Women's Career Development Grant Recipients

The Membership Board of ASM is proud to announce that Jennifer F. Carr, currently at Massachusetts Institute of Technology (MIT), Cambridge, Mass., in the laboratory of Martin Polz, and Kirsten Neilsen, currently at Duke University Medical Center, Durham, N.C., in the laboratory of Joseph Heitman, are the Women's Career Development Grant recipients for 2006. The grants are given to encourage the careers of women of outstanding accomplishment and potential to carry out research in the area of microbiology.

Carr began her research career at the National Institutes of Health in Jenny Hinshaw's lab. Using biochemical assays and electron microscopy, she investigated conditions that govern the structural state of a protein involved in endocytosis. In her graduate studies at Brown University she joined Al Dahlberg's lab and worked to develop a genetic system for analysis of ribosome function with the extremophile Thermus thermophilus. This work stimulated her interest in the fields of microbial ecology and diversity. As a postdoctoral associate at MIT, she is working with bacterial isolates, predominantly vibrios, to address questions such as how motility affects fitness with respect to nutrient acquisition or susceptibility to viruses. She is also working to discover the nature of the interaction with other species in the habitat. Carr has applied her grant to a course at the Cold Spring Harbor Laboratory to expand her understanding of bacterial genetics and its applications.

Kirsten Neilsen received a Howard Hughes Medical Institute Postdoctoral Fellowship and a National Institutes of Health Ruth L. Kirschstein National Research Service Award in Molecular Mycology and Pathogenesis and participated in the Medical Mycology Course at the Marine Biological Laboratories in Woods Hole, Mass., as a postdoctoral fellow. Her work on the role of mating type in virulence of Cryptococcus neoformans has been presented at both the Cryptococcus Genome meeting and the Human Fungal Pathogens: EuroConference on Host-Pathogen Interactions. Kirsten's postdoctoral studies at Duke focus on the virulence of Cryptococcus neoformans. C. neoformans is a human pathogenic fungus that causes cryptococcosis, which commonly presents as a disseminated meningoencephalitis that is universally fatal if untreated. Neilsen will use the grant to work with Françoise Droemer at the Pasteur Institute, who will teach her techniques used to image cryptococcal cell interaction with the blood-brain barrier. These techniques will help Neilsen determine whether morphological changes inhibit a cell penetration of the blood-brain barrier. Neilsen believes the ability to differentiate between morphological changes and "enzymatic" changes that inhibit a cell penetration of the central nervous system will allow her to clarify her future scientific focus.
ASM News

2007 Women’s Career Development Grant Recipients

The ASM Membership Board is proud to announce that Laura R. Croal, currently at Massachusetts Institute of Technology (MIT), and Jennifer Loughman, currently at Washington University in St. Louis, are the Women’s Career Development Grant recipients for 2007. The grants are given to encourage the careers of women of outstanding accomplishment and potential to carry out research in the area of microbiology.

Laura R. Croal’s study as an undergraduate on the response of mutants defective in different steps of the thiamine biosynthetic pathway to the thiamine antagonist bactimethrin spurred her interest in biofilm development in Vibrio cholerae. In Roberto Kolter’s lab at Harvard Medical School, she characterized and sequenced transposon mutants of Vibrio cholerae biotype O1 El Tor that were defective in biofilm formation. This piqued her interest in environmental microbiology. Croal moved to CalTech where research in Dianne Newman’s lab focused on elucidating the molecular mechanisms of microbial metabolisms with significant environmental impact, and she later learned the basics of protein X-ray crystallography.

Croal then began her thesis research addressing the question of whether bacteria were able to oxidize Fe (II) phototrophically. Initially, she used a genetic approach to identify genes and gene products involved in phototrophic Fe (II) oxidation with the goal of identifying a unique molecular biosignature that would provide a means to trace this metabolism in banded iron formations. Croal developed a system to heterologously express a genomic cosmids library of the Fe (II)-oxidizing phototroph Rhodobacter sp. SW2 in a genetically tractable close relative, Rhodobacter capsulatus SB1003. Because SB1003 cannot oxidize Fe (II) under the same conditions as SW2, Croal was able to screen for SW2-derived clones that conferred Fe (II)-oxidation activity to SB1003. She also discovered a three-gene operon from SW2 that stimulated light-dependent Fe (II) oxidation in SB1003, which she named the foxEYZ operon (Fe oxidation) and determined that the product of foxE was a c-type cytochrome that likely functioned as a Fe (II) oxido-reductase. This work was published in the Journal of Bacteriology (189:1774–1782, 2007).

Now in Sallie Chisholm’s lab at MIT, Croal studies the ecology and environmental impact of Prochlorococcus, the numerically dominant phytoplankton in the world’s oceans. She is also working to develop a method for transposon mutagenesis of this organism and is investigating the physiology underlying its interaction with marine heterotrophic bacteria. Croal will use the Women’s Career Development grant to study a wide array of research techniques fundamental to study of microbial oceanography offered in a Summer Course on Microbial Oceanography at the University of Hawai‘i-Manoa.

Loughman defines competition as “... an act of striving with others rather than against them.” This philosophy is reflected in her active community service, to the Young Scientist Program which encourages high school students from disadvantaged backgrounds to consider careers in science through activities that emphasize hands-on research and individualized contact with active scientists. Loughman’s academic research and community service accomplishments earned her
the Outstanding Graduate Student Award from the program faculty of the Infectious Diseases Scholars Program (IDSP) at Washington University in St. Louis, Mo. The award recognizes thesis quality (in the broadly defined area of infectious diseases) coupled with contribution to the scientific community during a student’s time at Washington University. Loughman admits she thrived in the collaborative environment of the university, where interdisciplinary and translational research was encouraged. She continues her interest in integrating basic science with clinical or applied science, while she is dedicated to science education and mentoring.

Loughman has chosen to complete her post-doctoral training at the same university where she earned her undergraduate and graduate degrees. Thus, she believes it essential to establish relationships with scientists from other institutions for her career development. Loughman plans to use the Women’s Career Development Award to fund registration and travel expenses for the Cold Spring Harbor meeting on Microbial Pathogenesis and Host Response. Meeting organizers intend to provide an in-depth focus on current approaches used to elucidate mechanisms of bacterial pathogenesis and to promote application of these concepts to understanding the evolution of emerging diseases, with an emphasis on interdisciplinary approaches to the study of infectious disease.
2008 Women’s Career Development Grant Recipients

The ASM Membership Board is proud to announce that Kari Ann Shirey, currently at The University of Maryland, Baltimore in the laboratory of Stefanie N. Vogel; Siobain Duffy, currently at The Pennsylvania State University Mueller Lab; and Subhra Chakraborty, currently at Washington University in St. Louis in the laboratory of Samuel L. Stanley, Jr., are the Women’s Career Development Grant recipients for 2008. The grants are given to encourage the careers of women of outstanding accomplishment and potential to carry out research in the area of microbiology.

Kari Ann Shirey joined the laboratory of Stefanie N. Vogel in March 2006, upon completion of her Ph.D. from the Department of Microbiology at Miami University in Ohio. As a graduate student, her research focused on the cytokine-mediated immune response to chlamydial infections and the ways in which the intracellular pathogen evaded them. She was honored with several awards for excellence in research and teaching during her graduate studies. In addition, she mentored students interested in host-microbe interactions. Shirey will use her grant for travel to a laboratory in Quebec, Canada, where she will study a technique for adoptive transfer of labeled alveolar macrophages into the lungs of mice that have been intratracheally treated with liposomes containing clodronate (LIP-CLOD) to eliminate the resident alveolar macrophages. She hopes to gain a better understanding of both microbes’ interaction with the alveolar macrophages and the host’s
disease progression and resolution during primary and subsequent infections. The role of alternatively activated macrophages during infection may help to develop more appropriate therapeutic and preventative targets.

Siobain Duffy studies the evolution of viruses. She uses ecological and evolutionary theory to better understand and predict viral evolution, with the ultimate goal of learning how to prevent and control outbreaks of emerging viruses. Duffy’s education has been in molecular biology and biochemistry (B.A. with highest honors, Rutgers University, 2000) and ecology and evolutionary biology (Ph.D., Yale University, 2006), and has always focused on microbiology. As an undergraduate, she conducted a multiyear research project on quantifying the risk of *Escherichia coli* O157:H7 contamination of apple cider. Her dissertation research was recognized within her university with the John Spangler Nicholas dissertation prize, by the National Science Foundation with a doctoral dissertation improvement grant, and by the ASM Raymond W. Sarber award. She is currently a National Science Foundation postdoctoral fellow studying the long-term evolution of an overlooked class of emerging viruses with her mentor Edward C. Holmes in the Mueller Lab at The Pennsylvania State University. Duffy will use her grant to learn how to conduct in vitro and in vivo experiments with the plant viruses she has been researching. She will spend a month in Linda Hanley-Bowdoin’s lab at North Carolina State University to learn and practice Hanley-Bowdoin’s molecular techniques.

Subhra Chakraborty began her career with the government of India as a research fellow of the Indian Council of Medical Research, working in Microbiology at the National Institute of Cholera & Enteric Diseases. She began her postdoctoral research on amebiosis in the lab of Samuel Stanley Jr., at Washington University in St. Louis, Mo. Chakraborty’s accomplishments influenced David Thanassi at Stony Brook University to offer her a postdoctoral fellowship in his laboratory to address the mechanism of pathogenesis of *Francisella tularensis*. She plans to use this grant to visit the lab of Meta J. Kuehn at Duke University Medical Center, Durham, N.C., to perfect new techniques of isolating and purifying bacterial outer membrane vesicles and associated proteins. Application of these new techniques will add new perspectives in the field of *Francisella* pathogenesis.

For further information on Women’s Career Development Grants, please go to http://www.asm.org/Membership/index.asp?bid=37857 under Membership on the ASM website.
Membership

2009 Women’s Career Development Grant Recipients

The ASM Membership Board is pleased to announce the 2009 Women’s Career Development Grant recipients: Mary Chelsea Lane, University of North Carolina, Chapel Hill (UNC) (Virginia L. Miller’s laboratory), Aimee Shen, Stanford University (Matthew Boggo’s laboratory), and Aleksandra E. Sikora, University of Michigan Medical School (Maria Sandkvist’s laboratory).

After completing a Ph.D. at the University of Maryland, Mary Chelsea Lane studied molecular mechanisms of urinary tract pathogenesis caused by uropathogenic Escherichia coli as a postdoctoral fellow at the University of Michigan Medical School. She authored six articles and received several awards. In 2008, she joined Virginia Miller’s laboratory at UNC to study Yersinia pestis, the causative agent of plague. Based upon her work, she won a position on an NIH grant in Infectious Disease Pathogenesis Research Training. Lane will use the Women’s Career Development Grant to enroll in the American Association of Immunologists Advanced Course in Immunology.

Aimee Shen joined Mathew Boggo’s laboratory at Stanford University after completing her Ph.D. at Harvard. Her work combines bacterial genetics with chemical biology to probe the function of bacterial proteases. She initiated research to characterize the role of a novel cysteine protease domain (CPD) by using this type of enzymatic reaction toward activating a newly recognized family of bacterial toxins, the Multifunctional Autoprocessing Peptides-in-Toxins (MARTXs). Shen has participated in Science in the News, a program aimed at lay audiences, and contributed to a high school curriculum on the relationship between race, ancestry, and DNA. She will use her grant to attend the 2009 Gordon Conference on Microbial Adhesion and Signal Transduction.

Aleksandra Sikora received her Ph.D. from the University of Gdansk, Poland, and shortly thereafter began a postdoctoral fellowship with Maria Sandkvist’s group at the University of Michigan Medical School, where Sikora investigates the type II secretion (T2S) pathway in Vibrio cholerae, the agent of cholera. Results of her investigations have been published in the Journal of Bacteriology. She has helped initiate collaborations with the UM Center of Chemical Genomics and the Michigan Proteome Consortium to enhance her research on extracellular proteases and on compounds that potentially block the T2S process. Sikora will use her grant to visit Paula Watnick’s laboratory at Children’s Hospital in Boston, where she will study the techniques involved in utilizing Drosophila melanogaster as a model for cholera infection.

The 2010 grant program is currently accepting nominations. Three grants ($1,200 each) are given annually to postdoctoral women of outstanding scientific accomplishment and potential for additional significant research or study in the area of microbiology. For more information on the program and the application process, go to http://www.asm.org/index.php?option=com_content&view=article&id=37857&Itemid=199 on the ASM website.
ASM News

2010 ASM International Ambassador of the Year

ASM congratulates Irma Rivera, Ph.D., on her selection as the 2010 ASM International Ambassador of the Year.

Rivera is a professor and researcher at the Department of Microbiology, Biomedical Science Institute, at the University of São Paulo, São Paulo, Brazil. Her research interests include environmental and applied microbiology with an emphasis on the molecular microbial ecology of marine ecosystems, including ballast water and Vibrio cholerae.

Rivera has been an ASM member since 1991 and received two ASM-UNESCO Fellowships, in 1994 and 1997, during which she studied with Rita Colwell at the University of Maryland. She was appointed ASM Ambassador to Brazil in 2007 and quickly demonstrated an exceptional commitment to her role and to the advancement of microbiology in her region. Due to the large size of Brazil, one of Rivera’s first objectives as Ambassador was to identify six ASM Regional Liaisons in principal cities throughout the country. In addition to their strategic geographic location, Rivera selected these Regional Liaisons for their range of microbiology interests in order to connect with all areas of microbiology. Through her own efforts and those of her Regional Liaisons, Rivera has been exceptionally adept at engaging ASM members in Brazil and highlighting the membership benefits and ASM resources most relevant to current and prospective members across all disciplines.

Rivera was also responsible for coordinating a significant ASM representation during the biannual Brazilian Congress of Microbiology in 2007 and 2009. More than 2,000 and 2,700 participants attended the congresses, where Rivera organized ASM Coffee Hours, membership drives, ASM speakers, Best Presentation Awards, ASM Roundtable discussions, presentations on ASM membership, and visits to local universities.

These activities represent a fraction of her creative and determined efforts to promote ASM among Brazilian microbiologists. Since her appointment, membership and participation in ASM programs in Brazil have grown.

In addition to her responsibilities as an ASM Ambassador, Rivera is the Coordinator of the Environmental Microbiology Unit in the Brazilian Society for Microbiology, a Board Secretary of the Pan American Marine Biotechnology Association (PAMBA), and a member of the International Society for Microbial Ecology (ISME). Finally, Rivera is a Coordinator of Vibrios LatinNet, which includes members from Argentina, Brazil, Chile, Cuba, Mexico, and Peru.

Ambassador Rivera is an asset to the ASM Ambassador Program, an exemplary volunteer for the Society, and a veritable model of a microbiologist dedicated to the advancement of her science.

2010 Career Development Grants for Postdoctoral Women

The ASM Membership Board is pleased to announce the recipients of the 2010 Career Development Grants for Postdoctoral Women: Kristi L. Frank, from Gary M. Dunny’s laboratory at the University of Minnesota Medical School, Erin A. Gontang, from Roberto Kolter’s laboratory at Harvard Medical School, and Clarissa J. Nobile, from Alexander D. Johnson’s laboratory at the University of California, San Francisco.

Kristi L. Frank started her postdoctoral work in Gary Dunny’s lab at the University of Minnesota Medical School shortly after earning her Ph.D. in biomedical research-biochemistry and
molecular biology from the Mayo Graduate School, Mayo Clinic College of Medicine. Her postdoctoral research, on which she is co-advised by Dunny and Patrick Schlievert, examines how Enterococcus faecalis adapts to and persists in a host as a pathogen. Frank uses microarray analysis and a genetic screen (employing recombinase-based in vivo expression technology) to characterize how E. faecalis gene expression changes over time in an animal model of subdermal abscess formation. Frank has completed experiments aimed at understanding the relative benefit that the conjugative plasmid pCF10 confers to E. faecalis cells in biofilm formation and in virulence in animal models of subdermal abscess formation and endocarditis. In addition to her lab work, Frank serves as an ad hoc peer reviewer for several journals, coordinates a monthly interest group on biofilms, and is actively involved in the Steering Committee of the University’s Postdoctoral Association. Frank will use the Career Development Grant for Postdoctoral Women award to attend the 3rd ASM Conference on Enterococci in Portland, Oreg.

After completing her Ph.D. at the Center for Marine Biotechnology and Biomedicine, Scripps Institution of Oceanography, University of California, San Diego, Erin A. Gontang began postdoctoral research at Harvard Medical School, in Roberto Kolter’s lab, where she focuses on the ecological roles of microbially derived natural products and how microorganisms use small molecules to mediate interspecies interactions. Specifically, she has examined how the model microorganism Bacillus subtilis responds to small molecules that induce biofilm formation. She has studied a novel signaling mechanism involving a histidine kinase of B. subtilis. The signal that activates the kinase appears to be a change in the intracellular potassium concentration, and in response to potassium leakage, the histidine kinase KinC initiates a signal cascade leading to biofilm formation. Gontang is working to identify the mechanism by which KinC detects potassium leakage. In addition, she is studying six actinomycete strains to determine whether the expression of previously silent metabolic pathways can be promoted. Gontang will use the grant to participate in the course offered by the John Innes/Rudjer Bošković Summer Schools in Applied Molecular Biology entitled “Microbial Metabolites: Signals to Drugs.”

Clarissa J. Nobile joined Alexander D. Johnson’s laboratory at the University of California, San Francisco, after completing her Ph.D. and an additional year of postdoctoral research at Columbia University, where her main research focus was on biofilms. While at Columbia, she made extensive progress in elucidating the genetic mechanisms of Candida albicans biofilm formation using a large-scale gene disruption strategy. The Bcr1-dependent adherence regulatory pathway that she discovered is pivotal to understanding C. albicans biofilm formation. Without the transcription factor Bcr1 (named for biofilm and cell wall regulator), C. albicans cells are unable to form biofilms. Nobile is continuing her biofilm studies in Johnson’s lab by incorporating more mechanistic detail on the transcriptional regulation that occurs during biofilm formation. She has recently published a paper in PLoS Biology detailing her studies with David Andes, Aaron Mitchell, and Alexander Johnson on a new biofilm regulator, Zap1, which is required for matrix production during C. albicans biofilm formation. Nobile will use the grant to participate as a speaker in the “Environmental Sensing and Responses” symposium at the International Mycological Congress (IMC9)—the Biology of Fungi Conference taking place in Edinburgh, United Kingdom.

The 2011 Career Development Grants for Postdoctoral Women program is currently accepting applications. Three grants ($1,200 each) are given annually to postdoctoral women of outstanding scientific accomplishment and po-
ASM has awarded the ASM Congressional Science Fellowship to Ian D. Simon for 2010–2011. Simon will work on the staff of a member of Congress or congressional committee during his fellowship year. Simon received his Ph.D. in microbiology from Yale University in May of 2008. In addition to working in a series of policy institutes since graduating, Dr. Simon has led the Biotechnology Initiative of the Asia Institute since October 2008. In this capacity he has created policy reports detailing new strategies that will enhance international collaboration efforts for Korean biotechnology research institutions. Simon has dedicated himself to expanding the depth of his understanding of science policy by taking additional elective classes at the Yale School of Epidemiology and Public Health to understand the economic and social factors that influence health policy decisions. Simon is enthusiastic about starting his fellowship, “I will be able to gain a firm grasp on the inner workings of U.S. science policy making, learn from key players in the science policy and political arena, and engage with both policymakers and scientists in formulating, communicating and advocating effective science policy.” Simon was an ASM Minority Undergraduate Research Fellow in 2001 and has been an ASM member since 2006.

ASM has supported Congressional Fellows since 1977. The ASM Congressional Science Fellowship Selection Committee selects a post-doctoral to mid-career microbiologist to spend one year on the staff of an individual congressman, congressional committee, or with some other appropriate organizational unit of Congress. Prospective Fellows must be citizens of the United States, members of ASM for at least one year and must have completed their Ph.D. by the time the fellowship begins in September. The Congressional Science Fellowship is supported in part by the Frobisher Fund, a bequest made to ASM by Martin Frobisher. Contact the Office of Public Affairs at publicaffairs@asmusa.org for more information on the ASM fellowship or go to the ASM web page for a program description: http://www.asm.org/index.php/policy/congressional-science-fellowship-application.html. The deadline for applications for the 2011–2012 fellowship is 18 February 2011.

ASM Branch Lectureships Program

The ASM Branch Lectureships (ASMBL) Program (formerly known as Waksman Foundation for Microbiology Lectures) annually selects a scientifically diverse group of outstanding speakers who are available to deliver lectures at ASM Branch meetings throughout the country. The ASMBL program, originally funded by the Waksman Foundation and now fully funded by ASM, has been a mainstay of the Branch program for 40+ years and in the last 20 years has provided over 490 lectures to thousands of Branch meeting attendees. The Branches have consistently given the program high ratings, as evidenced in the 2009–2010 program surveys, with 95% of responding Branches indicating that they would recommend their Lecturer to others. In addition, 92% of the Lecturers who responded rated their overall experience at the Branches as excellent, and another 8% as satisfactory.

An important component of the ASMBL program is its emphasis on providing opportunities for students to interact with prominent lecturers representing a wide range of scientific interest areas. Ninety-six percent of the 2009–2010 Lecturers who responded to the program survey reported that they had met with students at Branch meetings to present lectures, participate in informal discussions, judge posters, and/or judge oral presentations.

The ASMBL Committee is pleased to announce its slate of Lecturers for the 2010–2011 program year:

Kathryn Boor, Cornell University
Peggy Cotter, University of North Carolina, Chapel Hill
Andrew Darwin, New York University School of Medicine
ASMCurriculum Guidelines

The ASM Recommended Curriculum Guidelines for Undergraduate Microbiology are available in the online version of this article, as well as through the ASM website at http://www.asm.org/images/Education/microbe%20box%201%20final.pdf.

The task force identified six overarching themes to organize key concepts for understanding microbiology. These themes include evolution, structure and function, pathways, information flow, systems, and impact of microorganisms. The first five themes come from the 2011 AAAS Report Vision and Change in Undergraduate Biology Education: A Call to Action, a national report urging faculty to refrain from presenting science as a sea of facts and work towards ensuring that students have a foundational understanding in biology. (The report is available at http://visionandchange.org/finalreport.)

Over an 8-month consensus-building period between January and June 2011, the task force identified 26 statements related to the six overarching themes. These statements identify “enduring understandings”—what students should truly understand, not just do roteley or memorize, as a result of studying a particular concept. The statements are deliberately framed as declarative statements and present major curricular generalizations and recurrent themes (see the online version of this article). In addition, the task force identified two key skill areas, scientific thinking and microbiology skills, where students’ development of competency would have enduring and lasting value beyond the classroom and laboratories.

Call to Action. Over the next six months, the Task Force invites members to comment on the guidelines through an online survey. The 21-question survey measures the relative importance of core concepts and skills essential in microbiology while gathering user comments. Results of the survey will be shared with the membership in 2012. To participate in the survey, visit www.zoomerang.com/Survey/WEB22CXY77E3CY/.

Final guidelines will be available in summer 2012.

2011 Career Development Grants for Postdoctoral Women Recipients

The ASM Membership Board is pleased to announce the recipients of the 2011 Career Development Grants for Postdoctoral Women. The recipients are Sinem Beyhan of the University of California, San Francisco (Anita Sil’s laboratory), Ashley Shade of Yale University (Jo Handelsman’s laboratory), and Laura E. Williams of Duke University (Jennifer Wernegreen’s laboratory).

Sinem Beyhan received her Ph.D. from the University of California, Santa Cruz, and is now a postdoctoral fellow in Anita Sil’s laboratory at the University of California, San Francisco. She is currently conducting research on the fungal pathogen Histoplasma capsulatum, the most common cause of fungal respiratory infections in immunocompetent hosts. H. capsulatum has a dimorphic life cycle, switching from an infective filamentous form in soil to a pathogenic yeast form in mammalian hosts. By replicating this morphological switch in the laboratory, Beyhan is investigating how H. capsulatum alters its growth program when it senses temperature changes. Her research on the three genes (RYP1, RYP2, and RYP3) that are required for yeast-phase growth in response to temperature has provided insights into molecular mechanisms by which the genes regulate yeast-to-hyphal transition. She demonstrated the importance of heat shock proteins and a transcription factor, FacB, in regulation of cell morphology in H. capsulatum. She is pursuing studies of the mechanism of how heat shock protein 90 (Hsp90) influences regulation of cell shape by temperature. Beyhan used the Career Development Grants for Postdoctoral Women award to attend the Federation of European Biochemical Societies (FEBS) Human Fungal Pathogens Course in La Colle sur Loup, France.
After completing her Ph.D. at the University of Wisconsin-Madison, Ashley Shade began a postdoctoral position with Jo Handelsman at Yale University, where she is using functional metagenomics and computation for next-generation (454 and Illumina) sequencing to assess microbial resilience after perturbation across different dynamic systems. Shade has been involved in the design of the Earth Microbiome Project, a next-generation sequencing study to understand microbial diversity across soil, aquatic, and “extreme” biomes of our planet. She is leading a conceptual review and meta-analysis of microbial robustness, which was an outgrowth of a roundtable session she and Handelsman cochaired at the International Symposium on Microbial Ecology. Shade collaborates with researchers at the University of Colorado and Argonne National Laboratory on analyses of temporal variability within and across communities from host-associated microbiome and environmental habitats. Additionally, she is working on a project to understand the implications of a “core” microbiome on interpretation of next-generation sequencing. She has mentored several undergraduates and reviewed articles for journals, such as *Bioinformatics* and *Applied and Environmental Microbiology*. Shade used the grant to attend the Marine Biological Laboratory Microbial Diversity summer course at Woods Hole, Mass.

Laura E. Williams joined Jennifer Wernegreen’s Laboratory (originally located at the Marine Biological Laboratory in Woods Hole, Mass., but since moved to the Institute for Genome Sciences and Policy, Duke University, Durham, N.C.) after receiving her Ph.D. from the University of Georgia, Athens. She researches genome evolution in *Blochmannia*, which are bacterial endosymbionts of carpenter ants. Due to extensive gene loss, *Blochmannia* can no longer exist independently from their ant hosts. They are strictly maternally transmitted and cospeciate with ant hosts. Williams is using Illumina sequencing technology to generate a dataset of *Blochmannia* genomes for comparative analyses and studies of molecular evolution in *Blochmannia*, focusing on how strength of selection is affected by the reduction in bacterial effective population size due to bottlenecks during maternal transmission. By comparing a large dataset of *Blochmannia* genomes of closely related and more divergent species, she hopes to learn how the symbiosis between *Blochmannia* and carpenter ants has evolved. In future research, Williams plans to investigate the evolution of predation in bacteria using an integrated approach that combines genomics and molecular biology. Williams used the grant to visit Elizabeth Sockett’s laboratory at the University of Nottingham, United Kingdom, to study isolation, culture, and assay techniques for predatory bacteria.

The 2012 Career Development Grants for Postdoctoral Women program is currently accepting applications. Three grants ($1,200 each) are given annually to postdoctoral women of outstanding scientific accomplishment and potential for additional significant research or study in the area of microbiology. For more information on the program and the application process, go to [http://www.asm.org/index.php?option=com_content&view=article&id=37857&Itemid=199](http://www.asm.org/index.php?option=com_content&view=article&id=37857&Itemid=199) on the ASM website.
Publication of Sequence Read Archives (SRAs) is not permitted.

*Genome Announcements* manuscripts do not require peer review, but may be reviewed at the editor’s discretion. Publication of an article in *Genome Announcements* does not preclude a later publication (e.g., a full comparative analysis) on the same organism in another ASM journal. *Genome Announcements* articles will be published continuously and will be collected into bi-monthly issues throughout the year. Articles accepted for publication in *Genome Announcements* are subject to a nonwaivable, flat publication fee of $330 for ASM members ($500 for nonmembers).

**2012 Career Development Grants for Postdoctoral Women Recipients**

The ASM Membership Board is pleased to announce the recipients of the 2012 Career Development Grants for Postdoctoral Women: Magdia De Jesus of Wadsworth Center, New York State Department of Health (Nicholas J. Mantis’ laboratory), Nikki Dellas of Montana State University (Mark Young’s laboratory), and Katherine S. Ralston of the University of Virginia (William A. Petri’s laboratory).

**Magdia De Jesus** began her postdoctoral training in the Wadsworth Center, New York State Department of Health after completing her Ph.D. at the Albert Einstein College of Medicine of Yeshiva University. She is currently conducting research in Nicholas Mantis’ mucosal immunology laboratory, where she explores the role of C-type lectin receptors on Peyer’s patch dendritic cells and macrophages in the recognition, uptake, and initiation of mucosal immune responses towards intestinal microbes. She has initiated ex vivo binding studies as well as Peyer’s patch infections using *Salmonella enterica* and *Candida albicans*, and is studying the mechanism(s) that determines selective sampling of antigens and SIgA-IC by M-cells and how uptake of these complexes contributes to tolerogenic or inflammatory immune responses. De Jesus is the Secretary of the Eastern New York Branch of ASM, and previously, she established an ASM Student Chapter and, later, the first ASM Postdoctoral Chapter. She is a member of the General Meeting Junior Advisory Committee, and serves on the ASM Translators Network. She also mentors minority undergraduates at the Wadsworth Center. De Jesus used the Career Development Grants for Postdoctoral Women (CDGPW) award to travel to Stuart Levitz’ laboratory at the University of Massachusetts Medical School to study a T-cell proliferation assay developed by Levitz.

Upon completing her Ph.D. in Chemistry at the University of California, San Diego, **Nikki Dellas** began postdoctoral work at the Salk Institute, and then moved to Mark Young’s archaeal virology lab at Montana State University to continue postdoctoral training. Integrating chemistry with biology, her research explores how a given virus can cross-infect multiple domains of life. She studies cloning, overexpression, mutagenesis, protein overexpression/purification, and in vivo infection in reference to essential enzymes of an archaeal virus that infects *Sulfolobus solfataricus*. She investigates the characterization of small RNAs throughout the course of a viral infection and performs experiments that progress toward the modification of the virus such that it can infect a bacterium, and vice versa. Through her studies, she hopes to gain insight into whether there is fundamental biological machinery that is conserved and transposable throughout all domains of life, what defines the boundaries by which a virus can infect a host of a different domain of life, and what can be inferred about horizontal gene transfer (HGT) and its role in maintaining/obscuring the three domains of life structure. Dellas used the CDGPW grant to attend the biennial Viruses of Microbes conference in Brussels, Belgium, and also visited the Pasteur Institute to work with Patrick Forterre.

**Katherine S. Ralston** received her Ph.D. from the University of California, Los Angeles, and is now conducting postdoctoral research in William A. Petri’s Laboratory at the University of Virginia. Her research focuses on *Entamoeba histolytica*, a parasite that causes tremendous morbidity and mortality in the developing world, remains a serious threat for travelers, and is a potential bioterrorism agent. Using a multidisciplinary approach, she determined that *E. histolytica* does not kill human cells by inducing apoptosis, as previously believed. She discovered that *E. histolytica* uses a novel mechanism for killing human cells, whereby, within one minute of
human cell contact, *E. histolytica* internalizes distinct pieces of the targeted cell. This “partial ingestion” or “chewing” of the human cell precedes the appearance of markers for cell death and is required for cell killing. To ascertain whether additional toxins or effectors are employed, Ralston has initiated studies into amoebic intracellular acidic vesicles to determine if they contain any putative cytotoxic effectors. Ralston has taught basic biology to junior high school students at an underprivileged school, served as a university-level teaching assistant, and mentored undergraduate students in laboratory research. Ralston used the CDGPW award to attend the 2012 Gordon Conference on Cell Death.

The 2013 Career Development Grants for Postdoctoral Women program is currently accepting applications. Three grants ($1,200 each) are given annually to postdoctoral women of outstanding scientific accomplishment and potential for additional significant research or study in the area of microbiology. For more information on the program and the application process, go to http://www.asm.org/index.php/awards/students-young-investigators/121-whats-new/membership/1120-womens-career-development-grants.
2013 Career Development Grants for Postdoctoral Women Recipients

The ASM Membership Board is pleased to announce the recipients of the 2013 Career Development Grants for Postdoctoral Women: **Seemay Chou**, University of Washington, Seattle (Joseph Mougous’ Laboratory); **Trinity Hamilton**, Penn State Astrobiology Research Center (Jennifer Macalady’s Laboratory); **Karyna Rosario Cora**, University of South Florida (Mya Breitbart’s Laboratory); and **Michelle Swick**, University of Texas Health Science Center at Houston (Theresa Koehler’s Laboratory).

**Seemay Chou** received her Ph.D. in Molecular and Cell Biology from the University of California at Berkeley, and is now a postdoctoral Fellow in the Laboratory of Joseph Mougous at the University of Washington, where she studies the structure and evolution of the bacterial type VI amidase superfamily. Her research focuses on how sequence-based diversity within this superfamily of PG-degrading amidases can shape functional diversity and, ultimately, the outcome of interbacterial competition. She is using this superfamily to investigate how PG structural diversity in recipient cells can influence Tae-mediated toxicity. She is also working to characterize overall PG structure and probing cell wall architectural differences in bacteria. Her aim is to establish a basic molecular understanding of how Tae specificity is encoded and use the Tae enzymes as a toolkit for surveying differences in PG structure at different growth stages, in various environmental conditions, and in many different bacterial species. Her preliminary work has shown that the Tae enzymes are highly amenable to structural characterization, and that a combination of different techniques will teach more about their interactions with PG. Chou will use the award to travel to the laboratory of Waldemar Vollmer of the Institute for Cell and Molecular Biosciences at the University of Newcastle to learn techniques related to cell wall purification and analysis.

After completing her Ph.D. in Biochemistry at Montana State University-Bozeman, **Trinity Hamilton** began postdoctoral work in Jennifer Macalady’s Laboratory at the Penn State Astrobiology Research Center. Hamilton’s research is aimed at understanding the role of biology in planetary redox evolution using approaches that blend biochemistry, molecular biology, geochemistry, and bioinformatics. She is combining -omics approaches (genomes, metagenomes, and [meta]transcriptomes), microcosm and enrichment cultures, and high-resolution geochemical measurements to elucidate the co-occurrence of oxygenic and anoxygenic phototrophs in early Earth analog environments. At a newly discovered Proterozoic-like microbial ecosystem at Little Salt Spring, Fla., she conducts studies which quantify contributions of oxygenic and anoxygenic photosynthesis to CO₂ fixation and identify environmental controls on oxygen production. Insights gained into the biogeochemical functioning of microbial communities at Little Salt Spring will directly inform the study of Proterozoic rocks, including biosignatures, geochemical thresholds, and biogeochemical process rates related to oxygenic vs. anoxygenic photosynthesis. Hamilton will use the award to travel to the Max Planck Institute of Marine Microbiology to develop a portable flow chamber necessary for in situ activity assays aimed at understanding oxygen production by phototrophic mats in a Proterozoic ocean analog.

**Karyna Rosario Cora** is a postdoctoral researcher in Mya Breitbart’s Laboratory at the University of South Florida, where she also received her Ph.D. degree in Biological Oceanography. Her current research focuses on a novel group of single-stranded DNA (ssDNA) viruses that she discovered through her Ph.D. research. She prepared the first comprehensive review summarizing features of circular ssDNA viruses and recently discovered
viruses and proposed a new classification scheme for ssDNA viruses that exhibit novel genome architectures. She is now investigating the diversity and biogeographical distribution of ssDNA plant viral pathogens (i.e., begomoviruses) by conducting viral metagenomics on whiteflies (their insect vector) collected from different parts of the world. She also explores the diversity of ssDNA viruses in invertebrates and fungi and their evolutionary relationships to vertebrate and plant ssDNA viruses. In addition to her own research, she oversees undergraduate and graduate student projects in the lab. Rosario Cora will use the award to visit and conduct experiments at Mavis Agbandje-McKenna’s laboratory at the University of Florida in Gainesville to further her ssDNA virus research, establish new collaborations, and acquire expertise in a new discipline.

Michelle Swick began her postdoctoral training in Theresa Koehler’s Laboratory at the University of Texas (UT) Health Science Center at Houston after receiving her Ph.D. in Cell & Molecular Biology at Baylor College of Medicine. Her Ph.D. research focused on mechanisms of antibiotic resistance in *Escherichia coli* and resulted in the development of a patented pooling strategy partnered with next-generation sequencing, which pools and sequences samples that share a common phenotype. Using the pooling strategy, she identified four novel SNPs that appear to be important to fluoroquinolone resistance in *E. coli*, each corresponding to the cap of an α-helix involved in DNA interaction. Her current research focuses on defining the mechanism by which camelysin contributes to *B. anthracis* pathogenesis, specifically trying to determine the impact of camelysin on the *B. anthracis* secretome, to characterize the importance of zinc to the activity of camelysin, and to test the importance of camelysin in the context of virulence. She currently serves as Chair of the Postdoctoral Association Executive Committee at UT Health, where she leads efforts to plan relevant and productive postdoctoral activities. Swick will use the award to visit the laboratory of Anne Boyer at the Centers for Disease Control in Atlanta to examine the expression of bacterial secreted proteases during infection using state-of-the-art detection methods developed in her laboratory.

The 2014 Career Development Grants for Postdoctoral Women program is currently accepting applications. Up to four grants ($1,500 each) are given annually to postdoctoral women of outstanding scientific accomplishment and potential for additional significant research or study in the area of microbiology. For more information on the program and the application process, go to http://www.asm.org/index.php/professionaldevelopment/postdocs/121-whats-new/membership/1120-womens-career-development-grants on the ASM website.