



# The Restriction Digest

**GSA Newsletter**

a publication of

the Graduate Student Association

Johns Hopkins University School of Medicine

**Volume 17**

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**June 2007**

## **GSA Teacher of the Year: Bob Siliciano**

Interview by Karen David

*Our GSA teacher of the year, Dr. Siliciano, is known for being a busy person, so it was an honor to have the chance to find out what drives him. True to his mentoring nature, he provides us insights on how to sustain this drive ourselves. During our conversation, we were interrupted by phone calls from one of his students and his wife. Not that I was eavesdropping, but it was evident from his kindness to the people around him, that this scientist who wears many hats is busy for the right things- his AIDS research, and most importantly, his family and his lab.*

### **Q. Would you briefly outline your career path? What led you to your current research interests?**

I went through the MD PhD Program at Johns Hopkins and was interested in immunology. I did my PhD with Hyun Shin and then I did a postdoc in basic immunology.  
*(continued on p.2)*

## **Ten easy ways to make YOUR lab a little bit greener!**

By Karisa Solt of HopkinsLIFE (Leadership Initiative for the Environment)

1. Turn off lights and computers when you leave the lab.
2. Turn off hoods when you are finished or when you leave for the day.
3. Minimize usage of dl & ddl water.
4. Recycle pipet tip boxes (and inserts).
5. Run only full loads in the autoclave and dishwasher.
6. Reuse paper by printing on both sides or using as scratch paper.
7. Use reusable containers and supplies whenever possible. (Even coffee mugs!)

*(continued on p. 3)*

## **The Johns Hopkins University School of Medicine 2007 Graduate Student Commencement Address**

By Paria Mirmonsef

Thursday, May 17 | Meyerhoff Symphony Hall | 2:30 pm

Good afternoon to the dean and faculty of school of Medicine, the graduates and to our friends and families.

I'm incredibly honored to have been given this opportunity to speak to you all today, on the day of our graduation. Back in 1989, I had no idea that one day I'd be standing before you today...

You see, my parents decided in 1989 to leave Iran and to immigrate to the United States. My Mom had grown up in a traditional male-dominated family in a small town in Iran where higher education for a woman didn't seem necessary. My mom and dad wanted better for their  
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ogy at Harvard. During that time, my advisor suggested that instead of studying artificial antigens, we study a real pathogen. We obtained some recombinant HIV envelope protein and started working on that in 1986. From that point on, I became more and more interested in HIV and have been doing HIV research ever since.

**Q. Did the MD inform your PhD?**

Yes, once I started working on HIV, it became very important to work with clinicians. Over time, my work has become more clinically oriented...more focused on treatment. We collaborate with lots of people taking care of patients. Having the MD helps you communicate with them and understand the language of medicine which can be a little bit difficult. And so it has been very helpful.

**Q. I'm surprised you didn't pursue the clinical side of your training...**

I think you have to be really smart to do both clinical medicine and basic research. I don't think I have that kind of ability. I realized that I was better off in the lab. It's a different kind of thinking. In clinical medicine, you need to be able to synthesize lots of facts fairly quickly and put them together and come up with a plan. I think I do better when I have a long time to think about things. Also, at the time I was trying to decide, I was involved in an area of research that was extremely interesting.

**Q. And the NIH roadmap makes research of clinical importance a priority...**

The reality is that the funding for medical research is tight, and that in the public's mind, progress on major diseases is critical. I was involved in a lobbying effort in the Congress to provide more funding for the NIH. One of the senators kept asking how much money would it take to cure cancer, which of course is an impossible question to answer. That's the thinking; they want the results. The public is very supportive of medical research, but they want some results. I think it's the responsibility of everybody doing science to try and do whatever they can to educate people about it and what the process is.

**Q. How did you start your lab?**

I started with a technician and with a postdoc who couldn't find any other position and one graduate student. It was kind of grim at the beginning. We now have a fantastic group of people working with us - including several Hopkins undergraduates. I have been particularly fortunate to be able to work together with my wife for the last several years. We run the lab together along with another faculty member, Dr. Joel Blankson. We have a fellow from the infectious disease program, 2 postdocs and several graduate students.

**Q. So how do you balance your personal life and research? Your secretary Bonita mentioned that your definition of vacation is taking time off from Wednesday to Friday.**

We haven't taken a long vacation in a couple of years...When I was a postdoctoral fellow and my wife and I were expecting our first child, I remember telling my advisor that my family was going to be my top priority and that I would leave at 5pm. He didn't like that, but I told him that's what it is. I think if you have a family, you have to put your family first, although that's not what everybody in science does. A lot of people do it the other way and for a while it is difficult to compete with them. What you have to do is give up the other things that are not essential.

**Q. So what's your general philosophy in how you train your people?**

It's very important to give them a lot of independence and then to review the work with them periodically and help them when they get stuck...but not to tell them what to do everyday. They have to figure that out. I've been fortunate to have extremely gifted students so it's been a pleasure working with them.

**Q. Aside from building skills in the bench, what are other skills a graduate student should work on?**

It's extremely important that you learn how to write because to be honest, most of what you're going to be doing in the future is writing: grants, papers, letters of recommendation, protocols and all kinds of things. So you have to be really good at that. A

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8. Minimize open freezer time-use an ice bucket.
9. Turn off equipment when not in use: shakers, heating blocks, refrigerated centrifuges, house vacuum, etc.
10. Don't put non-biohazardous, non-lab-related waste into biohazard boxes.

Reduce, Reuse, Recycle... Only throw it out if you absolutely have to!

For more information about what you can do to promote a greener working environment here at Hopkins, please email [HopkinsLIFE@gmail.com](mailto:HopkinsLIFE@gmail.com), or attend meetings on the 2nd Monday of each month in 2-108 1830 Bldg. at 5:00 PM.

**A Graduation Message From The School of Medicine Development and Alumni Relations Office**

As you move on with your career, either with the Hopkins Family or at a new location, don't forget to keep your contact information current with us to ensure that you receive your free subscription to *Hopkins Medicine* magazine as well as updates on important news and information on future Biennial Meetings and Reunion Weekends.

If you are not remaining at Hopkins after graduation, **your [jhmi.edu](http://jhmi.edu) e-mail address will be disconnected around August 31st.** To avoid interruption of your e-mail and to stay connected with your class, sign up for a free e-mail alias provided by the Johns Hopkins University Alumni Association. Visit: [www.hopkinsnet.jhu.edu](http://www.hopkinsnet.jhu.edu), click on "yourname@jhu.edu," and follow the directions for signing up.

If there is any way that our office can be a resource for you now or in the future, do not hesitate to contact us at 410-516-0776, 888-JHM-1336 (toll free), [JHMalumni@jhmi.edu](mailto:JHMalumni@jhmi.edu) or One Charles Center, 100 North Charles Street, Suite 208, Baltimore, MD 21201.

## Pictures from the GSA's recent rafting trip at Ohiopele!

Photography by Mike Chang



To get involved with the GSA (or just keep up to date on the latest events), attend meetings on the 3rd Tuesday of each month at 3:00 in Room 2-108 in the 1830 Building.

**OR** visit the GSA website at: <http://www.hopkinsmedicine.org/gsa/>

(continued from p. 1)

daughters. But in the 80's, in a country ravaged by a revolution and an 8- year long war, our futures looked grim. So they left their homeland in the hopes that my sister and I would have better opportunities in life than they did. And that's how we ended up in the U.S.

As any red-blooded Iranian family would tell you, my sister and I were supposed to go to medical school. So when one day I sat my parents down and announced, "Mom! Dad! I've decided not to go to medical school!" "Vat?" they replied. I said, "I'd like to do research"! "So you von't be a doctor?" They asked! And I responded, "Well, yeah! Just a different kind of doctor!" And they repeated, "but you vill be a doctor, right?" And I said, right! And that was the end of their worries!

So I came to this fine institution that we all have come to love, "The Johns Hopkins University". I must admit, though, in the beginning I was still quite naive about what it really meant to be a researcher!

When you're in middle school and you read the life story of this or that scientist, you get this rosy picture of what it means to do science — and yes, there is of course that little innocent disclaimer warning the readers that "after years of hard work", some really awesome scientific discovery had happened. In all fairness, I was forewarned that it would take years (with the emphasis on "years") of hard work for something really cool to be discovered. But it's one thing to be warned, and a whole other thing to go through the experience yourself.

I don't have to tell this crowd what the last few years of training at Hopkins have been like. The early mornings, the late nights, thinking about an experiment when you're out with friends and you hastily write up the design on a piece of napkin so that you wouldn't forget...the many experiments that don't work, and the few that do... and the sense of relief and accomplishment that you feel after your hypothesis is proven.... I guess we all live for that "high"... that's when you know you love this stuff... and you know you can't be doing anything else...

I now appreciate that one must really love research for the sake of research. We didn't come here for the glory and certainly not for the love of money! Our motivation had to be the love of knowledge. Being a scientist is not a job; it's a life-style. It's an exciting, rewarding, fulfilling life with its ups and downs.

There are very few days in each of our lives when we can be true idealists, and the day of our graduation certainly qualifies as one. My husband and I are expecting the arrival of our first baby in a couple of months, and I often ask myself what sort of world I would want my daughter to grow up in.

I want her to grow up in a world where human life and humanity have a value above monetary gain and profit. I want her to grow up in a world where science and scientific inquiry are appreciated and celebrated, where scientific research is not motivated by how profitable the results can be but instead by how they could add to our knowledge of our universe and to helping our fellow co-habitants on this planet. I want her to value the heterogeneity and cultural diversity of the world we live in.

My daughter is not even born yet. But today, I dare to dream that I, no, we, will create a world for her in which she can breathe easier, get along better, and live in peace.

I know all of us worked very hard and waited a very long time for this day. And none of us could have made it if it weren't for the support of our families, friends, and last but not least our mentors.

I once heard that getting a Ph.D. is like getting a driver's license; it's now time to go out there and drive. I want to congratulate you from the bottom of my heart and wish you all the best of luck on the roads ahead!

Thank you!

*Paria Mirmonsef graduated with a PhD in Pathobiology last month. She is currently expecting her first child, and is a post-doctoral fellow in the Johns Hopkins School of Medicine Department of Oncology.*



*(continued from p. 2)*

lot of people are not good at that. And then I think interpersonal skills are pretty important. You have to assemble a team and it helps to learn how to interact with people. Essentially, you are the leader of the group and you have to learn the best way to work with this people which often involves respecting them and valuing their abilities...Also being willing to make lots of sacrifices so that people working for you see that you are working very hard also and not just reaping the benefits of their work. That you're right there doing your part as well.

**Q. I heard that you change the CO2 tanks...**

Yeah, that's my effort to do that. Actually, I don't have much time to do the lab work. I really like lab work but the kind of work that we do is hard to do part-time. I just feel that I have too many other responsibilities to be able to do a good job in the lab. When I try to do my own experiments, it's frustrating because I have to rush all the time. Then it's not fun, when you're rushing and doing a bad job with the experiments.

So my job is writing the grants and getting the support so people in the lab can do the work...I give them some overall idea on where the work should go and help them write up the work and troubleshoot when things go wrong.

**Q. What kind of struggles have you experienced in science?**

The field that I am in is quite competitive. Virtually every important thing that we discovered has involved a race with other labs. And a lot of the work that we initially published was controversial and took a long time for people to accept. That's hard and it makes it a hard life....Very rewarding, but a hard life that is far from instant gratification. What is good is building up an area of research that was not there when you started.

**Q. How do you keep yourself going with all these uncertainties?**

It's intrinsically interesting. And you have a sense when you are on the right track from lots of different lines of evidence confirming what you think even if other people don't believe it. And that gives you confidence. In addition, in this particular area,

almost everything that you do can be applied to a very important disease, so that keeps you going. Working with students is also extremely rewarding. It's a nice career in that sense that you get to work with all these smart young people.

**Q. At any point have you ever doubted that this is where you want to go?**

No, I've always been really very happy with this kind of a career. I cannot really imagine doing anything else. It's hard for me to imagine that I could find something that would be more interesting to do. I never had doubts about this being what I want to do. ... You always worry about surviving, getting funding, but despite that part, it's actually a very satisfying and rewarding career.

I think you have to be patient and keep your sense of humor. It's going to take a long time before you get a paying job. And lots of your friends will be in other areas making lots of money and so forth. At the end of the day you have to ask yourself, do I want to do something important? The one thing that's nice about this career is that you never have to doubt that what you're doing has real value. Everybody agrees that research is important, especially medical research. You never have to doubt that what you're doing is useful. In lots of other careers, you can be very successful but then wake up one day and ask, what was the point of it all?

**Q. Going back to how important research is, but what if your grad school is one big negative data?**

Well I think that's the way my graduate work was... We were working on a theory of how T cells recognize antigen. I guess we were maybe half right.. So I wouldn't say that my graduate work was noteworthy. I think that in graduate school you do your best, and some projects go very well, but some don't.

You learn how to be a scientist and it doesn't determine the rest of your future all that much. In the immunology program, one of our graduates did a very unremarkable thesis project, but as a post-doc, she made the most important discovery in the HIV field several years ago.

**Q. That gives us hope...**

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At any one time you're only one paper away from being famous. It just has to be a good paper.

**Q. General advice for students at different stages of their careers?**

*On choosing a lab.* I think we're very fortunate at Hopkins to have such great faculty and graduate programs do a very good job of ensuring that students end up in a good training environment. For example, it's difficult for faculty members to be part of most graduate programs and so the students can feel comfortable that faculty who are in these graduate programs are doing good work and that their labs have an environment good for students. It's really important to pick a subject that really excites you. You can pick a mentor who's a nice person, but if the work is not interesting, you're not going to want to be there late at night doing it. You have to pick something that really excites you so that it keeps you awake at night thinking about the problem. To me, that's the most important thing. You have to be able to enjoy the work

*On struggles midway.* Very common and that you just have to realize that everybody goes through that and that eventually if you work hard and think about the problem, things will turn out fine. When you're in graduate school, your mood is directly correlated with data, but later on in your career it's different because you have more things going on. Some projects are working, and some are not but there's always something that's going well. So I think this is just a common feature of grad school and if you stick with it, something will open up.

*On choosing a postdoc.* It's very good to choose a postdoctoral position in a different area because it gives you a whole different way of looking at things and a whole different set of skills. I changed direction in my career a couple of times, and it has always helped me to go into a new area with different perspective. For example, I started out in immunology and then became more a virologist and recently got interested in pharmacology... As a postdoc, you'll have to be productive in order to go on to the next step. So it's important to be in a lab with a good record of productivity working on a problem that you're interested in.

The editors of *The Restriction Digest* would like to thank everyone who contributed this year. It was a great success!

Congratulations and good luck to all of our 2007 graduates!

Have a great summer everyone!

For submission information, please contact an editor:

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Print out a copy online at:

<http://www.hopkinsmedicine.org/gsa/newsletter/index.shtml>

The submission deadline for the Orientation Issue is August 10th.

# Congratulations Class of 2007!

## Masters of Art

**Kate Taylor Burnett**, Medical and Biological Illustration. Visualizing Dynamic Processes and Forces of Vaginal Delivery Through Animation.

**David Joseph Cheney**, Medical and Biological Illustration. Virtual Resurrection of a New Species of Hadrosauroid Dinosaur Provides Novel Insights into Chewing Biomechanics.

**James V. D'Ambola**, Cellular and Molecular Medicine. Studies on Mutant Huntingtin Proteolysis.

**Sarah Elizabeth Faris**, Medical and Biological Illustration. Limb Body Wall Complex Secondary to Extra-Amniotic Umbilical Cord.

**Lydia June Gregg**, Medical and Biological Illustration. Can Covered Stents Treat Cerebral Aneurysms? A Visual Exploration of the Dynamics and Mechanisms of a Semipermeable Stent Graft.

**Fatemah Mamdani**, Pharmacology and Molecular Sciences. Molecular Target Identification of the Natural Compound, OSW-1, and SAR Studies and Inhibitors of IMPDH I as Potential Anti-angiogenic Drugs.

**Duc Hong Nguyen**, Medical and Biological Illustration. Applications and Technical Challenges of Radiology-Based Visualization Programs for Three-Dimensional Modeling of the Neck.

**Devon Margaret Nykaza**, Medical and Biological Illustration. A Qualitative Analysis of Infant Suckling in Four Species Using Digital Animation.

**Andrew McCully Watkins**, Neuroscience. GLT-1 Promoter and RNA Regulation by Synaptic Activity, GDNF, and Disease.

## Masters of Science

**Guy Amir**, Health Sciences Informatics. Beyond Computer-Aided Detection: The Improved Accuracy of Lung Cancer Assessment Using Radiological Computer-Aided Diagnosis Technology.

**Nkossi-Dila Dambita**, Health Sciences Informatics. Usability and Impact of Vocera, a Mobile Information and Communication Technology Device, at Johns Hopkins Hospital.

**Jonathan Dion Gold**, Health Sciences Informatics. Critical Issues in the Development and Implementation of a Health Record Banking System.

**Paul Aubrey Law**, Health Sciences Informatics. Informatics Inventory of Autism Clinical Research in Practice.

**Malinda Murphree Peeples**, Health Sciences Informatics. An Informatics View of the Design of a National Outcomes System for Diabetes Education Programs.

**Mary Winifred White**, Health Sciences Informatics. Disco: Dance Videogame Based Interventional Study on Childhood Obesity.

# Doctors of Philosophy

**Agoston Tony Agoston**, Pharmacology and Molecular Sciences. DNA Methyltransferase 1 Dysregulation in Breast Cancer.

**Mikkel Andrew Algire**, Biochemistry, Cellular and Molecular Biology Training Program-Biophysics and Biophysical Chemistry. The Mechanism of eIF5-Promoted GTP Hydrolysis by eIF2 During Start Condon Recognition in Eukaryotic Translation Initiation.

**John Thomas Arigo, Jr.**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Nrd1, Nab3, and the Nuclear Exosome: Transcription Termination and RNA Degradation.

**Anthony Alan Armstrong**, of Sullivan, Program in Molecular and Computational Biophysics. Computational and Experimental Studies of Conformational Entropy in Proteins and Model Systems.

**Ezana Muluneh Azene**, Cellular and Molecular Medicine. Gating and Permeation in Cation-Selective Voltage-Gated Ion Channels.

**Justin Richard Bailey**, Molecular Biology and Genetics-Program In Immunology. Persistence of HIV-1 Despite Highly Active Antiretroviral Therapy (HAART) and Immune Responses: Evidence for a Novel Viral Reservoir in Patients on HAART and Characterization of HIV-1 Virus and Immune Responses in Elite Suppressors.

**Hans Tómas Björnsson**, Human Genetics. Developing Approaches to Study Human Epigenetic Variation.

**Gabriela Caraveo**, Molecular Biology and Genetics-Program In Immunology. Genetic and Biochemical Evidence for a Non-Transcriptional Role of TFII-I: Negative Regulator of Agonist Induced Calcium Entry.

**Kristina Leigh Carroll**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Identification of RNA Polymerase II Terminator Elements and Their Interaction with the Yeast RNA-Binding Proteins NRD1 and NAB3.

**Ivana Celic**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Regulation of Genomic Stability by *S. cerevisiae* Sirtuins Hst3p and Hst4p.

**Steven Michael Chase**, Biomedical Engineering. The Coding of Sound Localization Cues in the Inferior Colliculus.

**Chen Chen**, Biological Chemistry. Structural Studies of the Mitochondrial ATP Synthetic Machinery.

**Haiyin Chen**, Biomedical Engineering. Cerebellar and Cerebellar Thalamic Contributions to Motor Adaptation.

**Jianmeng Chen**, Pharmacology and Molecular Sciences. Hypoxia Induced Epstein-Barr Virus Lytic Infection - What Can be Learned from a Drug Screen?

**Jichao Chen**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Molecular Biology of Nr2e3: A Photoreceptor Transcription Factor.

**Xi Chen**, Neuroscience. Neurotrophin Function During Maintenance and Regeneration of the Adult Nervous System.



**Li Cheng**, Neuroscience. The OAZ Transcription Factor Regulates Olfactory Receptor Neuron Development and CNS Midline Formation.

**Ian Shen-Yi Cheong**, Cellular and Molecular Medicine. Liposomase for Localized Liberation of Liposomal Loads.

**Jean-Ju Lucia Chung**, Biochemistry, Cellular and Molecular Biology Training Program-Neuroscience. Molecular Organization and Trafficking of Membrane Proteins.

**Brian Andrew Coblitz**, Biochemistry, Cellular and Molecular Biology Training Program-Neuroscience. Regulation of Membrane Protein Cell-Surface Expression by 14-3-3 Protein.

**Cheng Dai**, Cellular and Molecular Physiology. Functional Identification of Neuroprotective Molecules.

**Jianli Dai**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. A Stochastic Model for DNA Replication in *Schizosaccharomyces Pombe*.

**Jiyoung Dang**, Biomedical Engineering. Temperature-Responsive Hydroxybutyl Chitosan as a Dynamic Scaffold for Tissue Engineering and Regenerative Medicine.

**Alisa Michelle Davis**, Program in Molecular and Computational Biophysics. Biophysical Characterization of Zinc(II)-Binding Domains in Two Systems: Neural Zinc Finger Factor-1 and T-Cell Co-Receptors CD4 and CD8 Alpha with T-Cell-Specific Kinase LCK.

**Cory David Dunn**, Biochemistry, Cellular and Molecular Biology Training Program-Cell Biology. The Genetic Requirements of Yeast Cells Lacking a Mitochondrial Genome.

**David Michael Feldser**, Human Genetics. Short Telomeres: Consequences and Mechanisms.

**Christopher Jonathon Frank**, Cellular and Molecular Medicine. Telomere Length Regulation in *Saccharomyces Cerevisiae*.

**Natalia Oleg Glebova**, Neuroscience. Neurotrophin Control of Sympathetic Axon Growth.

**Monica Vanina Goldberg**, Cellular and Molecular Medicine. Role of PD-1 and Associated Ligands in CD8+ T Cell Responses to Self, Microbial, and Tumor Antigens.

**Kerry L. Gorelick**, Cellular and Molecular Medicine. Function of the Plat Domain in the ADPKD Protein, Polycystin-1.

**Alexa Harcourt Green**, History of Medicine. The Market Cultures of William Beaumont: Ethics, Science and Medicine in Antebellum America, 1820-1865.

**Elizabeth Anne Grice**, Human Genetics. Functional Evaluation of Non-Coding Conserved Sequences at RET and Their Pathological Relevance to Human Genetic Disease.

**John Clayton Hall**, Molecular Biology and Genetics-Program In Immunology. Defining Mechanisms of Antigen Expression in Systemic Autoimmune Disease.

**Isamu Zachary Hartman**, Molecular Biology and Genetics-Program In Immunology. A Cell-Free Reconstitution of Major Histocompatibility Complex Class II Antigen Processing.

**Aliya Courtney Hines**, Pharmacology and Molecular Sciences. An Investigation of Protein Kinase Mechanism Using Bisubstrate Analog Inhibitors.

**Jason Wyatt Holder**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Assembly and Architecture of Tn7 Transpososomes.

**Xiaoyi Hu**, Pharmacology and Molecular Sciences. Chemistry and Biology of Human Methionine Aminopeptidases.

**Chun Yi George Huang**, Cellular and Molecular Medicine. Aquaporins in *Caenorhabditis Elegans*.

**Guo Huang**, Biochemistry, Cellular and Molecular Biology Training Program-Neuroscience. Characterization of STIM1 and Homer in Calcium Signaling.

**Gulayse Ince Dunn**, Biochemistry, Cellular and Molecular Biology Training Program-Neuroscience. Regulation of Cortical Development by the Transcription Factor NeuroD2.

**Wilsaan Mychal Joiner**, Biomedical Engineering. Time Estimation and Error Feedback in Predictive Eye Movement Timing.

**Peter Sungwhan Kim**, Pharmacology and Molecular Sciences. Immunological Consequences of Antibody-Tumor Antigen Interactions on the Development of Potent Anti-Tumor Immunity.

**Seyun Kim**, Biological Chemistry. A Role of Keratin Intermediate Filaments in the Regulation of Protein Synthesis and Epithelial Cell Growth.

**Victoria Afua Laast**, Pathobiology. An SIV/Macaque Model of HIV-induced Peripheral Nerve Disease.

**Brian Hansen Ladle**, Pharmacology and Molecular Sciences. Regulating the High Avidity, Tumor-Reactive CD8+ T Cell Response in the Setting of Immune Tolerance.

**Jessica Ann LaRusch**, Human Genetics. A Novel Internal Binding Motif in the CFTR C-Terminus Enhances EBP50 Multimerization and Facilitates Endocytic Recycling.

**Julie Ann Law**, Biochemistry, Cellular and Molecular Biology Training Program-Biological Chemistry. The Roles of Three Critical Proteins in the Structure and Function of the *Trypanosoma brucei* RNA Editing Complex.

**Byron Hing Lung Lee**, Cellular and Molecular Medicine. The Activation and Inhibition of Mammalian DNA Methyltransferases-Studies with Nitric Oxide and Procainamide.

**Richard Sang Un Lee**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Novel Mechanisms of Genomic Imprinting Disruptions in Beckwith-Wiedemann Syndrome.

**Cheuk Tung Leung**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Molecular and Cellular Regulation of Olfactory Neurogenesis During Development and Regeneration.

**Hsi-Wen Liao**, Neuroscience. I. Identification and Characterization of a New Retinal Photoreceptor-Melanopsin-Expressing Retinal Ganglion Cells (MOP-RGCs) II. Identification and Characterization of a New Opsin-Like Protein-Muller Cell G-Protein-Coupled Receptor (MGR).

**Kun Liu**, Biological Chemistry. Structural and Functional Studies of Aquaporins.

**Wendy J. Liu**, Biomedical Engineering. A Microfabrication Approach to Study Cell-Cell Interactions in Proliferative Regulation.

**Yangjian Liu**, Biological Chemistry. Aquaglyceroporins in Erythrocytes, Malarial Parasites, and Osteoclasts.

**Yifei Liu**, Biological Chemistry. Study of the Peroxisome Matrix Protein Import.

**Rebecca Sarah Maag**, Biochemistry, Cellular and Molecular Biology Training Program-Cell Biology. Apoptotic Signaling at the Golgi Complex: Insights from a Caspase-Resistant Golgi Protein.

**Feilim Colm Mac Gabhann**, Biomedical Engineering. Computational Models of Angiogenesis: VEGF and its Receptors *in vitro* and *in vivo*.

**Kathryn Roberts Marron**, Cellular and Molecular Medicine. Golgin Cleavage and Rapid Golgi Disruption Induced by Cytotoxic Lymphocyte Granule-Mediated Death.

**Heather Joy Martin**, Pharmacology and Molecular Sciences. Epstein-Barr Virus Mediated Modulation of Interferon Regulatory Factors and the Toll-Like Receptor Pathway.

**Emily Adams McVey**, Cellular and Molecular Medicine. Isolation, Characterization and Infection of Pigtailed Macaque Fetal Neural Progenitor and Mesenchymal Stem Cells.

**Paria Mirmonsef**, Pathobiology. The Dynamics of Tumor and T Cell Interactions Following Hematopoietic Stem Cell Transplantation.

**Mythili Nadella**, Biochemistry, Cellular and Molecular Biology Training Program-Biophysics and Biophysical Chemistry. Structure Determination and Functional Analysis of Mical (Molecule Interacting with CAS-L), an Axon Guidance Signaling Protein.

**Michael Graham Nicholson**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Identification and Characterization of SIV p43.

**Xinle Niu**, Biomedical Engineering. Novel Cell-Cell Communication by Intercellular Transfer of Cellular Components.

**Sungjin Park**, Biochemistry, Cellular and Molecular Biology Training Program-Neuroscience. Immediate Early Genes and Synaptic Transmission: Protein Synthesis-Dependent Synaptic Plasticity and Homeostatic Adaptation.

**Amanda Ruth Pendleton**, Biochemistry, Cellular and Molecular Biology Training Program-Cell Biology. Characterization and Functional Analysis of Infectious Bronchitis Virus Proteins 3A and 3B.

**Daniel Peyser**, Biochemistry, Cellular and Molecular Biology Training Program-Molecular Biology and Genetics. Dissecting Pathways with the Yeast Knockout Collection.

**Meenakshi Rao**, Neuroscience. Retinoid-Inducible Transmembrane Protein GDE2 Directs Spinal Motor Neuron Differentiation *in vivo*.

**Joseph Thomas Rodgers**, Biochemistry, Cellular and Molecular Biology Training Program-Cell Biology. Transcriptional Control of Glucose Homeostasis Through SIRT1 and PGC-1 alpha.

**Arup Roy**, Biomedical Engineering. Synchrony: A Neural Correlate of Somatosensory Attention.

**Neda Alagha Sharifi**, Human Genetics. Evolutionary Incorporation of Nonsense-Mediated mRNA Decay into Organismal Survival Mechanisms.

**Gek Ming Sia**, Neuroscience. Molecular Mechanisms of AMPA Receptor Synaptic Recruitment.



**Jordan Philip Steinberg**, Neuroscience. Cellular and Molecular Mechanisms of Long-Term Synaptic Depression in the Cerebellum.

**Jennifer Lynn Stephens**, Cellular and Molecular Medicine. Mitochondrial Fatty Acid Synthesis and its Contribution to Trypanosome Metabolism.

**Michael Lee Stitzel**, Human Genetics. MBK-2 and the Regulation of Maternal Protein Degradation at the Oocyte-to-Embryo Transition.

**Linnan Tang**, Biological Chemistry. *Tsunami* is Required for Directional Responses of *Dictyostelium* in Chemotactic Gradients During Development.

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**Fan Yang**, Biomedical Engineering. Tissue Engineering for Evaluation and Treatment of Craniofacial Abnormalities.

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**Sika Zheng**, Neuroscience. Identification and Characterization of Nuclear Factor I-A as a Neuroprotective Gene Learning from “What Does Not Kill You Makes You Stronger.”

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**Rebekah Lorah Zinn**, Cellular and Molecular Medicine. The Epigenetic Regulation of hTERT in Cancer.