

The [CATALYST]



[News & Announcements]

Dr. Yehenew Agazie received a 5-year R01 grant from the National Cancer Institute, which is a component institute of the NIH. ***Congratulations Dr. Agazie!*** (see page 3)

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Aaron Robart, has won the **Ralph E. Powe Junior Faculty Enhancement Award**

Oak Ridge Associated Universities (ORAU) invests in the future of science through awards programs for young faculty at member institutions. The Ralph E. Powe Junior Faculty Enhancement Awards provide seed money for research by junior faculty at ORAU member institutions. These awards are intended to enrich the research and professional growth of young faculty and result in new funding opportunities. ***Congratulations Aaron!***

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Stephanie Shumar's first author paper entitled "**Nudt19 is a renal CoA diphosphohydrolase with biochemical and regulatory properties that are distinct from the hepatic Nudt7 isoform**" has just been accepted for publication in the Journal of Biological Chemistry. ***Congratulations Stephanie!***

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Congratulations to David Smith and Tiffany Thibaudeau on publishing a paper in Nature Communication entitled "**A common mechanism of proteasome impairment by neurodegenerative disease-associated oligomers**". (see page 7)

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E.J. Van Liere Memorial Convocation & HSC Research Day The 53rd Annual event was held on March 22nd & 23rd 2018. We would like to congratulate all the award winners, while offering congratulations for a job well done to Daniel Vanderbilt, Urikhan Sanzhaeva, Evan Kerr, Kristina Marinak, Jesse Sundar, and Ashley Brandebura.

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Birthdays

Karthikeyan Narayanan	Mar	19
Claire Smathers	Mar	22
Sherrie Rice	April	4
Emily Sechrest	April	27
Naira Margaryan	April	28
Bradley Webb	April	30
Kristina Marinak	May	11
Thamaraiselvi Saravanan	May	11
Roberta Leonardi	May	15
Lana Yoho	May	24
Mike Gunther	May	26
Brittney Rogers	May	28
Qiang Ma	May	31
Fatimah Matakah	May	31
Skye Hickling	June	4
Elena Pugacheva	June	5
Saravanan Kolandaivelu	June	10
Tiffany Thibaudeau	June	14
Emily Minor	June	18
Mark Tseytlin	June	19
David McDonnell	June	23
Knox VanDyke	June	23
Trey Rottgen	June	27
William J. Canady	June	28

"Now, a living organism is nothing but a wonderful machine endowed with the most marvelous properties and set going by means of the most complex and delicate mechanism."
~ Claude Bernard

[News & Announcements cont'd]



Wirtz Pizza Party / Black Bear Burritos

April 2-6 - **Grad student appreciation week** events. The Department hosted two events on Friday April 6th, a **Pizza Party** in The Wirtz Conference Room, & **Happy Hour** at Black Bear Burritos at 3119 University Avenue.



Aaron Snoberger

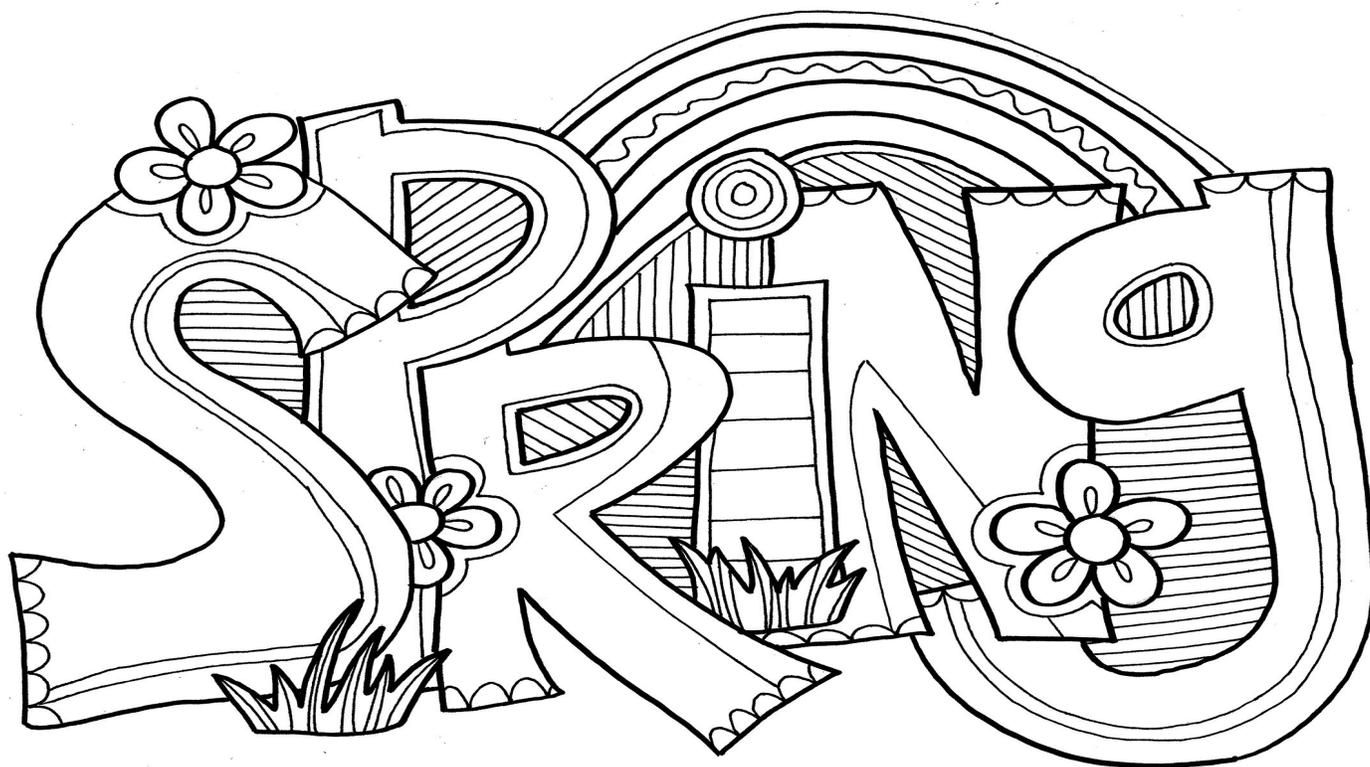
Aaron Snoberger defended his dissertation on Monday May 7th. The title of his dissertation was "*Proteasomal ATPases Hard at Work: The Inner Workings of a Protein Destruction Machine*". **Congratulations Aaron!**



Trey Rottgen

Trey Rottgen defended his dissertation on Friday May 18th. The title of his dissertation was "*A study of epithelial CT secretion in the Murine Distal Colon*". **Congratulations Trey!**

[Creativity Challenge - Use Your Creativity And Color this Image]



"Biology today is moving in the direction of chemistry. Much of what is understood in the field is based on the structure of molecules and the properties of molecules in relation to their structure. If you have that basis, then biology isn't just a collection of disconnected facts."

~ Linus Pauling

[2018 Vice President's Awards]

2018 The Vice President's Awards

West Virginia University honored 10 individuals and two teams at the Health Sciences Center for outstanding achievement on Wednesday, April 4 at 4 p.m. in the Pylons Lobby. The ceremony was open to the entire HSC community.

The Vice President's Achievement Awards are bestowed annually on people and groups who have made significant contributions to the missions of the University and their schools and units.

Winners were nominated by their peers and selected by the Achievement Awards committees.



Staff Awards

Administrative/Managerial - **Lana Yoho**, Post-Award Director in the Office of Research and Graduate Education



Faculty Awards

Teaching Award - **Dr. Andrew K. Shi-emke**, PhD, Associate Professor in Biochemistry in the School of Medicine



[National Cancer Institute Grant]

Yehew Agazie, DVM, PhD, receives a 5-year R01 grant from the National Cancer Institute

A WVU Cancer Institute investigator in the Department of Biochemistry, Yehew Agazie (DVM, PhD) received a 5-year R01 grant from the National Cancer Institute (component institute of the NIH) to study alternative therapeutic strategies for the treatment of HER2-positive breast cancer. Overexpression of the human epidermal growth factor receptor 2 (HER2) is one of the causes of breast cancer. Although current anti-HER2 therapies are effective initially, cancer cells often develop resistance, leading to disease recurrence which is virtually incurable. The study focuses on identification of a new therapeutic target and invention of a new inhibitor (potential drug) against the new target. The project is based on prior work in the



principal investigator's (PI's) laboratory that showed that targeting other molecules that play critical roles in HER2-positive breast cancer may provide better results. Particularly, the PI's group has

shown that inhibition of a protein called SHP2 blocks expression of the HER2 protein, the very cause of the disease, leading to differentiation of a cancer cell to a normal-looking breast epithelial cell. Dr. Agazie has already invented an anti-SHP2 compound and obtained a patent. The anti-breast cancer effect of this compound will be studied in model mice and patient-derived xenograft tumors. The long term goal is to come up with a lead compound for developing anti-SHP2 drugs. Drs. Lockman, Rojanasakul, and Wen are co-investigators in the project.



The [Spotlight]

10 Things you didn't know about:

Bradley Webb

The Basics

Title: Assistant Professor
Office/Lab: 3121A, 3127

1. Where are you from?

I was born in Vancouver and raised in Cochrane, Alberta, a small town just outside of Calgary on the way to Banff.

2. Where did you go to University? Post-doc?

I did my undergraduate and graduate studies at Queen's University at Kingston before moving to UCSF in San Francisco for my postdoctoral fellowship.

3. Where/when did you meet your significant other?

I met my wife, Katy, in San Francisco. Despite only living about 3 blocks apart for years, we met through online dating. We have been married since June 2016. Katy is a superstar immigration lawyer and champion of Berlin-style ping pong.

4. Any kids?

We celebrated the arrival of our little Mountaineer on May 26th, 2018. Her name is Annabelle Frances Webb. She weighed in at 8lbs., 11 oz. and she measured 20.5 in.



5. Any pets?

We have a small, black cat named Keira. Keira is a shy little kitty who thinks all people are terrifying. Her hobbies include "singing" to birds in the back yard, chasing her stuffed squirrel, and making sure I am up promptly in the morning to fill her food bowl.



6. Any hobbies, pastimes, or activities people might be surprised to know about?

I played Canadian Football in University for 5 years before focusing on my scholastic career. Answers to the inevitable follow-up questions – Yes, Canadian Football is a real thing. No, it isn't soccer. Yes, it is real Football, just like American Football, but with few rule changes. No, I'm not lying.

7. Any weird links to the department?

It turns out I probably played in a high school basketball tournament against Aaron Robart. My memory is a little fuzzy but I'm certain that my team won.

8. What was your very first job

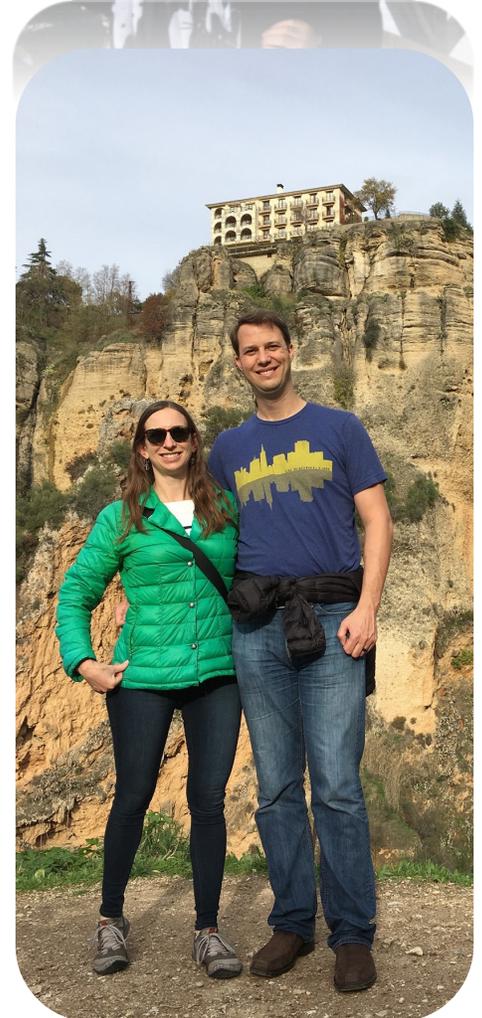
I worked in an ice cream factory, making ice cream and cleaning up. A couple of times a week I was able to take about a liter of "run off" ice cream home with me. By the end of the summer I was sick of eating ice cream.

9. Hands-down favorite movie?

Scent of a Woman

10. Biggest pet peeve?

People who wear socks with sandals.



*"The only phrase I've ever disliked is, "Why, we've always done it that way." I always tell young people, Go ahead and do it. You can always apologize later."
~ Grace Hopper*

Laura Stabile, Ph.D.

Assistant Professor

WVU Graduate Advisor: Lisa Salati, PhD

Degree Received/Graduation Year:

PhD 1999

Current Position/Title/Location:

Associate Professor of Pharmacology & Chemical Biology, University of Pittsburgh UPMC Hillman Cancer Center

What have you been up to since you left WVU?

Where has the time gone? After graduating from the Department of Biochemistry in 1999, I started a post-doctoral fellowship at the University of Pittsburgh Department of Pharmacology under the mentorship of cancer pharmacologist Jill Siegfried, PhD and pulmonologist Joseph Pilewski, MD. Going into my post-doctoral training, I wanted to switch gears from my graduate training in nutrient control of cellular functions and metabolism to study cancer biology. During my time as a post-doc, I obtained a fellowship award from the American Lung Association which initiated my curiosity of the investigation of hormones and growth factors in lung cancer, a disease that was not thought to be hormonally regulated. Since lung cancer was increasing in women to epidemic levels and one in five women diagnosed with lung cancer were never-smokers, we hypothesized that hormones may play a role in this disease. After a 4-year post-doc, I was appointed to my first faculty position as Instructor in 2003 and was promoted through the ranks of Assistant Professor and now Associate Professor. My efforts in the laboratory allowed me to secure NIH funding as well as funding from multiple foundations to further explore the mechanism of hormonal and growth factor signaling in lung cancer. Working at a NCI-Designated Comprehensive Cancer Institute, together with my clinical collaborators, we were able to rapidly translate these preclinical efforts into several clinical trials testing the anti-tumor effects of



anti-estrogens in lung cancer patients. Dr. Salati will be pleased to know that I am circling back to my biochemistry days and have a new research interest in dietary modulation and metabolism in cancer! While it is hard to believe that I have been at the University of Pittsburgh for 18 years, it is even harder to believe that my husband and I recently celebrated our 20 year wedding anniversary and have one son in his last year of high school and one daughter in her first year of high school. In the blink of an eye, we went from changing diapers to visiting colleges and discussing career options. I am looking forward to what the next 20 years will bring.

What advice would you give to current or incoming graduate students here at WVU?

Find good mentors. Choosing your advisor is one of the most important decisions that you will make and is the most important relationship that you will have in graduate school. Choose someone who will support you in developing your strengths and who also recognizes your weaknesses. Do your homework on this. Your mentor should be

right for you...someone who inspires you and creates an optimistic environment. You can have more than one mentor besides your primary advisor during your graduate career, and mentors can serve different purposes. You will need letters of recommendation for many early career grants, promotions, etc. and the relationships that you form during your graduate career will be of utmost importance.

Find ways to challenge yourself. The more that you are engaged with your work, the more you will enjoy it. Don't take the easy road. Not only will you achieve more, you'll have a better time doing it also. Getting a PhD takes a lot of dedication and hard work, but it doesn't stop there. There is always something new to learn and your research or career may take you in a completely new direction, forcing you to learn new concepts and techniques along the way. Take on the challenge.

Ask questions and obtain feedback. Don't be afraid to ask questions- during a seminar, at lab meetings or journal clubs. This is part of the learning process. And always get feedback on your work, including your experimental design, data analysis, manuscripts, abstracts, presentations and grant applications. Learn from your mistakes and correct them. Spend time with other graduate students bouncing ideas off of each other and troubleshooting.

Have fun. If you aren't happy, you will not be successful. So have fun in the process. Make friends and balance your work and personal life. And as Dr. Salati would say, "Don't wish your life away!"

How did your experience at WVU contribute to your professional career?

During my graduate training at WVU, I not only learned how to do basic science, I also learned how to think independently. WVU laid the foundation for future success. I also learned so many basic skills that have carried on with me today, including organizational and communication skills. For

The [Alumni Spotlight Cont'd]

example, I learned how to give an effective seminar, not just a one hour long seminar but also how to concisely present my research in a short time period. These basic skills are the building blocks of any career.

What advice do you have for students getting ready to graduate during these difficult economic times?

Build a strong professional network. Networking is critical for all stages of career development and ultimate success. Every day we meet people who could be important for our career development. Networking is all about building relationships and taking action. Your career growth is dependent on talking to people and making connections. In this era of vast competition in the workplace, networking will be an essential tool in searching for employment. Networking will also help expand your knowledge and allow you to see things from other perspectives. Attend scientific meetings when given the chance



and take every opportunity to present your research. Another aspect of networking is creating an online presence using social media to leverage the full power of virtual communities to open additional opportunities. Being visible and getting noticed is one of the biggest benefits of networking. This will also lead to collabo-

rations in your scientific endeavors, which is vital in these tough times...a team science approach is crucial for high-quality research with limited resources.

Be flexible. Academic careers are not for everyone. There are many possibilities so take time to explore the options to make an intelligent decision on what you may or may not enjoy. Changing jobs or career paths is much more common than one may think. Keep an open mind to all of the possibilities.

Be a go-getter. Be aware of your options and be ready to seize opportunities when they come along. This will separate you from the rest of the pack. However, this does not mean taking on every task asked of you and serving on every committee. You also must learn to say "no" and understand how to prioritize your time.

[2nd Annual Undergraduate Spring Symposium]

The 2nd Annual WVU Undergraduate Spring Symposium

The Office of Undergraduate Research and the Honors College in conjunction with Undergraduate Admissions, the Biochemistry Program and SpeakWrite organize this campus-wide, culminating spring poster event to celebrate undergraduate scholarly activity (research/creative endeavors) whilst encouraging prospective students to decide on attending WVU. In 2018, this event took place on Saturday April 14, 2018 (1-3:30 p.m.) in the Mountainlair Ballrooms. The poster event coincided with prospective student and family attendance at the April 14 "Decide WVU Day" at the Mountainlair.

The Department of Biochemistry would like to congratulate one of our own, from Aaron Robart's lab. Undergraduate student Raisa Nunez won second place for her



poster at the 2nd Annual Undergraduate Spring Symposium. Raisa is a student participating in the new Research Apprenticeship Program (RAP).

Title: **"Co-crystallization of mitoNEET with Thiazolidinediones"**

Raisa A. A. Nuñez,* Werner Geldenhuys and Aaron R. Robart (Biochemistry), "Co-crystallization of mitoNEET with Thiazolidinediones"



"Don't judge each day by the harvest you reap but by the seeds that you plant."
~ Robert Louis Stevenson

[WVU Researcher Investigates Misfolded Proteins]

A WVU researcher investigates the role of misfolded proteins in Alzheimer's, Parkinson's and Huntington's disease. Alzheimer's, Parkinson's and Huntington's disease may have more in common than their effects on the functions of the brain and spinal cord. Finding that common thread could lead to a treatment that could work for all three.

A recent study by David Smith, Associate Professor of Biochemistry in the West Virginia University School of Medicine, suggests that at the heart of all three diseases may be misfolded proteins that are shaped in similar ways. His findings have been published in the journal *Nature Communications*. Neurodegenerative diseases are characterized by the progressive deterioration of the central nervous system—the brain and spinal cord - which can lead to a decline in cognitive function, such as dementia. Neurons, cells that carry messages throughout our body, cannot be regenerated. Some of the most common neurodegenerative diseases are Alzheimer's, Parkinson's and Huntington's disease.

Scientists have long known that a link exists between neurodegenerative diseases and protein buildup in neurons.

"However, no studies have ever found a good reason to explain why the cells protein degradation systems don't work well," says Smith. "That's where our study comes in."



His research focused on how the shape a protein takes, rather than its type, may be what contributes to disease. Smith, who is also a member of the WVU Rockefeller Neuroscience Institute, discovered that when excess proteins adopt a particular formation and accumulate in a neuron, they sabotage the neuron's proteasome—or, in Smith's words, its "protein degradation machinery." He compares it to a garbage disposal with a gate on top.

Normal-shaped proteins are crucial to neural functioning. Without them, the body can't build and maintain neurons that efficiently transmit information to, from and within the brain. Abnormal-shaped proteins may clump together and form molecular complexes called "oligomers," which are toxic to neurons and inhibit the proteasome.

"If you want to get rid of your proteins, you can open the gate to the proteasome

and throw your proteins in one at a time," he said. "We found that some of these toxic oligomers can actually block the gate so it can't be opened, and if you can't open the gate, then you can't degrade proteins, and then they start building up and wreak havoc in the cell." In this way, the process can perpetuate itself and exacerbate a neurodegenerative disease.

Smith and a team of researchers that included Tiffany Thibaudeau and Raymond Anderson, graduate students in the WVU School of Medicine, used purified proteasomes and examined the biochemical mechanism behind the effect. These insights may lead to the design of what Smith described as "small molecules that can act like drugs to prevent the toxic oligomers from inhibiting the proteasome."

Because the proteins at the center of the study were misshapen in the same way yet associated with three different neurodegenerative diseases, the study's findings may apply to a broad range of conditions.

"That means that drugs that counter this inhibitory mechanism could be useful to treat many of these neurodegenerative diseases, including those mentioned here as well as others," Smith said. "It's not often that you can imagine a single drug to have such a wide impact on so many diseases, so we are really excited about these findings."

[Recent Publications]

- ◇ **Tseytlin M, Stolin AV, Guggilapu P, Bobko AA, Khramtsov VV, Tseytlin O, Raylman RR. "A combined positron emission tomography (PET)-electron paramagnetic resonance imaging (EPRI) system: initial evaluation of a prototype scanner."** *Phys Med Biol*. 2018 May 16;63(10):105010. doi: 10.1088/1361-6560/aabfa1.
- ◇ **Tiffany A. Thibaudeau, Raymond T. Anderson, David M. Smith "A common mechanism of proteasome impairment by neurodegenerative disease-associated oligomers"** *Nature Communications* volume 9, Article number: 1097 (2018) doi:10.1038/s41467-018-03509-0
- ◇ **Moye AR, Singh R, Kimler VA, Dilan TL, Munezero D, Saravanan T, Goldberg AFX, Ramamurthy V "ARL2BP, a protein linked to Retinitis Pigmentosa, is needed for normal photoreceptor cilia doublets and outer segment structure."** *Mol Biol Cell*. 2018 May 2;mbcE18010040. doi: 10.1091/mbc.E18-01-0040.
- ◇ **DeVallance E, Branyan KW, Lemaster K, Olfert IM, Smith DM, Pistilli EE, Frisbee JC, Chantler PD. "Aortic dysfunction in metabolic syndrome mediated by perivascular adipose tissue TNF α - and NOX2-dependent pathway."** *Exp Physiol*. 2018 Apr 1;103(4):590-603. doi: 10.1113/EP086818. Epub 2018 Feb 28.

[Young Investigators Present Cancer Research]

Van Liere Research Conference

Several young investigators conducting cancer research at the WVU Health Sciences Center showcased their work during the 53rd Annual Van Liere Research Conference on March 22-23, 2018.

They included the following students from the Cancer Institute's Graduate Program in Cancer Cell Biology:

Kristina Marinak, **Sila Yarnadag**, **Marc Purazo**, **Hannah Wilson**, **Ian MacFawn**, **Maria Voronkova** and **Brenen Pa-penberg** presented posters, and **Jessica Allen** gave an oral presentation.

Kristina Marinak won first place in the Basic Science 4 group for her poster Nuclear Aurora-A Kinase promotes metastasis in Breast Cancer. Marinak's research focused on the role of nuclear Aurora-A Kinase in the progression of triple negative breast cancer and spread of the disease to other parts of the body.

Sila Yarnadag presented "Kinesin motor KIF2C regulates cilia-driven oncogenic signaling in glioblastoma". Yarnadag's research focused on identifying specific mechanisms that contribute to the development of glioblastoma multiforme, one of the deadliest types of brain cancer, with the long-term goal of finding new treatment strategies for the disease.

Marc Purazo presented "NEDD9 adaptor protein regulates HER2-driven oncogenic signaling in breast cancer". Purazo's research looked at new treatment strategies for human epidermal receptor positive breast cancer in which a resistance mechanism has occurred.

Hannah Wilson presented "Patient-Derived Orthotopic Xenograft Model of Breast Cancer-Associated Muscle Fatigue: Novel Pathways in Cancer Cachexia". Wilson's research focused on a new model of breast cancer-induced muscle fatigue.

Advisor: Emidio Pistilli, PhD, WVU Department: Human Performance - Exercise



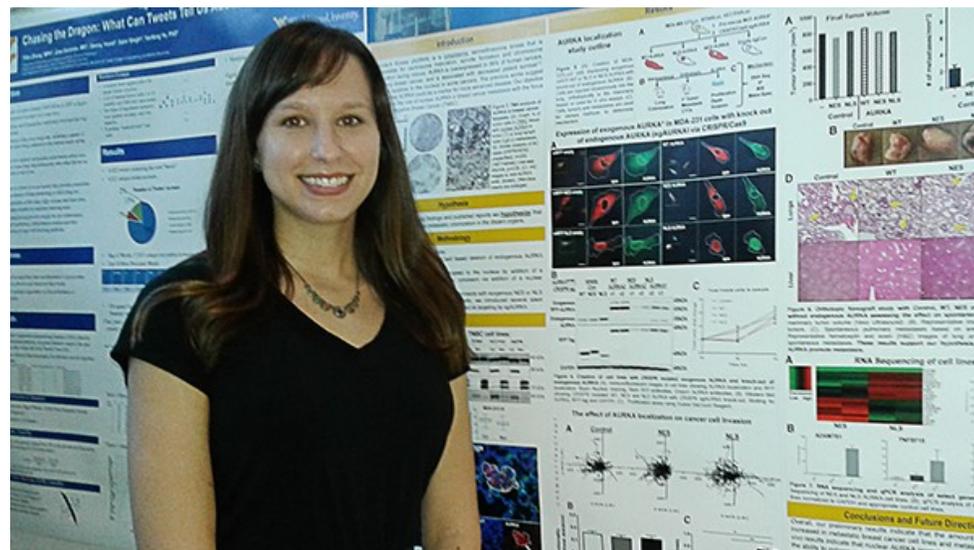
Physiology and Microbiology, Immunology & Cell Biology, member of the WVU Cancer Institute Breast Cancer Program

Ian MacFawn presented "Epigenetic regulation of resistance to NK killing by Epithelial-Mesenchymal Transition".

MacFawn's research focused on under-

Cancer Institute Mechanisms of Metastasis & Therapeutic Response Program.

Maria Voronkova presented "SOX9 regulates cancer stem-like cells and chemotherapy response in non-small cell lung cancer". Voronkova's research focused on the role of a stem cell protein that contrib-



Kristina Marinak poses in front of her first place research poster on triple negative breast cancer.

standing the mechanisms of a particular gene that protects cancer cells from becoming more resilient and invasive.

Advisor: Steven Frisch, PhD, WVU Department of Biochemistry, member of the WVU

utes to how well lung cancer cells respond to chemotherapy. Advisor: Yon Rojanasakul, PhD, WVU Department of Pharmaceutical Sciences, Co-Leader of WVU Cancer Institute Sara Crile Allen and James Fred-

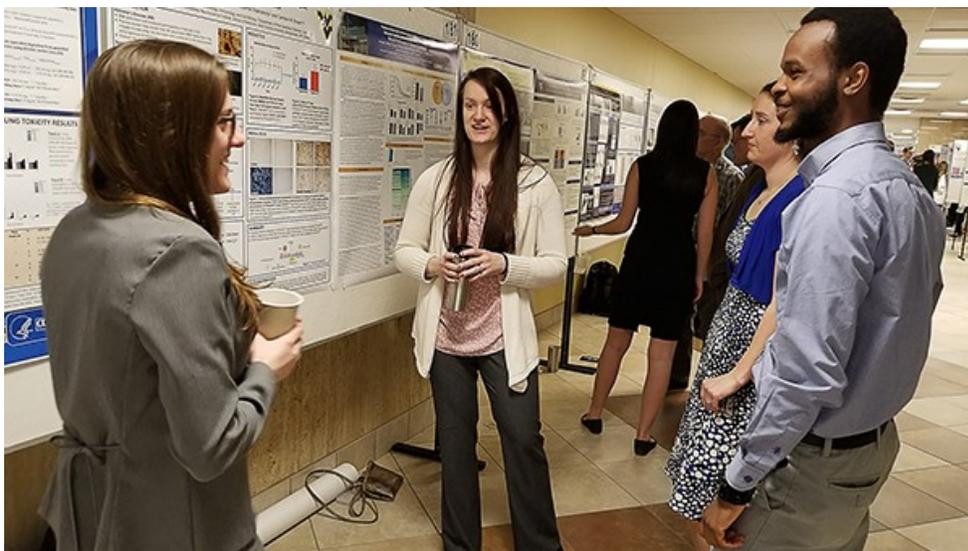
[Young Investigators Present Cancer Research Cont'd]

erick Allen Lung Cancer Program

Brenen Papenberg presented "Molecular Characterization of Mortality Disparity in Tobacco-Associated Appalachian HNSCC". Papenberg's research focused on a newly defined Appalachian health disparity for male patients with stage IV head and neck cancer. These patients have a worse survival rate than similar patients outside of Appalachia, possibly due to increased genetic damage from elevated tobacco usage in the region.

Jessica Allen gave an oral presentation titled "Coronin 1B as a Regulator of HNSCC Invasion." Allen's research focused on the protein coronin 1B which, when expressed at high levels in head and neck cancer, leads to decreased patient survival. She hopes to unravel the mechanism by which coronin 1B makes cancer cells more aggressive.

Daniel Vanderbilt won first place in the Clinical Fellows and Residents category for his poster "Hypoxic gene expression defines novel tumor subtypes in glioblastoma". Vanderbilt's research focused on how the expression of certain genes, in relation



Hannah Wilson shares her research on breast cancer-induced muscle fatigue.

to the decreased oxygen found in aggressive brain tumors, can be used to help group cases into subtypes with different clinical and biological traits. He found that patients with tumors where there was low expression of these hypoxia-related genes, tended to have longer survival, and these tumors were more likely to have mutations of a key gene called IDH1. Vanderbilt is in the WVU School of Medicine Graduate Medical Education Program. Advisor: John Vargo, MD, WVU Department of Radiation

Oncology, and Michael Ruppert, MD/PhD, WVU Department of Biochemistry, and leader of the WVU Cancer Institute Breast Cancer Research Program.

The 53rd Annual Van Liere Research Conference was sponsored by the WVU Office of Research and Graduate Education and is a celebration of Health Sciences Center research.



"Science means constantly walking a tightrope between blind faith and curiosity; between expertise and creativity; between bias and openness; between experience and epiphany; between ambition and passion; and between arrogance and conviction - in short, between an old today and a new tomorrow."

~ Heinrich Rohrer

[Bethany College Outreach—Spring 2018]

What did you do on your spring break?

Four freshmen from Bethany spent their spring break experiencing life as a biomedical researcher. **Eden Rice, Adriana Walt, Lena Grogan, Madelyn Hill** and **Amanda Stewart**, their faculty advisor, were embedded in the Department of Biochemistry for the week.

For five full days they had packed schedules with many opportunities to see first-hand our research teams at work. Labs opened their doors and allowed the students to observe ongoing experiments and engage intellectually with the graduate students and faculty. The students attended lab meetings, where team members discuss their recent results, troubleshoot problems and decide next steps in ongoing projects. They sat in on journal clubs, which are discussions (sometimes intense) of recent papers from the literature and in research forum, an in-house seminar where students and faculty present their research in a semi-formal venue to the rest of the Department for critique, additional

insights and suggestions. Several of the core facilities in the HSC also arranged demonstrations to show some of the cutting edge technologies available to faculty and students at WVU.

Thanks to Amanda for organizing at the Bethany end; Eden, Adriana, Lena and Madelyn for their enthusiasm that did not wane throughout the week; Karen Martin and Ida Washington for taking time to meet with the students; and the students and faculty of the Department, who opened their labs and meetings to provide a glimpse of our professional life to our guests.

"This experience was more than eye opening to the amount of effort put behind the betterment of mankind."

"My favorite part was interacting with the individual labs and being able to see the incredible amount of teamwork between labs. There is no competition, there's always teamwork to go towards the greater good."

~ **Lena Grogan**

"Our week at WVU was spent completely submerged in the academic life that encompasses graduate school. It gave us an idea of what it would be like if we pursued a PhD in Biochemistry or something similar. The labs and their teams exemplified what working together should be like, and showed us as undergraduate students how collaborating together is much more progressive than competing against your neighboring labs."

~ **Eden Rice**

"WVU experience gave me a chance to see what opportunities the future may hold" "Touring all the different labs made me realize that research may be something I'd want to do although I had never thought about it before."

~ **Adriana Walt**

"Visiting WVU made me realize the plethora of different options available to me after I finish my undergraduate program. This experience opened my eyes to the possibilities to various careers in the sciences."

~ **Madelyn Hill**



[2018 Exploring Careers Symposium]

PhD trained? Now what?

A panel of trained scientists currently in a diversity of careers gathered to share their experiences with WVU graduate students and postdocs at the Spring 2018 Exploring Careers Symposium, which was sponsored by the Cell Biology Training Program, the Behavioral and Biomedical Sciences T32, the Stroke T32, the Office of Research and Graduate Education and the Department of Biochemistry.

The event was well received by the participants, "I had a great experience!". The diversity of careers was appreciated, "The event itself was amazing! I loved the broad variety of topics we were able to learn about". Importantly, the participants took the opportunity to really engage with the speakers, "I made great connections, and networked with the speakers of interest to me.". Likewise, the speakers enjoyed the symposium, "It was a fantastic visit!", were

Thanks to all of the participants who made this a very successful event. Special thanks to Gina Mazzetti who provided all of the logistical support for the symposium. Thank you to our guests, Aubrey Daniels (CEO of Aubrey Daniels International), Harish Radhakrishna (Senior Director, Flavors-Chromocell), Erienne Olesh (Assistant Director of Technology Commercialization, WVU), Elizabeth DiNapoli (Medical Science Liaison), Kelly Servick (Writer, Science Magazine), Andre Porter (Science Policy Analyst, ASBMB), Darren Sledjeski (Chief of the Genetic Mechanisms Branch, NIH) and Mercedes Rubio (Program Director, Division of Training, Workforce Development and Diversity, NIH). Thanks also to all of the CBTP, BBS and Stroke student organizers of the symposium, particularly Deidre O'Dell for spearheading student efforts to organize Exploring Careers!



Seventy-eight participants from across the campus registered to attend the day long symposium and hear our guest speakers describe their career paths, requirements and job skills for their positions, daily duties, and pros and cons of their career choice. They also provided advice on how to prepare for a career in their field. The day ended with a panel discussion where the invited speakers addressed questions from the audience, providing both detailed career-specific advice and broad general career advice on a range of topics. The student organizers of the symposium had the opportunity to network with the speakers at a dinner. Participants at the symposium had time during breaks and lunch to converse with speakers of interest.

impressed with the student organizers and participants, "Their questions were insightful" and commented that "The logistics and organization of the Symposium were outstanding."

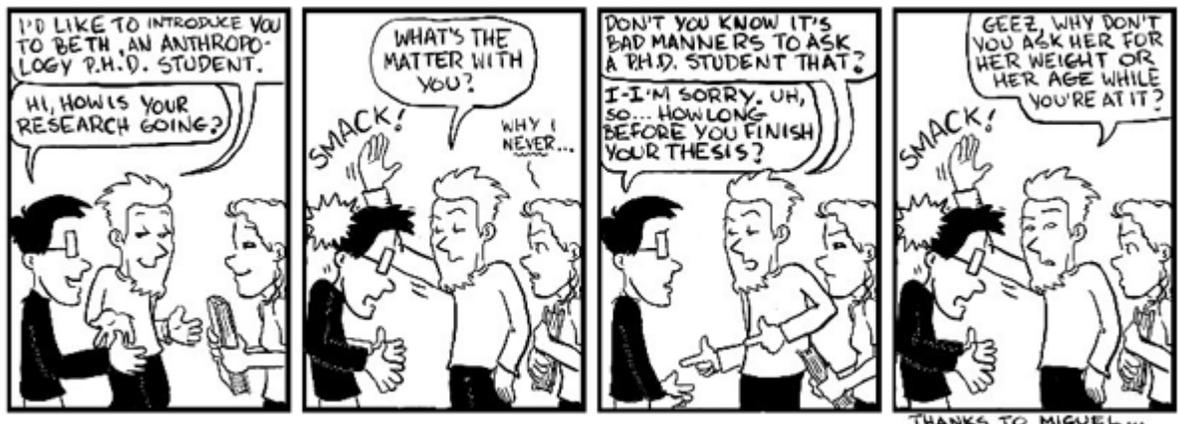


Human Bones

T	C	M	S	E	T	U	M	X	Y	C	C	O	C
P	A	A	T	E	T	T	S	T	E	R	N	U	M
B	I	T	R	A	P	E	Z	I	U	M	T	M	C
L	S	T	I	B	I	A	A	A	U	S	E	F	L
L	C	L	U	P	I	T	T	U	A	R	M	H	A
H	A	M	A	T	E	U	A	S	L	A	P	U	V
V	P	T	N	X	M	P	U	R	C	D	O	M	I
F	U	L	E	R	A	E	A	U	M	I	R	E	C
I	L	S	L	T	L	R	P	T	E	U	A	R	L
B	A	U	E	L	P	L	S	A	I	S	L	U	E
U	E	L	A	H	I	R	U	M	E	F	I	S	T
L	L	M	S	L	A	A	R	S	U	L	A	T	R
A	U	D	V	U	M	U	L	N	A	A	L	S	E
L	A	S	R	A	T	A	T	E	M	A	N	T	U

- TIBIA
- MALLEUS
- CLAVICLE
- STAPES
- ULNA
- TRAPEZIUM
- COCCYX
- FEMUR
- HAMATE
- TALUS
- RADIUS
- METATARSAL
- TEMPORAL
- HUMERUS
- SCAPULA
- PATELLA
- STERNUM
- FIBULA

Play this puzzle online at : <http://thewordsearch.com/puzzle/48/>



JORGE CHAM ©THE STANFORD DAILY

[Crossword Puzzle]

Puzzle Date: April 18, 2018

ACROSS

- 1) Tusked swine
- 6) Guitar lesson topic
- 11) Weather Channel graphic
- 14) Loosen, as neckwear
- 15) Richard Carpenter's singing sister
- 16) Excellent stat for a Cy Young winner
- 17) Crude oil, to a refinery
- 19) On the ___ (furtively)
- 20) Farrow of "Zelig"
- 21) Be hopping mad
- 22) Super Bowl party snack
- 24) File charges against
- 26) Cop's collar, informally
- 27) Translucent window pane
- 32) Guitar lesson topic
- 35) Burn-soothing gel
- 36) Word after user or greens
- 37) Jay in the Television Hall of Fame
- 38) Show as similar
- 40) Shoot-'em-up sound
- 41) "Finish your dinner!"
- 42) "Another helping, please"
- 43) It comes from the heart
- 44) Holdings that can't be liquidated
- 48) Old flames
- 49) Black sheep, so to speak
- 53) Davis Cup sport
- 56) Cropland measure
- 57) Rock's White Stripes, e.g.
- 58) Paul Bunyan's feller
- 59) Scant sympathy
- 62) Loose with the rules
- 63) Bowl over
- 64) Oust, Soviet-style
- 65) CPR expert
- 66) Not as timeworn
- 67) Formers of natural canopies



BUNDLE UP

By Lynn Lempel
Edited By Fred Piscop

DOWN

- 1) Myanmar, formerly
- 2) Broadcasting live
- 3) Like Iraq and Iran, in the 1980s
- 4) Grand Canyon overlook area
- 5) Penguin or puffin
- 6) Yarn purchases
- 7) "Cornhuskers" poet Sandburg
- 8) Jackie's husband after Jack
- 9) Used as support
- 10) Blow up, in a way
- 11) Holey fabric
- 12) Woody's singing son
- 13) Forks over
- 18) Pizzeria request
- 23) An army NCO
- 25) ___-Cuban (musical genre)
- 26) Soccer great with three World Cup wins
- 28) Makes off with
- 29) Way out there
- 30) Snail-mailed or emailed
- 31) "Phantasy Star" game company
- 32) Bass or treble sign
- 33) Learn via the grapevine
- 34) Not duped by
- 38) In need of company
- 39) Supplements to Social Security, briefly
- 40) Long-necked pear
- 42) Like Chipotle's cuisine
- 43) Have a go at
- 45) Meditative discipline
- 46) 26-Down's sport
- 47) Most-traded currency after the dollar
- 50) Be crazy about
- 51) ___ protector (PC accessory)
- 52) Capacious carryalls
- 53) Chaucer offering
- 54) Checkup by the doc
- 55) Word to the first in line
- 56) Woodcarver's tool
- 60) Result of a veto override
- 61) Garment in cold storage, perhaps

For more information about this product, visit syndication.andrewsmcmeel.com

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[Coffee Break]

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

[Upcoming Events]

WVU and Morgantown Upcoming Events (May 2018 through July 2018)

May			
5/4/2018	Artwork of Monongalia County K-10 Students on Display	5 pm to 7 pm	Monongalia Arts Center, 107 High St.
5/5/2018	Mohigan Strawberry 5K Run/Walk	10 am to 12 PM	Morgantown Marriott, 2 Waterfront Place
5/7/2018	Doctoral Dissertation Defense - Aaron Snoberger		
5/8/2018	Election Day - WVU Closed		
5/10-13/18	WVU Graduation	All Weekend	WVU HSC/Coliseum
5/12/2018	Blue and Gold Mine Sale	7:00 AM	Milan Puskar Stadium, Morgantown, WV
5/14/2018	Registration for Summer Term		
5/12/2018	Libraries Rock! Rock Painting for Kids	10:00 AM	WV Botanic Garden, 1061 Tyrone Rd. Morgantown
5/18/2018	The Kentucky Headhunters	6:30 to 11 pm	Metropolitan Theatre, 369 High St., Morgantown
5/25/2018	11th Annual River City Festival of the Arts	Various Times	Szilagyi Center, Rowlesburg, WV
5/28/2018	Memorial Day - WVU Closed		
June			
6/2/2018	Kenny Chesney Concert	4:00 PM	Heinz Field, Pittsburgh, PA
6/7-9/2018	WVU Graduates Emeritus Reunion Weekend	All Day	Erickson Alumni Center
6/8-9/2018	American Cancer Society Relay for Life of Monongalia County	6/8-9/18	Westwood Middle School Track, Morgantown WV
6/13-17/2018	Clarksburg Kennel Club Dog Show	8:00 am each day	Mylan Park, Morgantown, WV
6/16-17/2018	2018 High Point Pro Motocross National	8 am to 6 pm	High Point Raceway, Mt. Morris, PA
6/28-30/2018	2018 Miss West Virginia Scholarship Pageant	7:30 PM	Metropolitan Theater, Morgantown, WV
July			
7/4/2018	4th of July - WVU Closed		
7/6/2018	Deadline to Apply for Summer 2018 Graduations		
7/31-8/4/2018	Mon County Fair	Various Times	Mylan Park, Morgantown, WV
7/26-29/2018	2018 Mountainfest Motorcycle Rally	All Day	Mylan Park, Morgantown WV



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Biochemistry Website

