Welcome to King’s College

King’s College, located in Wilkes-Barre, PA is a Catholic institution of higher education that pursues excellence in teaching, learning, and scholarship through a rigorous core curriculum, major programs across the liberal arts and sciences, nationally-accredited professional programs at the undergraduate and graduate levels, and personal attention to student formation in a nurturing community. Founded in 1946 following the Congregation of Holy Cross founder Father Basil Moreau’s vision to educate the children of coal miners, King’s continues to provide an outstanding higher education to students of diverse backgrounds, including many first-generation college students. The College’s commitment to students is expressed both in the curriculum and in co-curricular programs encouraging service, fostering reflection, and cultivating leadership skills. In the words of its founding president, "King’s teaches its students not only how to make a living, but how to live."

Welcome Message from Dr. Ed Levri
President, Pennsylvania Academy of Science

It is my pleasure to welcome you to the 93rd annual meeting of the Pennsylvania Academy of Science. This year’s meeting promises to be eventful with interesting oral presentations and lively poster sessions, with presentations representing 37 different Pennsylvania colleges and universities. We feature what is sure to be an engaging keynote address on Saturday evening on dinosaur paleontology and a panel for students considering careers in STEM fields during lunch that same day. I encourage participants to increase their involvement in the society by joining the PAS Board of Directors for the Business meeting on Saturday. We are always looking for more members to take leadership roles in the society. Special thanks to Tammy Tintjer and the faculty and staff at King’s College for their roles in organizing the meeting this year. I encourage you to attend as many sessions as you can, meet new colleagues, and learn something new. Good luck to all of the students participating in the Anne Spychala Competition.

Enjoy the meeting and plan to attend next year’s event at Indiana University of Pennsylvania, in Indiana, PA.
2017 Keynote Address

Collecting Dinosaurs on Four Continents

Dr. Peter Dodson Ph.D

Peter is a vertebrate paleontologist whose more than four decades of research has centered on the evolution, anatomy, and paleoecology of dinosaurs. He is an international authority on the Ceratopsia or horned dinosaurs, a group exemplified by the iconic *Triceratops*. Peter has described and named six new dinosaur species including ceratopsians, and the long-necked sauropods. He has authored or co-authored over 100 publications on dinosaurs and is a founding editor of “The Dinosauria”, a multi-authored, state of the art compendium on dinosaur research that is now entering its third edition. Peter has also authored “The Horned Dinosaurs: A Natural History”, for which he is currently working on an updated second edition to this 1996 treatise on ceratopsian dinosaurs. In his quest to further our understanding of dinosaur paleobiology he has conducted field research in Africa, Asia, North America, and South America. His work has earned him the honor of two specific epithets; both an extinct frog, and a Chinese ceratopsian bear his name.

Peter earned his BSc in Geology at the University of Ottawa (1968), his MSc and PhD in Geology/Paleontology from the University of Alberta (1970) and Yale University (1974) respectively. He has been a Pennsylvania scientist for over 42 years and serves a Professor of both Veterinary Gross Anatomy and Earth and Environmental Science at the University of Pennsylvania.

Saturday April 1, 2017 following the dinner beginning at 6:00PM
3rd Floor, Sheehy-Farmer Campus Ctr.

Student Lunch Panel Saturday April 1 12:15-1:15PM

So I’m a Science Major? What next?

Why did you become a science major? What do you want to do when you graduate? As a science major, there is a world of opportunities waiting for you. But, do you know what is out there? We have a great line-up of panelists who will help you to explore a wide-range of occupations. Our panelists have pursued careers in pharmacy, research at the National Institutes of Health (NIH), conservation with the Department of Conservation and Natural Resources (DCNR), ecology/conservation biology, and forensic chemistry (to name a few). We invite you to participate in the panel discussions, meet our panelists, and ask questions about your future careers.

A free boxed lunch will be provided to students that attend the panel.

Students wishing to attend the panel must have signed up during online meeting registration.

Location:
3rd Floor, Sheehy-Farmer Campus Ctr.
Participants at the 93rd Annual Meeting of the PAS

<table>
<thead>
<tr>
<th>School/Organization</th>
<th>Number of Presentations</th>
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<tbody>
<tr>
<td>Susquehanna University</td>
<td>16</td>
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<tr>
<td>Lycoming College</td>
<td>14</td>
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<td>Kings College</td>
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<td>York College of Pennsylvania</td>
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<td>Cedar Crest College</td>
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<td>East Stroudsburg University</td>
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<td>Marywood University</td>
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<td>Elizabethtown College</td>
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<td>Cabrini University</td>
<td>7</td>
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<td>Penn State University-Altoona</td>
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<tr>
<td>Albright College</td>
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<td>Misericordia University</td>
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<td>Lafayette College</td>
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<td>Wilkes University</td>
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<td>Wilson College</td>
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<td>DeSales University</td>
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<td>Mercyhurst University</td>
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<td>Widener University</td>
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<td>Bucknell University</td>
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<td>Delaware Valley University</td>
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<td>Dickinson College</td>
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<td>Gannon University</td>
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<td>Gettysburg College</td>
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<td>Harrisburg University of Science and Technology</td>
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<td>Lebanon Valley College</td>
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<td>Mansfield University</td>
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<td>Messiah College</td>
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<td>Saint Vincent College</td>
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<td>Alvernia University</td>
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<td>Bloomsburg University</td>
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Presentations sponsored by 37 Pennsylvania colleges and universities.
### 93rd Annual Meeting of the Pennsylvania Academy of Science

**SCHEDULE OF ACTIVITIES AT A GLANCE**

**Friday, March 31**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00-6:00 PM</td>
<td><strong>PAS Board Meeting</strong></td>
<td>Tomato Bar, Pittston PA</td>
</tr>
<tr>
<td>6:00-7:00 PM</td>
<td><strong>PAS Board Dinner</strong></td>
<td>Tomato Bar, Pittston PA</td>
</tr>
<tr>
<td>6:30-7:30 PM</td>
<td><strong>Meeting Check-In</strong></td>
<td>Susquehanna Brewing Co., Pittston PA</td>
</tr>
<tr>
<td>7:00-9:00 PM</td>
<td><strong>Reception</strong></td>
<td>Susquehanna Brewing Co., Pittston PA</td>
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**Saturday, April 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:30–10:30 AM</td>
<td><strong>Meeting Check-In</strong></td>
<td>1st Floor Lobby, McGowan Hall</td>
</tr>
<tr>
<td>8:45–9:10 AM</td>
<td><strong>Introduction and Welcome</strong></td>
<td>Burke Auditorium, McGowan Hall</td>
</tr>
<tr>
<td>9:15-10:30 AM</td>
<td><strong>Oral Presentations</strong></td>
<td>Burke Auditorium, McGowan Hall</td>
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<tr>
<td></td>
<td>I Animals and Disease</td>
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<tr>
<td>10:00–11:00 AM</td>
<td><strong>Coffee Break</strong></td>
<td>Postupack Room, McGowan Hall</td>
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<tr>
<td>10:00–12:00 PM</td>
<td><strong>Poster Session I: Terrestrial Ecology</strong></td>
<td>1st &amp; 2nd Floor Lobby, McGowan Hall</td>
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<td></td>
<td>(Poster set-up 8:00-10:00 AM)</td>
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<tr>
<td>10:30–12:00 PM</td>
<td><strong>Oral Presentations</strong></td>
<td>Room 203, Mulligan</td>
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<td>II DNA metabolism and Cancer</td>
<td>Room 090, Mulligan</td>
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<td></td>
<td>III Neuroscience</td>
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<td>11:45–1:15 PM</td>
<td><strong>Lunch</strong></td>
<td>Food Trucks outside of McGowan Hall</td>
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<tr>
<td>12:15-1:00 PM</td>
<td>**PAS Business Meeting (All members welcome/</td>
<td>Burke Auditorium, McGowan Hall</td>
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<td></td>
<td>Bring your lunch)**</td>
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<tr>
<td>12:15-1:15 PM</td>
<td><strong>Student Lunch Panel</strong></td>
<td>3rd Floor, Sheehy-Farmer Campus Ctr.</td>
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<tr>
<td></td>
<td>“So I’m a Science Major? What next?”</td>
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<tr>
<td>1:15–2:45 PM</td>
<td><strong>Oral Presentations</strong></td>
<td>Room 203, Mulligan Hall</td>
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<tr>
<td></td>
<td>IV Animals and habitats</td>
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<tr>
<td>1:30–3:30 PM</td>
<td><strong>Poster Session II: Aquatic Ecology/ Microbiology</strong></td>
<td>1st &amp; 2nd Floor Lobby, McGowan Hall</td>
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<td></td>
<td>(Poster set-up 12:00-1:30 PM)</td>
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<tr>
<td>2:00–3:00 PM</td>
<td><strong>Coffee Break</strong></td>
<td>Postupack Room, McGowan Hall</td>
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<tr>
<td>3:00–4:45 PM</td>
<td><strong>Oral Presentations</strong></td>
<td>Room 090, Mulligan</td>
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<tr>
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<td>V Studies of Animal Populations</td>
<td>Room 203, Mulligan</td>
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<td></td>
<td>VI Models of Human Disease</td>
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<tr>
<td>6:00-6:45 PM</td>
<td><strong>Cocktails</strong></td>
<td>Connerton’s, Lower Level</td>
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<td>Sheehy-Farmer Campus Ctr.</td>
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<tr>
<td>7:00-9:00 PM</td>
<td><strong>Dinner and Keynote Address:</strong> Peter Dodson</td>
<td>3rd Floor, Sheehy-Farmer Campus Ctr.</td>
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<tr>
<td></td>
<td><strong>Collecting Dinosaurs on Four Continents</strong></td>
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* Business Meeting Election slate and proposed constitution changes found at the end of the program book.*
<table>
<thead>
<tr>
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<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:30–8:30 AM</td>
<td>Meeting Check-In</td>
<td>1st Floor Lobby, McGowan Hall</td>
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<tr>
<td>8:00-9:00 AM</td>
<td>PAS Board Meeting</td>
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<td>9:00–10:00 AM</td>
<td>Coffee Break</td>
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<tr>
<td>9:30–11:30 AM</td>
<td>Oral Presentations</td>
<td>Room 311, McGowan Hall</td>
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<tr>
<td></td>
<td>VII Microbes, Antimicrobials, and Bacteriophages</td>
<td>Burke Auditorium, McGowan Hall</td>
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<td></td>
<td>VIII Human Impacts on Habitats</td>
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<tr>
<td>9:45-11:45 AM</td>
<td>Poster Session III: Chemistry &amp; Physics/Genomes, Cells, and Disease</td>
<td>1st &amp; 2nd Floor Lobby, McGowan Hall</td>
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<tr>
<td>11:45–12:30 PM</td>
<td>Lunch</td>
<td>Food Trucks outside of McGowan Hall</td>
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<tr>
<td>12:30-1:00 PM</td>
<td>Awards Ceremony</td>
<td>Burke Auditorium, McGowan Hall</td>
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On Saturday and Sunday, lunches will be available for purchase from Food trucks located outside of McGowan Hall. Please bring your lunch and join us for the PAS Business Meeting (All members welcome) in Burke Auditorium, McGowan Hall.

PAS Spychala Awards and PAS Undergraduate Research Grants will be announced at the Awards ceremony on Sunday.

Visit the PAS website for more information
[Pennci.org](http://Pennci.org)

Follow the Pennsylvania Academy of Science on Twitter
[@PennAcadSci](https://twitter.com/PennAcadSci) 🐦 Live tweet the conference #PAS2017
93rd Annual Meeting of the Pennsylvania Academy of Science
King’s College
March 31 - April 2, 2017

GENERAL PROGRAM SESSIONS
Program Chair: Dr. André P. Walther

Saturday, April 1 MORNING SESSIONS

ORAL SESSION I: Animals and Disease
Saturday April 1 9:15-10:30 AM
Location: Burke Auditorium, McGowan Hall
Session Chair: Dr. Stephen Mech


4. Local prevalence and strain diversity of Borrelia burgdorferi in Peromyscus leucopus and Ixodes scapularis. Chern, Kacie*, Jane Huffman, and Abdalla Aldras East Stroudsburg University.


POSTER SESSION I: Terrestrial Ecology
Saturday April 1 10:00-12:00 AM
Location: 1st & 2nd Floor Lobby, McGowan Hall
Session Chair: Dr. Kenneth Klemow


20. Seasonal weather patterns and the reproductive effort of a long-lived perennial, Mountain Laurel (Kalmia latifolia). Spagnoli, Angela*, Maureen Levri, and Edward Levri Penn State University-Altoona.

22. Evaluation of the thermal properties of a primary rainforest at the Amazon Conservatory of Tropical Studies (ACTS) Iquitos, Peru. Hunter, Tracy*, Stephen Madigosky, and Itzick Vatnick Widener University.

23. Plant mitochondrial and chloroplastic cytochrome c polypeptides as substrates of an evolutionarily distinct eukaryotic Cytochrome C biogenesis system. Wan, Xinlei*, and Carsten Sanders* Kutztown University.

24. Ecological integrity of edge and interior environments at West Chester University’s Gordon Natural Area. Bertoline, Alaina*, and Jessica Schedlbauer West Chester University.


32. Individual and population health for two Eastern Hellbender meta-populations in a tributary of the West Branch of the Susquehanna River. Lansberry, Seth* Lycoming College.

33. Habitat preferences, and population structure and stability, in two Eastern Hellbender meta-populations in a tributary of the West Branch of the Susquehanna River. Musheno, Sarah* Lycoming College.

34. Detection of Eastern Hellbender (Cryptobranchus alleganiensis alleganiensis) environmental DNA in Northcentral Pennsylvania streams using qPCR. Orgitano, Ryan*, and Mel Zimmerman Lycoming College.


38. Species differences in bat emergence and foraging times in northeastern Pennsylvania. Burns, Jessica*, Elizabeth McGovern, and Howard Whidden East Stroudsburg University.


40. Age determination of voles (Microtus spp, Schrank, 1798) based on wear of the occlusal surfaces on individual molars consumed by barn owls (Tyto alba, Scopoli, 1769). Spence, Laura*, Samantha Loh, Laura Scales, and Carlos Iudica Susquehanna University.

41. A novel avian sexing assay using fecal DNA. Kelleher, James*, Emily Wolcott, and Darl Swartz Delaware Valley University.

42. Quantitative Genetic Analysis of Grooming Behavior in the Fruit Fly Drosophila melanogaster. Hannum, Courtney*, Zachary High*, and David Andrew Lycoming College.
43. Littoral zone diversity of larval caddisflies (*Trichoptera*) from Meadows Pond, Dallas, Pennsylvania. **Corpus, Larry***, Misericordia University.

44. Distribution of Blackfly Larvae (*Diptera: Simuliidae*) from Trout Brook, Luzerne County, Pennsylvania. **Womesdorf, Alivia***, and **Larry Corpus** Misericordia University.

45. Hemlock Woolly Adelgid abundance and Hemlock health in hilltop vs. valley sites. **Kanaskie, Caroline***, **Yueli Liang***, **Cheyenne Moore**, and **Carol Loeffler*** Dickinson College.

46. Octopamine effects on wolf spider courtship and mating interactions: more sex or more cannibalism? **Coleman, Alyssa***, and **Matthew Persons** Susquehanna University.


48. The impact of induced plant stress on goldenrod galling insect success. **Grunmeier, Orvil***, **Dustin Bendas***, **David Matlaga**, and **Alissa Packer** Susquehanna University.

49. The effect of single and multiple courting males on female mating decision rules in the wolf spider *Tigrosa helluo*. **Persons, Matthew** Susquehanna University.

50. Long-term patterns of weevil infestation in the fruits (acorns) of two oak species: Is there a predator satiation effect? **Pintsch, Tanya***, **Shealyn Marino**, **Matthew Suchocki**, and **Michael Steele** Wilkes University.

51. Tolerance vs. Resistance in an animal-dispersed seed; long-term patterns of weevil infestation in oak acorns across a latitudinal gradient. **Schafer, Kaitlin***, **Jarret Colvin**, **Amy Bradley**, and **Michael Steele** Wilkes University.

52. Sublethal effects of acaracide treatments in Honey Bees. **Andre, Beverly***, **Cynthia Surmacz**, **John Hranitz**, **Ibrahim Cakmak**, and **Selvi Cakmak** Bloomsburg University.

53. First record of *Physaloptera sp.* in Eastern Coyotes (*Canis latrans*) from Pennsylvania, USA. **Scales, Laura***, and **Carlos Iudica** Susquehanna University.

54. Effects of expanding deer populations on understory vegetation and invasive species. **Kish-Levine, Samantha***, and **Carol Loeffler*** Dickinson College.

55. The influence of fish odor on the dispersal behavior of an invasive snail. **Luft, Rebecca***, **Lewis Gromiller**, **Edward Levri**, and **Edward Levri** Penn State University-Altoona.

56. Does fish odor influence the emergence behavior of the invasive New Zealand mud snail? **Gromiller, Lewis***, **Sean Freidhof***, and **Edward Levri** Penn State University-Altoona.

57. The relationship between water chemistry and the abundance of the invasive New Zealand mud snail in central Pennsylvania. **Levri, James***, and **Edward Levri** Penn State University-Altoona.

58. Testing the effect of dentine hardness on microwear in the saurolophine hadrosaur *Kritosaurus navajovius* (*Dinosauria, Ornithischia*). **Gartley, Shamus***, and **Frank Varriale** King’s College.

ORAL SESSION II: DNA Metabolism and Cancer  
Saturday April 1 10:30-12:00 AM  
Location: Room 203, Mulligan Hall  
Session Chair: Dr. Lisa Antoniacci


11:45-12:00  11. A cancer-associated intronic polymorphism does not promote alternative splicing of the CCK2 receptor in pancreatic cancer cells. Yoon, Sung Bo, Matthew Miller, Katlyn Tyrpak, Keane McCullum, Shannon Sell, Evan Shirey, Glenn Jones, and John Harms* Messiah College.

ORAL SESSION III: Neuroscience  
Saturday April 1 10:30-12:00 PM  
Location: Room 090, Mulligan  
Session Chair: Dr. Angela Asirvatham

10:30-10:45  12. The role of SCAMP3 in Amyloid Precursor Protein trafficking. Cooney, Dan*, and Quyen Aoh Gannon University.


11:15-11:30  15. Characterizing the expression of Runx1t1 throughout retinal development in Chicken (Gallus gallus). Kable, Brianna*, and Sean Georgi York College of Pennsylvania.

ORAL SESSION IV: Animals and Habitats
Saturday April 1 1:15-2:45 PM Location: Room 203, Mulligan Hall
Session Chair: Dr. Douglas Glazier

1:15-1:30  

1:30-1:45  

1:45-2:00  

2:00-2:15  

2:15-2:30  
64. Effect of local environment on abundance, reproductive effort and upland movement of woodland salamanders. Broholm, Tessa*, and Megan Rothenberger. Lafayette College.

2:30-2:45  

POSTER SESSION II: Aquatic Ecology and Microbiology
Saturday April 1 1:30-3:30 PM Location: 1st & 2nd Floor Lobby, McGowan Hall
Session Chair: Dr. Linda Kennedy

80. The combined effects of ocean acidification and global warming on prey detection in the minnow, Fundulus heteroclitus. Laplante, Michelle*, and John Cigliano. Cedar Crest College.

81. Using a controlled water-flow enclosure system to assess ability of Orconectes rusticus to discriminate between different chemical cues. Stonecipher, Jacob*, Marquise Henry*, and Anya Goldina. Elizabethtown College.


85. Response of benthic macroinvertebrate communities to variations in discharge during the summer months of 2015 and 2016 in the upper main stem of the Susquehanna River. Mendez, Marta*, Michael Bilger, and Jack Holt. Susquehanna University.


89. Inquiry based activities for teaching about invasive species in grades seven and eight. Egberts, Carly*, and Anya Goldina Elizabethtown College.

90. The effect of rainfall intensity on the mobility of legacy sediments. Kimmel, Mallory*, and Jennifer Elick Susquehanna University.

91. Nitrification in the Lake Lacawac water column. Zawacki, Victoria W.*, and Elise M. Heiss King's College.


93. Integration of multiple aqueous geochemical analyses to assess five headwater streams in Bald Eagle State Forest, PA. Van Woert, Andrew*, and Ahmed Lachhab Susquehanna University.

94. Impact of Walker and Faylor Lakes on Middle Creek (Snyder County, PA) using physical, geochemical & benthic metrics. Motsko, Jeremy*, and Ahmed Lachhab Susquehanna University.


96. Utilizing a wireless sensor network to monitor water quality in Presque Isle Bay. Healy, Michael*, and Amy Parente Mercyhurst University.

97. Prioritizing Brook Trout sampling in unnamed tributaries using a network model. Hake, Sean*, Dan Ressler, and Jon Niles Susquehanna University.


102. The antimicrobial effect of thymol on biofilm proliferation in hydroponic lettuce farming. Christopher, Thomas*, and Deanne Garver Marywood University.

103. Ectromelia virus accumulates less free double-stranded RNA compared to vaccinia virus. Frey, Tiffany*, Colton Ryan, Marie Pizzorno, and Adam Hersperger Albright College.


107. Chryseobacterium greenlandense is a latter heterotypic synonym of Chryseobacterium aquaticum. Kerney, Dayshia*, and Jeffrey Newman Lycoming College.


111. Do genetics, environment, and lifestyle all affect the oral microbiome? A comparative study of the oral microbiome between Amish, non-Amish, and twins. Custer, Brittany*, and Debra Wohl Elizabethtown College.

112. Comparing the oral microbiome of the Amish and non-Amish communities. Rei, Esther*, and Debra Wohl Elizabethtown College.

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**ORAL SESSION V: Studies of Animal Populations**

Saturday April 1 3:00-4:45 PM Location: Room 090, Mulligan

Session Chair: Dr. Howard Whidden

3:00-3:15  **66. Functional genomic landscape in Drosophila provides evidence for pervasive adaptation on sexually selected male traits.** Jones, Alexandra*, Rob Kulathinal, and Craig Stanley Temple University.

3:15-3:30  **67. The invasive New Zealand mud snail in central Pennsylvania.** Levri, Edward, and Rebecca Luft* Penn State University-Altoona.

3:30-3:45  **68. Optimization of a multiplex PCR Analysis for Crotalus horridus.** Januszkiewicz, Eric* East Stroudsburg University.

3:45-4:00  **69. Monitoring habitat use of Hooded Warblers (Setophaga citrina) in three understory types in the Delaware Water Gap National Recreation Area.** Swayser, Brandon*, and Terry Master East Stroudsburg University.

4:00-4:15  **70. Effects of chronic stress on metabolic and immune responses in House Sparrows.** Henry, Marquise*, Brenna Gormally, and Michael Romero Elizabethtown College.

4:15-4:30  **71. Building surveys for bats in the Delaware Water Gap National Recreation Area.** Schell, Joseph*, and Howard Whidden East Stroudsburg University.

4:30-4:45  **72. Territorial aggression between captive Panthera leo and Panthera tigris amovensis.** Quain, Melanie*, Terry Master, and Thomas LaDuke East Stroudsburg University.
3:00-3:15  73. From inactivated virus vaccines to drug delivery: exploring creative uses for small hydrophobic molecules. Belanger, Julie* King’s College.


3:45-4:00  76. Using flow cytometry and Click-it® Plus EdU Alexa Fluor® 488 to study mitogen-induced DNA synthesis in Coelomocytes of the invertebrate Eisenia hortensis. Grant, Sarah*, and Sheryl Fuller-Espie Cabrini University.

4:00-4:15  77. Immunofluorescence and fusion index analysis of ethanol-treated C2C12 muscle cells in culture. Brough, Carla, and Ondra Kielbasa* Alvernia University.


4:30-4:45  79. Testing the effects of prolactin on osteoblast differentiation. Cabrera Vicens, Brenda*, Kelly Perri, and Joyce Belcher Cabrini University.
### ORAL SESSION VII: Microbes, Antimicrobials, and Bacteriophages

**Sunday April 2 9:15-11:00 AM Location: Room 311, McGowan Hall**

**Session Chair:** Dr. Jeffrey Newman

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>9:45-10:00</td>
<td><strong>122. Characterization of Flavobacterium franzi AED, isolated from a freshwater creek.</strong> Frantz, Devin*, and Jeffrey Newman Lycoming College.</td>
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<tr>
<td>10:00-10:15</td>
<td><strong>123. Characterization of a novel species of Rugamonas.</strong> Kaltreider, Tara*, and Jeffrey Newman Lycoming College.</td>
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<tr>
<td>10:15-10:30</td>
<td><strong>124. Identification and characterization of a novel antibiotic-producing Microbacterium sp.</strong> Bischer, Andrew*, and Joshua Loomis East Stroudsburg University.</td>
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<td>10:30-10:45</td>
<td><strong>125. The Role of the Enterobacter cloacae AcrAB-ToLC Efflux Pump in Triclosan resistance.</strong> Marotta, Julianna*, and K. Joy Karnas Cedar Crest College.</td>
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<td>10:45-11:00</td>
<td><strong>126. Detection of simulated pathogenic Escherichia coli O157:H7 using an end point polymerase chain reaction assay developed for a mid-level Microbiology for Health Professions course laboratory.</strong> Mylin, Lawrence* Messiah College.</td>
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<td>11:00-11:15</td>
<td><strong>127. The effects of artificial sweeteners and probiotics on the gut microbiome and immune system.</strong> Bischer, Andrew*, and Abdalla Aldras East Stroudsburg University.</td>
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### ORAL SESSION VIII: Human impacts on habitats

**Sunday April 2 9:30-11:30 AM Location: Burke Auditorium, McGowan Hall**

**Session Chair:** Dr. Sheryl Fuller-Espie

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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>9:30-9:45</td>
<td><strong>113. The effects of chloroform and microbeads on zebrafish embryo development.</strong> Allen, Mia*, and Catherine Santai Harrisburg University of Science and Technology.</td>
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<td>9:45-10:00</td>
<td><strong>114. Effect of dam removal on the macroinvertebrate community in the Darby Creek, Delaware County, PA.</strong> Polekoff, Sarah, Adam Dicaprio, Matthew Dougherty, Madelyn Franklin*, and Kathryn Goddard Ursinus College.</td>
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<td>10:00-10:15</td>
<td><strong>115. Assessment of the biological effects of estrogenic contamination in a sewage-impacted urban estuary.</strong> Hernandez, Erika*, and Megan Rothenberger Lafayette College.</td>
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<td>10:15-10:30</td>
<td><strong>116. Interactive effects of iron enrichment and acidification on coastal phytoplankton assemblages.</strong> Gleich, Samantha*, and Megan Rothenberger Lafayette College.</td>
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<td>Time</td>
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<td>10:30-10:45</td>
<td><strong>117. Evaluation of factors that increase the load of pathogenic E. coli in the Conococheaque, a freshwater creek in Franklin County, Pennsylvania.</strong> Lybarger, Vanessa*, M. Dana Harriger, and Christine Proctor Wilson College.</td>
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<td>10:45-11:00</td>
<td><strong>118. Spatial analysis of the hydrology and ecology of the Tarkhill Creek Watershed in Pike County, Pennsylvania.</strong> Durnin, Brook*, and Chad Freed Widener University.</td>
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<td>11:00-11:15</td>
<td><strong>119. Cataloging and monitoring MS4 storm water outfalls within an urbanized area of Lycoming County.</strong> Zimmerman, Mel*, and Ashley Bresee Lycoming College.</td>
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<td>11:15-11:30</td>
<td><strong>120. Earthworms as sentinel species for the measurement of macroautophagic biomarkers in response to the heavy metal environmental pollutants cadmium and copper.</strong> Markowitz, Lauren*, Olivia Townsend*, and Sheryl Fuller-Espie Cabrini University.</td>
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**POSTER SESSION III: Chemistry & Physics/Genomes, Cells, & Disease**
 Sunday April 12 9:45-11:45 AM Location: 1st & 2nd Floor Lobby, McGowan Hall
 Session Chair: Dr. Joshua Slee

<table>
<thead>
<tr>
<th>Session No.</th>
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<tr>
<td>129</td>
<td><strong>The Role of Ent3p in Put4p trafficking from the trans-golgi network to the plasma membrane.</strong> Acosta, Gabrielle*, and Quyen Aoh Gannon University.</td>
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<td>130</td>
<td><strong>Impact of ethanol on markers of heterochromatin maintenance and trinucleotide repeat expansion in Saccharomyces cerevisiae.</strong> Banach, Christopher*, Alison Dyszel*, Serena Ngan*, Angeline Lonardi, Riley Slate, Thomas Basil, and Lara Goudsouzian Desales University.</td>
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<tr>
<td>131</td>
<td><strong>Temperature effects on TPE, trinucleotide repeat stability, and chromosome loss in Saccharomyces cerevisiae.</strong> Latham, Nicholas*, Angeline Lonardi*, Riley Slate*, Alison Dyszel, Serena Ngan, Rachel Jesiolowski, Ellen Weidel, and Lara Goudsouzian Desales University.</td>
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<td>132</td>
<td><strong>Untangling defects in cell cycle control caused by a reciprocal translocation in the fungus Aspergillus nidulans.</strong> Brown, Morgan*, Joseph Artemiou*, and Steve James Gettysburg College.</td>
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<td>133</td>
<td><strong>Genetic and biochemical analysis of Aspergillus nidulans SET2, a histone H3K36 trimethyltransferase that controls mRNA levels of the snxa shuttling mRNA-binding protein.</strong> Francisco, Sarah*, and Steven James Gettysburg College.</td>
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<td>134</td>
<td><strong>Behavior of a Sex Trivalent in Metaphase I and Anaphase I.</strong> Felt, Kristen*, Makayla Lagerman*, Ryan Doan, and Leocadia Paliulis Bucknell University.</td>
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<td>135</td>
<td><strong>The role of dityrosine in the protection of Saccharomyces cerevisiae spores from ultraviolet light.</strong> Walton, Elizabeth*, Nathan Navarro*, Christopher Cortes, Archana Ganta, James Hughes, Edward Winter, and Aikaterini Skokotas Rosemont College.</td>
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<td>136</td>
<td><strong>The Role of RPA phosphorylation in cell cycle regulation and telomere synthesis.</strong> Namous, Nadia*, and Andre Walther Cedar Crest College.</td>
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<td>137</td>
<td><strong>Identification of phosphorylation dependent protein-protein interactions with Replication Protein A using the Yeast Two Hybrid assay.</strong> Sarara, Donna*, Sarah Jane Groves*, and André Walther Cedar Crest College.</td>
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<td>138</td>
<td><strong>Replication Protein A phosphorylation modulates cellular responses to chemotherapeutic DNA damaging agents in the budding yeast, Saccharomyces cerevisiae.</strong> Namous, Fadia*, Brianna Hill*, and André Walther Cedar Crest College.</td>
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<td>139</td>
<td><strong>AFM imaging of human chromosomes.</strong> Emmett, Grace*, and Jeffrey Stephens Misericordia University.</td>
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<td>140</td>
<td><strong>The Colloidal Enigma: N-phenyl-1-naphthylamine (NPN) and dimethylsulfoxide (DMSO) colloid formation in water.</strong> Cirilo, Joseph*, and Julie Belanger King’s College.</td>
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Toward the characterization of egg lipids in the presence of small molecules with differential scanning calorimetry. Thomas, Nicolas*, Zoe Waizenegger*, and Julie Belanger King’s College.

Anti-inflammatory effects of ellagitannins and anthocyanins in berry leaf teas. Goodson, Sara*, and Deanne Garver Marywood University.

Characterization of phthalates as contaminants in unscheduled alcohol samples from the Baltic region. Carwell, Shanna*, and Deanne Garver Marywood University.

Enhanced luminol chemiluminescence with silver and gold nanoparticles. Kurey, Caitlin*, Kuntal Patel*, and Mary Lynn Grayeski Marywood University.

Evaluation of alkene bromination methods according to Green Chemistry Principles. Plumer, Mariah*, Nicholas Yurek, Jason Spevak, and Anne Szklarski King’s College.

Experimental and computational investigation of the isomerization of vicinal dibromides in conformationally rigid cyclohexane systems. Accocella, Ryan*, and Anne Szklarski King’s College.


Investigation of the thermoreversible gelation of polycaprolactone and its multiple melting points. Hearne, William*, and Isaac VonRue King’s College.

Development of a qualitative method for detection of intravenous methadone abuse. Evans, Tiara*, Richard Jackson, and Catherine Santai Harrisburg University of Science and Technology.


Development of a custom detection and acquisition system able to perform fluorescence lifetime imaging. Eplett, Sarah*, and Ryan Colyer Cabrini University.

Development of a novel fluorescence lifetime imaging technique using compressive sensing. Grant, Sarah*, and Ryan Colyer Cabrini University.


The impact of N-glycosylation on the binding affinity of IL-13 to the receptor IL-13Ra-2. Jenkins, Carson*, and Jeffrey Thompson York College of Pennsylvania.

Expression of THRA over the course of retinal development in Chicken (Gallus gallus) embryos and the impacts of Thyroid Hormone on THRA Expression. Long, Hailey*, and Sean Georgi York College of Pennsylvania.

Anesthetic Effect on Gene Expression of MT2 and BCL2 and Apoptosis in Gallus gallus embryos Across Retinal Development. Sullivan, Kaelan*, and Sean Georgi York College of Pennsylvania.


Investigating the connection between apoptosis and the corticosterone-induced loss of splenic dendritic cells in mice. Chambers, Morgan*, and Jodi Yorty Elizabethtown College.


Double-stranded RNA klf-3 microinjected into Caenorhabditis elegans klf-2 mutant: effects on morphology and fecundity. Davis, Kaleb*, and Christopher Brey Marywood University.
162. The physiological and anatomical effects of dietary high fructose corn syrup-65 compared to sucrose in CD-1 mice (Mus musculus). Rosado, Rousanna*, Brian Gray, and Bradley Rehnberg York College of Pennsylvania.

163. Dyslexia-related single nucleotide polymorphisms have an influence on college major choice. Saccone, Nicholas*, Ann Yezerski, Elizabeth Hoover, Tyler Grogan, and Matthew Evers King’s College.

164. Induction of dopaminergic phenotype in SH-SY5Y cells by sequential exposure to retinoic acid and brain-derived neurotrophic factor (BDNF). Lundy, Daniel*, Brianna Morris, and Kathleen Bartlow Lycoming College.


166. The effects of glutamate on trkb.t1-mediated calcium release in SH-SY5Y cells. Perez, Alexis*, and Barbara Fenner King’s College.

167. The effects of mechanical stress on neurite outgrowth, oxidative stress, and trkb.t1 expression in SH-SY5Y cells. Szerszen, Krystal*, and Barbara Fenner King’s College.

168. Using the yeast two-hybrid method to identify novel protein interactors of the cannabinoid type 1 receptor. Vera, Andrew*, Stephanie Justice-Bitner, and Jessica Petko King’s College.


173. Designing a binary plasmid that allows inducible non-antibiotic elimination of the host bacterium. Camarata, Tia*, and Andrew Samuelsen Albright College
List of Restaurants Near King’s Campus
(in order of distance from campus)
*will take call ahead orders

Food Trucks
- Gyro King
- Cibo’s Pizza

Wilkes-Barre
1. Vesuvios* (0.2 miles)
“A variety of Italian dishes,” pizza by the slice, and beers on draft.
111 N Main St, Wilkes-Barre, PA 18701
Hours: Sat 10A-3P; Sun 10A-2P (570) 824-8747
eatatvesuvios.com

2. Jasmine Thai (0.3 miles)
“Thai Restaurant & Lounge”
216 N River St, Wilkes-Barre, PA 18702
Hours: Sat 11A-10P; Sun 1P-8P (570) 822-7222
Jasminethaiwilkesbarre.com

3. Torres Bakery* (0.3 miles)
A small Central-American bakery and grocery with amazing tacos to go.
160 N Washington St, Wilkes-Barre, PA 18701
Hours: Sat 6A-6P; Sun 6A-2P (570) 824-4069

4. Chick-Fil-A (0.5 miles)
20 Public Square, Wilkes-Barre, PA 18701
Hours: Sat 7:30A-7:30P; Sun closed (570) 208-5900

5. Circles on the Square* (0.5 miles)
“Wilkes-Barre’s finest take-out deli”
9 Public Square, Wilkes-Barre, PA 18701
Hours: Sat 10:30A-3:30P; Sun closed (570) 829-4005
circlesonthesquare.biz

6. El Zocalo* (0.5 miles)
“Bringing Fresh Mexican food to downtown Wilkes Barre”
21 Public Square, Wilkes-Barre, PA 18701
Hours: Sat 12-9; Sun closed (570) 822-3942
https://www.facebook.com/elzocalomexicancuisine/

7. City Market (0.5 miles)
“Full service Deli and Restaurant with fresh produce”
25 Public Square, Wilkes-Barre, PA 18701
Hours: Sat and Sun 7:00A-12:00P (570) 235-6916
https://www.facebook.com/pg/CityMarketWilkesBarre/

8. Rodano’s (0.6 miles)
American & Italian cuisine, cocktails & entertainment. Patio dining available.
53 Public Square, Wilkes-Barre, PA 18701
Hours: Sat 11A-10P; Sun 11A-9P (570) 829-6444
rodanos.com

9. Thai Thai (0.7 miles)
“Authentic Thai cuisine”
41 S Main St, Wilkes-Barre, PA 18701 (570) 824-9599
Hours 11:00-3:00; 4:30-10 Saturday; Closed Sunday
thaithaiwilkesbarre.com

10. Letts Eat (0.7 miles)
“A variety of lunch and dinner specials infused with traditional Indian flavors.”
78 S Main St, Wilkes-Barre, PA 18701 (570) 371-3890
Hours 11:30A-10:00P Saturday, Closed Sunday
letts-eat.com

Kingston/Forty-Fort Restaurants
1. Goldstein’s Delicatessen* (1.2 miles)
“Gourmet sandwiches, pizza & craft beer offered in a cozy diner with a vintage, small-town feel.”
200 Pierce St, Kingston, PA 18704
Hours: Sat 8a-11P; Sun 11A-10P (570) 283-0653
Goldsteinsdeli.com

2. Bakehouse (1.8 miles)
Baked goods, bagels, sandwiches
152 United Penn Plaza, Kingston, PA 18704
Hours: Sat 6:30A-7P; Sun 6:30A-5P (570) 714-2253
bakehouse-cafe.com

3. Biggie Burger (@ Bakehouse)
152 United Penn Plaza, Kingston, PA 18704
Hours: Sat 11A-7P; Sun 11A-5P (570) 714-2253
biggieburger.com/

4. AmberDonia (2 miles)
Pastries and wood-fired pizza
26 E Union St, Kingston, PA 18704
Hours: Sat 7A-9P; Sun 7A-7P (570) 714-6000
amberdonia.us

5. Canteen 900 (2.5 miles)
“Casual bistro go-to with a focus on natural foods serves breakfast & lunch in a chic, rustic space.”
900 Rutter Ave, Forty Fort, PA 18704
Hours: Sat 8A-4P; Sun closed (570) 338-2547
canteen900.com
Local Area Attractions

Everhart Museum
“Natural History, Science and Art”
1901 Mulberry Street, Scranton, PA 18510
(570) 346-7186
everhart-museum.org/
Hours: M, Th, F, 12P - 5P; Sat 10A - 5P; Sun 12P - 5P

Steamtown National Historic Site
“Steamtown National Historic Site is a railroad museum and heritage railroad located on 62.48 acres in downtown Scranton, Pennsylvania, at the site of the former Scranton yards of the Delaware, Lackawanna and Western Railroad.”
Lackawanna Ave at Cliff St., Scranton, PA 18503
(570) 340-5200
www.nps.gov/stea/index.htm
Hours: Daily 9A - 5P (Winter hours: January 8 - April 1, 10A - 4P)

Lackawanna Coal Mine Tour
“Descend slowly into the earth in a mine car as you enter the old Slope #190. Watch the sky slowly disappear. Soon you’ve reached “the foot”. Then explore 300 feet beneath the earth through an anthracite coal mine originally opened in 1860. Accompany a miner in the winding underground gangways and rock tunnel past three different veins of hard coal, past the mule boy and the niper, past the monkey vein and the dead chute. Listen as he explains the fascinating methods used, and the heroic efforts involved, in deep mining’s history.”
McDade Park, Bald Mountain Road, Scranton, PA 18504
(800) 238-7245 and (570) 963-6463
lackawannacounty.org/index.php/attractions/coal-mine
Hours: Box office opens at 10A. The last tour leaves between 2:30 and 3:00 and you must arrive no later than 2:45 to be scheduled for the final tour of the day. (Opens April 1st)

Anthracite Heritage Museum
“The Anthracite Heritage Museum serves the educational needs of the public regarding the story of hard coal mining, its related industries, and the immigrant culture of northeastern Pennsylvania.”
McDade Park, Bald Mountain Road, Scranton, PA 18504
(570) 963-4804
www.anthracitemuseum.org/
Hours: M-Sat 9A - 5P; Sun 12P - 5P (Closed M-Tu in April)

Eckley Miners’ Village Museum
“Eckley Miners’ Village educates the public about the story of anthracite coal mining along with patch towns and their residents through the preservation and exploration of the site and its collection. Nestled among the coal fields of Luzerne County in northeastern Pennsylvania, Eckley is an example of a planned 19th-century industrial coal mining town showing visitors what life was like during the time when “coal was king.”
(570) 636-2070
eckleyminersvillage.com/
2 Eckley Back Road, Weatherly, PA 18255
Hours: M-Sat 9A - 5P; Sun 12P - 5P

Frances Slocum State Park
“Frances Slocum State Park consists of 1,035 acres in northeastern Pennsylvania’s Luzerne County. The horseshoe shaped, 165-acre lake is popular for boating and fishing, and is a home to many species of birds, fish, and wildlife. The many hiking and mountain biking trails and the large day use area attract visitors to picnic and explore the forests.”
Address: 567 Mt Olivet Rd, Wyoming, PA 18644
Phone: (570) 696-3525
www.dcnr.state.pa.us/stateparks/findapark/francesslocum/
Open from sunrise to sunset every day of the year

Seven Tubs Recreation Area
“Seven Tubs Recreation Area is a publicly accessible recreation area located in Luzerne County, Pennsylvania, owned by the Pennsylvania Department of Conservation and Natural Resources.”
900 Bear Creek Blvd, Wilkes-Barre, PA 18702
www.dcnr.state.pa.us/forestry/stateforests/pinchot/index.htm
Phone: (570) 675-1312

Rickett’s Glen
“Ricketts Glen State Park is a Pennsylvania state park on 13,050 acres in Columbia, Luzerne, and Sullivan counties in Pennsylvania in the United States.”
(570) 477-5675
695 State Route 487, Benton, PA 17814
www.dcnr.state.pa.us/stateparks/findapark/rickettsglen/
Open every day of the year
PAS Business Meeting Business
Saturday April 1 12:15-1:00 PM Burke Auditorium, McGowan Hall

Items for vote:

Nominated Slate for 2017 Election:

The slate for our annual elections is given below and will also be discussed at the annual Business Meeting. After nominations are taken from the floor, there will be a vote of the membership to approve the slate of officers. Officers up for election are in bold. We are still accepting nominations for offices up for election.

PJAS Director: Fay Nelson (elected by PJAS)
Treasurer: Matthew Wallace (2016-2018)
Finance and Investments Chair: J. Michael Campbell (2016-2018)
Corresponding Secretary: Sheryl Fuller-Espie (2017-2019)
Recording Secretary: Tammy Tintjer (2016-2018))
Book Editor: Sandy Whidden (2016-2018)
Journal Editor: Carl Pratt (2016-2018)
Webmaster and Archivist: André Walther (2017-2019)
Education Chair: David Singleton (2016-2018)
Annual Meeting Chair: Tammy Tintjer for Kings Meeting (2017)
Program Chair: André Walther (appointed)
Affiliate Chair: Greg Czarnecki (2016-2018)

Changes to the Constitution of the Pennsylvania Academy of Science

There are a number of changes proposed for our constitution that will need to be voted upon at the spring meeting. Most of these changes relate to issues that need to be addressed so that we can more effectively partner with Penn State University Press to publish our books and journal.

Proposed changes can be found at https://pennsci.org/proposed-changes-to-constitution/
Meeting Notes
Join us next year for
the 94th Annual Meeting of the Pennsylvania Academy of Sciences

at Indiana University of Pennsylvania
1. The William G. McGowan School of Business
2. Theater
3. Administration Building
4. Mulligan Physical Science Center
5. Charles E. & Mary Parente Life Sciences Center
6. Marie Luksic Hall
7. John J. Lane House
8. Kilburn House
9. Graduate Division/
   Center For Lifelong Learning &
   Office of International Recruitment
10. Environmental Studies
11. Intern Housing
12. Moreau House/Student Housing
13. Sherrer House
14. J. Carroll McCormick
   Campus Ministry Center (Chapel)
15. Hafey-Marian Hall
16. Holy Cross Hall
17. Hessel Hall
18. Athletic Recruitment Center
19. Study Abroad and Honors Program
20. ROTC
21. College Property
22. Esseff Hall
23. D. Leonard Corgan Library
24. Scandlon Physical Education Center
25. Leo Flood Hall
26. Human Resources
27. Alumni Hall
28. Monarch Court
29. Moreau Court
30. Sheehy-Farmer Campus Center
31. Thomas J. O’Hara Hall
32. André Hall (Student Health Center)
33. Office of Campus Safety and Security
34. O’Connor Park