

The [CATALYST]



[News & Announcements]

Baby Announcement!



Abigail Moye, Graduate Student in Ramamurthy Lab had her baby on 11/28/2017. Penelope Jane Moye was born at 10:31pm, and weighed in at 7lbs, 13oz. She is 20.5 inches

Congratulations to Abi & Drew!

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New Faculty Member



We would like to welcome Dr. Bradley Webb to the faculty of the Department of Biochemistry. Bradley comes to us from the University of California, San Francisco. **Welcome Bradley!**

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New Equipment

The Biochemistry Department has recently obtained GE Typhoon 5 imager using capital equipment funds provided by HSC. This is replacement for the old Typhoon phosphorimager that was no longer operational. The new instrument covers all the capabilities of the old Typhoon and adds new capabilities. If you wish to use this new equipment, please contact Paolo Fagone at pafagone@hsc.wvu.edu

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Birthdays

<i>Pete Mathers</i>	Jan	11
<i>Andrew Nickerson</i>	Jan	16
<i>Yuriy Loskutov</i>	Jan	18
<i>Tanya Dilan</i>	Feb	1
<i>Martin Poncelet</i>	Feb	5
<i>Helen Rodgers</i>	Feb	6
<i>Carol Sholtis</i>	Feb	7
<i>Taylor Thomas</i>	Feb	14
<i>Alexey Ivanou</i>	Feb	15
<i>Scott Weed</i>	Feb	20
<i>Paolo Fagone</i>	Feb	24
<i>Mike Miller</i>	Feb	28
<i>Kacey Rhodes</i>	Mar	6
<i>Gregory Konat</i>	Mar	6
<i>Drew Shiemke</i>	Mar	6
<i>Evan Kerr</i>	Mar	10
<i>Jinj Jie Yu</i>	Mar	14

"Biochemistry is the science of life. All our life processes - walking, talking, moving, feeding - are essentially chemical reactions. So biochemistry is actually the chemistry of life, and it's supremely interesting."

~ Aaron Ciechanover

[News & Announcements cont'd]



Years of Service Honorees, Brad Hillgartner (25 years), and Dave McDonnell (20 years). Dave and Brad were presented certificates for their Years of Service from the State of West Virginia, Office of Chief Executive. ***Congratulations Brad and Dave!***

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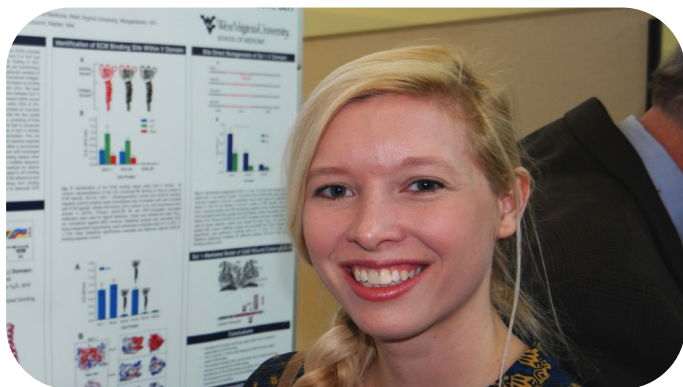
Ray Anderson, Graduate Student in Dr. David Smith's Lab. Ray has received notification that his F31 fellowship will be funded! He received a Ruth L. Kirschenstein National Research Service Award Individual Predoctoral Diversity Fellowship. This F31 Predoctoral fellowship is a diversity fellowship specifically for underrepresented groups in the field of science. ***Congratulations Ray!***

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Raisa Nunez, an undergraduate student in Dr. Aaron Robart's lab has been selected to represent WVU at the National Conferences on Undergraduate Research Apprenticeship Program. ***Congratulations Raisa!***

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WVU graduate student Ashley Brandebura scored very high on her F-31. She was told that she would be funded. This is the 3rd Grad Student in the past few months to receive funding. ***Congratulations Ashley!***



WVU graduate student Stephanie Shumar was awarded \$88,000 from the NIH to research an enzyme that regulates coenzyme A levels and glucose production in the liver. Her work is relevant to blood-sugar stabilization in diabetic patients.

Stephanie Shumar also received the F31 Diversity Fellowship which provides pre-doctoral funding to "under-represented" graduate students such as women. F31 fellowships are training grants for graduate students offered by the NIH. Obtaining an F31 is kind of the graduate school equivalent of obtaining an R01. It is given to graduate students that have an exceptional academic and preliminary research record. Stephanie's F31 will provide funding for 2 years. ***Congratulations Stephanie!***

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Brandon Jones, a Graduate Student in Elena Pugacheva's lab defended his dissertation entitled "**Dual Targeting of the Mesenchymal and Amoeboid Pathways: A Viable Therapy against Metastatic Breast Cancer.**" on October 10th 2017.

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Yuriy Loskutov, a graduate Student from Dr. Elena Pugacheva's lab, defended his dissertation on Monday November 13th 2017. Yuriy's dissertation was titled: "**Implications of primary cilia and associated lysophosphatidic acid signaling in glioblastoma biology and therapy.**"

"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

[Recent Publications]

- **Khramtsov VV.** "In Vivo Molecular Electron Paramagnetic Resonance-Based Spectroscopy and Imaging of Tumor Microenvironment and Redox Using Functional Paramagnetic Probes." *Antioxid Redox Signal.* 2017 Dec 20. doi: 10.1089/ars.2017.7329. [Epub ahead of print] PMID: 29132215
- Kishimoto S, Krishna MC, **Khramtsov VV**, Utsumi H, Lurie DJ. "In Vivo Application of Proton-Electron Double-Resonance Imaging." *Antioxid Redox Signal.* 2017 Nov 13. doi: 10.1089/ars.2017.7341. [Epub ahead of print] PMID: 28990406
- **Petrisko T, Konat G.** "Peripheral viral challenge triggers hippocampal production of inflammatory proteins." *Metab Brain Dis.* 2017 Aug;32(4):1249-1254. doi: 10.1007/s11011-017-0030-4. Epub 2017 May 18. PMID: 28523567
- **Margaryan, N.V., Seftor, E.A., Seftor, R.E.B.** and Hendrix, M.J.C. "Heterogeneity and plasticity of melanoma: Challenges of current therapies." In: *Cutaneous Melanoma: Etiology and Therapy*, (J.M. Farma, H. Ward, eds.), Codon Publications, Brisbane, Australia, 2017. ISBN: 978-0-9944381-4-0
- **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.* 2017 Jun;15(6):670-682. doi: 10.1158/1541-7786.MCR-16-0411. Epub 2017 Feb 24. PMID: 28235899
- **Dilan TL, Singh RK, Saravanan T, Moye A, Goldberg AFX, Stoilov P, Ramamurthy V.** "Bardet-Biedl Syndrome -8 (BBS8) protein is crucial for the development of outer segments in photoreceptor neurons." *Hum Mol Genet.* 2017 Nov 8. doi: 10.1093/hmg/ddx399. [Epub ahead of print] PMID: 29126234
- **Frisch SM, Farris JC, Pifer PM.** "Roles of Grainyhead-like transcription factors in cancer." *Oncogene.* 2017 Nov 2;36(44):6067-6073. doi: 10.1038/onc.2017.178. Epub 2017 Jul 17. Review. PMID: 28714958
- **Yu JJ, Salkini MW, Jiao S, Hogan T, Guo Y, Liang X, Yang B, Zhang L, Gyure K.** The first American cancer patient to receive dicycloplatin chemotherapy: A case report. *J Cancer Res Ther.* 2017; Vol. 5 (9):56-60; doi:10.14312/2052-4994.2017-11
- Yang XQ, **Yu JJ** (corresponding author), Guo Y and Mueller MD. Dicycloplatin, a Platinum - Based Supramolecule with 4 Hydrogen Bonds, is a Promising Chemotherapy Drug in eBook, Bentham Science Publishers, Atta-ur-Rahman (Ed.). Title: *Frontiers in Clinical Drug Research - Anti-Cancer Agents*, 2017, Vol. 4, Chapter 7, 339-362.

[Holiday Luncheon]



[In Memoriam]

William James Canady, Ph.D. Aged 93
December 8, 1924 - December 12, 2017
Morgantown, West Virginia



William J Canady, Ph.D.

Dr. William J. Canady passed away Tuesday, December 12, 2017. He was one of the departments Alumni.

William J. Canady, B.S., M.S., Ph.D. Dr. Canady was the first new faculty member recruited to the Department of Biochemistry after its relocation to the new Health Sciences Center.

His research interests were in protein biochemistry and his major contributions came in the characterization of alpha-chymotrypsin and cytochrome P-450.

Dr. Canady and his wife are long-time supporters of the WVU College of Creative Arts. The Canadys have sponsored the orchestra's Canady Symphony Series at WVU since 2006, in memory of their daughter Valerie. The Series includes three Pittsburgh Symphony concerts at the Creative Arts Center each year.

Since 1996, the Canadys have also presented the Canady Scholarships in the College of Creative Arts, through the Valerie Canady Charitable Trust Foundation.



The scholarships are named for their daughter, Valerie Canady, a WVU graduate, who was among the 270 people who died in the terrorist bombing of Pan Am flight 103 over Lockerbie, Scotland, in December 1988.

[Music At The Pylons]

The Health Sciences Center has a Baby Grand Piano located in the HSC Commons. Recently, the HSC started hosting an event, called Music At The Pylons.

Our own Oxana Tseytlin is a frequent performer. The most recent was in December 2017.



*"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*

[Alumni Spotlight]

Holly Cyphert, Ph.D.

Assistant Professor

WVU Graduate Advisor: Brad Hillgartner

Degree Received/Graduation Year:

PhD in Biochemistry – November 2012

Current Position/Title/Location:

Assistant Professor

Health Sciences Department

Marshall University

Clinical Professor

DCTS Marshall School of Medicine

Huntington, WV

What have you been up to since you left WVU? Career, family, other life events that you would like to share?

After leaving WVU, I worked in Roland Stein's lab at Vanderbilt University where I focused on transcription factors in the islet beta cell and how they are altered during diabetes. In 2015, I accepted a position at Marshall University where I am involved in research and teaching. I have a joint appointment with the School of Medicine.

On a personal note, Travis and I had a son in 2015 named Miles. On November 1, 2017, we welcomed our second son Mason into the world. I still run and I also play in a faculty basketball league at work (hoping to one day be recruited by Bobby Huggins back to WVU). I am still a hardcore WVU fan and do miss being in Morgantown on game day.



What do you enjoy most about your current position, field of study, or your current life endeavors? ***How did your experience at WVU contribute to your professional career?***

I love the balance of being able to be in the classroom and the lab. Being back in WV where diabetes and obesity are so prevalent also allows me to take on more clinical research projects with the community. Currently, I have a project investigating weight gain during college in addition to projects in my lab that focus on bile acids and pancreatic beta cells.

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

I would advise incoming and current graduate students to be open to all possibilities and don't let other people's opinions alter your perception.

When I started in grad school, people warned me about labs to not go into. I was even told to not go to Brad's lab because he expected a lot from his students (which is the point of grad school). Going to Brad's lab was the best decision for my science career and I'm glad that I took the chance and rotated in his lab.

The classes and one-on-one mentoring I received from Brad and committee members helped me to develop a core of knowledge in biochemistry and metabolism. I now use that knowledge to develop projects, research, and to teach students. Often on my teaching evaluations, students comment that I explain things at a level they can comprehend. I believe this is a result of my own education.

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

Be patient and don't give up. It's hard to come out of grad school and not know what is next. However, if you put the work in while you are in grad school, I believe everything will work out. There are a lot of people leaving science in academia and this could open lots of doors for new graduates.



"Most people say that it is the intellect which makes a great scientist. They are wrong: it is character."

~ Albert Einstein

[6th Annual Appalachian regional Cell Conference (ARCC)]

The one-day Appalachian Region Cell Conference (ARCC) is a student run regional conference that began in 2012. Each year the ARCC has attracted nearly 80 young scientists with the main goal of fostering networking and collaboration between postdoctoral, graduate and undergraduate students from four universities across three states: Ohio University (OU), Marshall University (MU), University of Kentucky (UKY) and West Virginia University (WVU). Participants have included trainees, professionals and faculty with a broad cell biology background conducting research in basic and translational science. This unique opportunity allows trainees to organize a meeting where we present and discuss our research with colleagues in the Appalachian region, thus providing us insight to what is happening in our own backyard. We encourage high school and undergraduate students from the area to attend, providing them an opportunity to learn about or even discuss their own research at a collegiate level. Our intent is that this will encourage future scientific endeavors.



Skye Hickling

Skye Hickling, a graduate student in Eric Tucker's lab won a first place poster at the 6th Annual Appalachian Regional Cell Conference (ARCC).



Taylor Thomas

Taylor Thomas, a graduate student in David Smith's lab won a second place poster at the 6th Annual Appalachian Regional Cell Conference (ARCC)



"Research is formalized curiosity. It is poking and prying with a purpose."
~ Zora Neale Hurston

[National Conferences on Undergraduate Research]

Robert Lab undergraduate student Raisa Nuñez has been selected to represent WVU at the National Conferences on Undergraduate Research.

The National Conferences on Undergraduate Research (NCUR), established in 1987, is dedicated to promoting undergraduate research, scholarship, and creative activity in all fields of study by sponsoring an annual conference for students. Unlike meetings of academic professional organizations, this gathering of young scholars welcomes presenters from all institutions of higher learning and from all corners of the

academic curriculum. Through this annual conference, NCUR creates a unique environment for the celebration and promotion of undergraduate student achievement, provides models of exemplary research and scholarship, and helps to improve the state of undergraduate education.

Raisa has been working in Aaron Robert's lab as part of the new Undergraduate Research Apprenticeship Program.

Congratulations Raisa!



[Grant Awarded]

WVU Student Awarded Funding for Diabetes Research

A West Virginia University graduate student is studying an unexplored enzyme that could lead to new diabetes treatments.

Stephanie Shumar is a graduate student in WVU's School of Medicine and is studying Biochemistry and Molecular Biology. Stephanie was interviewed by NPR on December 5th 2017.

"This is kind of the initial step for us to be able to understand something that has not been studied before," said Shumar. "Hopefully this will put another piece into the puzzle of the different things that are affected in metabolic diseases, like diabetes. Hopefully this will give us a better understanding and provide a framework and something that, further on down the line, can be used to help us treat diabetes."

The university says in a news release that conventional diabetes medications work

by stabilizing blood sugar levels, not by improving chemical processes behind how the body produces and processes blood sugar. Shumar says that's like a motorist who doesn't fix an antifreeze leak but instead keeps pouring more into the car.

tional Institutes of Health for a two-year investigation into how one enzyme regulates coenzyme A levels and glucose production in the liver. High concentrations of coenzyme A in the liver can affect blood sugar levels.

Shumar was awarded \$88,000 by the Na-

Congratulations Stephanie!



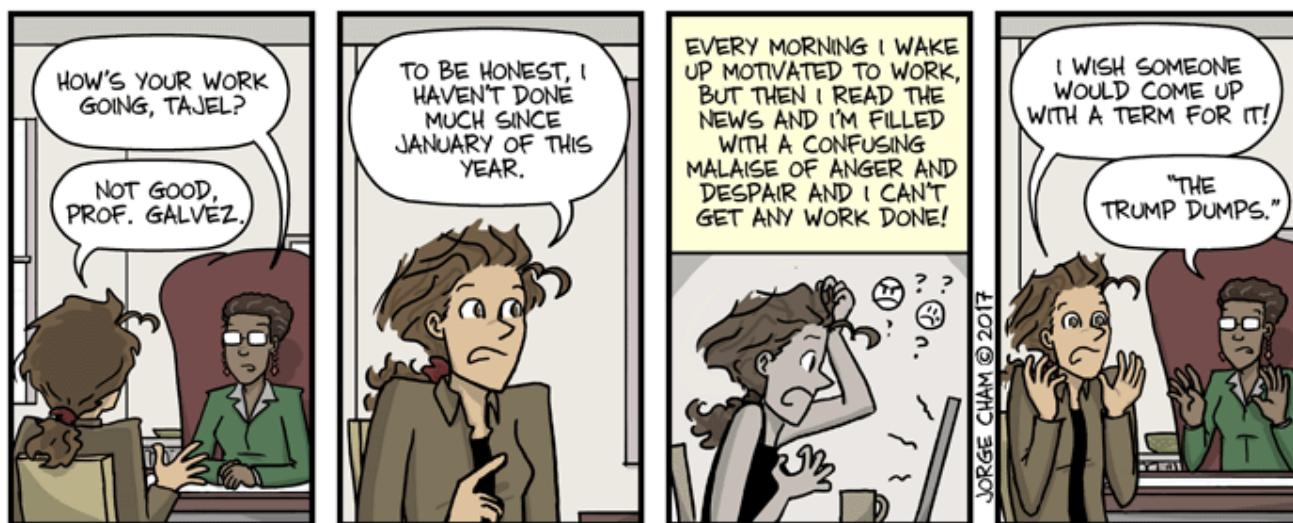
"I believe in innovation and that the way you get innovation is you fund research and you learn the basic facts."

~ Bill Gates

Microbiology

E	M	T	S	U	N	E	I	L	P	A	L	S	E
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L	M	I	E	T	S	E	U	Y	U	L	T	C	V
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 YEAST
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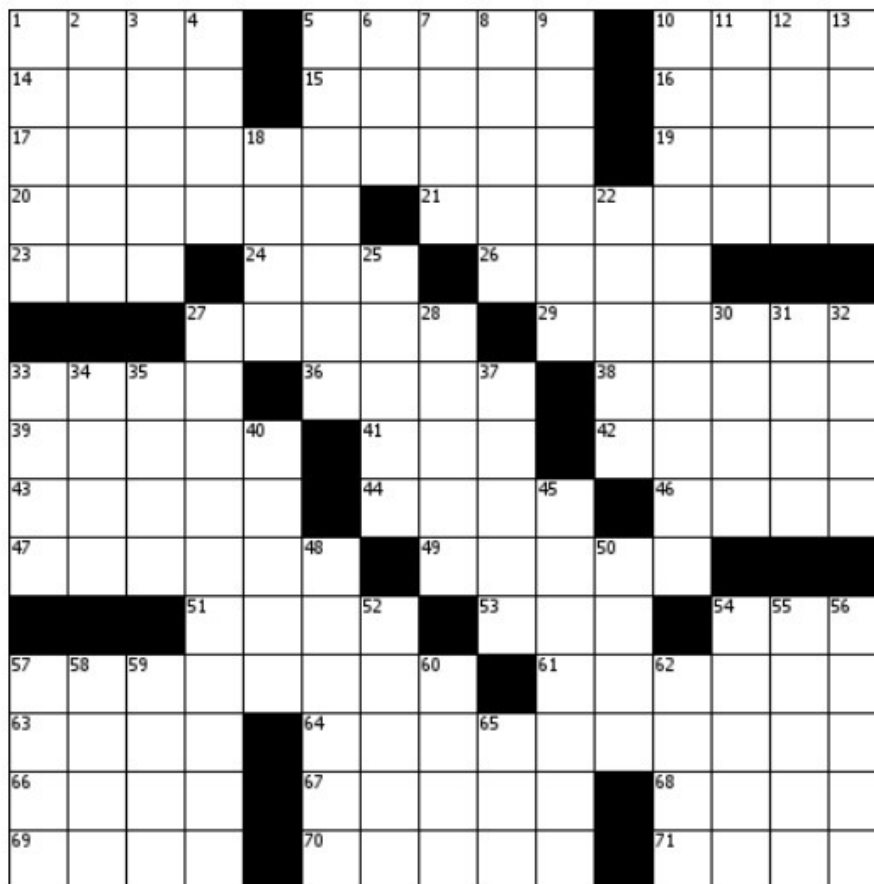


WWW.PHDCOMICS.COM

[Crossword Puzzle]

Across

1. Bird stomachs
5. Acid used to stain microscope slides
10. One might be in evidence
14. Carrier since 1948
15. Country singer Carter
16. Workout reminder
17. Caramel candy on a stick
19. Shoe stretcher
20. One-celled creatures
21. Preference, so to speak
23. Ukr., formerly
24. Turn the other way
26. New York tennis stadium
27. '92 presidential candidate
29. Typo list
33. Mr. Bill's cry
36. Coin since 2002
38. One in the weasel family
39. Shows sorrow
41. Sire's counterpart
42. IQ test developer
43. "Sleep" word starter
44. Lummoxes
46. May honorees
47. Parodies
49. Drum rattler
51. D.C. baseballers, briefly
53. "Sweet" girl of song
54. Hale, for one
57. Dairy delivery
61. Firefighting operation
63. Noisy outburst
64. St. Peter's Square chant
66. No more
67. Actress Verdugo
68. "Dear me!"
69. Thrilled
70. Actor Alain
71. Hotbed



Down

1. Southwest sights
2. Reunion attendees
3. Perfecta or exacta
4. Thick chunk
5. More than likely
6. Caribbean, e.g.
7. Anti-DWI org.
8. Chief of the Vedic gods
9. Indian pony
10. Scythe wielder
11. Real-estate measure
12. Sonny's '60s partner
13. Platforms named for their shape
18. Tear down
22. Beat
25. Cream-colored cheese
27. Outdoor-arena event
28. Plumbers' concerns
30. 47, for silver: Abbr.
31. Be prolific
32. They may be lively or liberal
33. Has title to
34. Jalopy
35. Rex's sleuth
37. Forebodings
40. Up to a certain point
45. Lizardlike
48. Repelled, with "off"
50. Spin-fishing need
52. Steps over a fence
54. 1:62,500, e.g.
55. Chrysalides
56. Matzoh's lack
57. Psyche parts
58. Broke down
59. Secluded spot
60. Daredevil Knievel
62. Duration
65. "I'll take that as ___"

[Coffee Break]

Crossword Puzzle answers located on the back page [No L^{OO}KING...]

Upcoming Events

WVU and Morgantown Upcoming Events (January 2018-April 2018)

1/6/2018	WVU Men's Basketball vs. Oklahoma	7:15 PM	WVU Coliseum
1/7/2018	Healthy Fun	10 am - 1 pm	500 Green Bag Road, Morgantown, WV
1/7/2018	Morgantown Community Orchestra Meet-&-Greet	11 am - 1 pm	WVU Creative Arts Center
1/9/2018	WVU Men's Basketball vs. Baylor	7:00 PM	WVU Coliseum
1/15/2018	WVU Men's Basketball vs. Kansas	9:00 PM	WVU Coliseum
1/16/2018	11th MLK, JR., Day : "Nonviolence is Courageous"	2 - 3:30pm	Metropolitan Theatre, 373 High St., Morgantown, WV
1/19/2018	Music at the Pylons	12 - 1 PM	Roberta C. Byrd Health Sciences Center
1/20 thru 22, 2018	33 Annual Food & Wine Festival (\$49 person)	All Weekend	Lakeview Golf Resort & Spa, Morgantown WV
1/20/2018	WVU Men's Basketball vs. Texas	2:00 PM	WVU Coliseum
1/27/2018	WVU Men's Basketball vs. Kentucky	TBA	WVU Coliseum
1/28 - 29, 2018	Discover the Dinosaurs (Saturday and Sunday)	10 AM - 7 PM	Mylan Park, Morgantown, WV
2/1 - 2/2018	Dance Now - Lyell B Clay Concert Theatre	7:30 PM	WVU Creative Arts Center
2/3/2018	WVU Men's Basketball vs. Kansas	4:00 PM	WVU Coliseum
2/10/2018	WVU Men's Basketball vs. Oklahoma	12:00 PM	WVU Coliseum
2/12/2018	WVU Men's Basketball vs. TCU	9:00 PM	WVU Coliseum
2/14/2018	Rain - A Tribute to the Beatles; Lyell B Clay Concert Theatre	7:30 PM	WVU Creative Arts Center
2/14/2018	Music at the Pylons	12 - 1 PM	Robert C. Byrd Health Sciences Center
2/15 - 19/2018	Pittsburgh International Auto Show	10 AM - 10 PM	David L. Lawrence Convention Center, Pittsburgh, PA
2/24/2018	Empty Bowls Luncheon	TBD	Mylan Park, Morgantown, WV
2/24/2018	WVU Men's Basketball vs. Iowa State	6:00 PM	WVU Coliseum
2/26/2018	WVU Men's Basketball vs. Texas Tech	9:00 PM	WVU Coliseum
3/2 - 3/11/18	2018 Pittsburgh Home and Garden Show	10 AM - 10 PM	David L. Lawrence Convention Center, Pittsburgh, PA
3/3 - 4/2018	WV Outdoor Hunting and Fishing Show	TBD	Mylan Park, Morgantown, WV
3/7/2018	Foreigner - Lyell B Clay Concert Theatre	7:30 PM	WVU Creative Arts Center
3/8/2018	Music at the Pylons	12 - 1 PM	Robert C. Byrd Health Sciences Center
3/22-23/2018	53rd Annual Van Liere Research Conference	All Day	Robert C. Byrd Health Sciences Center
4/3/2018	Rodgers and Hammertsein's Cinderella	7:30 PM	WVU Creative Arts Center



Check out the
Biochemistry Website

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