Department of BIOCHEMISTRY

Fall 2016
Volume II, Issue III

The [CATALYST]

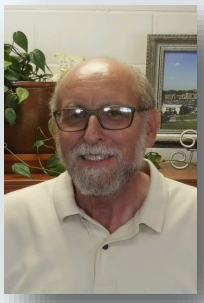
[News & Announcements]

Meet Our New Mountaineer Family

More warm "Welcomes" are going out to our newest faculty members who have joined our Mountaineer Family!

Dr. Aaron Robart joined the Biochemistry Department in August. Prior to his move to Morgantown, Dr. Robart lived in San Diego, CA, with his wife and daughter, and has trained at multiple institutions such as the University of Calgary, UCLA and UCSD. He will establish his independent research program at WVU studying RNA splicing from a structural perspective. He is currently busy getting new lab up and running. Stop by and say hello! ***Welcome Dr. Aaron Robart!***

Dr. Jianhai Du has a joint appointment with the Department of Biochemistry and the Ophthalmology Department. Dr. Du has trained at the Peking University in Beijing China and most recently in Seattle at the University of Washington. His current research is focusing on energy metabolism of neuronal retina and human RPE cells. ***Welcome Dr. Jianhai Du!***



Dr. Richard E.B. Seftor and his wife, ***Elisabeth*** joined the Department of Biochemistry in September. Dr. Seftor is a Research Professor and Elisabeth Seftor is a Senior Research Scientist. Their most recent Research Lab was in Chicago at Northwestern University. They are part of the Mary Hendrix Lab and will reside in the Erma Byrd building. The Hendrix laboratory discovered that aggressive cancers can re-express the embryonic morphogen Nodal, a TGF-beta signaling molecule that contributes to maintaining pluripotency and is associated with stem cells, but do not re-express its primary inhibitor, Lefty. Since cancer stem cell populations are thought to contribute to drug

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"Science, my lad, is made up of mistakes, but they are mistakes which it is useful to make, because they lead little by little to the truth".
~ Jules Verne

[Chair's Corner]

I was looking at an early draft of the The [CATALYST] and was struck by the article on grants on page 8. Over the course of the summer, faculty in the Department were awarded $4,156,125 in new grant funding. While we are generally aware of the recent successes of our faculty, tallying the awards underscores just how successful we have been. Congratulations (again) to Roberta, Elena and Jianhai!!

I would like to acknowledge and thank all of the behind the scenes players who have helped our faculty succeed over the past few years. Thanks to the mentors who have made the time to guide, critique, read and re-read proposals, as competitive applications have been developed and finalized. Thanks to all of our colleagues (both within Biochemistry and in other Departments) who have taken time to attend "faculty-only research forum" or other venues to discuss (sometimes heatedly) ideas and early drafts of aims to build the strongest foundations possible for grant applications. Special thanks to the administrative support in the Department (especially Lana!) for all of their efforts to support the faculty during grant writing. I think the faculty agree that the ability of the departmental administration to shoulder the burden of development of much of the bureaucratic components of grant applications, allowing faculty to focus on the science, has had a very positive impact. In my view, we have developed the culture and the administrative infrastructure, not just to succeed, but to excel in our research mission. Kudos to you all!

Securing extramural support is challenging given the level of financial support for funding agencies. Last year we were given a reprieve from flat budgets for NIH, when Congress increased the NIH budget by $2 billion. Despite support in the House ($1 billion) and Senate ($2 billion) for an increase in the NIH budget this year, this week Congress passed a continuing resolution to fund the government, i.e. to continue operations under last year's budget. The continuing resolution expires on December 9, so when Congress reconvenes after the election, it will have to approve a new budget (hopefully with an increase for research funding) or pass another continuing resolution (no increase for anything). In what may be a lame duck session, Congress will take action on an issue that could have a significant impact on research funding for several years.

[News & Announcements cont'd]

resistance and recurrence, this work suggests that Nodal may be used as both a diagnostic marker and therapeutic target for aggressive cancers that become resistant to conventional front-line therapies. They are continuing this work in partnership with the pharmaceutical companies AbbVie and TaiRx, Inc.

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Two Grad Students have presented their final defense!

Nachiket Pendse, Graduate Student Biology Dept. with Dr. Vishy Ramamurthy's Lab, defended on Tuesday, August 16th, 2016 at the Eye Institute Lecture Hall.

The title of his presentation was "***Role for protein prenylation and CAAX processing in photoreceptor neurons***® Nachiket is a Graduate Student in the Biology Graduate Program.

Zachary Wright, Graduate Student in the Biology Dept. with Dr. Vishy Ramamurthy's Lab, defended on Thursday, July 21st, 2016 at the Eye Institute Lecture Hall. The title of his presentation was: "***Complex Regulation of Protein Trafficking and Photoreceptor Cell Development by Small GTPases***"

Zach is in the Pharmaceutical & Pharmacological Sciences, School of Pharmacy PhD program.

Best of luck to all our Graduate Students!

"Every adversity, every failure, every heartache carries with it the seed of an equal or greater benefit".
~ Napoleon Hill

[News & Announcements - Grants Updates]

Things have certainly been moving in the right direction for faculty obtaining research dollars. Since our last issue, several of our enthusiastic researchers have successfully secured extramural dollars to support their research endeavors. At a time where securing grant dollars is not such as an easy feat, a special congratulations goes out to the following individuals whose tireless efforts and hard work has finally paid off!

Congratulations to ***Dr. Roberta Leonardi***, Assistant Professor of Biochemistry, who just secured a $1,856,000 funded, 5 year MIRA R35 project from the National Institute of General Medical Sciences to study the mechanisms through which Nudt7 and Nudt19 regulate lipid and carbohydrate metabolism in the liver and kidney and to develop approaches to modulate the activity of these enzymes. The title of her 5 year project is ***¦Changes in coenzyme A levels are a key mechanism regulating metabolic pathways".***

Congratulations also goes to ***Dr. Elena Pugacheva***, Associate Professor of Biochemistry, who just secured a $358,875 funded R21 project from the National Cancer Institute to determine the molecular mechanism(s) of KIF2C-driven cilium disassembly and any therapeutic benefits of cilium restoration in GBM patient derived xenograft (PDX) models. The title of her 2 year project is ***¦The role of KIF8C/AURKA signaling in cilia loss and progression of glioblastoma".***

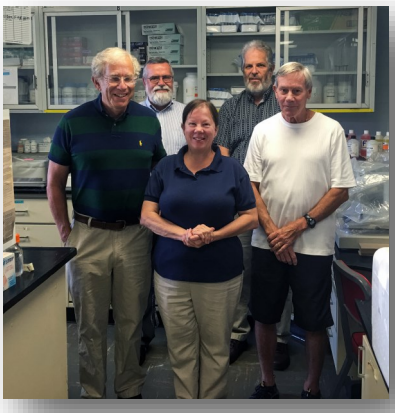
A second shout out goes to Dr. Pugacheva for also securing a National Cancer Institute, $1,781,250, 5 year competing renewal for her R01 project focused on determining the role of nuclear AURKA in metastasis in TN and HER2+ breast cancers. The title of her 5 year project is ***¦The role of HEF1/NEDD9 protein in proliferation and invasion of metastatic breast cancer".***

Congratulations also goes to ***Dr. Jianhai Du***, Assistant Professor of Ophthalmology and Biochemistry, who just secured a $160,000 funded project from the BrightFocus Foundation to test specific hypotheses on NAD metabolism under oxidative stress to develop new treatments for Sorsby fundus Dystrophy (SFD) and Age-related Macular Degeneration (AMD). The title of his 2 year project is ***¦NAD metabolism in normal and disease-specific human RPE cells".***

Last, but certainly not least, congratulations goes out to ***Dr. Yehenew Agazie***, who recently secured a $50,000 Pilot grant through the WV Clinical and Translational Science Institute to test and obtain preclinical data that strengthens the preliminary findings on SHP2 as a drug target and on WGMDY as an anti-cancer agent. The title of his pilot project is ***¦Targeting SHP8 for the treatment of HER2-positive breast cancer".***

[Health Sciences Researchers Work Published in Nature Microbiology]

Two WVU Health Sciences researchers recently had their work published online in Nature Microbiology, a scientific journal that publishes exceptional research from across the field of microbiology. The manuscript is entitled **"Spirochaete flagella hook proteins self-catalyse a lysinoalanine covalent crosslink for motility."**



Nyles Charon, Ph.D., professor in the Department of Microbiology, Immunology and Cell Biology and ***Michael Miller, Ph.D.,*** professor in the Department of Biochemistry, initiated the research and collaborated with a nationwide team of investigators to identify the self-catalytic nature of FlgE crosslinking for protein engineering, and its sensitivity to chemical inhibitors.

FlgE is a protein that forms a critical element of the spirochete flagella referred to as the hook. If the hook is incapacitated, the bacteria cannot move and is not infective. They focused their research on Treponema denticola, a bacterium that is part of the human oral microbiome and is associated with periodontal disease. Besides characterizing the covalent cross-link that links FlgE proteins together, they engineered mutants that were not only defective in forming the cross-link, but lacked motility. The lysinoalanine cross-link they identified is highly unusual in all living cells, but the FlgE's capacity to self-catalyze covalent cross-links is remarkable, as few proteins in nature are able to carry out this type of reaction.

This particular research is relevant to paving the way for the development of new drugs that inhibit cross-linking and treat spirochetal diseases, including Lyme disease, syphilis, and periodontal disease. Furthermore, the ability to exploit the self-catalytic reaction may be important in engineering cross-links in other proteins besides FlgE, as for example, for the delivery of drugs for cancer treatment. Their research was supported by a grant from the National Institute of Dental and Craniofacial Research, one of the National Institutes of Health in the U.S. Department of Health and Human Services.

http://www.hsc.wvu.edu/news/storyhealine=health-sciences-researchers-work-published-in-nature-microbiology

Bill Wonderlin, Ph.D.

Associate Professor
Department: Physiology

Michigan State University
College of Human Medicine

What have you been up to since you left WVU? I joined the Department of Physiology at Michigan State University in early 2014. MSU's College of Human Medicine has campuses in East Lansing and Grand Rapids, and I am one of six basic scientists teaching in Grand Rapids. During my first two years I gave lectures, lead the histology lab, and coordinated the two-semester cellular and systems physiology courses. BUT, beginning this Fall we are implementing a brand new and radically different curriculum. We have completely replaced the typical two-year, lecture-based "boot camp" approach with an early immersion of medical students into clinical experiences, beginning in their ninth week of medical school. The basic sciences are being delivered via a variety of experiences, including variations on team-based learning activities, small group activities through scholar groups in learning societies, labs, and simulations, but not lectures! It's a just-in-time delivery of basic science content organized around clinical complaints. It's a bit like copying a traditional curriculum onto post-it notes and then rearranging the notes into about 100 clinical complaints. Putting this just-in-time delivery into operation has been a huge challenge. On the positive side, the students are highly motivated to learn the basic sciences when they can clearly recognize the clinical significance. But, it is very difficult to drill deeply into the basic science when they have not had foundational training. I am the Director of the Early Clinical Experience, the initial 24 weeks of the curriculum, and our team is scrambling to stay ahead of the students as we move along through our first semester. Of course, I feel well prepared for the challenge of last-minute curricular development, given the number of times at WVU that I handed out lecture notes still warm from being printed only minutes before a lecture!

What do you enjoy most about your current position, field of study, or your current life endeavors?

The transition to a new academic institution and a new academic role has been relatively easy, and I highly recommend it as a stimulating jolt to one's academic life. Although I miss having a lab and being involved in research projects, my new role as a full-time educator has had its own rewards. As coordinator of the two-semester cellular and systems physiology courses I had the opportunity to learn physiology from a much broader perspective, and it has been an eye-opening experience. It has also been fun to lead the histology lab, and my personal goal has been to modernize the lab by bringing more cell biology into a lab experience dominated by traditional H&E images. It has also been interesting to be at a community-based medical school. MSU does not have a teaching hospital. Instead, a significant component of our teaching faculty for problem-based learning and other group activities includes a large number of physicians from the Grand Rapids and East Lansing communities who teach on a part-time basis. These physicians are highly motivated to work with our students, and there is an interesting sense of ownership of the medical school by the community.

What advice would you give to new faculty here at WVU?

In hindsight I wish I had taken better advantage as a new investigator at WVU of opportunities to learn more from our own medical school curriculum. Sitting in on clinically-oriented lectures can provide a great opportunity to expand one's ability to step outside of our basic science silos and view basic science through the lens of clinical relevance. Although some mentors might argue that young faculty should not waste any time in activities outside of their efforts to get funded and be productive, a medical school curriculum provides a wealth of "free" opportunities for expanding our insights into clinical questions that are relevant to our basic science research.

How did your experience at WVU contribute to your professional career? WVU provided opportunities and strong motivation for me to develop professionally both as a researcher and an educator. I have always had the highest respect for colleagues who can excel in both roles. In my current role in developing the new curriculum at MSU, I draw on the skills I developed at WVU in teaching both gradu-

[Alumni Spotlight, Cont'd]

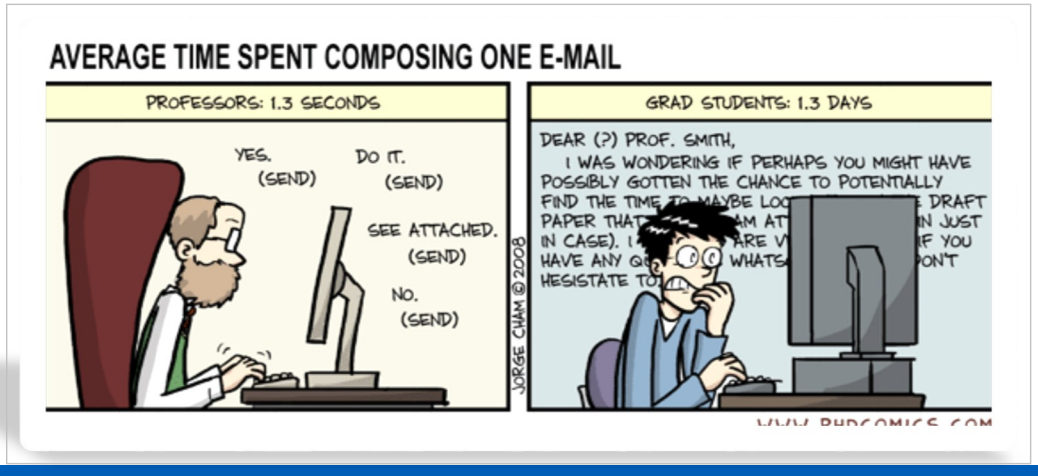
ate and medical students, as well as a broad range of formal and informal (I miss the proteins journal club!) opportunities to learn and use basic science knowledge in my research.

What advice do you have for students getting ready to graduate during these difficult economic times? Think broadly about how you can find satisfaction in academia and try not to be locked into traditional career paths.

Any additional comments you'd like to include? Linda and I have greatly enjoyed Grand Rapids and West Michigan in general. Grand Rapids is large enough to provide plenty of urban adventures (Beer City USA), and the great outdoors of West Michigan is truly great. We are having fun paddling the lakes, biking an amazing number of rail trails, and enjoying hiking and X-country skiing in local parks. And, when we have the time to get away, we are still enjoying visits to the Adirondack Mountains.

[Recent Publications]

- Murphy D, Cieply B, Carstens R, **Ramamurthy V**, **Stoilov P**. "*The Musashi 7 Controls the Splicing of Photoreceptor-Specific Exons in the Vertebrate Retina*". PLoS Genet. 645^{0} Aug 5^{3};56(^{2}):e544^{0} 69^{0}. doi: 54.57^{1} 5/journal.pgen.544^{0} 69^{0}. eCollection 645^{0} Aug. PubMed PMID: 27541351.
- Pifer PM, Farris JC, Thomas AL, **Stoilov P**, Denvir J, **Smith DM**, **Frisch SM**. "*Grainyhead-like 2 inhibits the coactivator p300, suppressing tubulogenesis and the epithelial-mesenchymal transition*". Mol Biol Cell. 645^{0} Aug 5;6^{1} (59):68$^{1\,3}$ -92. doi: 10.1091/mbc.E16-04-0249. Epub 2016 Jun 1. PubMed PMID: 27251061; PubMed Central PMCID: PMC4966987.
- Gorodetsky AA, Kirilyuk IA, **Khramtsov VV**, Komarov DA. "*Functional electron paramagnetic resonance imaging of ischemic rat heart: Monitoring of tissue oxygenation and pH*". Magn Reson Med. 645^{0} Jul;$^{1\,0}$ (5):794-8. doi: 10.1002/mrm.25867. Epub 2015 Aug 24. PubMed PMID: 26301868; PubMed Central PMCID: PMC4766065.
- **Miller MR**, Miller KA, Bian J, James ME, Zhang S, Lynch MJ, Callery PS, Hettick JM, Cockburn A, Liu J, Li C, Crane BR, Charon NW. "*Spirochaete flagella hook proteins self-catalyse a lysinoalanine covalent crosslink for motility*". Nat Microbiol. 645^{0} Aug 8;1(10):16134. doi: 10.1038/nmicrobiol.2016.134. PubMed PMID: 27670115. ***(See Full Story on Page 3)***



[Meet Our Office Staff]

Janelle Weaver
Office Administrator

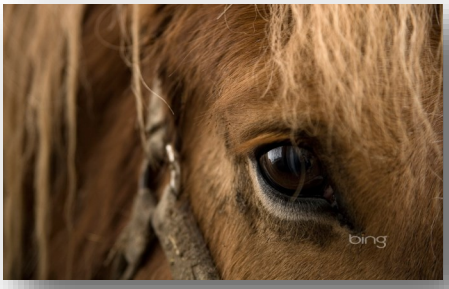
I grew up outside of Philippi, WV in a more rural setting and always wants to move somewhere bigger! I attended (and loved) WVU, graduated in 2007 and decided I still wanted to move somewhere bigger. So with the help of my parents I moved to Atlanta, GA! I actually moved to Atlanta to attend massage therapy school but after I finished, I ended up being hired into a payroll position with a staffing company. It was fast-paced and never ending, but I worked with great people that quickly became close friends, which helps make the job fun!

Traffic was bad. It is much worse than Morgantown traffic so I try not to complain about it now! After 4 years I came to realize I am not a city girl, I'm a country girl at heart… a mountain momma ;).

I moved back to Morgantown in 2011 and while a lot has changed for me since my move back, it was the best decision I've made! I'm currently planning my wedding with my fiancé, James Hill, and taking care of our two very furry cats Nala & Leo. I love cake, cookies, dark chocolate and a good IPA… then I run and lift weights so I can enjoy them all!

Gina Mazzetti
Administrative Associate

I grew up in the very small town of Gallitzin in the Allegheny Mountains of Pennsylvania. I have lived in a few other places from northern Ohio to Central Texas, but I always found myself missing the mountains! Living and working in Morgantown and in West Virginia is very similar to "home" for me. This place grows on you and becomes a source of comfort and beauty that I appreciate every day. I have been hiking, bicycling, and camping many times this summer in and around these mountains. I have spent many hours on the GAP (Great Allegheny Passage) which runs from Washington, DC to Pittsburgh, PA.



My only son is an adult now and just purchased his first home in Altoona PA. He is a very hard working, kind and generous young man and I am very proud of him. He has a beautiful daughter, so yes, that makes me a Grandmother. She calls me GiGi, and ironically, that's what all my family called me when I was very, very young.

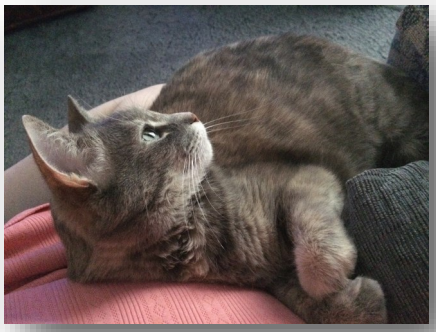
As anyone who knows me at all, knows how much I enjoy horses. I am lucky enough to have wonderful friends who share their 4 beautiful steeds with me! The trail ride adventures are the most fun. All is right with the world when I am anywhere near these magnificent animals. My life is filled with special friends and I look forward to many more wonderful, exciting adventures!

Carol Sholtis
Accounting Assistant II

Just a little bit of information about myself since I was asked by Dr. Schaller and we all know we can't say no to him.

[Meet Our Office Staff, Cont'd]

First of all, I grew up and still live in PA to this day. I grew up in Whitehouse PA – a little town on Route 857 going toward Rich's Farms. If you blink you might miss it! I attended Albert Gallatin High School and graduated from West Virginia Career College in 1988 with an Associate Degree in Business Administration. After graduating from the Career College, I started to work at WVU in the Industrial Engineering Department in September 1988. I joined the Biochemistry Department in August 2005 and have been here ever since.



I am married to a great guy named Bill and we recently just celebrated our 22nd Wedding Anniversary in May. One of the things that I like to do is travel to the Outer Banks area of NC. I would love to go up in the light houses but unfortunately I am afraid of heights, so that will never happen. I love to shop and if anyone knows me very well, QVC is my favorite. I had a great vacation this past July with my girlfriends as we call it "Girls Vacation" to the Lancaster and Hershey PA area. QVC is not far from there, so we had to stop and visit and shop of course.

We do not have kids but we do have a fur baby cat name Molly Jean. She is so sweet and such a baby!

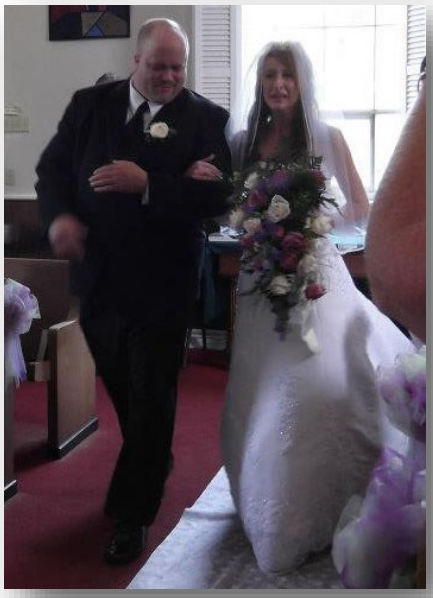
David McDonnell
Web Developer/IT Support/CSC

I grew up in a small town called Venice, in Washington County, PA, about an hour north of Morgantown. In my spare time, I enjoy dog training, reading, martial arts, movies, etc. I have studied and taught martial arts since the age of 15, and I have competed in state and regional level competitions in my younger years.

As I got older, I focused more on the defensive aspects, and less on competition, since healing from competitive injuries is much less fun than it was when I was 25! As I get older, I focus on teaching and training, everything from MMA to Women's Rape Defense workshops, to teaching kids, etc.

My daughter Morgan is 24, and is the light of my life. She has given me 3 beautiful grandchildren, Kolby, Khloee, and Korlynn, and in January we will welcome the fourth grandchild, Kimber. I have two godsons who are Morgan's brothers, James and Jordan, from her mom's second marriage. They are like my own kids.

The kids have a boxer named Goofy that I bought them for Christmas 2 years ago. My favorite dog breed is the German Shepherd, which I have owned two. Beja was the first, and most recently Endoj, who is living out his golden years on a 23 acre farm with his own stall in the barn, and free reign to wander all around the farm. I might get another puppy in the near future, but not sure how soon.



Between my daughter, my grandkids, godsons, and my own hobbies and pastimes, my life is full, and gets better every day.

10 Things you didn't know about:

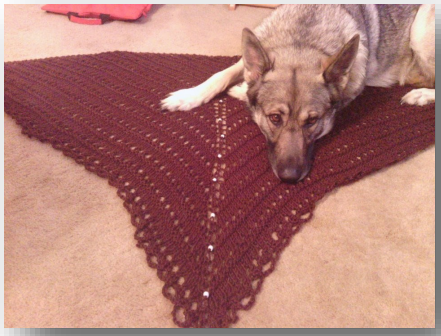
Deborah Corbin

The Basics
Title: Research Specialist Sr.
Office/Lab: Leonardi

1. **What was your very first job?**
   I worked with my mom at a daycare, I was eight so the money was "under the table"

2. **Weirdest food you've ever eaten?**
   Whole baby octopus (Stephanie!)

3. **If you had to do it all over again, what would you study in school?**
   If I had it all to do over again I wouldn't have gone to college and instead I would have liked to have been a horse jockey.



4. **Have you ever broken the law?**
   Yes, once when I lived in Sabraton my now husband and I set off fireworks in the backyard. Not the little ones but 2.5 inch mortars that you probably could have seen from downtown. Then officer Knight came (yes he drives a trans am when not on duty) and sited us with tickets…best $125 ever!

5. **Favorite guilty-pleasure TV show?**
   Teen mom (argh, I know!)

6. **How do you take your coffee and/or tea?**
   Like I like my men, cold and bitter.

7. **What is your most prized possession?**
   My electric pressure cooker (who doesn't like a whole chicken in 25 minutes?)

8. **Where/when did you meet your significant other?**
   At a bar, where else?

9. **Any hobbies people might be surprised to know about?**
   Before I had my daughter and moved to my "farm" I spent a lot of my free time knitting and crocheting.

10. **Are you superstitious?**
    How so? Only when it comes to experiments in the lab, like western blots (spooky antibodies).

"To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science".
~ Albert Einstein

[Meet Our New Students]

Emily Minor

I'm an MD/PhD student at WVU. I completed my first 2 years of medical school and am just beginning the PhD phase of the program in Dr. Rajendran's lab. We study digestive diseases, such as ulcerative colitis and celiac disease. I am interested in better understanding iron transport with the hope of developing novel therapies to improve iron absorption. I am from Florida originally and completed my undergraduate studies at the University of Miami. Both of my parents grew up in West Virginia, so this has always been my second home. Outside of school I enjoy running, reading, and traveling. Aviation is also a huge passion of mine. I got my pilot's license 5 years ago and have slowly been building up flight time since then. I hope to one day have my own plane!

Hannah Wilson

I am the newest member of the Frisch Lab. As a third year MD/PhD student, this is my first year in the Cancer Cell Biology PhD program. After spending two crazy years in medical school and three summers completing rotations and graduate coursework, I am incredibly pleased to have found a happy research home for the next few years. Ultimately, I plan to pursue residency training in Radiation Oncology and use the skills I develop as a scientist to conduct clinical/translational research within my practice.

Trey Rottgen

I am an MD/PhD student and am entering my fourth year of graduate school. I participate in the cellular and integrative physiology program, however my P.I. is Dr. Rajendran. My research interests have always included a passion for electrophysiology, which includes a detailed investigation of specific ion channels in different diseases. In Dr. Rajendran's lab, we have a primary focus on electrolyte transport in ulcerative colitis, and the role it plays in the development and morbidity of the disease. Personally, I am a lifelong resident of the state of West Virginia. I attended WVU for my undergraduate education and graduated with a B.S. in exercise physiology. Aside from school, I am an avid sports fan and am always up for a game of Ultimate. Unsure of what Ultimate is? Find me and ask me!

[Coffee Break]

Science

E O H K T R H E S Q T Z X C S P G I X S C
L S L A D E R Y W U N R P L R D C S L B A
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AREA
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AVERAGE
BEAKER
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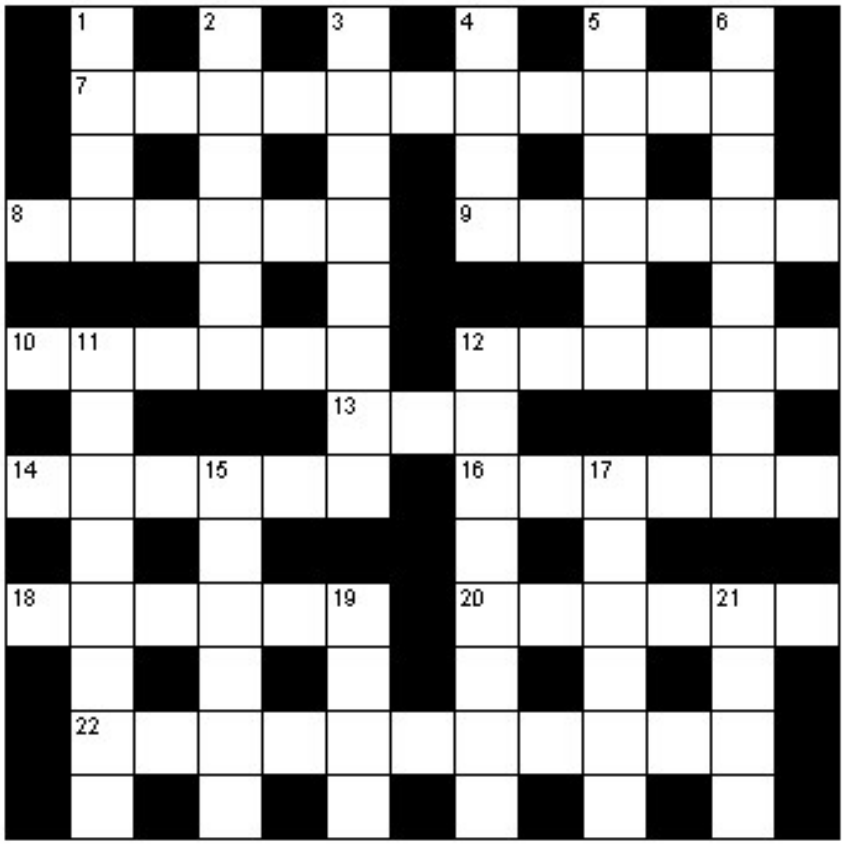
ELECTRONS
FLASK
GRADUATED CYLINDER
HYPOTHESIS
INDEPENDENT
INTRODUCTION
LENGTH
MASS
MATERIALS
METHODS
NEUTRONS
OBSERVATION
OPAQUE
PHYSICAL
PROPERTY
PROTONS
RESULTS
RING STAND
THERMOMETER
TRANSLUCENT
TRANSPARENT
VARIABLE
VOLUME
WIRE GUAZE

26 September



Across

7 Delighted (4,3,4)
8 Symbol (6)
9 Repaired (6)
10 Of a choir (6)
12 Seller of cloth (6)
13 Function (3)
14 Archer's missiles (6)
16 Quarter (6)
18 Spiritlessness (6)
20 Handsome Greek god (6)
22 Stamp-collector (11)

Down

1 Shape (4)
2 Underground room (6)
3 Incentive (8)
4 Quantity of paper (4)
5 Country formerly part of Yugoslavia (6)
6 Unseemly (8)
11 Sailors' dance (8)
12 Beaten (8)
15 Get (6)
17 Imaginary ideal place (6)
19 Twelvemonth (4)
21 Overdue (4)

Crossword Puzzle answers located on the back page [No L  KING...]

[Upcoming Events]

WVU and Morgantown Upcoming Events (October through December 2016)

September 2016				
9/29 - 10/2/16	Buckwheat Festival	8 - 10pm	Kingwood, WV	www.buckwheatfest.com/
October 2016				
10/1/2016	Mountaineer Football vs. Kansas State	3:30 pm	Milan Puskar Stadium	
10/7/2016	Art's Walk downtown Morgantown	6-9 pm	Downtown Morgantown	Arts Walk Downtown
10/7 - 10/9/16	WVU FALL Family Weekend	All day	Morgantown, WV	sabrina.cave@mail.wvu.edu
10/9/2016	Fall Children's Festival	1-4 pm	WV Botanic Garden, Tyrone Rd.	http://www.wvbg.org/
10/13/2016	Men's Basketball Gold-Blue Debut		Wheeling, WV	
10/22/2016	Mountaineer Football vs. TCU	TBA	Milan Puskar Stadium	
10/28 - 11/6	Mountaineer Week		WVU	www.mountaineerweek.wvu.edu/
November 2016				
11/5/2016	Mountaineer Football vs. Kansas	TBA	Milan Puskar Stadium	
11/8/2016	Election Day - University Closed		WVU Holiday	
11/19/2016	Mountaineer Football vs. Oklahoma (True Blue)	TBA	Milan Puskar Stadium	Fans, wear blue for the game.
11/19-11/27	Fall Recess			
11/23-11/25	Thanksgiving Holiday - University Closed		WVU Holiday	
December 2016				
12/3/2016	Mountaineer Football vs. Baylor	TBA	Milan Puskar Stadium	
12/5/2016	Holiday Luncheon	11:30 - 2:00	George Wirtz Memorial Library	
12/6/2016	Last Day of Classes for the Fall 2016 Semester			
12/8 - 12/14/16	Final Exams Week			
12/15/2016	Winter Recess Begins			
12/17/2016	Commencement			
12/23-27/2016	Winter Holiday - University Closed		WVU Holiday	
1/2/2017	New Year's Day (Observed) - University Closed		WVU Holiday	

Check out the Biochemistry Website

Crossword Puzzle Solution