



# NEWSLETTER

Volume 64, No.1

January, 2006

## *Pennsylvania Academy of Science*

### PLAN TO ATTEND THE Pennsylvania Academy of Science 82<sup>nd</sup> ANNUAL MEETING

Holiday Inn  
Grantville, PA

**March 31-April 2, 2006**

**DEADLINE FOR HOTEL RESERVATIONS:  
MARCH 17, 2006**

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#### ***The Pennsylvania Academy of Science Newsletter***

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PAS Home Page: <http://pennsci.org>

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Erie, PA 16546

## FROM THE DESK OF THE PRESIDENT



Welcome to 2006. May the New Year bring you happiness and may you successfully keep all your resolutions. Sometimes I believe that the New Year's resolution is a version of punctuated equilibrium, an attempt to jolt free of the status quo with a dramatic, profound change. But inertia is hard to overcome and old habits die hard.

As for me, I've dumped my usual fitness related resolutions, in favor of not procrastinating once I get around to it. This year we do have a change for our newsletter. It will now be available only on the PAS home page, <http://pennsci.org>.

I am excited about the PAS annual meeting to be held March 31–April 2 at the Holiday Inn, Harrisburg. In the commonwealth the opportunities for students to participate in numerous ongoing research activities is evidenced by the nearly 140 abstracts submitted for the annual meeting.

Rather than make resolutions, we as an organization should try to accomplish the following: PAS still needs more members, and I encourage you to consider sponsoring the first year of membership for your undergraduate and graduate students. If you have ideas for symposia for future meetings, please don't hesitate to let us know. If you are interested in any of the offices for PAS, contact us for more information.

I would like to express my gratitude to all the members who have responded to the Annual Fund Campaign. The goal of the development fund is to generate sufficient money to cover the cost of publishing our journal and provide for undergraduate and graduate student research grants. We still have a way to go but with your help we will be able to achieve our goal.

I am looking forward to seeing you all in Harrisburg.

Jane E. Huffman, PhD  
President of the Pennsylvania Academy of Science  
Professor, Department of Biological Sciences  
East Stroudsburg University of Pennsylvania

## DIRECTORS AT LARGE

(2005-2007) Fred Brenner  
(2005-2007) Sherman Hendrix

## OFFICERS AT LARGE

Director (2004-2006): Dana Harriger  
Director (2004-2006): Robert Coxe  
Director (2004-2006): Robert Cole

## Address change and membership application:

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## UPCOMING MEETINGS

The **82<sup>nd</sup> Annual PAS Meeting** will be held at the *Holiday Inn, Grantville, PA, March 31-April 2, 2006.*

The **National Conference on Undergraduate Research (NCUR)<sup>®</sup> 20<sup>th</sup> Annual Meeting** will take place on *April 6-9, 2006, UNC Asheville, NC.* Please visit the website for more information <http://www.ncur.org/>

The **American Society for Microbiology 106<sup>th</sup> General Meeting** will take place **May 21 - 25, 2006, Orlando, FL.** Please visit the website for more information <http://www.asmta.org/>

The **Ecological Society of America 91<sup>st</sup> Annual Meeting** will take place Aug. 6-11 2006, Memphis, TN. Please visit the website for more information <http://www.esa.org/memphis/>

The **Geological Society of American Annual Meeting** will take place on **October 22-25, 2006, Philadelphia, PA.** Please visit the website for more information <http://www.geosociety.org/meetings/2006/>

## CALL FOR NOMINATIONS

The members of the Pennsylvania Academy of Science are requested to submit nominations for the following offices of the Academy to be elected at the 2006 annual meeting:

President-elect (2006-8)  
Corresponding Secretary (2006-8)  
Treasurer-elect (2006-8)  
Director-at-large (2006-8) 2 positions (Nominated from among the committee chairs)

Nominations should be sent to:

Dr. Clarence J. Murphy, Chair  
PAS Nominating Committee  
312 Albert Road  
Stroudsburg, PA 18360

Or send emails to [cjmurphy@ptd.net](mailto:cjmurphy@ptd.net)

## 82<sup>nd</sup> Annual Meeting of the Pennsylvania Academy of Science Photo Contest

### Calling All Photographers

Photographers are invited to enter their best photos in The Pennsylvania Academy of Science's 3<sup>rd</sup> Annual Conference Photography Contest. Categories for this year's contest are: Landscape, Flora, Fauna, Conservation Activities and Open. A panel of judges will judge entries and provide a critique of winning photos at the award presentation after dinner on Saturday night. Ribbons and tangible prizes will be awarded as follows: ribbon awards and prizes will be made for 1st, 2nd and 3rd place in each category. Best of Show and Peoples' Choice (voting by conference participants) awards will also be awarded prizes.

### PHOTOGRAPHY CONTEST RULES

- Entrant must be registered for the Conference to submit a photo.
- Entrant must have taken the photo and have all rights to its distribution and use.
- Entries cannot include photos submitted to a previous PAS conference.
- Maximum of four entries per category per entrant.
- All entrants must register their photos at the registration desk on Friday March 31<sup>st</sup>.
- Entry fee is \$2.00 per photo or \$10.00 total if five or more are submitted.

Entry categories are Landscape, Flora, Fauna, Conservation Activities and Open. Only hard-copy prints will be accepted. Images may have been taken on film, or captured digitally and manipulated to achieve the final image. Each photo may not be entered in more than one category. Photos of captive/captured animals or propagated plants may be submitted only in the Open category. Black and white or color photos may be submitted in any category.

**Hard Copy Prints:** The size of hard-copy prints must be between 5"x7" and 11"x16" (print photography contest booth will be staffed by volunteers during daytime hours, we cannot guarantee total security of your photos).

A panel of judges will select winning entries. Judges will evaluate photos on the basis of the image impact (message/feelings conveyed) 25%, and 15% each for clarity, color/contrast, composition, lighting, and overall impression. Conference attendees will select the Peoples' Choice winner among all the photos. Attendees will have until 4 PM on Saturday to cast their votes.

Ribbons and prizes will be awarded Saturday evening at the critique.

# SCHEDULE OF ACTIVITIES AT A GLANCE

## 82<sup>nd</sup> Annual Meeting of the Pennsylvania Academy of Science

March 31 – April 2, 2006 – Holiday Inn, Grantville PA

### FRIDAY, March 31

1:00 pm	Board of Director's Meeting	Congressional Suite
3:00-8:00 PM	<b>Registration</b>	Lobby
6:30-8:00 PM	<i>Dinner</i>	Majestic I & II
8:15 PM	<b>Speaker</b>	Majestic I & II

### SATURDAY, April 1

7:30-9:00 AM	<i>Breakfast</i>	Majestic I & II
8:30-11:00 AM	<b>Registration</b>	Lobby
9:00-5:00 PM	<b>Exhibits</b>	Royale 1,2,3
9:00-12 Noon	<b>Paper Presentations</b>	
	<b>I</b> Molecular Biology / Chemistry / Physics	Congressional Suite
	<b>II</b> Aquatic Biology	Regency Suite
	<b>III</b> Parasitology / Microbiology	Pennsylvania Suite
9:00 AM-12 Noon	<b>Poster Session I</b> Cell / Molecular Medicine	Royale 1,2,3
10:00-10:30 AM	<i>Coffee Break</i>	Foyer
10:00AM-2:30PM	Advisory Council Meeting	Winners' Circle Saloon
12 Noon-1:15 PM	<i>Lunch</i>	Majestic I & II
1:00-5:00 PM	<b>Paper Presentations</b>	
	<b>IV</b> Medicine / Cancer / Immunology	Congressional Suite
	<b>V</b> Ecology / Environmental Science / Botany	Regency Suite
	<b>VI</b> Vertebrate Zoology	Pennsylvania Suite
1:00-4:00 PM	<b>Poster Session II</b> Ecology Aquatic Biology	Royale 1,2,3
2:30-3:00 PM	<i>Coffee Break</i>	Foyer
5:00 PM	<b>Business Meeting</b>	Congressional Suite
5:00-6:30 PM	<i>Social Hour (Cash Bar)</i>	Winners' Circle Saloon
6:30-8:00 PM	<i>Dinner</i>	Grande Ball Room
8:15 PM	<i>Mixer</i>	Winners' Circle Saloon

### SUNDAY, April 2

7:30-9:00 AM	<i>Breakfast</i>	Majestic I & II
8:30-11:00 AM	<b>Registration</b>	Lobby
8:30-11:30 AM	<b>Poster Session III</b> Microbiology / Parasitology	Royale 1,2,3
11:00 AM	<b>Board of Director's Meeting</b>	Congressional Suite

## PROGRAM SESSIONS

82<sup>nd</sup> Annual Meeting of the Pennsylvania  
Academy of Science  
Holiday Inn, Grantville, PA  
March 31-April 2, 2006

### Program Chairs

Lucinda H. Elliott and Marcie L. Lehman

**SATURDAY, APRIL 1**

**9:00 AM – 12:00 NOON**

#### Session I

#### MOLECULAR BIOLOGY/CHEMISTRY/PHYSICS

Congressional Suite

Lucinda Elliott, Session Chair

**9:00-9:15**

1. GENERATION OF A FULL-LENGTH CDNA CODING FOR THE *MANDUCA SEXTA* APOLIPOPHORIN PRECURSOR PROTEIN. **Elaine Steinke\*** and **K. Joy Karnas** (Cedar Crest College, Department of Biological Sciences).

**9:15-9:30**

2. IDENTIFICATION OF LEPIDOPTERON APOLIPOPROTEINS. **Lynn Wilson\*** and **K. Joy Karnas** (Cedar Crest College, Department of Biological Sciences).

**9:30-9:45**

3. PODOCORYNA CARNEA EST PROJECT. **Alicia M. Alcamo\*<sup>1</sup>**, **Heather L. House<sup>2</sup>** and **Diane Bridge<sup>1</sup>** (<sup>1</sup>Elizabethtown College, <sup>2</sup>University of Maryland School of Medicine).

**9:45-10:00**

4. ENZYME THAT MAKES A CRITICAL CELL WALL COMPONENT FOR CAPSULE ATTACHMENT IN THE FUNGAL PATHOGEN *CRYPTOCOCCUS NEOFORMANS*. **Julianne A. Sefko\*** and **Amy J. Reese** (Cedar Crest College, Department of Biological Sciences).

**10:00-10:15**

**BREAK**

**10:15-10:30**

5. USING RNA INTERFERENCE TO REDUCE THE LEVELS OF A CELL WALL REGULATION ENZYME IN THE FUNGAL PATHOGEN *CRYPTOCOCCUS*

*NEOFORMANS*. **Devika Rawal\*** and **Amy J. Reese** (Cedar Crest College).

**10:30-10:45**

6. PURKINJE NEURON DEVELOPMENT: INTRACELLULAR SIGNALING PATHWAYS THAT REGULATE DENDRITE FORMATION. **Stamatis A. Zeris\*** and **Mary E. Morrison** (Lycoming College, Biology Department).

**10:45-11:00**

7. EXTRACTION OF ISOFLAVONES FROM SOYBEAN. **Heather Plank\***, **Ray Shively**, and **Deborah S. Austin** (Wilson College, Department of Chemistry).

**11:00-11:15**

8. METHYLTRIOXORHENIUM-CATALYZED EPOXIDATION OF OLEFINS IN HALOGEN-FREE IONIC LIQUIDS. **Jayna Reggi\***, **Ray Shively**, and **Deborah S. Austin** (Wilson College, Department of Chemistry).

**11:15-11:30**

9. DETERMINATION OF WINDOWS OF VULNERABILITY FOR THALIDOMIDE INDUCED TERATOGENESIS IN SEA URCHIN EMBRYOS CULTURED IN VITRO. **Cherysse Lanns\***, **Katie Plocharczyk**, **Steven Heverley**, and **Jan Reichard-Brown** (Susquehanna University, Department of Biology).

**11:30-11:45**

10. G PROTEIN RECEPTOR REGULATION OF ZEBRAFISH CARDIAC DEVELOPMENT. **Carl A. Hansen,<sup>1\*</sup>** **Anna Stauffer,<sup>2</sup>** and **Janet Robishaw<sup>2</sup>** (<sup>1</sup>Bloomsburg University, Biological and Allied Health Sciences, <sup>2</sup>Geisinger Clinic, Weis Center for Research).

**11:45-12:00**

11. MEASURING THE EFFICIENCY OF AN AUTOMOBILE ENGINE USING A METER STICK AND A STOP WATCH. **Neil M Shea\*** (Kutztown University, Department of Physical Sciences (retired)).

**SATURDAY, APRIL 1**

**9:00 AM – 12:00 NOON**

#### Session II

#### ECOLOGY/ENVIRONMENTAL/AQUATIC BIOLOGY

Keystone B

Peter Petokas, Session Chair

**9:00-9:15**

12. PRELIMINARY REPORT ON THE DISTRIBUTION, HABITAT, AND FOOD PREFERENCES OF JUVENILE AND ADULT EASTERN HELLBENDERS (*CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS*) IN NORTHCENTRAL PENNSYLVANIA. **Peter J. Petokas\***, **James Rogers**, **Philip Kratochvil**, and **Noah Sterngold** (Lycoming College, Department of Biology).

**9:15-9:30**

13. ATTEMPTS BY SPORTSMEN TO EXTIRPATE THE EASTERN HELLBENDER (*CRYPTOBRANCHUS ALLEGANIENSIS ALLEGANIENSIS*) FROM NORTHCENTRAL PENNSYLVANIA STREAMS DURING THE 1930'S. **Peter J. Petokas\*** and **James Rogers** (Lycoming College, Department of Biology).

**9:30-9:45**

14. A CHEMICAL AND PHYSICAL ASSESSMENT OF THE BUFFALO CREEK WATERSHED (UNION COUNTY PA). **Brad Musser\***, **Katie Swanson**, **Laura Lockard**, and **Mel Zimmerman** (Lycoming College).

**9:45-10:00**

15. SEDIMENTATION ASSOCIATED WITH A WET-CONSTRUCTED STREAM CHANNEL RESTORATION PROJECT IN THE PENNSYLVANIA PIEDMONT: PLACING PERCEPTIONS IN PERSPECTIVE. **Matthew P. Hoch\*** and **Jason S. Shirey** (Penn State University - York).

**10:00-10:15****BREAK****10:15-10:30**

16. EVIDENCE OF THE IMPORTANCE OF FIRST ORDER STREAMS IN THE PENNSYLVANIA LAKE ERIE WATERSHED AND WHY THEY SHOULD BE BETTER PROTECTED. **J. Michael Campbell\*** and **Erik A. Weber** (Mercyhurst College).

**10:30-10:45**

17. BIOLOGY AND CHEMISTRY OF MINESHAFT OUTFLOWS IN TIOGA COUNTY, PA. **John Kirby**, **Gregory Carson**, and **Carissa Ganong\*** (Mansfield University, Department of Chemistry).

**10:45-11:00**

18. AN EXAMINATION OF THE INTERACTION BETWEEN AN INVASIVE SNAIL AND NATIVE MOLLUSK BIODIVERSITY IN LAKE ONTARIO. **Ashley Kelley\***, **Shane Lunnen**, and **Edward P. Levri** (Penn State – Altoona, Division of Mathematics and Natural Sciences)

**11:00-11:15**

19. CONTRIBUTING AREAS OF TWO MAJOR CARBONATE SPRING SYSTEMS IN SOUTH CENTRAL PENNSYLVANIA DETERMINED BY FLUORESCENT DYE TRACING. **Ashley Brookhart\*<sup>1</sup>**, **Todd Hurd<sup>1</sup>**, **Thomas Feeney<sup>1</sup>**, **Martin Otz<sup>2</sup>**, and **Ines Otz<sup>2</sup>** (<sup>1</sup>Shippensburg University, <sup>2</sup>5788 Widewaters Parkway, Dewitt, NY 13214).

**11:15-11:30**

20. A STUDY OF *MYRIOPHYLLUM HETEROPHYLLUM* IN PENNSYLVANIA AND DELAWARE. **Amanda Treher\*<sup>1</sup>**, **Timothy Block<sup>1</sup>**, **Ann Rhoads<sup>1</sup>**, **Lucinda McDade<sup>2</sup>**, **James Macklin<sup>2</sup>**, and **Carrie Kiel<sup>2</sup>** (<sup>1</sup>University of Pennsylvania, The Morris Arboretum, <sup>2</sup>The Academy of Natural Sciences, Philadelphia).

**11:30-11:45**

21. INFLUENCE OF ACLIMATION TEMPERATURE ON THE POST STOCKING MOVEMENT OF HATCHERY TROUT IN STREAMS. **Robert Wnuk\*<sup>1</sup>** and **John S. Smith<sup>2</sup>** (<sup>1</sup>PA Fish and Boat Commission, <sup>2</sup>East Stroudsburg University of Pennsylvania).

**SATURDAY, APRIL 1****9:00 AM – 12:00 NOON****Session III****PARASTOLOGY/MICROBIOLOGY****Keystone C****Jane Huffman, Session Chair****9:00-9:15**

22. THE EFFECTS OF ESTIVATION ON THE SURVIVAL AND LIPID COMPOSITION OF *BIOMPHALARIA GLABRATA* INFECTED WITH *SCHISTOSOMA MANSONI*. **Meredith M. White\*** and **Bernard Fried** (Lafayette College, Department of Biology).

**9:15-9:30**

23. EMERGING TICK-BORNE INFECTIOUS DISEASE PREVALENCE IN NORTHEASTERN PENNSYLVANIA TICK POPULATIONS. **Judy Cherepko\***<sup>1</sup>, **Gary Fromert,**<sup>2</sup> **Michael Pula,**<sup>1</sup> and **Jane E. Huffman**<sup>2</sup> (<sup>1</sup>Monroe County Vector Control, <sup>2</sup>East Stroudsburg University, Applied DNA Sciences Laboratory).

**9:30-9:45**

24. HEMATOLOGY AND PREVALENCE OF *TOXOPLASMA GONDII* AND *TRICHINELLA SPIRALIS* ANTIBODIES IN NEW JERSEY BLACK BEARS (*URSUS AMERICANUS*). **Jane Huffman\***<sup>1</sup>, **Heather Kinyon,**<sup>1</sup> **Jack Pedone,**<sup>1</sup> **Kelcey Burgess,**<sup>2</sup> and **Patrick Carr**<sup>2</sup> (<sup>1</sup>East Stroudsburg University, Department of Biological Sciences, <sup>2</sup>New Jersey Division of Fish & Wildlife, Clinton Management Area, Hampton, NJ).

**9:45-10:00**

25. BACTERIAL PNEUMONIA IN THE OPOSSUM (*DIDELPHIS VIRGINIANA*) INFECTED WITH THE LUNGWORMS *DIDELPHOSTRONGYLUS HAYESI* AND *CAPILLARIA* SP. **Tanya Troutman\*** and **Jane E. Huffman** (East Stroudsburg, Department of Biological Sciences).

**10:00-10:15****BREAK****10:15-10:30**

26. SCANNING ELECTRON MICROSCOPY OF THE TEGUMENTAL SURFACE OF *RIBEIROIA* SPP REDIAE AND CERCARIAE. **Shamus P. Keeler\*** and **J. E. Huffman** (East Stroudsburg University, Department of Biological Sciences).

**10:30-10:45**

27. CONJUGAL TRANSFER OF ANTIBIOTIC RESISTANCE FROM ENVIRONMENTAL ISOLATES. **Colleen E. Walsh\*** and **Laurie F. Caslake** (Lafayette College, Department of Biology).

**SATURDAY, APRIL 1****1:00 PM – 5:00 PM****Session IV****CANCER/IMMUNOLOGY/MEDICINE****Keystone A****Jonathan Coren, Session Chair****1:00-1:15**

28. DETERMINING THE ABILITY OF SV40 T-ANTIGEN TO REACTIVATE SILENT RIBOSOMAL PROMOTERS BY USING REAL TIME PCR. **Rachael S. Levine\*** and **Jane F. Cavender** (Elizabethtown College, Biology Department).

**1:15-1:30**

29. LOCALIZATION OF B23 IN THE PRESENCE OF SIMIAN VIRUS T ANTIGEN. **Meghan E. Gowens\*, Katherine Heberlein,** and **Jane F. Cavender** (Elizabethtown College, Biology Department).

**1:30-1:45**

30. LONG TEMPLATE PCR AMPLIFICATION OF GENOMIC DNA TO IDENTIFY CLONES WITH FULL LENGTH P53 GENES. **David Hamel\*** and **Jonathon Coren** (Elizabethtown College, Biology Department).

**1:45-2:00**

31. ANALYSIS OF AN ARRAYED HUMAN GENOMIC LIBRARY CONSTRUCTED IN THE PAC VECTOR PJCPAC-MAM2. **Robert Burke\*, Yasunori Nagahama\*,** and **Jonathon Coren** (Elizabethtown College, Biology Department).

**2:00-2:15**

32. GROWTH INHIBITION, CYTOGENETIC EFFECTS AND INDUCTION OF APOPTOSIS MEDIATED BY IMATINIB MESYLATE, AN EFFECTIVE ANTI-LEUKEMIA DRUG IN HUMAN CERVICAL CARCINOMA (HELA) CELLS. **I-Lee Hwa\*, Christopher Sweitzer\*, Aviva Goel,** and **Shyamal K. Majumdar** (Lafayette College).

**2:15-2:30****BREAK****2:30-2:45**

33. MUTAGENESIS BY ANTHRACYCLINES IN AN *ESCHERICHIA COLI* PLASMID. **Caitlin Feather\*** (Edinboro University, Department of Biology).

**2:45-3:00**

34. EFFECT OF CCL5 ON ANTIGEN SPECIFIC T CELL EFFECTOR FUNCTION. **Tye R. Murphy\*, Daniela Simova,** and **Robert A. Kurt** (Lafayette College, Department of Biology).

**3:00-3:15**

35. INHIBITION OF CCL5 EXPRESSION BY A MURINE MAMMARY CARCINOMA USING RNA INTERFERENCE. **Mevan Jayasinghe\*** and **Robert A. Kurt** (Lafayette College, Department of Biology).

**3:15-3:30**

36. TOLL-LIKE RECEPTOR MRNA EXPRESSION IN DENDRITIC CELLS FROM OTII TRANSGENIC MICE. **Collin J. LaCasse\*** and **Robert A. Kurt** (Lafayette College, Department of Biology).

**3:30-3:45**

37. EFFECTS OF OBESITY AND CIGARETTE SMOKING ON REPRODUCTIVE SUCCESS. **Kristine Tofts\***, **Aliceann Reilly,<sup>1</sup>** and **Cynthia Surmacz<sup>2</sup>** (<sup>1</sup>Geisinger Medical Center, The Fertility Center, <sup>2</sup>Bloomsburg University).

**3:45-4:00**

38. COMPARATIVE HEALING IN A EQUINE MODEL: ANALYSIS OF THREADED VERSUS UNTHREADED OSTEOSTIXIS IN MCIII'S AND MTIII'S. **Kay Pfaff,<sup>1</sup>\*** **Gareth Spurlock,<sup>2</sup>** **M. Dana Harriger,<sup>1</sup>** **Alicia L. Bertone,<sup>3</sup>** and **Brad E. Engle<sup>1</sup>** (<sup>1</sup>Wilson College, <sup>2</sup>Spurlock Equine Associates, <sup>3</sup>Ohio State University College of Veterinary Medicine).

**4:00-4:15**

39. EXPERIMENTAL ANALYSIS OF OCCUPATIONAL STRESS INDICATED BY CORTISOL. **Kyndal Cook\*, M. Dana Harriger,** and **Brad E. Engle** (Wilson College, Department of Physical and Life Sciences).

**SATURDAY, APRIL 1**

**1:00 PM – 5:00 PM**

**Session V**

**ECOLOGY/ENVIRONMENTAL SCIENCES/BOTANY**

**Keystone B**

**Richard Stewart, Session Chair**

**1:00-1:15**

40. INVENTORY AND VALUATION OF SHADE TREES IN KINGSTON, PENNSYLVANIA USING CITYGREEN. **Nina Sweppenheiser\*** and **Kenneth Klemow** (Wilkes University, Wilkes-Barre).

**1:15-1:30**

41. INCREASE IN GRASS PRODUCTION WHEN INTERCROPPED WITH LEGUMES. **Jan Mikesell\*** (Gettysburg College).

**1:30-1:45**

42. INTERPRETING VEGETATION CHANGES AND FIRE REGIMES IN THE NJ PINE BARRENS USING HISTORICAL AERIAL PHOTOGRAPHY. **Michael Allen\*** (East Stroudsburg University).

**1:45-2:00**

43. COMPOSITION OF AND DISPERSAL PATTERNS FROM A FOREST FRAGMENT AT THE ACOPIAN CENTER FOR CONSERVATION LEARNING, ORWIGSBURG, PENNSYLVANIA. **Brandy M. Botek\*** and **Amy E. Faivre** (Cedar Crest College, Department of Biological Sciences).

**2:00-2:15**

44. VARIATION IN FLOWER VISITATION AMONG THREE SPECIES OF BEES IN A PENNSYLVANIA MEADOW. **Andrea A. Edge\*** and **Amy E. Faivre** (Cedar Crest College, Department of Biological Sciences).

**2:15-2:30**

45. A COMPARATIVE ASSESSMENT OF THE MICROBIAL COMMUNITIES IN SEDIMENTS OF THE LAKE ERIE BLUFF AND IN BLUFF TOP SOILS. **Maggie J. Campbell\*, Mark N. Fahmeyer,** and **Marlene Cross** (Mercyhurst College).

**2:30-2:45 BREAK**

**2:45-3:00**

46. SPECIES COMPOSITION AND STRUCTURE OF THE GORDON NATURAL AREA, AN URBAN FOREST IN SOUTHEAST PENNSYLVANIA. **Greg Turner\*, Robin R. Van Meter,** and **Gerald D. Hertel** (West Chester University).

**3:00-3:15**

47. VEGETATION RESPONSE AND LEACHATE QUALITY IN SOIL AMENDMENT-CULM MIXTURES: A COLUMN EXPERIMENT. **William J. Tarutis, Jr.\*** (Lackawanna College, Mathematics & Science Division).



**3:15-3:30**

48. METAL-SULFATE-PH EFFECTS ON COLOR OF IRON HYDROXIDES IN SYNTHETIC COAL MINE DRAINAGES. **William J. Tarutis, Jr.\*** (Lackawanna College, Mathematics & Science Division).

**3:30-3:45**

49. EFFECTS OF GLYPHOSATE (ROUNDUP®) ON GLUTATHIONE-S-TRANSFERASE ACTIVITY IN MUDWORMS, *LUMBRICULUS VARIEGATES*. **Jillian E. Smith\* and John S. Smith** (East Stroudsburg University).

**SATURDAY, APRIL 1****1:00 PM – 5:00 PM****Session VI****VERTEBRATE ZOOLOGY****Keystone C****Pablo R. Delis, Session Chair****1:00-1:15**

50. DISPLAYED BEHAVIORS OF RATS (*RATTUS NORVEGICUS*) IN ENRICHED AND STANDARD HOUSING CONDITIONS. **Kathryn Servansky\* and Ginger R. Fisher** (Wilson College).

**1:15-1:30**

51. HETEROZYGOSITY-FITNESS CORRELATIONS IN A POPULATION OF COLLARED LIZARDS, *CROTAPHYTUS COLLARIS*. **Danielle Wartko,<sup>1\*</sup> Linda Yeany,<sup>1</sup> John M. Hranitz,<sup>1</sup> and Troy A. Baird<sup>2</sup>** (<sup>1</sup>Bloomsburg University, <sup>2</sup>University of Central Oklahoma, Department of Biology).

**1:30-1:45**

52. INVESTIGATION OF THE EFFECT OF POPULATION STRUCTURE ON HETEROZYGOSITY-FITNESS CORRELATIONS IN COLLARED LIZARDS, *CROTAPHYTUS COLLARIS*. **Linda Yeany,<sup>1\*</sup> Danielle Wartko,<sup>1</sup> John M. Hranitz,<sup>1</sup> and Troy A. Baird<sup>2</sup>** (<sup>1</sup>Bloomsburg University, <sup>2</sup>University of Central Oklahoma, Department of Biology).

**1:45-2:00**

53. MOLECULAR IDENTIFICATION OF WHITE-FOOTED MICE AND DEER MICE (GENUS *PEROMYSCUS*) FROM NORTHEASTERN PENNSYLVANIA. **Jacqueline I. Balogach<sup>1</sup> Maria Kitchens-**

**Kintz, and Howard P. Whidden** (East Stroudsburg University).

**2:00-2:15**

54. TEMPORAL AND GEOGRAPHIC VARIATION IN SKELETAL MORPHOLOGY OF THE WOODCHUCK (*MARMOTA MONAX*) IN THE NORTHEASTERN UNITED STATES. **Stephen P. Niedzwiecki\* and Thomas C. LaDuke** (East Stroudsburg University, Department of Biological Sciences).

**2:15-2:30****BREAK****2:30-2:45**

55. ACID MINE DRAINAGE AND NESTING INSECTIVOROUS BIRDS ALONG TRIBUTARIES OF THE SUSQUEHANNA RIVER. **Nicholas T. Ernst\* and Clay E. Corbin** (Bloomsburg University, Department of Biological and Allied Health Sciences).

**2:45-3:00**

56. FORAGING SUCCESS AND HABITAT USE BY A POPULATION OF GREAT EGRETS (*EGRETTA ALBA*) ON THE SUSQUEHANNA RIVER. **Terry Master and Don Detwiler IV\*** (East Stroudsburg University, Department of Biological Sciences).

**3:00-3:15**

57. THE ROLE OF FORSTERS TERNS (*STERNA FORSTERI*) IN FEEDING AGGREGATIONS. **Lisa Schreffler<sup>1\*</sup>, John Leiser,<sup>2</sup> and Terry Master<sup>1</sup>** (<sup>1</sup>East Stroudsburg, Department of Biological Sciences, <sup>2</sup>Northampton Community College, Department of Biological Sciences).

**3:15-3:30**

58. A POINT COUNT SURVEY OF BIRDS OF EARLY SUCCESSIONAL HABITATS IN THE DELAWARE WATER GAP NATIONAL RECREATION AREA. **Terry Master\*, James Sheehan, Gregory George, and Beth Swartzentruber** (East Stroudsburg University, Department of Biology).

**3:30-3:45**

59. THE EFFECT OF SOIL AND FOOD QUALITY ON BLUEBIRD NESTLING SUCCESS. **Lori Kristin Simpers\* and Daniel E. Ressler** (Susquehanna University).

**3:45-4:00**

60. REPRODUCTIVE SUCCESS OF THE WOOD DUCK, *AIX SPONSA*, ON THE CONODOGUINET CREEK IN SOUTHCENTRAL PENNSYLVANIA. **Earl L Nollenberger\*** and **Jonathan Herbert** (Shippensburg University).

**POSTER SESSION I**  
**SATURDAY, APRIL 1**  
**9:00 – 12 NOON**  
**CELL/MOLECULAR MEDICINE**  
BALLROOM SOUTH  
Jane Cavender, Session Chair

61. OXIDATION OF A NICKEL DITHIOLATE COMPLEX: MECHANISTIC INSIGHTS ENROUTE TO SULFATE FORMATION. **Balwant S. Chohan** and **Erik R. Hosler\*** (Susquehanna University, Department of Chemistry and Biochemistry).
62. COMPARATIVE PHARMACOKINETIC STUDIES OF MEDIUM CHAIN ALKYL ALCOHOLS, ALKYL ALDEHYDES AND CARBOXYLIC ACIDS. **Kevin Curl\*** and **James Sidie** (Ursinus College).
63. TIME COURSE OF ANESTHETIC ACTION AND RECOVERY OF ALKYL ALCOHOLS AND ALKYL ALDEHYDES. **Caitlin Hanlon\*** and **James Sidie**. Ursinus College).
64. GAS CHROMATOGRAPHY/MASS SPECTROSCOPY MEASUREMENT OF ALKYL ALDEHYDE ANESTHETICS. **Erin Obermeier\*** and **James Sidie** (Ursinus College).
65. SURFACE CHARACTERIZATION OF A BIOLOGICAL LAYER WITHIN A VENTRICULAR DEVICE VIA SEM. **Feroza McAndrew,<sup>1\*</sup> Gerald D. Hess<sup>1</sup>, and Conrad M. Zapanta<sup>2</sup>** (<sup>1</sup>Messiah College, <sup>2</sup>Penn State College of Medicine, Hershey).
66. ANALYSIS OF FACTORS THAT INFLUENCE T CELL-DENDRITIC CELL CONJUGATE FORMATION BY CONFOCAL MICROSCOPY. **Kathryn Rose\*** and **Robert A. Kurt** (Lafayette College, Department of Biology).
67. CHANGES IN LIM GENE EXPRESSION IN BREAST CANCER CELLS TREATED WITH HUMAN CHORIONIC GONADOTROPIN. **Athenesia Faggins\*, Mayoora**

**Muthu\*, Thomas M. McGuire, and Eric P. Ingersoll** (Penn State Abington).

68. HUMAN CHORIONIC GONADOTROPIN DECREASES PROLIFERATION OF BREAST CANCER CELL LINES AND AFFECTS THE EXPRESSION OF VARIOUS LIM-CONTAINING GENE. **Benjamin D. Glasberg\*, John C. Madara\*, Eric P. Ingersoll, and Thomas M. McGuire** (Penn State Abington).
69. THE ANGIOGENIC SWITCH IN PROSTATE CARCINOMAS OF THE LOBUND WISTAR RAT MODEL. **Amit Sharma,<sup>1\*</sup> Nicole Ciano,<sup>1</sup> Morris Pollard,<sup>2</sup> Charles Burns Sr.<sup>1</sup> and Linda S. Gutierrez<sup>1</sup>** (<sup>1</sup>Wilkes University, Department of Biology, and <sup>2</sup>University of Notre Dame).
70. THROMBOSPONDIN 1 IN ULCERATIVE COLITIS-ASSOCIATED DYSPLASIA. **Patricia Shepherd\*, Salman Punekar, Nicole Ciano, and Linda S. Gutierrez** (Wilkes University, Department of Biology).
71. EFFECTS OF ABT-510, A THROMBOSPONDIN 1- DERIVED COMPOUND IN A MODEL OF INFLAMMATORY BOWEL DISEASE. **Nicole Ciano\*, Salman Punekar, Valerie G. Kalter, and Linda S. Gutierrez** (Wilkes University, Department of Biology).
72. EFFECTS OF SMOKING ON SALIVARY CORTISOL LEVELS AND BLOOD PRESSURE IN COLLEGE STUDENTS. **Stefanie Simon\*, Lindsey Dymond, Stefanie Macri, and Valerie G. Kalter** (Wilkes University, Biology Department).
73. EFFECTS OF INTRACRINE SIGNALING PATHWAYS ON ANGIOTENSIN-II INDUCED TYROSINE PHOSPHORYLATION IN CHINESE HAMSTER OVARY CELLS. **Lucinda J., Hughes,<sup>1</sup> Rajesh Kumar<sup>2</sup>, Kenneth M. Baker<sup>2</sup> and Chris E. Kule<sup>1\*</sup>** (<sup>1</sup>Cabrini College, Science Department, <sup>2</sup>The Texas A&M University System Health Science Center College of Medicine, The Cardiovascular Research Institute).

74. METHYLATION STATUS OF THE RIBOSOMAL PROMOTER IN THE PRESENCE OF THE KU AUTOANTIGEN BINDING SEQUENCE. **Linda M. Nilsson\***, **Leah J Robinson\***, and **Jane F Cavender** (Elizabethtown College, Biology Department).
75. ARRAYING OF A HUMAN GENOMIC LIBRARY CONSTRUCTED IN THE PAC SHUTTLE VECTOR PJCPAC-MAM2. **Robert Burke\***, **Yasunori Nagahama**, **David Hamel**, **Wendy Chandler**, **Melissa Marschner**, and **Jonathon Coren** (Elizabethtown College, Biology Department).
76. CHARACTERIZATION OF RETINAL STEM CELLS IN A FISH MODEL SPECIES. **Helen Luu\***, **Dawn Sadler\***, **Amanda Sellers\***, **Jennifer German**, and **Audrey J. Ettinger** (Cedar Crest College, Department of Biological Sciences).
77. CHARACTERIZING THE ROLE OF JNK IN SEA URCHIN EMBRYONIC DEVELOPMENT. **Erica Wagner\***, **Jason Hamberger\***, and **Margaret T. Peeler** (Susquehanna University, Biology Department).
78. JUVENILE HORMONE REGULATION OF YP1, YP2 AND YP3 GENE EXPRESSION IN FAT BODY AND OVARIES IN *DROSOPHILA MELANOGASTER*. **Emily E. Bowling\*** and **David S. Richard** (Susquehanna University, Department of Biology).
79. INSULIN-SIGNALING AND DYNAMIN MAY BE INVOLVED IN THE REGULATION OF RECEPTOR-MEDIATED ENDOCYTOSIS IN *DROSOPHILA MELANOGASTER*. **Kristen Shilling\*** and **David S. Richard** (Susquehanna University, Department of Biology).
80. LIFE AT THE EDGE: ALTERATION OF CORTICAL ACTIN CYTOSKELETAL DYNAMICS IN SEA URCHIN COELOMOCYTES. **David Cheung\***, **Mary McClellan\***, and **John Henson** (Dickinson College and Mount Desert Island Biological Laboratory).
81. DETECTION OF TELOMERASE ACTIVITY IN *HYDRA MAGNIPAPILLATA*. **Seth E. Ilgenfritz\*** and **Jeffrey P. Thompson** (York College of Pennsylvania, Department of Biological Sciences).
82. DETERMINING SYNTHESIS AND EXPRESSION OF APOLIPOPROTEINS IN UNICELLULAR ORGANISMS. **Hilary Prescott\*** and **K. Joy Karnas** (Cedar Crest College).
83. IDENTIFICATION OF CYTOPLASMIC MICROTUBULE ASSOCIATED PROTEIN GENES IN *CHLAMYDOMONAS REINHARDTII*. **Stephanie Nowotarski\***<sup>1</sup>, **Cristen Rosch**,<sup>2</sup> and **K. Joy Karnas**<sup>1</sup> (<sup>1</sup>Cedar Crest College, <sup>2</sup>Kutztown University of Pennsylvania).
84. EXPRESSION OF VEGF RECEPTOR HOMOLOGUES IN THE CNIDARIAN *HYDRA MAGNIPAPILLATA*. **Alexander Theofiles\***, **Curtis Nolt**, and **Diane Bridge** (Elizabethtown College).
85. COLOR-CODING THE PLANT TRANS-GOLGI NETWORK. **James Bochicchio\***, **Ashley Moore**, and **William Terzaghi** (Wilkes University, Department of Biology).
86. MEASURING RESPIRATION, LIPID COMPOSITION, AND THERMAL PROPERTIES OF *ARABIDOPSIS* MUTANT. **Ashley McBrearty\***, **Benjamin Palachick**, **Deana Mikhalkova**, **William Stine**, and **William Terzaghi** (Wilkes University, Department of Biology).
87. MAKING PLANTS WITH PEROXISOMES THAT FLUORESCCE YELLOW. **Jennifer Ramil\***, **Keith Heim**, **Stephen Lehmkuhl**, **David Scordino**, and **William Terzaghi**, (Wilkes University, Department of Biology).
88. HUNTING FOR VARIANT SCR ALLELES INVOLVED IN SELF-INCOMPATIBILITY IN *ARABIDOPSIS LYRATA*. **Kathleen Dwyer\***, **Paurush Shah**, **Melissa Badenhop**, **Sarah Novik**, **Gregory Toole**, and **Colin Flannery** (University of Scranton)
89. ENGINEERING LEARNING MODULES AS A KEY TO SUCCESS IN TECHNICIAN TRAINING. **Duval Bhalodia**, **Helen Grebski**, **Wes Grebski\***, and **John Skopek** (Penn State Hazleton).
90. SELENIUM AS A NEUROPROTECTIVE AGENT IN THE 6-OHDA STRIATAL LESION MODEL. **R. Siegfried\***, **P. Varvarelis**, and **C. M. Fox** (Moravian College Department of Biology).

91. FORENSIC APPLICATION OF SINGLE-STRANDED CONFORMATION POLYMORPHISM (SSCP) ANALYSIS UTILIZING MICROCHIP ELECTROPHORESIS IN THE DIFFERENTIATION OF ZFX AND ZFY GENES FOR MAMMALIAN GENDER IDENTIFICATION. **Gary W. Fromert\*** (East Stroudsburg University, Northeast Wildlife DNA Laboratory, Applied DNA Sciences).

**POSTER SESSION II  
SATURDAY, APRIL 1**

**1:00 – 4:00 PM  
ENVIRONMENTAL/AQUATIC BIOLOGY/EDUCATION  
BALLROOM SOUTH**

**Matthew Hoch, Session Chair**

92. PREDATION RISK OF MALES AND FEMALES OF THE WOLF SPIDER *PARDOSA MILVINA* DURING COURTSHIP AND COPULATION. **Bryant Upton\*** and **Matthew Persons** (Susquehanna University).
93. HABITAT PREFERENCE AND MOVEMENT OF THE WOLF SPIDER *PARDOSA MILVINA* IN A CROP SYSTEM. **Amanda Sangillo\***, **Sarah Kiemle**, and **Matthew Persons** (Susquehanna University).
94. SILK DRAGLINE DEPOSITION AND CONSPECIFIC COMMUNICATION IN THE WOLF SPIDER *HOGNA HELLUO*. **Christopher Latanich\*** and **Matthew Persons** (Susquehanna University).
95. THE EFFECTS OF SPIDER CUES ON COLORADO POTATO BEETLE (*LEPTINOTARSA DECEMLINEATA*) FORAGING BEHAVIOR. **Jeffrey Garofalo\***, **Steven Heverley**, and **Matthew Persons** (Susquehanna University).
96. WATCHING YOUR FRIENDS GET EATEN: BYSTANDER EFFECTS ON PREDATOR RECOGNITION AND SUBSEQUENT SURVIVAL IN THE WOLF SPIDER *PARDOSA MILVINA*. **Ahmed Alkhateeb\***, **Mark Prokopovits**, and **Matthew Persons** (Susquehanna University).
97. USE OF HABITATS BY BIRDS IN PENNSYLVANIA AT LANDSCAPE LEVEL. **Ross Boozer\*** and **Carlos A. Iudica** (Susquehanna University, Department of Biology).
98. POPULATION TRENDS IN SIX BIRD SPECIES: BLACK-THROATED BLUE WARBLER; PILEATED WOODPECKER; GREY CATBIRD; WOOD THRUSH; EASTERN TOWHEE; AND GOLDEN-CROWNED KINGLET; IN A 5 HECTARE OAK-HICKORY WOODLOT IN SOUTHCENTRAL PENNSYLVANIA. **Jonathan Herbert\*** and **Earl L. Nollenberger** (Shippensburg University).
99. ASSESSMENT OF DEER IMPACT ON HUNTED AND NON-HUNTED LANDS OF MONTOUR PRESERVE. **Christopher Dempsy\*** and **Mel Zimmerman** (Lycoming College).
100. BASE-LINE WATER QUALITY ASSESSMENT OF THE LOWER WEST BRANCH OF THE SUSQUEHANNA RIVER. **Laura Lockard**, **Heather Horsley\***, and **Mel Zimmerman** (Lycoming College).
101. PRESENCE OF PRECOCENES IN THE WHITE SNAKEROOT PLANT *AGERATINA ALTISSIMA*. **Priyam Patel\***, **Yee Lee\***, **Amy L. Bradley**, **Kenneth Klemow**, and **William J. Biggers** (Wilkes University, Departments of Biology and Chemistry).
102. EFFECTS OF ABANDONED MINE DRAINAGE ON DEVELOPMENT AND METALLOTHIONEIN. **John Untisz\***, **Ashley Fauver\***, **Sara Grab**, **April Kostick**, **Courtney Blasko**, **Kenneth Klemow**, and **William J. Biggers** (Wilkes University, Department of Biology).
103. ACHIEVEMENTS OF THE KEYSTONE STREAM TEAM AND THE APPLICATION OF NATURAL STREAM CHANNEL DESIGN (NSCD) FOR RESTORING PENNSYLVANIA STREAMS. **Peter J. Petokas\*** and **Mel Zimmerman** (Lycoming College, Department of Biology).
104. COMPREHENSIVE BIOASSESSMENT OF WASTEWATER EFFLUENT IMPACTS ON SOUTH BRANCH CODORUS CREEK IN SOUTHCENTRAL PENNSYLVANIA. **Matthew P. Hoch\***, **Mark Brickner**, **Mavish Mango**, **Alexandra Prokuda**, **Sharon Shoop**, and **Peter Siwik** (Pennsylvania State University – York).

105. THE EFFECT OF PREDATOR PRESENCE ON THE GEOTACTIC RESPONSE IN THE FRESHWATER SNAIL *POTAMOPYRGUS ANTIPODARUM*. **Monique DeLisser\***, **Pramod Gadam**, and **Edward P. Levri** (Penn State – Altoona, Division of Mathematics and Natural Sciences).
106. SUCCESS OF RIPARIAN BUFFER STRATEGIES ALONG THE CONEWAGO CREEK. **Steven J. Choc\*** and **Thomas E. Murray** (Elizabethtown College, Department of Biology).
107. DIVERSITY AND ABUNDANCE OF AQUATIC PLANTS IN A CARBONATE SPRING ECOSYSTEM BEFORE AND AFTER CLOSURE OF BIG SPRING FISH CULTURE STATION. **Emilie Kohler\***, **Layne Strickler**, **Nathan Fuller**, and **Todd M. Hurd** (Shippensburg University).
108. RELATIVE CONTRIBUTIONS OF STOCKED TROUT TO FISH-EATING BIRDS INHABITING STREAMS OF SOUTH-CENTRAL PENNSYLVANIA. **Tonya Britt\***, **Jessica Jerin**, **Yvonne Amedume**, and **Todd M. Hurd** (Shippensburg University).
109. ATTENUATION OF LIGHT BY A NATURAL ASSEMBLAGE OF ZOOPLANKTON. **Amy Overfelt\*** and **Jessica Nolan** (York College of Pennsylvania).
110. SCANNING ELECTRON MICROSCOPE IDENTIFICATION OF YELLOW BREECHES DIATOMS. **Michelle Sabol\*** and **Gerald D. Hess** (Messiah College).
111. EFFECTS OF WASTEWATER TREATMENT PLANT DISCHARGES ON DIATOM AND BENTHIC MACROINVERTEBRATE COMMUNITIES. **Nicole Taibi\*** and **Jerilyn Jewett-Smith** (East Stroudsburg University).
112. SURVEY OF INVASIVE RIPARIAN PLANTS ALONG THE LOWER BRODHEAD AND CHERRY VALLEY WATERSHED: INTEGRATION OF FIELD SURVEYS, GPS AND GIS DATA FOR DEVELOPMENT OF AN INVASIVE SPECIES MANAGEMENT PLAN. **Jerilyn Jewett-Smith\***<sup>1</sup> and **Edith Stevens**<sup>2</sup> (<sup>1</sup>East Stroudsburg University, <sup>2</sup>Brodhead Watershed Association).
113. ROLE OF PLANT ARCHITECTURE AND CUTICULAR FEATURES IN REMOVING IRON FROM WETLANDS CONSTRUCTED TO TREAT ABANDONED MINE DRAINAGE.

**Rachel Giroux\***, **Beth Karwaski\***, **Kenneth Klemow**, **Therese Wignot**, **Donald Mencer**, and **Brian Whitman** (Wilkes University, College of Science and Engineering).

114. THE EFFECT OF THE NUMBER OF FLOWERS PER SUCCESS OF *KALMIA LATIFOLIA*. **Tara Mayhew\***, **Maureen A. Levri**, and **Edward P. Levri** (Penn State – Altoona, Division of Mathematics and Natural Sciences).

### POSTER SESSION III SUNDAY, APRIL 2

8:30 – 11:30 AM

ORGANISMAL/MICROBIOLOGY/PARASITOLOGY/  
BALLROOM SOUTH  
Joy Karnas, Session Chair

115. PHYLOGENETIC DISTRIBUTION OF RIVERINE COLIFORMS. **Abigail L. Redmond\***, **Aunisha Desai**, **Alfonsino Laveglia**, and **John R. Cybulski** (Wilkes University, Department of Biology, Chemistry, and Health Sciences).
116. INTERFERING WITH CAPSULE SYNTHESIS AND BINDING IN THE FUNGAL PATHOGEN, *CRYPTOCOCCUS NEOFORMANS*. **Carrisa Hunold\***, **Jacqueline Pinder\***, and **Amy Reese** (Cedar Crest College).
117. OVEREXPRESSION OF ALPHA-1,3-GLUCANASE FROM *CRYPTOCOCCUS NEOFORMANS* AS A REAGENT TO DEGRADE PATHOGENIC FUNGAL CELL WALLS. **Lindsay M. Horvath\*** and **Amy J. Reese** (Cedar Crest College).
118. MICROBES IN MAKE-UP. **Catherine R. Massafra\*** and **Amy J. Reese** (Cedar Crest College).
119. EFFECTIVENESS OF COMMERCIALY AVAILABLE MOUTH WASHES ON THE GROWTH OF ORALLY-DERIVED BACTERIA. **Bryon Martinez\***, **Amy Valkovec**, **Lindsey Gruenewald**, **Tracee Popielarczyk**, **Richard Knowlton**, **Debra Wohl**, and **Jane F. Cavender** (Elizabethtown College, Biology Department).

120. CORRELATION OF ANTIBIOTIC RESISTANCE FOUND IN ORAL BACTERIA WITH OVERALL DENTAL HEALTH. **Lindsey Gruenewald\***, **Tracee Popielarczyk\***, **Amy Valkovec**, **Bryon Martinez**, **Richard Knowlton**, **Debra Wohl**, and **Jane F. Cavender** (Elizabethtown College, Biology Department).
121. DETERMINATION OF NITROGEN AND SULFUR CYCLING BACTERIA IN SOIL AFFECTED AND UNAFFECTED BY THE UNDERGROUND MINE FIRE OF CENTRALIA, PENNSYLVANIA. **Maria Wing\*** (Susquehanna University).
122. DETAILED GROWTH CHARACTERISTICS OF AN EXTREME HALOPHILE. **Kathleen Grant\***, **Katie Lowther\***, and **David Dunbar** (Cabrini College).
123. DETERMINING THE DISTRIBUTION OF ERWINIA AMYLOVORA IN SOIL IN RELATION TO FIRE BLIGHT INFECTIONS IN AN APPLE ORCHARD. **Abbas A. Alibhoy\*** and **Debra Wohl** (Elizabethtown College).
124. ISOLATION AND CHARACTERIZATION OF THERMOPHILIC BACTERIAL AND EUKARYOTIC MICROBES IN THE RHIZOSPHERE OF PLANTS WITHSTANDING EXTREME TEMPERATURES IN CENTRALIA, PENNSYLVANIA. **Melissa S. Stahl\*** (Susquehanna University, Department of Biology).
125. A SURVEY OF COYOTE (*CANIS LATRANS*) ENDOPARASTES IN PENNSYLVANIA BASED ON FECAL ANALYSIS. **Evan Ogden\***<sup>1</sup>, **Craig Kindlin**,<sup>2</sup> **Pablo R. Delis**,<sup>1</sup> and **Richard Stewart**<sup>1</sup> (<sup>1</sup>Shippensburg University, <sup>2</sup>Letterkenny Army Depot).
126. THE EFFECTS OF MECHANICAL LOADING ON DIAPHYSEAL BONE GROWTH IN MAMMALS WITH TAPERED LIMBS. **J. P. Rivera\***, **C. Zhang**, **S. A. Ebba**, **J. H. Plochocki** (Pennsylvania State University-Altoona, Department of Biology).
127. FUNCTIONAL ADAPTATION OF THE PROXIMAL FEMUR TO MECHANICAL LOADING. **C. J. Riscigno\***, **M. Garcia**, **J. H. Plochocki**, (Pennsylvania State University-Altoona, Department of Biology).
128. A PICTORIAL KEY TO THE SCALE PATTERNS OF GUARD HAIRS OF INDIGENOUS PENNSYLVANIA MAMMALS. **Kellie L. Kremser\***, **Melissa Cichella\***, and **Carlos A. Iudica** (Susquehanna University, Department of Biology).
129. THE MAMMALIAN FAUNA OF LETTERKENNY ARMY DEPOT, PENNSYLVANIA. **Richard L. Stewart\***, **Craig Kindlin**, and **Pablo Delis** (Shippensburg University, Department of Biology).
130. RELATIVE TRAP EFFECTIVENESS AND THE IMPLICATIONS FOR INVENTORIES OF SMALL MAMMALS. **Samantha A. Sedivec\***, **Stephen P. Niedzwiecki**, and **Howard P. Whidden** (East Stroudsburg University).
131. AN EMPIRICAL METHOD FOR DETERMINING MEASUREMENT PRECISION IN MORPHOMETRIC STUDIES. **Stephen P. Niedzwiecki\*** and **Thomas C. LaDuke** (East Stroudsburg University, Department of Biological Sciences).
132. COMPUTER IMAGE ANALYSIS OF RETINAL OIL DROPLETS IN DIFFERENT VERTEBRATE SPECIES. **Corry M. Marcincin\*** and **James R. Dearworth** (Lafayette College, Department of Biology).
133. THE PUPILLARY RESPONSE TO LIGHT IN THE ENUCLEATED EYE OF THE TURTLE. **Tory E. Littlefield\*** and **James R. Dearworth** (Lafayette College, Department of Biology).
134. AMPHIBIANS AND REPTILES IN SOUTH CENTRAL PENNSYLVANIA: MONITORING AND MANAGEMENT AT LETTERKENNY ARMY DEPOT. **Pablo R. Delis\*** and **Richard L. Stewart** (Shippensburg University, Department of Biology).
135. HISTOCHEMICAL AND BIOCHEMICAL STUDY OF ARTEMIA FRANCISCANA HEMOCYTES DURING THE MOLTING CYCLE (CRUSTACEA: ANOSTRACA. **Donald D. Dangle\*** and **Allan F. Wolfe** (Lebanon Valley College, Department of Biology).
136. ANALYSIS OF THE CS1A GENE ENCODING CHONDROITIN AC LYSASE FROM *FLAVOBACTERIUM COLUMNARE* ISOLATES. **Alexandra L. Schmidt\*** and **Laurie F. Caslake** (Lafayette College, Department of Biology).
137. THE OPTIMUM CONCENTRATION OF SILVER THIOSULFATE (STS) FOR DELAY OF SENESCENCE IN CUT *CHRYSANthemum MORIFOLIUM* FLORAL HEADS. **Renee D. Ulrich\***, **Jessica N. Pfautz\***, and **S. E. Williams** (Lebanon Valley College, Department of Biology).

138. ONLINE POLYCLAVE KEY FOR THE PLANTS FROM THE KIRBY PARK NATURAL AREA, WILKES-BARRE, PA. **Brea Dibble\***, **Matt Johnston\***, **Ted Orelie\***, **Jeff Thompson\***, **Kenneth Klemow**, and **Matthew Zukoski**. (Wilkes University).
139. ALLELOPATHIC POTENTIAL OF THE INVASIVE ALIEN, *ROSA MULTIFLORA*. **Lisa Fung-Kee-Fung\***, **Philippe Vanier**, and **Lorraine Mineo** (Lafayette College).
140. ANALYZING THE ACCLIMATION POTENTIAL OF RED AND WHITE OAK SEEDLINGS. **Cassie Sailus\***, **Cecelia Candelario**, **Christopher Pray**, **Kamran Kalim**, and **William Terzaghi** (Wilkes University, Department of Biology).
141. DETERMINING PARENT-OFFSPRING DISTANCES IN OAK FORESTS BY DNA FINGERPRINTING. **M. Shafqat\***, **J. Carlson**, **D. Layer**, **H. Marking**, **A. McEuen**, **P. Smallwood**, **M. Steele**, and **W. Terzaghi** (Wilkes University, Department of Biology).
142. LIPID ANALYSIS OF RED AND WHITE OAK ACORN SHELLS. **Kristy Hicks\***, **Jason Cao**, **Jeffrey Bellinger**, **Jennifer Ramil**, **David Scordino**, and **William Terzaghi** (Wilkes University, Department of Biology).
143. THE EFFECT OF ODDITY IN PREY SELECTION OF LARGEMOUTH BASS (*MICROPTERUS SALMOIDES*). **Nathan Keller\*** and **Brad Rehnberg** (York College of Pennsylvania).
144. PREVALENCE OF NEST ECTOPARASITES IS INDEPENDENT OF GROUP SIZE AND NEST DENSITY IN BARN SWALLOWS (*HIRUNDO RUSTICA*). **S.A. Rogers**, **C.E. Corbin**, and **G.T. Wassmer\*** (Bloomsburg University of Pennsylvania)

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**9:00 – 11:00 AM**  
**EMERGING DISEASES IN WILDLIFE**  
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**RECENT MEMBER PUBLICATIONS AND ACCOMPLISHMENTS**

Fried, Bernard and Bandstra, Sharon R. (2005). Age of adult worms of *Echinostoma caproni* does not affect development of miracidia. Journal of Parasitology 91: 1220 - 1221.



## MANUSCRIPTS FOR *THE PENNSYLVANIA GEOGRAPHER*

The editors of *The Pennsylvania Geographer*, a peer reviewed, semi-annual journal of the Pennsylvania Geographical Society, are soliciting manuscripts for the Spring/Summer 2006 edition. The journal is in its 44<sup>th</sup> consecutive year of publication. The general topic for this issue (Volume 44, #1) of the journal is: **ECOTOURISM**. Papers dealing with the above theme, or any other geographical topics, will be considered for publication. The deadline for submitting materials for the spring/summer 2006 issue is **February 15, 2006**. Please send manuscripts and/or inquiries to Dr. William B. Kory, Editor, or Dr. Gregory Faiers, Associate Editor, *The Pennsylvania Geographer*, Geography Department, University of Pittsburgh at Johnstown, Johnstown, PA 15904. Phone: (814) 269-2994; 2993 or 2990. E-mail: [koryupj@pitt.edu](mailto:koryupj@pitt.edu)

### TOPICS FOR FUTURE ISSUES:

Fall/Winter 2006 (Volume 44, #2):

#### **“Geography and Terrorism”**

August 15, 2006 deadline for receiving material

Spring/Summer 2007 (Volume 45, #1):

#### **“Cultural Geography”**

February 15, 2007 deadline for receiving material

Fall/Winter 2007 (Volume 45, #2):

#### **“Water Resources”**

August 15, 2007 deadline for receiving material

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## SCHOLARSHIP & AWARD OPPORTUNITIES

### Spencer Foundation Major Research Grants Program

The grants program is intended for research projects requiring more than \$35,000 in grant support. Awards of up to \$35,000 are made. Inquiries and preliminary proposals are accepted at any time. The principal investigator must have an earned doctorate in an academic discipline or a professional field and must be affiliated with a college, university, research facility, or cultural institution. The foundation supports research that promises to contribute new knowledge to the improvement of education, broadly conceived, in the U.S. and abroad. A variety of disciplinary and interdisciplinary approaches are favored, though emphasis is given by charter to the behavioral sciences. The foundation is interested as well in the related research areas of cultural knowledge, socialization, and the production and distribution of knowledge. Research may range from medium-sized studies that can be completed in a year by an individual researcher to more extensive collaborative studies that last several years. Grants are not made to maintain organizations or infrastructures of educational research. Additional information can be found on the Web at <http://www.spencer.org/proginfo.htm>. For further information, contact: John B. Williams, Vice-President, Spencer Foundation, 900 North Michigan Avenue, Suite 2800, Chicago, IL 60611-1542.

## LEARNED DISCOURSES

*Timely Scientific Opinions*

**Intent.** **Learned Discourses** provide a forum for open discussion by and for PAS members. These articles will reflect the professional opinions of the authors regarding scientific issues. They will not represent PAS positions or policies. And, although they are subject to editorial review for clarity, consistency, and brevity, these articles will not be peer reviewed. The success of the **Learned Discourses** depends on our contributors. We encourage submissions that are timely and will inform and stimulate discussion. If you disagree with an opinion expressed here, **submit a reply**.

**Rules.** All submissions must be succinct: no longer than 1,000 words, no more than 6 references, and at most one table or figure. Reference format must follow that of the Journal of the Pennsylvania Academy of Science. Topics may fall within any area of science.

**Submissions.** Send submissions as e-mail attachments (Word), to Richard Stewart ([rlstew@ship.edu](mailto:rlstew@ship.edu)). Submissions will be printed on a first-received basis when space limitations apply.

### **Learned Discourses Editors**

Richard Stewart and Pablo Delis

Department of Biology

Shippensburg University, Shippensburg, PA 17257



## PENNSYLVANIA SOCIETY FOR BIOMEDICAL RESEARCH

The Pennsylvania Society for Biomedical Research (PSBR) is a 501(c)(3) non-profit science education organization which was founded in 1990 and became operational in 1991.

The society was formed by universities, medical schools, pharmaceutical firms and professional societies in Pennsylvania. Current members and supporters include many of the Commonwealth's leading biomedical research and educational institutions, professional societies, and hospitals.

Our mission is to foster a better understanding of the benefits of biomedical research and the vital role it plays in improving the quality of human and animal health and expanding our economy.

The society is governed by a board of directors elected from its membership. The board meets three times a year, usually at a member organization. PSBR's annual meeting provides an opportunity for participants to be briefed of the status and activities of PSBR and to discuss important issues.

The PSBR strongly supports the continued role of animals in research when no reliable alternative exists.

### ***Our goals include:***

1. Develop PSBR as a resource for pertinent facts about the indispensable use of animals in biomedical research.
2. Serve as a credible resource for the general public, educators, students, legislators and member organizations.
3. Responsibly manage our resources to enhance an environment which supports biomedical endeavors to improve human and animal health.

PSBR seeks to meet its goals through the following programs in cooperation with our member organizations:

#### **1. PSBR Information**

Publish PSBR Bulletin, a newsletter which documents items of interest to the biomedical research community

Maintain a PSBR home page and web site on the Internet (<http://www.psbr.org>)

Maintain a database and resource library of biomedical research information.

#### **2. Educational Programs**

Conduct contests for students on topics related to animals in research

Provide information for teachers through workshops and training programs

Provide educational materials and speakers to elementary, secondary and college classrooms

Provide reference materials on biomedical research to school and public libraries

Exhibit materials at scientific and educational conferences

Develop and maintain a hands-on exhibit about animals in research

Coordinate all PSBR programs with the Pennsylvania Department of Education

#### **3. Membership support – Public Relations/media**

Media/speaker training

Assistance in crisis management planning

Provide resources and information to members dealing with requests from the media and animal rights organizations

Contribute editorials and press releases on items of interest to biomedical research

Enlist the governor to proclaim October 21 as Biomedical Research Day, Pennsylvania

#### **4. Staff Orientation and Information**

Assist animal care staff in explaining their contribution to biomedical research

Enlist member personnel to participate in PSBR educational programs

#### **5. National Cooperation**

Network with other state biomedical research organizations, and with national organizations in order to maximize effectiveness through information exchange and development of cooperative projects and programs

#### **6. Animal Rights Movement**

Maintain a current knowledge of the animal rights movement by review of animal activist publications, web sites and information hotlines

Cooperate with national and other state biomedical research organizations

Seek opportunities to counter negative representations about biomedical research

#### **7. Legislation and Government Relations**

Monitor and review newly introduced legislation for impact on biomedical research

Provide information on key issues to legislators

Keep members informed of the status of important legislation

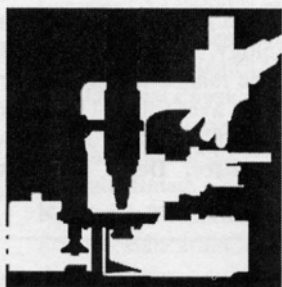
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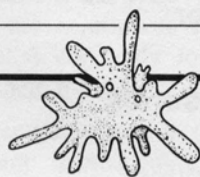
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## PENNSYLVANIA BIODIVERSITY PARTNERSHIP SOLICITS INPUT ON PENNSYLVANIA BIODIVERSITY CONSERVATION PLAN



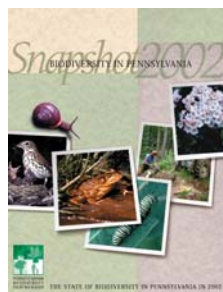
The Pennsylvania Biodiversity Partnership (PBP) is a broad-based public-private partnership formed in 2000 to promote the conservation of native species and their habitats. PBP members include conservation and environmental organizations; government agencies; business and industry; scientists and academic organizations; sportsmen and women; and private landowners.

A consensus quickly emerged with the Partnership that a statewide plan, focusing on strategies and opportunities for protecting Pennsylvania's natural resources, while at the same time maintaining economic vigor and quality of life for all Pennsylvanians, must be developed and implemented.

The development of this comprehensive plan for biodiversity is a multi-year process with a projected completion date of 2005. *Biodiversity in Pennsylvania: Snapshot 2002*, released in December 2002, marked the end of the first phase. This 48-page document is a concise literature-based report that synthesizes the present status of Pennsylvania's biodiversity.

Building on *Biodiversity in Pennsylvania*, PBP is actively soliciting input from all stakeholders, including biologists and other scientists, in developing the first draft of the Pennsylvania Biodiversity Conservation Plan. Please tell us what issues are important to you and what you would like the plan to contain by visiting the PBP website ([www.pabiodiversity.org](http://www.pabiodiversity.org)) and completing a short comment form online.

Additional information about PBP and copies of *Biodiversity in Pennsylvania* and the executive summary, may be found on the PBP website. Free copies of the report or executive summary may be obtained by contacting PBP, 16 Terminal Way, Pittsburgh, PA 15219, telephone (412) 481-4100, [pbpinfo@pabiodiversity.org](mailto:pbpinfo@pabiodiversity.org)



## PENNSYLVANIA ACADEMY OF SCIENCE ANNUAL FUND CAMPAIGN

Fellow members of the Pennsylvania Academy of Science:

I would like to thank all of those who contributed to our first Annual Fund Campaign and to ask for your continued support. In order to adequately fund our undergraduate research program, we need to increase our Undergraduate Research Endowment. Currently we are funding the Journal by page charges and the operating fund of the Academy, but we would like to be able to create a sufficient endowment so that the interest can be used to support our excellent peer reviewed journal. The executive board of the Academy established the annual fund drive to increase our endowment for undergraduate research and to endow the Journal of the Pennsylvania Academy of Science. It is our desire to have the journal be self-sufficient and to be supported entirely through page charges and interest from our recently established Journal of the Pennsylvania Academy Endowment.

### Pennsylvania Academy of Science Annual Fund Campaign

Please apply my contribution of:

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\_\_\_\_\_ to the Journal of the Pennsylvania Academy of Science Endowment

Signature \_\_\_\_\_

Thank You.  
Fred J. Brenner, Past PAS President

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## DARBAKER PRIZE - \$1,000

The Darbaker Prize is a Pennsylvania Academy of Science (PAS) award given for outstanding scholarly contributions which use microscopic techniques and present microscopic illustrations in the reporting of biological research. The award is competitive amongst qualified papers submitted in association with the Academy's annual meeting.

The Pennsylvania Academy of Science established the Darbaker Prize in 1952. Funds for the award are made available through a bequest of the late L.K. Darbaker, 1939 PAS President. Referring to the award, Dr. Darbaker stated: "Any sum applicable to the Pennsylvania Academy of Science shall be for grant or grants in Microscopical Biology."

To qualify for the Darbaker Prize, a scientist or scientists must: (1) have used microscopy (light, SEM, TEM or other technologies) in the research they report, (2) submit in proper format a manuscript reporting the results of the completed study for consideration to be published in the *Journal*, (3) specifically state a request to the Editor of the *Journal* to have their manuscript considered for the Darbaker Prize for the current calendar year, and (4) be a member of the Pennsylvania Academy of Science. Darbaker Prize competition manuscripts are expected to be presented and submitted at the PAS annual meeting, but if not, manuscripts will be accepted for consideration within four weeks (28 calendar days) following the last day of the annual meeting. Only manuscripts that have successfully completed the review process and have been accepted for publication in the *Journal* will be eligible for the award.

The Editor of the *Journal* will examine all manuscripts submitted for award consideration to determine the fulfillment of requirements. The editor will then forward the eligible manuscripts with his/her and reviewers' recommendations to the PAS President for final decision. The Darbaker Prize will be made in the *Journal* at an appropriate time.

For further information contact:

Shyamal K. Majumdar, Ph.D.  
Editor of the Journal  
Professor of Biology  
Lafayette College  
Easton PA 18042  
Ph: (610) 330 5464; Fax: (610) 330 5705  
E-Mail: [majumdas@lafayette.edu](mailto:majumdas@lafayette.edu)

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## PAS HIGH SCHOOL STUDENT RESEARCH GRANTS

The PAS has funds to provide modest financial support, not in excess of \$100, for student research projects. Students working on projects in the Natural or Physical Sciences under the direction of PAS member scientists at high schools, colleges, or in industry may submit an application for support.

### Proposal Guidelines:

1. Funds are to be used primarily for supplies; secondarily, for small pieces of equipment if essential.
2. Funds are not to be used for major pieces of equipment, student stipends, travel, etc.
3. Proposals are encouraged that involve groups of students working together on a project.
4. Students are encouraged to present their findings at the next meeting of the Pennsylvania Junior Academy of Science (PJAS).

### Proposal Requirements:

1. A title page with project title, name and grade of the student; sponsor name (PAS member); school name, address and phone number; characterization of school location (urban, suburban, or rural). The title page should also include the total amount requested (not to exceed \$100) and the signatures of student and sponsor.
2. A short summary of the project, including pertinent background information, a statement of the hypothesis, a description of the planned experiments, and a statement of the expected results.
3. Budget, including a statement of how the money will be used and a statement of the time frame during which the project will be performed.

### Proposal Deadlines:

March 30 and November 15. Proposals received after a deadline will be reviewed during the following period. Send completed proposals or requests for further information to:

Dr. Jane F. Cavender  
Chairperson, PAS Research Grant Committee  
Department of Biology  
Elizabethtown College  
Elizabethtown, PA 17022-2298.

Information on various research grants can be found on the PAS web site at <http://pennsci.org/>

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## COLLEGE STUDENT RESEARCH FUNDS AVAILABLE

The Pennsylvania Academy of Science has funds available to support UNDERGRADUATE AND GRADUATE COLLEGE STUDENT research in the natural, physical, or social sciences. Proposals should be written and submitted by the student under faculty guidance. Proposals will be accepted until May 1 at which time they will undergo review by professional referees, and evaluation by the PAS Research Grant Committee. Authors of proposals selected for funding will be notified by October 15. Unsuccessful applicants will be notified by November 15. Grants are normally made in the amount of \$500 or less, as requested in the proposal and, therefore, proposal budgets should take this limit to consideration.

### General Guidelines for proposal:

- (1) Projects should be of such nature that they can be initiated and completed within one year.
- (2) The PAS funds are to be used primarily for expendable supplies, small pieces of equipment, and travel, living and/or housing expenses, if essential for the project.
- (3) Funds are not to be used for major pieces of equipment.
- (4) Results of the project are normally communicated at the next meeting of the PAS following completion of the research. The student is encouraged to submit a manuscript for consideration of publication in the *Journal of the Pennsylvania Academy of Science*.

### Proposal Format should include the following Sections:

- (1) A titled INTRODUCTION describing the nature of the project and discussing the novelty or significance of the research. A general summary of the pertinent literature must be provided to demonstrate to the reviewers that the author has adequate knowledge of the research area.
- (2) A titled METHODS & MATERIALS describing how the research will be carried out; the kinds of materials and equipment used; the procedures to be employed regarding the care, use and disposition of research animals; the approximate starting and finishing dates of the research for which PAS funding is requested.
- (3) A titled STUDY PARTICIPANTS identifying the student(s) and supervising PAS member, their affiliation (e.g., academic institution or employer), and position or section status. The role of the student(s) must be CLEARLY identified. The previous relevant experience of the PAS member in supervising research must be discussed. A statement is required that the research supervisor is a current PAS member. A statement should be made regarding primary responsibility for writing the proposal, if not the author(s) given.
- (4) A titled BUDGET will include an ITEMIZED budget showing how PAS funds are to be used, and identifying the piece of equipment and facilities currently available to do the research. If funding is to be supplied by other sources, this should be identified. Additional guidance regarding format can be found in the "Guidelines for Authors" in *Journal of the Pennsylvania Academy of Science*.

Submit an original and FIVE (5) copies of the proposal and clearly list on the cover page, the area to which the grant most closely applies: Biochemistry, Chemistry, Cell Biology, Ecology, Environmental Science, Genetics, Geology, Microbiology or other. All proposal reviews will be evaluated by the PAS Research Grant Committee, and the proposals will be ranked for preference for funding. Only those proposal judged worthy of funding will receive funding to the extent funding is available. Unsuccessful proposals may be reconsidered after revision in accordance with suggestions by the PAS Research Grant Committee and proposal referees.

### Send all materials to:

**Dr. Jane Cavender,  
Chairman PAS Research Grant Committee  
Department of Biology  
Elizabethtown College  
Elizabethtown, PA 17022**



# PENNSYLVANIA ACADEMY OF SCIENCE-APPLICATION FOR MEMBERSHIP

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Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Middle Initial or Name: \_\_\_\_\_

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Institution: \_\_\_\_\_ E-mail: \_\_\_\_\_

Office Phone: (\_\_\_\_) \_\_\_\_\_ Home Phone: (\_\_\_\_) \_\_\_\_\_ Fax: (\_\_\_\_) \_\_\_\_\_

Branch of Science Main Interest: \_\_\_\_\_

(Biology, Zoology, Botany, Physiology, Chemistry, Physics, Engineering, Spectroscopy, Biochemistry, Psychology, Medicine, Mathematics, Geology, Geography, etc.)

Degrees: \_\_\_\_\_ Title: \_\_\_\_\_

Where did you learn about PAS? \_\_\_\_\_

**Member of AAAS?** ☐ Yes **PSTA** ☐ Yes **PASA** ☐ Yes **PA Chapter Wildlife Society** ☐ Yes

**Society of College Science Teachers** ☐ Yes **PA Biological Survey** ☐ Yes **PA Assoc of Environmental Professionals** ☐ Yes

**Comm of PA Univ Biologists** ☐ Yes **MidAtlantic Assoc College Biologists** ☐ Yes

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Please return this application and first year's membership dues, made payable to the **Pennsylvania Academy of Science**, to:

**Dr. Valerie G. Kalter, Membership Chairperson, Biology Department, Wilkes University, Wilkes-Barre, PA 18766.**

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