

The [CATALYST]



[News & Announcements]

Welcome To Our Department

We are happy to welcome Drs. Scott Weed, Ph.D. and Gregory Konat, Ph.D./LM, MS, to the Biochemistry Department!

Dr. Gregory Konat's research interests are primarily focused on the immune-to-brain communication. In particular, the research objective of my laboratory is to elucidate mechanisms by which inflammatory episodes in the periphery alter brain function. Dr. Konat brings Graduate Student, Tiffany Petrisko. **Welcome Dr. Konat and Tiffany!**

Dr. Scott Weed's lab focuses on the underlying molecular mechanisms that drive tumor cell invasion and metastasis, the key events in cancer progression responsible for lethality. Historically the laboratory focuses on cancers occurring in the oral cavity, collectively referred to as head and neck squamous cell carcinoma (HNSCC). Dr. Weed brings Graduate Students Jessica Allen, Steve Markwell, and Brenen Papenberg. **Welcome Dr. Weed, Jessica, Steve, and Brenen!**

We would also like to welcome **Marieta Gencheva, Ying Zhang, Tyler Goff**, and **Kacey Rhodes** to the Biochemistry Department. Marieta is a Research Associate in Dr. Valery Khramtsov's lab. Ying Zhang is a Research Specialist and Tyler Goff is a Biology Technician, both working in Dr. Yehenew Agazie's lab. Kacey Rhodes is a Research Specialist working in Dr. Elena Pugacheva's lab. We are happy our department is growing with such talented individuals!

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Congratulations to **Dr. Vishy Ramamurthy** for being the recipient of the "2017 Health Sciences Mentor Award"! See all the details in the article on page 5.

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Congratulations to **Ashley Brandebura** and **Kristina Marinak** for being named Rising Stars! See page 6 for more details.

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Faculty hosted a "**Happy Hour**" on Wednesday, April 12 at the Blackbear, Evansdale location. Graduate students enjoyed a free beer and informal conversation to celebrate "Graduate Student Appreciation Week".

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Upcoming Birthdays

Naira Margaryan	April	28
Heimo Riedel	May	7
Benoit Driesschaert	Mar	7
Kristina Marinak	May	11
Thamaraiselvi Saravanan	May	11
Robert Leonard	May	15
Lana Yoho	May	24
Mike Gunther	May	26
Brianna Rogers	May	28
Qiang Ma	May	31
Skye Hickling	June	4
Elena Pugacheva	June	5
Saravanan Kolandaivelu	June	10
Tiffany Thibodeau	June	14
Emily Minor	June	18
Mark Tseylin	June	19
David McDonnell	June	23
Knox VanDyke	June	23
Trey Rotgen	June	27
William J. Canady	June	28

"The price of success is hard work, dedication to the job at hand, and the determination that whether we win or lose, we have applied the best of ourselves to the task at hand."

~ Vince Lombardi

[Chair's Corner]

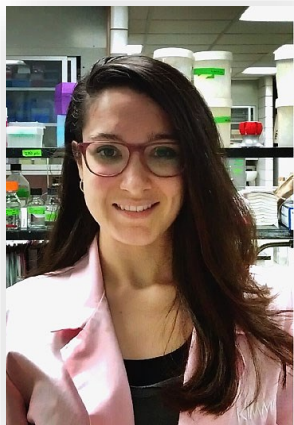
Times sure seem tough for funding for biomedical research and proposed budget cuts suggest darker days are coming. There is, however, reason to believe that this very bleak outcome will be averted. In December 2015, Congress increased the NIH budget by \$2 billion. Last summer the House and Senate appropriations committees recommended a \$1-2 billion increase for NIH, although a budget was never passed. Late last year the 21st Century Cures Act, with a small, temporary increase in funds for NIH, was passed. Recently, Congressman McKinley drafted a letter to Congressional leadership urging a \$2 billion increase to the NIH budget for FY18 and the letter was co-signed by more than 200 members of Congress. The most striking thing about these actions has been the very strong, bipartisan support for biomedical research. In this partisan political climate, the fact that biomedical re-

search funding has strong support from both sides of the aisle in the House and the Senate provide some optimism that proposed dramatic reductions to the NIH budget will not come to pass.

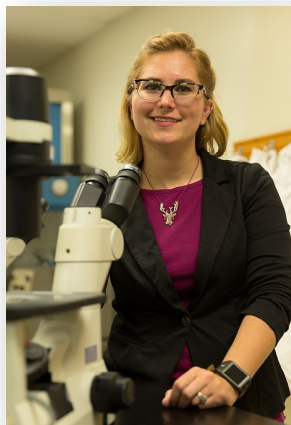
Meanwhile, back in the Department, we continue to grow. We have launched a search for a new faculty member and the search committee has begun the task of evaluating the ~140 applicants for the position (thank you Brad, Roberta, Jianhai, Mike and John!!). The Department has also benefited from a re-organization in the School of Medicine and on July 1, Drs. Gregory Konat and Scott Weed will join our faculty. On behalf of the faculty, staff and students in Biochemistry, I extend an early welcome to Greg and Scott, and their students, Steve, Jessica, Brenen and Tiffany to their new home.



[News & Announcements cont'd]

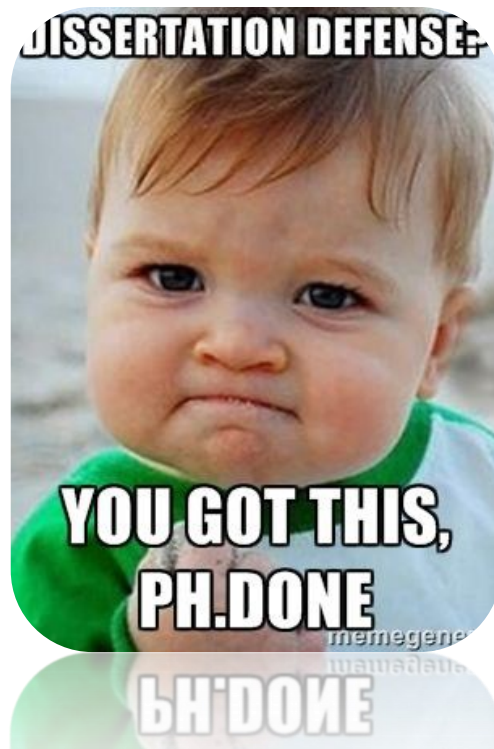


Congratulations to **Kimberly Alonge** who presented her doctoral dissertation defense on Monday, February 20, 2017. The title of her defense was “*Novel Mechanisms Controlling the Expression of the Antidiabetic Hepatokine Fibroblast Growth Factor 21*”. Kimberly moved to Seattle Washington right after her defense. She is doing research at the University of Washington in the Division of Metabolism, Endocrinology and Nutrition. See more on page 9.



Congratulations to **Jessica Hall** who presented her doctoral dissertation defense on Friday, March 17, 2017. The title of her defense was “*Biochemical Characterization of the Release of FAK Autoinhibition*”. She is currently a Visiting Assistant Professor at Bucknell University. This year she taught upper level Cell Biology & Molecular Biology, next year she will be teaching Intro to the Cell & Molecular Biology. Jess is doing research with 3 undergrads over the summer as well! See more on page 9.

We will see both Kim and Jess next month at the Commencement Ceremony.

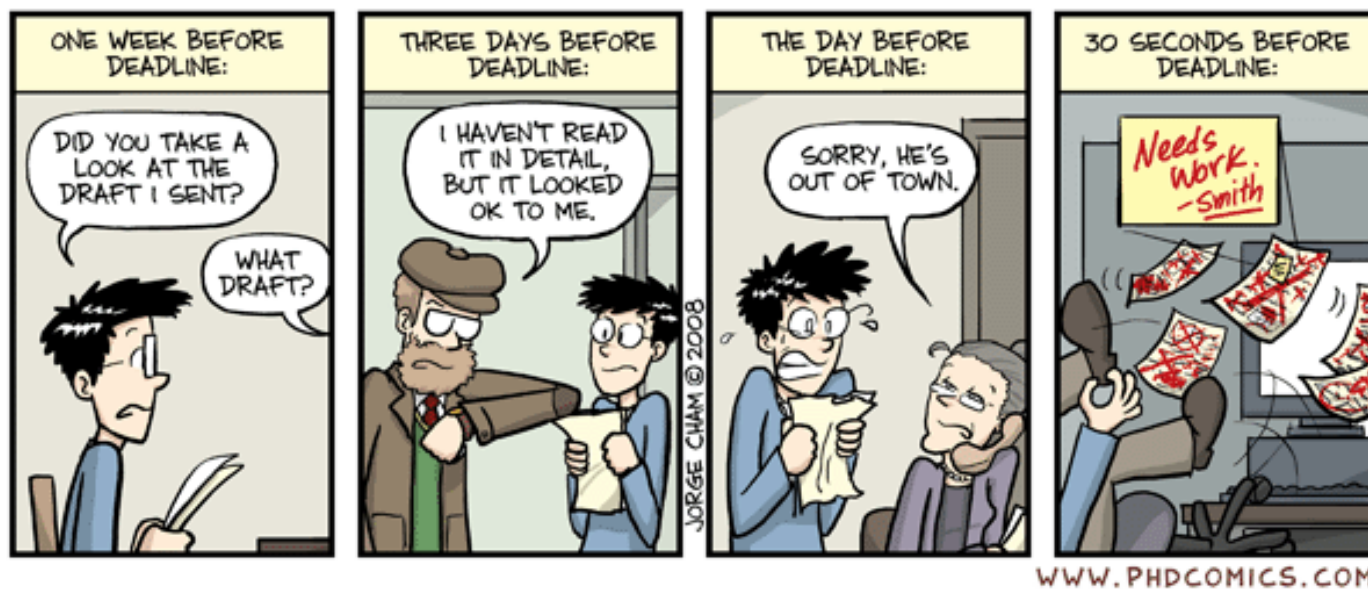


“Science makes people reach selflessly for truth and objectivity; it teaches people to accept reality, with wonder and admiration, not to mention the deep awe and joy that the natural order of things brings to the true scientist.”

~ Lise Meitner (1878 - 1968)

[Recent Publications]

- Jones BC, Kelley LC, Loskutov YV, Marinak KM, Kozyreva VK, Smolkin MB, **Pugacheva EN**. "Dual Targeting of Mesenchymal and Amoeboid Motility Hinders Metastatic Behavior." *Mol Cancer Res*. 645¹ Feb 68. pii: molcanres.4855.645⁰. doi: 54.559²/5985-7786.MCR-16-0411. [Epub ahead of print] PubMed PMID: 28235899.
- Xu M, Xie YA, Abouzeid H, Gordon CT, Fiorentino A, Sun Z, Lehman A, Osman IS, Dharmat R, Riveiro-Alvarez R, Bapst-Wicht L, Babino D, Arno G, Busetto V, Zhao L, Li H, Lopez-Martinez MA, Azevedo LF, Hubert L, Pontikos N, Eblimit A, Lorda-Sanchez I, Kheir V, Plagnol V, Oufadem M, Soens ZT, Yang L, Bole-Feysot C, Pfundt R, Allaman-Pillet N, Nitschké P, Cheetham ME, Lyonnet S, Agrawal SA, Li H, Pinton G, Michaelides M, Besmond C, Li Y, Yuan Z, von Lintig J, Webster AR, Le Hir H, **Stoilov P**; UK Inherited Retinal Dystrophy Consortium., Amiel J, Hardcastle AJ, Ayuso C, Sui R, Chen R, Allikmets R, Schorderet DF. "Mutations in the Spliceosome Component CWC27 Cause Retinal Degeneration with or without Additional Developmental Anomalies." *Am J Hum Genet*. 2017 Apr 6;100(4):592-604. doi: 10.1016/j.ajhg.2017.02.008. Epub 2017 Mar 9. PubMed PMID: 28285769.
- Corbin DR, Rehg JE, Shepherd DL, **Stoilov P**, Percifield RJ, Horner L, Frase S, Zhang YM, Rock CO, Hollander JM, Jackowski S, **Leonardi R**. "Excess coenzyme A reduces skeletal muscle performance and strength in mice overexpressing human PANK2." *Mol Genet Metab*. 645¹ Apr;564(8):794-362. doi: 10.1016/j.jymgme.2017.02.001. Epub 2017 Feb 3. PubMed PMID: 28189602; PubMed Central PMCID: PMC5382100.
- Balachandran A, Wong R, **Stoilov P**, Pan S, Blencowe B, Cheung P, Harrigan PR, Cochrane A. "Identification of small molecule modulators of HIV-1 Tat and Rev protein accumulation." *Retrovirology*. 645¹ Jan 6⁰;58(5):1. doi: 54.55²⁰/s56³¹¹-017-0330-0. PubMed PMID: 28122580; PubMed Central PMCID: PMC5267425.
- Grosso F, **Stoilov P**, Lingwood C, Brown M, Cochrane A. "Suppression of Adenovirus Replication by Cardiotonic Steroids." *J Virol*. 2017 Jan 18;91(3). pii: e01623-16. doi: 10.1128/JVI.01623-16. Print 2017 Feb 1. PubMed PMID: 27881644; PubMed Central PMCID: PMC5244322.
- He X, Wang L, **Riedel H**, Wang K, Yang Y, Dinu CZ, Rojanasakul Y. "Mesothelin promotes epithelial-to-mesenchymal transition and tumorigenicity of human lung cancer and mesothelioma cells." *Mol Cancer*. 645¹ Mar 58;5⁰(5):7. doi: 54.55²⁰/s56³87-017-0633-8. PubMed PMID: 28288645; PubMed Central PMCID: PMC5348784.
- Rodgers HM, Belcastro M, **Sokolov M**, Mathers PH. "Embryonic markers of cone differentiation." *Mol Vis*. 2016 Dec 22;22:1455-1467. eCollection 2016. PubMed PMID: 28031694; PubMed Central PMCID: PMC5178185.
- Khramtsov VV**, **Bobko AA**, **Tseytlin M**, Driesschaert B. "Exchange Phenomena in the Electron Paramagnetic Resonance Spectra of the Nitroxyl and Trityl Radicals: Multifunctional Spectroscopy and Imaging of Local Chemical Microenvironment." *Anal Chem*. 2017 Apr 10. doi: 10.1021/acs.analchem.6b03796. [Epub ahead of print] PubMed PMID: 28363027.
- Bobko AA**, Eubank TD, Driesschaert B, Dhimitruka I, Evans J, Mohammad R, Tchekneva EE, Dikov MM, **Khramtsov VV**. "Interstitial Inorganic Phosphate as a Tumor Microenvironment Marker for Tumor Progression." *Sci Rep*. 2017 Jan 24;7:41233. doi: 10.1038/srep41233. PubMed PMID: 28117423; PubMed Central PMCID: PMC5259743.
- Kubota H, Komarov DA, Yasui H, Matsumoto S, Inanami O, Kirilyuk IA, **Khramtsov VV**, Hirata H. "Feasibility of in vivo three-dimensional T (2)(*) mapping using dicarboxy-PROXYL and CW-EPR-based single-point imaging." *MAGMA*. 645¹ Jan ⁰. doi: 10.1007/s10334-016-0606-8. [Epub ahead of print] PubMed PMID: 28063096.



10 Things you didn't know about:

Martin Poncelet

The Basics

Title: Research Scholar
Office/Lab: Khramtsov



continued to play it without a teacher, learning on my own. Almost 5 years ago, I decided to learn to play the violin. This was a challenging idea, and still is. After 2 years, I switched to viola, so I could play with another student who started at the same time.

Being able to continue the viola lessons was one of the prerequisite for moving to Morgantown. This was possible thanks to the Community Music Program of the school of music. I also recently joined the Community Orchestra. This is a tough first experience in an orchestra but it's also a lot of fun!



1. What was your very first job?

My very first true job (not counting any previous student jobs) was in Belgium. I worked for 8 years in the R&D team of a diagnostic company, developing Vitamin D immunoassays. I was an organist chemist in a world of biologists, which could sometimes lead to some troubles communication-wise. Leaving the company to come to Morgantown was a hard choice that I do not regret though.

2. Weirdest food you've ever eaten?

Grilled insects. Tasted like paprika. I probably will never try it again.

3. How many languages can you speak?

I can speak English, of course, but also French (my native language). I had to learn to speak Dutch at school, and I kind of ended being able to speak it a bit, but languages are like music instruments, once you stop practicing, you forget how to use it. I also have a Russian vocabulary of ten words that I sometimes use to make my Russian coworkers smile.

4. Any special talents? (e.g. juggling, singing, dancing...)

I would not call it a talent, but I have a big interest in music. I started learning to play the piano when I was 10 and continued to do so with a teacher for 6 years. I slowly

5. Who was your favorite teacher/professor in school and why?

Probably my chemistry teacher during my 11th and 12th grades, which explains why I chose to study chemistry. She had the talent to communicate her passion for chemistry.

6. Favorite vacation spot and why?

A tiny village in south France, near Milliau. More like a collection of lost houses atop a hill. I've been there several times, in an old school converted into a house. It's far from everything and the road to access it is long and sinuous, but I go there to enjoy the quietness and the wilderness of the place. And it's a good spot to watch the shooting stars during summer.



7. How do you take your coffee and/or tea?

This may be surprising to a lot of people, but I don't drink coffee, nor tea. I simply don't like it. And then comes the usual question: "But what do you drink then???" Well, I don't need to replace it by something else. I just drink water when I need it, and occasionally drink milk or juices.

8. What do you think people would be most surprised to know about you?

I have a twin brother. It's not particularly surprising, but people usually do find it surprising. For me, it's just my brother.

9. When you were a child, what did you want to be when you grew up?

I only decided to study chemistry one or two years before going to the university. But as a child, I always had a strong interest for basic sciences. Surprisingly, and given my taste for music, I barely thought of becoming a musician.

10. Any hobbies people might be surprised to know about?

I have a pretty big collection of minerals. I find them beautiful and fascinating!

[Health Sciences Mentor Award]

The mentor award committee was started in 2016 by Dr. Lisa Salati and the office of graduate education as a way to annually recognize excellent mentors from across the different schools of WVU's Health Sciences Center. Graduate students from the schools of Medicine, Dentistry, Pharmacy, Nursing, and Public Health are encouraged each year to submit mentor nominations to the graduate office. The nominations are then sent to a selection committee consisting of a graduate student representative from each school, all of whom either volunteered to serve on the committee upon its formation or were recommended by former members of the committee. The nomination forms are essentially student testimonials regarding the nominee, where nominators are asked to describe the qualities of their mentor relating to aspects such as the mentor's role in generating a constructive training environment, contributing to the professional development of the student, and providing assistance regarding career and research ad-

vancement.

When the selection committee received Dr. Ramamurthy's nomination forms, it was clear to all of us that his students took significant amounts of time to thoughtfully describe why he is deserving of such recognition. This reflects well both upon Dr. Ramamurthy's character and the environment he has created in his laboratory. The students described how Dr. Ramamurthy makes time for each of the members of his lab, and provides constructive feedback and guidance for each of their respective projects. His students reported sincere appreciation of his



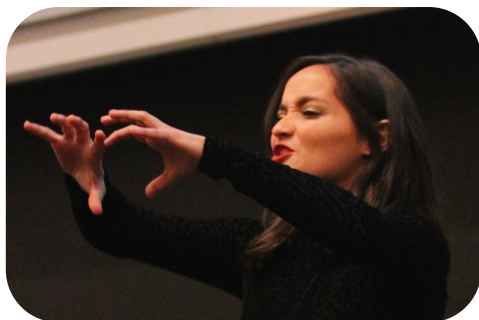
feedback regarding their laboratory-based and departmental presentations each semester, and they recognized the importance of this activity in keeping them on track with their dissertation research. Dr. Ramamurthy helps his students develop their career prospects by encouraging them to attend and present at national scientific conferences that they find interesting, while introducing them to scientists he knows at conferences their lab typically attends. Lastly, a strikingly unique characteristic of Dr. Ramamurthy's mentoring style and laboratory environment was how he created a family atmosphere within his lab. His students described how this atmosphere fosters creative scientific ideas and provides a strong support network to cope with the struggles of graduate school and science as a whole. The committee felt that these qualities of Dr. Ramamurthy set him apart from other nominated mentors and made him a truly deserving recipient of the 2017 Health Sciences Mentor Award!

[3-Minute Thesis Competition]

Congratulations to Tanya Dilan, PhD Candidate, from Dr. Vishy Ramamurthy's Lab. She was awarded 3rd Place in the 3-Minute Thesis Competition.

This competition challenges doctoral students to present their research topic and its significance in three minutes and using just one slide. The winner of the competition will receive a \$2,000 grand prize.

For more information visit: <http://graduateeducation.wvu.edu/current-students/events/3mt>



Tanya presenting her thesis

The 3 Minute Thesis Competition was first established by The University of Queens-land. The idea is that you condense your thesis, and sometimes three to four years of research, into three minutes and present it to a general audience. It has to be clear and concise enough that, for example, your grandmother will grasp the fundamental importance of your research, but at the same time you do not want to oversimplify or over generalize your thesis. The first round is a video submission and once you pass the first round they pair you up with a coach that really helps you take your talk to the next level. Our coach was professor Gina Martino Dahlia, the chair of the Journalism Department. She taught us the importance of using body language or non-verbal's to convey complex ideas. We learned about eye contact, intonation, strong openings and closings and other essential components that keep the viewers engaged during your talk. This experience taught me a lot about public speaking and it was also very fun. I think graduate students should have this valuable tool in their toolkit for future in-terviews and elevator talks. Also one big

plus for me is that my family, after three years, finally understands what my thesis is about.

~ Tanya Dilan



Tanya receiving her award

[Rising Stars]

Rising Stars

Each year during graduate student appreciation week, we recognize excellence in a graduate student from each program at the HSC.



Ashley Brandebura

This year, we recognized students earlier in their studies who were demonstrating outstanding achievement in their studies. Hence the name Rising Star. The students were selected by the graduate program directors in consultation with their faculty.

Faculty consulted with the graduate studies committee and they designated Ashley Brandebura and Kristina Marinak as Rising Stars!

Ashley Brandebura is a Neuroscience Graduate Student in Dr. George Spirou's and Dr. Pete Mathers Lab. Her focus is on Neuroscience and neural development. She possesses an excellent command of the literature, outstanding presentation skills, and demonstration of independence. Congratulations Ashley!

Kristina Marinak is currently a graduate student in Dr. Elena Pugachevas's lab in

the WVU Cancer Institute. Her leadership efforts in raising awareness of breast cancer metastasis at the WVU Cancer Institute led her to receive this title. During the summer of 2016, Kristina served on the Metastasis Research Society's Early Career Leadership Council.

Congratulations Kristina!

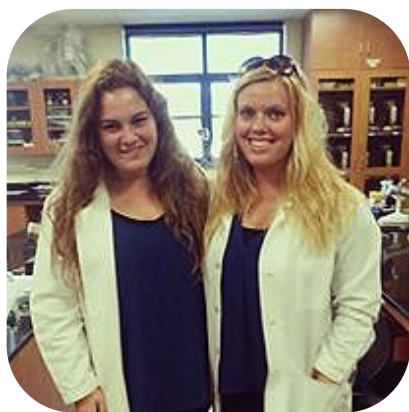


Kristina Marinak

[Meet Our Students]

Taylor Thomas

I am a first year in the Biochemistry and Molecular Biology Program and the newest member to Smith Lab.



Our lab studies the proteasome and I, specifically, am interested in an ATP-independent proteasome activator.

This activator plays a role in immune responses, and influences the progression of cancer and neurodegenerative diseases. I study this activator with the hope of developing a potential drug target to modulate proteasome activity to combat cellular dysregulation.

I am a Central Pennsylvania native. I grew up in an extremely small town just north of Penn State and I attended Lock Haven University for my undergraduate studies.

Aside from school, I love all things outdoors. I mainly enjoy hiking, biking, and

kayaking, but I'm always up for something new. I am also a certified soccer official and like to do that in my spare time.



"There is no end to education. It is not that you read a book, pass an examination, and finish with education. The whole of life, from the moment you are born to the moment you die, is a process of learning."

~Jiddu Krishnamurti

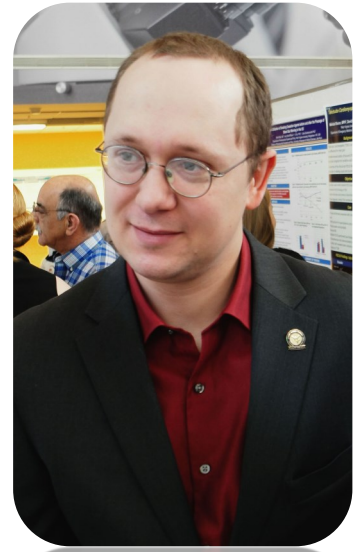
[Van Liere Poster Winners]



Tanya Dilan - "Bardet-Biedl syndrome-8 (BBS8) is essential for morphogenesis of photoreceptor outer segments"



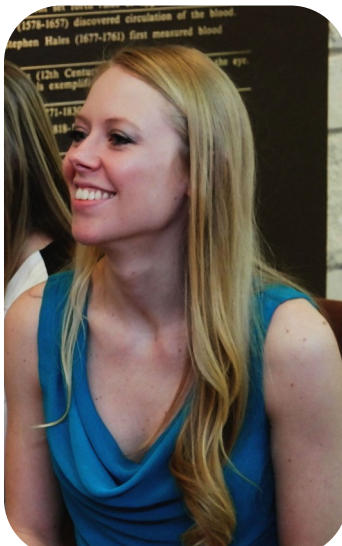
Ashley Brandebura - "Single Cell RNA-Sequencing of a Developing Neural Circuit"



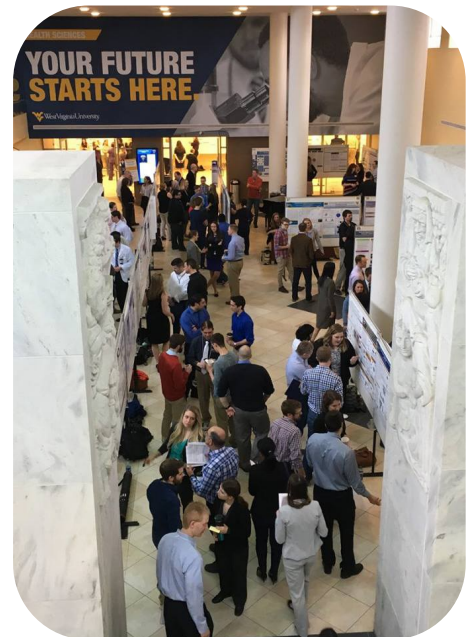
Yuriy Loskutov - "Primary cilium points at LPA signaling as a novel therapeutic target in GBM"



Skye Hickling - "JNK signaling controls the guided migration of cortical interneurons through nucleokinesis and leading process dynamics"



Abigail Moye - "ARL8BP, a ciliary protein, controls the growth of photoreceptor microtubular axonemes, organ positioning, and sperm motility."



"You look at science (or at least talk of it) as some sort of demoralizing invention of man, something apart from real life, and which must be cautiously guarded and kept separate from everyday existence. But science and everyday life cannot and should not be separated. Science, for me, gives a partial explanation for life. In so far as it goes, it is based on fact, experience and experiment."

~ Rosalind Franklin (1920 - 1958)

[Wirtz Library Renovation]

The George Wirtz Memorial Library has finally received its make-over!

As I am perusing the very thick project folder named the "Wirtz File", I remember how I had thought I was initiating the first conversations of the Wirtz renovations on May 27, 2015. But it turns out this project has been in the works (or at least on someone's desk) since 2010 and quite possibly prior to 2010, so it was well before I arrived at WVU in the Fall of 2014! After much debate and confusion over who, what, where, when and how, the project took off on January 23, 2017. There were several delays in supplies arriving and of course weather related delays as well, which I suppose is to be expected with any construction projects. But after a long awaited, and much anticipated 11 weeks, the George Wirtz Memorial Library renovations were finally complete and the decorating began! We wanted the library to be an accommodating, professional looking space that can be changed from a meeting room to a small classroom with ease. We also wanted to make sure that we kept the Biochemistry Department focus in the room so we decided to include photos on the wall from different Depart-



mental/SOM events throughout the year (s). Most photos will be updated on an annual/semi-annual basis, so keep your eye out – you may be a feature on the wall in the future! The Department of Biochemistry group photo was also something new we wanted for the room and will now be a yearly tradition that will always have a "home" on the wall. Finally, on Tuesday, April 11, 2017 prior to the department faculty meeting, the ribbon cutting ceremony commenced and we were officially

back in business and Wirtz Library was done. Dr. Clay Marsh and Dr. Laura Gibson were present to do the honors and share in our celebration! If you have not had the opportunity to stop by and see the new conference room, please do so. We are very happy with the long awaited results. And if you need to reserve time in the Wirtz Library, please see me, as we did before.

~ Gina Mazzetti

[Grants Awarded]

Congratulations! to **Dr. Brad Hillgartner**, Professor of Biochemistry, who secured a \$154,000 funded, 2 year American Heart Association award in January 2017 to study a hepatic hormone called Fibroblast growth factor 21 (FGF21) and develop new approaches to enhance its production and reverse metabolic syndrome. The title of his 2 year project is "*Novel Mechanisms Controlling the Expression of FGF21, a Hepatokine that Reverses Metabolic Syndrome*".

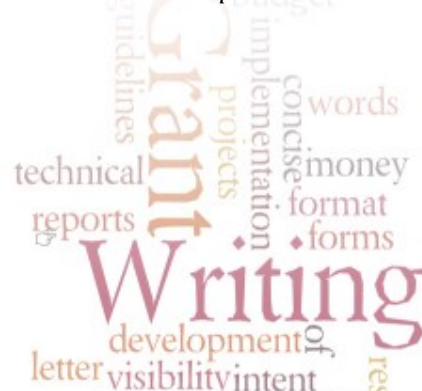
Congratulations! to **Dr. Richard Seftor**, Research Professor of Biochemistry, who secured a \$155,000 funded, 6 month contract with TiaRx, Inc. in January 2017 to conduct cell and animal studies to test CVM-1118 on tumor cell vasculogenic

mimicry. The title of his project is "*Molecular Mechanisms Underlying CVM-1118 Suppression of Tumor Cell Vasculogenic Mimicry (VM)*".

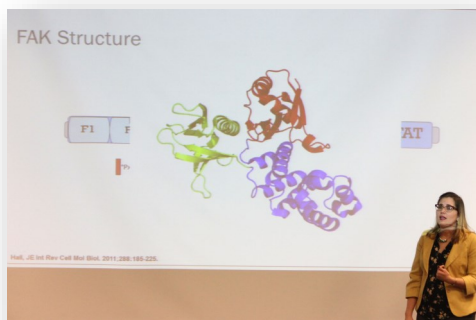
Congratulations! to **Dr. Vishy Ramamurthy**, Professor of Biochemistry & Ophthalmology, who secured a \$412,500 funded, 2 year National Eye Institute R21 award in February 2017 to the role for BBS8 in photoreceptors and test whether BBS is actively needed for the maintenance of photoreceptor function. The title of his 2 year project is "*Ciliopathies and Photoreceptor Function*".

A second **Congratulations!** goes out to **Dr. Vishy Ramamurthy**, Professor of Biochemistry & Ophthalmology, who also just

secured a \$1,457,899 funded, 5 year National Eye Institute R01 award in April 2017 to study the regulation of small GTPases that belong to the ARF-like family of proteins and their effect on early development of cilia and photoreceptor outer segment morphogenesis. The title of his 5 year project is "*Importance of Small GTPases in Photoreceptor Function*".



[Dissertation Defenses]



If I were to sum up my defense in one word, it would be anticlimactic. I was ready to go to battle to defend my work. I did not realize I had already been through the battles. Writing, rewriting, and tweaking the discussion of my manuscript to appease reviewers. Making all the disparate parts of my work over the years at WVU fit into one cohesive document that told a story. Putting together several research proposals to convince Bucknell I could mentor undergraduate

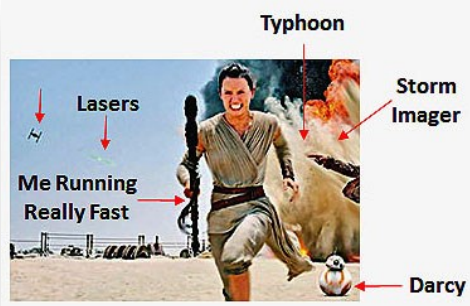
researchers. All those were the battles. The defense was a chat about my work with peers. It felt good. Finally defending gave me a huge boost in self confidence (I'm actually qualified for the job I've had since August!). It also gave me a great excuse to eat all the awesome food Morgantown has to offer. I defended on a Friday then Monday morning walked into my molecular biology class and taught them about histone modifications. I'm already looking forward. This summer I will be in charge of three undergraduate researchers, as we work to continue to explore FAK activation and put together a JoVE article on protein-lipid binding methods. I am going to take a small break in between, to come to Morgantown and walk in graduation, so I'll see you all soon!

~ Jessica Hall



Kimberly Alonge

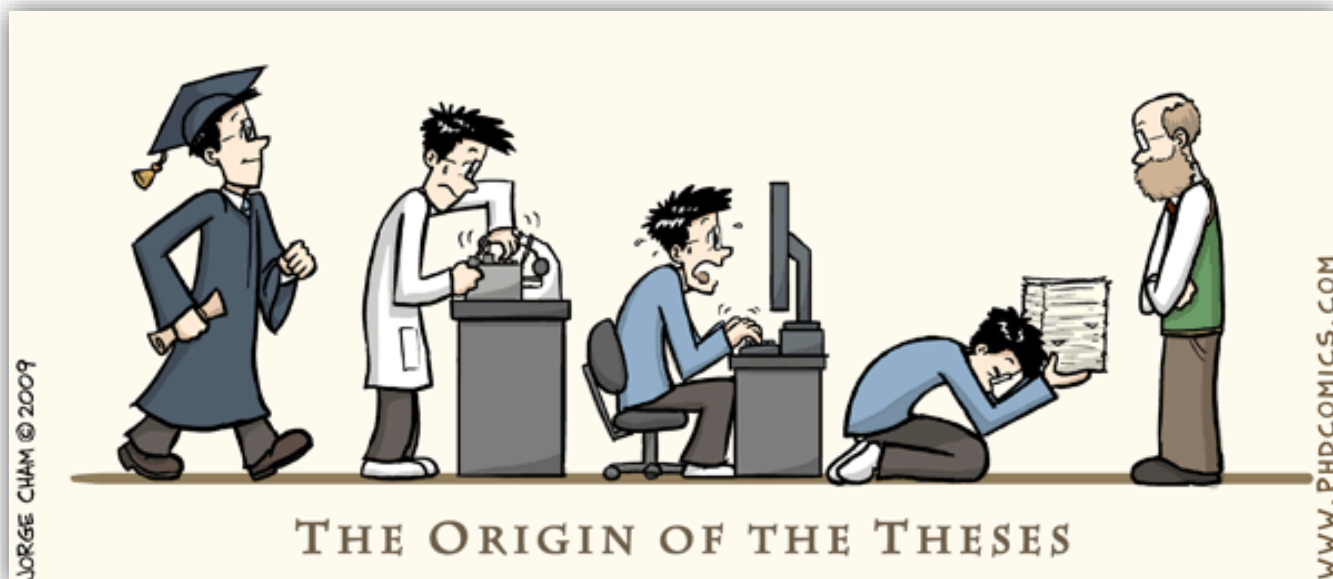
Kimberly M. Alonge, defended her dissertation on Monday February 20th 2017. Kim's Dissertation was entitled "Novel Mechanisms Controlling the Expression of the Antidiabetic Hepatokine Fibroblast Growth Factor 21". Kim's mentor in the Graduate Program in Biochemistry & Molecular Biology, was Dr. Brad Hillgartner.



How I Think My Dissertation Ended



How It Actually Ended



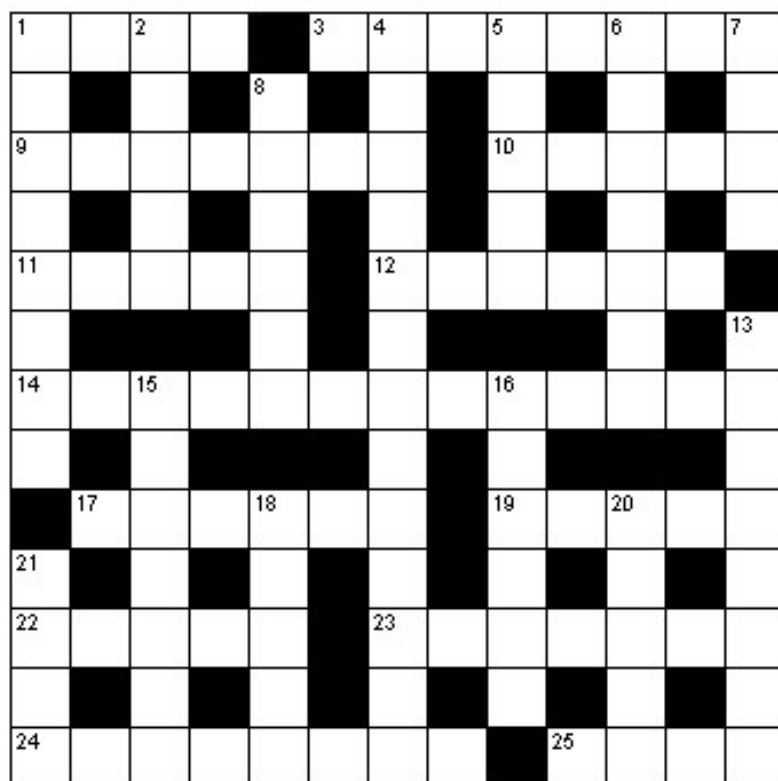
[Coffee Break]

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B	S	O	S	M	S	K	A	T	E	S	N
O	S	G	O	L	C	N	E	S	M	O	E
O	S	C	S	T	O	C	K	I	N	G	S
K	G	U	S	S	S	C	T	L	G	S	N
E	N	F	L	N	O	T	S	S	L	V	S
N	I	F	E	S	E	E	T	I	O	S	L
D	R	L	G	N	S	A	P	S	V	E	A
S	R	I	S	G	P	P	K	E	E	O	D
C	A	N	S	S	E	B	U	E	S	H	N
L	E	K	O	R	G	L	O	R	R	S	A
O	S	S	S	S	S	H	O	L	S	S	S

Bookends
Boots
Clogs
Cufflinks
Earrings
Gloves

Leggings
Mittens
Sandals
Shoes
Skates
Slippers

Sneakers
Socks
Spats
Spurs
Stockings



Across

- 1 Quarter of a pint (4)
- 3 London rail terminus (8)
- 9 Labour (7)
- 10 Quibble (5)
- 11 Sandy common (5)
- 12 Systematic procedure (6)
- 14 Quarrelsome (13)
- 17 Altitude (6)
- 19 Concise, pithy (5)
- 22 Criminal organisation (5)
- 23 Pariah (7)
- 24 Award for selling many records (4,4)
- 25 Among (4)

Down

- 1 Make progress (3,5)
- 2 Long-necked woolly animal (5)
- 4 Lights (13)
- 5 Implicitly understood (5)
- 6 Pasta dish (7)
- 7 Proficient (4)
- 8 A depth of six feet (6)
- 13 Beaten (8)
- 15 Joyous (7)
- 16 Shrewd (6)
- 18 Stately, splendid (5)
- 20 Domain (5)
- 21 Self-satisfied (4)

[Upcoming Events]

WVU and Morgantown Upcoming Events (April 2017-June 2017)

4/20/2017	Research Forum Tiffany Thibaudeau hosting	4:00 PM	2940 B HSC North
4/22/2017	West Virginia Bites & Brews • sparkwv.org/	5-9 PM	WV National Guard Morgantown Readiness Center
4/22/2017	Chocolate Lovers' Day	11-3 PM	Downtown Morgantown
4/25/2017	Seminar Speaker, Sadie A. Bergeron, PhD	12:00 PM	3067 HSC North
4/28-4/30/2017	WVU Cancer Institute's 32nd Annual Spring Gala heretohelp@hsc.wvu.edu	All day	The Greenbrier, White Sulphur Spring, WV
5/1-5/5/2017	Final Exams Week		WVU
5/2/2017	Seminar Speaker, Stephanie Shumar PhD Candidate	12:00 PM	3067 HSC North
5/3/2017	United Way Day of Caring	All day	various locations, Morgantown WV
5/4/2017	Research Forum Skye Hickling hosting	4:00 PM	2940 B HSC North
5/5-6/2017	Cheat River Festival	All Day	Albright, WV
5/6/2017	3rd Annual High Street Bazaar	10-2 PM	High Street, Morgantown, WV
5/6/2017	143rd running of the Kentucky Derby	6:30 PM	Louisville, Kentucky
5/9/2017	Faculty Meeting	12:00	George Wirtz Memorial Library
5/12/2017	HSC School of Medicine Commencement Ceremony	9:00 AM	Okey Patteson Auditorium
5/18/2017	Research Forum hosted by Dr. Mark Tseytlin's Lab	4:00 PM	2940 B HSC North
5/23/2017	6th Annual KIDS Safety & Fitness Expo	5-7 PM	WVU Student Rec Center Fields
5/26-29/2017	10th Annual River City Arts Festival	All day	Szilagyi Center, Rowlesburg, WV
5/29/2017	Memorial Day - University Holiday		WVU Closed
6/1/2017	WVU New Student Orientation	All Day	WVU Campus
6/10/2017	Spring Bird Walk	7:30 AM	WV Botanic Garden, Tyrone Rd.
6/16/2017	Main Street Kingwood Street Fair	All day	Kingwood, WV
6/17/2017	Gallop With Goats 5K Authurdale Heritage http://www.tourmorgantown.com/events/gallop-with-goats/	All Day	Arthurdale, WV
6/24/2017	WV Grand Bash http://www.tourmorgantown.com/events/gallop-with-goats/	1-7:00 PM	500 Mylan Park Lane, Morgantown
6/24/2017	WV Bass Federatrion Championship	8:00 AM	Monongahela River
6/29/2017	4th of July Parade	TBA	Terra Alta, WV



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