BIOLOGY CURRENTS

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Letter from the Chair

PoKay Ma

Dear Alumni and Friends:

In this forum a little over a year ago, I informed you of the retirement of Dr. Corinne Michels, and of my assuming the duties of the chair of the Department of Biology. I was not fully convinced that I was the right person to succeed Dr. Michels, and accepted the responsibility with great trepidation.

Much has transpired over the course of the past two years. I can now report that I find aspects of this position enjoyable. Through glimpses of the day-to-day administration of Queens College, I have gained an appreciation not only of the many challenges confronted by institutions of higher education, but also of the many opportunities that present themselves to institutions that are prepared to embrace them. Through collaborations with colleagues from other departments, I have gained a deep respect for their wisdom and their dedication to the College.

One of the greatest pleasures I derive from the many tasks of the chair is my contact with our alumni. I have communicated with many of you, including two who took my courses a decade ago. I surprised them—and myself—by remembering them. Hard as it may be to believe, my colleagues and I do remember many of you, and would love to find out what you are currently doing.

In the 2012–2013 academic year, Queens College celebrated its 75th anniversary with a series of events throughout the year. One of the high

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Immunologist and Virologist Dr. Mika S. Vesanen Appointed Lecturer of Biology

The Biology Department is very pleased to announce that Dr. Mika Vesanen became a permanent member of our department after serving in an adjunct and substitute faculty capacity since 2005. A research scientist, Dr. Vesanen came to Queens College after holding positions as a Postdoctoral Research Fellow at the Rockefeller University (Aaron Diamond AIDS Research Center), and as a Postdoctoral Research Associate at Weill Medical College, Cornell University, in the Department of Immunology. Here at Queens, he has found his niche, teaching courses in Anatomy and Physiology, Immunology, Virology, Microbiology, the Biology of Cancer, and Infectious Diseases. Dr. Vesanen informs his teaching with his own research experience, kept current through extensive reading in his fields of expertise. He is passionate about keeping on top of the latest research, so that his message to students is always the status of the field at the present—not five or ten years ago.

Dr. Mika Vesanen

Dr. Vesanen grew up in Finland, spending much of his childhood in the small town of Lahtia, where nature abounded. He recounts that "it didn't take long to get to the middle of nowhere." He was exploring nature all the time—the forests were his playgrounds. At a young

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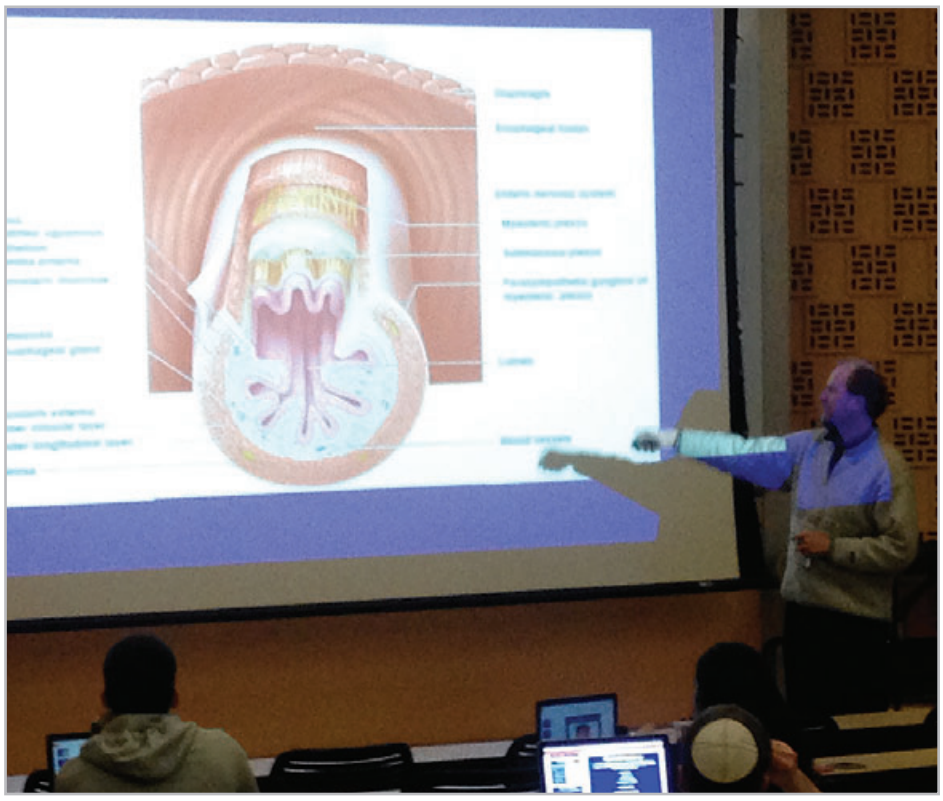


Dr. Vesanen lecturing on the gastrointestinal system

A Conference All About Queens County

The year 2013 was special for Queens College as it celebrated its 75th anniversary. To better acknowledge the college's role as the intellectual center of the borough, John Waldman of the Biology Department proposed and organized a conference, *Quintessential Queens: Celebrating America's Fourth Largest City*. Held on October 4 in LeFrak Concert Hall, it drew 200 attendees interested in this cornerstone of New York City.

The keynote speaker, noted author Robert Sullivan, performed a stream-of-consciousness tour of Queens in the spirit of another famous local writer, Jack Kerouac. Dr. Waldman covered ecology and environment with "Queens: An Unnaturally Natural Landscape." Official Queens County Historian Jack Eichenbaum and Jeffrey Kroessler of John Jay College took the audience through the evolution of Queens from farmland to metropolis. Queens College's own Andy Beveridge (Sociology) presented "The (Extremely) Diverse Peoples of Queens," a theme echoed by author Nicole Steinberg of the Pew Center for Arts & Heritage, who provided a tour of its many neighborhoods, from "Astoria to the Rockaways."

Cultural topics were covered by Queens College's Nicole Cooley (English), who spoke on "From *The Great Gatsby* to the Traveling Typewriter: A Look at the Queens Literary Scene," and Michael Cogswell, Director of the Louis Armstrong House and Museum, with "What a Wonderful World: Louis Armstrong (and Other Jazz Greats) in Queens." And Judith Sloan and Warren Lehrer of Earsay staged "Excerpts from Crossing the BLVD: Strangers, Neighbors, Aliens in a New America."

The presentations ended with a look at the borough in 2030 by Jonathan Bowles of the Center for an Urban Future, followed by a reading of an original work by the Poet Laureate of Queens, Paolo Javier. For those who couldn't be there or who would like to know more about "America's Fourth Largest City," the talks are easily accessed as videos on the college's website at http://www.qc.cuny.edu/QuintessentialQueens.

Picured below, conference organizer, Dr. Waldman

VESANEN APPOINTED BIOLOGY LECTURER *continued from page 1*

age, Dr. Vesanen became interested in collecting moths, and during summers spent on a small family-owned island, he garnered botanical insights while planting birch trees. A more formal study of biology was inspired by a high school biology teacher, who piqued his interest in genetics and cloning. This ultimately led Dr. Vesanen to apply to the University of Helsinki, where he completed his undergraduate education with a focus on genetics. During these years, he was a research assistant in the Department of Virology, where he worked on HIV studies.

Much of Dr. Vesanen's pedagogy is fashioned after the educational system he experienced in Finland. His core teaching value is understanding information—not merely memorizing it. To this end, Dr. Vesanen gives his students essay exams which require them to fully understand concepts and express ideas in their own words. He is proud that his students often report that he changes their style of studying to a more comprehensive approach. Dr. Vesanen loves to incorporate vivid stories in his teaching as well, often drawing on his experiences from Finland and its northern climate. For example, in winter he would swim in a lake (where a humongous hole was cut through the ice) after first warming up in a sauna (100 degrees Celsius)—creating an amazing physiological response. His students respond well to these personal anecdotes that reinforce physiological concepts.

In addition to his teaching, Dr. Vesanen also serves as a Pre-Health Advisor to our students who are interested in applying to medical, dental and other health-related graduate programs. He greatly enjoys the opportunity of seeing the pre-health students develop their interests over time, mapping career paths—and ultimately seeing students through the medical school admissions process. As a member of the National Association of Advisors, Dr. Vesanen attends regional meetings that enable him to better assist our pre-health students, and form effective lines of communication with the admissions offices at medical and dental schools. He is especially proud that during this past year, two of his advisees were admitted to Harvard Dental School.

FACULTY IN THE NEWS

Professor Waldman and fellow fisherman

Professor **John Waldman** and his colleague David Strayer of the Cary Institute of Ecosystem Studies authored a *New York Times* Op-Ed commentary entitled, "Beware Marauding Carp." Both Drs. Strayer and Waldman are experts on the ecology of the Hudson River and authors of books on this river that is central to New York State. The article describes the invasion of Lake Erie by the Eurasian species of fish commonly called the grass carp, a voracious consumer of underwater vegetation. Because Lake Erie and the Hudson River are connected via the Erie Canal, the grass carp threatens to disrupt the ecology of the Hudson River and New York's other inland waters. Of greatest concern is that the grass carp has been shown to be reproducing in Lake Erie. Moreover, it may only be the first of a number of other Asian fish species migrating through the Great Lakes. Waldman and Strayer feel that there is still time to stop these invasive fish species by erecting simple barriers. They are speaking out now so that we do not see a repeat of the spread of the zebra mussel that has devastated the plankton levels in the Hudson River and effectively starved the native shad populations. The full article can be found at http://www.nytimes.com/2013/11/20/opinion/beware-marauding-carp.html?emc=eta1&_r=0.

Etching of a "marauding" grass carp

Professor John Waldman was part of a team of scientists from the New York area who undertook a "bioblitz" of the 843-acre Central Park in Manhattan. The goal was to catalogue the variety of plant and animal life found in the park. Over a 24-hour period on a mid-August day, experts in lichens, spiders, birds, fish, reptiles, mammals, and flowering plants spread out throughout the park to collect, identify, and count the species found. They looked on land, up in trees, and used seining nets with the help of students from the City University of New York's Macaulay Honors College. This was the first time in over 10 years that this type of study of Central Park had been undertaken, and valuable information was obtained regarding the impact of restoration work on the lakes and ponds and efforts to remove invasive species. Dr. Waldman and students found bluegill sunfish, pumpkinseed sunfish, black crappie, largemouth bass, golden shiner, catfish, bullhead catfish, and other species in Harlem Meer and Central Park's lakes. He reports that, "You have nice species diversity and different age classes and high abundance. You could take these ponds and put them in the Catskills and they wouldn't be out of place. Considering where they are, these water bodies are quite impressive." The full article can be found at: http://www.nytimes.com/2013/08/28/science/census-of-central-park-finds-new-tenants.html?ref=todayspaper.

FACULTY NOTES 2013

This section reviews some highlights of the scholarly activities of Biology Department faculty members, staff, and students during 2013. The diversity of these activities is a clear indicator of the international recognition of our dedicated faculty. You should note the extent to which undergraduate students are integrated into their research programs.

MITCHELL BAKER presented his research on "The effect of land use history on the dispersal of tropical rainforest birds" at the American Ornithologists Union meeting held in Chicago, IL. He spoke on "Climate change and migratory insects; local and continental effects of temperature anomaly on potato leafhopper arrival and severity of infestation" at the Entomological Society of America meetings in Austin, TX as well as on a poster presentation of student research, "Geographical variation in mode of inheritance in resistance to spinosad."

STEPHANE BOISSINOT continued work on his National Institutes of Health grant to study the "Population genomics of non-LTR retrotransposons in vertebrates." Dr. Boissinot spoke on the "Evolution of genome size in vertebrates" at New York University, NY and on the "Evolution of the anti-viral OAS1 gene" at Montana State University, Bozeman, MT.

JOHN DENNEHY continued his research with support from his grant from the National Science Foundation Faculty Early Career Award entitled, *"Population Dynamics and Evolutionary Ecology of Virus Emergence."* Dr. Dennehy also serves as a panel member of the NSF Graduate Research Fellowship Program in Evolutionary Biology.

Dr. Dennehy was invited to speak at the Department of Computer Science and Electrical Engineering and the Center for Bioinformatics and Computational Biology of the University of Delaware on "Stochasticity in Bacteriophage Lysis Timing." Dr. Dennehy also spoke at the annual Evolution meetings on "Host range mutations among the bacteriophage Φ6" held in Snowbird, UT. He, doctoral student Brian Ford, and undergraduate students Marko Baloh, Lauren Esposito, Gregory Lallos, and Lauren Mordukhaev attended and presented posters on their research work at the 5th Annual Symposium of the Science Education Alliance, Howard Hughes Medical Institute, Ashburn, VA and the annual Evolution meetings, Snowbird, UT. Townsend Harris High School student Qainat Shah presented his research work in a poster at the Queens College Sigma Xi Research Poster Session.

ANDREW GRELLER remains very active in studies of native flora and forests, particularly those found locally on Long Island, and educational activities on tree and forest preservation. He spoke on the "Natural History of Madagascar: the island that time forgot," to the Long Island Botanical Society at Stony Brook. He was the lead author on a report for the *Quarterly Newsletter of the Long Island Botanical Society* entitled, "Field notes and morphological observations of some Montauk oaks." It appeared in their summer issue (**23**:25, 27–31, 34).

NATHALIA HOLTZMAN continued her research on early heart development using the genetic model system zebrafish (*Danio rerio*). She was invited to speak in the Queensborough Community College Biology and Geology Department Seminar Series on "While the Beat Goes On: Cardiac Contractility Directs Cardiac Morphogenesis." She also spoke at the Mid-Atlantic Zebrafish Conference held at Princeton University. The title of her talk was "myh6 and the Role of Cardiac Contraction in Sarcomere Assembly." Dr. Holtzman is also very involved in the college's Teaching and Learning Center and in developing pedagogical skills at all levels of education. She spoke on her work "Play Debrief Replay—a strategy for investigative learning practices" at the Central Park East 2 Elementary School Professional Development Workshop Series. She also ran a workshop at QC's Center for Teaching and Learning on "Teaching Large Classes," and lectured on "Strategies to Engage Students in Large Classes" at their Innovation With and Without Technology group. Additionally, Dr. Holtzman spoke at the Rockefeller University Tri-Institutional Career Symposium on "Conducting Research at an Undergraduate Institution." She and her students (doctoral students Corinna Singleman and Sana Khan; and high school student Elise Harrison) presented their work on zebrafish heart development at the following venues: the Society for Developmental Biology Conference in Cancun, Mexico; the Mid-Atlantic Zebrafish Conference in Baltimore, MD; and SUNY/CUNY Faculty Senate Student Research Symposium, Albany, NY.

Holtzman

DAVID LAHTI's research focuses on two areas—bird behavior and human cultural behavior—and he was invited to speak on these topics in a variety of national and international venues. He gave two presentations at Vrije Universiteit, Amsterdam,

Netherlands on "The evolution of religion" and "An evolutionary perspective on the history and functions of morality." He spoke twice at the annual Animal Behavior Society meeting held at the University of Colorado, Boulder. His topics were "Integration of genetic factors in the learning and production of canary song" and "Egg variation and defenses against brood parasitism in Rüppell's Weaver." Dr. Lahti was invited to speak at the CUNY Animal Behavior Initiative Second Annual Conference, where he discussed "Towards a macroevolutionary perspective on defenses against brood parasitism." He also gave seminars at the Brooklyn College Department of Biology and at Empire State College, New York, entitled, "Learned behaviors still evolve: lessons from birds."

Dr. Lahti was appointed Associate Editor of *The Auk: Ornithological Advances*. He serves as a peer reviewer of journal articles submitted to *Animal Behavior, Faculty of 1000 Research, Journal of Animal Ecology, Journal of Evolutionary Biology, Nature Communications,* and the *Proceedings of the Royal Society of London B.* Dr. Lahti reviewed grant proposals for the American Philosophical Society and the John Templeton Foundation. Additionally, he maintains the Online Bibliography of Environmental Thought (http://www.isee-obet.org).

Dr. Lahti and his students attended the Animal Behavior Society National Meeting, Boulder, CO; the CUNY Animal Behavior Initiative Annual Conference; and a conference at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, where they made poster presentations on their research.

ALICIA MELÉNDEZ continued her research on early developmental processes in *C. elegans*, particularly the role of autophagy (programmed cell death) in stem cell specification and proliferation in the germ line. Her research is supported by an NIH Area grant. She continues to collaborate with

Meléndez

Malene Hansen of the Sanford Burnham Medical Research Institute, La Jolla, CA, on another study entitled, "Role of autophagy and lipid metabolism in organismal aging," a project funded by an R01 research grant from the NIH National Institute on Aging.

Dr. Meléndez was invited to speak on autophagy in *C. elegans* development and aging at Rutgers University, NJ; the Northeast Regional Meeting of the Society for Developmental Biology in Woods Hole, MA; the New York Cell Death meeting at the Rockefeller University, NY; Central Michigan University, Mt. Pleasant, MI; and the Graduate Seminar on the Biology of Aging, Albert Einstein College of Medicine, Bronx, NY. Dr. Meléndez also spoke on her research at the 19th International *C. elegans* Meeting held at the University of California at Los Angeles, Los Angeles, CA. Several of her doctoral students also attended the conference and presented posters on their research.

Dr. Meléndez serves on the American Federation of Aging Research (AFAR) National Scientific Advisory Council, and is a co-organizer of the New York Area Worm Meeting. During 2013 Dr. Meléndez was on sabbatical leave to study chaperone-mediated autophagy in *C. elegans*. She worked with Dr. Barth Grant of Rutgers University, NJ. This work is ongoing.

ULDIS ROZE attended the

meeting of the American Society of Mammalogists in Philadelphia PA where he presented a poster on his book, *Porcupines, the Animal Answer Guide,* published by Johns Hopkins University Press.

CATHY SAVAGE-DUNN continued

her research investigating the role of body size control genes and TGFβ signaling in growth regulation in *C. elegans*, a model for human diseases like cancer and aortic aneurisms. She was invited to speak on this research at a number of high-profile conferences. Dr. Savage-Dunn gave a talk entitled, "Linking metabolic changes to body size regulation by DBL-1/BMP in *C. elegans*" at the FASEB Conference on The TGF-β *Superfamily: Signaling in Development and Disease* held at Steamboat Springs, CO. In addition, she attended the Northeast Regional Meeting of the Society for Developmental Biology, Woods Hole, MA along with students James Clark (doctoral student) and Tasmia Hoque, who presented posters on their research on TGF-β signaling and the role of the chloride intracellular channel proteins EXL-1/CLIC in the stress response in *C. elegans*. Dr. Savage-Dunn and doctoral students James Clark, Uday Madaan, and Yakov Shaulov attended the 19th International *C. elegans* Meeting held at UCLA, CA. They presented posters describing their studies of TGF-β signaling, *DBL-1* target gene regulation by SMA-2, SMA-3, and SMA-4, and environmental stress resistance in *exl-1* and *dbl-1* mutants of *C. elegans*.

JOHN WALDMAN published three

books in 2013, two new books plus a revised paperback edition. *Still the Same Hawk: Reflections on Nature in New York,* is a collection of creative nonfiction essays written for this book and edited by noted observers and philosophers of urban nature, including Tony Hiss, William Kornblum, Phillip Lopate, Anne Matthews, Betsy McCully, Kelly

McMasters, and Robert Sullivan, among others. To give you a taste of the unique nature of this book, here is a quote from Robert Sullivan's essay, "My Time Spent in the Nature that People Would Rather Not Think About." "My father is the prototypical urban explorer, at a time when his species had yet to be identified as such; my childhood was spent poking around in old yet-to-be-demolished buildings in Lower Manhattan, pulling over to check out old farms and empty fields in Brooklyn and Queens."

Dr. Waldman's second new book, *Running Silver: Restoring Atlantic Rivers and their Great Fish Migrations*, is a story of the migratory salmon, shad, herring, and other runs that once were so abundant that the rivers and estuaries of the Atlantic coast "ran silver," but whose numbers are now so severely depressed that some are near commercial extinction. The book, which was completed during his sabbatical leave discussed in the 2012 issue of *Biology Currents*, describes the life cycles and conservation challenges of this group of commercially significant fishes. According to Bruce Babbitt, former Secretary of the Interior, Dr. Waldman outlines a "blueprint to restore these fisheries to their former abundance." The Nature Conservancy describes *Running Silver* as "one of the most important conservation works I've read in recent years." Dr. Waldman also published a revised, paperback edition of *Heartbeats in the Muck: The History, Sea Life, and Environment of New York Harbor*, originally published in 1999. The new edition includes an epilogue that extends the remarkable story of the environmental recovery of New York Harbor from 2000 to 2012, the 40th anniversary of the critically important Clean Water Act.

Dr. Waldman is a member of the Editorial Board of the journal *Northeastern Naturalist*. He was Team Leader of the Fishes team in the Central Park BioBlitz organized by the Macaulay Honors College and authored a commentary that appeared on the Op-Ed page of the *New York Times* on November 20, 2013 entitled, "Beware Marauding Carp." (For more information on these, see the "Faculty in the News" section of this issue.) Dr. Waldman organized *Quintessential Queens: Celebrating America's Fourth Largest City* and presented the opening lecture, "An Unnaturally Natural Landscape." More information can be found elsewhere in this issue.

Dr. Waldman spoke at many different venues on his studies of NY-area waterways and fish conservation biology. He spoke about "Migration Reform: Opening up the Bronx River to Migratory Fish" at the Uncommon Ground Lecture Series, New York City Department of Parks & Recreation in Central Park, NY; on "Micro to Macro Movement in New York City Waterways from East Tremont to Newtown Creek" at the New School for Social Research, NY; on "Hudson River Atlantic Sturgeon: Vulnerability to Bycatch in Coastal Waters (and Non-Natal Estuaries)" and "Status of Hudson River Fishes: Local and Regional Perspectives" at the State of Hudson River Science symposium at the Hudson River Environmental Society, New Paltz, NY; and presented a lecture entitled, "Jamaica Bay Salinity Gradient Restoration and Stream Daylighting" at the New York City Stream Daylighting Workshop, the Hudson River Foundation, NY.

John Waldman gave the Keynote Lecture at the following conferences: at the Diadromous Species Restoration Research Network meeting at the University of Maine, Orono, his topic was "Is Resilience Theory Useful to Anadromous Fish Restoration?"; at the Atlantic Estuarine Research Society, Williamsburg, VA, he spoke about the "The Broad Arc of History on a Linear River"; at Hooked on Our Waters, a conference of CUNY's Hudson River Fish Advisory Outreach Project and NY-NJ Harbor & Estuary Program, he spoke on "New York Harbor: Four Centuries between Eagles"; and at the New York State Outdoor Education Association Annual Conference, Albany, NY, he talked about the new edition of his book *Heartbeats in the Muck: The History, Sea Life, and Environment of New York Harbor*.

Dr. Waldman also was invited to speak about his new book *Still the Same Hawk: Reflections on Nature in New York* at the Mid-Manhattan Library in New York. He also gave the commencement address for the New School's Environmental Studies Program.

ZAHRA ZAKERI continued her NIH-funded research on "Characterization of flavivirus NS4A induced autophagy." She was co-organizer of the meeting of the International Cell Death Society held in Spain. Dr. Zakeri was invited to chair a session on "Cell death: A Biomedical Paradigm" at the ECDO meeting of the Institut Pasteur, Paris, France. She spoke on the "Manipulation of cell death machinery by viruses" at the Turkish Cell Death Research Society meeting in Cesme, Turkey, and gave a lecture on the "Manipulation of Autophagy By Influenza Virus" at the 21st National Electron Microscopy Congress held in Mersin, Turkey.

Dr. Zakeri serves as a member of the grant review committees of the Belgium Cancer Society, the international unit of the National Research Foundation South Africa, and the Associazione Italiana per la Ricerca sul Cancro (AIRC) of Italy. She is on the Editorial Boards of *Apoptosis*, *Gastroenterology and Hepatology from Bed to Bench*, and *Cell Death and Disease*.

PSC-CUNY RESEARCH AWARD RECIPIENTS

Stephane Boissinot
Nathalia Holtzman
Daniel Weinstein

IN MEMORIAM by Corinne A. Michels, Uldis Roze, and Elizabeth S. Boylan

Sadly, we report the passing of four of the Biology Department's former faculty members.

ASSOCIATE PROFESSOR LOIS JEAN SMITH

died December 22, 2008, at age 85. Regrettably, this announcement is belated because the Department had lost touch with her since her retirement and was not aware of her death until recently.

Dr. Smith received her Ph.D. degree from Columbia University in 1955, studying implantation genetics in the house mouse at the Jackson Memorial Laboratory in Bar Harbor, Maine, which was affiliated with Columbia University's Department of Zoology. While carrying out her thesis research at the Jackson Labs, she collaborated with Elizabeth S. Russell on blood-forming tissue transplantation in genetically anemic mice that resulted in two co-authored publications. E.S. Russell, considered by many to be "one of the truly great figures in the field of mammalian developmental genetics," was a member of the National Academy of Sciences and served as President of the Genetics Society of America, among many other honors and awards.

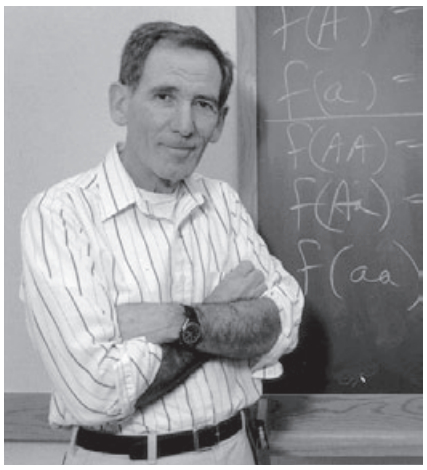
Many research articles by Dr. Smith were published by these journals during her career.

Dr. Smith continued studies of embryonic implantation in the mouse working with Kathryn F. Stein at Mount Holyoke College, MA and later in the Anatomy Department of Albert Einstein College of Medicine. She joined the faculty of the Queens College Biology Department in 1966. Over the course of her career, Dr. Smith published several highly cited research articles in influential journals, including *Science* magazine, the *American Journal of Anatomy, Journal of Experimental Zoology,* and the *Journal of Embryology & Experimental Morphology.* She was the sole author of most of her publications. Clearly, Dr. Smith's noteworthy education, training, and research record in the new field of embryological genetics made her an enviable addition to the Biology Department.

At Queens College, Dr. Smith taught undergraduate developmental biology, both the lecture course and the laboratory course, which focused on vertebrate embryology. Reflecting her lifelong scientific interests, Dr. Smith's estate included a significant bequest to students graduating with a major in biology and planning to attend graduate school to study embryology or genetics.

Both before and after her retirement, Dr. Smith indulged another biological passion: the breeding and showing of dogs. For this purpose, she created an enclosed space for dogs in the back of her SUV to travel back and forth to the dog shows.

Liz Hansen, a veterinarian at the U. of Missouri College of Veterinary Medicine, recalls getting several multi-page letters from Dr. Smith. The letters were handwritten, on both sides of the page, and discussed interesting genetic principles as they applied to dogs. Liz Hansen supplied Dr. Smith with a purebred schnauzer that she called Katy. Katy went on to displays at dog shows and won a championship.



Professor Marvin Wasserman

PROFESSOR MARVIN WASSERMAN

passed away on April 19, 2013 at the age of 84. He earned his BS degree from Cornell University in 1950 and M.A. and Ph.D. degrees from the University of Texas, Austin in 1952 and 1954, respectively. After two years of service in the U.S. Army, Dr. Wasserman returned to the University of Texas from 1956 to 1960 as a Research Associate. Following this, he was a Senior Lecturer at the University of Melbourne, Australia. Dr. Wasserman joined the QC Biology Department in September 1962 and soon met and married Florence Mazzocchi, a biology alum and a Biology College Laboratory Technician at the time. He rose through the ranks

to be appointed Professor in 1968, and was elected Chair of the Department in 1984. Prof. Wasserman retired in 1999 but continued his research work for over a decade.

Prof. Wasserman was one of those scientists who is happiest when pursuing research on a much-loved subject. We should all be so lucky. He was internationally recognized for his work on evolution and speciation in the *Drosophila repleta* group, a number of related species found in the desert areas of Mexico and the southwestern United States. He utilized chromosomal rearrangements and mating behavior to determine the evolutionary relatedness of these species. Some of his research methods were incorporated into his lab classes. You may remember extracting what you hoped was a *Drosophila* salivary gland and spreading it on a slide to visualize the giant chromosomal banding patterns. Prof. Wasserman was a very productive researcher. He authored over 40 book and journal articles in first-rank scientific journals, including *Nature, Evolution, American Naturalist,* and *Proceedings of the National Academy of Sciences.* The measure of a publication's influence is the number of citations it has received in the scientific literature. His 2007 publication in *Nature* (with multiple co-authors) has been cited 1,343 times. (In most cases, an article citation rate of 20 to 50 indicates a significant contribution.) Another frequent distinguishing characteristic of Dr. Wasserman's publications is their length. His 1992 book chapter on cytological evolution in the *Drosophila repleta* group was 88 pages long. Prof. Wasserman received grants in support of his research from the National Science Foundation. He also served as a permanent member of the National Policy Guidance Council, a subcommittee of the American Society of Naturalists, to oversee the National *Drosophila* Species Resource Center. Perhaps most significantly, he was elected a Fellow of the American Association for Advancement of Science in 1998, in recognition of lifetime accomplishment by fellow scientists.

Prof. Wasserman is best remembered by his students for his course in genetics, particularly the laboratory component of the class. In addition to "*Drosophila* chromosome squashes," there were endless weeks of *Drosophila* crosses to determine whether your "unknown" mutations were sex-linked or autosomal, dominant or recessive, or mapped to linkage group 2 or 3. And of course, the endless worry. Would your stock cultures die? Would you be able to get enough "virgin females"? Would your flies be killed while being incubated in your mother's oven? (This happened to one student whose mother turned on the oven, not realizing her son was keeping his *Drosophila* stock cultures inside.) Or frozen on your windowsill while you were collecting virgins? Thank goodness for the supportive lab techs who made success possible and the experience unforgettable. For years after he retired, Prof. Wasserman maintained his research laboratory and *Drosophila* stock cultures in Colwin Hall. A colleague would regularly ask him, "Marv, why don't you sleep late and go fishing?" He would always reply, "I have important work to do." This is how we will remember him.

PROFESSOR JOHN BERECH, JR. passed away on June 30, 2013 at the age of 87. Dr. Berech was a biochemist whose research focused on nucleotide metabolism in protozoa. He received his Ph.D. from Indiana University, Bloomington, IN, Department of Zoology, where he did doctoral thesis research with Professor W. J. van Wagtendonk and initiated his studies of *Paramecium aurelia* metabolism. From 1960 to 1963 Dr. Berech worked at Brookhaven National Laboratory in the Department of Radiation Physiology and published a journal article with H. J. Curtis on the effects of radiation on kidney function in the mouse. Dr. Berech joined the faculty of the Biology Department by 1964 and soon returned to studies of ciliated protozoa in his research lab in the basement of B Building (now Frese Hall).

Dr. Berech was doctoral thesis adviser to Marilyn Niemann, the late Peter Lanzetta, and Frank Keegan, who received their Ph.D.s from the Graduate School of CUNY. As recounted by Dr. Michael Gottlieb, a former CUNY doctoral student working with a different mentor, Dr. Berech was "a

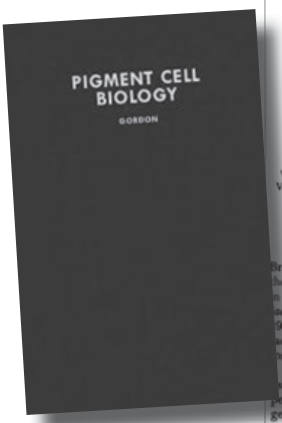
Peer-reviewed journals that published Dr. Beresh's collaborative works.

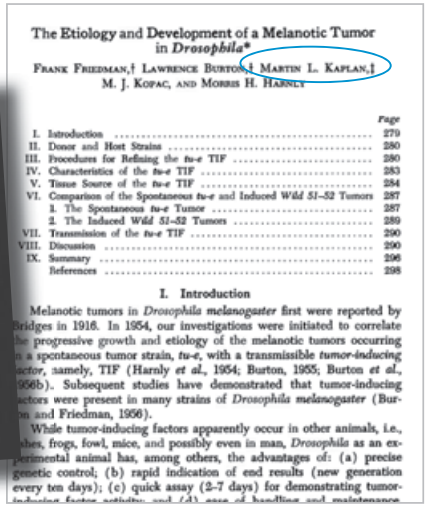
quiet soft-spoken individual who was generous with his time and teaching. [He] helped me on a side project of mine that came out of my thesis work on ribosomal RNA metabolism in a parasitic trypanosomatid flagellate *Crithidia fasciculata*. . . . This help led to a collaboration that resulted in a co-authored publication of a newly described polysaccharide." Dr. Gottlieb also recalls that Dr. Berech worked on a fungal research project with Howard Schoen, another doctoral student mentored by a faculty colleague. "The bottom line is that John was there to help and teach regardless of which lab they were in." The results of all of these collaborations were published in peer-reviewed journals, including the *Journal of Protozoology, Experimental Parasitology, Antimicrobial Agents and Chemotherapy*, and others. Prof. Berech was a lifetime member of the American Society of Protozoologists.

At Queens College, Prof. Berech taught Cell Physiology courses at the undergraduate and graduate level for many years, and inspired many students to pursue graduate studies. Those who took his classes will remember learning cell-separation techniques, getting a firm foundation in basic metabolism, and recall many late nights completing lab assignments.

PROFESSOR MARTIN KAPLAN passed away in 2013. He began his research career in the 1950s working on melanotic tumors of *Drosophila*. While affiliated with New York University and Brooklyn College, he published as sole author of an article entitled, "Histogenesis of the Tu-E Melanoma in *Drosophila*" that appeared in *Transactions of the New York Academy of Sciences*. Dr. Kaplan continued these studies at St. Vincent's Hospital, Manhattan, NY. He co-authored a chapter entitled, "The etiology and development of a melanotic tumor in *Drosophila*" in *Pigment Cell Biology: Proceedings of the Fourth Conference on the Biology of Normal and Atypical Pigment Cell Growth*, a 1959 book edited by M. Gordon (Academic Press Inc., NY). Dr. Kaplan continued at St. Vincent's Hospital in the research laboratory of Dr. Antonino Rottino, working on the carcinogenicity of tumor factor isolated from mouse and human cancers.

Prof. Kaplan taught a variety of courses including anatomy and physiology and a seminar course in medical ethics. He also served as Associate Dean of the School of General Studies. Additionally, Prof. Kaplan was active in the PSC-CUNY faculty union, and served as the Queens College union representative for many years.





The Etiology and Development of a Melanotic Tumor in *Drosophila**

Frank Friedman,† Lawrence Burton,‡ Martin L. Kaplan,‡ M. J. Kopac, and Morris H. Harnly

I. Introduction

Melanotic tumors in *Drosophila melanogaster* first were reported by Bridges in 1916. In 1954, our investigations were initiated to correlate the progressive growth and etiology of the melanotic tumors occurring in a spontaneous tumor strain, *tu-e*, with a transmissible *tumor-inducing factor*, namely, TIF (Harnly *et al.*, 1954; Burton, 1955; Burton *et al.*, 1956b). Subsequent studies have demonstrated that tumor-inducing factors were present in many strains of *Drosophila melanogaster* (Burton and Friedman, 1956).

While tumor-inducing factors apparently occur in other animals, i.e., rabbits, frogs, fowl, mice, and possibly even in man, *Drosophila* as an experimental animal has, among others, the advantages of: (a) precise genetic control; (b) rapid indication of end results (new generation every ten days); (c) quick assay (2–7 days) for demonstrating tumor-

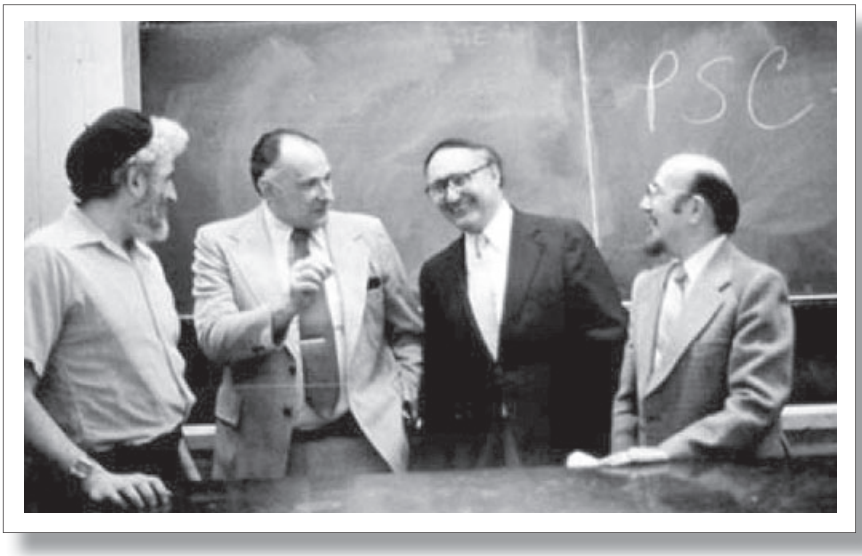


Photo: *Professional Staff Congress, Fourtieth Anniversary 1972–2012*

Left to right: **Sidney Lieberman, Claude Campbell, QC President Saul Cohen, and Marty Kaplan. Marty was active in the PSC-CUNY faculty union in the 1980s.**

FACULTY SCHOLARSHIP 2013

D = Doctoral student M = Master's student U = Undergraduate student HS = high school

BOOKS

Waldman, J., 2013. *Heartbeats in the Muck: The History, Sea Life, and Environment of New York Harbor* (paperback edition). Fordham University Press, New York. 192 p.

Waldman, J. (editor), 2013. *Still the Same Hawk: Reflections on Nature in New York.* Fordham University Press, New York. 151 p.

Waldman, J., 2013. *Running Silver: Restoring Atlantic Rivers and their Great Fish Migrations*. Lyons Press, Guilford, CT. 284 p.

BOOK CHAPTERS:

Lahti, D. C., 2013. Twelve (more) things about the evolution of morality that make people nauseous. In *Human Social Evolution: The Foundational Works of Richard D. Alexander*. K. Summers and B. Crespi (eds.). Oxford University Press, New York. pp. 307-325.

Lahti, D. C., (2013). Egg. *World Book Encyclopedia.* World Book, Chicago.

Gumienny[D], T. L. and C. Savage-Dunn, (2013). TGF-ß signaling in *C. elegans*. *WormBook*, ed. The *C. elegans* Research Community, doi/10.1895/wormbook.1.22.2, http://www.wormbook.org.

PEER-REVIEWED PUBLICATIONS

Collie[D], K., S. J. Kim and **M. B. Baker,** 2013. Fitness consequences of sibling egg cannibalism by neonates of the Colorado potato beetle, *Leptinotarsa decemlineata*. *Animal Behaviour* **85**: 329-338.

Sookdeo[M], A., C. M. Hepp, M. McClure, and **S. Boissinot**, 2013. Revisiting the evolution of mouse LINE-1 in the genomic era. *Mobile DNA* **4**:3.

Tollis[D], M. and **S. Boissinot**, 2013. Lizards and Lines: selection and demography affect the fate of L1 retrotransposons in the genome of the green anole (*Anolis carolinensis*). *Genome Biology and Evolution* **5**:1754–1768.

Dennehy, J.J., S. Duffy, K.J. O'Keefe, S.V. Edwards, and P.E. Turner. 2013. Frequent coinfection reduces RNA virus population genetic diversity. *Journal of Heredity* **104:**704–712.

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Barnaby, S.N., N. Nakatsuka, S. H. Frayne, **K. R. Fath**, and I. A. Banerjee, 2013. Formation of hyaluronic acid–ellagic acid microfiber hybrid hydrogels and their applications. *Colloid and Polymer Science* **291**:515–525. Online First. doi: 10.1007/s00396–012–2739–2.

Greller, A.M., 2013. Climate and Regional Composition of Deciduous Forest in Eastern North America and Comparisons with Some Asian Forests. *Botanica Pacifica* (Vladivostok, Russia) **2:**3–18.

Lenhart, K. F., **N. G. Holtzman**, Williams, J. R. and R. D. Burdine, 2013. Integration of Nodal and BMP Signals in the Heart Requires FoxH1 to Create Left-Right Differences in Cell Migration Rates That Direct Cardiac Asymmetry. *PLoS Genetics* **9:**e1003109.

Holtzman, N. G. and V. L. Miller, 2013. Classification and Life Cycle: a hands-on approach Module 1. *ASP Archive* (http://www.apsarchive.org/collection.cfm?collectionID=2758).

Lahti, D. C., 2013. The sociality of nesting in Rüppell's Weaver (*Ploceus galbula*) and the Lesser Masked Weaver (*P. intermedius*) in an Ethiopian acacia woodland. *Journal of African Ornithology* **84:**1–4.

Moseley, D. L., **D. C. Lahti**, and J. Phodos, 2013. Responses to song playback vary with vocal performance of both signal senders and receivers. *Proceedings of the Royal Society of London B* **280:**20131401. (http://dx.doi.org/10.1098/rspb.2013.1401).

*Lapierre[D], L.R., * M.J. Silvestrini[D] (*contributed equally), L. Nuñez[U], K. Ames[D], S. Wong, T. T. Le, M. Hansen, and **A. Meléndez**, 2013. Autophagy genes are required for normal lipid levels in *C. elegans*. *Autophagy* **9(3):**278–286.

Liang, J., S. Xiong[D] and **C. Savage-Dunn**, 2013. Using RNA-mediated interference feeding strategy to screen for genes involved in body size regulation in the nematode *C. elegans*. JoVE, 72:e4373, doi:10.3791/4373.

Brantner, J. S., D. W. Ott, R. J. Duff, J. I. Orridge[D], **J. R .Waldman**, and S. C. Weeks, 2013. Evidence of selfing hermaphroditism in the clam shrimp *Cyzicus gynecia* (Branchiopoda, Spinicaudata). *Journal of Crustacean Biology* **34:**184–190.

Brown, J. J., K. E. Limburg, **J. R. Waldman**, K. Stephenson, E. Glenn, and F. Juanes, 2013. Fish and hydropower on the US Atlantic coast: another example of failed fisheries policies through half-way technologies? *Conservation Letters* **6:**280–286.

FACULTY

SCHOLARSHIP 2013

Waldman, J. R., T. King, T. Savoy, L. Maceda, C. Grunwald, and I. Wirgin, 2013. Stock origins of subadult and adult Atlantic sturgeon, *Acipenser oxyrinchus*, in a non-natal estuary, Long Island Sound. *Estuaries and Coasts* **36:**257–267.

Boehm[M], J. T., L. Woodall, P. Teske, S. Lourie, C. Baldwin, **J. R. Waldman**, and M. Hickerson, 2013. Marine dispersal and barriers drive Atlantic seahorse diversification. *Journal of Biogeography* **40:**1839–1849.

Grumolato, L., G. Liu, T. Haremaki, S. K.Mungamuri, P. Mong, G. Akiri, P. Lopez-Bergami, A. Arita, Y. Anouar, M. Mlodzik, Z. A. Ronai, J. Brody, **D. C. Weinstein**, and S. A. Aaronson, 2013. ß-cateinin-independent activation of TCF1/LEF1 in human hematopoietic tumor cells through interaction with ATF2 transcription factors. *PLoS Genetics* **9:**1–13.

Wee, N.K.Y., **D. C. Weinstein**, S. T. Fraser, and S. J. Assinder, 2013. The mammalian copper transporters CTR1 and CTR2 and their roles in development and disease. *The International Journal of Biochemistry and Cell Biology* **45:**960–963.

Loos, B., A. M. Engelbrecht, R. A. Lockshin, D. J. Klionsky, and **Z. Zakeri**, 2013. The variability of autophagy and cell death susceptibility: Unanswered questions. *Autophagy* **9:**1270–1285.

Student Highlights

We are pleased to tell you some of what the Biology Department's students have been doing and their honors earned.

Doctoral student **ELLIOT AGUILAR** received a National Science Foundation/Swedish Research Council, Nordic Research Opportunities Fellowship. The funding made it possible for him to participate in a number of European conferences in his field, where he presented invited talks on his research. He attended the European Human Behavior & Evolution Association Annual Meeting at Vriej Universitat, Amsterdam, The Netherlands, and gave an oral presentation entitled, "May the best trait win: attractiveness of learned behaviors and prestige bias." He also attended the International Conference on Social Dilemmas, ETH Zurich, Zurich, Switzerland, where he presented his research on "Attractiveness of learned behaviors and model bias: may the best behavior win?"

Doctoral student **KARYN COLLIE** (Baker lab) made honorable mention (2nd place) in the Warder Clyde Allee Best Student Paper Competition of the American Behavior Society meeting in Boulder, CO. She submitted a manuscript entitled, "Sibling egg cannibalism by neonates of the Colorado potato beetle, *Leptinotarsa decemlineata"* and defended her research in a 17-minute oral presentation at a special session.

NIMROD GOZUM (Townsend Harris High School Class of 2013; Dennehy lab) was a New York City Science and Engineering Fair Semifinalist and received a Second Award in Microbiology.

Doctoral student **CHENGHUI JU** (Lahti lab) was invited to participate in the National Institute for Mathematical and Biological Synthesis (NIMBioS) Workshop held in the University of Tennessee, Knoxville, where he presented his research on "Analyzing animal vocal sequences." He also attended the Annual Meeting of the Animal Behavior Society, Boulder, CO, and spoke on his research, "Characterizing bird song diversity between individuals and populations: a computational approach." Chenghui also received a CUNY Animal Behavior Initiative Best Poster Presentation Award at the meeting in New York.

Master's student **KHALEDA KHAN** (Lahti lab) was the recipient of an Animal Behavior Society Student Award.

KEVIN MU (Class of 2013; Dennehy lab) received the Feigelson Award from the Queens College Biology Department for Best Undergraduate Research. He is now attending the Cornell University College of Veterinary Medicine.

Doctoral student **M. AARON OWEN** (Lahti lab) received a Fulbright Research Fellowship to attend the Young Ecologists Talk and Interact (YETI) meeting in Zunheboto District, Nagaland, India. His talk was entitled, "Insights into the mating behavior of the invasive small Indian mongoose." He also was the recipient of a Sigma Xi Grant-In-Aid of Research in support of his doctoral research. Aaron spoke on his research at the Annual Meeting of the Animal Behavior Society, Boulder, CO. His talk was entitled, "Sexual selection in the invasive small Indian mongoose (*Herpestes auropunctatus*)." He also participated in the CUNY Animal Behavior Initiative Annual Conference, New York, where he presented a talk on "Sexual dimorphism in the small Indian mongoose: Implications for sexual selection."

BIOLOGY GRADUATION AWARD HONOREES

Laura H. and Arthur L. Colwin Prize—Sela Sherr
Charles Darwin Prize—Lauren Mordukhaev, Nicholas Zito
Muriel and Philip Feigelson Award—Kevin Mu
Donald E. Lancefield Award—Chelsea F. Dahl, Pooja Sulan

BACHELOR'S DEGREE RECIPIENTS

HH—with High Honors; H—with Honors; ΦBK—Phi Beta Kappa, the national honor society;
BΔΦ—Beta Delta Phi, the national Biology Honor Society

Lauren Adragna
Jennifer Agudelo
Ashraf Ahmed
Morayo Akinkugbe
Muhammad Ali
Iannelli Amato
Omair M. Anjum – HH
Esi Benn
Alexandra Berry
Jolanta Bukala – HH
Ordaliza Calderon
Ashley Carrasco
Veronica Cedillo Castillo
Kexiang Cheng
Devina Chintaman
A. Young Cho
Mark Cohen
Warleny Colon
Joseph Corrao
Chelsea F. Dahl
Kimberly V. De Leon
Ioannis Demopoulos – HH
Sarah B. Deutsch – H
Shira Dvora
Wilson Echeverria
Tiffany Edwards
Daniel Floda
Melissa Gardner-Funes
Melissa Giraldo
Brenda Gonzalez – H
Robert Habig – HH
Susan Han – H
Naziat Hassan
Sadia Irish
Iosif Kandinov – HH
Chaya F. Kazarnovsky – HH
Safraz Khan
Ruben Kogen
James Kwon
Gregory Lallos
Yevgeniya Lamus
Cathy Le – H
Jennifer Lee
Simon Lee
Oren Levi – H
Jong Lim
Luisa Loaiza
Andre Machado – H
Biwedeou Magnan
Louis Maingrette
Alishba Maira
Yakov Masheev – HH
Daria Milichnikova
Jonathan Minkin – HH, ΦBK, BΔΦ
Davindra Mohabir
Raisa Moulon
Lauren Mordukhaev – HH, BΔΦ
Kevin Mu – HH, BΔΦ
Reshma Nair
Shana G. Neumann – HH
Mahtab Nipu
Brianna Poalina
Sarah Oberlander
Michelle Ott
Widad Rauf
Georgia Samios – H
Iqra Shahbaz
Sima Shakiba – H
Aman Sharma
Sela Sherr – HH
Karen Shum – H
Shamim Sidra
Anirban Sikdar
Elizabeth Sou
Pooja Sulan – HH, BΔΦ
Deeptirekha Sulapu
Usha Tejiram
Devindra Tilakdhari – H
Amanda Tissot – H
George Tobin
Julia Toubiyan
Qian Wang
Sara Wong – HH, BΔΦ
Ryan Yang
Joong Min Yun – HH
Nicholas Zito – HH, ΦBK

MASTER'S DEGREE RECIPIENTS

Shira Dvora
Gregory Lallos
Sarah Oberlander
Deeptirekha Sulapu

BIOLOGY ALUMNI FUND DONATIONS FY2013

In FY2013, 62 alumni and one corporate matching gift (names listed below) donated a very generous **$17,858**, the largest Biology Department total since the College began its fund-raising activities over 20 years ago. Thank you all very much. Your gifts have had a major impact on the Department's discretionary activities, including our weekly colloquium series of research presentations by visiting scientists, support for student research and travel to scientific conferences, and student graduation awards. Alumni Funds Awards are reviewed by the Department's Alumni Funds Advisory Committee, which makes recommendations to the Chair. We greatly appreciate your support.

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continued from page 1

points was a day-long symposium organized by Biology Professor John Waldman. This symposium, *Quintessential Queens,* brought together speakers from many disciplines and pursuits who highlighted the historical, sociological, economic, artistic, and cultural contributions the diverse Borough of Queens has made to the City and State of New York. Of course, Queens College figured prominently in all of these fields, not because the symposium was held on campus, but because the College was indeed the driving force behind the prosperity of the borough. For many residents of the borough, Queens College was the first rung in their ladder of upward mobility. It was the beginning of many a life's dream. As President James Muyskens put it, "We are a dream machine." That was the last 75 years. Now, the dream machine looks forward another 25 years toward its centennial. Our goal is to build on our mission, to continue to do the things we do well, and to improve on those that are less successful.

Within the Department of Biology, 2013 saw the graduation of one of the largest classes of Biology majors in recent memory. For the second year in a row, over 70 students graduated from the Department. We strive to offer our majors a wide selection of interesting courses. It appears that our efforts are paying off in attracting and retaining students. With an increasing number of majors, we are also seeing more students engaging in research activities; most of our research laboratories are filled with undergraduate students. These students work side-by-side with faculty members and graduate students, and many have presented their work at local and national meetings.

In January of this year, Dr. José Daniel Anadón joined the Department as Assistant Professor of Biology. Dr. Anadón hails from Spain, but spent a considerable amount of time in Arizona before coming to New York. A community ecologist, he has done extensive work on plant communities in Europe and the migration and distribution of reptiles in Africa. Since coming to North America, Dr. Anadón has added ecological modeling to his repertoire. Using computational techniques, he plans to expand on his empirical studies to construct models and predictions on communities. We will present a more in-depth profile of Dr. Anadón in this newsletter in the near future.

I urge you to keep in touch. You can view some of the exciting events in the Department by visiting our website at http://biology.qc.cuny.edu. *Biology Currents* will continue to come to you in the post. To facilitate two-way communication, we have initiated a Facebook page, which you can access through a link from our website. Of course, the old-fashioned line of communication is still open: you may contact me directly via regular mail or at pokay.ma@qc.cuny.edu. I would be delighted to hear from you.

Sincerely yours,
PoKay Ma,
Associate Professor and Chair

Biology Colloquium speaker Dr. Christopher Blair, Biological Sciences Department, NYC College of Technology, CUNY (*left*), Dr. John Dennehy, QC Biology (*center*), and Dr. Pedro Abellan, postdoctoral associate, Anadon Laboratory (*right*) discuss Dr. Blair's presentation. Past lists of Colloquium speakers are available on the department's web-page. The Colloquium is offered as a course for advanced undergraduate and graduate students and is attended by students, faculty, and staff. The weekly Biology Colloquium series is funded in part by alumni contributions to the Biology Department.

ALUMNI QUESTIONNAIRE

We want to keep in touch! If you just wish to say hello, or tell us what is new in your life, please fill in the information below and return to: Distinguished Professor Corinne Michels, Department of Biology, 65-30 Kissena Blvd., Queens, NY 11367-1597. Alternately, just provide the information below in an email (**Corinne.Michels@qc.cuny.edu**) and be sure to write "Biology alum" in the subject line.

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