

Fall 2012 BGS Newsletter

Welcome to BGS



The new academic year is starting, and the Penn campus is abuzz with the beginning of classes. Here at BGS, we welcome this year's incoming class of more than 90 students from almost 80 different

undergraduate institutions and 9 countries. BGS now has about 780 students and more than 650 faculty mentors. Our student/faculty ratio (1.2) is a testament to Penn's commitment to graduate education in the biomedical sciences.

In this issue of the BGS Newsletter, we highlight the backgrounds of several incoming students and celebrate the recent achievements of our faculty. As you will see, we are a diverse, interesting, and distinguished group. We share an unbridled enthusiasm for knowledge and discovery.

We all know about the economic challenges facing the US and the world, and financial support for scientific research has not been immune to these times. It is very important, however, for us to remember that we are living and working in a remarkable era for biomedical research. Major advances in the basic science of molecular structure and function, development, physiology and disease coupled with the "omics" revolution, stem cell biology, and gene therapy are leading to advances in medicine and therapeutics that were barely imaginable even a decade ago. I am proud to say that BGS faculty and students are at the forefront of this research.

Biomedical research is challenging work, and there will be times that test your will. But persevere, because the opportunities are extraordinary and the rewards are great. Enjoy the excitement of graduate study at BGS.

Rick Assoian, Interim BGS Director

BGS CONVOCATION

Tuesday, September 4, 2012

10:00 – 11:45 a.m.

BRB II/III Auditorium

Featured Speaker

Chi V. Dang, M.C., Ph.D.

Professor and Director,
Abramson Cancer Center

Perelman School of Medicine

**“Oncogenic Alterations of Metabolism:
Why don't elephants get cancer?”**

New Student Lunch

11:45 a.m. – 12:45 p.m.

BRB II/III Lobby

Reception

4:00 – 6:00 p.m.

BRB II/III Lobby

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IN THE NEWS

Penn Study Discovers How Pancreatic Tumor Cells Cripple the Immune System

A study published in the June 12, 2012 issue of *Cancer Cell* describes how pancreatic cancer cells produce a protein that attracts immune cells and tricks them into helping cancer cells grow. **Lauren J. Bayne**, a CAMB PhD candidate and first author of the study, along with senior author **Robert Vonderheide, MD, DPhil** (Immunology & CAMB), believe that blocking the protein may also prove to be a new way to treat pancreatic cancer.



To read this full article, please visit the following link at [Cancer Cell](#).

Penn Study Describes Molecular Machinery that Pulls Apart Protein Clumps



In a new study published in *PLoS Biology*, **James Shorter, PhD**, Assistant Professor of Biochemistry and Biophysics, and his colleagues, define the mechanisms by which small heat-shock proteins (hsp) collaborate with other molecular chaperones to regulate the assembly and disassembly of a beneficial yeast prion (an amyloid that can spread between individuals).

The full article on the study can be found in the [June 2012 issue of PLoS Biology](#).

Biomarkers in Blood May Detect Alzheimer's Disease and Mild Cognitive Impairment

Efforts to develop a blood test for Alzheimer's disease are progressing, as a new study co-authored by experts from the Perelman School of Medicine, including **Virginia M.-Y. Lee, PhD** and **John Q. Trojanowski, MD, PhD**, found a group of biomarkers that hold up in statistical analyses in three independent groups of patients. The study, a unique collaborative effort between researchers at Penn, Emory School of Medicine and Washington University, as well as the Alzheimer's Disease Neuroimaging Initiative (ADNI), was just published online.

Previous efforts to develop better and more clinically useful Alzheimer's diagnostic tests, including research from Penn, have focused on spinal fluid biomarkers and radiologic tests like MRIs and PET scans. These newer tests can detect various levels of proteins implicated in the Alzheimer's disease process, such as amyloid-beta and tau proteins.

To read more about the study, please visit: [Penn Study Promising First Step toward Blood Test for Alzheimer's](#)





STUDENT SPOTLIGHT

BGS is proud to welcome over ninety incoming students to the program this fall! As a special feature for this issue of the newsletter, we have invited some of these students to share their past research projects, current interests, personal hobbies, and why they chose the BGS program at Penn. Here are their stories...

Edward Kennedy - Biostatistics



Edward joins the Penn family after earning his Master's from the University of Michigan. There, he explored methods for estimating treatment effects in longitudinal settings, in order to estimate the benefit of salvage hormone therapy for prostate cancer. He later worked for the Center for Clinical Management Research at the Ann Arbor VA (a health services research group), where he focused on methods for causal inference, correlated data and risk prediction and simulation, mainly as applied to problems in critical care medicine and hospital-acquired infections.

Edward states that he chose to continue his research studies at Penn because of the biostatistics group's impressive and diverse collection of faculty, staff, students, and resources. In his words, "the research opportunities available here make it an ideal environment for someone who wants to develop better statistical methods to analyze

problems in biology and medicine."

While completing his studies at Penn, Edward's research interests will continue on in the field of causal inference. When taking time away from those studies, Edward plans to go running, biking, see some movies, and travel.

Ian Johnston – Pharmacology

As a goal set years ago, Ian Johnston has always looked forward to joining Penn, as he believes the institution "personifies excellence in healthcare and medical research".

Before coming to Penn, Ian worked in various research labs, including a material science lab where he researched the fabrication of gold nanoparticles for signal amplification, and also spent time in a biological microelectromechanical systems (bioMEMS) lab. He later performed research on quantum dots and their feasibility as fluorescent tags, in replacement of standard chemical fluorophores in a continuous microfluidic immunoassay.



During his studies at Penn, Ian will focus on cardiovascular pharmacology and drug targeting as a means of treating cardiovascular diseases and providing specialized drug therapies. Because of his background in BioMEMS and microfluidics, he chose to study pharmacology at Penn to acquire greater skills in drug design and delivery mechanisms. This will allow him to design and research all aspects of drug delivery systems from the molecular level to the final device design.

In his spare time, Ian enjoys sports, listening to music, watching movies, drawing, art, and anything that allows him to express himself. He also has a desire to learn the piano and is willing to become self-taught.



STUDENT SPOTLIGHT

Continued...

Brianne Jeffrey – Neuroscience



Brianne Jeffrey, who completed her undergraduate studies at Wheaton College, is looking forward to her studies here at Penn where she plans to learn more about the neural circuits involved in feeding and appetitive behaviors. She states that the large number of BGS faculty involved in her related field of research is very impressive, and it is clear to her that they are all experts in their fields. Additionally, Brianne feels that the BGS program is well designed for her strengths and weaknesses, and she takes great comfort in knowing that the faculty here has a genuine interest in working with students to learn more about other areas of neuroscience.

Of particular interest during her studies at Penn, Brianne would like to have a better understanding of the reward pathways involved in feeding regulation and food addiction, as well as the role of the brain in metabolism and body weight regulation. This will not only include obesity-related studies, but also normal body weight regulation and how the brain interacts with various diets.

While Brianne is very excited about her current research interests, she has also studied sleep regulation in mice and rats at a Harvard/VA lab in Brockton, Massachusetts, during her time at Wheaton College. After graduation, she then moved on to the Institute of Aging Research at Hebrew SeniorLife, a Harvard-affiliated geriatric hospital.

As an avid slow-pitch softball pitcher and floor hockey player, Brianne hopes to join other Penn students on the field for times of fun. She also enjoys trivia and singing, and recently sang the national anthem for the Brockton Rox.

Christel Chehoud – Genomics & Computational Biology

Christel Chehoud, from the nearby town of Whitehall, Pennsylvania, has studied microorganisms for several years now, spending two summers interning for the Human Microbiome Project Group at the Broad Institute. Her past research included finding optimal sections of DNA to sequence and untangling discrepancies between sequence and taxonomy of microorganisms.

For her senior thesis, Christel analyzed groups of deep-subsurface microorganisms found in the gold mines of South Africa. In fact, the picture shown here to the right was taken moments before she went approximately 2 km beneath the Earth's surface into a South African gold mine.

Christel states that she chose to join the BGS program at Penn, because of the extensive collaborations between GCB faculty, Penn's doctors and other Penn faculty members. She also feels that the GCB discipline perfectly fits her interests in microbial ecology.





STUDENT SPOTLIGHT

Continued...

Ismail Ahmed – Biochemistry & Molecular Biophysics



After being introduced to the multidisciplinary field of protein design and synthetic biology while at the City College of New York, Ismail Ahmed decided to expand his research in a biomedical laboratory environment, which led him to become a scholar in the NIH-funded Post-baccalaureate Research Education at Case Western Reserve University Medical School. There, his studies focused on the structural and dynamic aspects of protein, or more specifically, protein interactions involved in signal transduction.

While here at Penn, Ismail would like his research to be focused on designing novel therapeutic agents for human disease. He states that “the endless possibilities emerging from the ability to engineer novel proteins tailored to perform any chemical reaction of choice is particularly interesting to me, as I look at a career in research.”

As for choosing Penn to continue his studies, Ismail states, “All elite schools, like Penn, have great faculty, facilities and exciting things going on. However, the main factor that drew me to Penn was how diverse, multidisciplinary and close-knit the students are.” Additionally, the BMB program complements his interest in the structure and design of biology and shares his philosophy of applying unlimited techniques and applicable tools to solve problems.

In his spare time, Ismail enjoys sports (basketball, football and soccer); outdoor activities, including skiing, whitewater rafting, paintball and hiking; going to the movies or trying a new restaurant; and enjoying a great conversation with friends.

**To meet new friends at Penn or stay connected with
BGS Alumni, please visit the following sites:**



FACULTY



Garret FitzGerald, MD (PGG) was recently elected as a Fellow to the Royal Society, a self-governing fellowship of many of the world's most distinguished scientists including Isaac Newton, Charles Darwin and Albert Einstein.

The Society's fundamental purpose, as

it has been since its foundation in 1660, is to recognize, promote, and support excellence in science, and to encourage the development and use of science for the benefit of humanity.

Source: [Penn News](#)

FACULTY



Yvonne Paterson, PhD (CAMB & IMUN) has been awarded a \$4.6M renewal from the NIH for Penn's Postdoctoral Opportunities in Research and Training program (PENN-PORT), which she leads.

The goals of PENN-PORT are to enhance research-oriented teaching at minority-serving institutions (Lincoln, Rutgers, and Delaware County Community College); to promote research collaborations between faculty members at the three partner institutions and Penn; and to encourage minority students to enter graduate school and increase minority participation in biomedical research.

Source: [Penn Medicine](#)

ALUMNA



Kimberly Noble, MD, PhD, FAAP (NEURO - 2005) is a co-Principal Investigator on a 3-year, \$1.5 million grant from the Institute for Education Sciences. The grant is entitled "Getting Ready for School: An integrated curriculum to help teachers and parents support preschool children's early literacy, math and self-regulation

skills".

Currently, Kimberly is an assistant professor of Pediatrics at Columbia University. Her research focuses on socioeconomic disparities in child neurocognitive development, with an emphasis on reading and language development.

FACULTY

Nancy Bonini, PhD (NEURO), Gideon Dreyfuss, PhD (BMB & CAMB) and Beatrice H. Hahn, M.D. (CAMB) were all elected to the National Academy of Sciences, considered one of the highest honors that can be accorded a U.S. scientist or engineer.

Cited for "their distinguished and continuing achievements in original research," the three scientists are part of the 2012 Academy class of 84 members and 21 foreign associates.

Source: [Penn News](#)



Nancy Bonini, PhD



Gideon Dreyfuss, PhD



Beatrice Hahn, MD

Faculty Awards



Christopher Hunter, PhD (CAMB & IMUN) is the 2012 elected Fellow of the Royal Society of Edinburgh.



Taku Kamabyashi, MD, PhD (IMUN) is the recipient of the David B. Pall Prize for Innovation in Transfusion Medicine.



Gary Koretzky, MD, PhD (CAMB & IMUN) was elected to the American Academy of Arts & Sciences.



Mark Lemmon, PhD (BMB) has been designated as the George W. Raiziss Professor in Biochemistry and Biophysics.



Jonathan Maltzman, MD, PhD (CAMB & IMUN) is the recipient of the American Society of Transplantation's Basic Science Career Development Award.



Yvonne Paterson, PhD (IMUN) is the 2012 winner of the Vaccine Industry's Excellence (VIE) Award for Best Therapeutic Vaccine.



Trevor Penning, PhD (BMB & PGG) is the inaugural recipient of the endowed Thelma Brown and Henry Charles Molinoff Professor of Pharmacology.



Nathalie Scholler, MD, PhD (IMUN) is the recipient of the 2012 Early Career Faculty Travel Award from the American Association of Immunologists.



Andrei Thomas-Tikhonenko, PhD (CAMB & IMUN) is the 2012 winner of the Cancer Biology Teaching Award.

BGS Student Awards



Emily Bassett (BMB) is the recipient of the 2012 P. Leslie Dutton Award for Outstanding Publication by a BMB graduate student (*Developmental Cell* 22:749-762).



Lu Chen (BSTA) is the recipient of the Jonathan Raz Best Qualifying Exam Award.



Victoria Gamerman (BSTA) is the recipient of the Student Citizenship Award.



Sandra Griffith (BSTA) is the recipient of the Deming Student Scholar Award.



Laurel Redding (EPID) was awarded with a Nell Mondy Fellowship from Graduate Women in Science for research work in Peru.



Vanessa Trojani (NGG) was selected for the NIH National Graduate Student Research Conference October 9-10, 2012.



Matthew White (BSTA) is the recipient of the ENAR Distinguished Student paper Award.



B&B/BMB 2012 Retreat Poster Awards:

Josh Wand First Place Award: Chris Nabel (advisor: Rahul Kohli)

Second Place: Kevan Salimian (advisor: Ben Black)

Third Place: Nataline Meinhardt (advisor: Doron Greenbaum)

Honorable Mention: Ed Ballister (advisor: Mike Lampson)



NSF Fellowship Awards:

Cierra Danko (CAMB)

Gregory Osborn (CAMB)

Zahra Parker (CAMB)



NRSA Recipients:

Morgan Bridi (NGG)

Morgan Desantis (BMB)

Angela Jablonski (NGG)

Armen Moughamian (NGG)

Whitney Parker (NGG)

Lauren Stutzbach (NGG)



ALUMNI AWARDS & APPOINTMENTS

Congratulations to our BGS alumni who have moved on to rewarding careers and received the following recognitions and appointments:



Kenneth L. Brayman, MD, PhD, FACS (CAMB/PATH – 1989) is the Division Chief of Transplant Surgery at the University of Virginia. He is also the Director of Transplant Services; Renal, Pancreas and Islet Transplant Programs; and the Center for Cellular Therapy and Biotherapeutics at the University of Virginia.

Carolyn Bergman, PhD (IMUN - 1997) was recently appointed to Associate Professor of Biology at Georgian Court University.

Sean Hennessy, PhD (EPID – 2002) has been appointed as the Director of the new Center for Pharmacoepidemiology Research and Training (CPeRT), a type 1 center within the Center for Clinical Epidemiology and Biostatistics of the Perelman School of Medicine.

Kristen Lantz, PhD (CAMB – 2004) and her husband **Michael Diem, PhD (CAMB – 2006)** welcomed their son, Keller Lantz Diem, this past June.



Kristin currently works in clinical pharmacology/oncology clinical trials, while Michael works in protein engineering drug discovery. Their son is shown here with 3-year-old sister, Avery Lantz Diem.

Jonathan Maltzman, MD, PhD (IMUN – 1997) was recently inducted into the American Society for Clinical Investigation (ASCI).

Carrie McMahon, PhD (CAMB – 2002) is a Consumer Safety Officer in the Office of Food Additive Safety at the U.S. Food and Drug Administration. She works with other FDA scientists to evaluate the safety of new food ingredients.

Jason Mills, MD, PhD (CAMB – 1997) was recently inducted into the American Society for Clinical Investigation (ASCI).

Maureen Murphy, PhD (CAMB/MOLB – 1994) was appointed as the Program Leader of the Molecular & Cellular Oncogenesis Program at The Wistar Institute.

Heather Rose, PhD, Esq. (CAMB – 2008) is currently serving as the Technology Licensing Manager for Drexel University where she specializes in commercialization of life sciences technologies for both Drexel University and Drexel University College of Medicine. She received her *Juris Doctor* in 2011 to combine her fields of expertise in science and law.



UPCOMING EVENTS

BGS ALUMNI REUNION

BGS will host its first BGS Alumni Reunion spring 2013!

Details on the event will be published in the Winter 2012/13 newsletter

More information to follow!

NGG Student-Led Retreat



Students at 2011 Retreat

September 28, 2012

9:00 a.m. – 5:00 p.m.
BRB II/III Lobby



Reception

5:00 p.m.
14th Floor, BRB II/III

2012 CAMB SYMPOSIUM

October 23, 2012

Translational Research Center

Keynote Speaker

Dr. Konrad Hockendlinger
Harvard Stem Cell Institute

Annual IGG Retreat

November 2-4, 2012

Cape May, New Jersey





RECENT EVENTS

COMMUNITY SCIENCE CARNIVAL



July 21, 2012

White Rock Baptist Church Gym

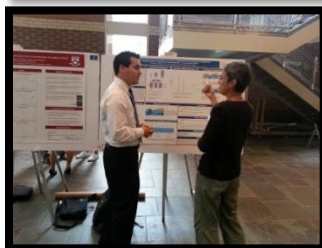
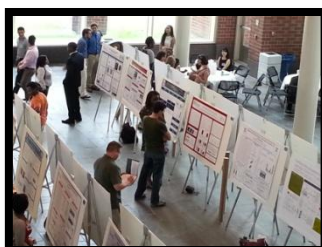
During the Community Science Carnival, the Science Education Academy (SEA) performed experiments with children in grades K-6, and also engaged older adults with scientific/research talks.

Photo by: Irene Bukh

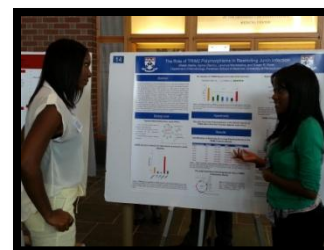
Annual SUIP Research Symposium

August 9, 2012

BRB II/III Lobby



Students from the Summer Undergraduate Internship Program (SUIP) participated in the annual research symposium where they exhibited their research findings during a poster session.



BGSA 2012 EXECUTIVE BOARD ELECTIONS

Chair: Julie Crudele

Vice Chair: Stephen Santoro

Vice Chair for Finance: Jessica Bryant

Vice Chair for Operations: Laura Bryant

Vice Chair for Academic Affairs: Shaun O'Brien

Vice Chair for Social Affairs: Atrish Bagchi

GAPSA Representatives: Kristy Simmons, Edward Chen and Nate Snyder



FACULTY APPOINTMENTS

Biochemistry and Molecular Biophysics

- *Bohdana Discher, PhD*, Research Assistant Professor of Biochemistry and Biophysics, Perelman School of Medicine
- *Benjamin Garcia, PhD*, Associate Professor of Biochemistry and Biophysics, Perelman School of Medicine
- *Jerry Glickson, PhD*, Research Professor of Radiology, Perelman School of Medicine
- *John I. Murray, PhD*, Assistant Professor of Genetics, Perelman School of Medicine
- *Kathryn Wellen, PhD*, Assistant Professor of Cancer Biology, Perelman School of Medicine

Epidemiology and Biostatistics

- *Sandra Amaral, MD*, Assistant Professor of Epidemiology, Perelman School of Medicine
- *Amanda Anderson, PhD*, Assistant Professor of Biostatistics and Epidemiology, Perelman School of Medicine
- *Jun James Mao, MD*, Assistant Professor of Family Medicine and Community Health, Perelman School of Medicine
- *Peter Merkel, MD*, Professor of Medicine, Perelman School of Medicine
- *Russell Taki Shinohara, PhD*, Assistant Professor of Biostatistics

Neuroscience

- *Timothy Lucas, MD, PhD*, Assistant Professor of Neurosurgery, Perelman School of Medicine
- *Timothy Roberts, PhD*, Professor of Radiology, Perelman School of Medicine
- *Heath Schmidt, PhD*, Research Assistant Professor of Psychiatry, Perelman School of Medicine

To include information in the next newsletter, please write to Jamie Lipford at jlipford.upenn@gmail.com

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