Self-Study Report
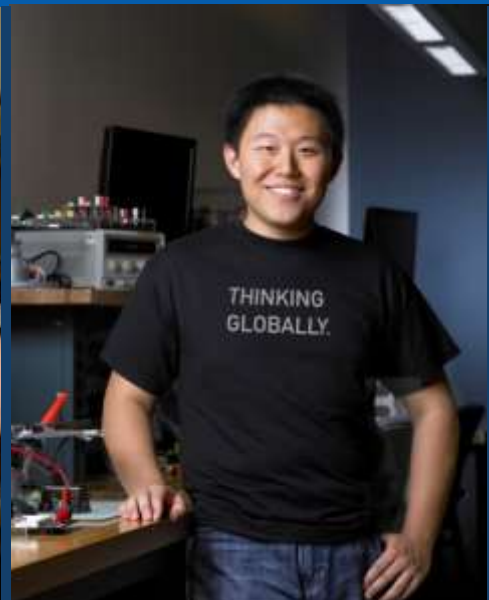

Kettering University

THINK DIFFERENTLY.
LEARN DIFFERENTLY.

HLC Accreditation
December 2013

Kettering University
Office of the President

President's Welcome

Despite our many names and incarnations, **Kettering University** has from its inception nearly 100 years ago been unusually effective in educating students who go on to lead extraordinary lives and successful careers, often in high-level positions in major corporations and organizations.

Today we are pleased that our graduates continue to be, as has historically been the case, in very high demand. They are finding the fulfilling employment that they seek, at higher salaries than the norm, and are being accepted to top graduate programs across the globe. We talk about this as the *"Kettering Magic,"* but in truth, our students are the product of a very intentional approach to education that integrates theory and practice - one that combines rigorous classroom and laboratory experiences with equally rigorous experiential components, most often in the form of a cooperative education experience that is as comprehensive as that found in the classroom.

In early **December**, as we were finishing this self-study, we learned that **Ms. Mary Barra '85**, both an alumna and a member of our **Board of Trustees**, has been named *CEO* of **General Motors**. In **November** we celebrated **Mr. Matthew Tsien's '81** appointment to the *presidency* of **General Motors China**, and the receipt of three **NSF-MRI** grants to three different faculty teams. As we at Kettering celebrated these successes, we also recognized how proud we are of our many successful alumni who have similarly benefitted from a Kettering education.

This self-study has been a learning process for us. A great many people have contributed to it, providing important information and even more important perspective. But I think it fair to say that we have come away from the process both invigorated because of what we have accomplished and reassured by our many efforts to adhere to best practices which are inclusive and transparent and to create programs and methodologies that will be sustainable. We are heartened by our sound fiscal circumstances, our improved enrollment, our quite remarkable new successes in fundraising and alumni relations, our contributions to the **Flint** community and our great progress in improving our infrastructure, both in terms of the physical plant and technology.

This self-study also describes Kettering's distinctive and flexible approach to strategic planning, which echoes the importance that **HLC** places on systematic and integrated planning that anticipates emerging factors and fluctuations in resources or conditions.

Rather than focus on the creation of a single, static strategic-plan document incorporating milestones and tactics built upon a vision frozen in time, we have embraced a living, breathing, strategic planning process that will never be finished but that will continue to respond to changing circumstances, including new challenges and new opportunities. At the same time, and importantly, we made this process enduring and relevant by anchoring it to that which doesn't change – a set of core strategic drivers that we defined together, known as the **Four Pillars** – coupled to a set of active and ongoing planning processes and structures. These activities, always ongoing both institutionally and within various areas of the campus, operationalize our strategic drivers in a flexible, adaptive, and evolutionary way.

We are also newly aware of the areas where we need next to pay attention. Most of these areas fall within academic affairs. We are now in the midst of searching for a new *provost* who will take responsibility for enhancing our assessment efforts and working with the faculty both to create a more robust system of faculty evaluation and to provide leadership in terms of the future of our graduate programs.

Thank you for your efforts on our behalf as peer reviewers for the **HLC**. We look forward to your visit.

Sincerely,

Dr. Robert K. McMahan
President

Significant Events 2011 – 2013

Kettering guarantees fixed-rate undergraduate tuition.

Kettering and Flint celebrate University Corner. New Einsteins Bros. Bagels and Flint Police Service Center.

Flint named one of 11 'Comeback Cities' due to recent improvements in the downtown area and its evolution into a **College Town**.

New VP for University Advancement and External Relations, **Susan Davies**

True Kettering – Vision, Mission, Values

$2MM Grant – **Charles Stewart Mott Foundation**

New VP for Marketing, Communications and Enrollment, **Kip (Cornelius) Darcy**

Chemical Engineering Lab Dedication

"Celebrate Kettering" events in honor of the inauguration of Kettering's 7th President, **Dr. Robert K McMahan.** Including donation from **GM** for Campus Safety Vehicle.

New President Named, **Dr Robert K McMahan**
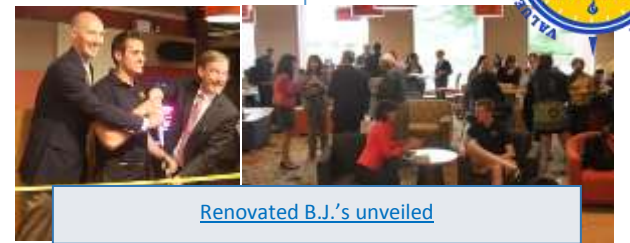
Renovated B.J.'s unveiled

2011 | 2012 | 2013

Farewell to former President and first lady, **Dr Stanley and Angie Liberty**

New VP for Administration and Finance, **Thomas Ayers.**

State-of-the-art, high definition Security Center unveiled - funded by donation from Lear Corp.

Renovated Campus Dining Room and Convenience Store.

Kettering partners with **Zipcar**

President McMahan and first lady, **Karen McMahan** arrive on campus.

KU and Flint join elite national partners to make broadband networks 100 times faster than today's internet – US Ignite

Kettering works with **City of Flint** to keep Atwood Stadium vital part of community.

EPA Grants help cleanup, testing at **Chevy in the Hole** property.

Kettering Board of Trustees elect new chair, **Charles F. Kettering III.**

$15.5MM pledge to Kettering University. – **Charles Stewart Mott Foundation**

Kettering plays key role in **Flint's** Master Plan Process.

Accreditations and Memberships

INSTITUTIONAL ACCREDITATION

Kettering University has been accredited since **1962** by **The Higher Learning Commission** and is a member of the **North Central Association of Colleges and Schools**, 230 South LaSalle Street, Suite 7-500, Chicago, Illinois 60604-1411, (312) 263-0456.

PROGRAM ACCREDITATION

ENGINEERING PROGRAMS

The **Electrical Engineering**, **Industrial Engineering**, and **Mechanical Engineering** programs are additionally accredited since **1977**, the **Computer Engineering** program since **1998**, and the **Chemical Engineering** and **Engineering Physics** programs since **2013** by the **Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology** *(EAC/ABET)*, 111 Market Pl., Suite 1050, Baltimore, MD 21202, (410) 347-7700.

SCIENCE PROGRAMS

The **Computer Science** program was accredited in **2007** by the **Computer Accreditation Commission** of the **Accreditation Board for Engineering and Technology** *(CAC/ABET)* and the **Applied Physics** program was accredited in **2013** by the **Applied Science Accreditation Commission** *(ASAC/ABET)*.

BUSINESS PROGRAMS

The **Management** program was accredited in **1995** by the **Accreditation Council for Business Schools and Programs** *(ACBSP),* 11520 West 119th Street, Overland Parks, KS 66213.

MEMBERSHIPS

- **AICUM** – Association of Independent Colleges and Universities of Michigan

- **AITU** – Association of Independent Technical Universities.

- **API** – American Payroll Institute Inc.

- **ASCAP** – American Society of Composers, Authors and Publishers

- **ASEE** – American Society for Engineering Education

- **BMI** – Broadcast Music Inc.

- **CACUBO** – Central Association of College and University Business Officers

- **National Common Application** – Standard Admissions Application

- **MASFSA** – Michigan Association of Student Financial Services Administrator

- **NCURA** – National Council of University Research Administrators

- **URMIA** – University Risk Management and Insurance Association

Rankings and Points of Pride

RANKINGS

- **Kettering University** is a nationally-recognized **STEM** *(Science, Technology, Engineering and Mathematics)* and Business university and a national leader in combining a rigorous academic environment with rich opportunities for experiential learning and cooperative education.

- 98% of Kettering graduates are employed or go to graduate school in their fields within six-months of graduation.

- #1 in Industrial and Manufacturing Engineering and #3 in Mechanical Engineering in the country among non-Ph.D. granting universities – *U.S. News & World Report*

- **"Best In Class" National Award for Entrepreneurship Across the Curriculum Program** – *Kern Family Foundation*

- Kettering ranked 60th nationally in **PayScale's** annual **College Salary Report**. Kettering was the highest ranking **Michigan** school on the list and ranked seventh among all Midwest colleges. – *PayScale.com*

- One of the 328 **Most Interesting Colleges** – *Kaplan's*

- A **"Best Midwestern College"** – *Princeton Review*

- A **"College of Distinction"** – *Colleges of Distinction*

POINTS OF PRIDE

- 98% of Kettering students received financial aid/scholarship.

- A Kettering degree provides significant earning power in the marketplace as shown by a 98.2% repayment rate for student loans.

- Kettering is certified as a **Robotic Education Robot Training Center**, thanks to the efforts of **Dr. Lucy King** *Professor Emerita of Manufacturing Engineering*.

- First private university in **Early Assurance Program** with **Michigan State University's College of Human Medicine – Kettering University** is guaranteed two seats in each entering med school class.

- Kettering is the first **STEM University** in **Michigan** to guarantee undergraduate fixed-rate tuition; eliminate academic fees.

- **U.S. Ignite** will bring the fastest broadband research network in the world to **Flint** and the **Region**. **Flint** is one of the first 25 cities and **Kettering University** is among the 60 universities in the first round of this elite national partnership.

Fast Facts

ACADEMICS

Number of Degree Programs: **15**

Number of Minors: **27**

Number of Concentrations: **23**

Graduate with up to **2.5 years** work experience.

ENROLLMENT FALL 2013

Undergraduate: **1,690**

Class Term: 920

Co-op Work Term: 718

Thesis Term: 52

Graduate: **301**

Total Enrollment: **1,991**

NEW ENROLLMENTS

First-Time, First Year Students: **376**

Transfer: **34**

GPA Average: **3.68**

ACT Average: **27.3**

Combined SAT Average: **1,248**

TUITION

2013-14 Undergraduate Student Tuition: **$35,600**

Student Scholarships**: $15,392** *(average)*

Financial Aid: **$15,392** *(average)*

Average Co-op Earnings**: $15.73 per hour**

UNDERGRADUATE STUDENT DEMOGRAPHICS

GENDER

Male: **1,381**   Female: **309**

ETHNICITY

International: **96**

Black or African American: **55**

American Indian or Alaskan Native: **4**

Asian: **53**

Hispanic or Latino: **55**

White: **1,281**

Native Hawaiian or Other Pacific Islander: **1**

Two or More Races: **45**

Unknown: **100**

RESIDENCE STATUS

Out of State: **359**

Michigan: **1,232**

Unknown: **1**

International: **98**

2012-13 DEGREES AWARDED

Bachelor's: **280**

Master's: **122**

Total Degrees Awarded: **402**

CO-OP EMPLOYER PARTNERS IN EDUCATION

Number of Employers: **491**

Top 10 Employer Partners in Education

Academic Programs

BIOLOGY

Degrees
Applied Biology

Minors
Biology

BUSINESS

Degrees
Business Administration

Minors
Business
Innovation & Entrepreneurship

CHEMICAL ENGINEERING

Degrees
Chemical Engineering

CHEMISTRY & BIOCHEMISTRY

Degrees
Biochemistry
Chemistry

Minors
Biochemistry
Chemistry
Pre-Med *(Course of Study)*

COMPUTER SCIENCE

Degrees
Bioinformatics
Computer Science

Minors
Bioinformatics
Computer Gaming
Computer Science
System and Data Security

ELECTRICAL & COMPUTER ENGINEERING

Degrees
Computer Engineering
Electrical Engineering

Minors
Computer Engineering
Electrical Engineering

INDUSTRIAL & MANUFACTURING ENGINEERING

Degrees
Industrial Engineering

Minors
Healthcare System Engineering
Manufacturing Engineering
Quality Engineering

LIBERAL STUDIES

Minors
Economics
History
International Studies
Literature
Pre-Law

MATHEMATICS

Degrees
Applied Mathematics

Minors
Applied & Computational Mathematics
Statistics

GRADUATE PROGRAMS

Bachelor/Master Options
Bachelor of Science/MBA
Bachelor of Science/Master of Science

Masters
Business Administration (MBA)
Operations Management
Lean Manufacturing
Engineering Management
Engineering - Automotive Systems
Engineering - Electrical Engineering
Engineering - Computer Engineering
Engineering - Electrical & Computer Engineering
Engineering - Manufacturing Engineering
Engineering - Mechanical Cognate
Engineering - Mechanical Design
Engineering - Sustainable Energy & Hybrid Technology

MECHANICAL ENGINEERING

Degrees
Mechanical Engineering

Specialties
Alternative Energy
Automotive Engineering Design
Bioengineering Applications
Specialty
Machine Design & Advanced Materials

PHYSICS

Degrees
Applied Physics
Engineering Physics

Minors
Acoustics
Applied Optics
Materials Science
Medical Physics
Physics

University Organization Chart

Dr. Robert K. McMahan, Jr.
President

Dr. Robert L. Simpson
Provost and Senior Vice President for Academic Affairs

Thomas W. Ayers
Vice President for Administration and Finance

Cornelius (Kip) H. Darcy
Vice President for Marketing, Communications and Enrollment

Susan M. Davies
Vice President for University Advancement and External Relations

J. Betsy Homsher
Vice President for Student Life and Dean of Students

Viola M. Sprague
Vice President for Instructional, Administrative and Information Technology

Donald G. Rockwell
University Counsel Office of the President

Links to additional information regarding Kettering University's governing body, executive leadership team and reporting units:

Board of Trustees >>

President McMahan>>

Officers of the University with links to Reporting Units>>

Board of Trustees

Introduction

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Institutional History and Context

In **2019 Kettering University** will celebrate its centennial, marking one hundred years as a world-class technical institute. With its focus on the **STEM** *(Science, Technology, Engineering, and Mathematics)* disciplines and management, its unique **Cooperative Learning** *(Co-op)* programs and its commitment to **Experiential Education** that integrates theory and practice, Kettering has claimed for itself a genuinely distinctive niche among small not-for-profit private universities.

Kettering University currently enrolls approximately **1,700 undergraduates** and **300 graduate students** as of **Fall 2013 Census**. Its **Cooperative Education** *(Co-op)* program has more than **500 corporate partners** who are willing both to participate and invest in the education of Kettering students. These organizations share the university's conviction that joining an academic course of study with work experience is an exceptionally effective approach to learning, leading Kettering students to gain not only an in-depth understanding of a discipline and a broad education grounded in the liberal arts but also the type of work experience at a high level that employers value.

Kettering's general education requirements, which ensure that all graduates have grounding in the liberal arts, include two courses in written and oral communication; courses in economic principles, introduction to the social sciences and introduction to the humanities; a 300 level elective in the humanities and a 300 level elective in the social sciences; and a senior seminar in leadership, ethics and contemporary issues. All students also complete a culminating undergraduate experience in the form of a senior thesis in addition to other capstone work. Many students additionally engage in one-two terms of faculty-directed research, frequently presenting their results at **National Scientific** meetings and publishing them in peer-reviewed journals.

Kettering graduates are unusually successful in finding employment in their chosen fields and in being admitted to the nation's finest graduate and professional schools. Indeed, **Ms. Dee Leopold**, *Dean of Admissions* at the **Harvard Business School**, in an **April 17, 2012** interview with **Fortune**, HOW DO YOU GET INTO HARVARD BIZ SCHOOL, gave **Kettering University** a ringing

endorsement. Explaining that the **Harvard Business School** did not always rely on its traditional feeder schools, she said, *"We love Kettering in Flint."* *(For an example of the impressive success of recent graduates in terms of employment and post-graduate education, please see [attachment 10](#) regarding recent physics graduates.)*

As significantly, an analysis of alumni records reveals that close to 1,000 Kettering alumni hold or have held the position of *CEO*, and include some of the most successful *CEO's* of major organizations in the country: corporate, non-profit, and philanthropic. The professional success of the typical Kettering graduate is testimony to the impact of the University's emphasis on leadership. *(See [attachment 11](#).)*

The success of Kettering alumni, the University's worldwide corporate partnerships, and Kettering's unique focus on industries with potential for job growth set the university apart from others *that* might be considered competitors.

Kettering University is also fortunate in that its **Board of Trustees** is deeply committed to the institution and highly vested in the distinctive Kettering educational model.

THE GENERAL MOTORS YEARS

In response to the workforce needs of the then nascent and exploding automobile industry in **Southeast Michigan**, a group of entrepreneurs that today are household names *(e.g. Chevrolet, Buick, Chrysler, Mott, Sloan, Kettering)* came together to design and participate in the creation of the **School of Automotive Trades**, now **Kettering University** was founded in **Flint** in **1919**. **General Motors** acquired the institution in **1926** with the

intent of transforming it into a world-class training ground for future executives and leaders, eventually renaming the school **The General Motors Institute** or **GMI**. The school's first director, **Maj. Albert Sobey**, refined the school's four-year **Cooperative Engineering** program to include a required and continuous four-week rotation between school and work for all students. Over time, the institution adopted different approaches to this requirement and in **2001** instituted the current pattern of alternating eleven-week terms of on-campus study and co-op work. Between each eleven-week term there is an interstitial *"assessment week"* that provides a window during which all faculty are expected to reflect on the previous as well as the upcoming terms.

For the 56 years during which **Kettering University** was effectively a unit of **General Motors**, the company shaped its priorities and culture, which not surprisingly were often more corporate than academic. For example, during this time, **GMI** developed only new majors or academic programs that the company believed were critical to *its* success. Neither did **GMI** develop a typical college financing model built upon tuition and philanthropy because **General Motors** had the means to support essentially the entire cost of a student's education, also paying them high wages while attending school and providing them invaluable professional experience during their work terms. Or to put it another way, because **GMI** was part of a for-profit company that heavily subsidized the tuition of its student employees, it had no need to establish either a tradition of philanthropy among graduates or a mechanism for soliciting alumni support. The institution did not develop a traditional system of shared governance because such an approach was inconsistent with corporate management structures and priorities. Nor did **GMI** seek accreditation by the

"If we taught music the way we try to teach engineering, in an unbroken four-year course, we could end up with all theory and no music. When we study music, we start to practice from the beginning, and we practice for the entire time, because there is no other way to become a musician. Neither can we become engineers just by studying a text book, because practical experience is needed to correlate the so-called theory with practice."

– Charles F. Kettering, 1941

Engineers' Council for Professional Development *(which later became Accreditation Board for Engineering and Technology, now known as ABET)* until **1977** because as an arm of **General Motors**, **GMI's Board of Regents** believed that accreditation was unnecessary.

Furthermore, **GMI** was impacted more directly by the business cycle in durable goods than were traditional colleges and universities over the same period. Business downturns or crises in the automotive sector, which happened in nearly every decade, led to periodic lay-offs of student employees as well as of **GMI** faculty and staff. On the other hand, its educational programs and enrollments grew and the institution prospered when **General Motors** did.

However, it is important to note that throughout these transitions and cycles, historical data suggest that the University's classroom/co-op rotation model has consistently operated to great effect with respect to student outcomes.

A NEW UNIVERSITY IN A CHANGING CITY

During a significant downturn in the economy in the early **1980's**, **General Motors** *President* **Mr. Roger Smith** authorized a phase-out of **GM** ownership of **GMI** and directed that the institution be transitioned to operate as a not-for-profit private university under the name **GMI Engineering and Management Institute**. **General Motors** gifted all **GMI** land and facilities to the new Institute, but otherwise, the new Institute received little direct assistance in managing the transition. The **GMI Engineering and Management Institute** began formal independent operations in **July 1982**.

Initially, the new Institute confronted the significant challenges of independence successfully. Convinced that the distinctive form of education that **GMI** offered was worth preserving, the administration, faculty and staff of the newly independent Institute built a new foundation for a strong future. In only four-years, more than 250 corporations were added to the **Cooperative Education** program, and enrollment increased. The Institute operated under balanced budgets while moving from a revenue model based on **GM** grants and subsidies to one based on tuition and fees. The faculty created a **Faculty Senate**, and the administration approved it in **1985**. While retaining their focus on high-quality teaching, members of the faculty accepted new responsibilities for academic decision-making and intensified their research efforts. Standards increased for faculty scholarship both in hiring decisions and in promotion and tenure decisions.

The Institution grew and ultimately was formally renamed **Kettering University** by the **Trustees** on **January 1, 1998**, linking its educational mission with **Mr. Charles F. Kettering**, a distinguished engineer, inventor, and humanitarian, who was also a pioneering advocate for **Cooperative Education** and one of the institution's early supporters.

Even as the separation from **General Motors** produced many benefits for the University, over time operating and financial problems at **General Motors** had a significant and negative impact on the larger **Flint** community. **General Motors** ceased major manufacturing operations in several parts of the city in the 1990's – eliminating nearly 50,000 jobs in the process – which in turn increased unemployment, undermined local businesses and reduced the tax base supporting schools and public

services. These negative impacts were further amplified by the natural demographic trend toward the suburbanization of communities at the time.

The decline of **General Motors** in **Flint** signaled to **Flint** and **Kettering University** that they both would need to re-imagine themselves to be successful in the 21st century. With the **University of Michigan-Flint**, **Kettering University**, and **Mott Community College** all located within the central city district, the community sought to make downtown **Flint** more attractive to college students.

KETTERING'S CHALLENGES IN THE FIRST DECADE OF THE 21ST CENTURY

Despite its promising beginning, the new **Kettering University** soon began to struggle. Beginning in **2002**, enrollments growths began to trend negative. In **2008**, as was true at most colleges and universities, so did the endowment. Kettering was at a distinct disadvantage in managing these trends, however, because it lacked sophisticated advancement and admission operations. Moreover, because alumni from the **GMI** era *(many of whom were by this time capable of giving major gifts)* had been employees whose tuition had been subsidized, they did not understand the importance of philanthropy to the financial health of their *alma mater*. Gifts for financial aid, facilities, technology and faculty support, for example, were for the years effectively *de minimis*.

KETTERING SINCE AUGUST 2011

When **Dr. Robert K. McMahan** became *president* of **Kettering University** in **August 2011**, he was determined to collaborate with the campus community to develop an integrated plan to transform Kettering.

His first action was to spend several months listening carefully both in formal and informal settings to his new colleagues, Kettering students, alumni, trustees and community leaders so that he gained a clear sense of Kettering's strengths, challenges and opportunities. In early fall and within months of arriving, he also launched an inclusive and effective campus-wide visioning process.

The *president* was clear that the visioning process needed to be built on Kettering's rich history and co-op program in **STEM** and business while also integrating an understanding of Kettering in the context of the challenges facing **American** higher education. He argued that to survive and flourish, traditional universities were going to have to evolve quickly and intentionally and that **Kettering University** would need to be both *"high tech"* and *"high touch."* For example, he noted that education was becoming more virtual, with new technologies presenting both challenges and opportunities in terms of *"delivering"* education in ways previously unimagined and that he anticipated that the methods of delivering education would continue to evolve dramatically in the coming years. He also observed that higher education today was more collaborative, social, and peer-to-peer than in the past, something that colleges and universities increasingly will need to take into account and integrate into routine practice. Perhaps the largest change, he maintained, was that going forward education was going to need to be even more student-centered. He also stressed that education would increasingly be brought to students rather than having students come to a conventional university and that students were going to demand more

$15.5MM Mott Foundation Pledge to Kettering University Video>>

active and less passive forms of interaction both inside as well as outside of the classroom.

Informed by the envisioning process, the *president* then articulated four over-arching institutional goals on which the University should focus going forward:

- Increasing significantly Kettering's enrollment at the undergraduate, graduate, and continuing / professional education levels so that Kettering University will over time graduate even greater numbers of highly trained scientists, engineers, mathematicians, technology experts, medical professionals, college professors, high school teachers, and business leaders.

- Increasing the University's image as a global leader in **STEM** and business education, ultimately achieving a level of public and higher education standing commensurate with the excellent educational outcomes it produces.

- Contributing to the economic revitalization of **Flint** and the region by creating an explicit urban economic development strategy for the University focused on the surrounding community and working with a broad community of entrepreneurs and firms – big and small, new and established – who seek to develop and launch new products and services.

- Increasing gifts from and engagement of its alumni and financial support from government, corporations, foundations, parents, and friends.

President McMahan also instituted an inclusive process of ongoing and evolving planning. He worked with the campus and particularly the members of his **Cabinet** to identify a series of ambitious but feasible strategic

priorities that would organize the work of his administration, inform the allocation of resources and help define Kettering's fundraising priorities. He was also especially determined that all new policies and practices would be sustainable, charging his *vice presidents* to seek input from the faculty, staff and students as appropriate to ensure, for example, that new initiatives such as new degree programs and new academic student support systems were the result of collaboration and ultimately were vetted and approved by the appropriate groups, such as the **University Curriculum Committee** and the **Faculty Senate**. **President McMahan** also asked the *vice presidents* to assess such initiatives and to make changes if these assessments so indicated.

He then successfully began to raise the funds to move forward on these priorities. In the spring of **2012**, the **C.S. Mott Foundation**, impressed by the integrated plan for transforming **Kettering University** and for helping revitalize **Flint**, awarded Kettering a grant of $15.5MM over three-years to fund many of its strategic priorities as well as facilities and technology improvements. *(See attachment 12.)*

That same spring the **U.S. Ignite** foundation awarded equipment worth $750K to **Kettering University**, permitting the University to connect to the nation's premier **Internet** research network. With this, Kettering joins a small group of only a few dozen institutions in the **U.S.** to have a similar capability and access, and it permits Kettering faculty and student researchers to participate in the development of the next generation of **Internet** applications.

Leveraging this grant, Kettering has made significant system upgrades to its technology infrastructure. The grant will also ultimately permit Kettering to contribute

to the reinvigoration of the **Flint** economy through the deployment of high-speed connectivity across economic redevelopment zones around the University *(enhancing workforce training activities that can help overcome barriers to the labor market)* and support a variety of partners in the areas of clean energy, advanced manufacturing, and education. *(See attachment 13 or website.)*

A new v*ice president* for advancement and university relations recruited by the *president* has made some important staffing and strategic decisions that have proven to be extremely effective. For example, in **2012-13**, Kettering experienced an 86% increase in donated dollars and a 23% increase in number of donors compared with the year before. In addition to the **C. S. Mott Foundation** and **U.S. Ignite** grants, Kettering has in the last two-years received a significant number of major gifts, including pledges and gifts by:

- **Trustee Bob Oswald '64** and his wife **Marcy** of more than $560K to increase to $2MM the **Oswald International Faculty Fellowship** to fund international travel, teaching and research by Kettering faculty.

- Alumnus **Mr. Gary Cowger '70** and his wife **Kay** of $350K to renovate space to create **The Gary and Kay Cowger Board Room** in the **Campus Center**.

- The **LEAR Corporation** of $125K for a state of the art security system for the University.

- 658 alumni of $534K in celebration of a **Professor Reg Bell's** 200th consecutive teaching term, and to establish the **Reg Bell Endowment** in support of curricular

enhancements, student research, scholarships and professorships in **Chemistry**, **Biology** and **Bio-Chemistry.**

The Kettering Donations chart indicates dollars raised for **2008-2012**, as well as projections for **2013-2014**.

Kettering University has also improved alumni participation in giving from 1,489 donors in FY10 to 1.639 alumni donors in FY13, an increase of 18%. During this same period, the overall number of donors to Kettering increased by 23%. In addition, the average annual gift increased from $135 in FY10 to $216 in FY13. Finally, by the end of the *first* quarter of FY14, the University has secured gifts and pledges exceeding the *previous fiscal year's total.* The University raised over

Kettering Donations 2008 – 2013						
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**Projected 2013-14**
Alumni	$840,128	$1,916,262	$2,020,050	$690,665	$777,823	$1,200,000
Friends	$298,152	$248,677	$209,220	$209,905	$321,598	$400,000
Corporations	$448,392	$390,867	$517,137	$604,166	$423,283	$600,000
Foundations	$2,596,612	$2,272,773	$2,582,088	$2,271,341	$5,774,180	$5,800,000
Other	$177,618	$218,922	$185,012	$183,026	$68,497	$100,000
Total	$4,360,902	$5,047,501	$5,513,506	$3,959,102	$7,365,381	$8,100,000

Kettering Donors 2008 – 2013						
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**Projected 2013-14**
Alumni	1,740	1,489	1,573	1,312	1,639	2,048
Friends	300	341	312	245	305	315
Corporations	75	78	78	96	67	99
Foundations	10	6	12	9	22	25
Other	30	48	56	21	43	43
Total	2,155	1,962	2,031	1,683	2,076	2,530

Research Grants 2007 – 2013		
Fiscal Year	New Awards	# Awards
2007	$2,035,134.00	18
2008	$2,149,138.00	19
2009	$935,602.00	22
2010	$5,419,442.00	27
2011	$4,358,505.00	39
2012	$1,338,576.55	31
2013	$2,577,184.99	55

THE PROCESS

OSR identifies grant opportunities, provides guidance to faculty who submit grants, and administers both grants and contracts, once awarded. Some of the important tasks this office provides include the following:

Pre-award support. The Pre-Award phase begins with an idea and ends with the submission of a contract or grant proposal. The office reviews, negotiates, and approves all sponsored proposals prior to submission for the funding agency. (See attachment 14 or website).

Post-award support. Once a contract or grant is awarded, the office administers the financial aspects of the contract or grant to ensure that it follows the guidelines of the sponsoring agency and the budget submitted to the sponsor at the beginning of the award. The office also ensures that all reporting requirements are met (See attachment 15 or website).

$6.7MM in FY13 with commitments in FY14 *to date* of over $6.9MM. These positive growth rates in fundraising and alumni giving are expected to continue.

The Kettering Donors chart indicates the number of donors and dollars in 2008-2012, as well as projections for **2013-14**.

Faculty applied research has similarly increased significantly and among other awards, in **August/September** of **2013**, Kettering faculty teams were awarded three **NSF-MRI** grants, the maximum allowed for an institution.

NSF awarded **Dr. Jaerock Kwon** $341K for his program entitled MRI: DEVELOPMENT OF HIGH-THROUGHPUT AND HIGH-RESOLUTION THREE-DIMENSIONAL TISSUE SCANNER WITH INTERNET-CONNECTED 3D VIRTUAL MICROSCOPE FOR LARGE-SCALE AUTOMATED HISTOLOGY.

Dr. Justin Young, **Dr. Terri Lynch-Caris**, **Dr. Mehrdad Zadeh**, **Dr. Girma Tewolde**, and **Dr. Giuseppe Turini** were awarded $114K for their program entitled MRI: ACQUISITION OF A MOTION CAPTURE SYSTEM TO FACILITATE MULTIDISCIPLINARY RESEARCH EFFORTS AND ENHANCE UNDERGRADUATE RESEARCH TRAINING.

Dr. Prem Vaishnava, **Dr. Bahram Roughani**, **Dr. Ligua Wang**, **Dr. Corneliu Rablau**, and **Dr. Steven Nartker** were awarded $77K for their proposal MRI: ACQUISITION OF AN X-RAY DIFFRACTOMETER FOR UNDERGRADUATE EDUCATION AND RESEARCH IN MATERIALS CHARACTERIZATION.

These monetary awards enable these faculty members to bring their research efforts to fruition as well as to enhance the laboratory learning environment by exposing undergraduate and graduate students to cutting-edge research instrumentation. *(For a full list of research awards in the last few years, see attachment 16.)*

Since **2007**, Kettering faculty and staff have received close to $19MM in grants and contracts through the **Office of Sponsored Research** *(OSR)*, which facilitates all aspects of research grants and contracts at **Kettering University**. *(See the provided chart for more detail about research awards and the process.)* These research grants have provided funding for laboratories and program initiatives where faculty and undergraduate/graduate students conduct research and contract work together.

The labs include the following:

- **Advanced Power Electronics Laboratory**
- **Applied Physics Acoustics Laboratory**
- **Crash Safety Center**
- **Environmental Scanning Electron Microscope Laboratory**
- **Fuel Cell Center**
- **Kettering Agent Fate**

- **North American Advanced Biogas Laboratory (NAAB Lab)**

- **Photonics and Fiber Optics Laboratory**

- **Rockwell Laboratory**

The university's endowment has increased since the downturn of **2008** during which time the endowment declined by 21% ultimately shrinking to a value of $49.7MM on **June 30, 2009**. As of **June 30, 2013**, however, the endowment has more than fully recovered from its earlier losses and was valued at $70.3MM. Current institutional debt totals $22.8MM. Even more significantly, for the last six fiscal years, **Kettering University** has consistently exceeded its planned net operation budget targets *(See* attachment 17 *for approved and actual operating budgets from 2007 to the present)*. For example, In FY13, the University planned for a slight surplus and finished the year substantially ahead of plan with a meaningful surplus. As of **June 30, 2013** Kettering has accumulated substantial cash reserves in excess of $14.6MM.

President McMahan also took steps to strengthen Kettering's financial and technology infrastructures, including the creation of a more transparent and reliable budget process. *(These and other initiatives will be described in more detail in the pages to follow.)* He was particularly determined to break down existing silos, create a team approach and end bureaucratic practices that were legacies of the old **GM** culture. Within two-months of his arrival on campus *(but even then only after extensive listening and analysis)*, he re-organized the administration to make it more effective, responsive and nimble. He elevated the existing *director* of **Information Technology** to a *vice president* and charged her with re-engineering

processes to make them more effective and efficient. *(Ending the requirement that purchasing requests must be on hand-written forms with nine carbon copies was especially popular.)* He created a retention task force, and retention has begun to improve *(For more detail, see* Criterion 4.C *in the 2007 HLC Comprehensive Visit Section)*. By **April** of his first year, he had appointed new *Vice Presidents* in **University Advancement** and in **Communications, Marking and Enrollment Management**. In early summer of that year, he appointed a new *Vice President* for **Finance and Administration**; Kettering's *Provost*, who had agreed to remain for the first several years of **Dr. McMahan's** presidency, is now retiring. Kettering has launched a national search for a new *provost* who will join the campus no later than the summer of **2014**.

During this period, Kettering upgraded its dining facilities and options for students, faculty, and staff; expanded menus to include more custom-made items and added a convenience store. Early in **2013**, **Kettering University** also opened an **Einstein Bros Bagels Restaurant** across the street from the campus and provided space in that same building for a **Flint Police Service Center**. A major gift enabled the campus to enhance campus safety, resulting in the installation of one of the most sophisticated campus surveillance systems in the country.

Kettering also embarked on a campus facilities master planning process in **February 2013** to assess its needs relative to long-term development of the campus while not losing sight of intermediate-term needs as well. Through a competitive process, the university selected the architectural firm of **SHW Group**, which focuses its business primarily in the education sector, to assist with master planning.

As a part of the **Master Planning** effort, teams from **SHW** visited the campus frequently, meeting with a wide range of campus groups and department heads to gather input about program needs. **SHW** also analyzed the condition of physical structures and systems and studied in detail the use of space across the campus.

A steering committee comprised of the *president*, *provost*, *vice president* for **Administration & Finance**, and the *director* of **Physical Plant**, guided the work. The **Resource Advisory Committee** served to provide broad-based feedback to the **SHW** team. The **Board of Trustees** received updates on the process at their regularly scheduled meetings.

Using the information gathered and feedback provided, **SHW** then developed a proposed **Master Plan** for review by the steering committee and the approval of the *president*. The *president* will recommend the final plan to the **Board of Trustees** at its **February 2014** meeting.

In short, **Kettering University** has rebounded from nearly a decade of enrollment problems and a number of years of financial problems. In addition to its positive financial picture, each of Kettering's entering classes since **2011** have exceeded 400 new first year and transfer students. In **2012-13**, Kettering implemented a fixed-tuition guarantee for all undergraduates that has been attractive to new students.

The **Board of Trustees**, for its part, revised its **Bylaws** and gave **President McMahan** enthusiastic support.

As part of its objective of increasing enrollment, **Kettering University** has also in recent years added new programs in chemical engineering, engineering physics, applied biology and the biomedical sciences. Kettering believes that these new programs, particularly the new major in applied biology, will attract more women students and students of color to Kettering even as the new health science programs will provide talented students for clinical work in the emerging health care organizations in **Flint** and as students for **Flint's** new **Michigan State University College of Human Medicine Campus**.

Kettering also has in the last year created new opportunities for experiential learning for these students. For example, **Kettering University** now offers its premed students the opportunity to be trained as medical scribes. For their **Co-op** experience at such institutions as the **Hurley Medical Center** and **Beaumont Hospitals**, the scribes learn the basic elements of working with emergency medicine physicians and the *"ins and outs"* of emergency medicine, such as the basics of interviewing patients, medical terminology, common medical complains and drugs, privacy and medical cost issues. Using the latest technologies, they work with these physicians to analyze the information from the interviews, research various medications, select optimal treatment options, and enter final patient treatment plans into the **Epic** database system. The physicians working with Kettering scribes have indicated that because the Kettering students understand the software and hardware of the technology being used in ways that the doctors do not, the students become valuable support for them.

Kettering University has also developed a new course of study in business with an emphasis on

technology/project management in order to produce future employees and leaders who will have a firm grounding in science, mathematics, and technology and who will also understand the importance of teamwork, nimbleness, and being entrepreneurial. The **Kettering Faculty Senate** approved this program in **March** of **2013**. As a result of these changes, all business students now complete a four-course sequence in *"business studios"* designed to prepare them to participate in the full spectrum of bringing an idea to the marketplace.

Under **President McMahan's** leadership, Kettering has also fulfilled its goal of becoming an active and committed partner in **Flint's** economic re-development. With an eye toward the future, the university has assumed ownership of more than 100 properties through the **Genesee County Land Bank** with an option to buy additional properties. Kettering has demolished and rejuvenated these properties at its own cost as a way of contributing to **Flint** and in so doing has significantly enhanced the area adjacent to the University. *(See attachment 18 or website)*. The University led in creating a University Avenue Corridor Coalition to bring together areas institutions, including two **Flint** hospitals, and area residents to work together to beautify this core area of **Flint**. As part of this initiative, the city has transferred ownership of the historic 11,000 seat **Atwood Stadium** to the University. This community sports and entertainment venue could no longer be financially supported by the City in light of other higher priority public service needs. Located near the University, its closure threatened the safety and development of the area. Now with the stadium under the University's management, it will be possible to have this cultural icon serve to enhance the continued development of the **University Avenue Corridor** and according to

President **McMahan**, *"help ensure that Atwood Stadium continues to exist as an important community facility."*

All of the board member of the former **Atwood Stadium Authority** have agreed to serve as an extension of the University's advancement fundraising team in helping to secure gifts for the renovation of the stadium property. Operationally, the stadium will be overseen by the University's recreational management team with a focus on growing the number of community related events and adding University events to the schedule. Given the pattern of past community support for the stadium, the University is optimistic that key gifts for upgrading the facility can be secured from the community. With upgrades to the field surface and expanded marketing, it should be possible to increase fee based events, such as local high school athletic events and community concerts, so as to make the ongoing operation of the stadium budget neutral.

Although Kettering has always done so to a limited extent, such contributions to the community are now a formal part of the university's mission. For example, Kettering faculty, staff and students are encouraged to work with local businesses and non-profits to develop improvements that will help their enterprises succeed. The university hosts the regional **Michigan Small Business Development Center** to help new and existing small businesses, and it opened the **Innovation Center** in **2010** to nurture science and technology-based new companies needing laboratory space. **President McMahan** explains these initiatives this way: *"We are not an island. Our success is tied to Flint's success. We have an obligation of service. One of the things we want to teach our students is community service."*

Recent local press coverage of the University's efforts indicates that the community at large is appreciative of Kettering's actions.

With the commitment of the community and substantial support from the **C.S. Stewart Mott Foundation**, downtown **Flint** is being revitalized, something that will clearly benefit not only the community but **Kettering University** as well. The change has been dramatic. For example, as recently as **2005**, 80% of the buildings downtown were vacant. Now, 25% are. **Flint's** downtown is now populated with excellent restaurants and retail establishments. As importantly, residential occupancy in downtown **Flint** is currently at 100%.

The **Charles Stewart Mott Foundation** and other donors have also supported the development of the impressive **Flint Cultural Center**, which now includes the stunning **Flint Institute of Arts**, the **Whiting** *(a 2,043 seat performing arts center)*, the **Flint Institute of Music**, the **Sloan Museum**, the **Buick Gallery & Research Center**, the **Robert T. Longway Planetarium** and the **Flint Youth Theatre**. The Center is a major educational resource and, as its website puts it, *"a model for how the arts, sciences and humanities can work collectively to create synergy among constituent institutions. It acts as a community catalyst, working with other organizations, individuals, and agencies to strengthen local and regional economic development, cultural understanding, and widespread support for the arts, sciences, and humanities."* Kettering students, faculty and staff often take advantage of programs at the **Flint Cultural Center**. In addition, members of the **Flint Institute of Art** teach courses on the Kettering campus for interested students.

The community also engaged in efforts to revitalize areas outside of the downtown. In **2002**, to seek to remedy the problem of abandoned and ruined properties, the **Genesee County Land Bank** began overseeing tax-foreclosed properties, managing them and preserving

them for eventual civic benefit. Using a process that engages residents and major institutions alike, the city of **Flint** has created its first **Master Plan** in fifty years.

KETTERING'S PLAN FOR THE FUTURE

When **President Robert McMahan** was inaugurated in **April 2012**, he reflected on what he had learned by listening to members of the Kettering community:

*"What they have all taught me is that despite our various names and evolving programs, Kettering has from its birth been dedicated to excellence and to making a significant impact on **Flint**, the region, and the nation by devoting ourselves to educating the next generation of leaders, innovators, entrepreneurs, and engaged citizens . . . I have also learned the degree to which we are indebted to the **Flint** community, particularly to our predecessors who had vision and who were determined to make this institution a reality. They believed, as we at Kettering do now, in the power of education to transform lives and communities."*

Being **Kettering University** in today's **Flint** is much different from being **GMI** in **Flint's** prosperous years. In the past, **Flint** was an asset in attracting students. Now the University has to make the case to prospective students, faculty and staff that **Flint** as well as **Kettering University** has much to offer. The University is also intent on expanding its geographic reach for students. But these kinds of challenges have always faced this institution. Its history is one of facing problems with agility and innovation while maintaining its core commitment to experience-based education.

This self-study therefore is focused on the actions that **Kettering University** has now taken and intends to take going forward as it strives for excellence in providing educational experiences that transform lives. It describes

the ways Kettering faculty and staff are now working together to continue to link theory and practice, implement new ways of educating our students, and envision new ways of having an impact on the world. It also provides evidence of the many new programs and policies across the institution that have been implemented to ensure among other things that our students are receiving appropriate academic and personal support; that our co-op programs are student-centered and educationally sound; that planning is on-going, transparent and inclusive; that we assess our programs and make improvements based on such assessment; that we are fiscally responsible and data-driven in our decision-making; that we are making progress in creating a culture of philanthropy and engaging our alumni; that we are acting on our commitment to revitalizing **Flint** and the region; and that we are approaching admission and retention in newly intentional and even sophisticated ways.

This self-study will also explicitly describe the actions that the university has taken to addresses the concerns of the **2007 HLC** accreditation team and those that emerged in the **2010** focused visit. We believe that the actions Kettering has taken in the last two and one-half years and those actions it intends to take going forward will demonstrate the university's ability to learn from past mistakes, establish priorities and act with integrity. We further hope to demonstrate that as it intentionally embraces best practices, Kettering is conscious of the importance of institutionalizing these practices by having all the appropriate voices around the table as they are designed, implemented and ultimately assessed.

Even so, as the self-study will reveal, Kettering is aware of areas that need further attention. The most significant

of these will become priorities for the new *provost*: creating a more robust system of faculty evaluation and more consistently incorporating the results of various and often extensive assessment efforts into planning, whether at the departmental or university level. Although in recent years the **Office of Institutional Effectiveness** has led to a much more systematic approach to gathering important data, data which in some areas have been for impetus for new programs and initiatives, the new *provost* will lead the effort to ensure that assessment informs planning and resource allocation at all levels. Those of us involved in crafting this self-study are confident that the university's efforts in terms of faculty evaluation and assessment will lead to our becoming an ever-stronger institution.
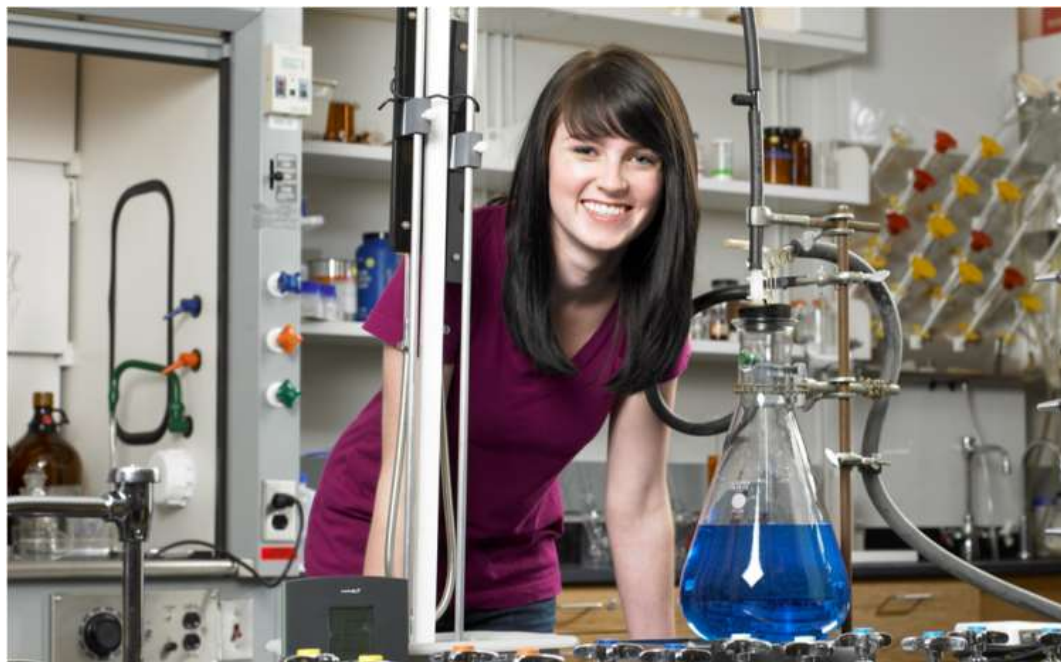
2007 HLC Comprehensive Visit

Concerns Addressed

As the previous section demonstrates, led by **President Robert McMahan**, **Kettering University** today is energized and focused on realizing an exciting new, shared vision. The University leadership is organized, inclusive, and intentionally transparent. Indeed, members of the senior administration often participate in town hall meetings, which focus on matters of institutional importance, including the budget. The campus is vibrant with new buildings and services. The members of the

faculty have new junior colleagues in every department and have strengthened the learning environments through student-focused teaching. The new focus on applied research has resulted in many more such grants than was the case prior to the **2007** visit. Enrollment, fundraising and alumni participation have all increased as well.

The snapshot of **Kettering University** today is a strong contrast to that of the last continued accreditation visit. In the last **HLC** comprehensive review *(2007)*, Kettering was facing a *"perfect storm"* of economic and institutional factors. The economy in **Michigan** was on the cusp of a steep decline as the automotive industry confronted unprecedented challenges. **Kettering University**, built on the foundation of the former **General Motors Institute**, was still strongly focused on providing education for the needs of the auto industry. The **Flint** community also facing mounting challenges as its largest employer, **General Motors**, was closing many of the industrial facilities, which led to a sharp decrease in demand for other regional businesses. In addition, Kettering had recently experienced a presidential transition after a long-term *president* who had a more corporate or top-down approach to leadership. At the time of the last **HLC** visit, **President Liberty**, who had arrived in mid-**2005**, was still getting to know the campus and was therefore at a distinct disadvantage in representing Kettering to the **HLC** accreditation team.

As **Michigan's** economy emerges from this tumultuous period, **Kettering University** and the surrounding community have been undergoing dramatic transformations as well. As a result, many of the problems that led to the **HLC's** follow-up attention after its last visit have been resolved. We hope that this self-

study will demonstrate that the concerns listed by the previous **HLC** evaluators dim in the light of the campus transformation.

HOW KETTERING HAS ADDRESSED PREVIOUS CONCERNS

The ASSURANCE SECTION, REPORT OF A COMPREHENSIVE EVALUATION VISIT, FEBRUARY 26-28, 2007 for the **Higher Learning Commission** noted three overarching areas of concern and additional criterion-related ones. The University addressed these concerns in two progress reports, submitted to the **Higher Learning Commission** in **August 2008**: PROGRESS REPORT ON ADOPTION OF A NEW MISSION STATEMENT, ASSOCIATED STRATEGIC PLAN, AND IMPLEMENTATION PLAN, and the PROGRESS REPORT ON ADOPTION OF INSTITUTIONAL EFFECTIVENESS AND ASSESSMENT MEASURES AND THEIR USE. The **Commission** accepted these reports, noting remaining concerns and its intent to consider them during the focused visit, which took place in **2010**. The ASSURANCE SECTION report which followed that visit indicates that overall, the **Commission** found no evidence that further HLC follow-up was required. In some areas of focus, however, the **Commission** cited the requirement for *"further organizational attention."* We address these areas in the body of the report.

Below we describe the actions the university has taken to address all **2007** concerns. When similar concerns are expressed, we have grouped them together to avoid repetitiousness. We further address them in our discussion of the appropriate criteria. We also provide electronic links to additional information that might be of interest.

We have italicized the concerns and left the formatting unchanged for ease of reference to the original document. Each concern is followed by a brief description of how the university addressed it.

•••

1.C. – 2002 MISSION STATEMENT DID NOT HAVE WIDE SUPPORT ON CAMPUS . . . A NEW MISSION STATEMENT WAS BEING DEVELOPED AND WAS SHARED WITH THE VISITING TEAM . . . BUT THERE WAS NOT EVIDENCE THAT THE NEW MISSION WOULD RECEIVE BROAD SUPPORT.

The **Board of Trustees** approved the current mission and vision statements on **February 22, 2013**. These statements represent the Kettering community's collective ideas for transforming the University to meet current and anticipated challenges. The campus-wide process, which began in **October 2011**, sought a great deal of input from the faculty, staff and students. Indeed, over the course of following years, all members of the campus community, as described in the introduction section, have had multiple opportunities to participate actively in shaping these statements, as well as the University's overarching goals, called the **Four Pillars of Success**. These pillars guide strategic planning, the strategic planning process, and resource allocation. They include 1) optimized growth in enrollment and programs; 2) global leadership in STEM education; 3) community vitality; and 4) engaged stakeholders.

The participation of so many members of the Kettering community in this

process represents a marked change from the hierarchical approach taken previously. As a result, the new mission and vision enjoy widespread support. In addition, a comprehensive internal branding and roll-out of **True Kettering** has built upon this broad support and has similarly engaged the campus. *(See Criterion 1.A.)*

1.D. – MEMBERS OF THE FACULTY SENATE INDICATED THAT THEY DO NOT PLAY A SUBSTANTIAL CONSULTATIVE ROLE IN RELATION TO THE PRESIDENT AND HIS CABINET. CONCERNS WITH RECENT BUDGET ISSUES LED TO THE CREATION BY THE FACULTY SENATE OF A BUDGET TASK FORCE THAT MET WITH THE PRESIDENT . . . A MEETING HELD TO ENGAGE IN DISCUSSIONS RELATED TO BUDGET MATTERS DID NOT RESULT IN BETTER UNDERSTANDING OF ISSUES OR FURTHER CONSULTATION.

President McMahan and Kettering's new *Vice President* for **Administration and Finance** *(CFO)*, who joined Kettering in the summer of **2012**, have put into place a new, transparent budget process that includes all university units in planning and fiscal accountability. *Managers* and *department heads* consult with their teams, complete budget worksheets and submit to their *vice president* budget requests consistent with their unit and institutional priorities. Each *vice president* reviews the budget requests for the departments in his/her area consulting with *managers* and making adjustments in the requests as appropriate in light of area goals. The **President's Cabinet** and the *president* then collectively review budget requests with the cabinet making a recommendation to the *president*. **President McMahan** also consults with the newly created **Resource Advisory Committee** *(RAC)* comprised of two faculty members, two staff members, and two students and co-chaired by the *CFO* and *Provost*, to advise him on a broad range of resource issues including new major initiatives requiring operating budget support. Based on all of this input, the

president formulates a formal operating budget resolution for the review and action of the **Board of Trustees**. *(For a more detailed description of the process, see Criterion 5.A. and 5.B.)*

The *president* has also brought about more sharing of information. The *vice presidents* now have access to one another's budgets. *Department heads* now are able to see one another's budgets. The *CFO* now provides periodic updates on resource issues and publishes annually an institutional budget summary for the campus community *(See attachment 19 and 20.)* The *president* has held town hall meetings with the faculty and staff to share and discuss key issues including the operating budget.

This process departs significantly from that of the past when the *president*, *provost*, and *chief financial officer* established all budgets without broad consultation thus effectively making budget information confidential and closely guarded. This new collaborative and transparent process has contributed significantly to campus-wide knowledge about and engagement with the budget process and the University's financial situation. *(See attachment 21. For a more detailed description of the current budget process, see Criterion 5.A. and 5.B.)*

As is appropriate, the single largest operating expense in the University budget is consistently that associated with personnel compensation and benefits. More than 67% of the operating budget in **2012-13** was allocated to these expenses. The expenses undergird a faculty of sufficient size to support a student to faculty ratio of 14:1.

Beginning with **2003-04**, **Kettering University** saw eight-years without broad-based raises for faculty and staff. Salary adjustments were however made for a limited number of faculty to diminish internal inequities,

and promotional increases for assistant professors more than doubled over the these eight-years, ensuring that salaries for recently promoted associate professors remained at reasonable parity with those of institutional peers. The University currently hires new faculty at market value, consequently, the issue of salary disparity relative to peer institutions is not an issue for junior faculty, where Kettering remains competitive in attracting high quality faculty. Faculty salaries at the full professor level do not uniformly meet market expectations when compared with faculty holding similar positions at peer institutions. A **2010** salary analysis showed that in aggregate faculty salaries lagged behind those of peers by approximately $1.5MM. Reinstatement of a broad-based salary adjustment program in **2012** stabilized, but did not diminish, this gap. In a **December 6, 2013** memo to the faculty and staff, the president noted, *"During the development of next year's budget, I will set as a priority the goal of beginning to address the question of salary compression for senior faculty members specifically."*

Kettering employees have received an across-the-board two percent raise for the last two-years.

(See attachment 22 December 6, 2013 memo from President McMahan to faculty and staff about Kettering's current financial situation, annual reviews and compensations.)

1.D. – STAFF MEMBERS DO NOT HAVE FORMAL REPRESENTATION THAT PROVIDES INPUT ON GOVERNANCE, THE ALLOCATION OF RESOURCES OR STRATEGIC PLANNING.

In **2011**, the University began to institutionalize staff input on governance. Under the direction of the **Planning and Assessment Council Steering Committee** *(PAC-SC)*, an elected body comprised of staff and faculty, the University administered the **Noel-Levitz Employee Satisfaction Survey**. Results revealed a number of challenges *(including resources, collaboration, and communications)*, and were shared with the campus community through electronic means, town hall meetings, and discussion forums.

As noted above, today the staff is today represented by two members on the **Resource Advisory Committee** *(RAC)*. Additionally, with the revised budget process, staff members at all levels contribute toward building the budget. As a result of these new processes and committees, staff members today are fully engaged in providing input on the allocation of resources.

Staff members at all levels now also engage fully in the University's strategic planning process. At the departmental level, they formulate annual unit goals that align with the **Four Pillars**. Also, the administration encourages them to put forth proposals for new initiatives, particularly cross-departmental ones that support the pillars. Typically, they work through their *supervisors* to bring matters to the attention of their respective *vice presidents*. The *provost* refers some matters to the **Faculty Senate**, as appropriate. *(For more detail, see Criterion 1.A. and 5.B.)*

1.D. – WHILE THE PRESIDENTS CABINET IS QUITE LARGE MANY MEMBERS OF THE STAFF AT THE LOWER LEVEL EXPRESSED FRUSTRATION AT LACK OF FORMAL CHANNELS FOR INPUT BACK TO PRESIDENTS CABINET.

Soon after his arrival in **2011**, **President McMahan** reorganized the **President's Cabinet**; reduced it from ten to six members; and

redefined their respective roles to more effectively address the needs of the University. He elevated the *provost's* position to *senior vice president*, consolidated functional responsibilities, promoted two *senior administrators* to *vice presidencies (Information Technology and Student Life)*, and hired three new *vice presidents (Administration and Finance; Marketing, Communications and Enrollment; and University Advancement and External Relations)*. The *president* and his **Cabinet** embrace an inclusive, collaborative approach to leadership, which manifests itself in a number of ways, most notably by *"leadership by walking around."* **Cabinet** members adhere to an open-door policy that promotes regular communications and encourages faculty, staff, and students to express themselves. New budgeting and strategic planning processes, town halls, and other communication channels foster inclusivity. **President McMahan** has engaged **Dr. Susan Resneck Pierce**, *President Emerita* of the **University of Puget Sound** and currently a *consultant* to *university presidents* and *boards*, to serve *"Of Counsel for Special Projects"* for Kettering. Over the past two and one-half years, she has visited campus on several occasions to hold *"listening sessions"* with members of the administration, faculty, staff, and students to ensure their concerns surface. *(For more detail, see .)*

In response to a proposal to establish a staff senate, the university decided to focus on improving communication university-wide and seek staff input through improved processes, such as the new budget process. Going forward senior leadership will work with the **PAC** to develop a new charter for the staff group that better coordinates its work with the newly created **Resource Advisory Committee** and better fits within the context of an ongoing dynamic planning process.

1.C. – CONCERNS WERE EXPRESSED BY SOME FACULTY AND STAFF THAT THE INTENDED EXPANSION OF BUSINESS PROGRAMS AND BROADER FOCUS ON GRADUATE EDUCATION DID NOT FIT IN WELL WITH THEIR UNDERSTANDING OF THE KETTERING MISSION.

As noted earlier, Kettering has developed a new course of study for business related to entrepreneurship. The **Business Department** is also in the midst of completely revising its curriculum, focusing on the **Bachelor of Science** in **Business Administration** and eliminating the **Bachelor of Business Administration**. Kettering has also included **Business** in its new mission statement as one of its core areas of study.

The revised **Business 2.0** curriculum will focus on creating leaders capable of taking an original idea to the marketplace. There are three key aspects to achieving this:

- Teaching business students more about engineering, science, mathematics, statistics, and the application of these fields to business practice. This better prepares students to work with concept originators and perform business analyses related to bringing ideas to the marketplace.

- Providing value-added knowledge early in the program directed toward student success and value for co-op employers. This prepares students to facilitate the idea development process and perform basic analyses.

- Creating business studio experiences modeled on art studios for students. These team-based studio courses not only give students the opportunity to practice and hone their knowledge, but access business faculty who will

be available to them during the studio period. Just-in-time teaching will occur in the studios to address the instructional needs of the students. Studios will make extensive use of simulations and projects. Collectively, the suite of four studio courses will prepare students to participate in the full spectrum of bringing an idea to the marketplace.

Business 2.0 also addresses issues of prerequisites and flow through the program. Adjustments are being made to the **Business Minor** and **Innovation Minor** to align with changes to the major. Because of the clear purpose of **Business 2.0**, the individual concentrations have been eliminated. The program is being implemented in two phases. Phase 1 has been launched for the **2013-14** academic year and addresses freshman and sophomore courses. Phase 2, currently in development, encompasses the higher-level courses and will be launched in **2014-15**.

Although **Kettering University** remains deeply interested in expanding graduate programs, given the press of other more immediate priorities and the stated-intention of the current *provost* to retire at the end of this academic year, the *president* put this effort on hold. Kettering has launched a national search for its next *provost*, who is expected to assume office in the summer of **2014**. She or he will take a leadership role in working with the appropriate members of the faculty and corporate partners to develop a strategy going forward for graduate offerings, both on campus and online.

2.A. – SERIOUS CONCERNS ABOUT THE ABILITY OF KETTERING TO PUT IN PLACE AN EFFECTIVE STRATEGIC PLAN THAT WILL PROVIDE THE NECESSARY RESOURCES AND ENROLLMENTS THAT

WILL ALLOW KETTERING TO SUPPORT ITS CURRENT AND FUTURE EDUCATIONAL PROGRAMS.

2.B. – THE 2002 STRATEGIC PLAN WAS COMPREHENSIVE, BUT INITIATIVES WERE NOT PRIORITIZED AND THERE WAS NO CLEAR ORGANIZED APPROACH DEVELOPED TO ACHIEVE THEM . . . OF THE 11 CORE STRATEGIES IN THE PLAN . . . RELATIVELY LITTLE WAS ACCOMPLISHED.

2.B. – THERE ARE FEW SIGNIFICANT CHANGES OVER THE PAST DECADE AT KETTERING THAT HAVE RESULTED FROM THE NUMEROUS STRATEGIC PLANNING PROCESSES.

2.D. – THE NEED TO ALIGN PLANNING WITH THE ORGANIZATION'S MISSION HAS BEEN STRAINED BY THE EXISTENCE OF MULTIPLE MISSION STATEMENTS. MAJOR SECTORS OF CAMPUS COMMUNITY ARE SKEPTICAL OF THE CURRENT STRATEGIC PLANNING PROCESS, REQUIRING CAMPUS ATTENTION TO CORE COMPONENT 2D.

Upon his arrival in **2011**, **President McMahan** instituted an evolving on-going and collaborative strategic planning process that clearly identifies immediate and realistic strategic priorities tied to the institution's mission and vision for the future. In contrast to previous planning efforts, this process has led to widespread support for the mission and vision.

As noted earlier, the ongoing strategic planning process is comprehensive and organized around the **Four Pillars of Success**, which provide clear direction for all areas of the university. The **Office of Institutional Effectiveness** posts information about all levels of planning on its **Blackboard** site, available to all faculty and staff. *(For more detail, see* Criterion 5.A.*)*

As part of the planning process, the **President's Cabinet** now meets annually to establish the institution's top five

or six strategic priorities for the coming year. The **Cabinet** then develops action plans for those priorities, identifying intended outcomes, measures of assessment, the source of resources, the responsible party or parties, and a timetable. The **Cabinet** further preliminarily defines the top five or six institutional priorities for the coming three-years. Each **Cabinet** member's own slate of priorities derives from this list. Finally, throughout the year, the **Cabinet** periodically evaluates progress on priorities and, if necessary, makes adjustments.

The institution's progress and achievements have engendered confidence across the campus and among Kettering's external constituents, both in the planning process and Kettering's future. The campus is clearly pleased with Kettering's success in the last two-years in significantly increasing gifts and grants to support both current and future needs, with the fact that our resource base now fully supports its current educational programs, with the growth in the endowment and with the university's cash position. The $15.5MM grant from the **C.S. Mott Foundation** has been especially helpful in that it has funded, and will continue to fund, many onetime initiatives as well as facilities and technology improvements. Several of the goals outlined in the grant have already been accomplished. The **U.S. Ignite** grant has further enabled Kettering to update its technological infrastructure.

In short, Kettering today is ensured an adequacy of financial and human resources and is continually updating its physical and technological infrastructure. Each area of the resources is discussed in detail later in the document. *(For more information, see Criterion 5.A.)*

The **True Kettering** campaign has also promoted awareness of the mission and features an ongoing website

rotator of additional accomplishments and changes. Efforts are now underway to translate **True Kettering** into faculty and staff action and behavior. This began with a faculty and staff survey to understand their perspectives and measure their current level of engagement. The survey included questions about satisfaction, manager effectiveness, and leadership direction. Faculty and staff currently participate in professional development sessions, led by external consultants, designed to support the **True Kettering** culture. The training builds awareness, motivation, and skills to create engagement, service excellence, and effective collaboration. *Managers* and *department heads* have also participated in special training programs that provide a framework for performance management and employee engagement. *(For more detail, see Criterion 1.A.)*

The Kettering board-approved mission and vision statements are now clearly understood and widely embraced by the campus community. Although a few members of the campus community continue to dwell on the problems of the past, today they represent a distinct minority. People are heartened by the tangible evidence of the university's progress, particularly enhanced facilities, new programs, successful fundraising, stunning improvements made to the surrounding neighborhood, and an array of impressive new faculty and administrative appointments. *(For more detail, see Criterion 1.A.)*

2.B. – ENROLLMENT HAS BEEN AN ONGOING CONCERN AT THIS TUITION DEPENDENT INSTITUTION . . .

2.B. – WHILE THE INSTITUTION IS SOLVENT, IF ENROLLMENTS CONTINUE TO DECLINE, THE PRESIDENT AND BOARD OF TRUSTEES ACKNOWLEDGE THAT THE IMPACT WOULD BE SEVERE. MEETINGS ON CAMPUS WITH FACULTY, STAFF AND STUDENTS DID

NOT REFLECT THE SAME LEVEL OF AWARENESS OF FINANCIAL VULNERABILITY.

The University's intense focus on improved marketing, outreach, and enrollment operations has begun to remove variability in the undergraduate entering class size. Also, Kettering plans to undertake a review of how it uses financial aid to benefit admissions and retention. To achieve the desired controlled growth in new entering students, the university now places significant emphasis on recruiting **STEM**-focused prospective students and families, from traditional and emerging recruitment markets in **Michigan** and out-of-state, as well as internationally. Each of the entering classes since **2011** has exceeded 400 new students—first year and transfer. A new *Vice Presi*dent for **Marketing, Communications, and Enrollment** leads these efforts.

As part of its enrollment and long-term budgeting strategy, Kettering launched a fixed tuition guarantee model in **2012-13**. Within this program, students are guaranteed fixed tuition for up to five-years. *(Because of the co-op and senior thesis requirements, most Kettering students are enrolled for four and one-half years.)* Fixed tuition helps to mitigate the uncertainty of tuition increases on the budgets of students and their families. **Kettering University** is the first **STEM** school in **Michigan**, and one of a small number of institutions in the nation, to offer fixed tuition to all undergraduate students.

Kettering has also initiated a year-long project of market research, retaining the **Art & Science Group** *(A&S)*, a prominent higher education consulting firm, to conduct a sophisticated institutional strategy and positioning study focused on our prospective student markets. The goal of this study will be to give Kettering a firm understanding of how best to position the University to ensure that the

university meets its enrollment goals and secures the necessary revenues to support its on-going commitment to excellence. The research is designed to illuminate the university's current market dynamics, to identify strategic initiatives and different ways and levels at which they might play out, and then to estimate the impact that they would have on application and matriculation rates. Ultimately, the work will conclude with recommendations on how to position the University in its undergraduate markets, how to substantiate the university's position in terms of academic programs and in student life, and how to communicate it.

Ultimately, the research will inform future strategic planning, beginning in the fall of **2014**. The University established a moderate-sized working group of senior administrators and faculty to work closely with **A&S** throughout the process. **President McMahan** *chairs* the group, which will provide guidance and feedback to the consultants, reviewing survey instruments at the start of the project and discussing research findings and recommendations at key junctures as well as at the conclusion of the study. Altogether, participants will engage in four to six meetings over the course of the coming year.

Kettering also intends to launch **Kettering Global** in **2014-15**, an initiative that will include both online and residential components and which, when fully operational, should provide the university with a significant new revenue stream. Built upon programs that are consistent with Kettering's mission, **Kettering Global** is designed to

serve graduate students, employees of Kettering's nearly 500 corporate partners *(both domestic and foreign)* and undergraduate students during resident and non-resident terms. The University received full startup funding for this initiative as an element of the **Mott** grant, and initial staffing and development of the program is currently underway.

In short, the university has increased enrollment, improved the admission operations and is now focused on attracting additional geographically diverse students and improving retention. Based on the **Art & Science** research, Kettering will consider adding new programs in the coming years. The University has also clearly benefitted from significant new gifts and grants and from careful fiscal managements. The **Board of Trustees** has formal oversight processes in place to monitor Kettering's financial situation and enrollment. The *president* regularly communicates with the faculty, staff and students about the university's financial situation. *(For more detail, see the* Institutions History and Context *section and also* Criterion 5 *and* 5.A.*)*

2.C. – WE DID NOT DISCERN A COMPREHENSIVE ANALYSIS OF ASSESSMENT MEASURES THAT LEAD TO INTERVENTIONS FOR PROGRAM IMPROVEMENT. IN PARTICULAR, THERE IS NO DASHBOARD OF ASSESSMENT MEASURES THAT PROVIDES INSTITUION-WIDE AWARENESS OF ASSESSMENT ACTIVITIES OR THE IMPACT OF SUCH ACTIVITIES.

KETTERING'S EVALUATION/ASSESSMENT PROCESSES DO NOT PROVIDE RELIABLE EVIDENCE OF INSTITUTIONAL EFFECTIVENESS TO GUIDE STRATEGIES FOR CONTINUOUS IMPROVEMENT

3.A. – GRADUATE PROGRAM OUTCOMES ARE ARTICULATED BY FACULTY CURRICULUM COMMITTEES AND THE FACULTY GOVERNANCE SYSTEMS AND ARE SOMEWHAT GENERAL AND PROVED TO BE DIFFICULT

TO ASSESS BECAUSE THEY ARE LOOSELY BASED ON WORK INTEGRATED LEARNING. THE ASSESSMENT OF THE EFFECTIVENESS OF GRADUATE PROGRAMS REMAINS DEPENDENT ON THE ESTABLISHMENT OF DEFINITIONS THAT HAVE BROAD APPLICATION.

3.A. – KETTERING'S GOALS FOR STUDENT LEARNING OUTCOMES MAKING EFFECTIVE ASSESSMENT POSSIBLE WAS EXAMINED BY THE TEAM AND THOUGHT IT SHOULD BUT THERE WAS ONLY SPECIFIC INSTANCES THAT IT COULD BE DEMONSTRATED. THE TEAM SAW NO CONVINCING EVIDENCE THAT THIS WAS THE CASE FOR THE WHOLE INSTITUTION, OR EVEN THE MAJORITY OF IT . . .

3.A. – COLLECTED DATA DO NOT APPEAR TO HAVE BEEN INTEGRATED, INTERPRETED, AND USED TO GENERATE FEEDBACK THAT INFORMS AND ENLIGHTENS THE PROCESSES AND OPERATIONS OF THE UNIVERSITY FOR CONTINUOUS IMPROVEMENT. WORKING EXAMPLES NOTWITHSTANDING, ASSESSMENT AT THE INSTITUTIONAL LEVEL HAS NOT BEEN DEMONSTRATED TO BE EFFECTIVE, RESULTING IN TEAM CONCERNS ABOUT THE LEVEL OF FULFILLMENT OF CORE COMPONENT 3.A.

In **2013**, Kettering revitalized its previous assessment model *(created in 2009)* to align with the institution's mission and strategic priorities, as established by the cabinet to sustain progress toward achieving the **Four Pillars of Success**. The model's dashboard requires all units—academic and non-academic—to report annually on several criteria: purpose as it relates to the mission and vision of the institution, goals, intended outcomes, criteria for success, employed assessment tools, resources and costs, evidence of accomplishment, and the use of results. The University expects all units to analyze and interpret collected data and to integrate findings into future plans and actions. The *"use of results"* section in annual reports demonstrates how findings inform programs and services. It also serves as a measure of

continuous improvement in that it is intended effectively to close feedback loops. Note that all degree programs that have programmatic accreditation *(ABET, ACBSC, etc.)* must fulfill additional stipulated assessment requirements. All these degree programs hold *"good standing"* status with their accrediting bodies.

The University publishes all assessment reports on **Blackboard**, which is available to all faculty and staff. The *director* of **Institutional Effectiveness** *(Kettering's institutional research unit)*, hired in **June 2012**, created the new model and oversees its implementation, utilization, and compliance. *(For further information, see Criterion 4.B.)*

The University measures graduate student outcomes specific to degree programs and in general. For example, post-coursework, all **MBA** students must complete the **ETS** *(Educational Testing Services)* **Major Field** test which assesses mastery of concepts, principles, and knowledge in four content areas: marketing, management, finance, and accounting. It also assesses critical thinking and reasoning skills. The **Graduate Program** uses results *(including national comparative data)* to evaluate instructional effectiveness and the program's intellectual rigor; they inform strategic direction and program curricula. Course-specific capstone projects in all graduate programs require students to demonstrate the application of acquired knowledge to a work-focused or real-world situation.

All graduate students complete satisfaction surveys at three junctures in their academic programs: after no more than seven credit hours; after 8-39 credit hours, and at coursework completion. Assessed topics range from program concentration efficacy to graduate student services. Results inform program changes and improvements.

In **2013**, the provost established a **Graduate Program Review Committee**, composed of the *associate provost* for **Academic Affairs**, the *director* of **Graduate Programs**, the *director* of the **Academic Success Center**, and the **Registrar**. The committee will evaluate current assessment practices and results, learning outcomes, and processes within each graduate program. It will make recommendations on current programs to the new, as yet unnamed *provost* who is expected to begin in **July 2014**. The *president* has identified **Graduate Programs** as a priority for the next *provost*. *(See Criterion 4.A. for additional information.)*

3.C. – FACULTY REPORT THAT FUNDS ALLOCATED TO THE MAINTENANCE OF LABORATORIES IN THE OPERATING BUDGET ARE ZERO IN MANY CASES AND PRACTICALLY SO IN OTHERS. INSTRUCTORS AND STUDENTS IN SCIENCE PROGRAMS REPORT, SHORTAGES IN BASIC SUPPLIES FOR THE CONDUCT OF EXPERIMENTS IN COURSES . . . THE INTEGRATION OF TECHNOLOGY IN INSTRUCTION IS INADEQUATE. THIS LACK OF SUPPORT FOR THE LEARNING ENVIRONMENT ON CAMPUS LEADS THE TEAM TO HAVE CONCERNS ABOUT CORE COMPONENT 3.C.

Today, faculty and staff inform the annual budget building process today to ensure that instructional and laboratory supply needs are appropriately funded. In addition, as detailed in Criterion 5.A.1, the University has upgraded many of its laboratories. Funds from operating surpluses over the past two-years have been invested in needed facilities and equipment, including, in the last year alone, over $100K in refreshed computers and $100K in new laboratory instrumentation in response to needs solicited from *department heads*. Thanks to the **Mott** grant, Kettering has also

completed construction costing in excess of $3MM to expand the **Chemical Engineering** lab space and create new **Applied Biology** lab space.

3.C. – THE TEAM SUGGESTS THAT THE INSTITUTION CONSIDER IMPROVEMENTS IN DISTANCE LEARNING THAT WOULD IMPACT CORE COMPONENT 3C.

As noted previously, Kettering intends to launch **Kettering Global** in **2014-15**. As part of this initiative, **Kettering University** will shift its distance learning platform from video-based recording of lectures to web-based constructs. The University recently completed a $750K enhancement to wireless networking infrastructure across campus in support of this and other initiatives.

4.C. – OVERALL STUDENT SATISFACTION WITH PROGRAM EFFECTIVENESS HAS BEEN DETERMINED TO BE ONLY MODERATE WITH A LACK OF INTERNAL PROCESSES AND PROCEDURES TO DETERMINE THE REASONS FOR THIS AND DEFINE CORRECTIVE ACTION.

Overall student satisfaction has improved significantly since the **HLC's 2007** and **2010** visits as a result of new attention to student feedback and also the implementation of an array of new initiatives that provide support for students throughout the course of their education. Indeed, during his first year on campus, **President McMahan** made improving retention and graduation rates an institutional priority by establishing a university retention taskforce, comprised of faculty, staff, students, alumni, and community partners. He charged the taskforce to complete a comprehensive review of retention and graduation patterns, to identify institutional deficiencies that contribute to attrition, and to recommend remediating strategies. The taskforce made a number of campus-wide recommendations to enhance student success and persistence. They include

improvements to instruction, academic support services, advising *(including for the culminating experience/senior thesis)*, and other programs and services. The taskforce's recommendations include implementation of new assessment initiatives to measure the efficacy of new initiatives. The university has begun increasingly to benchmark with other institutions of higher education, particularly **STEM**-focused ones, and adopt best practices in student support and retention. Some of these initiatives are described in detail below.

Kettering administers the **Noel- Levitz Student Satisfaction** survey biannually and then conducts follow-up focus group discussions to gain a better understanding of student concerns and how to address them. Kettering also administers the **National Survey of Student Engagement** *(NSSE)* biannually. The university integrates students into the academic program feedback cycle through their participation in various advisory roles and representation on the following committees: the **President's Student Advisory Council**, the **Resource Advisory Committee**, the **Faculty Senate**, the **Cooperative Education Task Force**, and several **Board of Trustees'** committees, including the **Academic Affairs Committee** and its **Student Life** and **Enrollment Subcommittee**, and the **Advancement Committee**. Students sit on most academic departments' industrial advisory boards. *(See attachments 27, 28, and 29 or website.)*

As described below, Kettering takes seriously student feedback. For example, results from the student satisfaction survey indicated dissatisfaction with the co-op program and its focus on general job placement, rather than student-focused placements as they related to majors and intellectual interests. In response, the

university moved management of the co-op program from **Enrollment** to **Academic Affairs**; redefined the staff positions as *"co-op educators" (rather than co-op managers)*; and shifted the focus to coaching and skill development and aligning job placements with students' interests. *(See page 38 for more information.)*

Additional evidence of Kettering's responsiveness to student concerns includes intensified and collaborative advising efforts carried out by academic department faculty and staff in the **Academic Success Center** and shifting commencement planning and execution from the **Registrar's Office** to **University Advancement**. This shift freed the **Registrar's Office** to focus more intently on serving students. Finally, because retention data revealed that Kettering had an unusually high number of students who had completed all their degree requirements except the **Senior Thesis**, faculty created additional, equally rigorous thesis options to enable greater numbers of current students and former students to graduate. In total 68 students took advantage of these programs in their first year.

ACADEMIC SUPPORT FOR ON-CAMPUS AND CO-OP EDUCATION

Over the past two-years, **Kettering University** has strengthened the academic support it provides students in significant ways. In each instance, it has moved its support functions from staff supervision to faculty leadership. Five significant examples follow:

1) A member of the faculty assumed leadership of the mandatory one-credit orientation course and coordination of the entire first year curriculum. Previously, a staff person had carried out these responsibilities. In spring **2013**, the **Faculty Senate** approved a new and enhanced **First Year Curriculum** and student-centered delivery protocol that the university launched at the beginning of the **2013-14** academic year *(the academic year begins in July at Kettering)*. Orientation class size was reduced from 25 to 15 and participating faculty established clear learning outcomes that provide a foundation for student success that includes academic and cooperative education experiences.)

2) In **October 2012**, the *provost* created the **Center for Undergraduate Experiences** *(CCUE)*, directed by a faculty member who has a **Doctorate** in **Industrial and Systems Engineering**. The center replaced **Thesis Services**, previously managed by a staff person. **CCUE's** first charge was to address what the data showed was a serious problem: that based on the state of economy and other factors, between 5-10% of students did not complete their **Senior Thesis** either because they accepted job offers in their junior and senior years or because their employers did not provide adequate opportunities to complete the thesis. The data also showed that these phenomena contributed to the university's low six-year graduation rate of 59%.

The university recognized that an unintended consequence of its strong **Cooperative Education** *(Co-op)* program is employers' occasional willingness to hire Kettering undergraduates before they have completed their degrees. They did so because the students had already demonstrated their capabilities and, without degrees, could be hired at lower salaries. The prospect of permanent
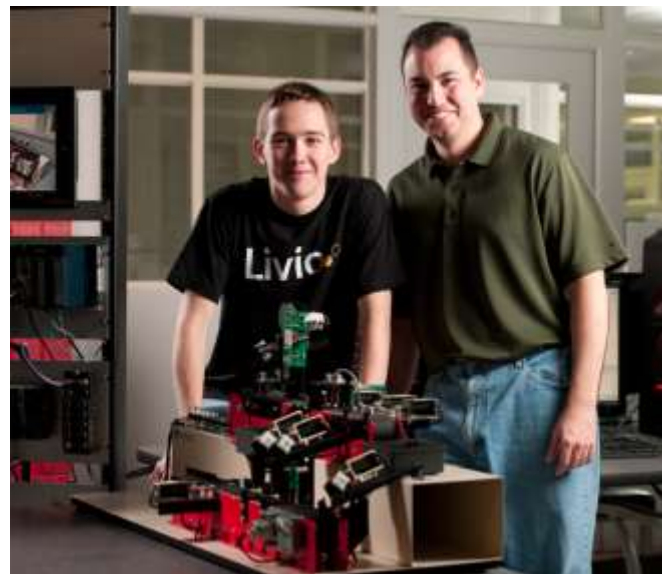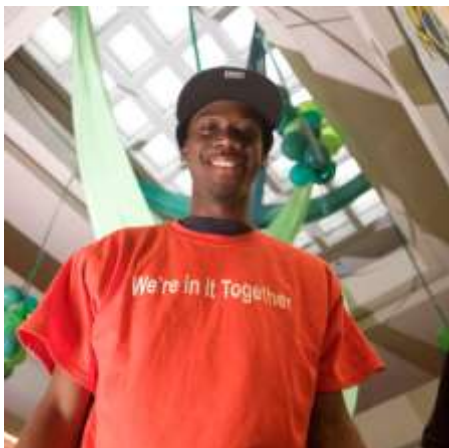
employment appealed to students because it offered the prospect of financial stability and professional recognition and perhaps eliminated the need to write a **Senior Thesis**. While many of these students later realized the negative long-term consequences of their decision, the university offered few options for lapsed students to complete their degrees.

In **2013**, the **CCUE** took a series of steps to ensure that lapsed students receive opportunities to complete their degrees and that current students complete theirs before accepting full-time employment. These steps are discussed fully in Criterion 3:

A concerted effort by *co-op educators* to ensure co-op employers honor their educational responsibilities to students, rather than use the program as an opportunity to hire accomplished non-degreed and lower paid employees. The educators actively and explicitly discourage employers from hiring Kettering students until they have fulfilled all degree requirements, including the **Senior Thesis**.

Faculty designed and approved additional options for completing a senior thesis, including a professional practice thesis that allows students to complete faculty-advised on-campus projects; an entrepreneurial thesis that enables students to pursue start-up companies; and a research thesis undertaken on campus with a faculty member.

An advising session is required during a student's junior year to discuss **CCUE** options to establish a timetable for thesis completion.

Outreach to more than 300 students who, from **1989-2013**, completed all degree requirements except the senior thesis. On average, two students each week initiate contact with the **CCUE** and express interest in completing their theses. As of **November 1, 2013**, 43 former students had completed the thesis requirement and received their degrees.

3) Kettering created a new **Academic Success Center** *(ASC)* and conducted a national search for a *director* with appropriate credentials, including a **Ph.D.**, to create a student-centered resource. The new *director*, hired in **2012**, leads a team that provides tutoring, academic advising, supplemental instruction, success coaching, testing, and career counseling. New policies and practices have improved quality control, enhanced educational programming, and improved advising. The **ASC** has also put into place several additional programs described in the self-study.

- In **October 2012**, the **ASC** established a **Writing Center**, led by a faculty *coordinator*. It replaced an inadequate and limited writing lab previously overseen by staff and volunteers. The center provides targeted writing support to students at all stages of their academic careers, both when they are on campus and off campus during work terms. Because most students write their thesis while away from campus, the **Writing Center** provides critical support at a crucial juncture in their academic programs.

- The **ASC** created the **Supplemental Instruction** program in response to high levels of failure in specific first- and second-year courses as indicated by student performance; most notably in math and physics. A longitudinal study spanning 12 terms revealed failure rates *(defined by grades "D," "F", and "W" [withdrawal])* exceeded 30% in **Math 102**

(Calculus II) and **Physics 114** *(entry-level course in Newtonian Mechanics)*. The **ASC** piloted supplemental instruction in these entry-level courses and has since added higher level courses in electrical engineering, mechanical engineering, math, and physics. Initial evaluations suggest the **Supplemental Instruction** program will provide considerable benefits to students.

- The **Academic Success Center** also provides individual success coaching to help students at all levels of ability and performance set goals and remove obstacles to success. Success coaches help students develop time management skills, better manage their academic workload, and improve their study techniques and test-taking skills. The **ASC** encourages students placed on probation to create an **Academic Improvement Plan** that both students and **ASC** staff monitor for effectiveness.

- The **ASC** oversees an early alert system that enables faculty and staff to post concerns about students who exhibit at-risk performance or behaviors. **ASC** staff reach out to these students *(within one business day of receiving an alert)* to encourage them to take advantage of available resources.

4) Over the past two-years, Kettering has reorganized its approach to cooperative education with the goal of strengthening student learning and integrating more fully co-op and academic experiences. The **Cooperative and Experiential Education Department** *(formerly known as Corporate Relations and housed in Enrollment)*, now resides in **Academic Affairs** and focuses on student-centered bilateral learning—on the job and in the classroom—to more fully integrate the co-op experience into the

academic curriculum. Changes have been significant and positive. They include:

New learning initiatives, such as individual and customized learning and work plans for students; reflective learning sessions; online training to complement on the job learning; faculty guidance over student learning; increased rigor and oversight; intentional activity design; and remedial skills development, if needed. These initiatives correspond with the *co-op educators'* new responsibilities, particularly coaching, skill development and alignment of job placements with students' interests.

- The staff has put into place new strategies for co-op placements for mathematics and science students. They have also developed new experiential learning options, such as service learning, internships, undergraduate research, and entrepreneurship that will be launched in early **2014**.

- In the summer of **2013**, Kettering launched a new initiative to ensure that students reflected on what they had learned in their previous co-op work term. Specifically, in the second week of each school term, freshmen and sophomores engage in a two-hour *"work reflection"* facilitated by a *co-op educator*, a professor and an upperclassman. Over the next three-years, the program will be expanded to include all students.
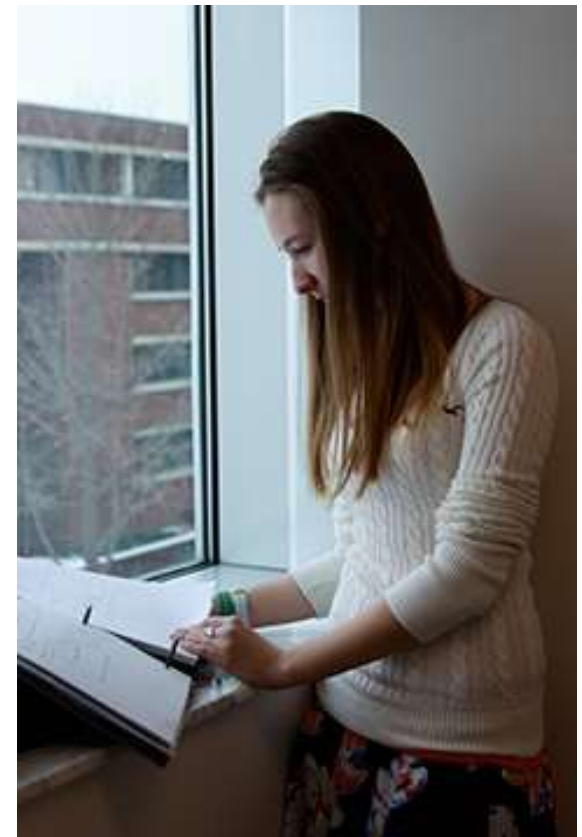
- To ensure students fulfill new requirements regarding cooperative education *(e.g., reflections, work plans, etc.)* and make satisfactory academic progress, the university publishes all related policies and procedures in the university catalog.

- Refocused *co-op educators*, with reduced case loads, meet with students after each academic term to help students evaluate and process their work experience. Also, students now regularly evaluate their *co-op educators*, as well as co-op experiences, in an online process similar to that used by employers.

5) In **2012**, under the leadership of a new *director*, the **Office of International Programs** *(OIP)* revised the **English** language proficiency requirements for all international students. Kettering bound students who do not meet proficiency requirements may now take courses in the **University of Michigan-Flint's English Language Program** until they reach the required level of proficiency.

The university has instituted a more consistent approach to working with international students. In **April 2013**, an advisory group of faculty and staff members identified the areas of responsibility for each office or department and developed a workflow that facilitates enhanced support of international students. The **OIP** *director* now plays a primary role in advising these students. The co-op office appointed an educator responsible for placing international students in cooperative employment and monitoring their progress so they complete degree requirements in a timely fashion. As a result, international students now carry out and complete the

co-op program as designed. The university has also more clearly articulated staff responsibilities for those working with international students and has taken steps to sure that international students possess documentation required by employers *(i.e., social security card, driver's license, etc.)*.

ADVISING

In response to students' concerns about academic advising, which they expressed in the **2010 Noel-Levitz Student Satisfaction** survey and follow-up focus groups, the university determined that its decentralized approach undermined its efficacy. In **2012**, the new *director* of the **Academic Success Center** led university-wide efforts to centralize advising within the center, in collaboration with faculty advisors from academic departments. The **ASC** hired additional staff and provided training opportunities to elevate the skills of all advisors. In addition, the **ASC** established advising standards that serve as guiding principles. *(See attachment 125 or website.)* The new advising process is designed to change students' perceptions about advising, from an administrative hurtle to a valuable experience that contributes to their success. In collaboration with the **Information Technology** *(IT)* department, **ASC** developed **KAMP** *(Kettering Academic Management Program)*, the infrastructure that gives all university advisors access to effective advising technology. All advisors will receive training in the system.

CRITERION ONE.

THE INSTITUTION'S MISSION IS CLEAR AND ARTICULATED PUBLICLY; IT GUIDES THE INSTITUTION'S OPERATIONS.

Mission

Criterion One. Mission

The institution's mission is clear and articulated publicly; it guides the institution's operations.

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CORE COMPONENT 1.A. The institution's mission is broadly understood within the institution and guides its operations.

1.A.1. The mission statement is developed through a process suited to the nature and culture of the institution and is adopted by the governing board.

Kettering University has experienced much change throughout its history but has clearly benefitted from a set of unwavering core values, most notably its on-going commitment to excellence and to providing students with the academic and experiential experiences that would enable them to have a positive impact on the world through their technological expertise, their ability to think critically, and their capacity for life-long learning.

As described in the Introduction and in the Concerns Sections 2.A., 2.B. and 2.D., **President McMahan** immediately created a collaborative, inclusive, on-going and data-informed planning process that drives institutional priorities, the allocation of resources and fundraising priorities. Today, Kettering's mission, vision, values and its **Four Pillars of Success**, a set of guiding principles, are widely understood and embraced. The campus also understands that the goal of planning is institutional improvement and even transformation rather than merely planning for its sake with the goal of producing a static document. This approach allows Kettering to respond to challenges and opportunities in a timely and effective manner.

President McMahan began the visioning process at a **November 2011** event attended by more than 200 members of the campus community. *(See attachment 35 or website.)* This process had two stages, leading in the first stage to the university vision statement and seven principles and in the second stage to a revised mission statement, the **Four Pillars of Success** and a set of core values that derived from the seven principles. The first stage was led by the **Planning and Assessment Council Steering Committee** *(PAC-SC)*, an elected executive committee of the university-wide **Planning and Assessment Council** *(PAC)* which itself had been

formed in **2010** with the approval of the **Faculty Senate** and which included among its members four representatives of the **Faculty Senate**. The steering committee included four representatives each from academic and student affairs and three representatives from non-academic areas.

The steering committee gathered feedback from those attending the kick-off event. People also contributed their thoughts through the university website. Ultimately, the **PAC-SC** synthesized and distilled this feedback into five topics, each of which was addressed by working groups comprised of a wide cross-section of staff, faculty, students, and administrators who volunteered to serve. The **PAC-SC** selected *co-chairs* for each working group, who were then tasked with devising a vision for their particular topic, as well as a list of values and priorities. **PAC-SC** integrated these reports into one document. A copy of the document was posted publicly on the Kettering website. *(See [attachment 36](#) or [website](#).)*

This collaborative effort resulted in the proposed vision and seven principles, which were shared with the campus for feedback and ultimately revised slightly based on that feedback.

The seven principles include:

- Invest in academic programs, both supporting our traditional areas of strength while developing new interdisciplinary programs in such critical areas as biosciences, bioengineering, robotics and nanotechnology.

- Enhance instruction, including adopting new instructional methods and fostering peer mentoring,

pilot projects, faculty professional development and use of appropriate instructional technology.

- Integrate experiential and academic learning, finding creative ways to take advantage of the untapped synergy between experiential learning and the learning that takes place on-campus.

- Enable significant expansion of applied research by identifying strategic focus areas, and developing institutional structures to aggressively pursue funding and partnership opportunities with industry and government.

- Foster collaboration both within the university and between the university and external partners, among students, between students and faculty in defining and fulfilling mutually acceptable learning outcomes, among faculty in their research and teaching, among staff and faculty in other aspects of university operation, and between the university and both industry and government in applied research and workforce and economic development.

- Invest in facilities and environment, beginning with a re-conceptualization of the campus that will have a significantly enhanced student center at its core that will create instructional spaces and research laboratories that promote interactions and exploration.

- Strengthen outreach by becoming much more engaged with the world beyond the university, in areas ranging from **K-12** programs to partnerships with local and regional governmental and community organizations to research collaborations with industry.

subject to further revision of the vision statement in collaboration with the **PAC**. *(See attachment 39 and 41. For a more detailed discussion of the specific iterations of the mission during the collaborative process, see attachment 40.)*

The new mission statement reads:

Kettering University prepares students for lives of extraordinary leadership and service by linking transformative experiential learning opportunities to rigorous academic programs in engineering, science, mathematics, and business.

The new vision statement:

We will be the first choice for students and all our partners seeking to make a better world through technological innovation, leadership and service.

Kettering's values include:

Respect: for teamwork, honesty, encouragement, diversity, partnerships with students.

Integrity: including accountability, transparency and ethics.

Creativity: fostering flexibility and innovation.

Collaboration: across disciplines and with all partners.

Excellence: in all we do.

The **Four Pillars of Success**, which the *president* also introduced in his inaugural address, were informed by input from external constituents and grounded in the mission, vision, and values and principles articulated by the university community. These include:

The *president* discussed the proposed vision and seven principles in his inaugural address, delivered **April 20, 2012**. *(See attachment 37 or website.)*

President McMahan initiated a similarly collaborative process to revise the mission statement and values. Early in his tenure, he drafted an initial version of the revised mission, which was reviewed by the **PAC-SC** and them the campus for comment. The steering committee collected feedback online and at a **November 8, 2012** town hall. *(See attachment 38 or website for the PowerPoint of the event.)* The **PAC-SC** then synthesized the feedback and made a final recommendation to the *president*. The *president* presented the revised mission statement, along with the proposed vision, and values to the **Board of Trustees**, which approved it on **February 22, 2013**,

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- ***Optimized Growth in Enrollment and Programs*** *(See attachment 42 or website.)*

- ***Community Vitality*** *(See attachment 43 or website.)*

- ***Global Leadership in STEM Education*** *(See attachment 44 or website.)*

- ***Engaged Stakeholders*** *(See attachment 45 or website)* Note that Kettering's constituents include current students, the **City of Flint** and its surrounding area, innovators, entrepreneurs, educational partners, alumni, corporate partners, educators, neighbors, friends and the global community.

The **Four Pillars** now guide curricular offerings, inform resource allocation in conformity with the mission, provide a basis for mobilizing resources and partnerships that will enable Kettering to be a major and direct partner in the revitalization of **Flint** and the region, and emphasize the importance of stakeholder engagement.

1.A.2. The institution's academic programs, student support services, and enrollment profile are consistent with its stated mission.

(See 2012-13 Entering Class Profile chart and attachment 122.)

1.A.3. The institution's planning and budgeting priorities align with and support the mission. (This sub-component may be addressed by reference to the response to Criterion 5.C.1.)

As described in detail in 2.D. in the concerns section, the mission and strategic goals today inform institutional budgeting priorities. In addition, academic and non-academic departments across the campus align their goals with the **Four Pillars of Success**, which, in turn, inform department budget priorities. The $15.5MM **Charles**

Mission

Kettering University prepares students for lives of extraordinary leadership and service by linking transformative experiential learning opportunities to rigorous academic programs in engineering, science, mathematics, and business.

Overall Numbers

TOTAL ENROLLED	FRESHMEN	TRANSFER STUDENTS	INTERNT'L STUDENTS
458	372	53	33

STATES REPRESENTED 24

Student Percentages

81% MALE
19% FEMALE
13% STUDENTS OF COLOR
21% NON-MICHIGAN STUDENTS

Student Profile

AVERAGE GPA	ACT MEAN COMPOSITE	ACT MID-50%
3.62	27	24-29

SAT STATISTICS

MEAN CRITICAL READING SCORE: 575
CR MID-50% RANGE SCORES: 510-630
MEAN MATH SCORE: 616
MATH MID-50% RANGE SCORES: 540-660

Countries Represented

UNITED STATES, BAHAMAS, BRAZIL, BULGARIA, CHINA, EGYPT, JAMAICA, MEXICO, SAUDI ARABIA, SYRIA, TAIWAN, VIETNAM

KETTERING TOP TENS

APPLICATION SCHOOLS
1. University of Michigan
2. Michigan Tech University
3. Michigan State University
4. Purdue University
5. Oakland University
6. University of Michigan-Flint
7. University of Cincinnati
8. Ohio State University
9. Western Michigan University
10. Grand Valley State University

FEEDER HIGH SCHOOLS
1. Grand Blanc High School
2. Carman-Ainsworth High School
3. Swartz Creek High School
4. Brandon High School
5. Fenton High School
6. Novi High School
7. Davison High School
8. Powers Catholic High School
9. Flushing High School
10. Clarkston High School

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Kettering UNIVERSITY

CLASS PROFILE 2012-13

Stewart Mott Foundation grant was also designed explicitly to catalyze initiatives associated with the pillars. The **Mott** grant has been critical in supporting one-time expenditures that are already having a lasting effect on both the university and the community. The **Mott** grant has also given other donors confidence in Kettering's direction and leadership. **Kettering University** dedicates more than 90% of its operating budget to educational costs, e.g. instruction, academic support, research, student services, and institutional services.

The introduction to the self-study documents in detail Kettering's success in achieving many of its goals and its progress toward achieving others.

CORE COMPONENT 1.B. The mission is articulated publicly.

1.B.1. The institution clearly articulates its mission through one or more public documents, such as statements of purpose, vision, values, goals, plans, or institutional priorities.

Kettering mission and vision statements are articulated publicly. All institutional documents are clearly visible on the university website. **MarComm** *(Kettering's in-house marketing and communication team)* launched the **True Kettering** campaign in the fall of **2013** as a way of publicizing and reinforcing the university mission, vision, values, and the four pillars.

The **True Kettering** materials have been articulated on posters and informative brochures placed around the campus, including large posters on the inside of elevator doors in the **Campus Center** and in buildings around campus, *"stepping stones"* on the floor in the tunnel between the **Campus Center** and the **Academic**

Building and a banner on the southern exterior of the **Mott Building**. The information is also available on the website. *(See attachment 41 or website.)*

To highlight and celebrate **True Kettering**, **President McMahan** has held and continues to hold campus picnics and/or town halls in which he discusses the mission, vision, and values with the Kettering community and answers questions. View the video of the first campus picnic addressing the mission, vision, and values.

1.B.2. The mission document or documents are current and explain the extent of the institution's emphasis on the various aspects of its mission, such as instruction, scholarship, research, application of research, creative works, clinical service, public service, economic development, and religious or cultural purpose.

1.B.3. The mission document or documents identify the nature, scope, and intended constituents of the higher education programs and services the institution provides.

Taken together, Kettering's mission and vision statements, its **Four Pillars** and its values clarify the university's purpose and programs, the constituents it serves and the services it provides.

CORE COMPONENT 1.C. The institution understand the relationship between its mission and the diversity of society.

Kettering University views diversity as fundamental to fulfilling its primary mission to prepare students for lives of extraordinary leadership and service to serve the needs of our democratic society and the global scope of the

nation's economy. The university believes that diversity enriches the educational experience of all members of this community as students, faculty, and staff learn from experiences, beliefs, and perspectives that differ from their own.

Kettering's commitment to diversity is reflected in its values, which emphasize respect, integrity, and collaboration; and demonstrated in its dedication to developing the talents and abilities of all members of the community. An appreciation for the benefits of diversity underpins the University's learning objectives, which require the faculty to teach critical thinking skills, including concepts of difference and stereotyping, and develop students' communications skills so they learn to communicate effectively and manage people of varied backgrounds.

Students' knowledge and understanding of diversity prepares them to thrive in cooperative and experiential learning settings that increasingly reflect a complex and diverse global society; one which many of them will lead one day. Sustainable economic prosperity—the nation's and the region's—depends upon the collaborative efforts of all talented and competent persons; a principle inscribed in specific course curricula and group projects assigned across the curriculum. Members of the Kettering community experience the benefits of diversity through co-curricular programs and activities that promote multicultural understanding and pay tribute to diverse identities. Finally, diversity and its importance form the basis of the university's emphasis on service to home communities, workplaces, and the global society.

1.C.1. The institution addresses its role in a multicultural society.

Kettering University addresses its role in a multicultural society through academic programs, co-curricular programs and services, enrollment strategies, hiring practices, and partnerships with external stakeholders. All are designed *(and periodically refined)* to create and sustain a diverse community; one that reflects **America's** multi-cultural society and both teaches and models the benefits of multiculturalism. Kettering subscribes to a definition of multiculturalism that takes into account persons of different abilities, identities, and practices, including ethnic, racial, gender, sexual, national, and *(non)*religious and expects all members of this community and all external partners to embrace and promote a productive, respectful culture for learning, living, and working as well as to sustain diversity as a source of vitality and renewal in a multicultural society. Policies, procedures, and activities reflect an intentional approach to multiculturalism and diversity.

The institution's processes and activities reflect attention to human diversity as appropriate within its mission and for the constituencies it serves.

Reflecting these values, the University expanded its **Non-Discrimination and Equal Opportunity Programs Policy** *(see attachment 46 or website)* and **University Code of Ethics** *(see attachment 47 or website)* in **2012** and publically posted both on the **University Policy** website after communicating the changes directly to the University community.

Kettering teaches students about multiculturalism and promotes their

understanding of it through minors, concentrations, and courses, on campus and abroad; in classroom settings and at applied learning sites; in co-curricular programs and activities. Students fulfill general education requirements by completing courses in economics, history, humanities, literature, philosophy, and sociology that focus on world systems, events, cultural production, belief, values and conditions. These courses promote an understanding of international institutions and issues, of world events, and the increasing interdependence of the nations and communities of the world. Other subjects, such as communications and social sciences, help students achieve an understanding of human behavior and social interactions, with particular emphasis on understanding diverse cultures within and beyond the **United States**. Students may minor in **International Studies** through the **Liberal Studies** department. Several **STEM** academic departments offer courses that integrate international perspectives.

Kettering offers a variety of study abroad opportunities to students. In recent years, our students have studied at universities in **Germany**, **China**, **Australia**, and **England**, with 40 students studying abroad in **2011** and 63 doing so in **2012**. To promote study abroad, Kettering provides a $1,500 travel stipend to offset travel and living expenses. The **Oswald Student Fellows** program and the **Ronald G. Greenwood Memorial Scholarship** grant funds each term to qualified students.

Some students, after completing a study abroad term, remain in foreign countries to carry out co-op employment assignments. The University encourages this practice so students may reap the benefits of living and working in different societies and learning about their cultures and values. Kettering's multinational cooperative

education employers also encourage it. Experience has shown them that students who have studied, worked, and traveled abroad acquire valuable traits that make them highly desirable employees, post-baccalaureate: self-knowledge, the willingness to take risks, broadened perspectives, imaginative thinking, adaptability, and self-confidence.

Each year, more than 70 exchange students from **Germany** spend one term at Kettering, living and learning in our community. These students, who attend universities in **Germany** with which Kettering has reciprocal agreements, add immeasurably to the intellectual vitality of the community.

The University promotes faculty members' knowledge and understanding of multiculturalism through exchange programs that allow them to teach and conduct research in foreign countries. Faculty regularly teach at affiliated universities in **Germany**. The **Rodes Professorship**, awarded annually, provides funding and release time for faculty to conduct research and study with international collaborators. The **Oswald Fellowship** supports one or two faculty travel opportunities/year.

The **Office of International Programs** *(OIP)* welcomes degree-seeking undergraduate and graduate students; short-term exchange students; visiting faculty, scholars and other university representatives; and corporate delegates from throughout the world. These visitors contribute significantly to the diversity of the learning community by sharing their knowledge and expertise in formal and informal settings. They demonstrate a wide range of perspectives, learning and teaching styles, and cultural values. The **OIP** also builds strategic partnerships with foreign academic institutions, governments, and industries to develop programs

beneficial to our community, as well as theirs. Each year, executives and managers from our partners at the **Chinese Automotive Technology and Advanced Research Center** *(CATARC)* and **Shanghai General Motors Worldwide** *(SGMW)* spend 6-12 months at Kettering, participating in executive education offered through the **Office of Graduate** and **Continuing Education**.

OIP further supports multiculturalism by offering academic immersion programs for international students *(including in English language acquisition)* and co-curricular ones that bring together domestic and international students through mentoring programs, social excursions and events, and cultural celebrations, such as **Chinese New Year** and **Cinco de Mayo**.

The Kettering student body includes 80 students from 16 countries. In **Fall 2013**, international students comprised 5.7% of the undergraduate student body and 11% of the graduates. Growth in international students reflects a new enrollment strategy for Kettering which, in the past, enrolled few. Kettering pursues this strategy as part of our effort to grow enrollment overall and, at the same time, to diversify the student body so that it more accurately reflects the society in which its students will live. Targeted recruitment efforts currently focus on **China**. The University partners with **Chongqing Jaotong University** with which it has a 2+2 agreement, participants spend two-years at Kettering during their collegiate experience.

1.C.2. The institution's processes and activities reflect attention to human diversity as appropriate within its mission and for the constituencies it serves.

Among students, the University articulates its principles on diversity beginning at **New Student Orientation** which engages new matriculates in lectures and discussions led by nationally recognized speakers and filmmakers. Students may explore diversity and multiculturalism in campus organizations such as the **International Club**, **Allies** *(a support group for Lesbian, Gay, Bisexual, and Transgender students)*, the **Muslim Students Association**, and the **Campus Crusade for Christ**, along with student chapters of national organizations noted below. Twice each year, the **International Club** hosts **Diversity Week**. Activities *(lectures, discussions, and presentations)* focus on a particular theme; most recently, *"Driving diversity forward to the future: We are all connected at the root."* The week concludes with a celebration that features food representative of students' home countries and ethnic identities, as well as entertainment. **Kettering Student Government's Senate** includes two multicultural representatives, elected by the student body. Other co-curricular multicultural activities include sending a Kettering delegation to the annual **Model United Nations** program and funding student participation in a variety of international conferences and programs.

Engineers Without Borders, a campus organization that includes students, faculty, and staff, provides members with opportunities to observe, first hand, people and places quite different from theirs. Participants have built ramps and other assistive devices for handicapped individuals in the local area; helped rebuild a school on the **Gulf Coast** after **Hurricane Katrina**; and installed water purification systems in **Mexican** and **South African** villages. These experiential learning opportunities contribute significantly to the community's knowledge and

understanding of human diversity in all its forms. Participants have described them as *"transformative"* and *"life-changing."*

The **Student Life Office** includes two units dedicated to meeting the needs of individuals typically underrepresented in **STEM**-focused institutions: the **Office of Women Student Affairs** and the **Office of Multicultural Student Initiatives**. Also, its **Pre-College Programs** office unit administers programs designed to cultivate youngsters' interest in **STEM** fields, particularly among girls and students of color. *(See [attachment 48](#) or [website](#).)*

The **Office of Women Student Affairs** *(OWSA)* dedicates itself to enriching the collegiate experience of women students by advocating for an inclusive environment that supports the educational and professional aspirations of its constituents. The office provides opportunities for women students to develop skills requisite to successful careers and personal lives and supports their career choices, which, too often, are threatened by social norms and cultural expectations. **OWSA** endorses active participation in professional organizations that share its goals, including the **Society of Women Engineers** *(SWE),* the **Association of Women in Science** *(AWIS)*, and **Women in Engineering Proactive Network** *(WEPAN).* The University provides financial support for students to attend conferences hosted by these organizations. Its *director*, the *Vice President* of **Student Life**, sits on the editorial board of the **Society of Women Engineers'** magazine and represents Kettering on **SWE's Women in Academia** committee. She formerly sat on the board of directors of **WEPAN**.

The **Office of Multicultural Student Initiatives** *(OMSI)*, a division within **Student Life**, supports students of color in their pursuit of degrees and professional careers. The office provides academic advising, tutoring, mentoring, and career counseling, with a special emphasis on meeting the specific needs of its constituents. Programs include **Maximizing Academic Growth in College** *(MAGIC),* which meets weekly throughout each term and teaches students strategies for achieving personal goals, strengthening study and test taking skills, and learning collaboratively. Other programs, such as **Academic Excellence Workshops** and the **Saturday Math House**, focus on the mastery of knowledge within specific fields of study. Upper class multicultural students tutor their younger peers and model traits associated with success and achievement. Multicultural faculty also serve as role models to our students, mentoring them and promoting their pursuit of **STEM** careers, including academic ones. **OMSI** affiliates with the **National Action Council for Minorities in Engineering** *(NACME)* the **Science, Engineering, Communication, and Math Education** consortium *(SECME)*, and the **National Association of Multicultural Engineering Program Advocates** *(NAMEPA).* The *director* and professional staff have held a variety of positions within these organizations. **OMSI** also promotes student participation in the **National Society of Black Engineers** *(NSBE)*, the **Society of Hispanic Professional Engineers** *(SHPE)*, and the **Black Unity Congress** *(BUC).* Students receive financial support from the University to attend conferences offered by these organizations.

OMSI seeks and obtains external scholarship funding to support students of color. The office collaborates with **Financial Aid** to select recipients and disburse funds

provided by the **State of Michigan**, the **Charles Stewart Mott Foundation**, and the **National Action Council for Minorities in Engineering**.

The **Kettering University** campus meets federal, state, and local requirements for handicapped accessibility. The **Wellness Center**, a division of **Student Life**, manages **Americans with Disability Act** *(ADA)* accommodations and other services to facilitate the success of our disabled students, in keeping with best practices as stipulated by the **American College Health Association** and the **Council for the Advancement of Standards**. **Human Resources** manages **ADA** accommodations and other services for employees with disabilities.

Kettering articulates its values regarding human diversity in **University Policy #10**, **Non-Discrimination and Equal Opportunity Programs** which describes the institution's position on equity and includes procedures for filing grievances and complaints. *(See attachment 46 or website.)* The policy also appears in the EMPLOYEE HANDBOOK, the FACULTY HANDBOOK, and the STUDENT HANDBOOK. Also, see the **Productive Work Environment Policy.** *(See attachment 49 or website.)*

Hiring and employee retention practices reflect the University's commitment to human diversity. We actively seek diverse, qualified candidates for all positions, placing particular emphasis upon a diverse faculty. Institutional efforts to recruit and retain diverse employees focus on the development and use of equitable recruiting practices; pre-emptive strategies to prevent the loss of valued employees; improving departmental and institutional climate; and supporting the development of leadership skills and professional development.

Recent faculty hires include five women and two **African-Americans** in **STEM** disciplines, out of eight total hires for **2013-14**; a significant achievement for a **STEM**-focused university. The *provost* has appointed a taskforce on female faculty charged with identifying and addressing the specific needs of women faculty in a **STEM** institution. This group actively pursues grant opportunities for increasing the participation and advancement of women in academic science and engineering careers. The **Women's Resource Center** *(WRC)* engages faculty, staff, and students in workshops and seminars designed to advocate for equitable learning and working environments that enable all members of this community to thrive. Through other **WRC** programs, faculty promote the pursuit of academic careers among women students and provide them with knowledge and information about earning advanced degrees.

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CORE COMPONENT 1.D. The institution's mission demonstrates commitment to the public good.

Kettering greatly values and works for the public good, demonstrating this through opportunities for students, faculty, and staff to serve the larger community. The mission statement emphasizes **Kettering University's** commitment to the public good through the preparation of *"students for lives of extraordinary leadership and service."* This commitment is supported through

both curricular and extracurricular programs. More specifically, the university community expresses its concern for advancing the public good through local and international service activities, special programs for students underrepresented in **STEM** fields, coursework, and involvement in the social and economic betterment in **Flint**.

1.D.1. Actions and decisions reflect an understanding that in its educational role the institution serves the public, not solely the institution, and thus entails a public obligation.

Kettering is aware that, in its educational role, it serves the public, not solely the institution, and thus entails a public obligation. The public good is emphasized throughout the curriculum. For example, **IME 540**, **Environmentally Conscious Design and Manufacturing** focuses on the notion of public good in terms of the natural and physical environment. *(See attachment 50 or website.)* **LS 489**, **Leadership, Ethics, and Contemporary Issues**, focuses on the responsibilities that leaders and followers have to each other, as well as the ethical responsibilities and dilemmas that we all face. *(See attachment 51 or website.)* The notion of service and the public good is now being explored through a service-learning thread under **Cooperative and Experiential Education**. The curriculum is being developed to allow students to gain work-term credits for volunteering and community service. This thread will be designed with the same rigor as the co-op work term and will also include a reflection activity. An *experiential education coordinator* has been hired and a pilot of this program is currently under development.

Faculty and students are involved in research projects that have a direct impact on the community at large. For example, a **Chemical Engineering** professor conducts research at the **North American Advanced Biogas Laboratory**, which focuses on anaerobic digestion and biogas technology. Undergraduate students involved in the project create technologies to transform sewer waste into *"clean"* fuel that powers local buses. The technologies have allowed the **City of Flint** to reduce environmental waste and save $200K per year in transportation operating expenses.

Kettering also values extracurricular community service. Kettering has a **Student Civic Engagement Center**, which houses **Real Service** and Kettering's chapter of **Engineers without Borders**. Groups like this have sponsored **Relay for Life**, an **American Cancer Society** fundraiser, and **Walk a Mile in Her Shoes**, part of an international march to raise awareness about the serious causes, effects, and remedies for sexualized violence. The Kettering chapter of **Engineers without Borders**, formed in **2006**, has worked on local projects, including the building of playgrounds, as well as global projects. Currently, the group is working to bring clean drinking water to the village of **Vukuzenzele** in **South Africa**. *(For more information on the project, see attachment 52 and 53 or website.)*

In addition to these programs, the **Student Life Office** offers many others that focus on public good. These include the following:

- *Greek Life.* The many fraternities and sororities on campus are dedicated to service. Information about the link between **Greek** life and community service can be found in attachment 54 or website.

- *Kamp Kettering*. This program is a pre-college career exploration program for girls in the 7th and 8th grade. *(See [attachment 55](#) or [website](#).)*

- *AIM* *(Academically Interested Minds)* This program is a pre-college career exploration program for multicultural students. *(See [attachment 56](#) or [website](#).)*

- *LITE* *(Lives Improve Through Engineering)* This is a two-week pre-college program for young women in the 11th grade. *(See [attachment 57](#) or [website](#).)*

- *Sustainable Energy*. This pre-college program for students in the 9th and 11th grade introduces them to advanced energy technologies. *(See [attachment 58](#) or [website](#).)*

- *Math Olympiad*. Those who place in the top three of this math contest are awarded full scholarships to Kettering. *(See [attachment 59](#) or [website](#).)*

- *Kagle Leadership Initiatives*. The program promotes the value of higher education, the **Kagle Leadership Initiatives** *(KLI)* provide **Flint** community students and families opportunities to engage in various enriching activities with students of **Kettering University**. Kettering students develop their leadership skills by mentoring and tutoring the area youth.

- *Service Saturdays*. On seven **Saturdays** each year, all Kettering students are invited to participate in meaningful community service projects within walking distance of the university, resulting in over 100 students supporting local clean-up activities.

1.D.2. The institution's educational responsibilities take primacy over other purposes, such as generating financial returns for investors, contributing to a related or parent organization, or supporting external interests.

- **Kettering University's** educational responsibilities take primacy over other purposes since it became a stand-alone, not-for-profit university independent of **General Motors** in **1982**. The focus of the university since then has been the delivery of exceptional programs of study at the undergraduate and graduate levels in science, engineering, mathematics, and business, as well as adding value to its corporate partners and the **City of Flint** and the region through research and cooperative education. As a private, non-profit independent university, Kettering supports only those efforts that contribute to fulfilling its educational mission.

1.D.3. The institution engages with its identified external constituencies and communities of interest and responds to their needs as its mission and capacity allow.

Kettering University's educational responsibilities take primacy over other purposes since it became a stand-alone, not-for-profit university independent of **General Motors** in **1982**. The focus of the university since then has been the delivery of exceptional programs of study at the undergraduate and graduate levels in science, engineering, mathematics, and business, as well as adding value to its corporate partners

and the **City of Flint** and the region through research and cooperative education.

Kettering has always been dedicated to engaging with its identified external constituencies and communities of interest, responding to their needs as its mission and capacity allow—just as it has been focused on the needs of its students. Kettering's third **Pillar of Success**, **Community Vitality**, reflects the university's acknowledgement that its vitality is inextricably linked to that of the surrounding region: the city of **Flint**, **Genesee County**, and the **State of Michigan**. Kettering engages with a broad spectrum of external constituencies, including community leaders, local youth, area schools, **STEM** and higher education constituents, and cooperative and experiential learning partners through which we prepare the next generation of engineers, scientists, and managers who are critical to economic growth and prosperity. We view these engagements as central to our responsibilities as educators, citizens, and leaders.

The university engages with the **City of Flint** and the surrounding community as an active member of several organizations, including the **Flint-Genesee Regional Chamber of Commerce**, the **Flint River Coalition**, and the **Carriage Town Historic District**. The university also hosts the **I-69 Trade Corridor Region** of the **Michigan Small Business Development Center**. Through the **Office of Sponsored Research** and the faculty, the university engages with a range of corporate and governmental, and non-profit entities to address their research and development needs.

In order to improve its engagement with the local community, in **August 2012**, the university created the position of the **Director of External Relations** to

participate in a variety of public and private initiatives. The **Office of External Relations** plays a critical role in multiple projects related to community development.

As noted in the introduction, the university in collaboration with other area organizations has established the **University Avenue Corridor Coalition (UACC)**, a collaborative effort among stakeholders along **University Avenue**, whose mission is to *"transform the University Avenue corridor into an attractive and crime-free community that is conducive to sustainable development."* The area of the **University Corridor** stretches from **McLaren-Flint** on the west to the **University of Michigan-Flint** on the east, bounded by **Hurley Medical Center** on the north and the **Flint River** on the south. Members of **UACC** offer their resources to address critical issues facing this area.

The university along with multiple corporate, governmental, and non-profit agencies utilizes the **CPTED** method – **Crime Prevention Through Environmental Design** – an effort focused on stabilizing land use in the areas affected by crime. Agencies involved include the following:

- **Carriage Town Ministries**

- **Forge Flint**

- **The University of Michigan - Flint**

- **CRIM Fitness Foundation**

- **Mott Park Neighborhood Association**

- **Kettering University**

- **LISC** *(Local Initiative Support Corporation)*

- **The University of Michigan** *(Ann Arbor)* **Youth Violence Prevention**

- **Whaley Children's Center**

- **Flint Children's Museum**

- **Durant Tuuri Mott Elementary School**

- **Michigan State University Department of Criminal Justice**

- **Hoffman's Deli**

- **Easter Seals of Flint**

- **City of Flint Police Department**

- **Flint Public Art Project**

- **McLaren Hospital**

- **Hurley Medical Center**

- **Shelton Automotive**

- **University of Michigan-Flint**

- **Flint Odyssey House**

- **Powers Catholic High School**

- **New Paths**

- **Glendale Hills Neighborhood Association**

- **Carriage Town Neighborhood Association**

- **Genesee County Land Bank**

- **City of Flint Mayor's Office**

The university continually contributes toward redevelopment of its local community. By using funds from the **Mott** grant to replace a convenience store on the corner of **University Ave** and **Chevrolet Ave**, immediately adjacent to and owned by the university with **Einstein Bros Bagels** and the **Police Service Center**, Kettering now provides a place for students and members of the community to frequent. The police mini-station provides a police presence in an area that previously had a relatively high crime rate. *(See the Introduction for other key Kettering community development initiatives.)*

REGIONAL IMPACT

In partnership with and therefore funding from **U.S. Ignite**, the **C.S. Mott Foundation**, and the **National Science Foundation**, Kettering is working to bring the fastest broadband research network in the world to **Flint**, making it one of only 25 cities in the nation to acquire this technological capability. *(See attachment 13 or website).* Led at Kettering by *Vice President* of **Information Technology** and the **Computer Science** *department head*, **U.S. Ignite** has the potential to transform the local workforce and the regional economy.

PRE-COLLEGE PROGRAMS

Kettering puts a special emphasis on addressing the chronically-low college enrollment rate of the state's high-school students *(46% in Michigan versus 60% nationally).*

(See [attachment 60](#) or [website](#).) It also seeks to redress a growing shortage of engineers, scientists, and mathematicians whose innovative products and services invigorate the nation's economy and improve people's living conditions. Through pre-college programs in the **Office of Student Life**, the university provides a range of pre-college learning opportunities for students, locally and nationally. The programs cultivate children's interest in **STEM** fields and introduce career opportunities that have the potential to provide life-long stability and security. The **Kagle Leadership Initiatives** is a campus-based program that offers benefits to the students and families of the **Flint** community. Elementary, middle, and high school students are provided one-on-one and group tutoring on the Kettering campus. Each year, more than 100 youth take advantage of this program, which benefits them, as well as the Kettering undergraduates who work with them and in so doing hone citizenship and leadership skills.

The University provides all pre-college programs at little or no cost to the participants and provides scholarships where necessary to assure students' economic circumstances do not inhibit their ability to participate. Over the next two-three years, Kettering will construct the **FIRST** *(For Inspiration and Recognition of Science and Technology)* **Robotics Center** on campus. This center will engage **Flint**-area students in the **FIRST Robotics Program** and encourage them to pursue **STEM** careers. This **FIRST Robotics Center** will further leverage the University's resources to benefit local and regional high school students. The University consistently supports several local **FIRST** groups by providing faculty advisers, undergraduate mentors, and funding.

CONCLUSION

Kettering University has illustrated its resilience by not only surviving the many changes it has undergone, but thriving because of them. The university has increased collaboration between and among the administration, faculty, staff, and students. As noted above, a collaborative process led to a new mission, vision, and values statement, as well as the **Four Pillars of Success**. All of these statements, which emphasize **STEM** and experiential education, leadership, service, community, and engagement, are assisting the university in strengthening its identity. The **True Kettering** campaign has worked to ensure that all members of the campus community understand and can articulate the University's mission and strategic directions.

Moreover, positive changes have occurred in terms of academic support and in the **Cooperative and Experiential Education** department, which now emphasizes that **Co-op** is an important part of the education offered by Kettering and that it not only provides professional training and experience but that it serves the educational needs of Kettering students. Most importantly, Kettering has maintained and strengthened its commitment to providing a high-quality education for its students, and, by focusing more on maintaining an ongoing process of strategic planning, the university has made itself more flexible and better able to address the rapid changes in its environment, including the challenges and opportunities it may face in the future.

Integrity: Ethical and Responsible Conduct

CRITERION TWO.

THE INSTITUTION ACTS WITH INTEGRITY; ITS CONDUCT IS ETHICAL AND RESPONSIBLE.

Criterion Two. Integrity: Ethical and Responsible Conduct

The institution acts with integrity; its conduct is ethical and responsible.

Kettering identifies integrity as one of its fundamental values. Its **Code of Ethics** describes institutional expectations regarding the conduct and behavior of students, employees, trustees, and external partners. Policies and procedures reflect the code's principles as well as processes for addressing unethical and irresponsible conduct. *(See [attachment 47](#) or [website](#).)*

CORE COMPONENT 2.A. The institution operates with integrity in its financial, academic, personnel, and auxiliary functions; it establishes and follows fair and ethical policies and processes for its governing board, administration, faculty, and staff.

Kettering upholds it integrity by fulfilling its obligations to its students, faculty, staff, trustees, and external stakeholders, including corporate partners, donors, local and state authorities, and the federal government. It serves as a responsible leader in the local community and the region, enriching it with educational programs, contributing to the economy as a major employer, and collaborating with businesses and other entities to develop the regional economy. Institutional policies and procedures are designed to ensure that Kettering operates ethically, with integrity, and legally according to local, state, and federal laws. **Kettering University** prepares annual financial reports in accordance with **Generally Accepted Accounting Principles** *(GAAP)*, as established by the **Financial Accounting Standards Board** *(FASB)*. The University contracts for an annual independent audit of its financial statements in accordance with standard practices. The most recent audit *(for FY13)* received an unqualified opinion. *(See attachments [123](#), [61](#), [62](#) or the [website](#).)* These audits reflect a solid financial foundation for an institution that operates prudently to ensure its future.

The University upholds integrity in its academic functions through policies and procedures designed to create a fair and equitable learning environment for all students. Policies cover confidentiality, identity verification, grading, testing, academic honesty and record-keeping.

The University publishes these policies on its website, in the undergraduate and graduate catalogs and in student and faculty handbooks. Also, faculty publish academic integrity expectations and sanctions on each course syllabus.

THE KETTERING UNIVERSITY EMPLOYEE HANDBOOK *(see attachment 64 or website)* describes policies pertaining to employee benefits and compensation, employment guidelines and hiring procedures, expectations regarding employee conduct and potential disciplinary actions, general performance expectations, and processes for filing discrimination and harassment complaints and their corresponding resolution options. A **Productive Work Environment** policy articulates both the institution's values regarding the campus climate, as well as expectations for employees. Additional information is posted on the **Human Resources** website.

The **Faculty Senate** publishes the KETTERING UNIVERSITY FACULTY HANDBOOK, which describes personnel policies and procedures as they apply to faculty. It includes faculty responsibilities; employment policies; the university's intellectual property policy; faculty appointments, promotion, and tenure guidelines; professional responsibilities of faculty, and disciplinary policies and procedures. The **Faculty Senate** updates the handbook periodically, as appropriate, and publishes it on **Blackboard**. *(See attachment 65.)*

The university requires all employees and trustees to adhere to a conflict of interest policy and to disclose any possible conflicts on an annual basis, so as to either eliminate such conflicts or ensure they do not compromise the integrity of the individuals involved or that of the university. This policy is published in the

EMPLOYEE HANDBOOK, incorporated into the **Kettering University Code of Ethics**, and the **Board of Trustees Bylaws**. *(See attachment 23 or website.)*

Kettering's auxiliaries include the **Follett**-owned bookstore and **Kettering Dining Services**, operated by **Sodexo**. Expressed contracts with these vendors *(and all others the university engages)* ensure the integrity of the university and the vendor. The contracts validate Kettering's values and include company-specific values regarding integrity. The contract with **Sodexo** adheres to that company's **Principles of Business Integrity** which expresses their ethical values, principles, and expectations. **Follett's** contract includes a similar code of ethics which they call **Follet's Values**.

The university admits students without regard to race, color, national origin, age, marital status, sex, sexual orientation including gender identity or expression, disability, religion, height, weight, genetic information, or veteran status. It follows a prescribed protocol that takes into account academic achievement, standardized test scores, and an essay describing a prospective student's interest in Kettering. All prospective students apply through the **Common Application**.

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CORE COMPONENT 2.B. The institution presents itself clearly and completely to its students and to the public with regard to its programs, requirements, faculty and staff, costs to students, control, and accreditation relationships.

The university publishes advertising and recruitment materials that contain concise and accurate

information about admission requirements, academic programs, costs of a Kettering education, and other pertinent information of interest to prospective students and their families. Materials are published in print and online, including in the undergraduate and graduate catalogs. *(See attachments 66 and 67.)*

Kettering also publishes information about how it complies with various state and federal laws and regulations. Specifically, Kettering does the following;

- Publishes an annual **Campus Safety** report that fulfills requirements contained in the **Cleary Act**. *(See attachment 68 or website.)*

- Provides disability services in compliance with the **American with Disabilities Act** and its amendments, along with state and local regulations regarding students, employees, and applicants with disabilities. Faculty and staff receive training periodically on **ADA** requirements and their applications at **Kettering University**. The university's policies and procedures regarding disabilities are published in the employee and student handbooks, undergraduate catalog, and on the website.

- Adheres to the **Family Educational Rights and Privacy Act**. These policies are published in the undergraduate and graduate catalogs, the student handbook, and online, along with the appropriate release forms. *(See attachment 70 or website.)*

- Restricts access to students' medical records as provided for in the **Health Insurance Portability and Accountability Act** *(HIPAA)*. Faculty and staff receive training periodically on **HIPAA** requirements

and their applications at Kettering. The university does not share students' medical information except as allowed by law and medical practitioners' responsibility to report in cases of potential harm, to oneself or others. The university publishes policies on **HIPAA**, and corresponding releases, in the undergraduate catalog, in the student handbook, and on its website. *(See attachment 71 or website.)*

- Maintains records of student complaints in either the **Office of the Provost** *(for academic complaints, including those pertaining to grades)* or the **Office of the Vice President for Student Life** *(for non-academic complaints)*. **University Policy #17** describes policies and procedures for filing complaints. *(Note that the university established this policy in November 2013 after preparation for this self-study revealed inadequate processes for addressing and tracking student complaints. The condition has now been redressed.)* *(See attachment 72 or website.)* A separate policy governs grade appeals. Student complaints regarding racial or sexual harassment or discrimination may be filed with the **Office of the Vice President for Student Life**. Once received, all complaints are processed, resolved, and tracked in a timely matter. The university publishes policies and procedures for all complaints, including students' rights and responsibilities, in the undergraduate and graduate catalogs, the student handbook, and online. No formal academic or non-academic complaints have been submitted since the last **HLC** evaluation in **2007**.

- Participates in federal programs for student financial aid under **Title IV** of the **Higher Education Act**. Recent **U.S. Department of Education** program audit reports have resulted in no significant findings.

The university evaluates all transfer credits according to regularly accepted policies in higher education. It publishes those policies, along with a statement its statement of criteria, and related procedures, in the undergraduate and graduate catalogs and online.

The University's publishes accurate reports on student achievements, persistence, retention, and completion, as required by laws and regulations, for dissemination to individuals and corporate entities, including the **U.S. Department of Education** and other governmental bodies. The University also publishes accurate and comprehensive information for students and the public regarding the academic calendar, grading, admissions requirements, academic program requirements, tuition, and refund policies. Other publicly and widely published information includes mission, vision, and values statements; policies regarding academic good standing and probation and dismissal; and a complete list of instructors and their academic credentials. This information appears in the undergraduate and graduate catalogs, on multiple websites, and in the student handbook.

Finally, the university publishes information regarding its affiliation and status with professional accreditation agencies. These include the **Higher Learning Commission** *(HLC)*, the **Accreditation Council for Business Schools and Programs** *(ABCSP)*, and **Accreditation Board for Engineering and Technology** *(ABET)*. Information may be found in graduate and undergraduate catalogs, advertising and marketing materials and in multiple places on the university's website, including appropriate academic departments' sites.

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CORE COMPONENT 2.C. The governing board of the institution is sufficiently autonomous to make decisions in the best interest of the institution and to assure its integrity.

2.C.1. The governing board's deliberations reflect priorities to preserve and enhance the institution.

Prior to the beginning of each academic year, the *president* and the *chair* of the **Board** together identify their recommended goals and priorities for the **Board** for the coming year. The **Executive Committee**—comprised of the *Chair* of the **Board** who also chairs this committee, the *Vice Chair* of the **Board** who serves as *Vice Chair* of the committee, the *Secretary* of the **Board**, the *President* of the University, the *Chair* of each standing committee and any *Past Chairs* of the **Board** who remain active members of the **Board of Trustees**—reviews and acts on these recommendations, which it then forwards to the committees to focus their work.

The **Kettering University Board of Trustees** intentionally directs its efforts to matters of strategy and policy rather than operations, as 2.C.4. outlines. Through its committees, the **Board** fulfils its oversight function of Kettering's finances, academic programs, facilities, technology, admission and retention, fundraising, student life and effective functioning.

The **Board** also holds a yearly two-day retreat devoted to issues of strategic importance to higher education in general and to

Kettering in particular and to a consideration of how the *trustees* and the *president* function, both separately and together. *(This was the topic of the last Board retreat in April 2013, which was facilitated by an external consultant, who writes and consults extensively on board and presidential performance and governance matters.)*

The university often brings in outside experts to provide *trustees* with an overview of the landscape of and challenging facing higher education, particularly those that pertain to Kettering.

2.C.2. The governing board reviews and considers the reasonable and relevant interests of the institution's internal and external constituencies during its decision-making deliberations.

The new bylaws, for the first time in Kettering's history, make possible faculty and student representation on **Board** committees. The bylaws state: *"The Board of Trustees, in its discretion, may select representatives of the faculty and student body from lists of nominations developed by the President in consultation with representative student and faculty groups. The term of any faculty and student committee member who may be selected shall be one year."*

The **Board** also interacts both in the context of **Board** meetings and at social events with members of the faculty, staff and student body, with alumni and with community stakeholders.

Because Kettering's current priorities include contributing to the revitalization of **Flint** and the region, enhancing the connection of the alumni to the university and

encouraging greater philanthropy, the *trustees* routinely review progress in terms of the university's effectiveness with its external constituents.

2.C.3. The governing board preserves its independence from undue influence on the part of donors, elected officials, ownership interests, or other external parties when such influence would not be in the best interest of the institution.

Kettering University's Board of Trustees has ultimate fiduciary responsibility for Kettering's health and integrity in all its aspects.

The **Board** is self-perpetuating. The majority of its members and the members of the **Executive Committee** quality, in the language of the **HLC** document, **Assumed Practices**, as being *"public members,"* that is *"they have no significant administrative position or any ownership interest in any of the following: the institution itself; a company that does substantial business with the institution; a company or organization with which the institution has a substantial partnership; a parent, ultimate parent, affiliate, or subsidiary corporation; an investment group or firm substantially involved with one of the above organizations"*.

The **Board's Trustee and Governance Committee** receives suggestions for possible new members from board members and the administration. After reviewing these suggestions, the committee nominates new *trustees* to the entire **Board**, which has responsibility for electing all *trustees*. In making its nominations, the committee is especially mindful of the areas of expertise it would like represented on the **Board**. As a result, the current **Board of Trustees** is comprised of various industry and community leaders, many of whom are Kettering alumni. The *president* is a member of the **Board of Trustees**.

The **Trustee and Governance Committee** of the **Board of Trustees** is responsible for evaluating the performance of the **Board** as a whole, which it does annually, and the performance of individual *trustees*, which it does at the end of each *trustee's* three-year term prior to determining whether to extend an invitation to that *trustee* for an additional term. Every three-years, the committee reviews the governance structure and activities of the **Board**. Periodically, as noted above, the *trustees* devote part of its annual **Board** retreat to a consideration of how it functions.

The **Board** conducts the business of the university in its three meetings/year. As needed, the **Executive Committee** meets between **Board** meetings, as do the committees of the **Board**.

The **Bylaws**, which the **Board of Trustees** approved in 2012 *(see attachment 23 or website.)*, include the following provisions that emphasize the ethical responsibilities of individual *trustees* and the **Board** as a whole:

•   A **Code of Conduct**, which all trustees sign annually to certify that they will comply with the conduct expectations. *(See attachment 73.)*

•   **Article XXIV** of the university **Bylaws** defines conflict of interest. *(See attachment 24 or website.)* The **Executive Committee** of the **Board** serves *"as a conflict of interest committee to review potential conflicts of interest of the Trustees."* The **Trustees and Governance Committee** monitors compliance with the conflict of interest provisions. *(See attachment 33 or website.)* The **President's Office** certifies compliance and maintains records.

•   A provision that *"members of the Audit Committee must be free from any compensatory relationship that would interfere with the member's exercise of independent judgment in performing the work of the Committee."*

In 2012, the **Board of Trustees** approved a university **Code of Ethics**, which calls on all *trustees* to *"sustain the highest ethical standards of this institution and of the broader community." (See attachment 24 or website.)*

In 2012, the university also adopted a gift acceptance policy that specifies *"No agreement shall be made between Kettering University and any agency, person, company or organization on any matter that would knowingly jeopardize the University's interests."* The policy further notes, *"Kettering University will accept unrestricted gifts and gifts for specific programs and purposes, provided that such gifts are consistent with the University's stated mission…" (See attachment 74 or website.)*

2.C.4. The governing board delegates day-to-day management of the institution to the administration and expects the faculty to oversee academic matters.

The governing board delegates the operation of the university to the *president* who in turn delegates as appropriate responsibility to the senior members of the administration. **Article XII** of the university **Bylaws** describes the responsibilities of the **Officers of the Board**, e.g. the *president* and the *vice presidents*. *(See attachment 24 or website.)*

Article XV, section 2 of the **Bylaws** specifies the role of the faculty in terms of the University's educational programs: *"Subject to the direction of the President and of the Board, the Faculty Senate shall have general supervision over all*

educational matters concerning the University as a whole, and over such matters as may be referred to it by the President or the Board." Specifically, the **Faculty Senate** reviews and recommends to the *president* who as appropriate recommends to the **Board** policies pertaining to faculty instructional responsibilities and curricular developments and revisions. The **Faculty Senate** has several standing committees that facilitate its work, including the university curriculum committee. All actions of the **Faculty Senate** are recommendations to the *president*, including recommendations for appointment of faculty representatives to the committees of the **Board of Trustees**.

Departmental curriculum committees oversee and make recommendations about any departmental curricular changes to the **University Curriculum Committee (UCC)** for its review and action. All academic departments are represented on the **UCC**. The **UCC** then recommends to the **Faculty Senate** whose members are elected by each academic department. The **Faculty Senate** in turn recommends curricular changes to the *provost* who can then either recommend approval to the president or send the recommendation back to the **Faculty Senate** for further consideration. If the contemplated action is a new academic program, the *president* recommends to the **Academic Affairs Committee** of the **Board of Trustees**, which in turn recommends to the entire **Board**.

The **Academic Affairs Committee** of the **Board** provides **Board** oversight of academic programs. As the **Bylaws** state: *"The Academic Affairs Committee oversees all activities that support the academic mission of the University, including the articulation of the academic mission of the University, enhancing the quality of the academic program, considering new academic programs and significant modifications in existing academic programs, fostering faculty development and other faculty priorities, all matters relating to the graduate and professional student experience (including academic, extra-curricular, and co-curricular affairs), promoting scholarly research, enhancing the quality of the experiential learning program, and overseeing strategic planning for the University."*

CORE COMPONENT 2.D. The institution is committed to freedom of expression and the pursuit of truth in teaching and learning.

Kettering University demonstrates its commitment to freedom of expression and the pursuit of truth in teaching and learning through the adoption and support of policies and procedures that conform to its stated values; most notably respect *(for teamwork, honesty, encouragement, diversity, partnerships with students)* and integrity *(including accountability, transparency, and ethics)*. These values, established and adopted by members of the campus community, guide the university philosophically and practically. The institution articulates its promotion, support, and protection of freedom of expression in myriad ways, including published documents, classroom experiences, and personal encounters.

The FACULTY HANDBOOK includes the **AAUP Statement on Academic Freedom and Tenure** as an amendment to **The Faculty Constitution**. *(See attachment 65 on page 14.)* In addition, the handbook's chapter on PROFESSIONAL RESPONSIBILITIES OF FACULTY AND DISCIPLINE PROCEDURES includes the entire **AAUP Statement on Professional Ethics**. At the core of this

statement is the primary responsibility of the faculty to seek truth through scholarship, to respect the individuality of students and to defend the right of freedom of expression for colleagues. Kettering's faculty tenure and promotion policies uphold freedom of expression while its procedures, which include review by multiple individuals and committees from the department level to the *president* and **Board of Trustees**, sustain it. These policies are described in the FACULTY HANDBOOK. *(See [attachment 65](#).)*

The commitment to freedom of expression and the pursuit of truth may also be demonstrated through the University's curriculum, which emphasizes students' critical thinking and reasoning skills, which are incorporated into undergraduate learning outcomes. Faculty instruct students on how to formulate questions for inquiry, how to search for credible solutions supported by evidence and how to present and discuss their ideas in productive ways that promote understanding, rather than deepen differences. These principles extend to co-curricular activities. For example, the university encourages students who write for the THE TECHNICIAN, Kettering's student newspaper, to think and write independently *(albeit respectfully)* about topics of interest, even when they contradict university policies or criticize official actions.

CORE COMPONENT 2.E. The institution ensures that faculty, students, and staff acquire, discover, and apply knowledge responsibly.

Kettering has institutionalized several policies and procedures to ensure that faculty, staff, and students acquire, discover, and apply knowledge responsibly.

They cover topics ranging from principles of academic integrity to research accountability. Faculty and staff are expected to adhere to generally accepted standards as established and articulated by the higher education community, as well as discipline- and area-specific professional organizations. They are also expected to model the highest standards of academic integrity and ethical conduct.

2.E.1. The institution provides effective oversight and support services to ensure the integrity of research and scholarly practice conducted by its faculty, staff, and students.

The **Office of Sponsored Research** *(OSR)* oversees all scholarly contracts and grants at **Kettering University**. It identifies grant opportunities, facilitates all facets of grant seeking, and provides guidance for submissions. The office administers all contracts and grants and provides oversight for accountability and compliance requirements. **OSR** makes available—to faculty, staff, and students—training to comply with the **2010 National Science Foundation** *(NSF)* requirements for **Responsible Conduct of Research** *(RCR)* which focuses on research misconduct, ethics in authorship, use of human subjects, and ethics in data management, among other topics. **RCR** training modules are available online through the **Collaborative Institutional Training Initiative** *(CITI)*. **OSR** is currently customizing the modules to more closely align with Kettering's specific needs.

In **2011**, Kettering established an **Institutional Review Board**, which is responsible for overseeing procedures required to protect human subjects in research. Using guidelines from the federal **Health and Human Services Office** for **Human Research Protections**, Kettering created a charter for the **IRB** and put in place standard operating procedures. The charter and the standard operating procedures are articulated in the university's **Human Subject Policy**. *(See [attachment 75](#) or [website](#).)*

2.E.2. Students are offered guidance in the ethical use of information resources.

Several university units instruct and guide students regarding academic integrity and the ethical use of information resources. These include all academic programs, the **Office of Sponsored Research** *(OSR)*, the **Academic Success Center** *(ASC)*, the **Writing Center**, the **Library**, and the **Office of Student Life**. Guidance is taught, published, and discussed across the university. Expectations, policies, and procedures are clearly articulated in multiple formats, including an institutional statement on academic integrity, course syllabi *(in a statement prescribed by the Office of the Provost)*, the **Code of Student Conduct**, and information which appears on the university's **Ethics and Behavioral Standards** [website](#). *(See [attachment 76](#).)*

Kettering's general education program provides students with guidance in academic integrity, from their first communications class *(Written & Oral Communication I)* through the required **Liberal Studies** capstone course *(Senior Seminar: Leadership, Ethics and Contemporary Issues)*, where students learn about the ethical acquisition and use of knowledge. **Written & Oral Communication II**, which is designed to prepare students for advanced writing projects including the senior thesis, guides students in the ethical use of information resources related to their particular fields of study. The **Center for Culminating Undergraduate Experiences** *(CCUE)* also provides guidance. In the summer of **2012**, **CCUE** collaborated with the **Academic Success Center** *(ASC)* to incorporate information related to ethics in research and writing into its introductory advisory meetings with students who are preparing to work on their theses. Kettering librarians also provide guidance and resources. The **ASC** advises students about academic integrity, generally and in reference to specific projects, and publishes information about it on its [website](#). Faculty who serve as thesis advisors guide students in the proper use of information throughout the writing process.

The **Office of Student Life** also provides guidance in the ethical use of information. For example, the faculty advisor to THE TECHNICIAN, the Kettering student newspaper, provide staff writers with guidelines about ethical journalistic reporting. In the spring of **2013**, the newspaper's faculty advisor collaborated with **Writing Center** staff to develop an on-going annual training program to support staff writers in their pursuit of truth and ethical use of information.

Center for Excellence in Teaching and Learning *(CETL)* provides faculty and staff guidance in teaching issues related to academic integrity through seminars and workshops. For example, in **2012**, a **Liberal Studies** faculty member spoke to the university community on LEARNING ABOUT CHEATING OR: HOW I BECAME AN ETHICS TEACHER AND SO DID YOU. The presentation was well attended and helped raised awareness about the issue. **CETL** will continue to promote academic integrity through additional programs..

2.E.3 . The institution has and enforces policies on academic honesty and integrity.

Students accused of academic misconduct are subject to instructors' sanctions and the provisions of the **Code of Student Conduct**, which is managed by the *Vice President* of **Student Life**. Faculty may impose their specific, syllabi-published sanctions for academic misconduct, as well as refer students to the **Office of Student Life**, which adjudicates all allegations and manages judicial board hearings and their attendant outcomes, including suspension and expulsion. Institutional rights and responsibilities; in general and specific to one's status, apply to all inquiries regarding ethical and responsible conduct related to the acquisition, discovery, and application of knowledge. *(See attachment 76 or website.)*

Enforcement of university policies on academic honesty and integrity has resulted in 32 referrals to the **Office of Student Life** for adjudication since **2007**. The office maintains records on all cases to identify repeat offenders and manage them appropriately. The University has no evidence that faculty or staff has breached academic integrity or honesty since the last **HLC** review in **2007**.

Allegations of misconduct among faculty are adjudicated by the **Office of the Provost** and follow policies and procedures articulated in the faculty handbook.

Staff members are held accountable through **Human Resources'** policies and procedures.

CONCLUSION

Kettering University operates with integrity and fulfills its obligations to all its stakeholders. The university has clearly articulated policies and procedures for student and employees regarding integrity and ethical conduct. It

provides multiple avenues for addressing concerns related to responsible conduct. It also fulfills all public reporting of institutional data as required by law, the **Higher Learning Commission**, and the other accrediting agencies.
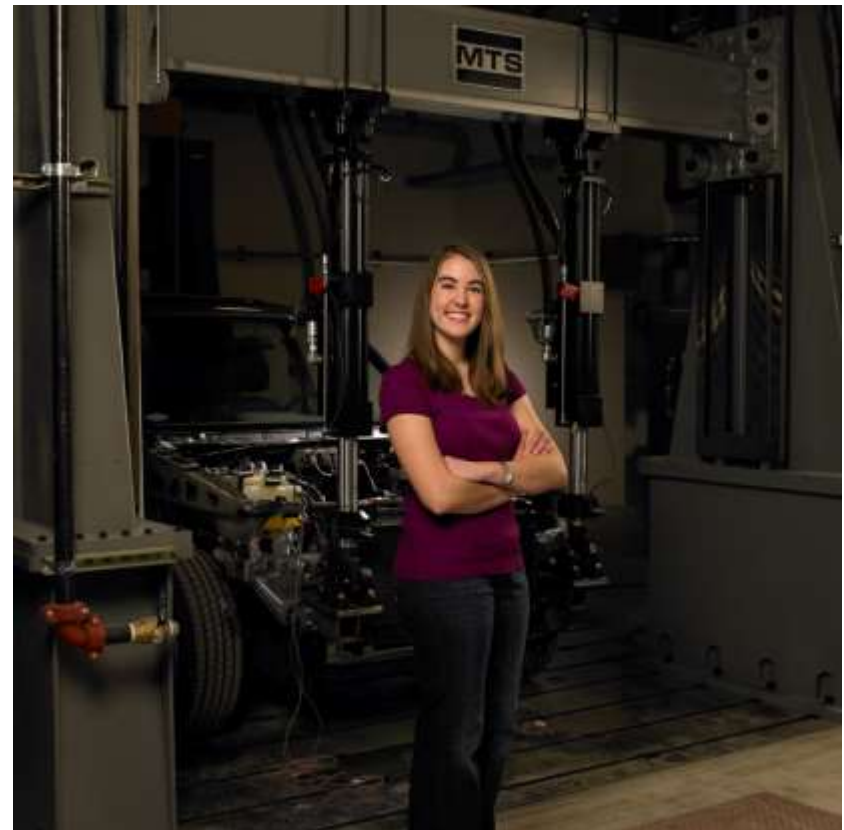
Teaching and Learning:
Quality Resources and Support

CRITERION THREE.

THE INSTITUTION PROVIDES HIGH QUALITY EDUCATION, WHEREVER AND HOWEVER ITS OFFERINGS ARE DELIVERED.
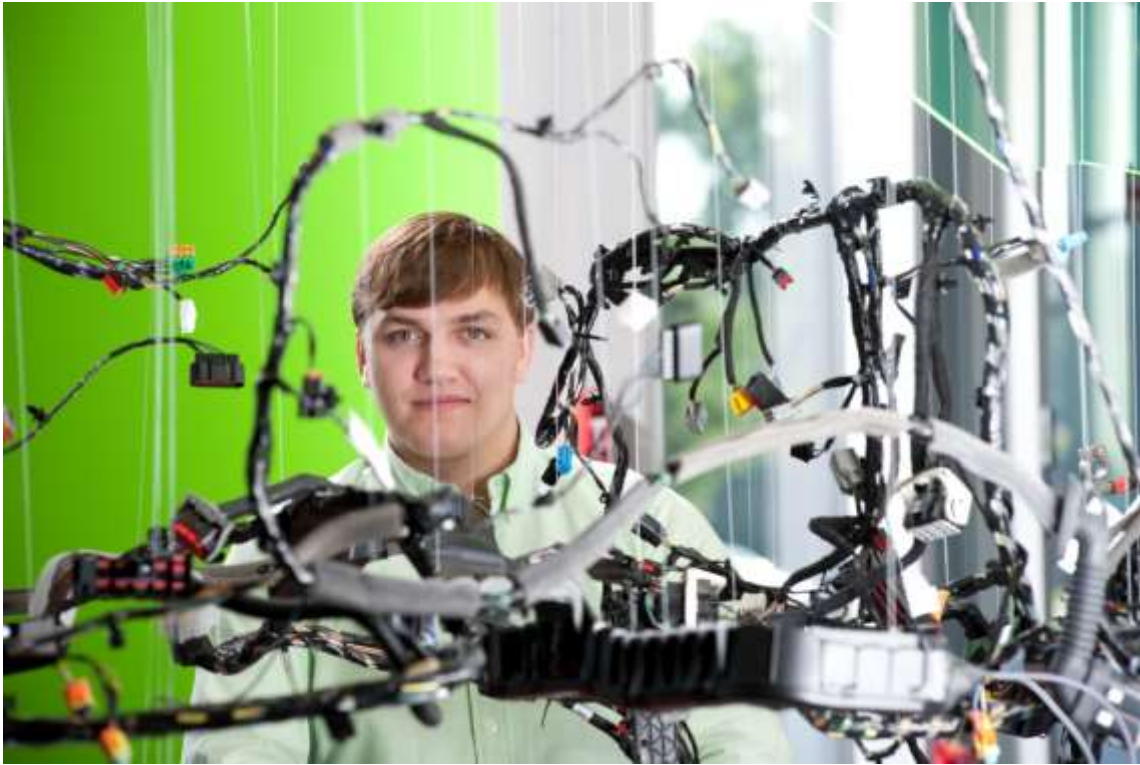
Criterion Three. Teaching and Learning: Quality, Resources, and Support

The institution provides high quality education, wherever and however its offerings are delivered.

Kettering takes pride in its highly qualified faculty and staff and the consistency of its standards across all of its programs: on campus and **Co-op**, undergraduate and graduate, curricular and co-curricular. The campus also takes pride in its state-of-the-art laboratories and technology, its support services that focus on students' intellectual and emotional well-being, its rich and varied co-curriculum and its engaged stakeholders including trustees, donors, alumni, members of the **Flint** community and its corporate partners.

The US NEWS AMERICA'S BEST COLLEGES GUIDE has recognized many Kettering programs for their excellence. Among non-doctoral universities in **2013**, **Industrial and Manufacturing Engineering** ranked **#1** and **Mechanical Engineering #3**. The University ranked **#17** among **Undergraduate Engineering** programs in the country and **#24** among all **Midwest** colleges.

CORE COMPONENT 3.A. The institution's degree programs are appropriate to higher education.

3.A.1. Courses and programs are current and require levels of performance by students appropriate to the degree or certificate awarded.

The Kettering faculty has been intentional about defining learning outcomes and the currency of all programs at all levels, achieving accreditation for all programs for which accreditation is available and developing a clear set of learning objectives for all programs, including those for which accreditation is not available.

The **Higher Learning Commission** *(HLC)* has accredited Kettering since **1962**. **Accreditation Board for Engineering and Technology** *(ABET)* has accredited the **Electrical Engineering**, **Industrial Engineering**, and **Mechanical Engineering** programs since **1977**, the **Computer Engineering** program since **1998**, the **Computer Science** program since **2007** and the **Chemical Engineering** and **Applied Physics** in **2013**. The **Accreditation Council for Business Schools and Programs** *(ACBSP)* **Business**

Administration has accredited Kettering's **Business** program since **1995**.

Chemistry and **Biochemistry** as well as **Mathematics** are examples of degree programs that have developed and follow their own learning outcomes.

Chemistry and **Biochemistry** have defined four main learning outcomes:

1. Students will demonstrate a broad, thorough, and quantitative understanding of theoretical and experimental chemistry or biochemistry.

2. Students will function effectively and ethically within a professional organization and society as a whole as professionals in chemistry, biochemistry, or related fields.

3. Students will have the skills to effectively communicate their knowledge of chemistry or biochemistry both professionally and colloquially.

4. Student will have the knowledge and skills in chemistry and/or biochemistry to be successful in pursuing an advanced degree or employment.

A **2011-12** assessment revealed that students were achieving these outcomes. The average **GPA** in chemistry/biochemistry and biology courses was 3.15 on a four-point scale. Ninety-one percent passed the **Written and Oral Communication** courses **I** and **II** with a grade of **B** or higher, and students consistently received strong satisfactory appraisals from their **Co-op** employers in ethical and profession behavior, in writing and in communication. In **2011-12**, 19 chemistry/biochemistry majors presented at least one paper at the national and/or regional conferences. As

notably, 89 percent of graduates that year found professional employment or were accepted into graduate programs.

Mathematics degree program have the following three learning outcomes:

1. Students will achieve broad, fundamental understanding of foundational mathematical and computational concepts.

2. Students will learn how to use mathematics in modeling and how to solve problems in science and wide variety of disciplines important for the society.

3. Students will become productive employees within science, engineering, commerce, and/or industry.

A **2011-2012** assessment provided evidence that students were achieving these outcomes. All applied mathematics students met the requirement for modeling in the senior-level math courses and were able to use **Maple**, **Minitab**, and **Matlab** at their workplace. All had satisfactory or better work evaluations. All students in the actuarial concentration passed the probability and financial mathematics actuarial exams and claimed three validations by educational experience. Over 90 percent of students in the bioengineering application concentration received a grade of **B-** or higher in the core mathematics courses and beyond.

In keeping with Kettering's commitment to being current, a number of departments offer complementary specialties within the major. For example, the **Mechanical Engineering Specialties** *(Automotive, Machine Design and Advanced Materials, Alternative Energy, and Bioengineering Applications)* provide a unique hands-on experience in specialized areas consistent with **Michigan** and the nation's interest in creating new jobs. The **Kettering University Alternate Energy Specialty** minor offers an inter-disciplinary curriculum designed to enable students to contribute to the development, advancement, and integration of fuel cell, hybrid electric and renewal energy technology into the world's economy.

3.A.2. The institution articulates and differentiates learning goals for its undergraduate, graduate, post-baccalaureate, post-graduate, and certificate programs.
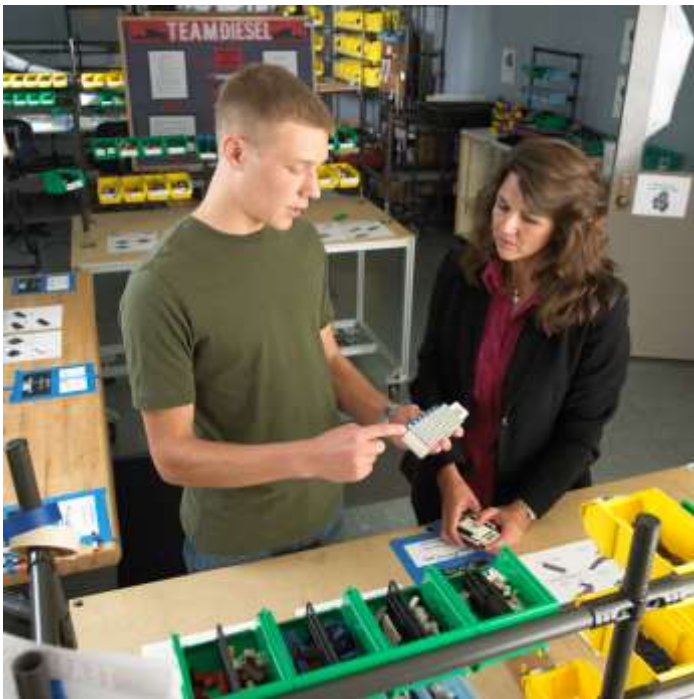
Undergraduate and graduate programs have separate and distinct learning goals, which are communicated to current and prospective students through the catalog, website and advising sessions with faculty and staff.

In **July 2011**, the **Faculty Senate** approved 13 learning outcomes for all undergraduates, spanning knowledge and skills in the technical areas, in general education and in the areas of communication and leadership. Many of the learning outcomes map to the individual learning outcomes at the department level. Two-years earlier, the **Student**

Life Department also established learning outcomes, which it assesses regularly. *(See attachment 78.)*

The graduate offerings—with their focus on providing full-time working professionals convenient access to a high quality education—are delivered primarily through distance learning. The graduate programs build upon the undergraduate programs, but the learning outcomes and goals are at higher levels than for the undergraduates, focusing on deepening student knowledge in content areas and on developing higher level strategic thinking to prepare the graduate students to become advanced technical professionals and managers. For example, the **Department of Business** measures undergraduate student learning in terms of nine specific categories including ethics, legal, and finance. The graduate student learning outcomes for students in business focus additionally on strategy and management.

When a course includes both undergraduate and graduate students, the graduate students are held to higher standards. For example, the **Master of Science** in **Engineering** requires a deeper level of knowledge in mathematics intended to develop graduate students' technical knowledge and skills to a more advanced level. Some graduate programs further integrate research extensively in its curriculum, providing additional learning goals not appropriate for undergraduates. Graduate students often are required to complete an extensive project not required for undergraduates..

3.A.3. The institution's program quality and learning goals are consistent across all modes of delivery and all locations (on the main campus, at additional locations, by distance delivery, as dual credit, through contractual or consortial arrangements, or any other modality).

The Kettering undergraduate education is delivered primarily through in face-to-face classrooms and mandatory **Co-op** and **Experiential Learning**. Some classes also use hybrid or online formats to utilize internet resource. Regardless of the delivery, all courses adhere to the same learning objectives. Students in both online and land-based courses are typically assessed in the same way by the same faculty: through homework assignments, quizzes, tests, and exams, which may be uploaded to **Blackboard** or emailed to the professor. Some have the quizzes and tests located online with a time limit set up on **Blackboard**; others require students to be on campus to write the final exam. A review of the student performance in both online and face-to-face format has revealed that students' performance is consistent. *(See attachment 79 for a summary of the survey of pre- and post-tests in both modes).*

The graduate program is primarily delivered online, using videotaped lectures and technology. Distance learning classes are, however, to a great extent the same as traditional on campus classes. Graduate classes are delivered live in one of three broadcast quality studios on campus and also online in that the actual classroom experience – including class lecture, case studies, class discussions, student questions, presentation materials, professor notes, and visuals and simulations – are captured digitally. Faculty members also integrate various forms of face-to-face and in-real-time experiences to enhance the students' interaction with the instructor and with one another. These include a pre-term conference call for the instructor and students, course project presentations via **Skype** and **Webex**, weekly conference calls, **Blackboard** discussions, blogs and discussion-group threads, project reflection journals, and project milestone reports. Most classes are refreshed *(recorded live)*

Online Courses	
2006	First undergraduate course in the Business department.
2008	Two more courses in the Business department.
2009	Courses within the Industrial and Manufacturing Engineering and Chemistry and Biochemistry departments.
2010	One course in Industrial and Manufacturing Engineering.
2011	Three courses in the Business department, one in Industrial and Manufacturing Engineering, and two in Math.
2012	One course in the Chemistry and Biochemistry department, two in Math, one in Mechanical Engineering, and one in Physics department.
2013	First course in the Liberal Studies department and one in Industrial and Manufacturing Engineering.

once per year. Students must sign into online courses and **Blackboard** using their **LDAP** user name and password.

Both undergraduate and graduate programs use the **Blackboard Learning Management System** for course management and delivery options.

In the past seven-years, the university has taken steps to increase the accessibility of its undergraduate programs through an expanded learning environment. *(See the Online Courses chart for a list of courses offered since 2006.)*

These online courses are available to both on-campus and off-campus students. Typically online courses are delivered through video lectures, documents in a **PDF** format, **PowerPoint** presentations, and web-based resources, such as applets and simulations. Most of the online courses are taught by faculty, who teach the same

courses in a traditional classroom. To ensure consistency in expectations, both online and classroom courses use the same textbooks and the same course outlines. However, to ensure consistent quality, at times courses are adjusted to accommodate the specifics of the online environment. For example, in the online **MATH 102** course, students receive more assignments with fewer questions in each to ensure that students grasp the concept before continuing to the next topic.

CORE COMPONENT 3.B. The institution demonstrates that the exercise of intellectual inquiry and the acquisition, application, and integration of broad learning and skills are integral to its educational programs.

Kettering is committed to helping its students build a strong foundation that includes broad learning and application of skills both on campus and in the **Co-op** experience. The curriculum includes a vertical integration of general education, requiring students to take general education courses at each level of their degree plan, beginning with a required **First Year Experience Course**, which addresses the importance of the liberal arts, and culminating with a required **Liberal Studies** capstone course in leadership and ethics in the senior year. All Kettering students also complete a **Senior Thesis**. Moreover, to gain credit for each work term, each student must be evaluated by the **Co-op** *supervisor* and receive a satisfactory performance rating in terms of such skills as communication, teamwork, and professional conduct. Students must also complete a new required reflective learning activity following each **Co-op** term designed to lead them more effectively to integrate their co-op and academic experiences..

3.B.1. The general education program is appropriate to the mission, educational offerings, and degree levels of the institution.

3.B.2. The institution articulates the purposes, content, and intended learning outcomes of its undergraduate general education requirements. The program of general education is grounded in a philosophy or framework developed by the institution or adopted from an established framework. It imparts broad knowledge and intellectual concepts to students and develops skills and attitudes that the institution believes every college-educated person should possess.

Kettering's general education program is appropriate to its mission of preparing students for lives of extraordinary leadership and service by placing its rigorous **STEM** and management education within the context of social responsibility. The general education curriculum is designed to shape future leaders by developing their communication skills, critical thinking abilities, and ethical decision-making.

The **Department of Liberal Studies**, which is responsible for delivering the eight-course general education to all undergraduates, describes its goals as follows:

- The **Department of Liberal Studies** imparts knowledge and concepts essential to the general education of students, and seeks to promote intellectual inquiry and effective communication. Its courses help students gain understanding of themselves, their cultural heritage, and human societies. By studying expressions of the imagination, philosophical and scientific ideas, and social, economic, and political behavior and change, the

department's program explores moral and ethical dimensions of humanity, the necessity of informed citizenship, and social responsibilities of professionals.

- While **Kettering University** is known for its programs that prepare students to be productive professionals, the university also believes that students need a broad education that enriches their personal lives and provides a foundation for socially responsible citizenship. The faculty of the **Department of Liberal Studies** are united in their dedication to providing this broad education.

- The courses offered by **Liberal Studies** emphasize critical thinking, effective communication, and the examination of ethical issues. These courses help students to sharpen their abilities to reason well, and to act effectively and responsibly. *(See [attachment 80](#).)*

The department has also established seven learning goals, which are to inform each course:

- Increase knowledge of the major ideas concerning morality and ethical responsibility, together with skills in reasoning and use of evidence regarding ethical issues.

- Develop an ability to communicate effectively in speaking and writing.

- Increase knowledge of a body of selected classic works from the literary, artistic, and philosophical heritage of civilization, together with skills in reasoning and use of evidence in these works

- Increase knowledge of a significant unit of historical change, together with skills in reasoning and use of evidence regarding such change.

- Increase knowledge of the roles of social, economic, and political institutions, together with skills in reasoning and use of evidence regarding such institutions.

- Develop abilities to engage in life-long learning.

- Increase knowledge of significant contemporary issues.

Finally, general education at Kettering is grounded in the following philosophical positions:

- Becoming a successful professional requires more than just technical knowledge; it also requires an understanding of humanity, social organization, and ethical issues.

- Students' cognitive abilities, attitudes towards education, and professional experiences change as they progress through college. It is important to expose students to liberal education when they reach higher levels of academic maturity.

- General education courses are an essential part of education and preparation for adult life. Non-technical courses should be woven into the fabric of education throughout the educational career.

3.B.3. Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing skills adaptable to changing environments.

All **Kettering University** degree programs, general education courses, co-op experiences, the senior thesis and the capstone course engage students in analyzing and communicating qualitative and quantitative data. The **Liberal Studies** courses give students an understanding of various modes of inquiry and stress both written and oral communication. The co-op experience by its very nature requires students to develop skills adaptable to changing environments. They do so by rotating through different jobs, often within the same company. *(GM and Ford, in particular, do an excellent job of rotating students and teaching them to adapt to change.)* Kettering students also learn to be adaptable in that they move every eleven weeks from their on-campus work to their co-op experience.

STEM courses are natural environments for engaging students in data analysis. For example, the calculus sequence of courses sets the foundation for upper class design engineering courses allowing the student to adapt to future design needs. **Probability and Statistics** classes also set the foundation for analysis of variation. For example, a **Biostats** course engages students in the calculation of the risk of breast cancer in relation to occupations with exposure to carcinogens. Using skills learned in class, students work in teams to collect data, analyze, and present a final report.

The **Mechanical Engineering** laboratory courses similarly require students to collect data from the experiments they run, process that data into results and conclusions, and communicate that information through laboratory reports. In the **Introduction to Mechanical Systems Design** course students are asked to prepare a patent application for their product design, requiring them to collect information by doing a patent search, analyze the information to see if there are competing patents and communicate their design thoughts through a completed patent application. Similarly, students in the **Chemical Engineering** department see current research conducted by their professors incorporated into their lab courses. *(See the online video presentation about faculty research in plasma technology for medical applications and materials.)*

All general education courses include data analysis and communication as critical elements. The required **Written and Oral Communication I** and **II** *(COMM101 and COMM 301)* courses engage students in doing research and practicing their communication skills in a variety of genres applicable to business and science. Humanities, social science, and history courses require a substantial amount of reading and involve students directly in understanding, using and communicating challenging material.

3.B.4. The education offered by the institution recognizes the human and cultural diversity of the world in which students live and work.

(See Criterion 1.C. for a full discussion of this topic.) In addition to the information provided earlier in the self-study, the **Kettering Student Government** asked the *associate provost* and a faculty member to facilitate a workshop in **November 2013** on inclusion. On that same day, **Center for Excellence in Teaching and Learning** *(CETL),*

Academic Success Center *(ASC)* and Office of Multicultural Student Initiatives *(OMSA)* co-sponsored a webinar for faculty & staff on inclusive teaching strategies to promote the success of underrepresented groups.

3.B.5. The faculty and students contribute to scholarship, creative work, and the discovery of knowledge to the extent appropriate to their programs and the institution's mission.

Members of the Kettering faculty engage in a variety of scholarly activities through conference presentations, invited lectures, and publications in peer-reviewed journals and books. *(See attachment 82.)* They also collaborate with their students in research projects. In required directed research courses, students participate in research that sometimes lead to results worthy of presentation at regional or national conferences. In fact, 19 chemistry/biochemistry majors presented at least one paper at such conferences in **2011-12**. Others have had work published in peer-reviewed journals. A recent **Physics** graduate received the **Undergraduate Research Exposition Award** for her research on the vibrational assessment of ice hockey sticks. *(See attachment 83 or website.)* Another student won the **2012 American Society of Mechanical Engineers** *(ASME)* **Internal Combustion Engine Fall** *(ICEF)* **Undergraduate Student Presentation Competition** for research on image processing techniques for determining needle lift in fuel injectors. *(See attachment 84 or website.)*

In **2013**, research became a more visible part of the student experience when the **Faculty Senate** approved the **Research Thesis** as one of the options for the culminating undergraduate experience, allowing students to conduct research in collaboration with a faculty member.

A Kettering education also prepares students to understand, analyze, and resolve a wide range of every-day issues, whether these issues affect people in the local community or in a community halfway around the world. Students do so in their senior theses, capstone design and research courses within the departments and in extra-curricular clubs and organizations. For example, in the winter of **2013**, four students and two *faculty advisors* spent several weeks in **South Africa** developing a partnership with community members in the installation of gutter systems and cisterns, and orienting residents to their maintenance and use. In **Michigan**, two Kettering students interested in bringing organic farming to city residents worked on designing and distributing small-scale aquaponics systems for individual residents. These modules would allow owners to take care of fish and learn how to grow sustainable crops, such as lettuce, basil, leafy greens, and others.

Kettering's focus on experiential learning intentionally requires students on a daily basis to solve real-life problems, design and test products, participate in projects with people from all backgrounds, and deliver ideas and solutions in a productive and professional manner. Students routinely collect, analyze, and communicate information in the course of their employment, which not only contributes to their education but also benefits Kettering's employer partners. Students bring this new knowledge and understanding back to the classroom, thereby requiring teaching faculty to stay relevant. For example, a mechanical engineering student placed at the **Ford Motor Company** gathered and analyzed information for a drive train component process and
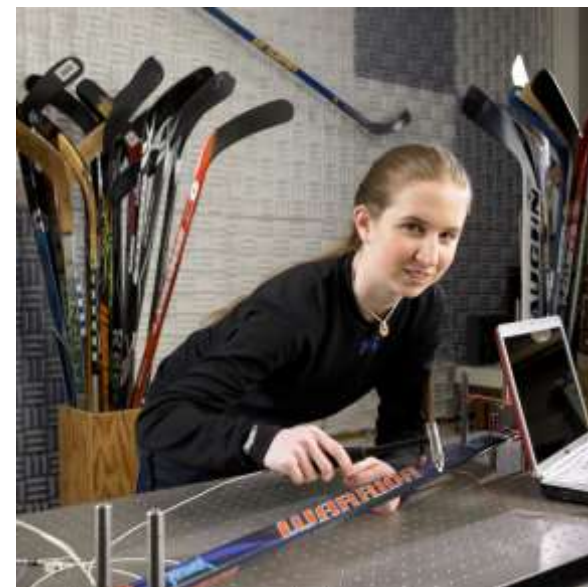
designed a part, which was later awarded a patent on behalf of the company. A marketing student working for a major retail chain helped to conduct market research and analysis, producing a report that was used by the employer to make decisions on proper advertising and product placement. As described earlier, the pre-med students working as scribes are doing analysis at a high level and often teach the *physicians* about the technology they use.

The experiential learning component exposes students to a wide array of work environments, ranging from traditional office settings to plant and construction sites to hospital wards. Students are also called on to perform both supportive and leadership roles. In this way, Kettering students accumulate both technical knowledge and complementary skills that equip them with the ability to adapt to numerous career fields and the changing environments. For example, a student with a degree in mechanical engineering and a concentration in bioengineering can work for a medical equipment company that manufactures transporting beds for ambulances and hospitals. The same student can shift to an automotive company and design seating systems and air bags to minimize impact on human body in a car crash. The same skill set can be transferred to other areas of manufacturing, such as furniture, aerospace, commercial appliances, and others. Kettering students exposure to entrepreneurial skills throughout the curriculum can use those skills to start their own company in any field. For example, Kettering students have started the following companies: **Youth of Tomorrow**, **Rate My Rental**, **Prime Studios LLC**, **Future Tech Farm**, and **GlobaLean**.

CORE COMPONENT 3.C. The institution has the faculty and staff needed for effective, high-quality programs and student services.

3.C.1. The institution has sufficient numbers and continuity of faculty members to carry out both the classroom and the non-classroom roles of faculty, including oversight of the curriculum and expectations for student performance; establishment of academic credentials for instructional staff; involvement in assessment of student learning.

3.C.2. All instructors are appropriately credentialed, including those in dual credit, contractual, and consortial programs.

Kettering's favorable student-to-faculty ratio of 14:1 ensures that all students receive a high level of individual attention within the classroom, through advising sessions and in university clubs, and organizations. Currently, the institution employs 129 full-time faculty and 15 part-time faculty, all of whom are appropriately credentialed with 92 % of full-time faculty members *(119)* holding doctoral degrees, eight holding master's level degrees, and one holding a bachelor's degree. Faculty members are appointed after a national search. Over the past four years, the faculty turnover rate has been lower than 5%, and the number of faculty has been holding steady.

Faculty members are responsible for three areas: teaching, scholarship, and service. Faculty routinely support students both inside and outside of the classroom. For example,

- Faculty in academic degree-granting departments support the mandatory student **Senior Thesis** projects by serving as *faculty advisors*, which includes

visits to the **Co-op** employers and review of **Thesis** documents.

- Faculty within the **Liberal Studies Department** provide on-going student consultations on major research papers through one-on-one meetings, follow-up meetings, and commentaries on written proposals.

- Many faculty and staff serve as *advisors* to Kettering student organizations. Engineering faculty serve as *advisors* to Kettering teams, such as the **SAE Mini-Baja** team, the **Formula** team, the **Snowmobile** competition team.

- Many faculty provide students with independent study and undergraduate research opportunities outside of their regular workload.

The faculty is expected to assess student performance. Their syllabi, using guidelines provided by the **Office of the Provost**, lay our faculty expectations as well as performance assessment tools and grading standards. *(See attachment 3-9.)* The syllabi are distributed to all students on the first day of class.

As noted earlier, the faculty has primary responsibility for the curriculum. The faculty also is responsible for academic standards through its **Academic Review Committee** *(ARC)*, a sub-committee of the **Faculty Senate** comprised of faculty and **Academic Success Center** and **Library** staff, that reviews and makes recommendations to the *associate provost* about students who meet the criteria for academic dismissal. The committee's options range from dismissal to outlining specific requirements that a student must meet in order to continue his or her enrollment and return to good standing.

3.C.3. Instructors are evaluated regularly in accordance with established institutional policies and procedures.

In the fall of **2011**, in collaboration with the **Faculty Senate** and in response to faculty concerns about the previously used *"home grown"* course evaluations, the *provost* initiated a process to improve the process of faculty evaluation. After a review of instructional metrics of faculty and based on the recommendation of the **Office of Institutional Effectiveness** *(OIE)*, Kettering piloted the **IDEA** *(Individual, Development, Educational, and Assessment)* **Evaluation** system, an on-line program that requires student evaluations for every faculty member at the end of each term. The **Faculty Senate** has now approve this system, which is based on data collected for over 40 years by the **IDEA Center** and which fosters teaching improvement, faculty evaluation, curriculum review, program assessment, and accreditation. The system provides comparative analyses both within Kettering and in terms of other institutions in the **IDEA** database. It assists the university in arriving at a summative judgment about effectiveness and serves as a diagnostic tool for guiding improvement. Kettering faculty and administrators have confidence in this system. In addition, if course evaluations suggest a problem, the *provost* and *associate provost* ask the *department head* to investigate the issues in greater detail and report the findings. If warranted, the *department head* works with the *professor* to develop an action plan for improvement.

All untenured faculty members receive feedback annually from their *department head* outlining progress toward tenure. The *provost* is currently working with the **Faculty Senate** on developing a more robust system of faculty review that includes a summative third-year review for all tenure track faculty and post-tenure review for all tenured faculty.

In addition to mandatory faculty evaluations, Kettering also assesses teaching and learning through the following methods:

- Peer assessment through **Center for Excellence in Teaching and Learning** *(CETL).*

- Departmental assessment for continual improvement and/or accreditation.

- Focus groups or informal feedback from students.

3.C.4. The institution has processes and resources for assuring that instructors are current in their disciplines and adept in their teaching roles; it supports their professional development.

Kettering consistently looks for ways to ensure that faculty members are current in their disciplines and effective teachers. For example, Kettering offers professional development opportunities to enhance teaching and learning through the **Center for Excellence in Teaching and Learning** *(CETL).* **CETL** also encourages collaborative multi-disciplinary endeavors and is dedicated to improving the learning environment. **CETL** is guided in its operation by the **Advisory Board** composed of faculty, staff and students from various disciplines.

The Kettering faculty actively participates in **CETL** activities, which include workshops, conferences, interactive seminars and training sessions. **CETL** topics have included INSTRUCTIONAL DESIGN FOR ACTIVE LEARNING presented by **Dr. Mike Prince**, WHAT THE BEST COLLEGE TEACHERS DO by **Dr. Ken Bain** and many internal faculty and staff presentations on topics that have broad appeal like RESEARCHING FUNDING and FLIPPING THE CLASSROOM. The **Teaching Circles Initiative** *(2012)* was aimed at advancing best practices in the areas of peer assessment, instructional technology, and teaching strategies. **CETL** has also sponsored forums and workshops that address how to effectively incorporate technology into teaching. The **CETL Brown Bag Lunch Discussion** group provides another venue for enhancing teaching and learning through collaboration. The **Distinguished Speaker Series**, which is co-sponsored by the **Office of the Provost**, provides Kettering faculty opportunities to present their scholarly research and educational innovations to the campus community. From **2011-2013**, more than 542 faculty hours were devoted to informal **Brown Bag** sessions and more than 2,000 faculty hours were devoted to the **Distinguished Faculty Speakers** series and other special events. *(See <u>attachment 85</u> for the CETL 2012-2013 Annual Report.)* The **CETL Collaboration Room**, which many faculty members frequent daily, makes possible informal multi-disciplinary conversations. Many Kettering faculty members also take advantage of a voluntary peer assessment program facilitated by **CETL**. Finally to support faculty who teach online courses, **CETL** has sponsored workshops that address how to effectively incorporate technology into teaching and

provides seed money for faculty to develop a limited number of online courses each year. A calendar, video archive and complete list of events are housed on the **CETL** website.

The **CETL** *director*, who also holds a half-time faculty appointment, solicits suggestions for improvement through surveys, informal conversations, and email correspondence and provides information to the campus through weekly emails, newsletters, annual reports and a constantly updated website. **CETL's** success depends on the voluntary participation of faculty. Even though a core group actively participates in many **CETL** events, engaging a larger portion of Kettering faculty in activities related to teaching excellence remains a goal.

The **Quad Pod Consortium**, made up of four local colleges and universities *(University of Michigan-Flint, Baker College-Flint, Mott Community College and Kettering University)* also provides opportunities for faculty development. The **Consortium** sponsors outside speakers, such as **Dr. Jose Bowen**, author of TEACHING NAKED, who will visit the four campuses in **January 2014**.

Faculty members also stay current in their disciplines through their own scholarship, research and participation in conferences, with many engaged in a high level of discipline-specific activities that are relevant and current, as required by the tenure and promotion process. In addition, **CETL** annually distributes thought-provoking books on teaching and learning that are read and discussed by faculty. The university provides support for attendance at professional meetings, such as **American Society for Engineering Education** *(ASEE)* and other professional societies that expose faculty to contemporary trends in teaching and research.

Departmental funds provide travel funds for faculty to attend and present at conferences.

3.C.5. Instructors are accessible for student inquiry.

Kettering faculty members pride themselves on being accessible to students with many opportunities for interaction inside and outside the classroom. Faculty members typically teach between four (4) and twelve (12) contact hours per week for three of the four terms of the academic year for a total of up to 32 contact hours per year. Many classes include a laboratory component that allows for one-on-one student-faculty engagement. Faculty members are expected to post and hold office hours during all teaching terms with a minimum of three office hours per week. Members of the faculty also engage closely with their students in the **Senior Capstone** course and serve as **Senior Thesis** *advisors*, ensuring that every Kettering student has a one-on-one relationship with a faculty member during their culminating experience. Students communicate with faculty through email, discussion boards, video chat, by phone, in person during office hours, and by appointment.

The staff members who serve as *"success coaches"* encourage students to develop a relationship with one new faculty member each term.

Faculty members also interact with students outside of the classroom. Most student organizations *(e.g. Model UN [United Nations] Club, Formula SAE [Society of Automotive Engineers])* have a faculty *advisor*. Discipline honor societies *(e.g. Kappa Mu Epsilon)*, organization honor societies *(e.g. Gamma Sigma Alpha)*, professional societies

(e.g. IIE [Institute of Industrial Engineers], SME [Society of Manufacturing Engineers]), and **Greek** organizations *(fraternities and sororities)* also typically require the service of a faculty or staff *advisor*.

3.C.6. Staff members providing student support services, such as tutoring, financial aid advising, academic advising, and co-curricular activities, are appropriately qualified, trained, and supported in their professional development.

Student support staff members are qualified to fulfill their functions and regularly received training and professional development. Some examples follow:

- All **Student Life** professional staff, except one, hold master's degrees in their respective fields and are trained in student development theory and its applications. All staff participate in professional development through the university as well as through area-specific associations, including **NASPA** *(National Association of Student Personnel Administrators)*, **ACPA** *(American College Personnel Association)*, **NODA** *(National Orientation Directors Association)*, **NACA** *(National Association for Campus Activities)*, and others.

- The **Academic Success Center** *(ASC)* recently upgraded its requirements for staff. In **2012**, **ASC** replaced the **Tutoring** *coordinator* position with a **Supplemental Learning** *coordinator* position that requires background knowledge in math/science, experience in teaching/tutoring with a strong preference for a professional background in education. A full-time communications *professor* now fills a **Writing Center** *coordinator* position, created to oversee the development of the writing services and training of the writing consultants, with a long-standing interest in writing support services. **ASC**

has implemented a uniform training program for all its *tutors* and in **January 2014** will apply for a **CRLA** *(College Reading and Learning Association)* certification. The **SI** *(Supplemental Instruction)* leaders who facilitate student study sessions *(a program started in the fall of 2012)* undergo mandatory training prior to the beginning of their service and are observed and coached by the **SI** *supervisor* throughout the term.

- Individual office budgets support opportunities for off-site professional development. For example, **Financial Aid** staff members participate in the **Federal Student Aid Conference**, **MSFAA** *(State Financial Aid Association)* summer and winter training sessions, as well as other training webinars and seminars. In **2012**, an **ASC** success coach attended a conference on legal issues in higher education. In **2013**, *advising* staff attended a conference for *administrators* in advising programs. That same year, representatives from **Financial Aid**, **Human Resources**, **Information Technology**, **Registrar** and **University Advancement** participated in the **Ellucian Live** conference, which was attended by approximately 8,500 participants from 2,400 higher education institutions around the world who came together to learn about best practices, share ideas, develop insights, design new approaches to their work and network. **Ellucian** provides higher education software services and supports **Banner**, the **Kettering University** management information system. Hundreds of sessions at the conference provided updates and information specific to functions in such areas as student services, information technology, alumni relations, human resources, and admissions.

- The university also provides training to keep staff members current on policies and procedures. For example, the **Business Office** offers training in such areas as the budget checking for available funds, budget variance reporting and **Banner**. **KEEN** *(Kern Entrepreneurship Education Network)*, funded **The Staff Workshop Series** was an **EAU** *(Entrepreneurship Across the University)* initiative offered in **Fall 2010**, **Winter 2011**, and **Spring 2011**. In **2011-12**, in response to staff requests, the university allocated $20K to the **Human Resources** department to transform the **Staff Workshop Series** into the **Kettering University Professional Development Fair**, which is now held annually to educate departments on services provided, build face-to face relationships, and discover new campus initiatives. *(See* <u>attachment 86</u> *or* <u>website</u>.*)*

- Many staff members participate in on-site webinars on a variety of topics.

CORE COMPONENT 3.D. The institution provides support for student learning and effective teaching.

3.D.1. The institution provides student support services suited to the needs of its student populations.

The responses to concerns <u>4.C.</u> document in some detail the ways in which Kettering provides students with appropriate support and resources for learning and provides faculty with appropriate support for teaching. Students receive a variety of support services at every stage of their education, from the initial orientation and first year experience course, to advising and academic

support services, to co-op and experiential learning coaching, to the culminating experience advising. Co-curricular programs and services, based on student development theory, also support student learning. Faculty and staff are supported with on-going professional development opportunities.

THE LIBRARY

The **Library** is open at least 80 hours per week *(with additional 14 hours during the week of final exams)* and offers reference services in person and via email, phone, and chat, enabling students during their co-op terms to interact directly with *librarians*. The **Library** currently houses 178,728 items in its online catalog, which is a shared database with a **PALnet** consortium *(Public and Academic Library Network)*, which is jointly operated by **Baker College**, **Mott Community College** and **Kettering University**. It has more than 40K unique electronic journal titles and 44 databases that can be accessed on or off campus 24 hours a day. The **Library** also houses 350 periodical titles in print form. In **2010**, the **Library** began to build an **eReserve** collection on **Blackboard**, which currently averages 2,240 hits per

week. The **eReserve** collection can be accessed on or off campus 24 hours a day. The **Library** owns 15 public access computer stations and several multifunctional **Xerox** copier/printers available for public use. The **Library** also has a laptop computer, **iPad**, **Kindle DX**, **Kindle Fire**, **Nook**, and **Microsoft Surface RT** tablet for public use.

When the new degree programs are approved, the **Library** allocates resources to support the new programs. In recent years, necessary materials were purchased for the new pre-law and pre-med concentrations and the chemical engineering, engineering physics and applied biology programs.

THE WELLNESS CENTER

The **Wellness Center** provides students with support related to their physical, mental, and emotional wellbeing. The **Wellness Center** handles all requests for disability accommodations by evaluating documentation and informing appropriate faculty about the granted accommodations. The **Wellness Center** also sponsors a **Ulliance Student Assistance Program**, which offers students confidential support in resolving concerns that may affect their personal or college life. General information on **Ulliance** can be found on their website.

3.D.2. The institution provides for learning support and preparatory instruction to address the academic needs of its students. It has a process for directing entering students to courses and programs for which the students are adequately prepared.

Kettering guides its students as soon as they are admitted. The following are in place to ensure that students are prepared for the courses they need to take.

MATH PLACEMENT

All entering students are required to take a math placement test that identifies the level of students' readiness and allows the university to place them in appropriate classes and if necessary receive preparatory instruction in mathematics *(Math 100)*. In the summer of **2013**, the **Math** department also began offering extended sections to facilitate understanding and learning in **Math 101** *(Math 101X)* and **Math 102** *(Math 102X)*. Students who complete an *"X"* section are automatically enrolled in the next level *"X"* section. In addition, students receiving a grade of **C-** or **D** in **MATH-101** *(regular calculus)* are also enrolled into **MATH-102X**.

LANGUAGE PLACEMENT

To demonstrate language proficiency, students for whom **English** is not a first language must provide official scores of one of the following exams: **TOEFL** *(minimum iBT 79 or 550 pBT)*, **IELTS** *(minimum 6.0 overall band)*, **MELAB** *(minimum 76)*, **ACT** *(minimum English 16)* or **SAT** *(minimum Critical Reading 480)*. In **2012**, Kettering developed an option for **English** language preparation at **University of Michigan-Flint** along with conditional admission for students who do not meet language requirements. Conditional undergraduate applicants must show successful completion of level **3A** to be fully admitted; graduate students must show successful completion of level **3B** to earn full admission status.

FYE 101 – FIRST YEAR EXPERIENCE

FYE101, a one-credit course required for all first year, transfer and international students offered for the first time in summer **2013** builds upon the **ORTN101** class *(offered since 2007)* to include all facets of the freshman experience. The course is discussion-based with

reflective learning questions inspired by the **Liberal Studies Senior Seminar Course** and is taught by a full-time faculty or staff member who is assisted by an upper-class peer mentor. The course has a common syllabus and textbook. The course seeks to support student engagement in the Kettering community, help students develop a sense of self-governance, and set a foundation for both a critical thinking and reflective learning mindset. Classes are limited to 15 students to facilitate close interaction between instructors and students and to help prepare students for the academic and cooperative work environments.

3.D.3. The institution provides academic advising suited to its programs and the needs of its students.

As noted earlier, Kettering has re-conceptualized its approach to academic advising. Previously, students were provided with a first-term schedule by the **Registrar's Office** and were advised for the first time toward the end of the freshman term. The new centralized advising provides academic support to incoming students as soon as they are admitted and confirm their plan to attend.

In addition to regular academic advising, students who demonstrate at-risk performance and behavior through the end-of-term grades reports and through the early alert process, receive probationary advising and coaching. Faculty and staff submit alerts through **KAMP** *(Kettering Academic Management Program)* whenever they feel a student needs assistance. The **ASC** staff who ensure that the students are offered appropriate resources to address the situation(s) that caused the concern monitors these alerts. For example, students receive success coaching to help them with study strategies, time management, note taking, notebook organization, textbook reading, test preparation, and test taking.

3.D.4. The institution provides to students and instructors the infrastructure and resources necessary to support effective teaching and learning (technological infrastructure, scientific laboratories, libraries, performance spaces, clinical practice sites, museum collections, as appropriate to the institution's offerings).

Kettering University strives to provide the infrastructure that supports teaching and learning. This includes state-of-the art teaching laboratories, **Information and Instructional Technology**, and library resources, along with support to maintain the facilities. The **CETL Collaboration Room** provides a resource for gathering and multi-discipline interaction among faculty and staff for the purpose of improving teaching and learning.

TEACHING LABORATORIES

Kettering offers an unprecedented array of laboratory space for a hands-on learning experience at the undergraduate level. Currently, there are more than 70 teaching/research labs and four *(4)* labs dedicated to research located in the **Academic Building** and the **C.S. Mott Engineering and Science Building**.

Kettering immerses all incoming students in its outstanding and extensive laboratory facilities the day they begin their studies. For example, in the manufacturing processes course, students are introduced to basics of lathing, milling, drilling, and cutting of materials on equipment that has been reconfigured with digital readouts. In addition students are required to complete laboratory exercises in lost foam or green sand casting in a working foundry. Use of equipment, such as stick and gas welding equipment, along with injection molding, as well as vacuum forming machines, round out

their introduction to metal joining and polymer processing. For advanced machining, a number of **CNC** machines, as well as three mills, a lathe, and a surface grinder, are available.

In the basic graphics course students utilize **NX** *(Unigraphics),* an industrial software package used by such corporations as **General Motors** to create and analyze products. All of the computations take place in a state of the art computational facility known as the **PACE** lab that is supported by a consortium of companies. In addition to visual graphics, the **PACE** lab is equipped with a **Laser 3-D Stereo-Lithography** machine and a **3-D** printer, thus allowing students to actually create a model of their digital creation.

Kettering has a variety of labs equipped with robotics technology. **Industrial Engineering's Computer Integrated Machining** *(CIM)* lab allows students to work with the pick and place **Puma** robots. The **Mobile Robotics** lab in **Electrical Engineering** gives students a chance to work with mobile robots, such as **Rumbas**, to respond to various sensors. The **Hougen Lab**, a **Megatronics** facility in **Mechanical Engineering**, which includes a design studio and wood working shop equipped with **Jet** mills and lathes, allows students to design and build robots using the **Mindstorm** microprocessor. A recent addition to the laboratory equipment is **Haptic** technology, a tactile feedback technology that takes advantage of the sense of touch by applying forces, vibrations, or motions to the user. This mechanical stimulation can be used to assist in enhancing the remote control of machines and devices *(telerobotics).*

The more unique labs with specialized equipment include a **Crash Safety** lab with an industrial type **Crash Sled**, an

MTS Shaker Lab, a **Hydrogen Fuel Cell Lab**, a **Bio-Mechanics Lab**, and an energy systems lab equipped with a quarter scale **Wind Tunnel**. A new **Chemical Engineering** facility is equipped with flow and process lab equipment. Most recent equipment in **Chemical Engineering** is a **CHNSO** – *(Carbon, Hydrogen, etc.)* element determinator.

From day one, students utilize state-of-the-art chemistry and physics laboratories. **Chemistry** labs include various spectrometers and digitphyal dispensing devices. In physics students are introduced to an advanced **Newtonian** mechanics lab that not only includes modern measurement equipment but high speed video equipment and state-of-the-art computers. **Physics** labs also include an **Acoustic** facility equipped with **DAQ's** complete with **Fast Fourier Transform** software to provide modal analysis and power spectral densities.

The **Liberal Studies** and **Math** classes have uniquely modern facilities as well. A **Liberal Studies Communications** lab is equipped with computers and software specifically designed for word processing. A **Humanities Art Center and Gallery** with a permanent collection of over 350 pieces is hosted within the **Liberal Studies** department. This enrichment facility provides a balance to Kettering's extensive technological laboratories. Extensive computer facilities include an **Applied Math LAB** with 41 computers that are accessible 24 hours a day, seven days a week. **Matlab** and **Maple** are the featured math software packages used and supported by the **Math** department. *(For a more comprehensive list of Kettering laboratories, see* *)*

INFORMATION AND INSTRUCTIONAL TECHNOLOGY

The **Information Technology** *(IT)* department provides the necessary technological infrastructure for the campus. There are two computer laboratories in the **Residence Hall**, with the option of wireless printing. Each residence room has a network jack for internet accessibility. Kettering allows students to use the platform and operating system of their choosing.

IT administers and maintains the technology in the classrooms and labs along with **Safety and Facilities** communication systems. Fifty percent of classrooms contain instructional multi-media carts equipped with computers, **AV** *(Audio Visual)* media interfaces, projectors, and audio systems. **IT Help Desk** support is available during regular business hours for resolution of on-going issues and information about services. Laboratories are equipped with **Windows 7**, and **Linux** and **Unix**-based workstations with network printers. The labs are also loaded with the required instructional software. Each student is provided with twelve gigabytes of network storage and thirty gigabytes of **Google Apps** for educational storage.

IT also supports such university-wide platforms as **Banner Student Information System**, **Blackboard Learning Management System**, and **Kettering Connect** for co-op education administration. **IT** also handles emergency alert services, network storage, web based services, email access, and campus-wide wireless internet.

The department strives to keep its services current. Recent initiatives include the following:

- In the **2012-13 Academic Year**, the Information Technology Advisory Committee *(ITAC)* was formed, led by the *Vice President* of **Instructional, Administrative and Information Technology**. The **ITAC**, which is served by three sub-committees – **Academic Advisory**, **Infrastructure and Operations Advisory** and **Student Initiatives Advisory Committees**, receives requests from the campus and maintains a priority matrix of all projects.

- At the end of **2012**, **IT** begin upgrading the wireless infrastructure to high speed and full coverage along with a project for virtualization of desktop machines in the labs in order to support the demands of the **BYOD** *(Bring Your Own Device)* technology, such as laptops and **iPads**. The fully re-designed wireless system will be more robust and comprehensive as to coverage, speed, security, and administration. **IT** is also implementing.

3.D.5. The institution provides to students guidance in the effective use of research and information resources.

LIBRARY AND COLLECTIONS

The **Library** continually upgrades its infrastructure to support students in their study, frequently upgrading the **Public Access Computers**, adding two computers in **2010**, upgrading computer memory in **2011**, and moving from **Windows XP** to **Windows 7** in **2013**. The **Library** replaced all **CPU** towers in **2009** and all keyboards and mice in **2010** and that same year upgraded the

Library network cabling and leased two multi-functional **Xerox** copier/printers that allow students to print, copy, fax, and scan to email. Additionally, the **Library** installed two large whiteboards for student use. Other technological upgrades within the **Library** include purchasing **eReaders – KindleDX** in **2009**, **Kindle Fire** in **2012**, and a **Nook** in **2013**, and acquiring a cell phone charging station in **2013**. The **Library** also offers an **iMac** computer, which has a 25½-inch screen and is loaded with productivity software, such as **Adobe Production Premium Creative Suite**, **Photoshop**, **Illustrator**, and **Garageband**.

As part of **Kettering Global**, the university is investigating technological solutions to enhance student and faculty face-to-face online interaction, which will positively impact the entire organization. The existing options to connect with the students virtually are **Skype**, **Big Blue Button**, and **Google Apps for Education**. These tools will continue to be leveraged and communicated to departments, while **IT** addresses a long-term organizational solution.

The **Scharchburg Archives** collection started in **1974** has grown into one of the largest collections of **General Motors** history outside of **General Motors** itself and is a rich resource for Kettering students. The **Archives** has obtained the papers of **Mr. Charles Kettering**, five *Presidents* of **General Motors** *(including its founder **Mr. William C. Durant**)* and two alumni from **General Motors Institute**. It also maintains a collection of over 350K patents related to vehicles. The collection attracts Kettering students as well as scholars from around the world.

CENTER FOR EXCELLENCE IN TEACHING AND LEARNING (CETL)

CETL is described in great detail in the criterion section 3.C.4.

RESEARCH GUIDANCE

Kettering students are supported when it comes to conducting research. As discussed in Criterion 2, students learn about effective use of research and information resources through a variety of sources, beginning with their first introductory course *(FYE101)* and concluding with their **Senior Seminar** course *(LS489)* and culminating undergraduate experience. Faculty guide students to use and communicate research and information resources effectively in their discipline-specific courses and their courses in communication *(COMM101 and COMM 301)*.

The **Library** further assists students with proper methods of academic research and ethical use of information resources. The **Library** focuses on building sufficient technological resources to assist students with research. The **Digital Thesis Archives** is available anywhere on campus and contains over 24K **Kettering University** theses entries with the last 10 years in downloadable form. The **Archive** is also available off-campus via Kettering's **Virtual Private Network** *(VPN)*.

In **2012**, the **Library** partnered with **Center for Excellence in Teaching and Learning** *(CETL)* to integrate into the **First Year Experience** a series of discipline-specific research guides to be found in the **Library**: **LibGuides**, which is a widely-used system for organizing research information in academic libraries. The guides provide students with a snapshot of their major, including extracurricular activities, professional

organizations, potential co-op employers, and specific library resources.

The **Academic Success Center** and the **Center for Culminating Undergraduate Experiences** also provide students with guidance and tutoring support throughout their research and writing process during both on campus and co-op term. The **Office of Sponsored Research** provides students with training in **Responsible Conduct of Research** for faculty-sponsored student research projects. The **Institutional Review Board** oversees procedures for protecting human subjects in research.

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CORE COMPONENT 3.E. The institution fulfills the claims it makes for an enriched educational environment.

Kettering University promises its students an exceptional educational experience that combines rigorous academic work with ongoing cooperative work placement. The university fulfills these claims as evidenced through the continually high ranking of its programs by various ranking agencies. Student learning is enriched not only through their co-op work experience, but also through the hands-on experiences within the laboratory facilities available to all students beginning at the freshman level.

3.E.1. Co-curricular programs are suited to the institution's mission and contribute to the educational experience of its students.

Kettering offers its students a variety of theory- and outcomes-based co-curricular programs that align with the University's mission to prepare students for lives of

extraordinary leadership and service. These offerings, necessary for a rich collegiate experience, promote leadership development, a life-long pursuit of personal growth and development, and a reflective mindset that complements academic programs. Kettering recognizes and funds more than 40 different clubs and organizations that provide opportunities for exploration, discovery, and the acquisition of knowledge and skills.

Some organizations, such as the **Outdoors Club** and the **Firebirds**, help students build physical and mental acuity through activities and competitions. Others, such as the **International Club**, promote diversity and multiculturalism. Affinity groups, such as **Allies** *(lesbian, gay, bisexual, transgender students)* and the **Campus Crusade for Christ**, support identity development. The **Women's Resource Center** offers workshops and seminars on topics of special interest to women students. Student chapters of the **Society of Women Engineers**, the **National Society of Black Engineers**, and the Society for **Hispanic Professional Engineers** connect students with alumni and other professionals who provide career guidance.

Honor societies, which include nationally recognized ones as well as Kettering's **Robot Society**, promote achievement. Kettering's intramural sports, which attract nearly 50% of our students, earned **BestColleges.com** recognition for the number of intramural sports on the roster, the comprehensive qualities of team management and coaching, and student satisfaction. *(See BestColleges.com [website].)* The **Greek** system and intramural sports also complement the academic learning provided to students. The University recognizes 12 fraternities and

5 sororities, all affiliated with national organizations. These **Greek** societies offer wide-ranging opportunities for leadership development and community service.

Various student groups also promote a student's sense of personal responsibility. Health and wellness programs promote healthy lifestyle choices and encourage students to assume responsibility for their well-being. Offerings include seminars and workshops on topics such as alcohol consumption, sexual activity, body image, eating disorders, physical fitness, nutrition, and mental health. Also, the **Wellness Center** sponsors presentations *(and provides resources)* on suicide prevention. **Kettering Student Government**, which includes the **Student Senate**, **Academic Council**, **Finance Council**, **Activities Council**, and **Operations Council**, gives students the opportunity to engage in democratic processes, leadership development, and managing community organizations. The **Student Civic Engagement Center**, operated by students with the direction of a **Student Life** *advisor*, serves as the center of community service projects on campus and promotes active citizenship.

Moreover, co-curricular activities outside of the classroom offer many options for reinforcing the problem-solving skills covered in the classroom and transforming students into leaders:

- For students who want to pursue design and automotive interests, Kettering's **SAE** *(Society of Automotive Engineers)* competition teams for **Formula**, **Clean Snowmobile**, **Aero**, and **Mini-Baja** give students a chance to develop their problem-solving skills with hands-on problems within real-life constraints. **FIRST** *(For Inspiration and Recognition of Science and Technology)*

Robotics allows students to develop design and leadership skills within science and technology.

- For students interested in societal concerns and sustainability, Kettering's **Formula Zero** team as well as **Engineers Without Borders** and the **Green Engineering Organization** provide a chance to get involved with alternative energy and creative problem solving for the good of the larger community. **Model UN** *(United Nations)* provides practice for students interested in global concerns.

- For students interested in joining industrial networks and gaining professional certifications, student professional societies include the **Institute of Industrial Engineers** *(IIE)*, **Society of Women Engineers** *(SWE),* **Institute of Electrical and Electronics Engineers** *(IEEE),* **National Society of Black Engineers** *(NSBE)*, **Society of Plastics Engineers** *(SPE),* **Distributive Education Clubs of America** *(DECA)* for students interested in business management, and many other discipline-specific societies. These organizations allow students to gain leadership skills and become engaged in their career field.

- For students interested in making a difference on campus, the **Kettering Student Government** *(KSG)* provides opportunities in service and leadership across campus. The student **Academic Council** represents students on the **Faculty Senate** and **CETL Advisory Board** to allow students a voice in academic decision-making.

3.E.2. The institution demonstrates any claims it makes about contributions to its students' educational experience by virtue of aspects of its mission, such as research, community engagement, service learning, religious or spiritual purpose, and economic development.

As a non-sectarian, independent institution, Kettering does not have a religious or spiritual purpose. It does, however, promote community engagement, social responsibility and economic development as described in earlier sections of this self-study. Kettering is especially proud that 98% of our graduates are employed within their field or attending graduate school within six months of graduation, suggesting that their Kettering education truly prepares them for the next phase of their professional lives.

Teaching and Learning: Evaluation and Improvement

CRITERION FOUR.

THE INSTITUTION DEMONSTRATES RESPONSIBILITY FOR THE QUALITY OF ITS EDUCATIONAL PROGRAMS, LEARNING ENVIRONMENTS, AND SUPPORT SERVICES, AND IT EVALUATES THEIR EFFECTIVENESS FOR STUDENT LEARNING THROUGH PROCESSES DESIGN TO PROMOTE CONTINUOUS IMPROVEMENT.

Criterion Four. Teaching and Learning: Evaluation and Improvement

The institution demonstrates responsibility for the quality of its educational programs, learning environments, and support services, and it evaluates their effectiveness for student learning through processes designed to promote continuous improvement.

Kettering's mission, to prepare students for lives of extraordinary leadership and service by linking transformative experiential learning opportunities to rigorous academic programs, directs faculty and staff efforts to ensure excellence in teaching and learning and exemplary educational programs; learning environments; and support services. The administration, which strongly promotes assessment and the applications of results, strives to achieve a pervasive culture of assessment; that focuses on student learning outcomes and individual students' success. Its goal is to strengthen assessment at all levels and across the university so that the institution fully integrates results into a cycle of continuous improvement as the path toward mission fulfillment and the realization of the **Four Pillars of Success**.

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CORE COMPONENTS 4.A. The institution demonstrates responsibility for the quality of its educational programs.

Over the past several years, Kettering has implemented a variety of initiatives designed to respond to increasingly greater demands and needs for assessment and accountability—at the national level, within the higher education community, and within the institution. Concurrently, the movement toward student-centered learning has catalyzed change at Kettering—in teaching paradigms and expectations for student learning. At Kettering, these changes are reflected in a new organizational structure for assessment and evaluation, an increasing emphasis on student-centered teaching methods and, perhaps most significantly, in the application of assessment data to institutional planning and resource allocation.

Under the provost's leadership, the director of the **Office of Institutional Effectiveness** *(OIE)* oversees all assessment activities. **Dr. Edwin Imasuen**, the *director* hired in **2012**, has significantly broader and deeper knowledge and experience, as well as responsibilities, than his predecessors. **Dr. Imasuen** leads assessment and evaluation activities across campus and provides resources for accreditation program reviews; collects, analyzes, and disseminates data for institutional applications *(e.g., retention and completion rates; student satisfaction; non-returning and exiting students, etc.)*; and strives to ensure assessment activities meet the highest standards in the field. He holds assessment seminars and workshops to educate the community and works, in general, to create a culture of assessment at Kettering. Most notably, **Dr. Imasuen**, in collaboration with colleagues from several academic departments, created a 500+ page comprehensive compilation of assessment information from throughout the university that illustrates what departments assess, the results, and how they apply them. It includes:

- A guide for conducting assessments; their components; how results inform continuous improvement; how they relate to specific programs and the university mission. *(See in particular pages 5-6 of attachment 127.)*

- Accomplishments by unit, **2009 – 2013** *(see page 8-69 in attachment 126)*.

- Annual **Institutional Effectiveness Plan & Assessment** reports for the years **2009 – 2013**. These reports, which follow a prescribed format, describe goals, intended student learning outcomes, criteria for success, assessment tools, resources, results, and the use of results. Appointed assessment coordinators from each academic and non-academic department contribute to these annual reports. *(See attachments 129, 130, 131 and 132.)*

The discussion below highlights representative assessment processes and demonstrates the development of a structured and systematic university-wide approach to data gathering and analysis that has served as the impetus for several new programs and initiatives. The new *provost* will lead efforts to ensure further progress, with a particular emphasis on the role of assessment in planning and resource allocation at all levels.

4.A.1. The institution maintains a practice of regular program reviews.

Kettering University maintains the quality of its programs through regular program reviews, including on-going assessment of student learning and satisfaction, specialized accreditation reviews of its degree programs, and surveys conducted among stakeholders: students, faculty, staff, alumni, co-op employers, and industrial advisory boards. The university-wide student learning outcomes establish the criteria for measuring student learning in academic and co-curricular programs. *(See Criterion 4.B.1. for a full description of the university's student learning outcomes.)* These outcomes acknowledge the significance of all facets of a Kettering education: the major, general education, cooperative and experiential learning, and personal development. They serve as the foundation for program-specific outcomes and departmental ones reflect them. Academic departments accredited by **ABET** use the agency's standards—

Program Educational Objectives *(PEO's)* and **Student Outcomes** *(SO's)*—to measure their students' educational achievements. This data is collected and analyzed annually and reported to **ABET** at six-year intervals. The **Registrar's Office** maintains the integrity and quality of educational credits—earned and transferred—to ensure they meet the level of achievement appropriate to each degree program. **Student Life** assesses students' co-curricular learning against specific objectives and utilizes the **Council for the Advancement of Standards' Standards and Guidelines**. *(See attachment 78.)*

All departments conduct annual assessments; some are comprehensive, others address selective aspects or units of a department, curriculum, program, or process. For example, in **2012**, **Chemistry** and **Biochemistry** conducted a comprehensive review of its **2009** curriculum revisions. **Chemical Engineering** undertook a similar review, also in **2012**, to assess its efficacy in relation to university learning outcomes and **ABET**-prescribed program educational objectives. Within the same timeframe, **Cooperative Education and Career Services** *(now known as the Cooperative and Experiential Education Department)* assessed its accomplishments in light of its responsibilities to guide students through the university's mandatory co-op program, while the **Center for Excellence in Teaching and Learning** assessed its programs to help faculty, staff, and students become better teachers and learners. *(See attachment 128. Co-op pages 91-93 and CETL pages 89-90.)*

The annual **Institutional Effectiveness Plan and Assessment** *(IEPA)*, which the university institutionalized in **2009**, represents its annual collective efforts to begin to address the assessment deficiencies noted by the **HLC** in **2007** and **2010**. These deficiencies included the absence of a dashboard of assessment measures, which **OIE** now makes available to the campus community. *(See attachment 81.)* Another cited concern was the scant *"evidence to support the data gathered has feedback mechanisms that could support continuous improvement."* The current **IEPA** model requires departments to connect data, results, and use of results. Doing so has resulted in marked improvements, including curriculum revisions *(e.g., Chemical Engineering, as noted above)*; capital improvements, new construction projects *(e.g., Applied Biology labs, discussed below)*; and implementation of new student support services *(e.g., the Writing Center)* established in **2012** to help students hone skills requisite to professional success. *(See the concerns section, 3.C. and 4.C. for a description of the assessments that led to creation of this center.)*

Some assessments are, admittedly, more rigorous and sophisticated than others. Taken together, however, we view them as a significant and fundamental step toward building a culture of assessment at Kettering.

Additional progress, led by the **Office of Institutional Effectiveness** *(OIE)*, includes utilizing existing assessment tools to provide feedback to students about all aspects of their education. These include course-level formative and summative assessments *(quizzes, tests, one-minute papers, written assignments, exams, etc.)* to measure learning, and internal and external surveys to measure cooperative and experiential employment performance. Evaluations and surveys conducted among students,

employers, alumni, and industrial advisory boards provide data to measure the relevance of academic programs. In **2012**, for example, the **Applied Mathematics** department surveyed its advisory board to assess their satisfaction with the relevancy of its coursework and the quality of co-op work carried out by its students. The board recommended the department offer courses in life contingencies; life insurance math based on the application of theoretical actuarial models to insurance and other financial risks. In response, the department added a two-course sequence to its curriculum. *(See attachment 66, page 86.)* Other departments rely upon this type of data to make similar curriculum adjustments.

4.A.2. The institution evaluates all the credit that it transcripts, including what it awards for experiential learning or other forms of prior learning.

Kettering evaluates all credit that it transcripts according to generally accepted principles and practices in higher education. Enrolled students must complete course requirements according to those prescribed in each syllabus. Course syllabi adhere to a standard template provided by the **Office of the Provost**. Students receive credit for cooperative and experiential learning experiences, required for graduation, based upon their achievement of established performance expectations. Employers, faculty, or other supervisors complete end-of-term evaluations; the university grants credit for satisfactory performance as determined by them. Additional ways to obtain credits include **Advanced Placement** *(AP)*, proficiency examinations, **International Baccalaureate** *(IB)*, and prior work experience for cooperative education credit.

ADVANCED PLACEMENT (AP)

Students may obtain advanced placement credit by demonstrating subject proficiency as measured by their performance in a high school course and their score on the corresponding **College Board Advanced Placement** exam. Each academic department establishes its own test score criteria for granting credit. The university provides a table in the undergraduate catalog which lists how **AP** scores correspond with Kettering courses. *(See attachment 66 page 13.)* If an equivalent course is not available for the **AP** exam area completed, elective or area credit may be awarded in the appropriate academic discipline and applied toward graduation if such elective credit options exist within the academic major.

A student who desires to earn credit by proficiency examination may request a special examination from the department in which the desired course is offered. A student may petition the department head of a given course to receive earned hours by examination. If the *department head* deems it appropriate and acceptable, the student will be given the means to demonstrate knowledge and performance of the course material at a level no less than an average student enrolled in the course. If such demonstration is successful, the course credits are posted on the student's transcript with a grade of **CR** *(credit)* but no associated **GPA** points. Credit by examination is

offered on a class-by-class basis; not all Kettering classes are eligible for credit by examination.

INTERNATIONAL BACCALAUREATE

Kettering University recognizes the academic quality of the **International Baccalaureate** *(IB)* program and the efforts of students enrolled in **IB** coursework. Upon application to the university, students seeking **IB** credit must have an official transcript sent directly to Kettering's **Office of Admissions**. Credit will be granted for passes at the **IB Standard Level** *(SL)* in **Computer Science** only. Credit will be issued for passes at the **IB Higher Level (HL)** according to the table published in the undergraduate catalog. *(See <u>attachment 66</u>, page 12.)*

COOPERATIVE AND EXPERIENTIAL LEARNING CREDIT

Occasionally, Kettering receives requests for **Cooperative Education** credit for work experience obtained prior to admission. The **Office of Cooperative and Experiential Education** reviews these requests and determines whether credit may be granted. If granted, the office notifies the **Registrar's Office** which records this on the student's transcript as **Cooperative Education Experience – Pre-Admit** credit. *(Note that students receive credit, but no grade, for this aspect of their Kettering education.)*

4.A.3. The institution has policies that assure the quality of the credit it accepts in transfer.

The university transcripts transfer credits from colleges and universities with appropriate accreditation. Transfers students must submit an official transcript, either directly from the institution they have attended or in a sealed and embossed envelope. Kettering considers only those courses in which a student has earned a **C** *(2.0)* or higher

grade. Except in the case of approved study abroad courses, discussed below, the university does not accept pass/fail credits and limits transferable credits to no more than 72.

Designated faculty in corresponding departments review course descriptions and syllabi to establish course equivalencies. Only with their approval does the registrar transcript credit. The **Course Equivalency System** on Kettering's website provides transfer students with a comprehensive list of equivalent courses, according to institution *(including some international ones)*. Articulation agreements and associated guide sheets are also available on the **Course Equivalency System** <u>website</u>.

Courses that do not appear on the **Course Equivalency System** require additional scrutiny. In these cases, the registrar secures and provides designated faculty in the corresponding department(s) with course descriptions and/or syllabi. The faculty reviewer determines whether the course is sufficiently similar to fulfill Kettering's requirements; if so, the registrar transcripts the course as **CR**, with no associated **GPA** points. The **Registrar** adds courses reviewed by faculty to the **Course Equivalency System** and notes them as *"transferrable"* or *"non-transferrable,"* depending on faculty determination of *"sufficiently similar"* or *"insufficiently similar."* *"Free"* elective credit may be granted for transferrable courses if such elective credit options exist with the academic major.

The **Office of International Programs** evaluates courses and assigns equivalencies for those taken at approved foreign institutions. Students must seek advisement and obtain approval from their degree departments to transfer such credits.

4.A.4. The institution maintains and exercises authority over the prerequisites for courses, rigor of courses, expectations for student learning, access to learning resources, and faculty qualifications for all its programs, including dual credit programs. It assures that its dual credit courses or programs for high school students are equivalent in learning outcomes and levels of achievement to its higher education curriculum.

Each department or program establishes course prerequisite expectations and submits them for review to the **Faculty Senate's University Curriculum Committee**, which includes members from all academic departments. Next, the **Faculty Senate** votes on committee-recommended prerequisites and, if endorsed, submits them to the provost and president for final approval. The **Office of the Registrar** is responsible for ensuring that prerequisites are met, which it does by blocking enrollment in the course if not met.

When a faculty member or a department proposes to create, change, or delete a course or program, the **Course Change Proposal** or **Program Change Proposal** must be submitted to the department, voted upon, and submitted to the **University Curriculum Committee** *(UCC). (See* [attachment 88](#)*).* At each step in the program and curriculum development, the **UCC** *(and then the Faculty Senate, Provost, and Registrar)* review the proposal to ensure a sound and rigorous curriculum. All must approve the course or program along with the *president.* New degree programs must be submitted to the **Board of Trustees** for approval.

The rigor of a given course is established by the faculty member, with reviews at the department and *provost* level to ensure general consistency from course to course. The **Office of the Provost**, for example, reviews the grade

distributions of all courses on a term by term basis, noting courses that have an excess of **A's** as well as **D's** and **F's**. Based on this quarterly review, the *provost* alerts the *department head* to any discrepancies whom then follows up with the instructor of record.

All new courses must include the intended learning outcomes, which are approved as described above. The syllabus guidelines require that the learning objectives be included in the course syllabus given to students on the first day of class.

The *department head*, in consultation with the members of the department and the *provost*, establishes the required and preferred qualifications prior to posting an open faculty position. For tenure track positions, a **Ph.D.** or other discipline-appropriate terminal degree is required in the general subject matter area described in the position statement. *Lecturer* and casual part-time *(adjunct)* positions require a minimum of a master's degree, again with appropriate subject matter expertise.

Kettering provides a range of learning resources to enrich students' educational experiences. The **Library** features print and non-print items, including books, periodicals, compact discs, **DVD's**, etc. Electronic indexes and periodicals focus on **STEM**-related materials although the **Library** offers access to materials in many other disciplines. The reference desk is staffed at all times; students may also request assistance from off-campus by calling or emailing. The **Library** provides in-person and electronic access to a regional network of libraries that includes the **University of Michigan-**

Flint, **Baker College**, and **Mott Community College**, all located nearby. *Librarians* provide instruction on databases and other resources. The **Richard P. Scharchburg Archives**, used by scholars worldwide, contains documents related to **America's** industrial and business heritage, particularly automotive history. The collection includes 375K vehicle patents. For more information about the **Kettering University Library** see the undergraduate catalog *(see [attachment 66](#), pages. 61-62.)*

The university has 59 technologically rich classrooms outfitted to support designated programs and dedicates funds to support equipment upgrades and replacements. Multi-media workstations and computer labs are located throughout campus; many are available 24 hours a day, seven days a week. Kettering supports a range of software used across multiple programs of study, such as **MATLAB** and **LabVIEW**, and specialized software such as **NX** *(Unigraphics)*, used in mechanical engineering.

4.A.5. The institution maintains specialized accreditation for its programs as appropriate to its educational purposes.

Since 1962, **Kettering University** has been accredited by the **Higher Learning Commission** and is a member of the **North Central Association of Colleges and Schools**. All of the programs within the university for which accreditation within a specific field is applicable carry such accreditation. **Accreditation Board for Engineering and Technology** *(ABET)* has accredited the **Electrical Engineering**, **Industrial Engineering**, and **Mechanical Engineering** programs since **1977**, the **Computer Engineering** program since **1998**, the **Computer Science** program since **2007** and the **Chemical Engineering**, **Engineering Physics** and **Applied Physics** since **2013**. The **Accreditation**

Council for Business Schools and Programs in Business Administration *(ACBSP)* has accredited Kettering's **Business** program since **1995**. Accreditation documents may be viewed in the [Resource Room](#).

4.A.6. The institution evaluates the success of its graduates. The institution assures that the degree or certificate programs it represents as preparation for advanced study or employment accomplish these purposes. For all programs, the institution looks to indicators it deems appropriate to its mission, such as employment rates, admission rates to advanced degree programs, and participation rates in fellowships, internships, and special programs (e.g., Peace Corps and Americorps).

Evidence demonstrates that **Kettering University** graduates are well prepared by their degree programs for employment and advanced studies. Most Kettering graduates achieve professional success rapidly as evidenced by the fact that 98% of our graduates are employed within their field or attending graduate school within six months of graduation. The **2012 EBI Map-Works Engineering Alumni Assessment** provides additional evidence that **Kettering University** students succeed upon graduation. Their findings indicate that 96% of Kettering alumni who responded to the survey were employed full-time, 2% were employed part time *(and were not seeking additional employment)*, and 2% attended graduate programs. For example, all 23 **Chemical Engineering** graduates from academic years **2011-12** and **2012-13** are employed or in graduate or medical school.

For several years in a row, the **WACE** *(World Association of Cooperative Education)* **National Cooperative Hall of Fame** *(an international organization that advances cooperative and work-integrated education)* has inducted Kettering graduates.

- **2012 Co-op Hall of Fame** *(See* _attachment 89_ *or* _website_.*)*

- **2011 Co-op Hall of Fame** *(See* _attachment 90_ *or* _website_.*)*

- **2010 Co-op Hall of Fame** *(See* _attachment 91_ *or* _website_.*)*

The success of Kettering graduates may also be measured by the salaries that students earn upon graduation. The table below illustrates the starting base salaries of the graduates within the programs offered by Kettering. *(See* _Graduate Salary Survey_ *chart).*

In addition, the **2012 EBI Map-Works Engineering Alumni Assessment** indicated that 80 percent of the surveyed alumni were earning above $65K in annual salary.

Until recently, Kettering did not collect adequate data on alumni admission to advanced degree programs or participation rates in fellowships, internships, and special programs. Existing evidence indicates graduates have completed advanced, professional, and terminal degrees at **Carnegie-Mellon**, **Columbia**, **Harvard**, **Michigan State University**, **Purdue, Stanford**, the **University of Michigan**, the **University of Tennessee**, **Wayne State University**, **Kettering University**, and other universities. Degrees conferred include **MBA's** and other master's degrees, **JD's**, **MD's**, **DDS's** and **Ph.D's**.

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CORE COMPONENTS 4.B. The institution demonstrates a commitment to educational

Graduate *Salary Survey for 2010-2011 Graduates*			
Bachelor of Science Degree Program	**Starting Base Salary**		
	Average	**Highest**	**Median**
Business	$53,500	$57,000	$53,500
Engineering	$57,295	$72,000	$58,000
Computer Engineering	$53,000		
Electrical Engineering	$57,666	$67,000	$60,000
Industrial Engineering	$60,500	$64,000	$63,000
Mechanical Engineering	$56,800	$72,000	$58,000
Math & Science	$55,000	$81,000	$49,500
Applied Mathematics	$47,000	$47,000	$47,000
Applied Physics	$41,000		
Biochemistry	$40,000	$40,000	$40,000
Computer Science	$57,666	$81,000	$52,000
Engineering Physics	$70,000	$70,000	$70,000
All Degree Programs	$58,698	$81,000	$58,349
Signing Bonus	$3,910	$9,200	$3,250

achievement and improvement through ongoing assessment of student learning.

Kettering University's Institutional Effectiveness Plan and Assessment *(IEPA)*, implemented in **2009**, exemplifies its commitment to educational achievement and improvement through on-going assessment of student learning. The **IEPA** calls for campus-wide assessment activities of different scopes and focuses that contribute toward the fulfillment of the institution's mission, as well as those of specific departments. These assessment activities link mission, learning, assessment, planning, and resource allocation at all levels: institutional, programmatic, and course or activity *(e.g., new student orientation)*. Building on the foundation created by the adoption of university-wide learning outcomes, academic and non-academic programs have established

or revised overarching learning outcomes to ensure intellectual rigor and educational achievement expected of baccalaureates and which are requisite to professional success. These learning outcomes align with those established by **ABET** and **ABCSP**; professional organizations such as the **Council for the Advancement of Standards**; and best practices within a particular field, as appropriate. Departments evaluate courses, activities, or services against both internal and external learning outcomes to affirm their efficacy. Some courses, activities, or services remain unchanged; others undergo revisions to address deficiencies.

4.B.1. The institution has clearly stated goals for student learning and effective processes for assessment of student learning and achievement of learning goals.

Kettering's goals for student learning include attainment of university-wide learning outcomes, program-, service- or course-specific ones, complemented by accrediting agency-specific outcomes *(where appropriate)*; cooperative and experiential learning outcomes; and co-curricular outcomes. This combination, which encompasses intellectual, professional, and personal growth and development, serves as the foundation for mission fulfillment: to prepare students for lives of extraordinary leadership and service. It measures institutional effectiveness against several performance indicators, including satisfactory and timely academic progress, satisfactory completion of mandatory cooperative employment, satisfactory and timely completion of a senior thesis, and satisfaction and participation levels in co-curricular activities. Assessments take place in all these areas and at multiple junctures in students' college careers *(including during graduate programs)*. Assessments conducted by faculty, staff, and external entities *(such as*

Noel-Levitz and advisory boards) take place in the classroom, through departmental studies, and through university-wide studies.

Assessments against learning outcomes measure academic achievement. At Kettering, outcomes for student learning include those established by the university and, for the specially accredited degree programs, those required by the particular agency. In **2011**, the university adopted common learning outcomes for all its undergraduates. These outcomes; developed by an assessment leadership team, approved by the **Faculty Senate**, and institutionalized by the *provost*; acknowledge the significance of all facets of a Kettering education: the major, general education, cooperative and experiential learning, and personal development. In keeping with its mission and core values, Kettering strives to ensure that all its students achieve these learning outcomes by graduation:

- *Communication:* The ability to communicate effectively both orally and in writing.

- *Critical Thinking:* The ability to reason logically, challenge assumptions, evaluate evidence, use evidence to support a position, and creatively apply knowledge to new situations.

- *Quantitative Reasoning*: The ability to use mathematical models, concepts, and skills to draw conclusions and solve problems.

- *Science:* A knowledge of basic laboratory science and the principles of scientific reasoning.

- *Foundation in the Liberal Arts:* A broad knowledge of the perspectives, content and methods

of inquiry and reasoning in the humanities and social sciences.

- *Depth of knowledge in a major field of study:* The content, connections to other disciplines, methods, and distinctive professional requirements of a specific discipline.

- *Global Awareness:* A knowledge of global societies, respect for other cultures, and the ability to interact effectively across cultural boundaries.

- *Teamwork:* The ability to work effectively as a member of a team.

- *Leadership:* The ability to provide vision, set direction, and motivate others to follow.

- *Ethics:* A knowledge of one's ethical responsibilities as an individual, a professional, and a member of society, and a commitment to their fulfillment.

- *Professionalism:* The habits, characteristics, and skills necessary to a responsible and productive career.

- *Entrepreneurial Mindset:* The habits and skills necessary for creative and innovative thinking, awareness of customer needs, and opportunity recognition.

- *Lifelong Learning:* The habits and skills to sustain and direct lifelong learning, and an appreciation of its importance.

Kettering undergraduate engineering programs which undergo **ABET** accreditation review include **Applied Physics**, **Chemical Engineering**, **Computer**

Engineering, **Computer Science**, **Electrical Engineering**, **Engineering Physics**, **Industrial Engineering**, and **Mechanical Engineering**. All of these programs have adopted **ABET's Program Educational Objectives** *(PEO) "a"* through *"k,"* which describe the knowledge and skills expected of program graduates. The **Industrial Engineering** program has adopted two additional outcomes specific to the major: *"l"* and *"m."* These outcomes, which focus on program effectiveness, inform departmental outcomes. **ABET** stipulates an indirect method of assessment which relies upon students' or others' perception of achievement. Its criteria encompasses both technical core courses housed within degree granting departments, as well as supporting courses from other departments, including **Liberal Studies**. Until **2012**, **ABET's** focus—and the University's standard measure of assessment—relied primarily on indirect methods for measuring the effectiveness **PEO's**. *(Note that recently, ABET shifted its focus from measuring PEO's to assessing student achievement by focusing these same criteria on student learning or Student Outcomes [SO]).* Now, the university intends to employ more direct methods of assessment and annual analyses and utilization of results. This process, directed by the provost in **2012**, will correct deficiencies that resulted from reliance on **ABET's** indirect methodology and provide additional opportunities for improvement on an annual basis.

Learning Outcomes Alignment			
Kettering Undergraduate Learning Outcomes	ABET – EAC/ASAC	ABET – CAC	Kettering Mission
Communication	g	f	✓
Critical thinking	e	b	✓
Quantitative reasoning	a	a	✓
Science	a, b		✓
Foundation in the liberal arts	h, j	e, g	✓
Depth of knowledge in a major field of study	c,k	c,k	✓
Global awareness	h	g	✓
Teamwork	d	d	✓
Leadership			✓
Ethics	f	e	✓
Professionalism	f	e	✓
Entrepreneurial mindset			✓
Lifelong learning	i	h	✓

ABET Program Educational Objectives: Upon graduation, students should have achieved these outcomes.

a. An ability to apply knowledge of mathematics, science and engineering.

b. An ability to design and conduct experiments, as well as to analyze and interpret data.

c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d. An ability to function on multidisciplinary teams.

e. An ability to identify, formulate, and solve engineering problems.

f. An understanding of professional and ethical responsibility.

g. An ability to communicate effectively.

h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

i. A recognition of the need for, and an ability to engage in life-long learning.

j. A knowledge of contemporary issues.

k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

l. A basic ability to design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy by using appropriate analytical, computational, and experimental practices through the Industrial Engineering core curriculum.

m. An advanced ability to design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and energy by using appropriate

analytical, computational, and experimental practices through the Industrial Engineering electives, capstone design experience, and thesis.

ABET Outcomes Correspondence to University Mission chart maps the correspondence between institutional and **ABET** outcomes, as well as the university's mission.

Assessment processes include direct and indirect data collection, quantitative and qualitative measures, analysis *(at various levels)* and interpretation, and strategies for continuous improvement. The chart illustrates the schematic framework for assessing student learning at Kettering. This process marks a significant change from the past when data collection took place sporadically and inconsistently; analytical information was underutilized and insecurely connected to program or institutional planning; and the absence of aggregation fostered departmental independence, rather than institutional cohesion. Now, each department assesses and evaluates it programs based on department- or unit-specific, and university criteria; particularly mission fulfillment. Assessments that take place after the **2013-14** academic year will also map to the **Four Pillars of Success**.

Assessment of student learning takes place across the university, at multiple junctures, and among several audiences, including students, faculty, staff, alumni, advisory boards, cooperative education partners, and external partners. *(See Assessment of Student Learning chart.).*

Curricular and co-curricular programs utilize some or all of these assessment tools, as appropriate.

Assessment of Student Learning			
Assessment Focus	**Strategy**	**Audience/Method**	**Frequency**
University's Student Learning Outcomes	Campus-wide, mission driven outcomes	Students/Direct	Annually
Department Student Learning Outcomes	Department mission-driven outcomes	Students/Direct	Annually
Benchmarking Surveys	Area specific, e.g., Noel-Levitz Student Satisfaction Survey, etc.	Students/Indirect	Biannually
Co-op Employer / Student Surveys	Specifically mapped questions pertaining to a specific	Students and Employers/Direct	Annually
Culminating Undergraduate Experience	Senior thesis project	Faculty/Indirect	On-going
Department Alumni Survey	Quantitative and qualitative	Department Alumni/Direct	3 year cycle
Department Curriculum Committee	Discipline specific	Faculty/Indirect	Annually
Directed Research	Faculty evaluation of research or seminar report	Faculty/Indirect	Annually
Kettering Alumni Survey	Supplemental questions pertaining to a specific department	Students/Direct	3 year cycle
Post-Graduate Alumni Survey	Assesses alumni's self-perception of their ability to innovate and solve practical problems.	Department Alumni/Direct	Annually
Post-Graduate Employers	Assesses employers' perception of graduates' ability to innovate and to solve practical problems 3-6 years after degree completion.	Employers/Indirect	Annually
Professional Peers	Discipline specific peer reviewed and accepted publications and presentations	Students/Indirect	On-going
Senior Exit Interviews	Students' self-perception of learning outcome realization	Graduating Students/Indirect	On-going
Standardized Testing	Discipline specific	Students/Direct	
Student Records	Grade-based academic achievement assessment	Students/Indirect	On-going

4.B.2. The institution assesses achievement of the learning outcomes that it claims for its curricular and co-curricular programs.

The university expects all curricular and co-curricular programs to carry out both periodic and on-going assessments and requires each department to submit an **Institutional Effectiveness Plan and Assessment** *(IEPA)* on an annual basis. This assessment model, instituted in **2009**, provides the template for a comprehensive review of programs and includes the department's mission and its relationship to the university's mission; student learning goals; intended outcomes; criteria for success; assessment tools; resources and costs; results and outcomes; and use of results. *(Beginning in 2013-14, departments will also link programs or services to the Four Pillars of Success.)* Departments use results to guide program improvements and the creation of periodic **SWOT** analyses to guide planning. Selected examples demonstrate how various departments utilize the **IEPA**.

MECHANICAL ENGINEERING

The **Mechanical Engineering** *(ME)* department uses a broad range of direct and indirect methods to assess student learning as defined by university, **ABET**, and departmental outcomes. Information and data from **ME** stakeholders *(students, co-op employers, ME advisory board members, and faculty)* regarding courses and curriculum is distilled by the **ME** curriculum committee and presented to the faculty for action in assessment meetings, which occur twice a year. The actions suggested by faculty are further reviewed by the curriculum committee and department administration to establish an effective implementation plan.

Direct measurements for course assessment include the traditional method of collecting information and data from course materials such as test grades, quiz grades, project grades and final exam grades to determine whether or not the course students are achieving outcomes. All course outcomes are included on the course syllabus, distributed by the faculty member at the beginning of the term. Each faculty member has the right to use this or her own course syllabus as long as the course outcomes match the standard course syllabus outcomes. This assures the faculty member the right to teach the course in a manner suited to him/her and also retains the integrity of the standard course outcomes.

In **2011-12**, **Mechanical Engineering** measured students' ability to apply knowledge of math, science, and engineering in five courses: **Statics**, **Solids**, **Machine Design**, **Thermodynamics**, and **Heat Transfer**. This learning outcome aligns with the university's quantitative reasoning and critical thinking outcomes, as well as **ABET's** criterion for applying knowledge. The department established an 80% achievement rate, based upon average grades earned. Results indicate that students met the criteria in all courses; however, those in **Thermodynamics** scored lowest *(80%)*. The department created additional resources for this course to enhance student success.

Direct measurements for assessment of **ME** courses are not performed on all **ME** courses every term but as a sampling of **ME** courses throughout the year. Core **ME** courses *(of which there are 14)* are assessed using direct measurements at least once each year. **ME** elective courses *(of which a student may take five of many)* are sampled with direct measurements at least once every three-years. The **ME** capstone courses use a separate method of

direct measurements due to the nature of the project and group format structure of the course. The seven capstone courses are assessed at least once every two-years. Each year, the results of these course assessments are summarized by the **ME** curriculum committee and then evaluated and discussed for action during the annual assessment meetings of the **ME** faculty. *(See [attachment 92](#).)*

LIBERAL STUDIES

Liberal Studies has recently revised its assessment processes in order to achieve a holistic method that takes into account changes in the student body and employer demands for more broadly educated graduates. The method also addresses challenges presented by the variety of disciplines housed in the department: communications, economics, history, humanities, literature, and social science. The new assessment model allows faculty to establish discipline- and course-specific outcomes, goals, criteria, and tools. For example, the communications faculty established these outcomes for measuring students' mastery of skills in **Communications 101** *(Written and Oral Communication I),* which align with university outcome #1: the ability to communicate effectively. After completing this course, students should be able to:

1. Analyze communication situations using the rhetorical concepts of purpose, audience, and occasion.

2. Communicate in multiple professional genres.

3. Demonstrate an understanding of the differences between professional and academic communication.

4. Engage in a writing process that includes invention, drafting, revision, editing, and proofreading.

5. Prepare and deliver oral presentations.

6. Employ project-appropriate research methods and synthesize information from primary and secondary sources.

7. Primary and secondary sources.

8. Use APA documentation format correctly.

In fall **2012**, faculty assessed a key learning objective for the course: writing for an audience. The outcome addresses discipline-specific goals, as well as the university's learning outcome #1. Faculty collected samples of student writing and assessed them using the following rubric:

4 : *Clearly and effectively adapted to specific audience and goal.*

3: *Mostly adapted to specific audience but has some issues.*

2 : *Not inappropriate for audience, but not appropriately adapted for the specific   audience.*

1: *Inappropriate for audience.*

0 : *Wildly off the mark.*

Results indicate 100% of students exceeded the criteria for success *(established at 70%)*, suggesting that the criterion score should be elevated. *(See attachment 124.)*

In another **Liberal Studies** course, **LS489/Senior Seminar**: **Leadership, Ethics, and Contemporary Issues**, faculty established critical thinking skills as one measure of student learning, corresponding with university outcome #2: the ability to reason logically, challenge assumptions, evaluate evidence, use evidence to support a position, and creatively apply knowledge to new situations. Faculty assessed 15 samples and rated them against these criteria:

4 : *Level of performance is outstanding.*

3 : *Level of performance is definitely better than average.*

2: *Level of performance is adequate.*

1: *Level of performance in general is poor but not failing.*

0: *Does not meet benchmark level of performance.*

The average score for the group was **2.23/4.00**, indicating that students demonstrated adequate or fair critical thinking skills. An analysis of individual achievement, however, indicates that only three students earned above a **3.00**, only one earned **3.50**, and five achieved **2.00** or lower. The *"fair"* ranking may, however, overstate students' achievement as faculty evaluated final drafts, which had been critiqued by student peers and instructors and revised, rather than students' initial work. It is highly probable that at least some of the samples reflect adequate performance because students acted upon revision opportunities. The average score falls below an aspirational **3.00**, particularly because **LS489** is one of the last courses students undertake at Kettering.

The faculty concluded that critical thinking learning should be assessed in earlier general education courses to measure students' progressive mastery of the skill and to ensure effective instruction at all levels. So far, this assessment has taken place only once and warrants additional data collection and analysis which will occur on an ongoing basis. *(See attachment 93 for the study report.)*

PHYSICS DEPARTMENT

In spring **2012**, the **Physics** department utilized feedback from their recent **ABET** accreditation review to develop a continuous improvement program that assesses student learning from a variety of perspectives: students', faculty, alumni, and advisory board members'. A focus group held with majors revealed gaps between the department's goal of students' ability to apply knowledge and their actual experiences *(university outcome #2, critical thinking and ABET outcome "e," the ability to identify, formulate, and solve problems)*, particularly as they relate to cooperative employment and the university's culminating experience *(senior thesis)* requirements. Students reported difficulties finding physics-focused employment and thesis projects that allow them to demonstrate and develop their acquired knowledge. These conditions undermine their ability to achieve learning outcomes. Findings contributed to the university's implementation of two initiatives to address the shortcomings: the co-op department's reorganization which assigns educators to specific departments and charges them to place students in employment situations that more closely align with their educational and professional goals; and the opportunity to complete discipline-specific research projects to fulfill thesis requirements. An assessment of the relative success of these initiatives is underway, on department and university-wide levels. *(See attachment 94.)*

INDUSTRIAL AND MANUFACTURING ENGINEERING

In **2007-08** and **2008-09 Industrial and Manufacturing Engineering** *(IME)* faculty and students evaluated learning against **ABET** outcomes *"a"* through *"l."* Faculty utilized graded items such as homework, tests, labs, and projects on a 4-point scale from strongly agree *(4)* to strongly disagree *(0)*. Students self-evaluated on the same scale. Both students and faculty rated all criteria 3.0 or higher. Overall findings for **2008-09** indicate that students and faculty perceive relative *(and often nearly correspondent)* outcomes achievement. *(See [attachment 95](#).)* The department carries out these course assessments biannually and now maps them to university learning outcomes. Also, the **IME** advisory board evaluates results every three years. Combined findings inform course assessment reports which include action plans for improvement. *(See [attachment 96](#).)*

COOPERATIVE AND EXPERIENTIAL LEARNING

Students must satisfactorily complete a minimum of seven work terms *(five work terms and two thesis terms)* with a recognized employer or other approved learning supervisor *(e.g., a member of the faculty who supervises a student carrying out a research project)* to fulfill the university's degree requirements for all programs. Students, in collaboration with supervisors and co-op educators, must establish term-long learning outcomes. The University assesses students' achievement at the end of each work term through performance evaluations completed by supervisors; an analysis of students' reflective exercises *(See [4.C.4](#) in the Concerns)* and students' evaluations of their particular experience.

Departmental and industrial advisory boards, composed of cooperative education employers *(including many alumni)*

and other professionals from business and academia, assess students' co-op performance in general, along with the relevancy of Kettering's academic curriculum as it relates to meeting the current and anticipated needs of employers. These boards typically meet semi-annually and provide important qualitative feedback to ensure Kettering appropriately prepares students with the knowledge and work habits requisite to success in the professions. The attached minutes from advisory board meetings in **Chemical Engineering** and **Physics** demonstrate the type of program and course review discussions that take place. *(See [attachment 97](#) and [attachment 98](#).)* Academic departments routinely incorporate advisory board recommendations into their curriculums. *(See [Criterion 5.C.2.](#) for more detail.)*

CULMINATING UNDERGRADUATE EXPERIENCES

Kettering also assesses students' educational achievement through the **Culminating Undergraduate Experience** *(CUE)*, typically referred to as the **Senior Thesis**. All students must submit such a project to meet degree requirements. **CUE** assessment measures are designed to ensure that students' work reflects the integration of cumulative knowledge, including that learned in the classroom and through cooperative learning experiences. The thesis must consist of a meaningful project that has *"real-world"* applications with an employer, as a start-up enterprise, or with a faculty researcher. These projects are assessed at several junctures: by the cooperative or experiential learning *supervisor* and the *faculty advisor* at the proposal stage,

during project development, and at completion. An additional assessment often takes place when a student makes an oral presentation of findings, which several employers require. The *faculty advisor* assigns a final grade once s/he is satisfied the project is of significant technical content worthy of four credits. *(See [Criterion 5.C.2.](#) for additional discussion of the CUE.)*

GRADUATE STUDENT LEARNING ASSESSMENTS

Several graduate programs, including the **MBA**, **MS** in **Operations Management**, **MS** in **Engineering Management**, and the **MS** in **Lean Manufacturing** require successful completion of capstone courses that aid in assessing program effectiveness. These courses measure a student's ability to apply cumulative knowledge and skills to a specific work-focused or real-world project. Capstone courses require students to develop an integrated and strategic approach to a project that demonstrates they have acquired mastery of all subject areas within their specific program.

Graduate Business programs *(MBA, MS in Engineering Management, and MS in Operations Management)* require students perform satisfactorily on the **ETS** *(Educational Testing Services)* **Major Field Test** after they have completed all coursework. This proctored exam helps the department assess instructional effectiveness. Faculty use results from this test to develop strategic directions and inform program and course improvements. Beginning in **2014-15**, the department intends to require students complete a pre-program assessment, developed in collaboration with **ETS**, to establish each student's baseline knowledge before taking any master's level courses. Results will be compared to those of the post-program exam and broaden knowledge about program effectiveness as it relates to individuals and cohorts.

The **Graduate Office** collects and analyzes student satisfaction data at three stages during the program: new students *(students who have completed 1-7 credit hours)*; mid-program students *(students who have completed 8-39 credit hours)*; and recent graduates *(students who received their degree within the past two-years)*. *(See [attachment 99](#) for a summary of the survey results over the last five-years).* The **Graduate Office** utilizes this assessment tool to measure service *(e.g., response time to student emails or messages, turn-around times for applications and registrations, etc.)*, satisfaction with the graduate student orientation course, and additions and deletions of academic degree program concentration offerings.

CO-CURRICULAR ASSESSMENT

As previously discussed, in **2009**, the **Student Life** department established learning outcomes for all its co-curricular programs and services. Assessments take place on an on-going basis, depending on the program or service, and map to both university and co-curricular learning outcomes. For example, **Camp COMPASS** *(Campus Orientation Meetings to Prepare for Academic and Social Success)*, a three-day leadership development experience for new students *(who self-select to participate)* provides an opportunity to sharpen skills requisite to collegiate and professional success: leadership, including communicating, critical thinking, and group dynamics *(Student Life outcome #3)* and effective interactions with individuals from different *cultures (Student Life outcome #7)*.

Post-program surveys directly measure participant achievement. After participating in summer and fall 2013 **Camp COMPASS** and our general orientation program, participants rated their own achievements against these outcomes. The average score was 4.7/5.0, i.e., 94% achievement. The average score has remained stable over the past seven years *(2007-2013)*. Further, retention rates among participants reflect their satisfaction with their overall Kettering experience after their first year. In **2010**, first year retention among participants reached 94.1%, versus 88.8% of the entire entering class; second year retention reached 94.1% versus 80.9% for the cohort. In **2011**, first year retention among camp participants reached 98.8%, versus 91.9% of the entire entering class; second year retention reached 86.5% versus 83.6% of the cohort. Clearly, **Camp COMPASS** plays a significant role in retention. **Student Life** is currently exploring the possibility of fully integrating the experience into orientation for all new students.

4.B.3. The institution uses the information gained from assessment to improve student learning.

Recent program reviews demonstrate how the institution uses information gained from assessment to inform improvements to student learning at the departmental level and in the classroom, student support services, and co-curricular programs.

CHEMICAL ENGINEERING

After the conclusion of the **2010-11** academic year, **Chemical Engineering** faculty carried out a comprehensive program review that measured student learning, evaluated assessment tools, and resulted in a variety of curricular improvements to enhance student learning. These included:

1. Curriculum Improvements
   (major and minor)

2. Teaching Improvements

3. Laboratory/Facilities Improvements

4. Student Life Improvements

5. Assessment Improvements

Some of these changes were implemented immediately, with notable success. For example, during the **2011-12** school year, the department added an extra hour classroom time per week to all lectures. At the end of that year, assessment results indicated improved student performance as measured against **ABET Student Outcome** *(SO)* **A**, students' *"ability to apply knowledge of mathematics, science, and engineering."* Seventy-two percent *(72%)* of students met expectations with a score of **3** or higher, against a target of **70%**. Less satisfactory, but perhaps more instructive, are results regarding **ABET SO G**, *"students will have the ability to communicate effectively."* Students averaged **2.8/4**; effectively *"below expectations,"* for the year and lower than the previous year average of **3.3/4**. These scores correspond with findings from co-op employer student surveys which noted decreased performance between the two years. Immediately, the department implemented curricular changes that placed more emphasis on written and oral communication. **Chemical Engineering's** comprehensive assessment plans may be viewed at pages 93-109 of attachment 126.

MATHEMATICS DEPARTMENT

The **Mathematics Department** assessed the math placements of students who entered the university in **Fall 2011** and **Fall 2012** to determine withdrawal and failure rates. Results showed that a high percentage *(30%)* of students entering Kettering were placed in **MATH 100**; a remedial course. *(See attachment 100.)* A review of performance within that course found that ~14% of students failed, effectively delaying or preventing timely progress through their academic program. As a result, the department created **Math 099W**, a five-week online remedial class to redress this problem. Students may take this class before enrolling at Kettering and, upon successful completion, be placed in the first calculus course, **MATH 101**. The department created a website to promote **Math 099W**, which includes a video description of the course. A web page linked to the math placement exam page was created to explain the course *(see attachment 101 or website)*, and a video was made to promote it. *(See the video.)*

A one-year analysis of the success rate of **MATH 099W** indicate that during summer and fall terms of **2012**, 82% *(nine out of eleven)* of the students who attempted the course were successfully placed in **MATH 101X**. Out of the nine, only one failed **MATH 101X**, showing a 90% passing rate in **MATH 101X** among students who passed **MATH 099W**.

In addition, **MATH 100** was identified as a high-risk course, which regularly produced a failure rate of above 15%. To assist students in passing the course and staying on track with their degree program, the department began offering an on-line version of the course *(MATH 100W)*, which students could take during their co-op term. The **MATH 102** course was also identified as a high-risk course *(24% W/F rate in the 2008-2009 AY and 22% W/F rate in the 2011-2012 AY)*. As a result, a **MATH 102X** was created to provide students with extended class hours.

LIBERAL STUDIES DEPARTMENT

Over the course of **Fall 2012** and **Winter 2013** terms, the faculty teaching a required humanities course *(HUMN201)* within the **Liberal Studies** department conducted an assessment of student learning as it specifically relates to the university's critical thinking learning outcome. After conducting an analysis of student achievement according to specific criteria for argumentative essays, the faculty developed a list of improvements for the course to enhance students' ability to write a compelling, thesis-driven essay that demonstrates insightful and original thinking and considers the implications of their argument in well-articulated prose. Improvements include additional instruction and practice in developing thesis statements; in class and in homework assignments. The faculty will assess the efficacy of these enhancements to inform further improvements. *(See attachment 102.)*

4.B.4. The institution's processes and methodologies to assess student learning reflect good practice, including the substantial participation of faculty and other instructional staff members.

Kettering University subscribes to the **AAHE's** *(American Association for Higher Education)* **Principles of Good Practice for Assessing Student Learning**, which begin with identifying *"a vision of the kind of learning we most value for students and strive to help them achieve."* At Kettering, our

mission describes that vision; one that links *"transformative experiential learning opportunities to rigorous academic programs."* The full integration of theory learned in the classroom and practice acquired through cooperative and experiential employment drives assessment of student learning and performance. The university employs a variety of assessment methods, ranging from student performance evaluations carried out by faculty to **The Idea Center's Student Ratings of Instruction**, or faculty evaluations; from surveys developed internally, such as those which query alumni, students, and cooperative employer on a range of topics, to external surveys such as the **Noel-Levitz Student Satisfaction Survey**, **National Student Engagement Survey** and the **Association of College and University Housing Officers-International Survey**, conducted among residents. Industrial advisory boards, focus groups, and faculty and staff retreats provide opportunities to conduct qualitative assessments. Benchmarking against peer institutions, where appropriate and available, provides comparative data and promotes idea generation. As noted, student learning assessments utilize established outcomes, as articulated by the university, specific academic programs and courses, support services, co-curricular programs, and accrediting agencies, as appropriate. Data collection among students take place at various junctures during their college careers *(beyond course performance assessments)*, including evaluations of cooperative employment performance at the end of each work term, after completion of the culminating experience project, and at the time of graduation. Data from several years' assessments guides change and continuous improvement. Within the institution, students, faculty, and staff participate in assessment activities and formulate applications for continuous improvement. Assessment results inform planning and resource allocation decisions.

Examples of good practice may be found in the discussion regarding improvements in chemical engineering, humanities, and math instruction noted previously.

CORE COMPONENTS 4.C. The institution demonstrates a commitment to educational improvement through ongoing attention to retention, persistence, and completion rates in its degree and certificate programs.

Kettering recognizes that the institution's success, as defined by retention, persistence, and completion rates and its ability to recruit new students are inseparable. The university strives to provide an educational environment in which all students persist to graduation and believe they receive value for the investment they and their families make in a Kettering education. It acknowledges that retention to graduation is an on-going, campus-wide responsibility that requires the participation and contributions of the entire campus community; including an alert and attentive administration who work collaboratively with a competent and caring faculty and staff to support students throughout their pursuit of a Kettering degree. The university collects and analyzes data on retention, persistence, and completion rates to measure its relative success, as an institution and in comparison to peer institutions. As described in 4.C. in the concerns section, Kettering has refocused its efforts on developing and sustaining effective strategies for ensuring students' success, as well as the institution's.

These efforts, described below, represent the application of institutional data to the development of learner-centered practices that promote degree achievement. They include intrusive and interventional practices that focus on intellectual engagement—in quality curricular and co-curricular programs—that lead to positive experiences and student satisfaction.

4.C.1. The institution has defined goals for student retention, persistence, and completion that are ambitious but attainable and appropriate to its mission, student populations, and educational offerings.

The university's recent strategic planning process established six-year graduation goals at a minimum 75% by **2019**, the university's centenary. The university views this rate as *"ambitious but attainable,"* given the community's intense focus on student success, the pace at which faculty and staff have worked recently to address challenges, and community-wide embrace of the new mission and the **Four Pillars of Success**; particularly optimizing growth in enrollment.

The retention committee, described in Criterion 4.C.2., is leading these efforts, setting specific goals and making recommendations for their attainment. The university identifies student success as an on-going community-wide responsibility requiring everyone's participation and contributions. Two fundamental questions underlie institutional efforts: Why do students leave? Why do students stay and complete their degrees? Goals will reflect an emphasis on implementation of sustainable yet adaptable strategies and shape resource allocation dedicated to mission fulfillment; most notably those resources directed toward teaching and learning.

4.C.2. The institution collects and analyzes information on student retention, persistence, and completion of its programs.

Kettering University routinely collects and analyzes data on student retention, persistence, and completion to inform planning and implementation of strategies to improve student success. Data collection ranges from overall outcomes to achievement levels in specific courses *(particularly gateway ones)*; from student satisfaction surveys to focus groups; from informal feedback mechanisms to standardized ones. Analysis takes place at all levels of the institution, including at the departmental level, within appointed groups, at the administrative level, and within senior leadership and the **Board of Trustees**. The university empowers employees at all levels to make recommendations and decisions affecting multiple areas of campus that promote student success. It views assessment and evaluation of student retention, persistence, and completion as fundamental to student success, as well as to creating a culture of assessment that promotes continuous improvement campus-wide.

4.C.3. The institution uses information on student retention, persistence, and completion of programs to make improvements as warranted by the data.

Data collection and analysis regarding student retention, persistence, and completion has resulted in several recent improvements and new initiatives. The most prominent of these occurred in the area of academic support services and are discussed at length in 4.C. of the Concerns section. In addition, in **February 2013**, the **Registrar's Office** instituted a registration block system to prevent students from registering for any class that they had previously failed, withdrawn from, or audited two or more times. Registration blocks may only be removed by the **Academic Success Center** *(ASC)* after

students have met with an advisor and successfully completed an academic improvement plan that incorporates strategies for success and a commitment to fulfilling them. Results are forthcoming.

4.C.4. The institution's processes and methodologies for collecting and analyzing information on student retention, persistence, and completion of programs reflect good practice. (Institutions are not required to use IPEDS definitions in their determination of persistence or completion rates. Institutions are encouraged to choose measures that are suitable to their student populations, but institutions are accountable for the validity of their measures.)

Kettering University employs sound methodologies for gathering and analyzing information about student retention, persistence, and graduation that meet generally accepted standards as defined by the **New Leadership Alliance for Student Learning and Accountability**, **Noel-Levitz**, and others. *(See Criterion 4.B.4. for information regarding principles that guide the collection and use of data.)* The university follows the formats prescribed by the **Integrated Postsecondary Education Data System** *(IPEDS)* and compares itself to peer institutions through it, as well as through data provided by the **Association of Independent Technological Universities** *(AITU)* and other sources.

In summer **2013**, the *provost* established a new retention committee; composed of faculty, staff, and students; and empowered it to develop a comprehensive, campus-wide plan that addresses retention, persistence, and degree completion. The committee's structure and charge reflect best practices as articulated by **Noel-Levitz**, which has demonstrated the relationship between such committees and increased retention and persistence to degree completion. The committee's work is already underway.

Drawing on current and planned outcomes assessments, the plan will examine persistence at every level. It will explore teaching, learning, and institutional programs, services, policies, and procedures that impact student success. The plan, which is expected be completed by **July 1, 2014**, will also define *"ambitious and attainable"* goals for retention, persistence, and completion. Preparation for this self-study has proved invaluable in setting a course for the committee's work and will serve as a point of departure for additional data collection and analysis.

CONCLUSION

Since **2007**, **Kettering University** has made significant strides in demonstrating its commitment to the quality of its educational programs, learning environments, and support services. Enhanced and ongoing assessment processes at every level direct improvement that contributes to fulfilling our mission. A refocused commitment to student retention, persistence, and completion pervades our community. Paraphrasing **Vincent Tinto**, that commitment springs from the character of Kettering's educational mission to prepare students for lives of extraordinary leadership and service by linking rigorous academic programs and transformative experiential learning opportunities.

The university's achievements include defining goals, establishing a dashboard of assessment measures, implementing a systematic and comprehensive protocol for data collection and analysis, and establishing pathways to make effective use of assessment data that informs continuous improvement. Kettering has accomplished these steps through

adherence to good practices in assessment and evaluation that produce reliable and actionable data.

Preparation for this self-study reveals that we have made significant strides in institutional assessment. It also reminds us that much work remains to be done to achieve our overarching goal of optimizing growth in enrollment and programs and providing our students with amazing classroom and applied learning experiences that lead to their success, and our own. To ensure the university's success, faculty and staff will prepare a comprehensive teaching and learning plan for the next provost's consideration. It will rely on the knowledge accumulated by many members of the Kettering community over the past several years, as well as the expertise of consultants, most notably **Dr. Dawn Gallinger**, *director* of **Research, Planning, and Assessment** at **Carroll College** in **Helena, Montana**. As noted earlier, once the new *provost* is appointed, **Dr. Gallinger** will advise him or her about the next steps Kettering might take in assessment.

CRITERION FIVE.

THE INSTITUTION'S RESOURCES, STRUCTURES, AND PROCESSES ARE SUFFICIENT TO FULFILL ITS MISSION, IMPROVE THE QUALITY OF ITS EDUCATIONAL OFFERINGS, AND RESPOND TO FUTURE CHALLENGES AND OPPORTUNITIES. THE INSTITUTION PLANS FOR THE FUTURE.

Resources, Planning, and Institutional Effectiveness

Criterion Five. Resources, Planning, and Institutional Effectiveness

The institution's resources, structures, and processes are sufficient to fulfill its mission, improve the quality of its educational offerings, and respond to future challenges and opportunities. The institution plans for the future.

CORE COMPONENTS 5.A. The institution's resource base supports its current educational programs and its plans for maintaining and strengthening their quality in the future.

Kettering today is on very sound fiscal footing, with more than adequate resources to support its current educational programs and to implement new ones. Although Kettering, like a great many private institutions, is dependent on tuition, which today provides 73% of its revenue, the university has been enjoying unprecedented success in fundraising and research funding. The endowment and enrollment have also rebounded. *(See the Introduction section for details).*

5.A.1. The institution has the fiscal and human resources and physical and technological infrastructure sufficient to support its operations wherever and however programs are delivered.

Kettering's financial stability is evident in its audited financial statements. *(See attachments 123, 61, 62 or the website.)* Over the last six fiscal years, the university has consistently exceeded its planned net operating budget targets. *(See attachment 17 for approved and actual operating budgets from 2007 to present.)* The university has a strong cash position *($14.6MM in June 2013)*. Endowment funds are steadily growing with the ten-year performance of the investment portfolio, even with the downturn of **2008**, being 7.1% versus the composite benchmark target of 7.4% set by the investment committee of the **Board of Trustees**. In **June 2013**, the endowment stood at $70.3MM, with $44MM designated as permanently restricted.

Kettering's adoption in **2012-13** of the fixed tuition model has increased net tuition revenue. Audited financial statements show that net tuition revenue from **2010-11** to **2012-13** has grown from $34.1MM to $37.6MM. *(See [attachment 103](#), [104](#), [105](#), [106](#) or [website](#).)*

The **President's Cabinet** meets weekly to assess and address operational needs and opportunities to achieve ongoing greater organizational effectiveness. This evaluation includes consideration of the university's human resource needs. When such need for change is identified, the appropriate **Cabinet** member works with the human resources department to consider possible options and develop a plan of execution. All employment-related changes include a thorough consideration of legal, fiscal, human and operational impact.

Human resource changes may be large or small scale including department reorganizations, staffing increases or decreases, pay adjustments, job modifications, etc. In response to changing needs, the university has implemented several department reorganizations within the past three-years, including the areas of information technology, advancement, cooperative education, auxiliary services, physical plant, marketing and communications and enrollment services. Most of these reorganizations included large-scale adjustments comprising staffing changes, pay modifications and job revisions. As the university continues to assess and adapt to changing organizational needs, frequent smaller-scale employment-related adjustments have also occurred.

More than 67% of the operating budget for **2012-13** was devoted to compensation and benefits. The student to faculty ratio is a healthy 14:1.

2009 – 2013 University Facility Improvements *(Projects 50K or Greater)*	
Vehicle Durability Lab	Renovation of an existing vacant space to support academic research in the area of vehicle durability. Renovations included construction of a vehicle "shaker," control station and support spaces.
Consumer's Primary Cable Replacement	Upgrade of one of our primary electrical underground feeds to campus that was reaching its expected life in order to provide for future infrastructure growth.
Electrical & Computer Engineering Lab Remodeling	Renovation of approximately 13,000sf of existing laboratory space that was dated to promote state of the art academic and research programs.
Recreation Center Chiller Replacement	Removal and replacement of the outdated chiller system that had exceeded its useful life.
Chemical Engineering Lab	Renovations of a vacated space into a teaching & research laboratory for the new Chemical Engineering program.
Swedish Biogas Interior Lab Fit Out	Development of the first of six laboratory's in the multi-tenant laboratory building – The Innovation Center. The Center will focus on applied research in cooperation with Swedish Biogas International.
Innovation Center Parking Lot #4 Development	Removal and replacement of an existing surface lot to develop a new parking and green space to support The Innovation Center.
Classroom Remodeling	Renovation *(including finishes, furnishings, and technological enhancements)* of approximately 12 general classrooms in the Academic Building.
Physics Lab Remodeling	Renovation and expansion of three Physics laboratories to upgrade the labs and enhance circulation in this portion of the building.
Recreation Center Boiler System	Replacement of an outdated boiler system that had exceeded its useful life.
Residence Hall Roof Replacement	Replacement of the roof on the Residence Hall as well as finishes and repairs to the fourth floor.
Campus Center Cafe Remodeling	Remodeling of the Sunrise Cafe to transform a dated "cafeteria" into an inviting modern cafe that enhances student dining experience.
BJ's Lounge & Grill Renovations	Remodeling and combination of two adjacent spaces to create a technology rich, lounge and grill for our campus community accessible 24/7 for studying, lounging, gaming, concerts and events alike.
Einstein Bros Bagels and City of Flint Police Service Center	Remodeling of an existing convenience store in the heart of campus to create an alternative dining location while developing a Police presence to improve the safety and security of the local community.

KETTERING CAMPUS FACILITIES

The **Academic Building** houses classrooms, laboratories, the **Library**, the **Humanities Art Center**, **McKinnon Theatre**, central receiving, printing services, and instructional and administrative offices.

The **C.S. Mott Engineering & Science Center** houses the university's steam plant, an automotive engine test cell, fuel cell center, crash safety center, and an undergraduate automotive design center; and includes the **Mechanical Engineering**, **Biochemistry**, and **Chemistry** classrooms, laboratories including the vehicle durability lab, and instructional offices.

The **Campus Center** houses **Campus Safety**, university dining services, the **Welcome Center**, the **Wellness Center**, the **Campus Store**, **Student Life**, **Women's Resource Center**, and administrative offices.

Kettering's 70,000 square-foot **Recreation Center** has a full complement of aerobic, strength, and sports amenities, in addition to student and alumni lounges. It houses a six-lane swimming pool, four multi-purpose regulation basketball courts, three racquetball courts, one squash court and an 1/8 mile suspended indoor track. Other facilities include an aerobics/dance room, a free-weight room, and a fitness/exercise room that overlooks the pool and the gymnasium. **Kettering Park**, approximately 19.5 acres of land adjacent to the **Recreation Center**, has been developed into four first class softball fields, two lighted soccer/football fields, a jogging path, a pavilion, sand volleyball courts and golf green. Additional land has been designated for future development.

All Kettering freshman students are required to live on campus. **Thompson Hall** provides 437 individual rooms that are connected to form suites. Each room is wired for access to the Internet, campus computer network, phone and cable TV. The lounge, study, laundry, and storage areas are available to the residents, and parking is located next to the building.

In **1998**, **Kettering University** entered into a ground lease and development agreement with **Campus Village Flint, LLC**, providing five acres of land for development of a student apartment complex. Under the terms of the lease, Kettering retains certain rights while **Campus Village** owns and operates the apartments. The first phase, consisting of 12 two-bedroom and 20 five-bedroom apartments, was completed in **July 1999**. The second phase, consisting of 12 two-bedroom and 12 five-bedroom apartments, was completed in **July 2002**. Ownership of the apartments will revert to **Kettering University** upon the expiration of the ground lease in **2032**.

Kettering University completed the construction of the approximately 9,000-square-foot, multi-tenant **Innovation Center** in **2010**. This building supports scientific and technologically-based 'start-up' companies that need dedicated laboratory space during their first three or four-years. The $3.2MM facility was made possible by the support from the **U.S. Department of Commerce**, the **State of Michigan** through the **City of Flint**, the **C.S. Mott Foundation**, and private gifts.

In short, Kettering today is a dynamic organization that constantly assesses internal and market needs for change and how best to make those changes based on systematic, thorough and effective assessment, planning and execution.

The university has an active program to maintain and upgrade its facilities.

(Please see the University Facility Improvements *chart containing a list of the projects with the cost of $50K and greater that have been undertaken since 2009.)*

Kettering's **Physical Plant** serves the university well. Located on approximately 81 acres of land, **Kettering University** consists of six main buildings: the **Academic Building**, the **C.S. Mott Engineering & Science Center**, the **Campus Center**, the **Connie and Jim John Recreation Center**, the **Frances Willson Thompson Hall** and the **Innovation Center**. *(For a fuller description of the campus, see* Kettering Campus Facilities *box.)*

The **Information Technology** *(IT)* department implements the necessary measures to ensure campus-wide system security. The main server room has dual redundancy to guard against power outages. It uses a recently updated **UPS** *(Uninterruptible power supply)* system along with a backup diesel generator that maintains both the power for the servers and the **HVAC** *(Heating, Ventilation, and Air-Conditioning)* system. The university also maintains vigilant security measures to guard against data hacking and other system integrity attacks. Encryption for the production wireless system is used, along with firewalls and security certificates for data sensitive systems. Kettering follows security safeguard recommendations as reported by hired third-party

security audit specialists along with **PCI** *(Payment Card Industry)* compliance for internal monetary transactions.

Campus safety has historically been a top priority for Kettering. Recently, the university implemented additional security measures. In **2012**, all university entrances were equipped with **Kettering ID** card readers, giving building access only to active students and personnel. In the summer of **2013**, the university installed multiple security cameras around campus and built a state-of-the-art security monitoring station in the **Campus Center**. Kettering's **Annual Report** shows a marked decrease in incidents from **2009** to present. *(See attachment 68 and 107 or website.)* The replacement of the convenience store adjacent to campus with **Einstein Bros Bagels** and the **Police Service Center** has transformed the area, drawing both the community and Kettering students and also significantly reducing crime in the area.

5.A.2. The institution's resource allocation process ensures that its educational purposes are not adversely affected by elective resource allocations to other areas or disbursement of revenue to a superordinate entity.

All university funds are designated for educational/general and auxiliary services, with more than 95% of funds dedicated to educational and general services, such as instruction, academic support, research, student services, and institutional services. Of these, more than 50% of expenses are dedicated to instruction and academic support. *(For more information, see Criterion 5.C.)*

5.A.3. The goals incorporated into mission statements or elaborations of mission statements are

realistic in light of the institution's organization, resources, and opportunities.

Kettering has amply demonstrated its ability to act in ways consistent with its new mission and vision statements and its **Four Pillars**. Please see the Introduction for a discussion of the myriad ways that Kettering has achieved many of its most immediate institutional goals and has developed realistic plans for others.

5.A.4. The institution's staff in all areas are appropriately qualified and trained.

The university has institutionalized processes so that staff members have the skills, knowledge and abilities to meet the needs of their position. For example, the hiring process is designed to identify and hire the most qualified candidates for all open positions. When a job opening is identified, the *hiring manager* works with the **Human Resources** department to identify the required and preferred qualifications of the job. This information is captured in the university's **Online Staffing Management System** *(implemented in 2007)* that is used to post the job and screen applicants using each position's specific criterion.

Once hired, the new staff member completes an orientation process, facilitated by the *hiring manager* and the **Human Resources** department. This includes initial training designed for all employees in the areas of safety, harassment prevention, benefits, general policies and university culture. For more specific job requirements, the *manager* communicates regularly with the new *(or the newly promoted)* staff member during the six month introductory period to ensure the employee receives

adequate direction and appropriate training.

The university's performance planning and review process provides the means to reinforce job-related skills, knowledge and abilities and develop new skills for changing job needs. Through this process staff members learn about their specific job expectations and receive an evaluation of their performance. This communication leads to personal development planning so further skill development may occur. Occasionally, staff members are unable to meet the needs of their job though the university's standard planning and review process. In these cases, the *manager* consults with **Human Resources** to identify possible solution strategies, which may include referral to the university's employee assistance provider, formal performance improvement planning, disciplinary action and/or termination of employment.

All university efforts to ensure staff members are appropriately trained and qualified have been refreshed with the implementation of **True Kettering** initiatives. For example, the performance planning and review process has been updated and *managers* have completed performance process training about the revised process and *"best practice"* skills. Likewise, all staff members have received training which communicated expectations for all employees and provided development or these required skills, knowledge and abilities.

New faculty also attend a full-day orientation that covers critical student services and provides faculty with tips on teaching success as well as connect them with more seasoned faculty for mentorship. *(See attachment 108.)*

Both faculty and staff are supported in their on-going professional development throughout their tenure at Kettering. Tenure-track faculty members are assigned *mentors* in the years of preparation for application for tenure and promotion. Faculty development and research funds support research activities and attendance at professional meetings. The university contributes towards the cost of all full-time employees' education. Faculty and staff receive nearly full waivers of tuition *(98 percent)* at Kettering or partial tuition payments to other institutions. *(See attachment 109 or website.)* Also see Criterion 3.C. for additional information..

5.A.5. The institution has a well-developed process in place for budgeting and for monitoring expense.

Kettering has effective processes in place for budgeting and for subsequent monitoring of revenue and expense activity to support good stewardship of resources. In creating an operating budget proposal for the **Board of Trustees'** approval, the university employs a modified zero-based budgeting process with a bottom-up approach. The process is informed by the overarching goals that flow from university-wide planning processes and by the directly related annual priorities established by the president and his cabinet. Once the board has approved the operating budget, the appropriate members of the staff monitor the revenue and expenses throughout the fiscal year, using quarterly forecasts supported by campus-wide input.

The creation of the annual operating budget begins in late fall with a macro look at key factors such as enrollment projections; market competition relative to pricing; financial aid discounting strategies; market conditions for utilities expense, employee benefit expense, and contracted services; endowment support; and unrestricted

giving support. The **Resource Advisory Committee** and the **President's Cabinet** review the impact of any new program initiatives flowing from planning processes that require ongoing financial support. In light of the key macro factors and any new initiatives, the *president* makes a recommendation about tuition for the upcoming fiscal year to the **Board of Trustees** for approval at its winter meeting. This allows for recruitment strategies and financial aid award processes to be fully implemented throughout the spring and summer.

The budget process then proceeds to a micro level with campus-wide input to gauge the magnitude of funding needed in each area to support programs and related supportive services. Each *manager* or *department head* works with his/her team to develop a proposed operating budget for submission to the *vice president* for the area. To help focus resources and attempt to generate some flexibility in reassigning resources over time, *managers* and *department heads* are asked to justify funding in excess of a set base percentage of the prior year's operating budget. For **2012-13** the base percentage was set at 80% and for **2013-14** the base percentage was set at 90%. *Vice presidents* then review and rebalance the budget proposals for the departments within their areas and work with their respective teams to arrive at an area-wide budget proposal. These area-wide budget proposals are shared with the other *vice presidents* for review. The *cabinet* working with the *president* meets to review, discuss and rebalance resources among their areas to arrive at a balanced overall operating budget recommendation to the president. An eye is also given to the potential future impact of budget proposals, so as to foster long-term financial health. The *president* then makes his budget recommendation to the **Board of Trustees** for approval at its **June** meeting for the fiscal year beginning **July 1**.

Once the fiscal year is underway, revenue and expenses are closely monitored, so that any necessary adjustments can be made to maintain a balanced operating budget outcome for the year. Primary revenue related factors such as tuition and financial aid awards are gauged at the beginning of the summer and fall terms and projected for the year. If necessary, major expense areas can be adjusted with respect to timing or magnitude, such as capital project spending or the filling of staff vacancies. To help ensure that departments stay within their respective operating budgets, any spending above that initially approved on a given expense line within a budget center must have the source of funding identified. For example, excess spending on a department's travel expense line could be funded by a transfer of budget funding from a department's contracted services expense line. *Managers* and *department heads* provide quarterly forecasts of anticipated operating expenses in their departments to assist in the creation of an institution-wide quarterly operating budget forecast. The combination of monitoring, controls, and forecasts helps to ensure a balanced outcome for the annual operating budget. *(See attachment 110 and 111.)*

The participatory budgeting process outlined above helps to ensure that a wide cast of voices is heard, that budgeting is tied to planning, and that funding within the operating budget is appropriately prioritized. Accountability for operating budget activity serves to increase transparency and enhance communication across the campus with respect to good stewardship of resources.

While the **2011-12** fiscal year ended in deficit position, as was planned and approved by the **Board of Trustees** for strategic reasons, the deficit was much smaller than planned and easily covered by the university's strong cash reserves. The subsequent **2012-13** operating budget using the above process resulted in a net surplus that surpassed the budget plan. The operating budget situation for **2013-14** appears to be on track to meet or exceed the budget plan. The processes and results have helped the campus and the **Board** gain an improved sense of financial stability and confidence in approaching the future.

CORE COMPONENTS 5.B. The institution's governance and administrative structures promote effective leadership and support collaborative processes that enable the institution to fulfill its mission.

Since **President McMahan's** arrival, Kettering has focused on clarifying governance *(For example, through the board's revision of institutional Bylaws (see attachment 23 or website.), by including faculty and student representatives on trustee committees and—as described below in Criterion 5.B.1. by forming various advisory groups comprised of faculty, staff and sometimes students)*, on enhancing Kettering's administrative effectiveness and on creating collaborative, transparent processes in the areas of planning and budget. The *vice presidents* today not only work collaboratively on behalf of the institution, each has also focused on fostering greater effectiveness and collaboration within her or his own area. *(See the Introduction for a more detailed discussion of these matters.)*

5.B.1. The institution has and employs policies and procedures to engage its internal constituencies—including its governing board, administration, faculty, staff, and students—in the institution's governance.

Kettering today employs policies and procedures that engage its internal constituents, abandoning the historical top-down budgeting and planning models. *(See the Introduction for a more detailed discussion of both the budgeting and planning processes.)*

Kettering has also involved faculty, staff and students in various institutional planning and positioning initiatives. Two recent examples will illustrate the point. Members of the **Art & Science** firm spent two-days on campus in **October 2013** meeting with students, faculty and staff in preparation for launching their market research. The firm is now working with a steering committee comprised of faculty and staff. As part of its work on a comprehensive campus master plan, the **SHW Group**, a leading national architectural, engineering, and planning company, similarly spent several days on campus in **May 2013**, interviewing representatives from across the university.

5.B.2. The governing board is knowledgeable about the institution; it provides oversight for the institution's financial and academic policies and practices and meets its legal and fiduciary responsibilities.

The board-approved restated **Bylaws** *(September 14, 2012)* detail the *trustees'* legal and fiduciary responsibilities and the board's organization, including its committees, and its functioning. *(See Criterion 2.C. and University Governance Structure chart for a fuller discussion of the board's organization and functioning.)*

In **2012**, the **Board of Trustees** also approved a reorganization of all **Board** committees to better reflect the operations and needs of the university. The revision reduced the number of **Board** committees to six from nine, and included the creation of a fully standalone **Audit Committee**. At the same time, full charters articulating the specific purpose, organization, roles, and responsibilities were developed and approved for every standing committee and subcommittee of the board. *(See University Governance Structure chart.)*

As described in Criterion 2.C. the **Board of Trustees** meets three times/year to conduct the university's business and in a two-day retreat annually to discuss strategic issues. Committees meet between board meetings as necessary. In **2012**, the **Board** instituted a new *trustees'* orientation session. New *trustees (and some experienced trustees)* now spend a day on campus, meeting with the *president* and members of the *cabinet* to discuss the functioning of the university and its strategic challenges and opportunities, augmenting the previous practice of simply giving trustees a handbook outlining their responsibilities.

Appropriate *trustee* committees provide oversight for the institution's financial and academic policies and practices. For example, the **Administration and Finance Committee** provides oversight for financial policies and practices. Meeting at least quarterly, this committee reviews the *president's* recommended annual operating budget and then makes its recommendation to the full **Board**. It also reviews the quarterly management financial statements and budget forecast projections to year end. The **Audit Committee** reviews the annual audit conducted by **Plante & Moran**, meets with the *auditors* and reports the result of the audit to the full

Board. The three most recent years of audit results are posted on the university website. *(See attachment 61, 62, 63 or website.)* This committee also reviews **IRS Form 990** *(Organization Exempt From Income Tax)* and reports to the full **Board of Trustees**. Forms for the three most recent years are posted on the university website as well. *(See attachment 116, 117, 118 or website.)* The **Subcommittee on Investments** is responsible for the investment and management of all investment assets of the Corporation. It appoints independent investment *advisors* or *managers* whom it authorizes to invest and manage funds of the **Corporation**, develops university investment policy guidelines *(including asset allocation strategy)* for approval by the **Administration and Finance Committee** and ultimately the full **Board** and reviews and reports all investment results. *(See attachment 119.)*

The **Academic Affairs Committee** oversees all academic programs and approves all new programs, as described in Criterion 2.C.4.

In addition to the ways noted above, the **Board of Trustees** meets its legal and fiduciary responsibilities in a variety of specified ways. For example, it appoints the *president* and approves key administrative positions, faculty promotions and tenure, fundraising priorities, enrollment targets and the financial aid discount.

5.B.3. The institution enables the involvement of its administration, faculty, staff, and students in setting academic requirements, policy, and processes through effective structures for contribution and collaborative effort.

According to the university's **Bylaws** and described in detail in Criterion 2.C.4. *"Subject to the direction of the*

UNIVERSITY GOVERNANCE STRUCTURE

- Bylaws *(attachment 23)*

- Executive Committee *(attachment 25)*

- Audit Committee *(attachment 26)*

- Academic Affairs Committee *(attachment 27)*

- Subcommittee on Enrollment *(attachment 28)*

- Subcommittee on Student Life *(attachment 29)*

- Administration and Finance Committee *(attachment 30)*

- Subcommittee on Investments *(attachment 31)*

- Advancement Committee *(attachment 32)*

- Trustees and Governance Committee *(attachment 33)*

- University Board of Trustees *(attachment 112)*

- President McMahan *(attachment 113)*

- Officers of the University *(attachment 114)*

President and of the Board, the Faculty Senate shall have general supervision over all educational matters concerning the University as a whole." The **Faculty Senate** holds weekly open meetings, which enable the faculty to consider academic matters with administrators and students who serve as *ex-officio members* or as *representatives* on the **Faculty Senate** and its committees. The **Faculty Senate** in recent years has approved such academic matters as establishing the new applied biology program, implementing **IDEA** for teaching evaluations, expanding the options for the culminating undergraduate experience, and the redesign of the **First Year Experience** course. *(See Criterion 3.C., 4.A. and 4.B. for more details.)*

Some members of the staff, particularly those who provide academic support, contribute to the academic programs in several ways. They can work through their *supervisors* to bring their ideas forward to their respective *vice president* and the *provost*. They can work collaboratively with faculty members and as members of curriculum advisory teams. They can also bring ideas to the **Faculty Senate** for its consideration.

Kettering students have an opportunity to give voice to their thoughts about academic policies through their representation in **Kettering Student Government** *(KSG)* and through their non-voting member on the **Faculty Senate**. The **Academic Council**, a subgroup of **KSG** creates and evaluates proposals relating to the university policies and practices, investigates academic quality issues, hosts campus student forums and recommends courses of action on academic issues. Due to the structure of the Kettering curriculum, sections **A** and **B** have separate representation within **KSG**, although both **KSG** sections have recently developed and adopted a model for sharing and mirroring agendas, structures and

processes to create more continuity across sections. Additionally, the *president* consults regularly with students though the **President's Student Advisory Council**, an appointed group that represents a broad cross-section of students in various majors and at all levels.

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CORE COMPONENTS 5.C. The institution engages in systematic and integrated planning.

Please see the Introduction section and Criterion 2.A., 2.B. and 2.D. for a detailed discussion of how Kettering today engages in systematic and integrated planning.

5.C.1. The institution allocates its resources in alignment with its mission and priorities.

Please see the Introduction section for a detailed discussion of how Kettering today is allocating its resources in alignment with mission and priorities.

5.C.2. The institution links its processes for assessment of student learning, evaluation of operations, planning, and budgeting.

Kettering links its processes for assessment of student learning, evaluation of operations, planning, and budgeting. Various needs are identified within the individual units of the university. These needs are included in the strategic planning process and addressed during the budgeting process. *(See 4.C. in the Concerns section.)* A few other examples follow:

- As it developed the **Chemical Engineering** program, the university re-deployed faculty resources and invested $750K to design and construct the first laboratory. Now in its fifth year, the program has grown to 99 majors the **Fall 2013** and has had two graduating classes with 12 students in **2011-12** and 11

in **2012-13**. All are either employed or in graduate/medical school. *(See attachment 120.)*

- The **Mott** proposal funded the initial development of the new **Applied Biology** program launched in **July 2013**, with the understanding that the university would each year of the grant pick up an increasing share of support for the program and fully fund it at the end of the grant period in **2015**. Kettering's budget **Pro-Formas** for **2014-15** and **2015-16** reflect this commitment.

5.C.3. The planning process encompasses the institution as a whole and considers the perspectives of internal and external constituent groups.

The inclusiveness of Kettering's current planning processes has been described throughout this document. For a detailed discussion of the inclusion of internal constituents, see Criterion 1. For a discussion of Kettering's expanded involvement in **Flint** and the region, see Criterion 1.D.

5.C.4. The institution plans on the basis of a sound understanding of its current capacity. Institutional plans anticipate the possible impact of fluctuations in the institution's sources of revenue, such as enrollment, the economy, and state support.

Kettering has adopted a conservative approach to budgeting, building its expectations for revenue on realistic goals for enrollment, net tuition revenue, gifts and grants. Through its facilities master planning process, the university understands its current capacity in terms of the physical plant and the facilities it needs as it adds new programs and grows enrollment. Kettering believes that the market research to be done by **Art & Science** will give the institution guidance about how

most effectively to expand its recruitment efforts. This project is also intended to provide Kettering with data that will inform future strategic decisions.

5.C.5. Institutional planning anticipates emerging factors, such as technology, demographic shifts, and globalization.

As a **STEMs** institution, Kettering is particularly cognizant of emerging trends in technologies of all sorts, both in order to maintain state-of-the-art laboratories for students and faculty and also to be sure that Kettering students are aware of the trends in their areas of study. The **Admissions Office** is acutely aware of demographic shifts, which will also be part of the **Art & Science** study. Kettering is keenly aware of globalization, both in terms of student understanding and also in terms of its focus on recruiting greater numbers of international students. **Kettering Global**, described in the Concerns Section is intended to focus intentionally on the questions of technology and globalization.
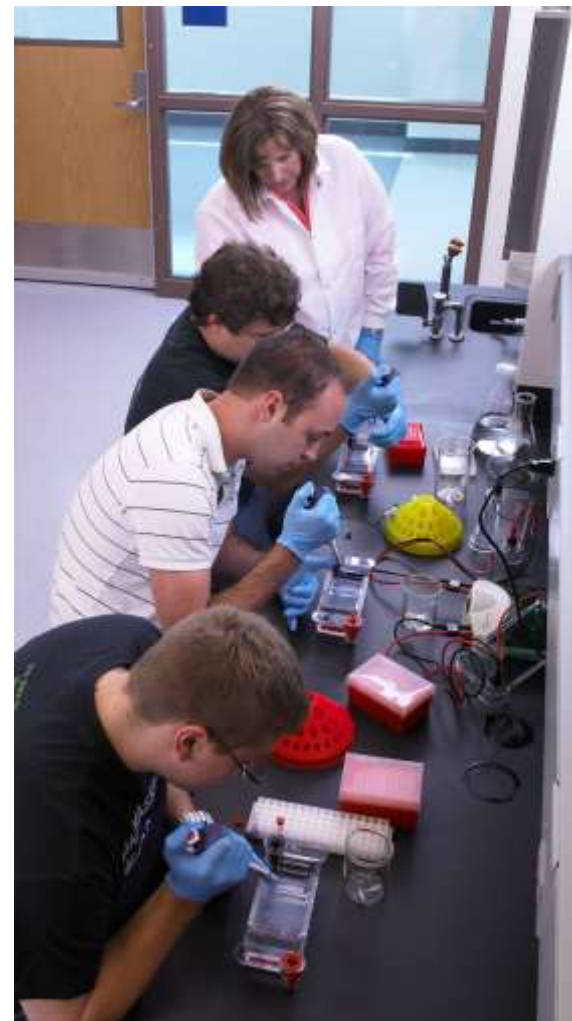
CORE COMPONENTS 5.D. The institution works systematically to improve its performance.

Kettering has embraced ongoing inclusive strategic planning informed by an understanding of the higher education landscape as opposed to creating a static strategic plan. The **True Kettering** campaign is meant to reinforce for all members of the campus community Kettering's commitment to its core values. The

university is also committed to ongoing professional development for its faculty and staff.

5.D.1. The institution develops and documents evidence of performance in its operations.

5.D.2. The institution learns from its operational experience and applies that learning to improve its institutional effectiveness, capabilities, and sustainability, overall and in its component parts.

In **2012**, the **Office of Institutional Effectiveness** *(OIE)* implemented a structured way to track university-wide goal setting and assessment, incorporating assessment data into the **OIE Plan and Assessment** reports for **2011-12** and **2012-13**. In **2013-14**, the **Four Pillars of Success** were incorporated as guiding principles in the planning process and are now included in the reports. **OIE** posts its annual reports on its **Blackboard** website. The **Planning and Assessment Council** also sponsors workshops for all assessment leaders focused on how they can engage those who report to them in the planning process and goal setting. The **True Kettering** campaign has helped the community to understand both the shared vision and also that planning is an intentional systematic and ongoing process consistent with the university's major goals. The **OIE Plan and Assessment** houses all units' goals and assessment and therefore acts as the campus' guiding document for continuous improvement.

Individual departments also now monitor their operations and assess their level of effectiveness in providing their required services. A few examples will illustrate the point:

- The **Academic Success Center** *(ASC)* tracks the number of tutoring appointments across disciplines,

days of week, and time of day to identify optimal coverage needs.

- In **2011**, the **Business Office** introduced a new process of financial monitoring that gives managers greater awareness of their on-going financial status and needs and allows them to plan accordingly. The process further calls for *managers* to submit quarterly budget forecasts to year-end to the **President's Cabinet** and ultimately to the **Administration & Finance Committee** of the **Board of Trustees.** *(See [attachment 111](#).)* This new process had led to greater awareness and accountability on the part of the *managers*.

- Academic departments monitor their performance through assessment of student learning and teaching effectiveness. Departments collect and review data on student course performance.

- The university uses periodic assessments of student and employee satisfaction to identify and address areas in need of improvement. These include the **Noel-Levitz Student Satisfaction Survey**, the **National Survey of Student Engagement** *(NSSE)*, the **Employee Satisfaction Survey** and the **Faculty and Staff Engagement Assessment** of **2013**.

Conclusion

Kettering in **2013** is a revitalized institution with a strong foundation and a bright future. The university is financially sound, having strengthened and diversified its resource base. The campus community was actively involved in the visioning process that led to a restated mission, set Kettering's direction and defined its core values. Enrollments and the endowment both have rebounded. There is a new transparency and inclusiveness in terms of planning budgetary and operational matters.

The campus community can take great pride in how much it has accomplished through on-going, data-informed and collaborative planning and action in such a short time. For example, Kettering has in just a few years accomplished the following:

- Developed new mission and vision statements, clarified its core values, and created the **Four Pillars of Success**, which today guide the university in its planning and its actions.

- Made significant strides in linking planning, budgeting, and assessment.

- Contributed significantly to the revitalization of **Flint** and the region.

- Has completed a new master plan.

- Significantly improved net tuition revenue.

- Was, in the *president's* first year, awarded a remarkable $15.5MM over three-years from the **C.S. Mott**

Foundation to fund Kettering's proposal for an integrated plan to transform the university.

- Was awarded participant institution status-in **U.S. Ignite** and received a significant gift of state of the art equipment providing state-of-the-art technology to **Kettering University** and to **Flint**.

- Significantly improved fundraising and alumni giving.

- Increased collaboration and transparency in many university processes including revising its budgeting process so that it is inclusive and transparent, involving managers and department heads from the outset of the process.

- Implemented a successful fixed tuition model.

- Renewed its commitment to the quality of the educational experience by developing a greater coherence between co-op/experiential learning and classroom and on-campus learning.

- Expanded the culminating undergraduate experience options beyond the traditional thesis to foster enhanced student learning and to eliminate unnecessary obstacles to graduation.

- Increased the number of online courses.

- Began using the **Common Application**.

- Began the process of sophisticated market research to inform the University's positioning, admissions and financial aid practices.

- Developed an effective employee performance process.

This self-study has been one more step in Kettering's current commitment to examine all aspects of its operations, with the goals of embracing best practices and of offering students the best education possible. As a result, the university recognizes that a number of areas require additional and ongoing attention, particularly a more robust system of faculty evaluation and achieving the next step in terms of integrating assessment data with planning at all levels.

Both of these areas will benefit from the leadership of and will be priorities for the new *provost*. Kettering will also this spring conduct a national search to identify a new *senior-level administrator* who will take the lead on launching **Kettering Global**. The president has also engaged **Dr. Dawn Gallinger**, *Director of Research, Planning, and Assessment* at **Carroll College**, who has been

a member of 15 **HLC** accreditation teams and who is nationally recognized in the field of assessment, to advise the new *provost* about the next steps Kettering might take in assessment.

The campus community and the **Board of Trustees** are keenly aware of Kettering's strengths and its potential but also of the challenges that it and all of higher education now face. Although optimistic about its future, the university fully understands and embraces its responsibility to all its constituents and especially to its current and future students.

On a more personal note, those of us involved in writing this self-study are genuinely optimistic that the Kettering faculty, staff and trustees will continue—with energy, dedication and integrity—to strive to fulfill the university's noble mission, realize its ambitious but realistic vision, be true to its core values and achieve its strategic goals.

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- **Ms. Betsy Homsher**, *Vice President of Student Life & Dean of Students*

- **Dr. Edwin Imasuen**, *Director, Institutional Effectiveness*

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- **Dr. Ada Cheng**, *Associate Professor, Mathematics*

- **Ms. Beth Covers**, *University Controller*

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