BIOLOGY CURRENTS

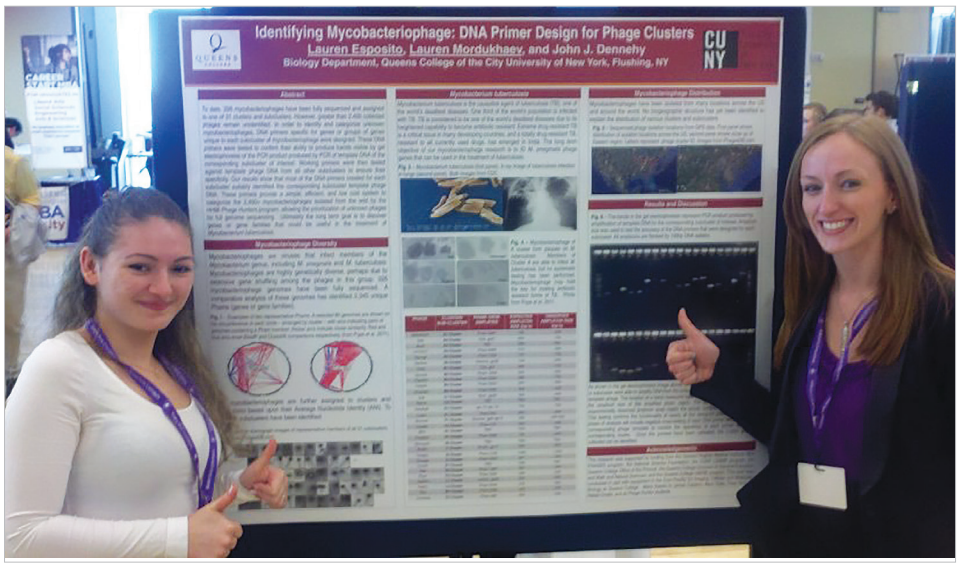
2015 | THE QUEENS COLLEGE BIOLOGY ALUMNI NEWSLETTER | VOLUME 18, NO. 1

Letter from the Editor

Corinne A. Michels

I hope you enjoy *Biology Currents*. This issue is the third published in less than 12 months. To those of you wondering why you have been receiving your issue years late, we are now up to date! Expect the issue that recaps the events of 2016 some time in the spring of 2017, on time.

In this 2015 issue, we again include the new section, **CAREER STORIES**, in which we will be highlighting alums that are well established in their career path. We will also continue the long-time section **ALUMNI UPDATE,** featuring news from alumni both recent and from times past. Our plan is to include these sections in each issue, but this depends on your communications with us. We need to hear from those of you who would like to update your fellow alums. If you enjoy reading these sections of *Biology Currents*, be assured that your fellow alums will enjoy hearing about you. For our part, we are truly enjoying catching up with our alumni.



Lauren Mordukhaev (left) and Lauren Esposito with their National Conference of Undergraduate Research poster presentation.

This issue of *Biology Currents* reports on the passing of QC Biology alumna Dr. Andrea Scheidt. About 10 years ago, Dr. Scheidt visited the department and met with a large group of our undergraduate students. She was so impressed by the educational activities provided by the Biology Department that she became our most enthusiastic and dedicated donor. Given her loss, we thought that this would be an opportunity to remind you what your Biology Department donations support and how they enhance the lives of our students. Be assured, your donations are used 100% to enhance the education of Biology Department students. Your comments and suggestions are welcomed.

Along with the college and other Biology endowment funds, your donations partially support expenses of Biology's weekly colloquium series, which is taken for course credit by most of our majors. You can review the lists of current and previous speakers at: http://biology.qc.cuny.edu/announcements/biology-colloquium/. There is active student and faculty participation and students are able to speak directly with renowned researchers in diverse fields, get a taste of the world of life sciences research, and open new horizons for their futures.

Post-commencement Biology Department Awards Ceremony

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CAREER STORIES DR. SHERYL HAUT '87

Dr. Sheryl Haut, MD

We are very pleased to highlight Dr. Sheryl Haut – a clinical and research leader in the treatment of adult epilepsy. Since graduating from Queens College, Sheryl Haut earned an MD from SUNY Downstate Medical Center College of Medicine (1991), did an internship in Internal Medicine at St. Vincent's Hospital Medical Center, and residency in neurology at SUNY Health Science Center at Brooklyn where she served as Chief Resident in her final year. She continues to distinguish herself as a clinician and a researcher specializing in the field of adult epilepsy. In 2013, Dr. Haut was appointed Professor of Clinical Neurology at Albert Einstein College of Medicine, Director of Adult Epilepsy at Montefiore Medical Center/AECOM, and Director of Education, Department of Neurology at Montefiore Medical Center/AECOM where she oversees the residency program. In recognition of her achievements, Sheryl Haut is listed in Super Doctors (http://www.superdoctors.com/), which identifies U.S. physicians who have attained a high degree of peer recognition and professional achievement.

Sheryl had an amazing role model, her mother. Sheryl grew up in Flatbush, the daughter of Rabbi Irwin Haut of Young Israel of Flatbush and Rivka Haut. Rivka held a Master's degree in Talmud studies from the Jewish Theological Seminary. She was an Orthodox Talmud teacher, the world's leading "agunah activist," and the co-author of four books. In response to our question that asked what brought her to a career in medicine, Sheryl responded that no one in her family worked in medicine, and she had not "considered being a physician until [her] college years." Sheryl told us she had been interested in nature, animals, and behavior since childhood, but it was her first high school biology class that "really opened [her] horizons."

One of the first advanced college courses Sheryl took was genetics, taught by Prof. Corinne Michels. Sheryl soon began working in Dr. Michels' research laboratory. As Sheryl describes the experience, "That time in the lab provided me with the first mentorship of my career, both from Dr. Michels, who … was so generous with her time and teaching, and from the graduate students in her lab who shared their world of biology research with me. This led to my first ever publications, an excitement about research, and a number of later career opportunities. It was during my time as a genetics research assistant that I participated in a summer program in the clinical genetics Institute of Tel Hashomer Hospital in Israel. That was my first exposure to clinical medicine, and I had the opportunity to compare my interest in basic science research with the possibility of clinical research. It was after that summer that I decided to pursue medicine as the next step in my career." In recognition of her outstanding undergraduate research experience, Sheryl received a Jonas Salk Scholarship from the City University of New York.

After medical school, Dr. Haut chose to specialize in neurology with a subspecialty in epilepsy. She called the field "fascinating" and described patient diagnosis as a form of "problem solving" in which one uses "patient history and the exam to localize the problem to a specific part of the nervous system." She describes it as follows: "The puzzle analogy is very appropriate here as well, as epileptologists spend a lot of time putting together the clues from the history, exam, description of the seizures, electroencephalography, and other testing to localize the seizure focus so that we can initiate appropriate medical and, at times, surgical treatment." Epilepsy is typically a chronic disorder but Dr. Haut tells us she appreciates "the opportunity to form long-term relationships with patients and explore with them all the aspects of their lives that may be affected by epilepsy."

Her experiences in basic research during her college years inspired her to integrate research into her practice and impacted Dr. Haut's approach to patient care. After her post-residency fellowship, she remained at Montefiore Medical Center and was appointed Assistant Professor of Neurology at Albert Einstein Medical College. Dr. Haut received her first research award as a junior investigator from the Epilepsy Foundation of America. Following this, she became a co-investigator in a five-year collaborative research program funded by a Career Development Award from the National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health (NIH). As part of this training, Dr. Haut completed a Master's in Clinical Research at the Albert Einstein College of Medicine.

Since the early 2000's, Dr. Haut has participated as principal investigator (PI) of projects, PI for the Montefiore component of others, or consultant in numerous research and clinical studies on a variety of aspects of epilepsy etiology and treatment. One NINDS-funded study explored the use of surgery in treating epilepsy. This dedication to exploring new treatment protocols has paid off for Dr. Haut's patients. A report aired on the CBS Early Show (http://www.cbsnews.com/news/miracle-outcome-of-epilepsy-surgery) highlighted one of her patient's extraordinary "miracle" outcome in an extremely complex and challenging case.

As her clinical work advanced, Dr. Haut became increasingly concerned about the unpredictability of seizures and the burden this puts on the patient's quality of life. She began to explore the possibility that patients could learn to predict seizures and in 2011 began a second clinical trial, entitled "Stress Management Intervention for Living with Epilepsy (SMILE)." This time Dr. Haut served as the principal investigator and Montefiore Medical Center served as the leading site for this multicenter randomized controlled trial of the role of stress management therapy in refractory epilepsy. Dr. Haut and her colleagues reported that "a subset of patients can self-predict their seizures." She anticipates that stress study will provide significant insights into the

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IN MEMORIAM ANDREA HARRIS SCHEIDT QC '62

DR. ANDREA SCHEIDT

ANDREA HARRIS SCHEIDT grew up in Rego Park and Valley Stream. She valued her experience at Queens College, where she earned a BS in Biology under teachers like Toge Johansson ("the bee man"), Arthur and Laura Colwin, Donald Lancefield, Dan Marien, Max Hecht, and Marian Himes, among others.

Returning for a campus visit in 2006, she marveled at the new facilities in the Science Building and the opportunities for student research with top-flight faculty. In 1962, all of the Biology Department was housed in the "E" Building (today's Colwin Hall), which it shared with the Education Department. Student research was preparing fly food for Dr. Marien's *Drosophila.* But she remembered the good times hanging out in the faculty lounge and talking with the faculty about personal futures and the world.

With the explosive development of molecular biology and genetics, and the birth of environmental biology, biology entered new domains and biology futures enlarged. In her own words, "The opportunities for a QC Biology major from almost half a century ago were always evolving, so a new degree could be picked up and a new road taken. Capitalizing on the foundation QC gave me, I have changed careers twice: first, earning a Master's degree in Public Health in Environmental Sciences (Columbia) and setting up a new Department of Environmental Management at a major New York City hospital; then, earning a law degree (Fordham) and admission to the Patent Bar (which requires the scientific and technical training provided by a bachelor's degree in specific majors and allows an attorney to practice in patent cases before the U.S. Patent and Trademark Office) and a career in Intellectual Property Law." Andrea practiced intellectual property law for over two decades, including pro bono activities for the New York-based Volunteer Lawyers for the Arts. She co-authored a monthly column titled "Character" in the *Licensing Journal* and was co-author of *"Trademark and Trade Dress" in International Law and Practice* (2005).

Andrea never forgot the strong foundation she got at the QC Biology Department and was a generous donor to the Biology Alumni Fund till the end of her life. She married the late Dr. Stephen Scheidt and is survived by her daughters Leslie Redd and Vivian Scheidt, sons-in-law Tom and Ammi, and grandchildren James, Andrew, Gabrielle, and Sophie. Strong, intrepid, and dynamic, she was fiercely independent despite living with MS and cancer.

Dr. Scheidt at a QC Gala

FACULTY IN THE NEWS

Professor Emeritus Andrew Greller, forestry expert on call

ANDREW GRELLER appeared in a CBS New York News television story, "Too Many Acorns? One Seasonal Myth Debunked" that aired on October 27, 2015. The reporter wondered why we were seeing such an abundance of acorns in the fall of 2015. Was this a predictor of a cold and snowy winter? So, they called on expert botanist Prof. Andrew Greller who debunked the myth. According to Dr. Greller, "A combination of warmth and sunshine and rainfall and good soil" during the preceding season was the real reason." Greller said, "Trees also often produce more seeds as a means of self-preservation" and "the more acorns you produce that are viable [the more] that will go on to reproduce those same trees." (http://cbsloc.al/2frtgjl)

Professor John Waldman holding striped bass catch

JOHN WALDMAN also served as the voice of reason in a November 10, 2015 *New York Times* article entitled, "Tale of Gowanus Canal's Three-eyed Fish May be too Good to be True (http://nyti.ms/2f0Q4Dw). The article explores the reasonableness of a video that appeared all over the local area TV news (http://7ny.tv/2f3KfnR) but Waldman would have none of it, saying that "it would require a confluence of improbable conditions." In his opinion, "Everything is wrong here. There's no evidence from anywhere in the whole range that bullheads tolerate anywhere near that level of salinity," he said. He added that even if a lower-salinity zone existed near the mouth of a stream, it was hard to imagine it would be big enough to support a stable population of catfish. Dr. Waldman was also interviewed on Geraldo Rivera's talk radio show to debunk the three-eyed Gowanus catfish. Hope you heard him.

Prof. Waldman was also interviewed by Fountain INK, a digital magazine based in India that provides "in-depth reportage on topics ranging from politics to culture." The article, entitled "The Social and the Ecological" focused on urbanization in India and China and its impact on the ecology of the regions. In both countries there has been a transfer of human populations to cities. While "cities leave smaller ecological footprints on the landscape," thereby allowing the environment of the countryside to recover from overpopulation, there are pros and cons. The relationship between the rural and the urban population distributions needs to be optimized. Dr. Waldman was selected for an interview because of his fascination with restoration and conservation projects on migrations and stock identification of striped bass, sturgeons, and shads in national and international importance and locally in New York Harbor, Jamaica Bay, and the Hudson River. (http://fountainink.in/?p=6362)

Dr. Waldman was quoted in a *Mongabay* Series: Special Reporting Initiative article entitled, "400+ dams could irrevocably harm Amazon ecology but solutions exist." The article discusses the potential irreversible harm to fish migrations and to wildlife should electric power-generating dams be positioned along the Amazon River. According to Dr. Waldman, "Not only are fish ladders not even successful for species they're designed for, we don't have a clue how all these obscure species will react." Adding that, "It's asking a lot for a finned creature to take an elevator or to climb a ladder." Dr. Waldman is an expert on the impact of dams on fish migrations and is the author of *Running Silver: Restoring Atlantic Rivers and Their Great Fish Migrations. Mongabay* is an online journal that encourages the appreciation of nature and wildlife and examines the impact of climate, technology, economics, and finance on conservation and development. (http://bit.ly/2eU6xvI)

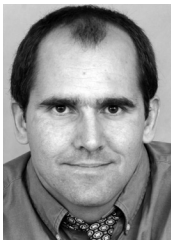
FACULTY NOTES 2015

This section reviews the highlights of Biology Department faculty members, staff, and students' extracurricular scholarly activities in 2015. The diversity of these activities is a clear indicator of international recognition of our dedicated faculty.

JOSÉ ANADÓN presented his research

entitled, "Insights into bird invasion trends from long-term data: Invasion pathways, phylogenetic bias, and the tens rule in Spain and Portugal" at the 100th Ecological Society of America Annual Meeting, Baltimore, MD.

JOHN DENNEHY was invited to speak



on "Event Timing in Single Cells" at the Division of Science, NYU-Abu Dhabi, United Arab Emirates, and at the Department of Biology, New York University, NY. He also spoke in the Science Lecture Series at SUNY Rockland Community College on "How to Build a Virus."

Dr. Dennehy attended the Annual Meeting of the Society for Mathematical Biology, Atlanta, GA and presented a talk on his work on "Modeling bacteriophage lambda lysis time through first-passage time calculations." Dr. Dennehy and his doctoral student Emily Lin attended the 2015 Microbial Population Biology Gordon Research Conference and presented a poster on Lin's thesis research.

KARL FATH gave an invited lecture in the Lehman College Department of Biological Sciences on "Development of nanoassemblies for drug delivery and tissue formation." His research entitled "Development of a highly sensitive activity-based probe of human cathepsin L" that was carried out in collaboration with colleagues at Fordham University was presented as a poster at the Gordon Research Conference on Bio-organic Chemistry--Chemical Tools for Decoding Biology and Advancing Medicine.

ANDREW GRELLER gave invited

lectures on "Forests, Pine Barrens, and Natural Grasslands of Long Island, New York" at the Connecticut Wildflower Society in Middletown, CT and on "An Ecologist Glimpses the Flora and Vegetation of New Caledonia" at the Long Island Botanical Society, Muttontown Preserve, NY. Dr. Greller and Cesar Castillo (QC Biology master's student and college lab tech) presented a poster on "Fossil root cross-sections from the Upper Cretaceous (Santonian Age, ca. 86 million years ago) Magothy Formation of Lloyd Neck, Suffolk County, New York" at the Botanical Society of America Annual Meeting in Edmonton, Canada.

Dr. Greller was involved in a variety of activities. He put together a photo-essay of the Long Island Mycology Club's tour of the NY Botanical Garden Herbarium for the club's journal *Sporeprint* and posted a photo of a Northern Shoveler in the March issue of the Queens County Bird Club *News and Notes*. He was invited to participate in the Eagle Hill Institute Workshop on "Crustose Lichens of Maine" taught by Dr. Irwin Brodo. Dr. Greller also was an evaluator for graduate student presentations at the Botanical Society of America Annual Meetings, Ecological Section in Edmonton, Canada.

NATHALIA HOLTZMAN gave an

invited talk on "And the beat goes on: Crafting the zebrafish heart" at the City College – CUNY Biology Department Colloquium Series. She also spoke on "Zebrafish as a model of PCB toxicity" to the NOAA Fisheries in Seattle, WA. Dr. Holtzman and doctoral student Corinna Singleman attended the SUNY/CUNY Faculty Senate Student Research Symposium. Albany, NY where their research on "Toxins in the Hudson River cause heart defects in fish early in development" was presented in a talk.

MARTIN KLOTZ was appointed Dean of the College's Division of Mathematics & Natural Sciences and joined the Biology Department in the summer of 2015. He is an active participant in the evolutionary and environmental microbiology community

MARTIN GÜNTER KLOTZ APPOINTED

We are pleased to announce that **Dr. Martin G. Klotz** was appointed Dean of the Division of Mathematics & Natural Sciences at Queens College in July 2015.

His appointment followed an extensive national and international search headed by a team of faculty and students selected from throughout the division. Dean Klotz also was appointed a tenured Professor of Biology. His research is an excellent complement to other faculty in the department and the division. Dean Klotz is a microbiologist and his research focuses on molecular evolution of bacterial genes, gene clusters, and genomes that participate in the nitrogen and carbon cycles. An interview to appear in the next issue of *Biology Currents* will highlight Dean Klotz in greater detail For now, let's welcome him to the department, the division, and Queens College.

nationally and internationally. Dr. Klotz is Editor-in-Chief of the journal *Frontiers in Microbiology* and is co-editor of *Nitrification*, a publication of the American Society of Microbiology Press. He serves on the editorial boards of *Applied & Environmental Microbiology* and *Environmental Microbiology*. In addition to these editorial positions, he reviews manuscripts for numerous top-ranking journals in the fields of microbiology, ecology, and environmental biology including *BMC Evolutionary Biology, FEMS Microbiology Ecology, FEMS Microbiology Reviews, Genome Research, Journal of Applied Microbiology, Journal of Bacteriology, Journal of Molecular Evolution, Methods in Enzymology, Microbial Ecology, Molecular Biology and Evolution, Molecular Microbiology, Nature, Nature Geoscience, PNAS,* and *Science*, to name just a few.

Dr. Klotz is founder and a Steering Committee Member of The Nitrification Network, established in 2006. Since 2014, he has served as Ocean Carbon Chair of the Institute of Marine Microbes and Ecosphere (IME) and State Key Laboratory of Marine Environmental Science (MEL), College of Ocean and Earth Sciences, Xiamen University, Xiamen, China.

Dr. Klotz reviews grant proposals for the United States' National Science Foundation, Department of Energy, and Department of Agriculture. He also reviews for international agencies including the Austrian Science Fund, the Estonian Science Foundation, the European Research Council, FONDECYT Chile, The Netherlands Genomics Initiative, and The Netherlands Organization for Scientific Research (NWO).

DAVID LAHTI serves as Associate

Editor of *The Auk: Ornithological Advances*. He was a peer reviewer for journal articles submitted to the *Biological Journal of the Linnean Society, Ethology, and Proceedings of the National Association of Sciences* (PNAS), reviewed a book for Macmillan Press, and reviewed a book proposal for Cambridge University Press. Dr. Lahti reviewed grant applications for the National Science Foundation, National Geographic Society, and the John Templeton Foundation. He also blogged on the educational site Reflections on Great Literature (http://www.greatlit.net) where he posts articles on works by Arthur Conan Doyle, Thomas Hardy, Francis Parkman, Matthew Arnold, Mark Twain, Antoine de Saint-Exupéry, H. G. Wells, and Euripides.

ALICIA MELÉNDEZ gave an invited

lecture on her research at Bar Ilan University, Israel entitled, "Autophagy in *C. elegans*." She also spoke at the City College – CUNY seminar series on "Autophagy in *C. elegans* development and aging."

Dr. Meléndez received a grant from the PSC-CUNY Award program to support her research on the "Role of BEC-1 in DNA Damage and Repair."

Dr. Meléndez and her doctoral students attended several conferences and presented their research. Nicholas Palmisano presented a poster on "The small GTPase RAB-10 regulates autophagy function in *C. elegans*" at the 2015 American Society for Cell Biology Annual Meeting held in San Diego, CA. Melissa Silvestrini and Dr. Meléndez attended the Keystone Symposia: Systems biology of lipid metabolism, Beaver Run Resort, Breckenridge, Colorado and the 20th International *C. elegans* Meeting held at the University of California at Los Angeles, Los Angeles, CA. They presented posters on "Autophagy genes in lipid homeostasis."

ESTHER MUEHLBAUER published "Plato to Darwin to DNA: A Brief History." See box on next page.

CATHY SAVAGE-DUNN spoke on

"Developmental and homeostatic functions of *C. elegans* DBL-1/BMP target genes" at the Federation of American Societies for Experimental Biology (FASEB) Science Research Conference on The TGF-ß Superfamily: Signaling in Development and Disease held in Snowmass, CO.

Dr. Savage-Dunn's doctoral students also attended the FASEB Science Research Conference at Snowmass, CO and presented their research. James Clark presented a poster on "DBL-1 signaling and its role in lipid metabolism." Uday Madaan presented a poster on "DBL-1 target gene regulation by SMA-2, SMA-3, and SMA-4."

JOHN WALDMAN spoke at several

conferences and public forums. Several were based on his book *Running Silver: Restoring Atlantic Rivers and Their Great Fish Migrations.* These included the keynote address at the Northeast Fish & Wildlife Conference held in Newport, RI with "Diadromous Fishes in Decline: Can We Make Our Rivers Run Silver Again?" at the Hudson River Foundation in Manhattan, with "Against the Current: Repairing Atlantic rivers to restore diadromous fishes," and at the Gunn Library in Washington, CT. Dr. Waldman also spoke on "New York Harbor Ecologies" at the Billion Oysters Project at the New York Harbor School, New York, NY. He presented a talk on "Environmental History of Jamaica Bay" at the Symposium on Ecosystem Resilience Research in Jamaica Bay held at the CUNY Graduate Center. Dr. Waldman lectured on "Ocean in the Forest —The

Future of Fisheries: Choices, Decisions, and the Role of the Arts" in the College of Environmental Science & Forestry in Syracuse, NY.

Dr. Waldman and collaborator Karin Limburg, Professor of Environmental Biology at the SUNY College of Environmental Science and Forestry, published an opinion piece entitled "Undamming rivers: A chance for new clean energy" in the August 2015 issue of *Yale Environment 360*, the online publication of *Yale Forestry & Environmental Studies*.

Dr. Waldman was an invited guest lecturer for several courses at a number of universities. He lectured on "Environmental Recovery & Aquatic Invertebrates" in Ecotoxicology: A Hudson River Case Study" at New York University and on "Ocean in the Forest" in courses on marine conservation at New York University and Stony Brook University. He also gave a guest lecture on the "Broad Arc of History of New York Harbor" for the CUNY Macaulay Honors College's Wetlands Course.

Dr. Waldman also serves on the editorial board of the journal *Northeastern Naturalist*. He was Scientist-in-Residence at the Hudson River Museum, Yonkers, NY in the fall of 2015. Dr. Waldman was invited to write "In memoriam – C. Lavett Smith, Jr." for the journal *Fisheries*.

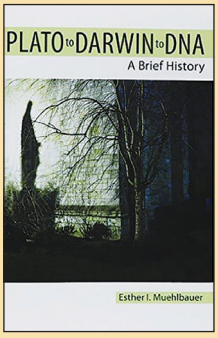
DANIEL WEINSTEIN lectured on "Inhibition of inappropriate germ layer formation in the vertebrate embryo" in the Biology Department seminar series at Medgar Evers College – CUNY. He also spoke at the Department of Biological Sciences, St. John's University on "Suppression of inappropriate germ layer formation in the vertebrate embryo."

ZAHRA ZAKERI was co-organizer of

the International Cell Death Society meeting on "Implementation of Knowledge of Cell Death" held in Prague, Czech Republic. She also gave the introduction and welcome opening talk for the conference. In addition, Dr. Zakeri chaired a workshop and panel discussion on "Building a career in the field of cell death: What is the future of this field?"

ESTHER MUEHLBAUER PUBLISHES

We are pleased to announce that **Esther I. Muehlbauer** published a book entitled *Plato to Darwin to DNA — A Brief History* (Kendall Hunt Publishing Co.).



The book is a concise historical guide to the development of scientific thought and, ultimately, biological theory. Beginning with the ancient Greek philosophers, Plato and Aristotle, and the philosophies of other early cultures, *Plato to Darwin to DNA — A Brief History* traces the origins of ideas that have impacted biology–establishing how each new generation of scholars has reinterpreted the living world using tools available at the time. It is a survey of some of the principal pioneers who shaped biological theory from Plato through Darwin to the DNA researchers. As stated in the text's introduction, "this attempt to catalog a few [scholars] is at best fragmentary, but like the fossil record itself, it provides a framework for the realization of change."

FACULTY SCHOLARSHIP 2015

D = Doctoral student M = Master's student U = Undergraduate student

BOOKS

Meléndez, A. *Behind the Microscope: Solving Scientific Mysteries.* Published by Benchmark Education Company, New Rochelle, NY. (ISBN: 978-1-4900-1658-0).

Muehlbauer, E. *Plato to Darwin to DNA – A Brief History.* Published by Kendall Hunt Publishing Co., Dubuque, IA (ISBN: 978-1-5249-0820-1).

PEER-REVIEWED PUBLICATIONS:

Anadón, J. D., E. Graciá, A. Giménez, S. Fahd, and U. Fritz, 2015. Individualistic responses to climate changes: niche differentiation promotes diverging Quaternary range dynamics in the subspecies of *Testudo graeca. Ecography* **38:** 956–966.

Saavedra, S., A. Maraver, **J. D. Anadón,** and J. L. Tella, 2015. A survey of recent introduction events, spread and mitigation efforts of mynas (*Acridotheres* sp.) in Spain and Portugal. *Animal Biodiversity and Conservation* **38:** 121–127.

Rodríguez-Caro R, E. Graciá, R. M. Dos Santos, **J. D. Anadón,** and A. Gimenez, 2015. One scute ring per year in *Testudo graeca*? A novel method to identify ring deposition patterns in tortoises. *Acta Herpetologica* **10:** 77–84.

Baker, M. B., P. D. Venugopal, and W. Lamp, 2015. Climate change and phenology: *Empoasca fabae* (Hemiptera: Cicadellidae) migration and severity of impact. PLoSONE **10:** e0124915.

Alyokhin[U], A., D. Mota-Sanchez, **M. Baker**, W. E. Snyder, S. Menasha, W. Maorsi, M. Whalon, and G. Dively, 2015. Red Queen on a Potato Field: IPM vs. Chemical Dependency in Colorado Potato Beetle Control. *Pest Management Science* **71:** 343–356.

Pope, W. H., C. A. Bowman, D. A. Russell, D. Jacobs-Sera, Science Education Alliance Phage Hunters Advancing Genomics and Evolutionary Science (SEA PHAGES), Phage Hunters Integrating Research and Education (PHIRE), Mycobacterial Genetics Course (MGC), S. G. Cresawn, W. R. Jacobs Jr, R. W. Hendrix, J. G. Lawrence, and G. F. Hatfull, plus **J. J. Dennehy**, 3 PhD students and 4 undergraduate students, 2015. Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity. *eLife* **4:**e06416.

Romanelli, S. M., **K. R. Fath**, A. P. Phekoo, G. A. Knoll, and I. A. Banerjee, 2015. Layer-by-layer assembly of peptide based biorganic-inorganic hybrid scaffolds and their interactions with osteoblastic MC3T3-E1 cells. *Materials Science and Engineering: C. Materials Biology Applications* **51:**316–328. doi:10.1016/j.msec.2015.03.018.

Romanelli, S. M., **K. R. Fath**, R. Davidov, A. P. Phekoo, and I. A. Banerjee, 2015. Supramolecular Fmoc-valyl based nanoassemblies for delivery of mitoxantrone into Hela cells. *Journal of Drug Delivery Science and Technology* **29:**107–116. doi:10.1016/j.jddst.2015.06.010.

Morgan[M], E. C. and **A. M. Greller**, 2015. A *Fraxinus americana – Liriodendron tulipifera* stand in Queens County, Long Island, with notes on the soil composition. *Quarterly Newsletter of the Long Island Botanical Society* **25:** 4–6.

Sharp, C. E., A. V. Smirnova, M. G. Kalyuzhnaya, F. Bringel, H. Hirayama, M. S.M. Jetten, V. N. Khmelenina, **M. G. Klotz**, C. Knief, N. Kyrpides, H. J. M. Op den Camp, A. S. Reshetnikov, Y. Sakai, N. Shapiro, Y. A. Trotsenko, S. Vuilleumier, T. Woyke, and P. F. Dunfield, 2015. Draft genome sequence of the moderately halophilic methanotroph, *Methylohalobius crimeensis* strain 10Ki. *Genome Announcements* **3:** e00644–15.

Hamilton, R., K. D. Kits, V. A. Ramonovskaya, O. N. Rozova, H. Yurimoto, H. Iguchi, V. N. Khmelenina, Y. Sakai, P. F. Dunfield, **M. G. Klotz**, C. Knief, H. J. M. Op den Camp, M. S. M. Jetten, F. Bringel, S. Vuilleumier, M. M. Svenning, N. Shapiro, T. Woyke, Y. A. Trotsenko, L. Y. Stein, and M. G. Kalyuzhnaya, 2015. Draft genomes of gammaproteobacterial methanotrophs isolated from terrestrial ecosystems. *Genome Announcements* **3:** eA00515–15.

Kits, K. D., **M. G. Klotz**, and L. Y. Stein, 2015. Methane oxidation coupled to nitrate reduction under hypoxia by the Gammaproteobacterium *Methylomonas denitrificans*, sp. nov. Type Strain FJG1. *Environmental Microbiology* **17:** 3219–3232.

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Xie, W., C. L. Zhang, J. Wang, Y. Chen, Y. Zhu, J. R. de la Torre, H. Dong, H. E. Hartnett, B. P. Hedlund, and **M. G. Klotz**, 2015. Distribution of ether lipids and composition of the archaeal community in terrestrial geothermal springs: impact of environmental variables. *Environmental Microbiology* **17:** 1600–1614.

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FACULTY SCHOLARSHIP 2015

D = Doctoral student
M = Master's student
U = Undergraduate student

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Student Highlights

We are pleased to report some of the Biology Department student activities and the honors earned. These are an amazing group of talented undergraduate and graduate students.

ELLIOT AGUILAR (thesis mentor David Lahti) successfully defended his PhD thesis entitled "Models and Methods in Social and Cultural Evolution" in the Doctoral Program in Biology: Ecology, Evolution and Behavior. In the fall, Elliot headed to the University of Pennsylvania where he will be an institutional postdoctoral research fellow working in the laboratory of Prof. Erol Akçay.

KRISTINA AMES (thesis mentor Alicia Meléndez) was awarded the PhD in Biochemistry from the Graduate Center of CUNY. Dr. Ames' thesis title is "Non-autonomous BEC-1/Beclin1-mediated autophagy is required for the G2/M transition during germline proliferation in *C. elegans*."

Congratulations to master's student **LAUREN A. ESPOSITO** (Dennehy lab) for winning a Society for the Study of Evolution (SSE) travel award to the 2015 Evolution meeting in Brazil! She is currently enrolled in the Master of Public Health Program at the Icahn School of Medicine at Mount Sinai in New York City.

Graduating senior **CHEYENNE GANESH** graduated from the Honors Program in Mathematics and Natural Sciences at Queens College with a Bachelor's in Biology. Her thesis was entitled "Learned vs. Inherited Aspects of Behavior Revealed through Bird Song Experiments."

Doctoral student **YE JIN** (Weinstein lab) received a Graduate Center Doctoral Student Research Grant.

CHENGHUI JU (thesis mentor David Lahti) was awarded the PhD in Biology: Ecology, Evolution and Behavior from the Graduate Center of CUNY. Dr. Ju's thesis title is "Cultural Evolution in Natural Populations: A Quantitative Bioacoustic Analysis." She will head to China to take up an academic position in 2016.

Chenghui Ju attended an invitational workshop in Knoxville, Tennessee, sponsored by the National Institute for Mathematical and Biological Synthesis (NIMBioS). She published a report based on her workshop presentation entitled "Analyzing Animal Vocal Communication Sequences."

Chenghui Ju, Charles Maniego, Franny Geller, and Khaleda Khan coauthored a white paper entitled "Song sharing and assessment of individual identity in house finches" to accompany the house finch (*Haemorhous mexicanus*) recordings of Paul C. Mundinger deposited at the Macaulay Library of Natural Sounds, Cornell Laboratory of Ornithology.

Doctoral student **UDAY MADAAN** (Savage-Dunn lab) was awarded a CUNY Graduate Center Dissertation Fellowship.

Undergraduate student **CHARLES MANIEGO** (Lahti lab) graduated with High Honors with a Bachelor's in Biology. His honors thesis was titled "Cultural mutation and variation in house finch *(Haemorhous mexicanus*) song." Charles received the Muriel and Philip Feigelson Memorial Award from the Biology Department, recognizing "outstanding achievement in research."

Undergraduate student **ANNA McPHERRAN** (Lahti lab) was chosen to be a Horace W. Goldsmith Scholar at the City University of New York. This scholarship is intended for "future leaders for whom graduate education is an essential foundation of their aspirations." Anna used this award to fund her travel to St. Croix to assist Aaron

Queens College Biology majors received two of the eight Jonas E. Salk Scholarship Awards presented to CUNY students in 2015. From left to right, Prof. Nathalia Holtzman (Mentor), **Hope Miodownik** (Salk Award Winner), **Ebrahim Afshinnekoo** (Salk Award Winner), Queens College Provost Elizabeth Hendrey, and Director of the Queens College Office of Health Professions Valli Cook.

Owen with his field studies on the Indian mongoose (see next page).

Master's student **JACQUELINE MILANDER** was awarded a scholarship to attend a residential program on environmental education this July at the Hog Island Audubon Camp in Maine.

Hope Miodownik

Congratulations to graduating senior **HOPE MIODOWNIK**, a Jonas E. Salk Scholarship Award winner. She is one of eight CUNY winners, two of whom were from Queens College. The City University of New York awards the prestigious Jonas E. Salk Scholarships for "students who plan careers in medicine and the biological sciences and who are judged likely to make significant contributions to medicine and research medical study" (see photo). Each year, eight graduates are selected on the basis of original research papers carried out with scientist mentors on subjects including neuroscience, cancer, genetics, and molecular biology. The Salk endowment provides a stipend of $8,000 per student appropriated over three or four years of medical studies plus medical diagnostic kits that include an otoscope and ophthalmoscope.

Ms. Miodownik will be attending Albert Einstein College of Medicine. Her project entitled "Elucidation of a comprehensive model of epicardiogenesis in zebrafish: the role of BMP signaling in epicardial migration" was carried out in Prof. Nathalia Holtzman's laboratory. The project explores the complex process for the formation of the vertebrate heart that "relies primarily on cell differentiation and migration." Her research used the zebrafish genetic model system that is used for the study of embryological development and disease.

Doctoral student **M. AARON OWEN** (Lahti lab) was awarded a CUNY Graduate Center Doctoral Student Research Grant and a Graduate Center Dissertation Fellowship to help fund his thesis research on the Indian mongoose.

Aaron received several other grants to fund his tropical island field trips to study evolution of sexually selected traits in the small Indian mongoose on St. Croix and Jamaica including a grant from Sigma Xi: the Scientific Research Society; a Queens College Biology mini-grant; and one from the American Society of Mammalogists, the premier society for the study of mammals. Aaron's fieldwork on St. Croix was carried out as part of a collaborative team with Buzz Hoagland of Westfield College and Steve Brewer of the University of Massachusetts. In Jamaica, Aaron's work was facilitated by folks at the University of West Indies at Mona, especially Ralph Robinson and Byron Wilson in Kingston, and Camilo Trench and Denise Henry at Discovery Bay Marine Lab.

Undergraduate student **ELSA ROSARIO** (Dennehy lab) took second place in Biology at the 2015 23rd Annual CSTEP Statewide Student Conference. Her project was entitled "Screening for compensatory evolution in mutated bacteriophage Φ6."

Doctoral student **SOUNAK GHOSH ROY** (Zakeri lab) received a Graduate Center Doctoral Student Research Grant.

Doctoral student **MELISSA SILVESTRINI** (Meléndez lab) received a Graduate Center Doctoral Student Research Grant.

Doctoral student **CORINNA SINGLEMAN** (Holtzman lab) received a Graduate Center Doctoral Student Research Grant. Corinna was also awarded a CUNY Graduate Center Mina Rees Dissertation Fellowship.

CAREER STORIES–HAUT

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management of epileptic seizures.

Dr. Haut is active and very well respected in her field. She is an author of more than 65 research articles, reviews, and chapters that appeared in highly respected journals. Among her professional activities are serving as a member of a NINDS grant review panel, serving on the editorial board of the journal *Epilepsy and Behavior*, and on a variety of committees for the American Epilepsy Society and the American Academy of Neurology. Dr. Haut has received the Teacher of the Year Award from the Department of Neurology of Albert Einstein College of Medicine and the Master Teacher Award from SUNY Downstate Alumni Association.

Dr. Haut has enjoyed a fulfilling personal life as well. In the summer after graduation from Queens College, she married fellow QC student David Rosenberg. Both attended SUNY Downstate Medical Center College of Medicine but pursued different medical specializations. Dr. Rosenberg is currently Director, Evidence Based Clinical Practice at Northwell Health and Associate Professor of Medicine at the Hofstra Northwell Health School of Medicine. The couple has two sons and a daughter ranging in age from 13 to 24 years. All are working or attending school in the NY metro area, which pleases Dr. Haut greatly.

Sheryl Haut took full advantage of the educational opportunities afforded to all students in the Biology Department and built a successful and rewarding career. We are sure that we will be hearing much more from her in the future.

Javier Monzón Class of '04 Is Appointed Assistant Professor Pepperdine University

Javier Monzón

On March 18th of 2015, the Biology Department had the pleasure of hearing from one of its own alumni, Dr. Javier Monzón, Class of '04. Dr. Monzón spoke on his postdoctoral research, "Tick talk: Evolutionary genomics of a rapidly expanding disease vector." Many will remember Javier as a fellow student, biology major, and psychology minor who did undergraduate research with the late Prof. Paul Mundinger. Some met Javier during the year after his graduation when he worked for the Biology Department as a college lab technician. He was assigned to Colwin Hall and assisted in field courses, particularly in ecology and evolution. A lucky few had Javier as their lab instructor. Dr. Monzón's seminar was an opportunity for us to be updated on his exciting research and, most importantly, to congratulate him on being offered a tenure-track position at top-ranking Pepperdine University.

We asked Dr. Monzón to tell us "what stimulated your interest in science, particularly biology, at Queens College?" This was his response. "Having been raised in Bogota, Colombia and in New York City, to me 'the outdoors' was the concrete jungle outside the apartment. But I still loved nature and watching documentaries about wild animals. I enjoyed science in elementary and junior high school, so I chose to attend Francis Lewis High School because it had a genetics laboratory. I got interested in genetics in high school and remember meeting Dr. Calhoon when I was a senior. He encouraged me to apply to Queens College. I entered as a freshman already decided to major in biology and got into the Honors in Mathematics and Natural Sciences (HMNS) program. After considering my various options for undergraduate research, I decided to work with tangible, living animals instead of invisible double helix molecules. So I joined Dr. Mundinger's laboratory and began conducting behavioral research with canaries. During my second semester at QC I took a physical education course that changed the trajectory of my life: Wilderness and Survival Skills. That course introduced me to the real outdoors. What better way to merge my passion for biology with my newfound love of being outdoors than a career in ecology? I started college interested in being a molecular geneticist. I graduated college interested in being an ecologist. Ironically, I am now both—a molecular ecologist!"

Dr. Monzón's earliest research experiences were here at QC while an undergraduate research student working with Paul Mundinger. They explored the genetics of canary song learning behavior by studying progeny derived from crosses between and within strains that sing different types of songs. They found that song learning and singing behavior varied more in the outbred canaries than those in genetically inbred strains. Their results suggested the presence of sex-linked genes affecting singing development and behavior.

Javier Monzón enrolled in the doctoral program of Stony Brook University's Ecology and Evolution Department and earned his PhD in 2012. His thesis, entitled "Rapid Evolution of Northeastern Coyotes" was mentored by Distinguished Professor Daniel Dykhuizen and co-mentored by Roland Kays of the North Carolina Museum of Natural Sciences. Dr. Monzón says his thesis "integrated evolutionary ecology, landscape genetics, and the newly emerging field of functional wildlife genomics." He used genetic markers from the dog genome to carry out one of the first genomic surveys of a wild carnivore. Chapters of his dissertation were published in *Molecular Ecology and F1000Research*, two highly regarded journals, and more publications based on this research are in review.

From 2012 to 2015, Javier Monzón did research at Stony Brook University's Center for Infectious Diseases as a Postdoctoral Fellow of the National Institutes of Health IRACDA program. The research, which was the topic of his seminar, was a population genomics study of the lone star tick, which is the most common tick found attached to humans in the eastern United States and carries a wide variety of pathogens. Dr. Monzón published his postdoctoral research in the journal *Genome Biology and Evolution*, and continues to investigate the ecology and evolution of the lone star tick while at Pepperdine University.

Over the past few years, Dr. Monzón has been involved in a number of other studies. In one project, done in collaboration with Charles Janson of the University of Montana, he analyzed the detection abilities between capuchin monkeys and two species of hawk-eagle in Iguazú National Park, Argentina. This work was published in the journal *Behaviour*. In another project, he explored the effects of climate change on biodiversity within protected areas. This culminated in a review article published in the journal *BioScience*. Dr. Monzón consulted for the company Applied Biomathematics to develop a population model of the golden eagle and to evaluate the effectiveness of proposed population status metrics for birds of prey. The work was published in an industry report for the Electric Power Research Institute and has relevance to the monitoring and management of raptor species and other long-lived, territorial animals. Recently, Dr. Monzón's research expanded outside the fields of ecology and evolutionary biology. He and colleagues published an article in the prestigious journal *Proceedings of the National Academy of Sciences,* in which they report discovering a link between high cholesterol and Lyme disease.

HONOREES & DEGREE RECIPIENTS 2015

Laura H. and Arthur L. Colwin Prize—Shoshana Reich
Charles Darwin Prize—Tamara Pulchenik
Muriel and Philip Feigelson Award—Charles Maniego
Donald E. Lancefield Award—Sue Lee

LIST OF GRADUATES

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

Jennefer Agudero
Joudi Al-Haj Jourmaa Vilar
Mostafa Aly—H
Fahmia Arif
Lilit Aslanyan—HH
Marko Baloh—H
Thomas Blakely
Renata Borka
Dolores Calle—H
Mayra Cruz
Nathalie Diaz
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Faraz Hanif
Sasha Harbajan
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Sara Ibrahim
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Gayane Jamgotchian
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Judah Kupferman
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Jessica Lee—H
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Benson Long
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Paul Marinos—HH
Farjola Martopullo
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MASTER'S DEGREE RECIPIENTS

Gabrielle Germain
Carlos Romero
Nazia Sarker
Deepti Rekha Sulapu

BIOLOGY ALUMNI FUND DONATIONS FY2015

In fiscal year 2015, fifty-two of our alumni donated **$7,881**, including a contribution from one corporation with a matching funds policy (Amgen Foundation Inc.). We are pleased to see the names of many who have faithfully donated in past years as well as several new names. Unhappily, this issue reports the loss of one of our major supporters, Dr. Andrea Scheit. Please read the article about her life in this issue.

Your gifts are a valued source of discretionary funds that are used to enhance the activities of the department including presentations by visiting scientists, faculty recruitment, support of student and faculty research and travel to scientific conferences, as a supplement to student graduation awards, and for special events. A list of this year's awards is presented elsewhere in this issue of *Biology Currents*.

We greatly appreciate your support. Most importantly, please tell us what we can do to inspire you to donate. Send emails to **Esther.Muehlbauer@qc.cuny.edu** or snail mail to Dr. Esther Muehlbauer, Biology Department, Queens College, CUNY, 65-30 Kissena Boulevard, Queens, NY 11367-1597

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EDITOR'S LETTER

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Additionally, your donations supplement expenses associated with undergraduate and masters-degree students who present research at scientific conferences.

Donations are used to supplement the Department's annual Graduation Awards (see list of recipients elsewhere in this issue). Endowment funds were established decades ago to provide the money that accompanies each award, but the current interest rate for these endowments is far too low. Thus, we use alumni donations to supplement the awards to amounts determined by the faculty. Alumni donations also pay for a post-commencement gathering of our graduates, their family and friends, and our faculty and staff. Alumni donations also support the activities of the Biology Honor Society, particularly tutoring.

Biology Currents is one way of keeping abreast of the activities of the Biology Department. I encourage you to check the department's web page at http://biology.qc.cuny.edu/ for more up- to-date information. We need to hear from you if you would like to be highlighted in an **ALUMNI UPDATE**, or would like us to include a brief report on your recent activities, or feel that your career would be a great read in **CAREER STORIES**. Please send me a brief text about what you have been doing to open up the conversation. My email address is **Corinne.Michels@qc.cuny.edu** and use "Biology Alum" in the subject line.

Regards,
Dr. Corinne A. Michels, Class of '63
Distinguished Professor Emerita

At the Biology Department Post-Commencement honors event and party.

Prof. Tim Short and Lauren Mordukhaev at the Post-Commencement celebrations.

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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