



**BIOLOGICAL CHEMISTRY**  
UNIVERSITY OF MICHIGAN

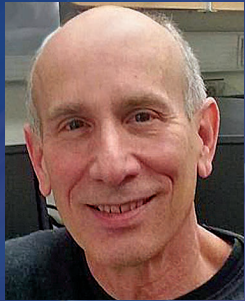
**News &  
Review  
2016**



# Letter From the Chair Dr. Dan Goldman

Dear Colleagues and Friends of Biological Chemistry;

Welcome to our annual newsletter. As you read through the newsletter, I hope that you enjoy learning about the various activities that took place in our department over the past year.



As many of you know, this was my first year as interim chair and I owe a huge thanks to faculty, staff and students who helped me maneuver through the intricacies of running a department and made my job so much easier to do. We are fortunate to work with such a dedicated and collegial group of people. I am happy to report that Sherry Cogswell is our new Chief Departmental Administrator. Sherry came to us from University Audits and as a result she has a wealth of knowledge about how the University and Medical School works. We are very lucky to have such a capable person lead our administrative team.

*As many of you know, this was my first year as interim chair and I owe a huge thanks to faculty, staff and students who helped me maneuver through the intricacies of running a department and made my job so much easier to do.*

I am also pleased to inform you of our success in hiring two new junior faculty, Yan Zhang and Kaushik Rangunathan. Yan and Kaushik will be joining our department early in 2017. Both were

selected as Biological Scholars, which is reserved for the Medical School's most outstanding recruits.

Dr. Zhang was recruited from UMass where she did her postdoctoral studies in Erik Sontheimer's lab studying CRISPR-Cas systems. These are RNA-guided, genetic interference pathways in prokaryotes that enable acquired immunity against invasive nucleic acids. More recently, CRISPR-Cas systems provide tools for genome engineering in eukaryotes. Yan will continue to explore this fascinating system as a new faculty member at Michigan.

Dr. Rangunathan comes from Daniel Moazed's lab at Harvard where he investigates how histone modifications and histone interacting proteins result in stable memories of gene expression that can be passed on to new generations. Understanding the mechanisms of epigenetic inheritance is crucial to understanding cellular memory and Kaushik will continue to explore this remarkable process in his lab at Michigan.

As you may know, Biochemistry, Human Genetics, and Cellular and Developmental Biology, all have interim chairs. This year the Medical School initiated searches for new Chairs for each department and a fantastic group of scientists have recently been visiting campus. We will keep you updated on the Biochemistry Chair search as we learn more.

In our newsletter you will learn about a new cohort of Ph.D. and M.S. students joining our department and those that graduated this year. Also included in this year's newsletter are updates on student and faculty activities and awards, and our endowed lecture series. If you haven't done so yet, please visit our web page at <https://medicine.umich.edu/dept/biological-chemistry> where you can find more news and details about the department.

I would like to conclude with a reminder that we are interested in hearing from you. Our department members and the friends of the department would love to keep abreast of what you are up to. Please send correspondence to my email address: [neuroman@umich.edu](mailto:neuroman@umich.edu).

I wish you a safe, healthy and happy holiday season.

With warm regards,

Dan Goldman

# Janet Smith Receives 2016 Distinguished Faculty Lectureship Award

Janet L. Smith, Ph.D., Margaret J. Hunter Collegiate Professor in the Life Sciences and Professor of Biological Chemistry received the 2016 Distinguished Faculty Lectureship Award in Biomedical Research from U-M Medical School. This award is the highest honor bestowed upon a faculty member for research in the biomedical sciences by the Medical School. Dr. Smith was recognized for her numerous significant research accomplishments, her outstanding contributions to mentoring and education, and her exemplary leadership, particularly in the structural biology community.



Dr. Smith has had a major influence on the field of protein structure determination and structural enzymology. She is highly regarded as a key developer of the multi-wavelength anomalous diffraction (MAD) method and SAD, its single-wavelength counterpart, widely used methods for de novo macromolecular phase determination. She led the development of world-leading beamlines for both micro-crystallography and SAD/MAD and is Scientific Director of the NIGMS and NCI beamlines at the Advanced Photon Source at Argonne National Laboratory.

She has collaborated to define the molecular mechanisms underlying modular polyketide synthases, and to make important contributions to our understanding of the structure and function of essential viral proteins. Recently, Dr. Smith published the structure of an essential flavivirus protein that may open the door to new diagnostics or vaccines for West Nile and dengue viruses (*Science*, 2014) and for Zika virus (*Nature Structural Molecular Biology*, 2016). Among her many awards, she was named a fellow of the American Association for the Advancement of Science in 2007, and from 1998-2008, she was an NIH MERIT award recipient. Finally, Dr. Smith is also an exceptional mentor to Biological Chemistry and Chemical Biology graduate students, post-doctoral scholars, and junior faculty at Michigan and beyond, giving generously of her time and research expertise.

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## On the Cover

Image provided by Dr. Nils Walter. For more details please see Rinaldi, A.J., Lund, P.E., Blanco, M.R. and Walter, N.G.\* (2016) The Shine-Dalgarno sequence of riboswitch-regulated single mRNAs shows ligand-dependent accessibility bursts. *Nat. Commun.* 7, 8976.

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at University of Michigan



# The Endowed Lectureships: 2015-2016

## William E.M. Lands Lectureship on the Biochemical Basis for the Physiology of Essential Nutrients

**David Sabatini, M.D., Ph.D.**

October 4, 2016

*"Regulation of Growth by the mTOR  
Pathway"*



**Dr. David Sabatini's** laboratory studies the mechanisms that regulate mammalian growth and metabolism. His group has also developed novel, high throughput technologies for biomedical research.

A long-term interest of his laboratory is in the signaling pathway anchored by the mTOR kinase that Dr. Sabatini identified as an M.D./Ph.D. student with Dr. Solomon Snyder at Johns Hopkins Medical School. mTOR is the abbreviation for "mammalian Target of Rapamycin." The mTOR network is a central regulator of growth, metabolism, and aging. This pathway is dysregulated in common diseases including cancer and diabetes. Work in Dr. Sabatini's laboratory has led to the identification of most of the established components of the pathway, including the mTORC1 and mTORC2 complexes, and to an understanding of their cellular and organismal functions. In recent years his laboratory has discovered the amino acid sensors and signaling molecules that signal amino acid sufficiency to mTORC1. The discovery of the Rag-Ragulator complex as a lysosome-associated machine that signals amino acid levels to mTORC1 revealed a key role for the lysosome in nutrient-sensing. His identification of rapamycin-resistant functions of mTORC1 and mTORC2 prompted the development of a new class of compounds that inhibit both pathways and are now in clinical trials as anti-cancer agents. In related work *in vivo*, David's laboratory unraveled molecular mechanisms through which fasting/feeding regulate organ physiology, including hepatic ketogenesis and intestinal stem cell self-renewal, as well as tumor growth. Dr. Sabatini is also interested in how the metabolism of small molecules affects growth control. His group has studied the role of the serine biosynthetic pathway in cancer and used genetic screens to find that aspartate synthesis is an essential function of mitochondria in cell proliferation.

Another major interest of Dr. Sabatini is in technology development. His lab has pioneered methods for purifying unstable protein complexes and developed cell-based microarrays for high throughput screening of cDNAs. His group also developed genome-scale RNAi and CRISPR/Cas9 libraries that are now widely used.

David is a Member of the Whitehead Institute for Biomedical Research, Professor of Biology at the Massachusetts Institute of Technology, and an Investigator of the Howard Hughes Medical Institute. He is also a Senior Associate Member at The Broad Institute MIT and Member of the Koch Institute for Integrative Cancer Research at MIT. His distinctions include being named a W. M. Keck Foundation Distinguished Young Scholar, a Pew Scholar and a TR100 Innovator. In addition, he has received numerous awards including the Paul Marks Prize for Cancer Research (2009), the Earl and Thressa Stadtman Scholar Award from ASBMB (2012), the Feodor Lynen Award from Nature (2013), the NAS Award in Molecular Biology (2014), and the Colin Thomson Memorial Medal (2014). Dr. Sabatini was recently elected to the National Academy of Sciences.



## Martha Ludwig Lectureship in Structural Biology

**Cynthia Wolberger, Ph.D.**

April 26, 2016

*"How SAGA Reads, Writes, and Erases the Histone Code"*



**Dr. Cynthia Wolberger** is Professor of Biophysics and Biophysical Chemistry at the Johns Hopkins University School of Medicine. Dr. Wolberger received her A.B. in Physics from Cornell University and her Ph.D. in Biophysics in 1987 from Harvard University, where she did thesis work on the structural basis of protein-DNA interactions with Stephen Harrison and Mark Ptashne. After a postdoctoral fellowship at the University of California, San Francisco with Bob Stroud, she did further research on the crystal structure analysis of homeodomain-DNA complexes in the laboratory of Carl Pabo at Johns Hopkins and joined the faculty there in 1991.

Dr. Wolberger was a recipient of the David and Lucile Packard Fellowship for Science and Engineering, a March of Dimes – Basil O'Connor Starter Scholar Award and an American Cancer Society Junior Faculty Award and was a Howard Hughes Medical Institute Investigator from 1994 - 2014. She has done pioneering work on the structural basis for combinatorial regulation of gene expression, the molecular mechanisms of the sirtuin family of protein deacetylases and on ubiquitin signaling. A current focus of the lab is on mechanisms by which ubiquitin plays a signaling role in transcription and in the DNA damage response.

Dr. Wolberger currently serves on the Editorial Boards of *Structure*, *eLife*, *Protein Science*, *Faculty of 1000* and *Current Opinion in Structural Biology* and is a coauthor of the textbook, *Molecular Biology: Principles of Genome Function*. She has served on review panels for both the NIH and NSF and is Chair of the Advisory Committee of the RCSB Protein Data Bank. Dr. Wolberger is a recipient of the Dorothy Crowfoot Hodgkin Award of the Protein Society and is a Fellow of the American Association for the Advancement of Science.

## G. Robert Greenberg Lectureship in Biological Chemistry

**JoAnne Stubbe, Ph.D.**

May 3, 2016

*"Radicals: Your Life in Their Hands"*



**Dr. JoAnne Stubbe** is the Novartis Professor of Chemistry and Biology at the Massachusetts Institute of Technology. She received her B.A. in Chemistry from the University of Pennsylvania, her Ph.D. in Organic Chemistry from The University of California, Berkeley with Dr. George Kenyon, and was a postdoctoral fellow at UCLA with Dr. Jules Rebek. Dr. Stubbe became an Assistant Professor of Chemistry at Williams College in 1972 and Assistant Professor of Pharmacology at Yale University School of Medicine in 1977. In 1980 she was recruited as a Professor of Chemistry at the University of Wisconsin, Madison, and then moved to MIT in 1987 where she is presently.

Dr. Stubbe has won numerous awards including NIH predoctoral and postdoctoral fellowships, and an NIH Career Development Award, The National Academy of Sciences Award in Chemical Sciences, the Protein Society Emil Kaiser Award, the ACS Nakanishi Award, the National Medal of Science, The Welch Award in Chemistry, Yale First Distinguished Woman Science Award, and most recently the A.I. Scott Award for Excellence in Biological Chemistry Research from Texas A&M University.

The Stubbe lab works to help explain the mechanisms of some of nature's most complex and important enzymes. Their most noted work defines how nature harnesses the reactivity of free radicals to carry out difficult chemistry with exquisite specificity. They continue to unravel the free radical chemistry of ribonucleotide reductases, essential in the transformation of RNA building blocks to DNA building blocks. Other areas of research for the Stubbe group include the mechanism of bleomycin, the mechanisms of iron and manganese metallation of proteins and regulation and prevention of mismetallation of metallo-cofactors in model organisms.

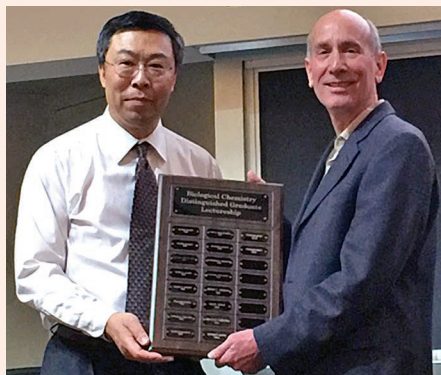


### The Distinguished Graduate Lecture

**Pengbo Zhou, Ph.D.**

May 17, 2016

*"Proteolytic Control of DNA Repair and Tumorigenesis"*



**Dr. Pengbo Zhou** received his Ph.D. in biological chemistry from the University of Michigan in 1994. He performed his Ph.D. thesis studies with faculty mentor Dr. Dennis Thiele. He carried out his postdoctoral research with Dr. Elaine Fuchs at the University of Chicago where he made the initial discovery of the lymphoid enhancer factor (LEF1) transcription factor of the WNT signaling pathway that controls epithelial-mesenchymal interactions and cell fate specification of skin and hair follicles. In 1996, he joined Dr. Peter Howley's group at Harvard Medical School, where his studies revealed a fundamental auto-ubiquitination mechanism that governs the dynamic action of the SCF (Skp1, Cullin 1, F-box-containing substrate receptor and Rbx1/ROC1) ubiquitin ligase. Dr. Zhou also pioneered the development of the "protein knockout" technology, which harnesses the SCF ubiquitination machinery to target degradation of cellular proteins at will.

Dr. Zhou joined the faculty at Weill Cornell Medical College, Cornell University in 1999 and is currently Professor with tenure in the Department of Pathology and Laboratory Medicine. He directs research investigating the role of the Cullin 4 family of ubiquitin ligases in regulating fundamental cellular pathways, and how loss of these ubiquitin-proteolytic control mechanisms leads to tumor development. Using a combination of biochemical, cell biological and mouse genetic approaches, his group identified multiple targets of CUL4A that govern the threshold levels of DNA repair, tumorigenesis, as well as the self-renewal, expansion and differentiation of hematopoietic stem/progenitor cells. Another interest of Dr. Zhou's group is to further develop the protein knockout system as a tool to interrogate the function and regulation of key cellular proteins, and to explore protein knockout as a means for therapeutic intervention of human diseases.

During his graduate studies at the Department of Biological Chemistry, Dr. Zhou received the 1992 Rackham Predoctoral Fellowship, the 1992 Lee Murphy Memorial Award and Loeb Predoctoral Fellowship. Dr. Zhou was the 1996 Special Fellow and the 2005 Scholar of the Leukemia and Lymphoma Society of America, the 2000 Kimmel Scholar, and received the Mary Kay Ash Charitable Foundation Award, the Dorothy Rodbell Cohen Foundation Award for Sarcoma Research, and the 2007 Irma T. Hirsch Career Scientist Award.



# New Joint Faculty Appointments in Biological Chemistry

**Wei Cheng, Ph.D.** was appointed as an Associate Professor in the Department of Biological Chemistry in June of 2015. He currently also holds an appointment as Associate Professor in the Department of Pharmaceutical Sciences and in the Department of Biophysics.



Associate Professor in 2014. At the same time he was granted an appointment in the Department of Biophysics, and most recently in our Department.

Dr. Cheng's research interests include mechanisms of diseases at the molecular

and cellular level, and he uses basic discoveries to guide his research on the development of new prophylactic or therapeutic approaches. A hallmark feature of his work is interdisciplinary; he uses techniques rooted in physics, chemistry, biology and engineering for his research, in particular aided by biophysical techniques that his lab developed.

Dr. Cheng is author or co-author of 25 peer-reviewed publications, 15 of these

since joining the University of Michigan. His papers have been published in top-flight journals including *Methods Mol. Biology*, *PLOS* and *The Journal of Physical Chemistry*. He has given 34 invited presentations, which include international engagements in China and Canada, as well as many lectures in the United States.

During his time at U-M, Dr. Cheng has been awarded the NIH Director's New Innovator Award Grant, an NSF CAREER Grant, a Basil O'Connor Starter Scholar Award from the March of Dimes Foundation, The 3M Nontenured Faculty Award, and was the George Fishman Memorial Fund recipient from the College of Pharmacy at U-M. Dr. Cheng is an accomplished scientist and we are honored to have him join our Department.

**Nils Walter, Ph.D.** was appointed as a Professor in the Department of Biological Chemistry in May of 2016. He currently also holds an appointment as Professor in the Department of Chemistry and in the Department of Biophysics.

In 1991, Dr. Walter earned his Ph.D. in Biochemistry under the direction of Professor Hans-Gunther Gassen at The Technical University of Darmstadt in Germany. He was a graduate research assistant with Nobel Laureate Professor Manfred Eigen at the Max-Planck-Institute for Biophysical Chemistry, and then a postdoctoral research fellow with Professor John Burke at the University of Vermont until 1999. Dr. Walter was appointed as an Assistant Professor in the Department of Chemistry at the University of Michigan in 1999. He was promoted to Associate Professor in 2005 and Professor in the Department of Chemistry in 2009. Dr. Walter also received a joint Professor appointment within the Department of Biophysics, and

most recently in the Department of Biological Chemistry.

Dr. Walter's research focuses on the enzymology of RNA and RNA-protein complexes, measured largely at the single molecule level. These studies synergize with the strong research expertise in enzymology and structural biology within Biological Chemistry. In addition, in recent years his research interests have evolved into the biomedical area, as evident from his recent appointment as co-director of the Center for RNA Biomedicine and his recent award of a Fast Forward Medical Innovation Kickstart grant from the U-M Medical School, aiming to develop a novel single molecule based RNA detection platform for biomarkers of human disease.



Dr. Walter is author or co-author of 156 peer-reviewed publications, 129 of these since joining the University of Michigan. His papers have been published in top-flight journals including *Biochemistry*, *The Journal of Molecular Biology* and *Methods*. He has given over 150 invited presentations, which include international engagements in China and Canada, as well as many lectures in the United States.

During his time at the University of Michigan, Dr. Walter has been awarded the Dow Corning Assistant Professorship in Chemistry and Camille Dreyfus Teacher-Scholar Award. He also was elected as an AAAS Fellow in 2011 and won a University of Michigan Faculty Recognition Award in 2013. Most recently Nils was honored with the Imes and Moore Faculty Award through the College of Literature, Science, and the Arts, and The Harold R. Johnson Diversity Award from the University of Michigan. We are excited to have Dr. Walter join our Department.



## Faculty Retirement

**William L. Smith, Ph.D.**, Professor of Biological Chemistry, retired from active faculty status on December 31, 2015.

William Smith received his B.A. degree from the University of Colorado in 1967. He was awarded his Ph.D. in Biological Chemistry from the University of Michigan in 1971, training with Professor William Lands. Bill Smith served on the faculty of Michigan State University from 1975-2003. He then joined the University of Michigan faculty as Professor and Chair of the Department of Biological Chemistry and the Minor J. Coon Collegiate Professor of Biological Chemistry. He was chair of the Department of Biological Chemistry from 2003-2013.

Professor Smith was internationally recognized for his work on signal transduction, eicosanoid metabolism and function, lipids and lipid mediators, and essential fatty acid metabolism and nutrition. His research explored the role of nutritionally essential fatty acids, prostaglandins and cyclooxygenases in inflammation, thrombosis, and colon cancer.

Professor Smith published over 150 peer-reviewed articles in the leading journals, and was a frequent invited speaker at national symposia. His work was funded by the National Institutes of Health for over 40 years, often by multiple grants including an NIH MERIT Award from 1995-2003. He served on the



editorial boards of several prestigious journals, including the *Archives of Biochemistry and Biophysics*, *Biochimica Biophysica Acta*, *Hypertension*, the *Journal of Biological Chemistry*, and *Prostaglandins*.

A gifted teacher and dedicated mentor, Professor Smith taught biochemistry, served on Ph.D. thesis committees, and was a research advisor to countless graduate students and postdoctoral fellows. He is the recipient of numerous honors and awards, including the Bayer Corporation's Senior Aspirin Award (1997), the State of Michigan Scientist of the Year Award (2004), and the American Society for Biochemistry and Molecular Biology's Avanti (2004) and William C. Rose (2006) Awards. In 2012, he was also awarded the University of Michigan Medical School Distinguished Faculty Lectureship Award in Biomedical Research, the highest honor bestowed upon a faculty member for research in the biomedical sciences by the Medical School.

Professor Smith was an outstanding leader in our department and recruited numerous excellent faculty to our department, at both the junior and senior levels. He is a highly valued member of our department and we are delighted that he is now Professor Emeritus of Biological Chemistry.

## Faculty News

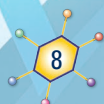
**Ray Trievel** co-organized the 2016 ASBMB Symposium on Transcriptional Regulation, which was held on Oct. 6-10 in Snowbird, Utah. Information about the symposium can be found at: <https://www.asbmb.org/ASBMBMeetings/SpecialSymposia/2016/Transcription>

**Nils Walter** is a founding Co-Director of the new Center for RNA Biomedicine at the University of Michigan.

**Nils Walter** received the 2015 Harold R. Johnson Diversity Service Award, University of Michigan.

**Carol Fierke** won the 2016 American Chemical Society Gordon Hammes Lecture Award.

**Yiorgo Skiniotis** won the 2016 American Society for Biochemistry and Molecular Biology Earl and Thressa Stadtman Young Scholar Award.





# Alumni News



**Claudia McDonald Bøen, Ph.D.**, (2013, with Bruce Palfey), is now CEO of Arctic Pharma AS, a Norwegian

biotech company developing novel anti-cancer drugs by targeting the enzymes which are up-regulated in cancer cells. Shortly upon becoming CEO, Claudia moved Arctic Pharma from its original site at the University of Oslo to a biotech incubator, also in Oslo, where she is leading efforts to secure venture capital and file the first round of patents on compounds under development. She has also founded, and is chairman of the board of, Nuseva AS, a scientific equipment-leasing company.

**Neha Bokil** completed her undergraduate honor's thesis entitled "Mutational Analysis of Conserved Amino Acid Residues in Human DNA Ligase I" in the O'Brien laboratory. She is currently doing research at the NIH as a postbac research fellow at the National Institute of Diabetes and Digestive and Kidney Diseases in Bethesda, MD.



**Stacie L. Bulfer, Ph.D.**, (2010, with Raymond Triebel), has accepted a position as a Senior Scientist at Deciphera

Pharmaceuticals, LLC, a biotech company located in Lawrence, KS.

**May Daher, Ph.D.**, post-doctoral scholar with Nils Walter, started a faculty position in Chemistry & Biochemistry at the University of Detroit Mercy.

**Huai Deng, Ph.D.**, post-doctoral scholar in the Kerppola laboratory, has started an independent laboratory at University of Minnesota.

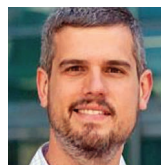
**Soma Dhakal, Ph.D.**, post-doctoral scholar with Nils Walter, started a tenure-track faculty position in Chemistry at the Virginia Commonwealth University in Richmond, VA.

**Preethi Kasavan** completed her undergraduate honor's thesis entitled "Characterization of Specific and Nonspecific DNA Binding by DNA Glycosylases Using Fluorescence Anisotropy" while doing research in the O'Brien lab. She is currently a first year medical student at Washington University in St. Louis, MO.



**Keith A. Koch, Ph.D.**, (1998, with Dennis Thiele), recently accepted a position as the Director of the

Fibrosis Innovation Group within the Consortium for Fibrosis Research & Translation at the University of Colorado Anschutz Medical Campus, Denver, CO. He will be bringing his drug discovery management experience to bear on the challenge of advancing a novel hybrid academic/biotech translational medicine program with a focus on the development novel treatments for fibrotic diseases.



**Michael C. Marvin, Ph.D.**, (2010, with David Engelke), accepted a position as an Assistant Professor of Chemistry

and will be teaching and mentoring students in biochemistry at Rockhurst University, Kansas City, MO.



**Kunyoo Shin, Ph.D.**, (2006, with Ben Margolis), is now an Assistant Professor / Principal Investigator

at Pohang University of Science and Technology (POSTECH), Pohang, Korea, working in the areas of stem cell and cancer biology.



**Erin Taylor, Ph.D.**, graduate from the O'Brien laboratory last year, has received a 3 year post-

doctoral fellowship from the UT Austin Collaborative Opportunities for Research Educators, that will provide financial support for doing postdoctoral research and give her experience teaching at an affiliate undergraduate institution. Her research is examining the mechanism of human DNA polymerase gamma which is responsible for replication of the mitochondrial genome.

**Julia Widom, Ph.D.**, post-doctoral scholar with Nils Walter, received an NIH K99/R00 Path to Independence Award.

# Student News

## Student Achievements & Recognition

Congratulations to **Elizabeth Abshire**, who was awarded a prestigious **predoctoral fellowship from the American Heart Association (AHA)**. Elizabeth is a fourth year student, mentored by Dr. Ray Trievel and Dr. Aaron Goldstrohm, who was awarded a fellowship for her research on "The Molecular Basis for Regulation of Obesity by Nocturnin, a Human 3'5' Exoribonuclease."

Congratulations to **Rob Fick**, a candidate in Dr. Raymond Trievel's laboratory, who was awarded the **2016 EBS Endowment for the Development of Graduate Education (EDGE) Award**.

Congratulations to **Tom Jurkiw**, a candidate in Dr. Patrick O'Brien's lab. Tom received an **Outstanding Poster Award** for his presentation at the 22nd Annual Cellular Biotechnology Training program Symposium held at Palmer Commons on April 26, 2016. Tom's poster was entitled "Mechanism and Thermodynamics of Binding by Human DNA Ligase 1."



Congratulations to **Meredith Skiba** and **Adam Thelen** who were each awarded a **Biological Chemistry Ph.D. Graduate Student Award**. This particular award mechanism is made possible by the Rackham Graduate School Block Grant and provides direct support to Biological Chemistry graduate students.

Congratulations to **Grace Kroner**, a Ph.D. Candidate in Dr. Peter Freddolino's lab, who was a recipient of the **PIBS 2016 Excellence in Teaching Award**. Grace was nominated for this award by Dr. Alex Ninfa for her teaching in the Biolchem 452 course. Grace was presented with her award at the PIBS Celebration in Graduate Education event held on June 21, 2016.

## Training Grant Awards

The following Biological Chemistry graduate students were awarded positions on the following NIH Training Grants:

**Marissa Torres** (O'Brien Lab)  
Genetics Training Grant

**Adam Thelen** (O'Brien Lab)  
Chemical Biology Interface Training Grant

The following Biological Chemistry graduate students were reappointed for a second year to the following NIH Training Grants:

**Claire Cato** (Tesmer Lab)  
Chemical Biology Interface Training Program (CBI)

**Grace Kroner** (Freddolino Lab)  
Cellular Biotechnology Training Program (CBTP)



## Rackham Graduate Student Research Grants

The following Biological Chemistry students received Rackham Graduate Student Research Grants between October 2015 and October 2016:

**Elizabeth Abshire** (Trievel/Goldstrohm Labs)

**Mohamed Alrarrayashi** (Fuller Lab)

**Qingyun Dan** (Smith Lab)

**Claire Cato** (Tesmer Lab)

**Michael Miller** (O'Brien Lab)

**Meredith Skiba** (Smith Lab)

## Rackham Graduate Student Travel Grants

The following Biological Chemistry graduate students received Rackham Travel Grants between October 2015 and October 2016:

**Claire Cato** (Tesmer Lab)

**Wallace Chan** (Zhang Lab)

**Qingyun Dan** (Smith Lab)

**Robert Fick** (Trievel Lab)

**Bradley Klemm** (Fierke Lab)

**Andrew Sikkema** (Smith Lab)

**Grace Kroner** (Freddolino Lab)

**Meredith Skiba** (Smith Lab)

**Samuel Slocum** (Sherman/Smith Lab)

**Eric Tse** (Southworth Lab)

**Michael Wolfe** (Freddolino Lab)



## In Memoriam

William (Bill) Jourdian, Ph.D., former Professor of Biological Chemistry, passed away on November 28, 2015 in Ann Arbor.

Bill was born in 1929 at Northampton, MA. He attended Amherst College (1946-1950) supported by prestigious scholarships. He majored in science and history. After attending the University of Massachusetts (1951-54), Bill received his Master's degree in Bacteriology, and then moved to Purdue (1954) to complete his Ph.D. in Biochemistry. He completed postdoctoral training at the University of Michigan Rackham Arthritis Research Unit (1958) under the guidance of Saul Roseman.



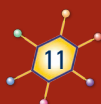
**George William Jourdian**

April 21, 1929 -

November 28, 2015

In 1961, Bill became a faculty member at the University of Michigan in the biological chemistry department and was promoted to associate professor in 1965. Bill's research focused on the biochemistry of glycoproteins and carbohydrates in cartilage. In the early 1980s, Bill discovered a receptor involved in intracellular and extracellular trafficking of lysosomal enzymes called the phosphomannosyl receptor. This landmark discovery was reported in the Proceedings of the National Academy of Science in 1981.

Bill was a member of the editorial board of the Journal of Biological Chemistry for 5 years, president of the Society for Glycobiology for three years, and served on the Physiological Sciences Study Section of the National Institutes of Health. Bill Jourdian will be remembered for his teaching skill, innovative research, collegial nature, and enthusiasm for scientific research.

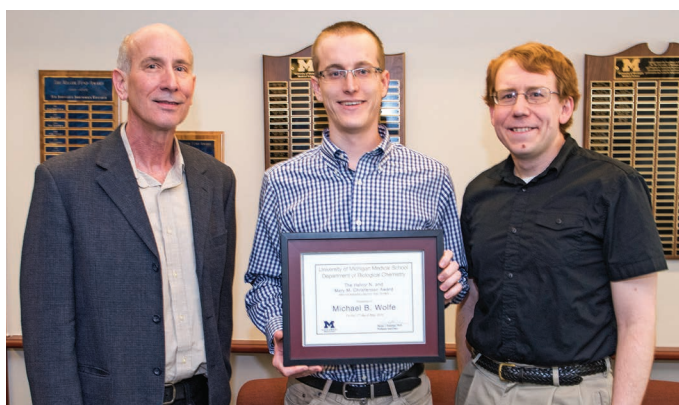


# 2016 Annual Student Awards

## The Halvor N. and Mary M. Christensen Award

Presented to a second-year student on the basis of academic record. This award is given in honor of Mary M. and Professor Emeritus Halvor N. Christensen who served as Chair of Biological Chemistry from 1955-1970, and who generously provided the gift that supports this annual award. Karen Gray, the Christensen's daughter, also continues to support this award. (Outstanding Second-Year Student).

2016 Awardee: **Michael Wolfe**  
Mentor: Peter Freddolino, Ph.D.



*Dr. Dan Goldman with awardee Michael Wolfe and mentor Dr. Peter Freddolino*

## The Adam A. and Mary J. Christman Award

Presented to a third-year student judged to be the most outstanding in that class. The Christman Award is named in memory of former long-time member Professor Adam Christman.

2016 Awardee: **Gregory Dodge**  
Mentor: Janet Smith, Ph.D.



*Dr. Dan Goldman with awardee Gregory Dodge and mentor Dr. Janet Smith*

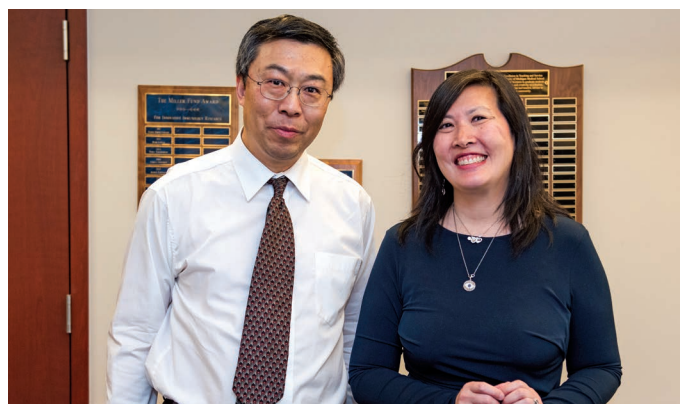
## The Anthony and Lillian Lu Award

Presented to a student on the basis of academic background, achievement in the graduate program, and potential as a scientist. This award is made possible by the Lu Family who generously provided the gift that supports this annual award.

2016 Awardee: **Grace Kroner**  
Mentor: Peter Freddolino, Ph.D.



*Dr. Dan Goldman with awardee Grace Kroner and mentor Dr. Peter Freddolino*



*2016 Distinguished Graduate Lecturer, Dr. Pengbo Zhou with Dr. Deborah Lu, a graduate of Biological Chemistry representing the Anthony and Lillian Lu family*

## The Lee Murphy Memorial Prize

Awarded annually to the student who embodies the highest ideals of scientific integrity and who has published a paper or a series of papers judged most significant by the Awards Committee. This award is named in honor of Lee Murphy, an alumnus of this department.

2016 Awardee: **Robert Fick**

Mentor: Raymond Trievel, Ph.D. (far right)



*Dr. Dan Goldman with awardee Rob Fick, Dr. Irwin J. Goldstein, and mentor Dr. Raymond Trievel*

## The Dziewiatkowski Award

Dedicated to the memory of the late faculty member, Dominic D. (Jay) Dziewiatkowski, this award is offered to the student who has submitted the most outstanding dissertation during the last academic year.

2016 Awardee: **Michael Howard, Ph.D.**

Mentor: Carol A. Fierke, Ph.D.



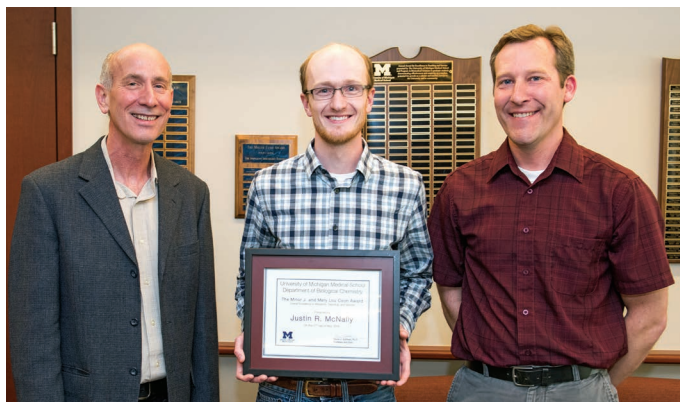
*Dr. Dan Goldman with awardee Dr. Michael Howard and mentor Dr. Carol A. Fierke*

## The Minor J. and Mary Lou Coon Award

Awarded annually to the student who exhibits overall excellence in research, teaching, and service to the department. This award honors Professor Coon, former Chair of the Department, and Mary Lou Coon who have provided the gifts that support this award.

2016 Awardee: **Justin McNally**

Mentor: Patrick J. O'Brien, Ph.D.



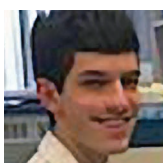
*Dr. Dan Goldman with awardee Justin McNally and mentor Dr. Patrick J. O'Brien*

## New Postdocs

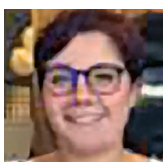
**Manolo Plasencia, Ph.D.** received his Ph.D. from Indiana University in Bloomington in 2009.  
Mentor: Philip Andrews, Ph.D.

**Mehdi Rahimpour, Ph.D.** received his Ph.D. from the Public University of Navarre, Pamplona, Spain in 2013.  
Mentor: Peter Freddolino, Ph.D.

## New Ph.D. Students



**Adam Thelen** received his Bachelor of Science in 2014 from Michigan State University, East Lansing, MI.  
Mentor: Patrick J. O'Brien, Ph.D.

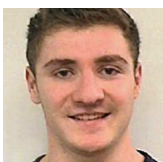


**Marissa Torres** received her Bachelor of Science in 2015 from San Francisco State University, San Francisco, CA.  
Mentor: Patrick J. O'Brien, Ph.D.

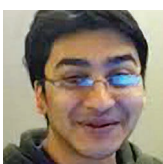
## New M.S. Students



**Liu Liu** received her Bachelor of Medicine in 2016 from Shanghai Jiaotong University, Shanghai, China.  
Mentor: Daniel Goldman, Ph.D.

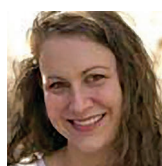


**Fernando Nunez** received his Bachelor of Arts in 2016 from Kalamazoo College, Kalamazoo, MI.  
Mentor: Daniel Goldman, Ph.D.



**Aushja Syed** received his Bachelor of Science in Biochemistry in 2015 from the University of Michigan, Ann Arbor, MI.  
Mentor: Patrick J. O'Brien, Ph.D.

## Ph.D. Degrees Granted



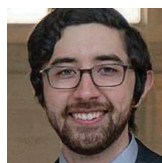
**Erin L. Taylor, Ph.D.**  
November 20, 2015  
*"Mechanistic Studies of Alkylation Repair DNA Glycosylases"*  
Mentor: Patrick J. O'Brien, Ph.D.



**Benjamin Ellington, Ph.D.**  
January 15, 2016  
*"Probing the Mechanisms of Aldehyde Decarbonylation Using Radical Clock Substrate Analogues"*  
Mentor: E. Neil G. Marsh, Ph.D.



**Elia (Wright) Hefner, Ph.D.**  
July 18, 2016  
*"Elucidating the Potential Role of Protein Prenylation in Bacterial Infection"*  
Mentor: Carol A. Fierke, Ph.D.

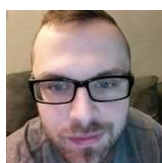


**Bryan M. Dunyak, Ph.D.**  
September 13, 2016  
*"Peptidyl-Proline Isomerases: Promising Targets for Natural Product-Inspired Therapeutics"*  
Co-Mentor: Jason E. Gestwicki, Ph.D.  
Co-Mentor: Janet L. Smith, Ph.D.

## M.S. Degrees Granted



**Mohamed Alrasyshi, M.S.**  
August 19, 2016  
*"Role of Actin Binding Protein, Bsp1p, in VPS13p-dependent Vesicular Transport and Fusion in Saccharomyces Cerevisiae"*  
Mentor: Robert S. Fuller, Ph.D.



**Michael Miller, M.S.**  
August 19, 2016  
*"Characterization of Small Molecule Inhibitors of 8-Oxoguanine DNA Glycosylase"*  
Mentor: Patrick O'Brien, Ph.D.

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University of Michigan Medical School  
Ann Arbor, Michigan 48109-0600  
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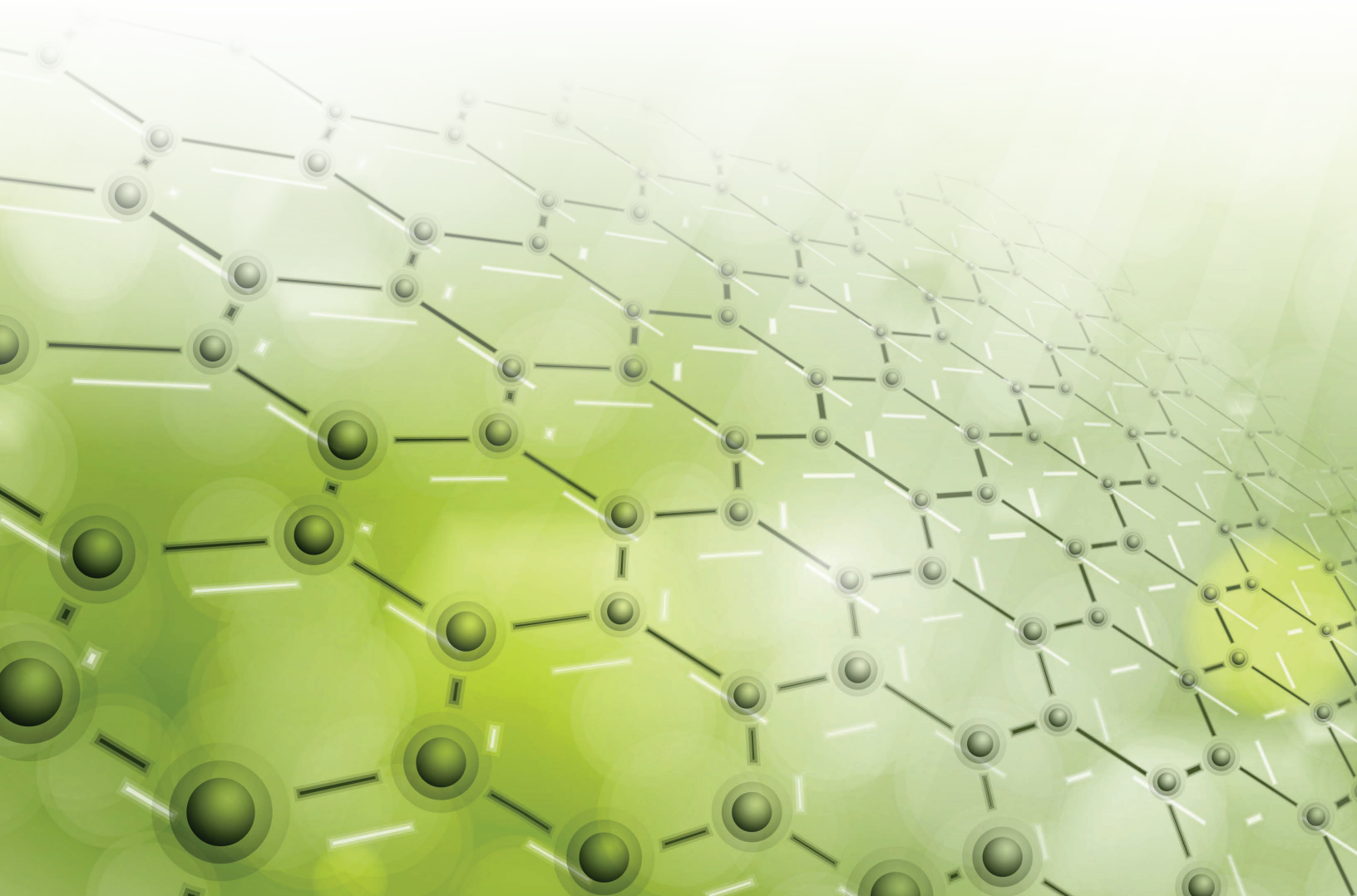
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