



The IMPRINT

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BSD Graduate Programs

IN THIS ISSUE

- Dean's Corner1
- DAC: Keynote2
- Best Dissertation Award ..3
- Student Honors4
- Recent Graduates5
- Photos from DAC6
- Faculty Honors7
- Ulinski Obituary8
- Student Accolades9
- Events of Interest12
- New Graduates14
- Alumni News16

Newsletter Mission and Contact Information:

The mission of the *The Imprint* is to provide a bridge between the University community and alumni, highlighting the achievements of alumni while keeping them informed of the developments and issues in The University of Chicago's Biological Sciences Division. To contact us: Theimprint@bsd.uchicago.edu

This newsletter was written and edited by current graduate students Cristianne Frazier, Lauren Kolodziej, Crystal Love, Joanna Rowell, Aashish Sha and Sruthi Swaminathan, and by Melissa Lindberg of the BSD Office of Graduate and Postdoctoral Affairs.

Dean's Corner

Victoria Prince, PhD



Photo by Louis Choi (DVBI)

It is my pleasure to announce that on June 21st, 2010 I took on the position of Associate Dean and Director, Office of Graduate Affairs (OGA). I am extremely fortunate to have the assistance of Dr. Nancy Schwartz, who has previously provided many years of invaluable service as Dean of Graduate Students, and who is now taking on the roles both of Associate Dean and Co-Director, OGA and Director of Postdoctoral Affairs. Nancy and I are currently in the process of restructuring the offices of graduate and postdoctoral affairs, with the goal of providing improved service to our graduate students and postdoctoral

trainees, as well as to the multiple graduate programs in the Division. Our goal is to partner effectively with the graduate programs, and with Dr. Conrad Gilliam, our new Dean of Research and Graduate Education, to maintain and enhance the high quality of graduate training at the University of Chicago.

Congratulations to the 83 students who graduated with their PhD degrees in the past year. In this issue of *The Imprint* we celebrate their achievements by reviewing the Divisional Academic Ceremony, where 45 of the new graduates received their hoods. Dr. Keith Yamamoto of the University of California at San Francisco was our speaker at the divisional ceremony and the guest of our students. Dr. Yamamoto is Professor of Cellular and Molecular Pharmacology and Executive Vice Dean of the School of Medicine at UCSF, and since 2009 has served as Chair of the Coalition for the Life Sciences. In addition to his long history of outstanding research on steroid receptors, Dr. Yamamoto plays an influential role in Washington DC, serving on many national committees focused on public and scientific policy, public understanding and support of biological research, and science education. Dr. Yamamoto delivered a truly inspiring speech, in which he urged our students to be passionate about and committed to their chosen careers – whether in research or beyond. The guest of the Pritzker medical students was the University of Chicago's own Dr. Scott Stern, Professor of Medicine and Assistant Dean for Technology and Innovation, and a perennial favorite faculty member of the Pritzker students.

The outstanding research achievements of our students are recognized in the many honors and accolades they have received, which we share with you in the article "Honors and Awards." Of particular note, this year the Division awarded the prize for the best dissertation to Matthew Friedman of the Committee on Evolutionary Biology. Matt is now a Lecturer in Paleobiology at Oxford University, and you will find an article on his work in this issue. We wish Matt and all of our other graduates success in their chosen careers, and look forward to receiving updates on their progress.



Sadly, we recently lost a valued colleague, mentor, and friend. Phil Ulinski, Emeritus Professor in my own Department of Organismal Biology and Anatomy, passed away on May 25, 2010. Phil was a distinguished neuroscientist and an extraordinary teacher of students at all levels, as well as an inspired long-time leader in the Division. He was my next-door neighbor in Culver Hall for many years, and I, like numerous others at the University, will miss him hugely. You will find a full obituary in this issue.

As we move rapidly toward the next academic year we are excited to welcome our incoming class of 89 graduate students. We look forward to orientation events and to a year filled with exciting science from across our graduate programs.

Dr. Keith Yamamoto, Keynote Speaker at the Divisional Academic Ceremony: June 11, 2010



Boycotts have always played an important role in shaping the history and character of the United States. During the country's infancy, the 1765 Stamp Act boycott asserted the colonies' opposition to taxation

without representation. Throughout the 20th century, both artificial inflation during times of war and economic hardships spurred housewives to boycott meat and dairy in response to high prices. In the 1950s and 1960s, bus boycotts stressed the demand for equality during the Civil Rights Movement.

While some people might consider the traditional boycott passé, this year's Divisional Academic Ceremony (DAC) speaker Dr. Keith Yamamoto, Professor of Cellular and Molecular Pharmacology at the University of California, San Francisco (UCSF) and Executive Vice Dean of the Medical School, is showing that in modern times the boycott is still alive and effectual. In 2003, Yamamoto led a successful boycott of Cell Press after Elsevier announced a rate hike for the University of California's electronic access to the journals. When Yamamoto called for fellow academic colleagues to leave editorial boards and cease paper submissions to *Cell*, the publisher lowered its price. Recently, Yamamoto – no stranger to passionate discourse – threatened to reinstate a system-wide boycott after Nature Publishing Group (NPG) proposed to raise the University of California's site license fees by 400%, according to a letter from the California Digital Library (CDL). In this letter CDL proposed to use, as leverage, the fact that over “the past six years, University of California authors have contributed approximately 5300 articles” to NPG journals, “638 of them in the flagship *Nature*.” Since the university's researchers also comprise peer review and NPG editorial and advisory boards, Yamamoto called for faculty to resign from these positions. NPG responded with a public statement admonishing the CDL's letter as “sensationalist use of data out of context” and “misrepresentation of NPG pricing policies.” The University of California gave its rebuttal by reasserting its stance on the exorbitant rate hike issue and underscoring the importance of reaching a “sustainable and mutually rewarding relationship with NPG,” although it could not be “achieved with the present proposal from NPG.”

At a luncheon after the DAC ceremony with members of the Biological Sciences Division's Dean's Council, Yamamoto noted that publishers are under considerable pressure to find ways to make money with open access. “Some depend on the income from journals to survive, so they increase institutional subscription prices,” he said. But he went on to explain that there is a “coolness attached” to *Cell*, *Science* and *Nature*, in that their editors make article submission to these journals a competition, and that this “autocratic style skews the way science is being done.” Yamamoto emphasized that the publication of

work is a critical part of how knowledge is built in science, and peer review is useful and important; however, in his opinion, the professional editors have become “style setters of science” with an abundance of control and power

over content. Yamamoto believes that the only individuals who should have jurisdiction over a paper are working scientists. “This way, you can talk to an editorial board in a whole different way. No tricks, no adversarial relationships and you can figure things out honestly.” In a recent email after the DAC ceremony, Yamamoto explained, “what has happened since the exchange of public rejoinders is that both sides have signaled interest in returning to the negotiation table. I've been involved in a subsequent strategy meeting to consider a viable UC stance. The bare fact is that the current models for support of scientific publication are not sustainable, either for universities or for publishers, and with electronic and open access publication, the ground is shifting beneath everyone.” In the meantime, until an agreement is reached, Yamamoto advocates the use of other high-quality publishing outlets such as the Public Library of Science (PLOS) as free forums for researchers to collaborate and share information.

Yamamoto's intensity and commitment to science is not surprising considering that he has served on numerous boards, advisory committees, and study sections with a focus on public and scientific policy. While doing his graduate work at Princeton University, Yamamoto first discovered that science is “a very social endeavor and its success depended on cooperation and communication.” He currently serves as Chair of the Coalition for Life Sciences, an alliance of seven non-profit professional organizations working together to foster public policies that advance basic biological research and its applications in medicine and other fields. He also acts as co-chair of the working group to Enhance NIH Peer Review, in addition to his other roles at NIH involving peer review and the policies that govern it. Now, when Yamamoto isn't in Washington influencing public policy to advance biomedical research, he is “enjoying the struggle to understand gene regulation, transcriptional regulatory network, signal transduction and working with students, postdocs and fellows” in his own laboratory. In his address at the DAC, Yamamoto called on the graduating class to be decisive and take risks with their scientific pursuits. “In today's society it seems to me that it's sort of out of style to do things with passion and intensity,” said Yamamoto, “to be dedicated to or obsessed with a goal or an ideal. It seems that balance and



moderation are the words of the day: perhaps it's that they are safer. Because commitment is sort of risky, scary and too exposed." Yamamoto continued, "that kind of personal commitment I'm referring to is placed perhaps in sharpest relief by considering how it plays out in extraordinary individuals and Barbara McClintock was one such individual." He described how McClintock's pioneering work in the field of corn cytogenetics was long ignored until later in her career. Because of McClintock's dogged determination, skill and curiosity, she was able to make the fundamental discoveries about transposition of genetic elements that were eventually recognized with

a Nobel Prize in 1983. Yamamoto emphasized that the graduates should learn from McClintock's example, that their future work will demand commitment and intense focus on the matter at hand. Yamamoto's research, involvement in the peer review process, and advocacy for issues in biological research demonstrate that he, too, is leading the graduates by his own example, and that the outcome of his boycott may set the precedent for what they encounter in their academic futures.

-Story and Photos by Lauren Kolodziej

Award for Best Dissertation in the Biological Sciences Division

Matthew Friedman

Committee on Evolutionary Biology

Thesis Title: The Diversification of the Acanthomorph Fishes: Ecomorphological Perspectives on an Evolutionary Radiation

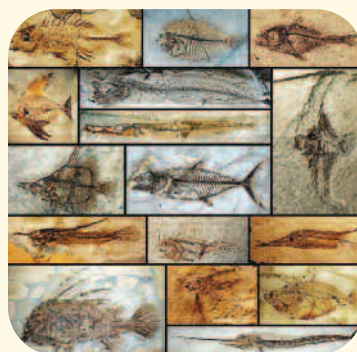


Perhaps one of the most fascinating events in Earth history is the Cretaceous-Tertiary extinction, which resulted in the disappearance of the dinosaurs 65 million years ago. The animal world changed profoundly within the 15 million years after this

event. Mammals diversified and proceeded to fill up a wide variety of land niches. In the oceans, teleost fishes were also rapidly diversifying to generate the tens of thousands of species that are still common today. This time period is the research focus of Matt Friedman, a recent graduate of the Committee on Evolutionary Biology. His dissertation, "The Diversification of the Acanthomorph Fishes: Ecomorphological Perspectives on an Evolutionary Radiation," received the 2010 University of Chicago Biological Sciences Division "best dissertation" award, and furthers our understanding of how extinction events dramatically alter life on this planet.

Friedman grew up in Cleveland, Ohio. This area contains a wealth of 360 million year old fossils from the Devonian period, the ancient "age of fishes." As a child he was fascinated by the local museum displays, where he saw fossils of huge, predatory fishes with bony armor and powerful, deadly jaws. This interest in paleontology prompted him to study geology and biology at the University of Rochester, and to complete a master's degree in zoology at Cambridge under the supervision of a prominent evolutionary biologist, Jenny Clack. Clack had been the postdoctoral supervisor of Michael Coates, making it a smooth transition for Friedman when he joined Coates' lab at the University of Chicago for his doctoral research.

For his dissertation, Friedman took advantage of the fact that teleost fishes, which comprise over 20,000 living species, are often represented by more complete fossil remains than many other groups of vertebrates like mammals and birds, which are typically known from fragmentary material. He used this vast, and often overlooked, dataset to ask whether specific types of fishes were particularly devastated by the Cretaceous-Tertiary extinction event. He studied biomechanical models that linked morphological features to functional ecology in living fishes, applied this knowledge to the fossil record, and discovered that the extinction event eradicated big fishes with jaw mechanics that prioritized speed over force – the large predators. From here, Friedman predicted that the subsequent radiation would fill the predatory niches that had been left empty after the extinction event.



To test this, Friedman studied the radiation of a large subset of teleosts, the acanthomorphs, or, as Friedman jokingly called them, "the largest group of vertebrates nobody has ever heard of." Using a technique known as geometric morphometrics, which allows the overall morphology of an animal to be quantified, he was able to characterize and compare the

morphology of over 600 species that lived between 100 and 5 million years ago. He found that after the extinction event the acanthomorphs rapidly invaded the shape space of the extinction victims. This is when the large, carnivorous acanthomorph fishes appeared, such as tuna and swordfish. Fascinatingly, all this diversification occurred during the first 15 million years after the extinction event, after which the acanthomorphs displayed modern levels of diversity. Acanthomorphs now consist of one third of all living vertebrate species, and much of the anatomical variety found today was generated during this relatively narrow time frame. In fact, due to several incredibly well preserved specimens, we know that even the pigmentation patterns of some acanthomorphs are the same today as they were 50 million years ago.

One curious example of an acanthomorph is the flatfish. These fish,

such as sole, halibut and turbot, are asymmetrical in that they have both eyes on one side of their face. The question of how this strange body plan arose is one that baffled Darwin, and fueled the arguments of those who opposed his theory of gradual evolution and natural selection. These evolutionary biologists argued that the flatfish body plan could not have evolved under the more gradual Darwinian model because they could not imagine the selective pressure that would favor a partially migrated eye.

Instead, they maintained that flatfish evolved spontaneously, almost overnight, in a process known as “saltatory” evolution, or evolution by leaps and bounds. This controversial topic could only be resolved by the discovery of a transitional form that



would link flatfishes with their symmetrical relatives. While looking through data from the late 1700s, when fossils were illustrated as woodcuts rather than as lithographs, Friedman identified a candidate intermediary form of flatfish. He gathered specimens from various museum collections and performed CT scanning to reconstruct the hidden anatomy encased in limestone blocks, and found fossil evidence of a primitive flatfish with a partially migrated eye. This discovery demonstrated that the evolution of flatfish was not spontaneous, but was a more gradual process, contradicting the theories of Darwin’s detractors.

Friedman is now working at St. Hugh’s College, Oxford as a lecturer in Paleobiology, with an appointment in the Department of Earth Sciences. When asked about his new position he cheerfully responded, “well, I get to wear a cape,” in reference to the gown and white bow tie he wears to official university events like thesis examinations. Friedman’s current research focuses on synthesizing fossil and molecular data to produce more reliable phylogenetic trees and date important events in the evolution of modern fish diversity, as well as studying early jawed fishes using synchrotron scanning in order to better understand how the head skeleton morphology changed with the evolution of jaws. In addition, he is developing new courses in paleobiology and on quantitative geology. He ultimately hopes to encourage others within the scientific community to use the extensive ray-finned fish paleontological dataset to study broad evolutionary questions. “In a sense, it’s the Wild West – a real frontier in our understanding of the vertebrate tree of life,” Friedman explained. “It’s half of vertebrate diversity, but there are outstanding issues and gaps in our knowledge in how these groups relate to one another and how they came to be over geological time scales.” By combining classical paleontological and anatomical approaches with modern quantitative, molecular and imaging techniques to the vast collections of fossils spread throughout museums in Europe, Friedman’s research will continue to provide new insights into how evolution has shaped, and continues to shape, life on our planet.

—Joanna Rowell

Student Honors and Awards



Katie Bittner, graduate of the Committee on Neurobiology in the summer of 2009, received a Harry Ginsburg Memorial Prize in Physiology for her dissertation entitled “Gating and permeation in an isoform of the T-type calcium channel CaV3.1.” She received her SB from the University of Maryland in 2003. Her advisor is Dr. Dorothy Hanck.

Ran Blekhan received the Departmental Award for outstanding performance in the general field of Human Genetics for his dissertation entitled “Using genome-wide multi-species expression patterns to study the evolution of gene regulation in primates.” He graduated in the winter of 2010, and received his SB from Tel Aviv University in 2005. His advisor is Dr. Yoav Gilad.



Jonathan Britt, who graduated from the Committee on Neurobiology in the fall of 2009, was awarded a Harry Ginsburg Memorial Prize in Physiology for his dissertation entitled “Investigations on the regulation of dopamine release and the role of dopamine in striatal synaptic plasticity.” He received his AB from Colorado College in 2002. His advisor is Dr. Daniel McGehee.



Josiane Broussard, a spring graduate, received the Committee Award for outstanding performance in the general field of Molecular Metabolism and Nutrition for her dissertation entitled “Experimental reduction of sleep duration is associated with increased nocturnal free fatty acid levels and impaired insulin signaling in the adipocyte.” She received her SB from Brandeis University in 2002. Her advisor is Dr. Eve Van Cauter.



Se Hoon Choi, who graduated in the fall of 2009, received the Committee Award for outstanding performance in the general field of Neurobiology for his dissertation entitled “Amyloid pathology and neurogenesis in mouse models of Alzheimer’s disease.” He received his MMS from Seoul National University in 2001. His advisor is Dr. Sangram Sisodia.



Alexis Demonbreun received the Committee Award for outstanding performance in the general field of Developmental Biology for her dissertation entitled “Myoferlin in Myogenesis.” She received her SB from the University of Chicago in 2004. Her advisor is Dr. Elizabeth McNally.





Matthew Friedman received the Award for Best Dissertation in the Division of the Biological Sciences. He graduated from the Committee on Evolutionary Biology in the summer of 2009. He received his SB from the University of Rochester in 2002, his MPhil from the University of Cambridge in 2004, and his SM from the University of Chicago in 2004. His dissertation is entitled “The diversification of the acanthomorph fishes: ecomorphological perspectives on an evolutionary radiation.” His advisor is Dr. Michael Coates. *See separate article for more information.*

Paul Ingram received the Department of Molecular Genetics and Cell Biology award for outstanding performance in the field of Cell and Molecular Biology. His dissertation is entitled “A role for phloem-mobile molecules in the regulation of *Arabidopsis* root system architecture.” He received his SB from Northern Illinois University in 1996. His advisor is Dr. Jocelyn Malamy.



Ari Rosenberg, who graduated from the Committee on Computational Neuroscience in the summer of 2009, was awarded a Harry Ginsburg Memorial Prize in Physiology for his dissertation entitled “Mechanisms of visual processing underlying the representation of non-fourier image features and transparent motion.” He received his AB from Florida Atlantic University in 2004. His advisor is Dr. Naoum Issa.

Dangjai Souvannakitti, a fall 2009 graduate of the Committee on Cellular and Molecular Physiology, was awarded a Harry Ginsburg Memorial Prize in Physiology for her dissertation entitled “Effects of intermittent hypoxia on neonatal adrenal chromaffin cells.” She received her MD from Mahidol University in 2003. Her advisor is Dr. Nanduri Prabhakar.



Brian Theyel, who graduated from the Committee on Computational Neuroscience in the summer of 2009, was awarded a Harry Ginsburg Memorial Prize in Physiology for his dissertation entitled “Assessment of corticothalamocortical circuit strength using flavoprotein autofluorescence imaging.” He received his SB from the University of Wisconsin-Madison in 2003. His advisor is Dr. Murray Sherman.

- *Cristianne Frazier*



Alumni News – Recent Graduates

Of our 2009-2010 graduates, twenty-six have elected to stay here at the University of Chicago:

- Eight are currently medical students at the Pritzker School of Medicine (Alice Cheng, Selene Koo, David Raleigh, Nathan Schoettler, Jennifer Taylor Veneris, John Wojcik, Jr., Sho Yano, and David Young);
- Eighteen have gone on to postdoctoral studies (Ilana Berlin, Marissa Blank, Benjamin Boyerinas, Elise Covic, Joseph DeBartolo, Angela Hancock, Rebecca Liu, James Lopez, Tamson Moore, Dana Mrejeru, Melissa Mueller, Amanda Neisch, Melanie Norstorm, Yahui Peng, William Sensakovic, Spyridon Stavrou, Brian Theyel, and Zhongzhou Zheng).

Other graduates are studying and working elsewhere:

- In the corporate world, Rebecca Ayers is a private equity analyst for Dunrath Capital and also works on Buzzbaba; Chinonye Nnakwe is an analyst for Campbell Alliance; Robert Schickel is a consultant for Boston Consulting Group; and Katinka Vigh is CFA Marketing Coordinator for ABCAM, PLC;
- Sarah Weyandt is a program coordinator for Reasoning Mind, a not-for-profit;
- Four have moved into faculty positions: Seungryoung Cho is an assistant professor, Department of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology; Dan Xia is an associate professor at the Institute of Biomedical and Health Engineering, Shenzhen Institute of Advanced Technology; Danjai Souvannakitti is on the faculty of Phramongkutklao Medical College, Thailand; and Matthew Friedman is a lecturer in paleobiology, St. Hugh's College, Oxford;
- James Andrew Gillis is a research associate at the University of Cambridge; and Christian Kammerer is the Gerstner-Kalbfleisch Postdoctoral Fellow in the Department of Paleontology, American Museum of Natural History;
- Two have elected to do more schooling: Thad Novak is a graduate student at Columbia University (Journalism); and Bonnie Scott will be a master's student in biomedical communications at the University of Toronto;
- Michael Altman is a medical physics resident at the Henry Ford Health System; and Yading Yuan is a medical physics resident at Harvard Medical School;
- Other graduates have gone on to postdoctoral positions in a variety of institutions: Katie Bittner at HHMI Janelia Farms; Ran Blekman at Cornell University; Jonathan Britt, Bruce Herring, Shen Yi (Bruce) Hwong, and Adam Savage at the University of California San Francisco; Josiane Broussard at the University of Southern California; Emily Butler at The Ohio State University, Research Institute at Nationwide Children's Hospital; Andrew Cal at the International Rice Research Institute; Se Hoon Choi at Harvard University; James Goodenbour and Maria Sierra at University of California Los Angeles; Justin Kern and Paul Harnik at Stanford University; James Knabb at Georgetown University; Jeffrey Knight at NIH/NCI/CCR Genetics Branch; Jessica Loweth at Rosalind Franklin University; Joshua Miller at Wright State University (Ohio); Yuriko Mishima at Riken Brain Science Institute (Japan); Michelle Rafacz at the Lincoln Park Zoo; Jacob Reimer at the Baylor College of Medicine; Peter Ari Rosenberg Maffia at Washington University (St. Louis); Rudyard Sadlier at Children's Memorial Research Center; Mrinal Shah at Northwestern University; Rita Strack at Johns Hopkins University; Maria Sutanto at Duke-NUS Graduate Medical School; Atsushi Tanaka at Kyoto University, Institute for Frontier Medical Sciences; and John Zaborske at the University of Wisconsin Madison.

Congratulations once again to all 83 of our 2009-2010 graduates, and best of luck as you move forward in your careers!

Divisional Academic Ceremony: June 11-12, 2010

Photos at the DAC, Drake, and Diploma Distribution by Jo Beaudreau and Carolyn Johnson



Elise Covic (CPNS) followed by Student Marshal Azusa Tanaka (IMMU);



R to L: Student Marshal Forrest Gulden, Michael Altman (MPHY), Rebecca Ayers (BMB), Ilana Berlin (BMB), Marissa Blank (MGCB), Josiane Broussard (MOMN), and Susan Byrne (IMMU)



Yading Yuan (MPHY)



Prof. Olaf Schneewind hooding Alice Cheng (MIGR)



Wei Xu (CABI) hooded by Prof. Piers Nash, assisted by Faculty Marshal Geoffrey Greene



Michelle Rafacz (EVBI)



Julieta Sylvester (BMB), Prof. Steve Kron, Chinonye Nnakwe (PATH)



Tamson Moore (IMMU) with Dr. Anne Sperling



Dr. Marcus Peter with Robert Schickel (CABI)



Dr. Piers Nash with Ilana Berlin (BMB)



Mrinal Shab (CABI)



Drs. Geoffrey Greene and Everett Vokes chatting with Chinonye Nnauke



Lis Nelis (PhD, 2008, EVBI) with Emma Greig (ECEV)



Melanie Norstrom (BMB) and Bonnie Scott (MGCB)



Josiane Broussard at Diploma Distribution



Amanda Marchiando (PATH), Seth Scanlon (IMMU), and W. Vallen Graham (PATH)

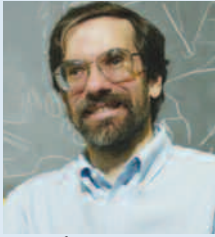


Yulie Peng (MPHY)



Rita Strack (BMB) and Elisabeth Montegna (MGCB)

Faculty Awards and Honors

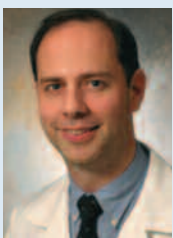
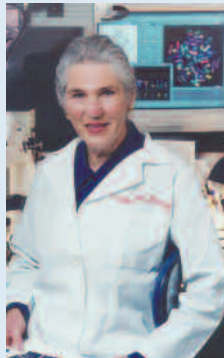


David Jablonski elected to National Academy of Sciences.

David Jablonski, PhD, the former chair of the Committee on Evolutionary Biology and a professor in the Department of Geophysical Sciences, has been elected to the National Academy of Sciences (NAS). The NAS, created in 1863, honors scientists and engineers who have made significant contributions to their fields. Jablonski's research focuses on macroevolution, which is the study of genetic changes that take place above the species level over time. He uses fossils and living organisms to study how geographical range and biological factors affect cycles of species extinction and survival in the wild. Jablonski has edited several books including *The Encyclopedia of Paleontology* (1979) and *Evolutionary Paleobiology* (1996). He has also won the Paleontological Society's Schubert Award for outstanding paleontologist and the Quantrell Award for Excellence in Undergraduate Teaching. Apart from his faculty appointment at the University of Chicago, Dr. Jablonski is a research associate at the Field Museum of National History, and a former research fellow at the Natural History Museum in London.

Janet Rowley, Award for Lifetime Achievement in Cancer Research.

Janet Rowley, MD, the Blum-Riese Distinguished Service Professor in the Departments of Medicine (Section of Hematology/Oncology), Molecular Genetics and Cell Biology, and Human Genetics, has received the Award for Lifetime Achievement in Cancer Research from the American Association for Cancer Research (AACR). The AACR recognizes scientists who make fundamental contributions to cancer research and are committed to educating and training future leaders in the field. Rowley completed her bachelor's degree in philosophy, and completed a master of science and a doctorate in medicine from the University of Chicago. She was the first to determine that leukemia is caused by a chromosomal translocation; this discovery was monumental and changed the field of cancer research. Her work has allowed the development of more advanced and accurate diagnostic techniques for the treatment of cancer. Since then, Rowley has received the National Medal of Science (1999), the Presidential Medal of Freedom, and the Gruber Prize in Genetics.



Ronald Cohen, PhD, associate professor in the Department of Adult and Pediatric Endocrinology, Diabetes, and Metabolism, Department of Medicine and the College, has received the Quantrell Award. This award is the nation's oldest for undergraduate teaching, and recognizes faculty members who have shown a strong dedication to education.



Jerry Coyne, PhD, professor in the Department of Ecology and Evolution, has been elected president of the Society for the Study of Evolution. He examines chromosome evolution, mating discrimination, hybrid sterility, and genetic variations in *Drosophila* to better understand natural selection and the origin of species.

David Freedman, PhD, assistant professor in the Department of Neurobiology, has received the Sloan Fellowship. Dr. Freedman studies how simple visual features, encoded in sensory areas of the brain, are transformed into more abstract, experience-dependent representations in higher areas such as frontal and parietal cortex.



Martin Kreitman, PhD, professor in the Department of Ecology and Evolution, has been elected to fellow in the American Academy of Arts and Sciences. Dr. Kreitman studies the factors that influence within-species and between-species variation during evolution. He is also interested in the role of natural selection on genetic variation and works on improving existing methods of measuring genetic variation.



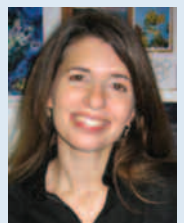
Michael LaBarbera, PhD, professor in the Departments of Organismal Biology and Anatomy and Geophysical Sciences, has received the National Science Foundation Award for Urban Teacher Education Program. Dr. LaBarbera has used theories of solid and fluid mechanics to study morphology and function in vertebrates and invertebrates. His teaching has earned him numerous accolades including the Quantrell Award for Outstanding Undergraduate Teaching (1999).



Jason MacLean, PhD, assistant professor in the Department of Neurobiology, has received a National Science Foundation career award. His lab studies spontaneous intrinsic network dynamics and synaptic connectivity in primary sensory cortex using laser scanning microscopy, patch clamp physiology.



Leslie Osborne, PhD, assistant professor in the Department of Neurobiology, has received the Sloan Fellowship. Dr. Osborne completed her post doctoral fellowship at the University of California – San Francisco in 2009. Her lab at UChicago studies smooth pursuit eye movements, and how visual information is applied to generate appropriate motor behaviors.





Callum Ross, PhD, associate professor in the Department of Organismal Biology and Anatomy, has won the Pritzker Favorite Faculty award and the Outstanding Basic Science Teaching Award. Ross studies the mechanics of chewing using videofluoroscopic and opticokinematic techniques in feeding behaviors. He is currently the course director for the anatomy course at the Pritzker School of Medicine.

Paul Sereno, PhD, professor in the Department of Organismal Biology and Anatomy, has received the distinguished explorer award by the Roy Chapman Andrews Society, the Outstanding College Alumni Award in Liberal Arts and Sciences from NIU, and the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. Sereno has studied dinosaur fossils all over the world including in Mongolia and Africa, and co-founded Project Exploration, which allows students



the opportunity to travel to excavation sites and become interested in paleontology. He has also been featured in National Geographic for discovering several new dinosaur species such as *Afrovenator*, *Suchomimus*, *Nigersaurus*, and *SuperCroc*, among others.



Neil Shubin, PhD, Robert R. Bensley Professor in the Department of Organismal Biology and Anatomy, Associate Dean, Organismal Biology and Anatomy, and Provost, The Field Museum, has received the Communication Award from the National Academies for his book, *Your Inner Fish*. Shubin works on the evolutionary origin of new species and performs comparative studies of anatomical structures to trace their evolution. He became interested in writing *Your Inner Fish* after teaching an anatomy course at Pritzker School of Medicine at UChicago.

—*Srutbi Swaminathan*

Neuroscientist Philip S. Ulinski, PhD, 1943 – 2010



An expert in the field of neuroanatomy and the architect of one of the country's first graduate training programs in computational neuroscience, Philip S. Ulinski, PhD, Professor Emeritus and former chair of the Department of Organismal Biology and Anatomy, and the Committee on Computational Neuroscience, died May 25, 2010 at the age of 67. The cause of death was heart disease.

For 35 years, Ulinski studied the organization of brain structures in turtles, snakes and other animals, focusing primarily on the circuitry of the visual system. His research articles and textbooks were critical to the field's understanding of how evolution has shaped the brain's ability to sense the world around an organism, from the simple visual system of reptiles to the more elaborate brains of humans and other mammals.

"Phil was part of a small and intensely creative and insightful group of comparative neurobiologists," said Daniel Margoliash, professor in the Departments of Organismal Biology and Anatomy and Psychology. "His work in reptilian systems was very important in helping formulate and advance this new set of ideas on the importance of the mammalian neocortex in controlling cognitive behavior."

Ulinski's research interests eventually led him to a rising new field in neurobiology that incorporated computational methods to analyze the complex dynamics of brain activity. Beyond adapting his own laboratory's techniques to assimilate these new tools, Ulinski sought to create new educational programs for undergraduate and graduate students interested in the young research field.

His efforts led to the formation of the Center for Integrative Neuroscience and Neuroengineering Research, a partnership with the

Illinois Institute of Technology, and the Committee on Computational Neuroscience at the University of Chicago. This PhD-granting program was among the first such curriculums in the United States.

"Phil was a singular force in pushing forward the computational neuroscience programs here at the University of Chicago. He was very forward-thinking about it." Margoliash said. "There were few people who envisioned this field as a natural opportunity for training as well as research, and he saw it and he built a program around it."

"He pretty much started it, he was the one," said Nicholas Hatsopoulos, current chair of the Committee on Computational Neuroscience and a professor of Organismal Biology and Anatomy. "He was involved not just in getting a degree program set up but also in creating a whole set of courses specialized in this field, and finding faculty to teach these courses."

Born in Detroit, and raised in Hamtramck and Warren, Michigan, Ulinski showed an interest in science from an early age. In elementary school, he asked his parents for a copy of *Grey's Anatomy* and established a laboratory in the family's basement, said his sister, Linda Stowers.

"Often, the mailman would bring deliveries for Phil that were supplies for his laboratory," his wife, Mary Ulinski, said. "One day, his mother said the delivery box was croaking; it was frogs!"

Hired to the Department of Anatomy by anthropologist Ronald Singer in 1975, Ulinski was a new kind of scientist for the department: a neurobiologist concerned with the function, not just the structure, of the brain. From 1982 to 1994, as chairman of what became the Department of Organismal Biology and Anatomy, he oversaw a further broadening of the department's mission, incorporating cell biology, genetics, paleontology and neuroscience into an integrative view of biology.

“Anatomy had been for a long time, ‘let’s memorize all the bones,’” Ulinski told the *Chicago Tribune* in 2006. “Not much emphasis had been put on why the bones are this way, what they are doing for the human body or animals.”

“He was a great source of inspiration and mentorship to everyone in the department,” said Robert Ho, current chair of the Department of Organismal Biology and Anatomy. “He was a source of history and wisdom and everyone really knew that. We all very much relied on his good sense, and his advice for every aspect of being a faculty member, being a student, and being a part of the department.”

Throughout his career, and even after assuming emeritus status, Ulinski emphasized both graduate and undergraduate education. In 1997, he received the Quantrell Award for Excellence in Undergraduate Teaching for his work in an introductory biology course series for first-year students that he helped design. After the launch of the Committee on Computational Neuroscience — which required creating a new curriculum from scratch — he taught two courses himself, and created a summer undergraduate program that drew students from around the country.

“He’d see problems and he’d step in himself and try to do something about them,” said James Hopson, Professor Emeritus of Organismal Biology and Anatomy and a colleague and friend of Ulinski since the mid-1970s. “That’s one of the things that really was admirable about Phil: He didn’t just talk, he was willing to do what was necessary to achieve a goal, and he was very broad in what his goals were. He leaves behind a strong legacy of our department and a lot of students that he’s trained.”

Ulinski received his undergraduate and PhD education at Michigan State University, majoring in biochemistry before completing graduate degrees in biophysics and zoology in 1969. After stints in the Department of Biology at Oberlin College and the Department of Anatomy at Loyola University, Ulinski came to the University of Chicago in 1975.

In 1979, Ulinski was elevated to Associate Professor and joined the Committee on Neurobiology. From 1982 to 1994, he served as Chairman of what became known as the Department of Organismal Biology and Anatomy, and was named a Professor in 1986. From 2001 until becoming a Professor Emeritus in 2008, Ulinski served as Chairman and Professor of the Committee on Computational Neuroscience.

As emeritus faculty, Ulinski concentrated on completing a textbook of computational neuroscience he started in the mid-1990s, while continuing to travel with his wife to scientific conferences. In his spare time, he also enjoyed reading, cooking, hosting dinner parties for family and friends, and participated in a lecture series at the Lutheran School of Theology in Hyde Park. Even in retirement, Ulinski remained passionate about teaching and mentoring the next generation of scientists, his wife said.

In a final act appropriate to someone who spent his career studying the visual system of the brain, Ulinski donated his eyes to the Illinois Eye Bank.

“Phil had a vision of where he wanted the scientific community to go, and he spent his life creating it,” Mary Ulinski said.

Ulinski is survived by his wife, Mary, nee Kalinowski; son, Steve, from a previous marriage; daughter-in-law, Laura; granddaughters, Maggie and Katie. He is also survived by two sisters, Sunnie Skillman and Linda Stowers. Phil was son to the late Steve and Helen Ulinski, a brother-in-law to Bob Stowers, Tom (Noel) Kalinowski and Barbara Madsen. Phil was a nephew and godson to Rita Dyszer; and an uncle to many nieces and nephews.

A visitation service was held at Bond Chapel, followed by a funeral service at Rockefeller Memorial Chapel. A memorial service to celebrate Phil’s life was held on July 24 at St. Thomas the Apostle Church in Chicago. A tribute also took place at the Organization for Computational Neurosciences Annual Meeting in San Antonio in late July.

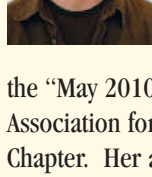
*The University of Chicago Medical Center
Office of Medical Center Communications*



Student Accolades



Joseph Briguglio, of the Program in Cell and Molecular Biology, won a National Science Foundation (NSF) Graduate Research Fellowship. His advisor is Dr. Aaron Turkewitz.



Sara Branco, of the Committee on Evolutionary Biology, was featured as the “May 2010: Scientist of the Month” by the Association for Women in Science: Chicago Area Chapter. Her advisor is Dr. Greg Mueller.



Katherine Brooks, of the Committee on Evolutionary Biology, won the American Society for Mammalogists Elizabeth Horner Award for best grant proposal, as well as the American Society for Mammalogists Grant-in-Aid of Research. She was also awarded a Sigma Xi Grant-in-Aid of Research, and a Hinds Fund Student Research Grant. Her advisor is Dr. Jill Mateo.

Kevin Bullaughey, of the Department of Ecology and



Evolution, was selected for a William Rainey Harper Fellowship for the 2010-11 academic year. His advisor is Dr. Molly Przeworski.



Rebecca Dikow, of the Committee on Evolutionary Biology, won the Willi Hennig Society Marie Stopes travel award for presenting at the XXIX International Meeting of the Willi Hennig Society. She also won a grant from the Lerner-Gray Fund for Marine Research from the American Museum of Natural History, to be used to sequence a marine bacterial genome. Her

advisor is Dr. W. Leo Smith.

Stefani Eames, of the Committee on Molecular Metabolism and Nutrition, won a best poster award at the 5th Annual Diabetes Day at the University of Chicago. Her advisor is Dr. Louis Philipson.



Cristianne Frazier, of the Committee on Neurobiology, won a poster award for her presentation at the 5th Annual Chicago Diabetes Day. Her advisor is Dr. Xiaoxi Zhuang.

Kacy Gordon, of the Department of Organismal Biology and Anatomy, won a National Science Foundation (NSF) Graduate Research Fellowship. Her advisor is Dr. Ilya Ruvinsky.



Matthew Heintz, of the Committee on Evolutionary Biology, was awarded a Wenner-Gren Anthropological Foundation grant, a Leakey Foundation grant, a Field Museum Africa Council grant, and a Fulbright Fellowship. His advisor is Dr. Elizabeth Lonsdorf.

Wendy Hernandez, of the Committee on Cancer Biology, received the American Association for Cancer Research (AACR) Minority Scholar Award, which funded her travel expenses to the annual AACR conference. Her advisor is Dr. Rick Kittles.



Kristen Jenkins, a first-year student in the Committee on Evolutionary Biology, won a National Science Foundation (NSF) Graduate Research Fellowship.

Kelly Kaihara, of the Committee on Molecular Metabolism and Nutrition, won a best poster award at the 5th Annual Diabetes Day at the University of Chicago. Her advisor is Dr. Barton Wicksteed.



Colin Kyle, a first-year student in the Department of Ecology and Evolution, won a National Science Foundation (NSF) Graduate Research Fellowship.

Neda Laiteerapong, of the Department of Health Studies, won a best poster award at the 5th Annual Diabetes Day at the University of Chicago.



Justin Lemberg, a first year student in the Department of Organismal Biology and

Anatomy, won a National Science Foundation (NSF) Graduate Research Fellowship.



David Lerner, of the Program in Cell and Molecular Biology, won a National Science Foundation (NSF) Graduate Research Fellowship. His advisor is Dr. Sally Horne-Badovinac.



Phil Long, of the Committee on Biophysical Sciences, won a fellowship from the Department of Energy (DOE) Office of Science Graduate Fellowship for his project "Elucidating the Protein's Contribution to Coherent Energy Transfer in the Photosynthetic Center." His advisors are Drs.

Tobin Sosnick and Greg Engel.

Alice MacQueen, a first-year student in the Department of Ecology and Evolution, won a National Science Foundation (NSF) Graduate Research Fellowship.



Sophie McCoy, of the Department of Ecology and Evolution, won a US Department of Defense National Defense Science and Engineering Graduate Fellowship, and a Geological Society of America Graduate Student Research Fellowship. She also won a National Science Foundation (NSF) Graduate Research Fellowship. Her advisor is Dr. Cathy Pfister.

Jillian McKee, of the Committee on Computational Neuroscience, won a Natural Sciences and Engineering Research Council of Canada (NSERC) Fellowship. Her advisor is Dr. David Freedman.



Laura Merwin, a first-year student in the Department of Ecology and Evolution, won a National Science Foundation (NSF) Graduate Research Fellowship.

Stephanie Mui, a first-year student in the Committee on Cancer Biology, won a National Science Foundation (NSF) Graduate Research Fellowship.



Sam Nalle, of the Department of Pathology/Program in Molecular Pathogenesis and Molecular Medicine, was appointed a University of Chicago Biomedical Consortium Scholar. His advisor is Dr. Jerrold Turner.

Daniel Roche, of the Committee on Neurobiology, won the Enoch Gordis Student Research Recognition Award at the 33rd Annual Scientific Meeting of the Research Society on Alcoholism. His research project was entitled "Alcohol Impairment of Pro-Saccadic and Smooth Pursuit Eye Movement:



Impact of Risk Factors for Alcohol Dependence." His advisor is Dr. Andrea King.



Benjamin Rubin, a first-year student in the Committee on Evolutionary Biology, won a National Science Foundation (NSF) Graduate Research Fellowship.



Lauren Sallan, of the Department of Organismal Biology and Anatomy, was awarded a National Science Foundation Doctoral Dissertation Improvement Grant (DDIG) for her thesis “The Consequences of Global Events on Vertebrate Biodiversity: The Paleozoic Actinopterygian Radiation.” Her advisor is Dr. Michael Coates.

Colleen Skau, of the Program in Cell and Molecular Biology, was selected for a William Rainey Harper Fellowship for the 2010-11 academic year. Her advisor is Dr. David Kovar.



Amy Stark, of the Department of Human Genetics, was awarded a Robert Bosch Stiftung Fellowship to attend Euroscience Forum 2010. Her advisor is Dr. Eileen Dolan.

Thomas Stewart, a first-year student in the Department of Organismal Biology and Anatomy, won a National Science Foundation (NSF) Graduate Research Fellowship.



William Tyburczy, of the Department of Ecology and Evolution, won the Christine Mirzayan Science and Technology Policy Graduate Fellowship. He will work with the Ocean Studies Board of the National Research Council. His advisor is Dr. Timothy Wootton.

Nathan Upham, of the Committee on Evolutionary Biology, received a Grant-in-Aid of Research from the American Society of Mammalogists for his project titled “Diversification of the New World rodent superfamily Octodontoidea: enhancing temporal and phylogenetic resolution with a complete suite of genera.” The funding will assist taxonomic sampling efforts for his doctoral research examining temporal, spatial, and ecological aspects of diversification in South American rodents. His advisor is Dr. Bruce Patterson.



Paul Volden, of the Committee on Molecular Metabolism and Nutrition, won a travel award from the Endocrine Society to attend Endocrine Trainee Day at ENDO 2010: The Endocrine Society’s 92nd Annual Meeting June 19-22 in San Diego. His advisor is Dr. Suzanne Conzen.

Erin White, of the Program in Cell and Molecular Biology, was appointed a University of Chicago Biomedical Consortium Scholar. Her advisor is Dr. Michael Glotzer.



Benjamin Winger, a first-year student in the Committee on Evolutionary Biology, was awarded a Graduate Student Award from the Society of Systematics Biologists. He was also one of five collaborators to co-author and receive a grant from the National Geographic Society for bird and plant surveys and collections in Ucayali, Peru. The PI for the grant is Dr. Thomas Schulenberg of the Cornell Lab of Ornithology, formerly of

the Field Museum and the Committee on Evolutionary Biology.

At the Committee on Immunology Retreat, the winner for best abstract was postdoctoral fellow Malay Mandal (Clark Lab) for “Genetic and epigenetic repression of the IgK intronic enhancer by STAT5,” while the award for best oral presentation went to graduate student



Jeannette Messer (Boone Lab) for “Functional consequences of mutation or loss of ATG16L1 in human intestinal epithelial cells.” Awards for best posters went to Tiara Byrd (PREP, Sperling Lab): “IL-33 production by dendritic cells stimulated via FcγR and TLR4 may serve as possible mechanism in the development of T helper 2 inflammation;” postdoctoral scholar Mihalis Verykokakis (Kee Lab): “SLAM Associated Protein (SAP) – dependent lymphocytes regulate innate-like CD8 T cell development;” postdoctoral fellow Mercedes Fuertes (Gajewski Lab): “Host type IFN signals mediate awareness of tumor and promote adaptive immune responses against tumor antigens through CD8α dendritic cells;” and Ying He (Yu Lab): “High mobility group box 1 is essential for the initiation of adaptive immunity by a growing tumor and promotes tumor progression.”

The following students won “Honorable Mention” for NSF Graduate Research Fellowships: **Joanna Mandecki** (Organismal Biology and Anatomy), **Sao-Mai Nguyen-Mau** (Microbiology), **Gregory T. Tietjen** (Biophysical Sciences), **Traci Viinanen** (Evolutionary Biology), **Michael Werner** (Cell and Molecular Biology), and **Charles Wright** (Biophysical Sciences).

After a competitive review process, the BSD Travel Awards Committee chose to support ten students for travel to national meetings in Winter and Spring 2010. Students awarded funds include: **Neha Bhooshan** (Medical Physics) to give a poster at the National Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) 2010; **Nicholas Block** (Evolutionary Biology) to present a talk at the Evolution 2010 and iEvoBio; **Rebecca Dikow** (Evolutionary Biology) to give a talk at the International Meeting of the Willi Hennig Society: Hennig XXIX; **David Courson** (Biochemistry and Molecular Biology) to give a poster at the Biophysical Society Annual Meeting; **Annat Haber** (Evolutionary Biology) to give a talk at Evolution 2010; **Elizabeth Hipp** (Medical Physics) to give a poster at the Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) 2010; **Erin Purcell** (Biochemistry and Molecular Biology) to give a poster at the American Society for Microbiology Annual Meeting; Brook Ragle (Microbiology) to give a talk at the Wind River Conference on Prokaryotic Biology, **Frances Szeto** (Molecular Metabolism and Nutrition) to give a poster at the Arteriosclerosis, Thrombosis, and Vascular Biology Meeting of the American Heart Association; and **Alissa Wlodaver** (Cell and Molecular Biology) to give a poster at the 15th Annual RNA Society Meeting. The BSD Travel Fund was generously created by an award from the University of Chicago Women’s Travel Board in 2004 and continues with support from alumni donations.

Events of Interest



The **Fifth Annual Margot and Robert Haselkorn Visiting Lecture** was held on April 22, 2010 in the Dorothy and Gaylord Donnelley Biological Sciences Learning Center. Sharon R. Long, PhD, professor of biological sciences at Stanford University, spoke on “Modern View of an Ancient Symbiosis: Can Molecular Biology Help Agricultural Sustainability?” The lecture was presented by the Department of Molecular Genetics and Cell Biology.

The University of Chicago, Northwestern University, and the University of Illinois at Chicago hosted **Dr. Francis S. Collins**, MD, PhD, director of the National Institutes of Health, for a lecture on April 24, 2010 at the Lurie Medical Research Center, Northwestern University. Dr. Collins spoke to faculty, graduate students, and postdoctoral scholars and fellows from the hosting institutions about his vision of the NIH and his reflections on new scientific frontiers. Dr. Collins’ talk focused on his proposed “5 themes” for the future goals of NIH: developing more high-throughput science so we can know the “alls” of science (ie. “all” the proteins involved in a biological pathway), increasing the amount of translational research funded by the NIH, improving healthcare, addressing global health disparities, and reinvigorating the biomedical community (with a special interest on improved K-12 education). Dr. Collins is a physician-geneticist noted for his landmark discoveries of disease and his leadership of the Human Genome Project. He received the National Medal of Science in 2009.



The **2009 George and Marie Andros Lecture** was delivered by Rino Rappuoli, PhD, the Global Head of Research, Novartis Vaccines and Diagnostics, on April 28, 2010 in the Dorothy and Gaylord Donnelley Learning Center. Dr. Rappuoli spoke on “Vaccines to Address the Needs of a 21st Century Society.” Dr. Rappuoli earned his PhD in biological sciences at the University of Siena (Italy), and served as a visiting scientist at Rockefeller University and Harvard Medical School. He has pioneered the use of genomic information for vaccine development (reverse vaccinology). Dr. George Andros, MD (Pritzker, 1960) established the lectureship in January 1989.



The Rockefeller Memorial Chapel, the Civic Knowledge Project, the Sustainability Council, Roots & Shoots, and the University Community Service Center hosted a lecture by world-renowned primatologist **Jane Goodall** on May 7, 2010, in the Rockefeller Chapel. Her presentation was entitled “Gombe and Beyond: The Next 50 Years.” Her research on the behavior of chimpanzees was conducted in Tanzania’s Gombe National Park.



The **5th Annual Chicago Diabetes Day** was held on Saturday, May 15, 2010 at the Gaylord and Dorothy Donnelley Biological Sciences

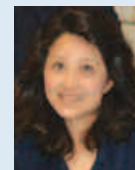
Learning Center, sponsored by the University of Chicago Diabetes Research and Training Center. Featured speakers included Susumu Seino, MD, DMSci, “Cell Signaling in Insulin Secretion;” Kenneth S. Polonsky, MD, “From Bench to Bedside: the Role of Xenin25 in the Regulation of Insulin Secretion;” James M. Wells, PhD, “Insights from Pancreas Development as a Means to Generate Beta-Cells from Stem Cells;” and Jose C.

Florez, MD, PhD, “Clinical Translation of Genetic Predictors for Type 2 Diabetes.” Student award winners from the poster competition are listed in *Student Accolades*.



The University of Chicago Division of Biological Sciences and the Pritzker School of Medicine presented A Centennial Celebration of the Life of Howard Taylor Ricketts (1871-1910) on May 18, 2010 at the Dorothy and Gaylord Donnelley Biological Sciences Learning Center. Speakers included Yuan Chang, MD,

American Cancer Society Professor at the University of Pittsburgh,



“Merkel Cell Polyomavirus: A Common Virus Causing an Uncommon Skin Cancer;” and Olaf Schneewind, MD, PhD, Louis Block Professor at the University of Chicago, “Host Responses to *Staphylococcus aureus* Infections.” After an intermission, the Ninety Seventh Ricketts Lecture was presented by



Alan Cowman, PhD, Australia Fellow and Head of the Division of Infection and Immunity at the Walter and Eliza Hall Institute of Medical Research in Melbourne, Australia, and Chairperson of the International Congress of Parasitology XII. Dr. Cowman spoke on “Moving House and Renovating: Erythrocyte Invasion and Survival of the Malarial Parasite in the Human Host.” The Howard Taylor Ricketts Award was established in memory of the University of Chicago scientist who demonstrated that Rocky Mountain spotted fever is transferred to man by ticks. He was the first to observe and describe the small bipolar bodies that cause the disease. Later he found, at the cost of his life, the related organism that causes typhus fever. He died in Mexico City on May 3, 2010. Mrs. Howard T. Ricketts established the award in 1913 in honor of her late husband. Originally designated to be awarded to young scientists, in the mid-1940s it was decided that the memorial should honor persons beyond the limits of the University of Chicago. It became an annual award “in recognition of outstanding accomplishments in the field of the medical sciences,” and has been bestowed on some of the world’s most distinguished scientists.



The **Annual Marian Elliott Koshland Memorial Lecture** was given on June 7, 2010 in the Dorothy and Gaylord Donnelley Biological Sciences Learning Center. The lecture was given by Diane Mathis, PhD, and was on “Aire Control of Immunological Tolerance.” Dr. Mathis is Professor of Pathology at Harvard Medical School, and serves as Director of the Juvenile Diabetes Research Foundation Center on Immunological Tolerance in Type-1 Diabetes. She is also a Principal Faculty Member at the Harvard Stem Cell Institute, Associate Faculty Member of the Broad Institute, and is on the Scientific Advisory Boards of the Howard Hughes Medical Institute, Genentech, Catabasis and Fidelity Biosciences. She received her PhD from the University of Rochester, and performed postdoctoral studies at the Laboratoire de Génétique Moléculaire des Eucaryotes (LGME) in Strasbourg, France, and at Stanford University Medical Center. In 1983, she returned to France, establishing a laboratory at the LGME (later the Institut de Génétique et de Biologie Moléculaire et Cellulaire) in Strasbourg, in conjunction with Dr. Christophe Benoist. In 1999 she moved to the Joslin Diabetes Center in Boston. For the next nine years, Dr. Mathis was a Professor of Medicine at Brigham and Women’s Hospital and Harvard Medical School, and an Associate Research Director and Head of the Section on Immunology and Immunogenetics at Joslin, where she held the William T. Young Chair in Diabetes Research. Her lab’s primary focus is T cell differentiation and autoimmunity. Dr. Mathis was elected to the US National Academy of Sciences in 2003 and the German Academy of Sciences in 2007. The lecture was hosted by the



Committee on Immunology, and honors Dr. Koshland, a distinguished alumna of the University of Chicago who earned her PhD in Immunology in 1949. She served as a research assistant on the Manhattan District Atom Bomb Project in Oak Ridge, Tennessee in 1945 and '46, and was part of a team of researchers who produced a vaccine for cholera. After completing her PhD, she was a lecturer at Harvard, and then spent 13 years at the Brookhaven National Laboratory as an immunologist. She was a professor of Molecular Biology at the University of California at Berkeley for 32 years, and an international leader in immunological research. Among her discoveries was finding variations in the amino acid composition of antibodies that explained how they recognize invading organisms or other foreign material in the body. Her discoveries led to groundbreaking progress in the understanding of how antibodies function. She died of lung cancer in 1997.



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The Annual **Science@theInterface Symposium** was held at the Gleacher Center in downtown Chicago on June 3, 2010. Sponsored by the Institute for Biophysical Dynamics, the theme was “Optogenetics.” Speakers included Dr. Keith Moffat (University of Chicago) on “Optogenetics: Biologically Inspired Photoreceptor Design;” Dr. Karl Deisseroth (Stanford University) on “Optogenetics: Development and Application;” Dr. Peter Hegemann (Humboldt University Berlin)



on “Tailoring Channelrhodopsin for the Neurosciences;” Dr. Tobin Sosnick (University of Chicago) on “Design and Tuning of LOV2-based Photoswitches;” Dr. Roger Y. Tsien (University of California – San Diego) on “Hijacking Nature’s Photoreceptors;” Dr. Christopher Voigt (University of California – San Francisco) on “Harnessing Light as a Fast and Reversible Inducer of Signaling Networks;” and Dr. Yi Wu (University of North Carolina – Chapel Hill) on “Interrogate Cell Signaling with Biosensors and Photoactivatable Proteins.”



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The **“Big Problems” Curriculum** in the College invited Lynn Margulis, Distinguished University Professor in the Department of Geosciences, University of Massachusetts, to speak on “Trail through ‘Deep Time’: The Web (not the Tree) for Life in Earth” on June 3, 2010 in the Donnelley Biological Sciences Learning Center. Dr. Margulis is a member of the National Academy of Sciences and the Russian Academy of Natural Science. She received a National Medal of Science in 2000. The event was co-sponsored by the Department of Ecology & Evolution, the Big Problems program in the College, UC Laboratory Schools, and the Franke Institute for the Humanities.



Events to Come:

On September 21, 2010, the **Midwest Conference on Diabetes and Obesity** will be held at the UIC Forum, 725 W. Roosevelt Road, from 8:30 AM to 6:00 PM, hosted by the Institute of Medicine and the University of Illinois at Chicago.

On Friday, October 29, 2010 the students of the Developmental Biology and Growth and Differentiation Training Programs will host a one-day **Symposium on Regeneration**. Speakers will include Drs. Ken Poss (Duke University), Susan Bryant (University of California - Irvine), and Phil Newmark (University of Illinois, Champagne-Urbana).

The Chicago Biomedical Consortium will hold its **Eighth Annual CBC Symposium: “Protein Folding and Misfolding in Health and Disease”** on October 29, 2010 at Ida Noyes Hall. Speakers will include Ana Maria Cuervo, MD, PhD, Albert Einstein College of Medicine; Steven Finkbeiner, MD, PhD, University of California - San Francisco; Judith Frydman, PhD, Stanford University; Scott T. Brady, PhD, University of Illinois at Chicago; and Richard I. Morimoto, PhD, Northwestern University.



Student News in the Division of Biological Sciences

PhD Graduates – Winter and Spring 2010

Biomedical Sciences Cluster

Committee On Cancer Biology

James Knabb (Macleod)

“BNIP3 Proteolysis by Caspase-1 during Necrosis Inhibits BNIP3 Function in Mitochondrial Autophagy”

Mrinal Shah (Godley)

“DNMT3B7, a Truncated DNMT3B Protein Found in Cancer Cells, Disrupts Murine Embryonic Development and Alters DNA Methylation in MYC-Induced Lymphomas”

Jennifer Taylor Veneris (Rinker-Schaeffer)

“Identifying Downstream Targets of JNKK1/MKK4 Involved in the Suppression of Ovarian Cancer Metastatic Colonization”

Wei Xu (Kee)

“Identification of an E2A-Regulated Transcriptional Network Controlling T Lineage Commitment and Transformation”

Committee On Immunology

Susan Byrne (Ashton-Rickardt)

“Requirements for Serine Protease Inhibitor 2A (SPI2a) in the Self-Renewal of memory CD8+ T Cells and Hematopoietic Stem Cells”

Adam Savage (Bendelac)

“PLZF Directs the Innate-like Effector Program of NKT Cells”

Seth Scanlon (Bendelac)

“The Role of Valpha14-Invariant NKT Cells in the Induction of TH2 Airway Inflammation”

Committee On Microbiology

Alice Gabrielle Cheng (Schneewind)

“Molecular Mechanisms of *Staphylococcus Aureus* Infection and Immunity”

Justin W. Kern (Schneewind)

“Surface-layer Function and Assembly in *Bacillus Anthracis*”

Committee on Molecular Metabolism and Nutrition

Josiane Broussard (Van Cauter)

“Experimental Reduction of Sleep Durations in Associated with Increased Nocturnal Free Fatty Acid Levels and Impaired Insulin Signaling in the Adipocyte”

James Lopez (Philipson)

“The Role of ERM Proteins in Beta Cell Biology”

Maria Sutanto (Cohen)

“SMRT Regulates Adiposity and Adipocyte Differentiation *In Vivo*”

Department of Pathology (Program in Molecular Pathogenesis and Molecular Medicine)

W. Vallen Graham (Turner)

“Molecular Mechanisms of Epithelial MLCK Isoform Regulation: Characterization and Pharmacological Exploitation”

Amanda Marchiando (Turner)

“*In Vivo* Analysis of Intestinal Epithelial Barrier Maintenance, Regulation, and Repair”

David Raleigh (Turner)

“Tight Junction-Associated Marvel Proteins: Characterization of Structure, Function, and Molecular Dynamics”

Dan Yu (Turner)

“Modulation of Tight Junction Protein Molecular Remodeling: a Novel Mechanism of Barrier Regulation”

Darwinian Sciences Cluster

Department of Ecology and Evolution

Emma Greig (Pruett-Jones)

“Vocal Communication in Splendid Fairy-Wrens (*Malurus Splendens*)”

Committee On Evolutionary Biology

Michelle Rafacz (Margulis)

“Hormonal and Behavioral Patterns of Reproduction and Parental Care in the Hylobatidae”

Sarah Weyandt (Heaney)
“Molecular Insight on the Diversification of Philippine Horseshoe Bats”

Molecular Biosciences Cluster

Department of Biochemistry & Molecular Biology

Joseph DeBartolo (Sosnick)
“New Approaches to Protein Structure Prediction and Design”

Rita Strack (Keenan)
“Engineering and Biochemical Analysis of Tetrameric DsRed”

Julieta Sylvester (Kron)
“Cellular Communication and Signal Transduction: Using Kinase Activities to Analyze Intracellular Networks”

John Wojcik, Jr. (Koide)
“The Development of Highly Selective Monobody Inhibitors of Human SH2 Domains”

John Zaborske (Pan)
“Regulation of Metabolism by Transfer RNA in *Saccharomyces Cerevisiae*”

Zhoungzhou Zheng (Sosnick)
“Characterization of Protein Folding Intermediates for Delineation of Folding Pathways”

Committee on Developmental Biology

Amanda Neisch (Fehon)
“Analysis of Moesin Function in RHO1 Regulation, Cell Survival, and Epithelial Integrity”

Committee on Genetics

Peter Roycewicz (Malamy)
“Root Cell Walls Constrain the Development of Lateral Root Primordia into Lateral Roots”

Department of Human Genetics

Ran Blekhman (Gilad)
“Using Genome-wide Multi-species Expression Patterns to Study the Evolution of Gene Regulation in Primates”

Department of Molecular Genetics & Cell Biology

Paul Ingram (Malamy)
“A Role for Phloem-Mobile Molecules in the Regulation of *Arabidopsis* Root System Architecture”

Yang Liu (Glick)
“Assembly and Regulation of the Transitional Endoplasmic Reticulum in Budding Yeasts”

Elizabeth Montegna (Glick)
“SEC16 Recruits SEC12 to Transitional ER Sites in *Pichia Pastoris*”

Bonnie Scott (Kovar)
“Formin’ the Actin Cytoskeleton for Diverse Cellular Processes in Fission Yeast”

Neurosciences Cluster

Committee On Computational Neuroscience

Elise Nicole Covic (Sherman)
“Functional Characterization of Corticocortical Connections in Both Directions Between the Primary and Secondary Auditory Cortices of the Mouse”

Committee on Medical Physics

Michael Bernard Altman (Pelizzari)
“Optimization of the Temporal Pattern of Applied Dose for a Single Fraction of Radiation: Implications for Radiation Therapy”

Yahui Peng (Jiang)
“Computer-Aided Histological Analysis for Prostate Cancer Diagnosis”

William Sensakovic (Armato)
“Computerized Segmentation and Measurement of Pleural Disease”

Yading Yuan (Giger)
“Correlative Analysis of Breast Lesions on Full-Field Digital Mammography and Magnetic Resonance Imaging”



Alumni News



Marion Ehrich (MS, 1970, Pharmacology) won the 2010 Merit Award from the Society of Toxicology. She is a tenured professor of pharmacology and the co-director of the Laboratory for Neurotoxicity Studies at the Virginia-Maryland College of Veterinary Medicine. She received her PhD from the University of Connecticut, Storrs, CT in 1975. Her mentor at the University of Chicago was Dr. K.P. DuBois.

Markus Daniel Boos, MD, PhD 2008, won the Outstanding Achievement Award in Medicine for the most outstanding achievement during four years of medical school, as well as the Award for Best Basic Science Research poster at the 64th Annual Senior Scientific Session. He graduated from Pritzker School of Medicine with honors, was a member of the Gold Humanism honor Society, and was inducted into Alpha Omega Alpha, Beta Chapter. He will begin his residency in pediatrics at the University of Chicago Medical Center, and will go on to a residency in dermatology at the Hospital of the University of Pennsylvania.



Martin King, MD, PhD 2008, won the Nels M. Strandjord Memorial Award for outstanding performance in the general field of Radiology. He also participated in the Senior Scientific Session. He graduated from Pritzker School of Medicine, and will do an internship in medicine-preliminary at the University of Chicago Medical Center/NorthShore University HealthSystem, followed by a residency in radiation-oncology at Stanford University.



Kent Mouw, MD, PhD 2007, won the Medical and Biological Sciences Alumni Prize for the best overall presentation of research done in medical school awarded at the 64th Annual Senior Scientific Session. He graduated from Pritzker School of Medicine, and has gone on to an internship in medicine-preliminary followed by a residency in radiation oncology, both at Brigham & Women's Hospital.

Cara Rabik, MD, PhD 2008, won the Leon O. Jacobson Basic Science Prize for the most meritorious basic science research performed by a MD/PhD student at the 64th Annual Senior Scientific Session. She graduated from Pritzker School of Medicine with honors and has gone on to a residency in pediatrics at the University of Michigan Hospitals.



Geoffrey Wool, MD, PhD 2008, won the John Van Prohaska Award for outstanding potential for a career in teaching, research and clinical medicine, and also the Departmental Award for outstanding performance in the general field of pathology. He graduated from Pritzker School of Medicine with honors, and was inducted into Alpha Omega Alpha, Beta Chapter. He has gone on to a residency in pathology at the University of California, San Francisco.

Johnnie Byrd MD, PhD 2008, graduated from Pritzker Medical School and has gone on to a residency in family medicine at the University of Chicago Medical Center/NorthShore University HealthSystem. **Kelly Riordan, MD, PhD** 2008, graduated from Pritzker School of Medicine and has gone on to a residency in internal medicine at the University of Washington Affiliated Hospitals. **Eric Sun, MD, PhD** 2006, graduated from Pritzker School of Medicine, and has gone on to a residency in anesthesiology at Stanford University.

Where are my fellow graduate students today?

The Biological Sciences Division and current graduate students would like to hear from you. What exciting career are you pursuing after graduating from the University of Chicago? Would you be willing to share information about your career with other alumni? Please submit your news to:

Theimprint@bsd.uchicago.edu

Members of the **Newsletter Committee** who contributed to this issue include: *Cristianne Frazier*, a fourth-year student in the program on Neurobiology, *Lauren Kolodziej*, a fourth-year student in the Committee on Molecular Metabolism & Nutrition; *Crystal Love*, a third-year student in the Committee on Developmental Biology, *Aashish Sha*, a first-year student in the Committee on Genetics, Genomics, and Systems Biology, *Joanna Rowell*, a fifth-year student in the program on Neurobiology, and *Srutbi Swaminathan*, a third-year student in the program on Neurobiology.

The **Newsletter Committee** would like to congratulate the former members of the committee who graduated this year: **Timothy Husson, Paul Ingram, Chinonye Nwawke, Thad Novak, Bonnie Scott, Maria Sutanto, and Julieta Sylvester**. Thanks for your work on *The Imprint!*

