ROSALIND FRANKLIN UNIVERSITY *of* MEDICINE AND SCIENCE

Hypothesis

SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES

ANNUAL NEWSLETTER 2014

welcome

Combined MD/PhD degree students Dr. Vivian Wong and Dr. Nitika Paudel recite the oath during their graduation from the Chicago Medical School this past June.

Contents

First of all, and right up front – thank you for taking some time to read through our second annual newsletter, Hypothesis, from the School of Graduate and Postdoctoral Studies. We consider Hypothesis an important vehicle to reach out to our alumni and contemporary RFUMS constituents and to keep you informed of the current status, events, and anticipated changes in our school as well as graduate education in general. Of course, showcasing the accomplishments of our students, postdoctoral researchers, and faculty is the highlight of Hypothesis and the aspect of the publication in which, I must admit, there is the most pride.

Each year I consider whether a theme can be ascribed to the newsletter that accurately portrays our overarching goals and conscious intent over the past year. Reflectively, at this time last year, we presented our first version of Hypothesis with the cover text "Ch- Ch- Changes". The first newsletter, a change unto itself in its existence, presented revision, rethinking and renewed programs within the Graduate School. In this year's edition, 'Competency' is the thematic thread that stitches the articles together. The anchoring knot that begins the thread was the formulation and adoption of core competencies for our graduate students. These competencies appropriately reflect the evolving need for our students and faculty to understand the easily measurable qualifications as well as the more subtle qualities required in an increasingly diverse, interactive and competitive career landscape. Long gone are the days in which researchers toiled late at night, isolated by themselves in a laboratory, only to discuss their work after emerging with a significant advancement. Although the latter is still a popular perception, and indeed often conveyed in images of past scientists, including Dr. Rosalind Franklin herself, science is now collaborative, interactive and interpersonal. Correspondingly, it is often challenged by the ability to communicate effectively with peers and the public and to organize and manage the research itself and those who conduct it.

A brief description of the core competencies is included on the next page, and I invite you to learn more about them on our website. In recent years, competency-based curriculum and teaching methods have been adopted in many educational settings. However, this rising tide has tended to flow around research-based graduate studies, at times unwittingly isolating students in a darkened tower of higher education. At SGPS, rather than testing the waters, we jumped in headfirst. We are among very few research-based doctoral programs that have formal competencies. Furthermore, we assess student progress in these competencies twice each year. Students must become proficient in varied communication skills, exhibit professional attitudes and practices, demonstrate effective leadership qualities, while developing their extensive knowledge base and outstanding research skills to succeed in careers in biomedical sciences. Parenthetically, "competency" typically characterizes the attributes developed in many curricula and training environments. SGPS has followed suit in using this nomenclature as a means to effectively communicate with our peers. Yet Webster defines "competent" as "having suitable or sufficient skill" and as "adequate but not exceptional". Rest assured that SGPS expects students, postdocs, staff and faculty to be much more than merely competent. We hold ourselves to the highest standard possible. I hope that progress toward competency and beyond is evident in the following pages.

Joseph X. DiMario, PhD
Dean, School of Graduate and Postdoctoral Studies
Professor, Cell Biology and Anatomy

core competencies

In April 2014, the School of Graduate and Postdoctoral Studies developed formal Graduate Student Core Competencies. The SGPS Curriculum Committee was tasked with the formulation of graduate student competencies to meet the needs of graduate students in all aspects of their education and training to facilitate their successful progression to the next phase in their careers. The SGPS faculty leadership approved the competencies. Adopted from the National Postdoctoral Association's Core Competencies, these six areas of training comprise the SGPS' optimal targets for graduate education.

Discipline-Specific Conceptual Knowledge

Graduate students are expected to demonstrate a broad base of established and evolving knowledge within their discipline and detailed knowledge of their specific research area. They should understand the gaps, conflicts, limits and challenges within their research area such that they can develop testable hypotheses.

Research Skill Development

Graduate students are expected to be able to design sound research protocols and safely perform the techniques necessary to conduct and analyze this research.

Communication Skills

In any professional environment, the ability to communicate one's thoughts in a way that people readily understand is critical. Although graduate students learn many communication skills throughout their educational lifespan, these skills take time to master. Communication is more than preparing and sending a message; it is making every effort to be sure that the message is heard and understood by the appropriate audience. Graduate students are expected to demonstrate interpersonal and other communication skills that enable them to communicate effectively with colleagues at all levels. They must also be prepared to communicate with students and society at large. They need to develop writing, speaking and listening skills.

Professionalism

Graduate students are expected to adhere to accepted professional standards and practices within their immediate workplace (e.g., laboratory, office), institution and discipline. They are also expected to reflect and advance the values of their profession in the community at large. One's professionalism is relevant in different contexts that govern and define the potential interactions the scholar engages with his/her environment.

Responsible Conduct of Research

Graduate students should receive training in responsible conduct of research so as to improve their ability to make ethical and legal choices. This training should provide them with an appreciation for the range of accepted research practices; familiarize them with the relevant regulations, policies, statutes, and guidelines governing the conduct of their research; and make them aware of the resources to which they can turn when ethical questions and concerns arise.

Leadership and Management Skills

Graduate students should develop the skills and techniques needed to facilitate effective team work, mentor junior lab members and pursue future leadership opportunities at the local and institutional level.

Alumni Survey Outcomes

The School of Graduate and Postdoctoral Studies currently tracks 98 measurable outcomes related to alumni, current student and programmatic characteristics. These metrics provide valuable information for programmatic review, assessment and strategic planning.

Quality of SGPS Faculty and Courses

As part of the Alumni Survey distributed last year, we asked questions about the quality of the SGPS faculty and curriculum. These results are shown here with 92-95% of respondents placing the graduate faculty and courses as "Good to Excellent."

95%

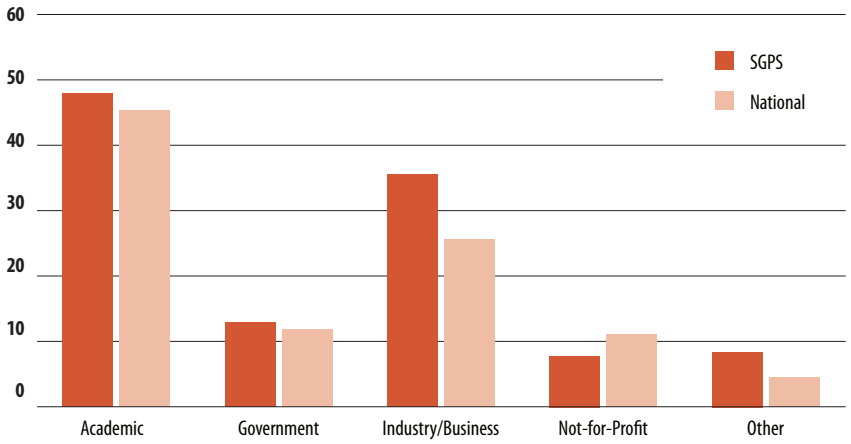
RATED **courses**
GOOD TO EXCELLENT

92%

RATED **faculty**
GOOD TO EXCELLENT

Long Term Career Outcomes

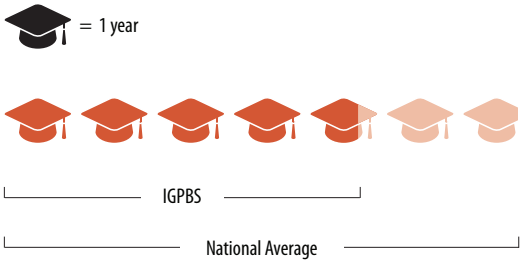
We also asked alumni to provide information on their career outcomes. Of all respondents at all stages in their careers, alumni responses were compared to national averages for doctoral degrees in basic biomedical sciences.



Time to PhD Degree Completion*

Among many metrics, SGPS tracks time to completion for PhD students in the Interdisciplinary Graduate Program in Biomedical Sciences and compares this data to national averages for basic science graduate students.

*Data covers 2012



Advancing SGPS Excellence

The Distinguished Graduate Scholar program was developed to recruit outstanding prospective students with the highest academic credentials.

In its current Strategic Plan, SGPS renews its commitment to attracting and retaining diverse, high quality candidates for graduate training. In Fall 2014, SGPS was pleased to welcome its first Distinguished Graduate Scholar. The program is one of many initiatives implemented by the school to achieve this strategic priority.

Graduate Students

discovering a future

FROM CRETE TO CHICAGO AND FINDING A FIT IN BIOMEDICAL SCIENCE

Leaving Greece wasn't easy for Maria Bompolaki, SGPS '16, who arrived at Rosalind Franklin University of Medicine and Science in the fall of 2012 to pursue a profession in science.

Raised on the ancient isle of Crete, in the port city of Chania, Bompolaki has, with good nature and determination, made the shift from shimmering seas and gleaming beaches to Chicagoland. She has put into perspective the separation from her close-knit family and a town "where everybody knows each other."

In Greece, where a debt crisis continues to choke the economy, employment and professional opportunities are slim.

"In Greece, you can get a degree, a very high level of education, but it's almost impossible to get a job," said Bompolaki, a PhD candidate in the Interdisciplinary Graduate Program in Bomedical Sciences. "The opportunity I was given to come here really opens up my possibilities for the future. What I'm doing now is what I want to do with my life."

As a girl, Bompolaki listened to her father, a former high school teacher who holds a degree in physics, talk about his true love, the planets and stars. But she was interested in a different universe – human biology.

"When I got into biology, I realized what I really liked was brain function," said Bompolaki, who earned a bachelor's degree from the University of Crete. She worked in the university's medical school neuropharmacology lab on a project that looked at the immunological response of the brain to neurodegeneration.

"I liked being part of developing a drug for treatment of neurodegenerative disease, which is very debilitating," Bompolaki said.

It was while doing lab work that Bompolaki met Professor Kyriaki "Kiki" Sidiropoulou, PhD '03, who encouraged her to apply to RFUMS.

"Before that I never considered it a possibility," Bompolaki said. "I knew RFUMS' graduate school was very active in neurobiology and it would be a perfect fit for me. I knew that if I could come here it would be a huge break for my career."

Bompolaki, who speaks three languages, including German, studied biosciences for a semester in Manchester, U.K., and upon her return in 2010 she began preparing her family for the move stateside that she hoped to make.

"My parents initially were very concerned about me going so far away," she said. "But they knew that working in the lab is something that really excites me, that it's really my dream job, that I can't imagine doing anything else with my life. They never said 'No.' Now that I'm here and everything went according to plan, they're very satisfied and proud."

Under the guidance of Dr. Janice Urban, professor and chair of the Department of Physiology and Biophysics, Bompolaki is studying the role of the amygdala in stress and stress resilience in rat behavioral models.

"We're working to understand the mechanisms involved in prevention and treatment of anxiety-related disorders, like PTSD," said Bompolaki, who enjoys the camaraderie of working in a lab. "I feel very fortunate that in all the labs that I have worked in so far, I've never felt isolated. That's very important for me – to work in an area where I can talk with people and socialize."

"I can't imagine doing anything else with my life."

Maria Bompolaki

What does the future hold for the outgoing young scientist? Bompolaki, who this summer will mentor a recent high school graduate through the university's INSPIRE program, is excited at the prospect. She expresses gratitude to her own academic mentors "who made this all come true for me."

"I no longer have to worry about the future, who will take me, will I ever have a job again," she said. "I'm really getting excellent training here and that will help me continue doing whatever I like, and choose what's best for my career."

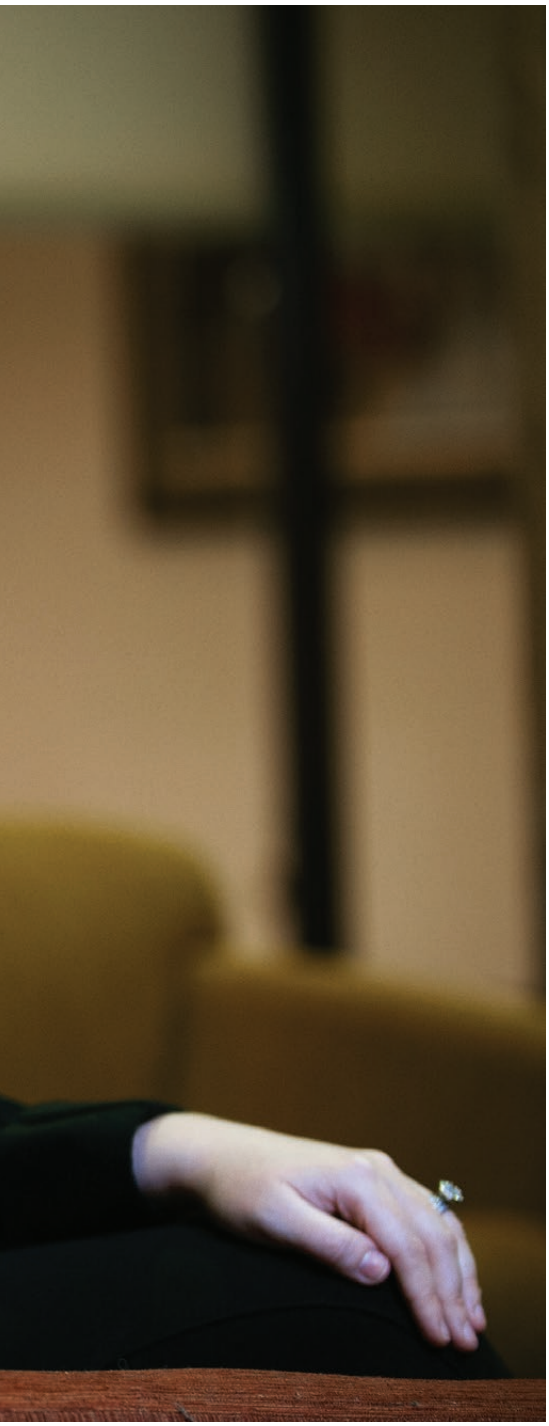
This article originally appeared in Helix Spring 2014.

franklin fellows

In tribute to the life and legacy of Rosalind Franklin, PhD, the university proudly selects students who are committed to interprofessional service, leadership and affinity with the university's educational objectives to become Franklin Fellows.

The Franklin Fellows Scholarship was established through a generous gift from Martin and Julie Franklin on behalf of the Franklin Family, in honor of the university's centennial. The fellowship fosters the development of interprofessional service projects aimed at improving the health and well-being of local underserved residents.

Each fellow receives a $10,000 scholarship on the successful completion of first-year fellowship requirements. The Fellowship may be renewed for a second year with a $5,000 scholarship based on successful evaluation at the one-year mark. Three School of Graduate and Postdoctoral Studies students are honored to have been selected as Franklin Fellows.



Nicole Woitowich

When Nicole (Niki) Woitowich was an undergraduate, her academic advisor told her that she wouldn't get accepted to graduate school—that Niki shouldn't waste her time applying. The advisor suggested that the best this budding "scientista" could do was teach high school biology, a career in which Niki was simply not interested.

After graduation, Niki returned to Chicago with her hopes dashed. She had taken up a full-time job in the metal manufacturing industry, essentially letting her degree go to waste. Unsatisfied, she resigned to pursue the only science career she had been proffered. She applied to Northeastern Illinois University, where she could take the education courses that she would need to get a teaching certificate.

In her first semester, Niki decided to take some additional science courses. It was then that she met the person who would change her life's trajectory. Emina A Stojković, PhD, was an associate professor teaching Enzyme Structure and Function. Right away, the professor noticed Niki's enthusiasm for science. Dr. Stojković asked what Niki wanted to do with her life, and the story of the academic advisor was revealed. Shocked, Dr. Stojković encouraged Niki to change focus from education back to science and pursue research in the lab — Dr. Stojković's lab. That was just the beginning. Two years later, Niki was presenting research for her masters thesis at both national and international scientific meetings. Soon, she received an acceptance letter from Rosalind Franklin University's School of Graduate and Postdoctoral Studies. She was going to get her PhD after all!

Niki is now a doctoral student, pursuing her research through the co-mentorship of the Department of Biochemistry and Molecular Biology and the Department of Physiology and Biophysics at RFUMS. Without Dr. Stojković's mentorship, though, Niki might have fallen through the cracks. She could have been another statistic-another female who abandoned her interest in science, technology, engineering and mathematics (STEM).

To ensure that no student thinks that graduate education is out of reach, Niki created Women in Scientific Discovery or Medicine (WISDOM). Niki designed this Franklin Fellows initiative to promote graduate education in STEM and healthcare-related fields through mentorship. With her vision and leadership, as well as with the participation of the graduate students at Rosalind Franklin University of Medicine and Science, the WISDOM program is off to a strong start.

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WISDOM employs an interprofessional, team-based approach to mentoring women who are currently enrolled in undergraduate degree programs. Through seminar series, campus tours and early mentorship connections, these undergraduate students learn about a variety of graduate and professional fields, including biochemistry, neuroscience, podiatric medicine, pharmacy and physical therapy. Through these interactions, undergraduate students can identify potential interests in graduate programs and particular career paths. WISDOM's goal is to foster these interests and facilitate their transition to graduate school through application workshops, mock interviews and academic tutoring. From a broader prospective, WISDOM is a community-outreach program that creates a potential pipeline for future RFUMS applicants.

In 2015, Nicole is joined in the WISDOM initiative by another SGPS doctoral student, Sahithi Pamarthy. Sahithi will spearhead a WISDOM expansion to reach middle school and high school students in the local area.

Together, Niki and Sahithi are going a step further to bring WISDOM to RFUMS. This will be accomplished through a new seminar series called "WiSci." The series will focus on issues that directly affect women in the STEM workforce both in industry and academia. WiSci's first speaker is Erin L. Thomas, PhD, Argonne National Laboratory's first gender diversity specialist. Dr. Thomas will speak about the importance of mentorship at all career levels. (Tentative date, April 2015).

Sahithi Pamarthy

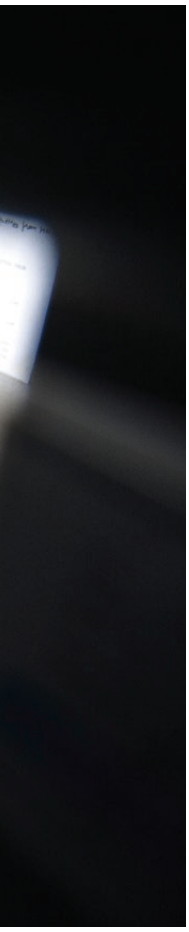
Sahithi Pamarthy has been selected to receive a 2014-2015 Franklin Fellowship. Sahithi is a PhD student in the microbiology and immunology lab of Dr. Kenneth Beaman. Working in the School of Graduate and Postdoctoral Studies at Rosalind Franklin University, Sahithi is fulfilling her dream of a career in research. She considers it a great honor to be selected for this year's Franklin Fellowship.

While in India, Sahithi volunteered for an organization working towards rehabilitation of women who have been victims of violence, an experience that led to her passion for the education of girls and women's empowerment. Her project will be an expansion of the WISDOM program founded by Nicole Woitowich. The goal of WISDOM is to inspire young girls to take up STEM subjects and to support women in STEM careers. Sahithi loves doing science and inspiring others to explore science, which makes WISDOM a perfect vehicle for the pursuit of her passion.

"By being a role model, we can impact the future of a new generation."

Sahithi Pamarthy

Through this scholarship project, she aims to create an interprofessional network of students and faculty who interact with the local community to make an impact on young girls by serving as role models in research. Sahithi is also passionate about getting people involved through her words of encouragement, "By being a role model, we can impact the future of a new generation. So, if you think what you do is cool, come join the WISDOM pool!"



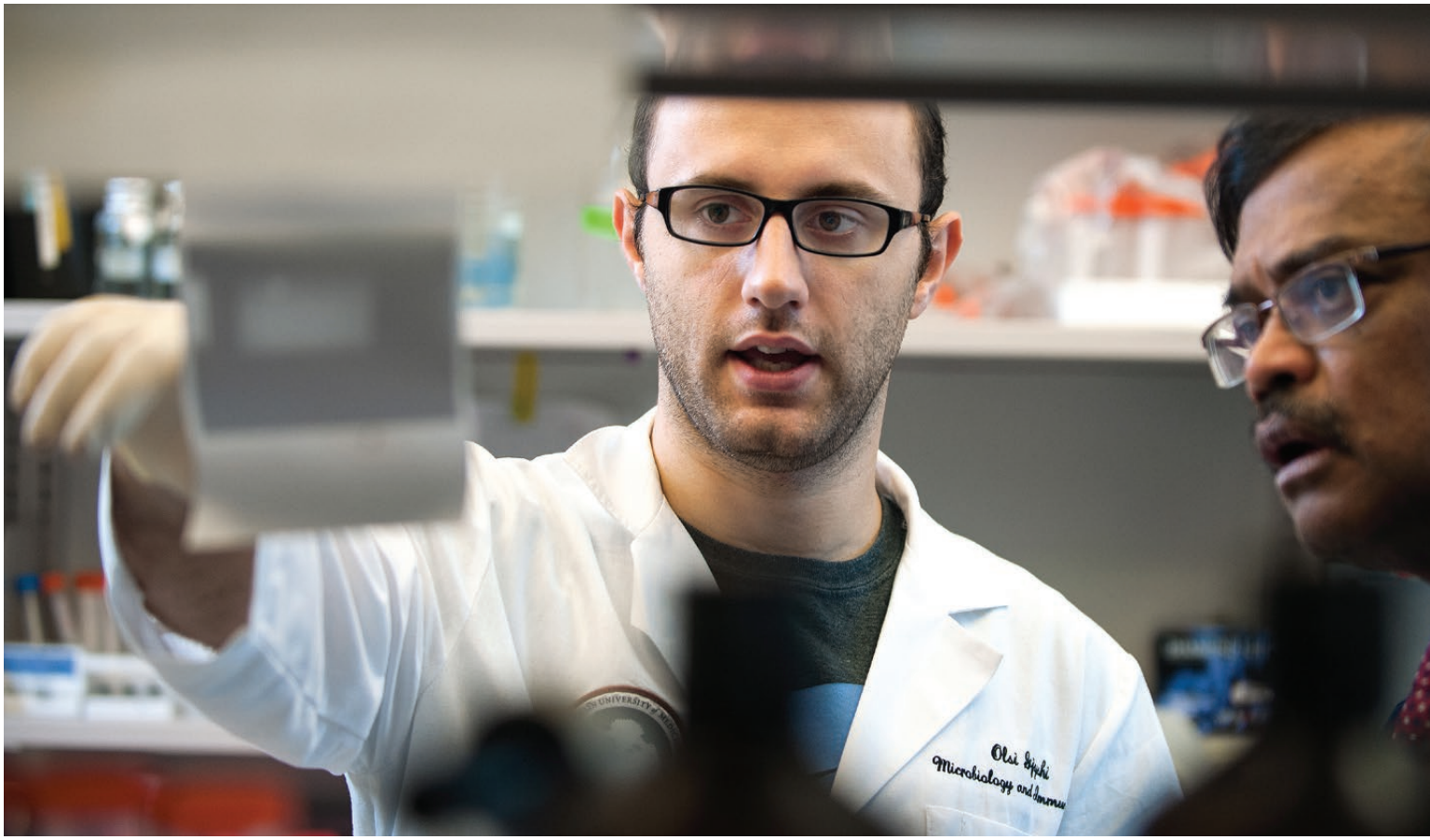
Olsi Gjyshi

Viruses are believed to contribute to the initiation and progression of twelve to twenty percent of human cancers. While the contribution to such a large amount of human malignancies is becoming more evident, the general population's knowledge on the matter is essentially absent. Few are aware that Epstain-Barr virus, the same virus that causes mononucleosis (mono), also causes Burkitt's lymphoma and about half of all Hodgkin's lymphomas. Even fewer are aware that the hepatitis C virus is the number-one cause of liver cancer worldwide. Just like these viruses, Kaposi's sarcoma-associated herpesvirus, hepatitis B virus, human T-cell leukemia virus, merckel cell virus and human papilloma virus are well-known cancer-inducing agents. People need to be informed about viruses and how to decrease exposure and risks of infection. Olsi Gjyshi is a doctoral-phase MD/PhD student in the Department of Microbiology and Immunology whose 2014 Franklin Fellows community service project attempts to address this issue.

One of the seven viruses that cause cancer, the human papilloma virus, is the number-one cause of cervical cancer world-wide. Although the PAP smear testing and the HPV vaccine have successfully reduced the incidence of cervical cancer, about 12,000 new cases are still recorded each year. One third of these cases are fatal. Such incidence is disproportionately high in under-served communities, where access to this type of routine care is limited. Olsi's project specifically aims to increase awareness about the importance of HPV vaccination and PAP smear testing. Simultaneously, the project is working to establish a system to provide free HPV vaccines to underserved/uninsured patients through collaboration with the CDC and Merck Company on behalf of the Interprofessional Community Clinic associated with RFUHS.

Olsi's work is being carried forward in 2015. He is mentoring physician assistant student Kelly Jo Smith. Kelly's mission is to increase awareness about the importance of vaccinations in the overall health of the community. Kelly plans to organize informational sessions with the underserved community of Lake County about vaccinations, their benefits and possible risks. Olsi will stay engaged in the project beyond just mentorship. As a graduate student familiar with the biology of viruses against which the country currently immunizes, he will transition to the role of scientific speaker and provide community presentations.

Together, the goal of these two fellows is to establish an interprofessional team of RFUMS students who provide education about why, or why not, individuals in our community should get vaccinated. Pharmacy students will be recruited to provide information about how vaccines work, while graduate students will provide information about how viruses can cause pathologies. Community partners currently include the Waukegan Public Library, the Lake County Health Department and the Interprofessional Community Clinic.



all school research consortium

The All School Research Consortium (ASRC) embodies the interprofessional educational philosophy at our university, where researchers and future health care professionals present their recent research discoveries and share ideas on how research addresses healthcare challenges to ensure better patient outcomes.

The ninth Annual ASRC was held on Wednesday March 19, 2014. Organized by the Graduate Student Association, this all-day event highlights research conducted by students and postdoctoral fellows from all five schools at RFUMS.

This year's keynote speaker was Dr. Alyssa Hasty, a renowned research scientist from Vanderbilt University, who has dedicated her career to the understanding of diabetes and metabolism. Dr. Hasty also takes a great interest in the training and education of young scientists and health professionals and is a strong proponent for women in science, having founded the "Women on Track" program to support women interested in pursuing tenure track positions in scientific research.

The event was sponsored by each of the university's five colleges, the Office of the Executive Vice President for Research, as well as vendors: Fisher Scientific, Thermo Scientific, Eppendorf, Mettler Toledo, Millipore, and Corning.

BEST STUDENT RESEARCH POSTER

Amanda Outinen, College of Pharmacy
Stephen Roeske, Dr. William M. Scholl College of Podiatric Medicine
Daryn Cass, Chicago Medical School
Gabriel Arom, College of Health Professions
Shahrooz Vahedi, School of Graduate and Postdoctoral Studies
Stanley Bazarek, Keystone Award

BEST SCIENTIFIC TALK

Monal Punjabi, College of Pharmacy
Rashid Ahmed, Dr. William M. Scholl College of Podiatric Medicine
Jason Frerich, Chicago Medical School
Rana Rabei, College of Health Professions
Huiya Huang, School of Graduate and Postdoctoral Studies
Karen Johnson, PhD, Postdoctoral Fellow

Student Leadership Awards

On April 16, 2014, two SGPS PhD students were acknowledged at the Student Leadership Awards Banquet

Ellie Butler, physiology & biophysics student, was awarded the Commitment to Research Award.

This peer-nominated award recognizes student leaders who promote research and knowledge creation. Students nominated for this award may demonstrate their commitment by assisting other students in a research mission, directly participating in outstanding research projects or incorporating leading-edge research into their organization's mission. Ellie's award acknowledges her commitment to research through her involvement in the 2014 All School Research Consortium. Her contribution to the planning, organization and coordination of the event allowed students from the university's five colleges and schools to showcase their research endeavors. As the Graduate Student Association's treasurer and ASRC co-chair, Ellie helped oversee the event's myriad details, including coordinating volunteers, compiling abstracts, coordinating the program booklet, arranging catering and speaker travel, assembling name badges and rearranging rooms. She was not alone in her efforts, though. Ellie gives much credit to her event co-chair, Sahithi Pamarthy, and the many students, staff and faculty volunteers whose hard work and team effort made the day run so smoothly.

Sahithi Pamarthy, microbiology & immunology student, was awarded the SGPS Student Leadership Award.

Each year, the Executive Student Council recognizes six students with the Student Leadership Award. These students have demonstrated commitment, dedication, and service to the university and the community. Students can be nominated for this award by any member of the university community (faculty, staff or students). A leader among the SGPS students, Sahithi volunteered this year as the secretary of the Graduate Student Association and All School Research Consortium event co-chair. Each of these offices requires significant effort, networking, communication and attention to detail. Sahithi demonstrates exemplary time management skills, which allow her to continue her full-time research and progress toward scientific discovery, publication and completion of her degree. She also shared her expertise and knowledge with other students by volunteering as a 2013-2014 Orientation Advisor and acting as a student ambassador during SGPS recruitment events. She knows most of the graduate students and is very well-thought-of by them and the faculty. She is a gem and leader who is worthy of this award.

ASRC BY THE NUMBERS

103
POSTER SESSION PARTICIPANTS

18
SYMPOSIUM SPEAKERS

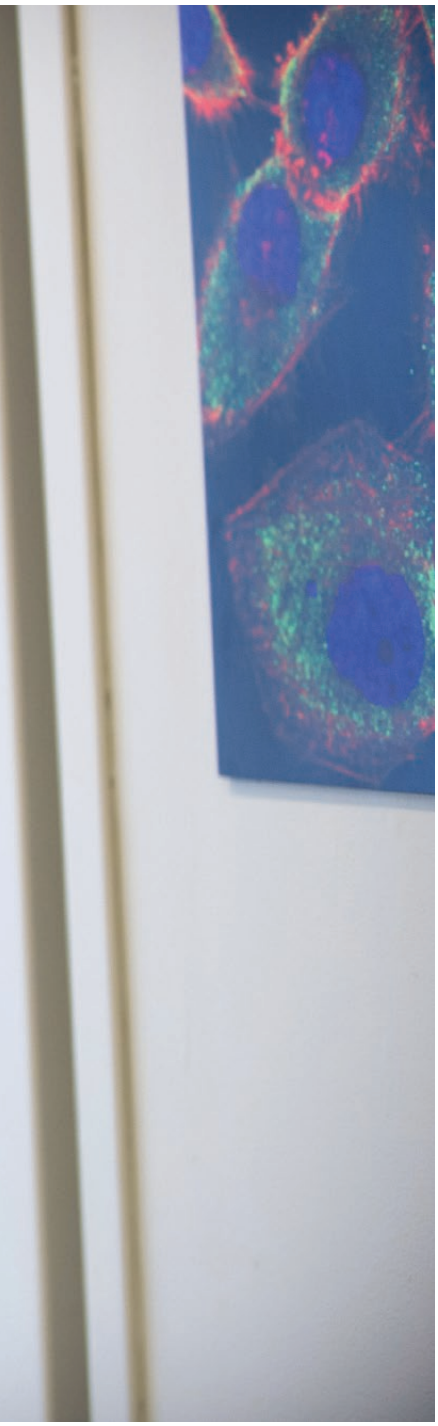
39
FACULTY JUDGES

20+
STUDENT VOLUNTEERS

the art show

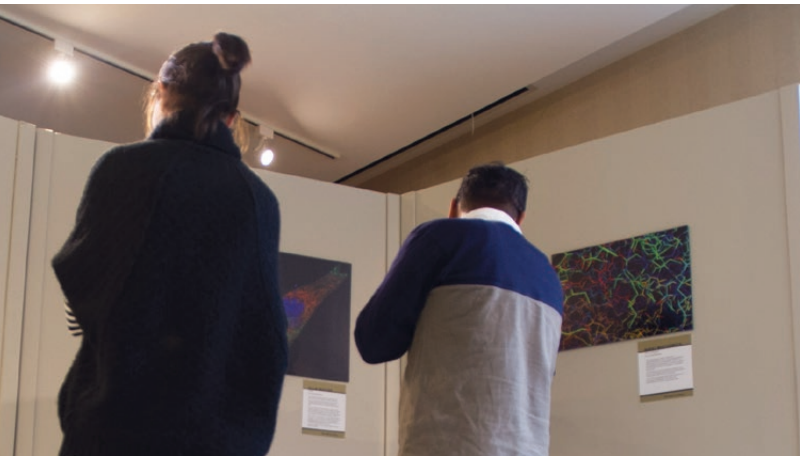
The All School Research Consortium concluded with the opening of the The Art Show, an exhibit of selected images created during the scientific discovery process of School of Graduate and Postdoctoral Studies' students. The Art Show was on display from March 19 through April 1 in the Scholl Gallery.

Guests admire the scientific works of art created by SGPS graduate students.



Sahithi Pamarthy stands with her piece, *The Face of Cancer Research* (far right).

Graduate student Eric Cavanaugh discusses the art with a guest.



Out & About

Our grads study hard, but also spend time giving back, engaging with peers and hanging out.

GETTING TO KNOW YOU...

During orientation week, current students took time out to greet the incoming class at dinner.

BRING YOUR CHILD TO WORK DAY

The students and faculty in our microbiology and immunology department lend a hand during this year's "Bring Your Child to Work Day."

STUDENT ACTIVITIES FAIR

Maria Bompolaki, a physiology and biophysics graduate student, displays her super powers representing the Graduate Student Association and All School Research Consortium at this year's hero-themed Student Activities Fair.

DISCOVERY DASH

After working out together and training to compete in this year's Discovery Dash, three students completed the race! Congrats to Nicole Woitowich, PhD student in biochemistry and physiology; Jennifer Chang, PhD student in cell biology and anatomy; and Olsi Gjyshi, an MD/PhD student in microbiology and immunology!

CSFN

The Society for Neuroscience Chicago Chapter's (CSfN) 2014 Annual Meeting, sponsored in part by SGPS, was held on Friday, April 4, 2014, at Northwestern Memorial Hospital.

Department of Cellular and Molecular Pharmacology student Daniel Thomases won first place in the Graduate Poster Competition. Andrew Scheyer, a student in the neuroscience department, won third place in the Graduate Student Symposium. The symposium participants were invited to meet with Dr. Susan Lindquist over lunch.

GAME NIGHT

Students take a break from the lab to participate in Game Night.

ORIENTATION

Students kick off the start of a new year at the SGPS Welcome Picnic.

MAKING CONNECTIONS

On March 29, the Milwaukee School of Engineering hosted its second biophysics networking event, sponsored by the Biophysical Society. The event was hosted and organized by several undergraduate students from MSOE. The daylong event consisted of speakers in the morning including Jason Kowalski and Sheeri Biendarra of MSOE. The event was attended by over 50 scientists from five area universities: MSOE, UW Milwaukee, Concordia University, IUPUI, and Rosalind Franklin University's Biochemistry graduate students, Dylan Burdette and Tirtha Mandal.

The day consisted of poster sessions, networking, oral presentations and scientific presentations by Marious Schmidt of University of Wisconsin - Milwaukee and a keynote address by Dr. Daniel Sem of Concordia University. This was followed by a lunch/networking period.

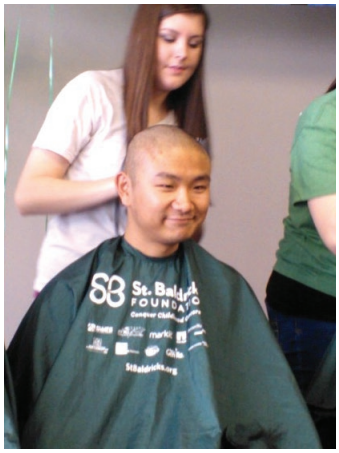
The theme of the event was structural determination of proteins, so it was a perfect fit for both Tirtha and Dylan. The networking allowed students to get to meet colleagues in their field as well as get information about facilities and equipment that could be available for future collaborations. Overall, this was a very informative and entertaining event, with some strong connections made.

http://www.biophysics.org/

ST. BALDRICK'S DAY

On Friday, March 28, students, faculty, staff and community members raised more than $33,000 for The St. Baldrick's Foundation! These proceeds will go toward helping to cure childhood cancers. SGPS' own Jiaju Wang, a Department of Physiology and Biophysics student, raised $94, which was 188 percent of his $50 goal. Great job!

St. Baldrick's is a volunteer-led organization that helps fund research into childhood cancer cures. Learn more at www.stbaldricks.org.



next chapter

CHARTING A PATHWAY FOR A CAREER IN RESEARCH

Addiction researcher Jessica Anne Loweth, PhD, is the first postdoctoral fellow at Rosalind Franklin University of Medicine and Science to win a highly competitive NIH Pathway to Independence Award.

Established in 2006, the five-year $1 million award, also known as K99-R00, is designed to offer support for both mentored and independent research during the early phase of an investigator's career, helping them to make the transition from postdoctoral research to a tenure-track assistant professor position.

"It's a wonderful opportunity," said Dr. Loweth, an Evanston, IL native who was accepted as a postdoctoral fellow in the Department of Neuroscience in 2010 after earning a PhD in neurobiology from the University of Chicago.

The grant calls for Dr. Loweth to receive two years of mentored support, including training in new research skills, from a team led by her research sponsor, Marina Wolf, PhD, professor and chair, Department of Neuroscience.

"With cuts to funding in academia, it's difficult to obtain an academic position – even to get an interview," said Dr. Loweth, who cites data by the NIH Office of Extramural Research showing that in 2009, just 23 percent of U.S.-trained biomedical PhDs were in tenure-track positions.

"The K99 makes you much more competitive," Dr. Loweth said. "It really helps senior-level postdoctoral fellows like me make this important transition."

Dr. Loweth has always known, she said, that she wanted a career in academic research and that she wanted to run her own program.

"I love scientific discovery," she said. "As head of your own lab, you can guide your own research. It's exciting to design your own studies. I also enjoy training students. I really enjoy the process of teaching them about neuroscience, about the laboratory, mentoring them and helping them learn."

Dr. Loweth will also receive guidance as she transitions to an independent tenure-track position through twice-yearly Skype sessions with her RFUMS Research Committee. Together, they will follow her progress and help her adjust to the myriad issues faced by new investigators—ordering equipment and setting up a lab, hiring and training a technician, recruiting students and postdoctoral fellows, teaching and administrative responsibilities, as well as manuscript and R01 submissions and reviews.

"The K99 makes you much more competitive. It really helps me make this important transition."

Jessica Anne Loweth, PhD

Because it dispels financial worries, the K99/R00 frees Dr. Loweth to focus intently on her research. She's using the grant to study the question "Do cocaine and chronic stress converge in the basolateral amygdala?" Her ultimate goal is to help recovering addicts maintain abstinence.

Research Committee members and mentors working with Jessica Loweth, PhD, under the NIH Pathway to Independence Award include, from left, Marina Wolf, PhD; Anthony West, PhD; Janice Urban, PhD; and Kuei Tseng, PhD. J. Amiel Rosenkranz, PhD, a co-mentor, is not pictured.

"I'm really interested in investigating why some people are more susceptible to stress-induced relapse and to see if, using animal models, we can identify neuroadaptations that drive compulsive drug-seeking behavior," Dr. Loweth said. "Through these studies, I hope to contribute to the development of pharmacotherapies for the treatment and prevention of stress-induced craving and relapse in abstinent addicts."

Joseph DiMario, PhD, professor and dean, School of Graduate and Postdoctoral Studies, noted that the extremely competitive K99/R00 Award is a recognition of the productivity and quality of Dr. Loweth's previous research as well as the significance and quality of her proposed research.

"It's also an acknowledgement of the dedication of individual SGPS mentors, like Dr. Wolf, who create a research environment conducive to the development of research trainees," said Dr. DiMario, who points to another way in which the university fosters new scientists:

Career Enhancement and Development for Postdoctoral Fellows. Developed by Dr. DiMario in collaboration with faculty and postdoctoral fellows, the program draws upon resources from national postdoctoral organizations and funds events designed to enhance postdoctoral professional development.

Dr. Loweth will use the results of her current NIH-funded study to identify new research topics, make new discoveries and advance in her career.

"You start with an idea and little by little, your results guide you in the next stage of the process," Dr. Loweth said. "You never know how the data will turn out. It's exciting. It's challenging. That's why I love academia. I very much look forward to this next chapter."

This article originally appeared in Helix Fall 2014.

The Science of Networking

On March 28, 2014 the Career Enhancement and Development Program for Postdoctoral Fellows presented its spring workshop entitled, "Networking Skills for Scientists."

The workshop was facilitated by Dr. Jessica Reimer, a communications consultant for Northwestern University. Jessica Reimer received her doctorate degree in microbiology from Northwestern University, and leverages her knowledge of science, research and publication in providing consulting services in the academic setting. Her focus is on pharmaceuticals, devices and healthcare.

Dr. Reimer learned to network on her own and has first-hand experience in leveraging her network to get a job. She has been invited to speak on networking and alternative careers for scientists at the University of Chicago and Northwestern University, and by the Association for Women in Science.

National Postdoctoral Appreciation Week

The second week in September is celebrated annually as National Postdoc Appreciation Week (NPAW). In celebration of the fifth NPAW, the Career Enhancement and Development Program for Postdoctoral Fellows Steering Committee designed and distributed RFUMS Postdoc t-shirts. The School of Graduate and Postdoctoral Studies invited all RFUMS postdocs to take a coffee break and gather for a group photo.

This was our way of saying "Thank You" for all the contributions they make to the university and the scientific community.

From left to right: Daniel Christian, Michael Stefanik, Yuvon Mobley, Mukesh Jaiswal, Mairaj Ansari, Hemantkumar Deokar, Karen Johnson, Arunava Roy, Binod Kumar, Jawed Iqbal, Gajendra Katara, Manoranjan Sahoo

Drs. Gajendra Katara and Yuvon Mobley take a break from the lab to network during this year's National Postdoc Appreciation Week's coffee break.

Building a Better Foundation

2014 saw many important initiatives implemented for RFUMS postdoctoral trainees. Additions have been made to our career development library, a new Postdoctoral Handbook was approved, new hiring guidelines were implemented, and better tracking and outcomes mechanisms were established.

In January, the School of Graduate and Postdoctoral Studies presented its first Career Development Session of 2015, "Applying for and Getting Jobs in Academia." This two-hour seminar and panel discussion for our postdoctoral trainees and graduate students addressed the many steps in the application, interview and job acquisition process for academia.

Representatives from Lake Forest College, DePaul University and RFUMS presented the characteristics of each institution, its faculty and students, as well as faculty workloads and responsibilities. This guidance will help to orient our postdoctoral trainees and graduate students and provide a framework for discussion and questions related to different types institutional application processes.

To enhance scientific and career development of postdoctoral fellows at RFUMS, the School of Graduate and Postdoctoral Studies administers the program Career Enhancement and Development for Postdoctoral Fellows (CED.PDF). The program is operated by a steering committee of postdoctoral fellows in consultation with the Dean of SGPS.

Steering Committee Members:

Daniel Christian, PhD
Postdoctoral Research Associate
Neuroscience Department

Karen E. Johnson, PhD
Postdoctoral Research Associate
Microbiology and Immunology Department

Arunava Roy, PhD
Postdoctoral Research Associate
Microbiology and Immunology Department

Chirosree Bandyopadhyay

Chirosree Bandyopadhyay graduated with her PhD in microbiology and immunology in June 2014. Dr. Bandyopadhyay looks back on her four years of graduate school as a wonderful phase of learning. She has fond memories from the first day of orientation in August 2010 and a great welcome by IGPBS. As an international student, thousands of miles away from home for the first time, she found the RFUMS scientific community like a family, and credits SGPS for helping its students whenever possible. She lists core competencies as one of the most noteworthy program advances and credits excellent mentorship in the microbiology and immunology department for her successful training.

In October of 2014, Dr. Bandyopadhyay began work as a postdoctoral research associate at Yale School of Medicine. In her new role, Dr. Bandyopadhyay will be part of the internal medicine department, researching as a team member of Professor Martin Schwartz group at Yale Cardiovascular Research Center (YCVRC).

Dean's Award for Outstanding Achievement in Research

Dr. Bandyopadhyay was selected to receive this year's SGPS Dean's Award for Outstanding Achievement in Research. This award was presented at the Annual Awards Ceremony held June 5, 2014. As part of the Commencement festivities, this ceremony was held downtown in the Grand Ballroom at Navy Pier, Chicago.

The PhD is the highest degree awarded by academia. A PhD earned through SGPS is based on the candidate's ability to conduct original research culminating in a body of work that advances mankind's understanding of nature and the human condition. The Dean's Award recognizes those individuals who have not only achieved this goal, but who have done so with distinction, by publishing their findings in a rigorous, peer-reviewed scientific journal.

Mallory Havens

Mallory Havens, PhD, a 2013 graduate of the Department of Cell Biology and Anatomy and former postdoctoral fellow, accepted a teaching position at Lewis University in April 2014. Mallory A. Havens began graduate studies in the School of Graduate and Postdoctoral Studies' IGPBS program in 2008. She joined the Hastings Lab and began her work on non-canonical microRNA biogenesis and splicing. Her passion for teaching and working with undergraduates led her to pursue this as a career. Mallory published five peer-reviewed articles before receiving her PhD in cell biology and anatomy in November 2013 and continuing as a postdoctoral fellow in Dr. Hastings' lab. Dr. Havens recently accepted a position as an assistant professor of biology with Lewis University, starting this fall, where she will focus on teaching. She contributes her success to the mentorship she received at RFUMS, particularly from Dr. Michelle Hastings.

As a professor at a primarily undergraduate institution her responsibilities are focused on the development of the students and teaching. Although undergraduate institutions are beginning to focus more on involving students in research, the main priority of the professors is still education within the classroom.

Dr. Havens teaches lecture and lab courses. She also serves on committees within the university, develops her own research and courses and contributes to the overall direction of the department and college. She teaches the introductory courses for new majors in the biology department and mentors students. So far, she has found a career in education to be very fulfilling.

Dr. Havens found that prior teaching experience in an undergraduate setting as an adjunct professor at Roosevelt University during graduate school prepared her to secure and flourish in her current position. With this experience, she was able to establish herself as a proven educator and demonstrate a commitment to teaching outside of the lab. As an adjunct professor, she developed all the materials and content for her course. Although the workload was considerable, in addition to her own graduate studies, she said it was fulfilling and one of the best things she has accomlished. The experience helped her understand how best to present materials, as well as become up-to-date on current trends in education. She also gained experience in dealing with student issues such as attendance and poor performance.

During graduate school, she prepared herself for a career in education by mentoring undergraduates in the lab, an experience that continues to help as she develops a research project at Lewis. The project will be carried out by undergraduate students and must, therefore, be within their capabilities. She has developed teaching methods to demonstrate proper lab technique and experimental design, allowing all of her students to expand their capabilities and fulfill their potential.

Dr. Havens advises her students, "The teaching opportunities that I took advantage of during graduate school allowed me to find my true passion: education. Although I entered graduate school knowing I wanted to stay in academia I did not know I wanted to focus on teaching at the undergraduate level. I believe that it is important to take advantage of as many opportunities as possible during school, so you can verify that you are pursuing a career you will actually enjoy. It is important to find a mentor that supports all of your career development, not just your development as a researcher."

Nagaraj Kerur

Nagaraj Kerur, DVM/PhD is a current postdoctoral trainee in the lab of Dr. Jayakrishna Ambati, Department of Ophthalmology and Visual Science at the University of Kentucky College of Medicine. Dr. Kerur is interested in the innate immune responses in the pathogenesis of age-related macular degeneration (AMD), an untreatable blinding disease. His current research is focused on understanding the AMD pathogenesis, which is driven by an innate immune pathway called the "inflammasome." In spring 2014, Dr. Kerur received a prestigious NIH K99/R00 Grant from the National Eye Institute to continue his research.

Dr. Kerur is an SGPS 2011 alumnus who feels very proud and privileged to have had access to world class, state-of-the art laboratories and research facilities at RFUMS. He received his PhD in microbiology and immunology under the mentorship of Dr. Bala Chandran, chair of the RFUMS microbiology and immunology department. Dr. Kerur credits the training he received as a graduate student in Dr. Chandran's lab as having played a vital role in shaping the formative years of his scientific career. He stresses that Dr. Chandran Lab's exemplary scientific rigor has helped him fathom what it takes to do science for a living.

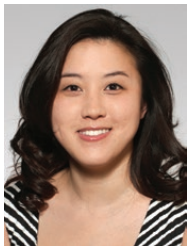
Dr. Kerur's predoctoral research at RFUMS also focused on the inflammasome, but in a very different context involving a viral disease known as Kaposi's sarcoma. His studies described a groundbreaking finding on the nuclear sensing of KSHV viral DNA by a protein known as IFI16. Human and animal cells are armed with multiple proteins that sense and alert the immune system against the invading microbial pathogens. At the time, it was widely surmised that such microbe sensing mechanisms existed only in the cytosol. However, Dr. Kerur's thesis work demonstrated that such sentinel mechanisms also exist in the cell nucleus.

"These findings represent a significant advancement in the field of immunology and are symbolic of the academic excellence and superior biomedical research at the RFUMS" said Dr. Bala Chandran. Dr. Kerur's pre-doctoral research was recognized on multiple occasions including; the 2009 AAAS' Annual Meeting's Poster Award, the 2011 AAI Trainee Abstract Award, and the 2011 SGPS Deans Award for Outstanding Achievement in Research.

The K99/R00 award is also known as the Pathway to Independence Award. It is designed to promote timely transition of promising, young research scientists to independent academic research positions. The award is intended to provide up to five years of support, consisting of an initial two years of mentored work, followed by three years of independent support. "One of only four given annually by the National Eye Institute, [this K99/R00 Award] is extremely competitive and is a testament to the quality of the candidate's pre- and postdoctoral research training experience," said Dr. Joseph DiMario, dean of SGPS.

Dr. Kerur believes that the expertise he gained through pursuing his PhD thesis on the topic of inflammasome, and harnessing that expertise to study new problems helped strengthen his candidacy for the K99/R00 career development award. He also attributes the success of his K99/R00 application to having an accomplished, supportive postdoctoral mentor and a strong commitment from his institutional training program. He expresses extreme gratitude to both Dr. Ambati and the Department of Ophthalmology at the University of Kentucky for their generous support.

Laura Shin



Laura Shin, DPM/PHD is an alumna of the combined DPM/PhD program in the School of Graduate and Postdoctoral Studies and Dr. William M. Scholl College of Podiatric Medicine. She earned a neuroscience PhD in 2012 and her DPM degree in 2014. Dr. Shin was awarded the Dr. Jerry D. Brant Leadership Award during this year's commencement ceremonies. The long standing award honors a well known leader in the profession. It is presented in recognition of outstanding leadership and contribution to the graduating class. Dr. Shin is currently a medical resident at the University of Pittsburgh Medical Center.

In December 2013, Dr. Shin became the first recipient of the STEM CELLS *Translational Medicine (SCTM)* Young Investigator Award. The award honors a young researcher whose 2012 SCTM article had significant impact through "novel and insightful research." Dr. Shin's story and interview were recently featured in the May 5 issue of the Regenerative Medicine Weekly newsletter. The Young Investigator Award fosters advancements in the field of stem cells and regenerative medicine and includes a $10,000 prize.

Her research, reported in the 2012 SCTM, was sponsored by the American Diabetes Association Clinician Scientist Training Grant. The Young Investigator Award is co-sponsored by CIRM and Quintiles, in cooperation with the Regenerative Medicine Foundation.

Eugene Dimitrov

Eugene Dimitrov, MD/PhD received his MD from the Medical Academy in Sofia, Bulgaria in 1992. He began physiology and biophysics studies through the School of Graduate and Postdoctoral Studies in 2002 and received his PhD in 2007. His research mentor was Dr. Janice Urban, who is now the chair of the physiology and biophysics department. His thesis was entitled "Neuropeptide Y (NPY) Dual Role in Stress Response and Energy Homeostatis." He completed his postdoctoral training at the section on Fundamental Neuroscience at the National Institute of Mental Health (NIMH) and continued to work in the same laboratory as a research scientist.

In March 2014, Dr. Dimitrov rejoined the physiology and biophysics department at Rosalind Franklin University as an assistant professor. Dr. Dimitrov's research interests are focused on the interdigitation of stress and pain pathways. He uses a systemic approach to examine the contribution of subsets of GABAergic neurons in amygdala to the generation of affective disorders. He uses transgenic mice lines and applies technologies such as viral vectors and pharmacogenetics to discover and describe the function of various neurotransmitter systems on pain associated mood disorders and development of cognitive impairment.

Dr. Dimitrov's connection to the University has come full-circle, as his role has recently expanded to that of mentor. He is currently training a second year PhD student, Tanvi Marketkar. Marketkar's project investigates the mechanism by which anxiety and stress affect memory formation.

We love to hear from our graduates!

Please send updates, news or contact info to: **IGPBS@rosalindfrankin.edu**

Visit the School's website: **http://www.rosalindfranklin.edu/sgps/Home.aspx**

Update your contact information: **http://www.rosalindfranklin.edu/ia/alumni/UpdateUs.aspx**

Follow us on Facebook: **https://www.facebook.com/RFUMSGraduateSchool**

Connect with RFU on LinkedIn and watch for SGPS updates in 2015!

The School of Graduate and Postdoctoral Studies is committed to providing opportunities for its graduates to engage and connect with the school.

In 2015-2016 the Dean's Office will launch its Alumni Speaker Series, bringing SGPS graduates back to campus to pass on their knowledge, career advice, and scientific discoveries.

Funding Updates

Travel Awards

Dr. Laurence R. Meyerson and Deborah L. Faiman Student Travel Awards

Biochemistry & Molecular Biology

Dylan Burdette, a 4th year PhD student in Dr. Adrian Gross' lab, won this honor and presented his work at the Biophysical Society 2/15-19/2014 in San Francisco, CA.

Microbiology & Immunology

Olsi Gjyshi, a 3rd year PhD student in Dr. Bala Chandran's lab, received this award in support of his travel to the 29th National MD/PhD Conference in Keystone, CO.

We would like to offer our congratulations to the students, and sincere thanks to Dr. Meyerson and Ms. Faiman. The School of Graduate and Postdoctoral Studies also provides additional funding for graduate school travel to scientific meetings.

The 2014 Keystone Travel Award, a competitively selected SGPS-sponsored award, provides funds for MD/PhD students to attend the National MD/PhD Student Association Meeting in Keystone, CO each year. This year's award was received by Stanley Bazarek.

Research Dollars

A major strategic initiative of the School of Graduate and Postdoctoral Studies is to increase its number of pre-and postdocotoral trainee grant submissions. SGPS is very pleased to report recent successes by our graduate students and postdocs in obtaining their own research funding:

In April 2014, neuroscience PhD student Craig Werner was awarded a Ruth L. Kirschstein National Research Service Award to continue his work on "Synthesis and degradation of synaptic proteins during cocaine withdrawal."

In April 2014, Postdoc Dr. Daniel Christian was awarded an NRSA to continue his work on, "Plasticity in nucleus accumbens spines during incubation of cocaine craving."

In July 2014, Postdoc Dr. Jessica Loweth was awarded prestigious K99 Grant to continue her work to answer the question "Do cocaine and chronic stress converge in the basolateral amygdala?"

The School of Graduate and Postdoctoral Studies also contributes to RFU research events as well as local symposia and scientific meetings, including:

Chicago Society for Neuroscience Meeting

CS2 - Chicago Symposium on Cell Signaling

RFUMS All School Research Consortium

RFUMS Neuroscience Retreat

Journal Publications

Bandyopadhyay C, **Valiya-Veettil M**, **Dutta D**, Chakraborty S, and Chandran B. (2014). CIB1 synergizes with EphrinA2 to regulate Kaposi's sarcoma-associated herpesvirus macropinocytic entry in human microvascular dermal endothelial cells. *PLoS Pathogens* 10(2), PMID: 24550731.

Banerjee K, **Munshi S**, Sen O, Pramanik V, Mukherjee TR, Chakrabarti S. (2014). Dopamine cytotoxicity involves both oxidative and nonoxidative pathways in SH-SY5Y Cells: Potential role of alpha-synuclein overexpression and proteasomal inhibition in the etiopathogenesis of Parkinson's disease. *Parkinson's Dis.* Article ID 878935.

Beaman KD, **Jaiswal MK**, **Dambaeva S**, Gilman-Sachs A. (2014). Future directions of clinical laboratory evaluation of pregnancy. *Cell. Mol. Immunol.* 10.1038/cmi.2014.62.

Bhattacharjee P, **Munshi S**, Das G, Islam SS. (2014). Clinico-investigative assessment and comparison of cardiovascular risk factors in young and elderly patients of acute coronary syndrome. *Int. J. Adv. Med.*1:180-8.

Bortolanza M, Cavalcanti-Kiwiatkoski R, **Padovan-Neto FE**, da-Silva CA, Mitkovski M, Raisman-Vozari R, Del-Bel E. (2014). Glial activation is associated with L-DOPA-induced dyskinesia and blocked by a nitric oxide synthase inhibitor in a rat model of Parkinson's disease. *Neurobiol. Dis.* 73:337-387.

Chakroborty S, Stutzmann GE. (2014). Calcium channelopathies and Alzheimer's disease: insight into therapeutic success and failures. *Eur. J. Pharmacol*. 739:83-95.

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Del-Bel E, **Padovan-Neto FE**, Szawka RE, da-Silva CA, Raisman-Vozari R, Anselmo-Franci J, Romano-Dutra AC, Guimaraes FS. (2014). Counteraction by nitric oxide synthase inhibitor of neurochemical alterations of dopaminergic system in 6-OHDA-lesioned rats under L-DOPA treatment. *Neurotox. Res*. 25:33-44.

Dutta S, Bandyopadhyay C, Bottero V, Wilson L, **Johnson KE**, Warshall C, Chandran B. (2014). Angiogenin interacts with the plasminogen activation complex at the cell surface of breast cancer cells to regulate plasmin formation and cell migration. *Molecular Oncology* 8:483-507.

Flores-Barrera E, **Thomases DR**, Heng LJ, Cass DK, **Caballero A**, Tseng KY. (2014). Late adolescent expression of GluN2B transmission in the prefrontal cortex is input-specific and requires postsynaptic protein kinase A and D1 receptor signaling. *Biol. Psychiatry* 75:508-16.

Gjyshi O, Bottero V, **Veettil MV, Dutta S**, Singh VV, **Chikoti L**, Chandran B. (2014). Kaposi's sarcoma-associated herpesvirus induces Nrf2 during de novo infection of endothelial cells to create a microenvironment conducive to infection. *PLoS Pathog*. 10(10): e1004460.

Huang H, **Shah K**, Bradbury NA, Li C, White C. (2014). Mcl-1 promotes lung cancer cell migration by directly interacting with VDAC to increase mitochondrial Ca(2+) uptake and reactive oxygen species generation. *Cell Death Dis*. 5: e1482.

Iqbal J. McRae S, Mai T, Banaudha K, **Sarkar-Dutta M**, Waris G. (2014). Role of hepatitis C virus induced osteopontin in epithelial to mesenchymal transition, migration and invasion of hepatocytes. *PLoS One*. 9(1):e87464.

Jaiswal M.K., **Katara G.K.**, Mallers T.M., Chaouat G., Gilman-Sachs A., Beaman K.D. (2014). Vacuolar-ATPase isoform a2 regulates macrophages and cytokine profile necessary for normal spermatogenesis in testis. *J. Leukoc. Biol.* 96:337-47.

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Munshi S, Khemka VK, Banerjee K, Chakrabarti S. (2014). Clinicotherapeutic potential of leptin in Alzheimer's disease and Parkinson's disease. *Asian J. Neurosci*. Article ID 181325.

Munshi S, Shinde AK, Biswas SC, Hazra A, Chakrabarti S. (2014). Post-treatment alterations of serum cancer antigen 125, cancer antigen 19.9 and carcinoembryonic antigen levels in patients with gynecological malignancies in a tertiary care hospital in eastern India. *Int. J. Adv. Med*. 1:255-63.

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Ota K, **Dambaeva S**, Lee J, Gilman-Sachs A, Beaman K, Kwak-Kim J. (2014). Persistent high levels of IgM antiphospholipid antibodies in a patient with recurrent pregnancy losses and rheumatoid arthritis. *Am. J. Reprod. Immunol.* 71:286-92.

Ota K, Yamagishi SI, Kim M, **Dambaeva S**, Gilman-Sachs A, Beaman K, Kwak-Kim J. (2014). Elevation of soluble form of receptor for advanced glycation end products (sRAGE) in recurrent pregnancy losses (RPL): possible participation of RAGE in RPL. *Fertil. Steril.* pii: S0015-0282(14)00543-3.

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Sahoo M, Del Barrio, Miller MA, Re F. (2014). Neutrophil elastase causes tissue damage that decreases host tolerance to lung infection with burkholderia species. *PLoS Pathogens* 10(8):e1004327.

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Thomases DR*, **Caballero A***, **Flores-Barrera E**, Cass DK, Tseng KY (2014). Emergence of GABAergic-dependent regulation of input-specific plasticity in the adult rat prefrontal cortex during adolescence. *Psychopharmacol* (Berlin). 231:1789-96.

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Valiya-Veettil M, **Dutta D,** Bottero V, Bandyopadhyay C, **Gjyshi O**, Sharma-Walia N, **Dutta S**, Chandran B. (2014). Glutamate secretion and metabotropic glutamate receptor 1 expression during Kaposi's sarcoma-associated herpesvirus infection promotes cell proliferation. *PLoS Pathog.* 10(10): e1004389.

Poster Presentations

Chakroborty S. November 2014. "Impact of phosphodiesterase 10A inhibition on spontaneous and cortically-evoked spike activity in the striatum of Q175 mice that model Huntington's disease". Society for Neuroscience. Washington DC.

Chakroborty S. November 2014. "Abnormalities in synaptic responses within dendritic spines associates with suppressed network-level CA1 plasticity in presymptomatic Alzheimer's disease mice". Society for Neuroscience. Washington DC.

Chakroborty S. November 2014. "Homeostatic role of nitric oxide signaling maintains synaptic plasticity expression in Alzheimer's disease mice". Society for Neuroscience. Washington DC.

Christian DT, Wang X, Briggs CA, Wolf ME, Stutzmann GA. November 2014. "Differential calcium signaling mediated by NMDA and AMPA receptors in individual dendritic spines of nucleus accumbens medium spiny neurons". Society for Neuroscience. Washington, DC.

Burdette, D. February 2014. "Shifting the gating equilibrium of a potassium channel via hydrophobic mismatch". Biophysical Society. San Francisco, CA.

Burdette, D. March 2014. "Shifting the gating equilibrium of a potassium channel via hydrophobic mismatch". Biophysics Networking Event. Milwaukee, WI.

Gjyshi, O. July 2014. "Manipulating host signaling for pathogenic purposes: How KSHV induces the master transcription factor Nrf2 to mediate de novo infection". 29th National MD/PhD Conference. Keystone, CO.

Gjyshi, O. May 2014. "Manipulating host signaling for pathogenic purposes: How KSHV induces the master transcription factor Nrf2 to mediate de novo infection". Chicago Symposium on Cell Signaling. Chicago, IL.

Goswami S. and Sharma-Walia N. February 2014. "Osteoprotegerin – the key to aneuploidy in Inflammatory and Invasive breast cancer". AAAS 2014 Annual Meeting. Chicago, IL.

Goswami S, Sharma-Walia N. April 2014. "Role of osteoprotegerin in inflammatory and invasive breast cancer". Annual AACR International Conference on Harnessing Breakthroughs Targeting Cures, San Diego, CA.

Goswami S, and Sharma-Walia N. April 2014. "Osteoprotegerin – the key to aneuploidy in Inflammatory and Invasive breast cancer". CSCTR/MWAFMR Combined Annual Meeting. Chicago, IL.

Huang H. November 2014. "Gamma-L-glutamyl-L-cysteine inhibits oxidative injury to cultured embryonic cardiomyocytes". Cardiovascular Redox Signaling Symposium. Milwaukee, WI.

Huang H. April 2014. "Mcl-1 promotes cancer cell migration by directly interacting with VDAC to increase mitochondrial Ca2+ uptake and ROS generation. Experimental Biology Conference". San Diego, CA.

Iqbal J. May 2014. "Hepatitis C virus induces epithelial to mesenchymal transition via osteopontin: role of osteopontin in hepatoma cells migration and invasion". Chicago Symposium on Cell Signaling. Chicago, IL.

Johnson, KE. March 2014. "The role of host nuclear innate immune sensor, interferon- gamma-inducible protein 16 (IFI16), in Herpes Simplex Virus type 1 (HSV-1) replication". All School Research Consortium. Rosalind Franklin University of Medicine and Science, North Chicago, IL.

*Equal contribution

Johnson, KE. May 2014. "The role of host nuclear innate immune sensor, interferon- gamma-inducible protein 16 (IFI16), in Herpes Simplex Virus type 1 (HSV-1) replication". Colorado Alphaherpesvirus Latency Symposium. Vale, CO.

Johnson, KE. June 2014. "The role of host nuclear innate immune sensor, interferon- gamma-inducible protein 16 (IFI16), in Herpes Simplex Virus type 1 (HSV-1) replication". American Society for Virology. Fort Collins, CO.

Katara, GK. April 2014. "Vacuolar ATPase subunit a2 is associated with immunosuppression in cancer". American Association for Cancer Research. San Diego, CA.

Kulshrestha A. April 2014. "Vacuolar ATPase 'a' subunit mediates platinum resistance in ovarian cancer. ". American Association for Cancer Research. San Diego, CA.

Padovan-Neto, FE. November 2014, "Effects of neuronal nitric oxide synthase (nNOS) inhibition on L-DOPA-induced striatal ERK1/2 phosphorylation in the 6-OHDA rat model of Parkinson's disease" Society for Neuroscience Meeting, Washington DC.

Pamarthy S, Gilman Sachs A, Beaman L. April 2014. "Notch signaling is regulated by vacuolar ATPase in triple negative breast cancer". American Association for Cancer Research Annual Meeting, San Diego, CA.

Purgianto, A. November 2014. "Effects of extended access cocaine self-administration on inhibitory neurotransmission in the nucleus accumbens". Society for Neuroscience. Washington D.C.

Sahoo, M. November 2014. "Induction of anti-LPS IgM by IL-1β, and of IFNγ by IL-18, are protective against lung infection with Francisella tularensis LVS". Autumn Immunology Conference. Chicago, IL.

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