



Volume 65, No.2

February 2007

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Pennsylvania Academy of Science

PLAN TO ATTEND THE Pennsylvania Academy of Science 83rd ANNUAL MEETING

Radisson Hotel
Monroeville, PA

www.radisson.com/monroevillepa

March 30-April 1, 2007

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The Pennsylvania Academy of Science Newsletter

Richard L. Stewart Jr. and Pablo R. Delis, Editors
Shippensburg University, Shippensburg, PA 17257

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MESSAGE FROM THE PRESIDENT



Debbie Ricker, Ph.D.

President Pennsylvania Academy of Science

It's soon time for the 83rd Annual Meeting of the Pennsylvania Academy of Science. As a long-time Academy member and officer, the Annual Meeting has always been an exciting event for me and my colleagues.

For faculty members, the meeting offers us the opportunity to converse and collaborate with friends from neighboring institutions. In addition, it allows us to expose our students to a critical, yet often overlooked, aspect of scientific research...educating others!

For students, the Annual Meeting is an anxious and formative experience. For some students, this is their first opportunity to engage a public scientific audience in conversation about their research. And, for most, this will be the experience upon which they will likely build as their scientific careers progress.

From either vantage point, it is clear that the Pennsylvania Academy of Science serves a very important role for scientists, both young and old. As the Academy continues its mission to:

- *Advance the pursuit and application of science within the Commonwealth, both in academic and industrial settings,*
- *Enhance the professional development of its members,*

(continued on pg. 3)

(Continued from pg. 2)

- *Create forums for professional dialogue among junior and senior scientists at all academic levels,*
- *Promote scientific research, presentation and discussion among its members and the public at large, and*
- *Support educational initiatives devoted to the development of scientific skills and knowledge.*

I wish to extend my personal invitation to **you** to participate.

The Academy seeks to involve increasing numbers of faculty and students in pursuing our mission. Specifically, we are eager to welcome members from historically under-represented institutions and invite long-term members to play a more active role in Academy business. If you would like to become more involved, please attend our Annual Meeting and join us for the open Business Meeting scheduled for 5:00pm on Saturday, March 31 in the Washington-Westmorland room. Alternatively, feel free to contact one of our Campus Representatives listed on the Academy website (www.pennsci.org). We appreciate your involvement, at any level!

At this year's meeting, we are pleased to host a Symposium on the timely topic of Renewable Energy. This event is scheduled for Saturday, March 31, from 1:15-4:15pm in the Fayette Room. Four key topics will be addressed, including Geothermal Energy, Wind Energy, Biofuels, and Biomass. I welcome your attendance at each of these presentations.

In addition to the Renewable Energy Symposium on Saturday, we are delighted to welcome Dr. Matt Lamanna as our evening after-dinner speaker. Dr. Lamanna is the Assistant Curator of Vertebrate Paleontology at the Carnegie Museum of Natural History. He comes at the recommendation of Dr. Bill Dewalt, Director of the Carnegie Museum and member of the Pennsylvania Academy of Science Advisory Council. Dr. Lamanna will address new directions in delineating the origin of modern birds.

I am confident that this year's Annual Meeting will be very enlightening for everyone in attendance. For those Academy members and affiliates who have worked hard to help organize the exciting array of events, THANK YOU! From Programs to Local Arrangements to Exhibits to Time & Place to Membership, your leadership in each respective area is greatly appreciated.

I look forward to seeing you in Pittsburgh!

UPCOMING MEETINGS

The **83rd Annual PAS Meeting** will be held at the **Radisson Hotel, Monroeville, PA, March 30-April 1, 2007**. <http://pennsci.org>

The **Association for Biological Laboratory Education (ABLE) 29th Annual Conference** will take place on **June 5-9, 2007 at the University of Kentucky, Lexington, KY**. Please visit the website.

<http://www.zoo.utoronto.ca/able/conf/able2007/index.html>

Pennsylvania Science Teachers Association Annual Conference will take place on **Dec. 5-7, 2007 at the Hershey Lodge and Convention Center, Hershey, PA**. Please visit the website for more information.

<http://www.pascience.org/conventions.htm>

DIRECTORS AT LARGE

(2005-2007) Fred Brenner

(2005-2007) Sherman Hendrix

(2006-2008) Marlene Cross

(2006-2008) Jane Cavender

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e-mail: Robert.coxe@state.de.us

83rd 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 3rd 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 31st.
- 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 banquet.

RECENT MEMBER PUBLICATIONS AND ACCOMPLISHMENTS

Reddy, Aditya and Bernard Fried 2007. The use of *Trichuris suis* and other helminth therapies to treat Crohn's disease. *Parasitology Research* 100: 921 – 927

Klockars, J., J. Huffman, and B. Fried. 2007. Survey of seasonal trematode infections in *Helisoma trivolvis* (Gastropoda) from lentic ecosystems in New Jersey, USA. *Comparative Parasitology* 74: 75-80.

Jarusiewicz, J.A., J. Sherma, B. Fried. 2006. Thin layer chromatographic analysis of glucose and maltose in estivated *Biomphalaria glabrata* snails and those infected with *Schistosoma mansoni*. *Comparative Biochemistry and Physiology B – Biochemistry and Molecular Biology*. 145: 346-349.

CALL FOR NOMINATIONS AND INTEREST IN SERVING

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 2007 annual meeting:

Treasurer-elect (2006-8)
Director-at-large (2007-9) 2 positions (Nominated from among the committee chairs)

Additionally, if you or students at your school routinely go to the PAS annual meeting, PAS has an advisory role for you.

Nominations or inquiries of interest should be sent to:

Dr. Jane E. Huffman
PAS Past-President
Department of Biology
East Stroudsburg University
East Stroudsburg, PA 18301
Ph: (570) 422-3716
Fax: (570) 422-3724
e-mail: jhuffman@po-box.esu.edu

The 83rd annual meeting will be held at the Radisson Hotel in Pittsburgh on March 30 – April 1, 2007

*Radisson Hotel Pittsburgh: 412-373-7300
101 Mall Blvd
Monroeville, PA 15146, US*

MEETING REGISTRATION FORM

Name: _____ Phone: _____

Address: _____ City: _____ State: _____ Zip: _____

Employer/Affiliation (for badge): _____

Full Meeting Registration:

No. of members or affiliates ___ @ \$45= _____

No. of non-members ___ @ \$55 = _____

No. of students ___ @ \$25 = _____

One-Day Meeting Registration:

No. of members or affiliates ___ @ \$30 = _____

No. of non-members ___ @ \$50 = _____

No. of students ___ @ \$20 _____

Make check payable to the *Pennsylvania Academy of Science*. Send completed forms and payment to:

Treasurer Jennifer L. White, Ph.D.
Assistant Professor of Biology
East Stroudsburg University
Stroudsburg, PA 18301
570.422.3712

http://pennsci.org/annual_meeting/Meeting_Registration.htm

SCHEDULE OF ACTIVITIES AT A GLANCE
83rd Annual Meeting of the Pennsylvania Academy of Science

March 30 – April 1, 2007 – Radisson Hotel, Monroeville PA

FRIDAY, March 30

5:00-10:00 PM	Registration	Lobby
3:00-6:00 PM	Board of Director's Meeting	Washington-Westmoreland
6:30-10:00 PM	<i>Dinner</i>	Showroom

SATURDAY, March 31

7:30-9:00 AM	<i>Breakfast</i>	Showroom
8:30 AM-5:00 PM	Registration	Lobby
9:00 AM-5:00 PM	Exhibits	Monroe 1
9:00-12 Noon	Oral Presentations	
	I Organismal Biology/Education	Fayette
	II Microbiology/Parasitology	Washington-Westmoreland
	III Vertebrate Ecology	Butler
10:15-10:30 AM	<i>Coffee Break</i>	Rm. 1514 (Lounge)
9:00 AM-12 Noon	Poster Session I – Microbiology/Cell and Molecular Biology	Monroe 1
10:00 AM-3:00 PM	Advisory Council Meeting	Somerset
12 Noon-1:15 PM	<i>Lunch</i>	Showroom
1:15-4:15 PM	Symposium: Renewable Energy	Fayette
1:15-5:00 PM	Oral Presentations	
	IV Botany/Aquatic Biology	Washington-Westmoreland
	V Cell and Molecular Biology/Physiology	Butler
1:15-5:00 PM	Poster Session II – Organismal Biology/Education	Monroe 1
2:30-3:00 PM	<i>Coffee Break</i>	Rm. 1514 (Lounge)
5:00-5:30 PM	Business Meeting	Washington-Westmoreland
6:00-6:30 PM	<i>Reception (Cash Bar)</i>	Iron City Grill
6:30-8:15 PM	<i>Dinner</i>	Showroom
7:30 PM	Speaker: Dr. Matthew (Matt) Lamanna Assistant Curator of Vertebrate Paleontology, Carnegie Museum of Natural History <i>The Origin of Modern Birds: New Fossils from the Early Cretaceous of Northwestern China</i>	

SUNDAY, April 2

7:30-9:00 AM	<i>Breakfast</i>	Showroom
8:30-11:00 AM	Registration	Lobby
8:30-11:30 AM	Poster Session III - Ecology/Environmental	Monroe 1
11:00 AM-12:00 noon	Board of Director's Meeting	Washington-Westmoreland

ANNUAL MEETING PROGRAM SCHEDULE AND ABSTRACTS

The complete program schedule can be viewed at

http://pennsci.org/annual_meeting/program.pdf and the abstracts for the meeting can be viewed at

http://pennsci.org/annual_meeting/abstracts.pdf

One correction since submission was sent from a member and two abstracts were submitted late and are only being published in the newsletter.

Cherepko, Judy*, **Gary Fromert**, **Jane E. Huffman**. Applied DNA Sciences Laboratory, East Stroudsburg University, East Stroudsburg, PA 18301. *Is Emerging Tick-borne Infectious Disease Under-reported in Monroe County Pennsylvania?* Zoonotic diseases represent serious public health issues, both in the United States and around the globe. In Pennsylvania, a number of infectious agents are vectored by ticks, and amplified in mice. Pennsylvania led the nation in reported LD cases in 2005. The actual number of human cases of LD and other zoonotic diseases have not been accurately reported. This study surveyed physicians, veterinarians, and a population of residents from a township in Monroe County, PA. The intent of the surveys were to determine knowledge, attitudes and behaviors regarding LD (*Borrelia burgdorferi*), babesiosis (*Babesia microti*), and human granulocytic ehrlichiosis (*Anaplasma phagocytophila*). We also determined the prevalence of, Babesia, Anaplasma and Borrelia from ticks (*Ixodes scapularis*) collected in Monroe County. A total of 443 ticks were collected from 2004 to 2006. 4.3% were positive for Borrelia, 5.6% were positive for Anaplasma and .5% were positive for Babesia. Information from this study will aid local doctors in prompt diagnosis and treatment of individuals at risk, and will add to the growing epidemiological data. **(18)** – updated

Forsburg, Zachery* and **Pablo R. Delis**, Department of Biology. Shippensburg University, Shippensburg, PA 17257. *The Amphibian Community of Natural vs. Agriculturally Disturbed Ponds in Letterkeney Army Depot, South-Central Pennsylvania.* – Our research focused on the amphibian community of two ponds in the Letterkeney Army Depot, North Mountain, Southcentral Pennsylvania. Both ponds were man-made, however one is impacted by agricultural practices (Site A), while the other is, currently, relatively natural and undisturbed (Site B). Using exclusively, and exhaustively, dip netting techniques, we found two resident species of amphibians

at Site B: 297 adult spotted newts, *Notophthalmus viridescens*, and 79 larval green frogs, *Rana clamitans*. At Site A, we only detected 8 adults of a single species: *N. viridescens*. The morphometric analysis of the newts (snout vent lengths, tail lengths, tail heights, and biomass) was done for both sites. Newts in Site B were significantly larger in mass and snout vent lengths than those of Site A. Basic chemistry analysis of the water, in our case higher nutrient content of site A, might be responsible for the absence of green frogs in this site. Our study suggests, as expected by ecological modeling, that natural sites have more biological diversity and contain greater biomass and larger organisms than the agriculturally disturbed sites. Our study, however, showed very low levels of amphibian biodiversity in both locations, hinting the negative effects of previous anthropogenic influences in the area.

(140) – late submission, not in program

Richard L. Stewart Jr.*, **Nate W. Fuller**, **Katherine D. Barry**, **Craig M. Kindlin** and **Marcie L. Lehman**. Department of Biology. Shippensburg University, Shippensburg, PA 17257. *Feeding patterns of two species of ticks on white-tailed deer from Letterkeney Army Depot.* Two species of ticks, *Dermacentor albipictus* and *Ixodes scapularis*, are common on deer harvested in Letterkeney Army Depot (LEAD) and sporadically on deer throughout Pennsylvania. Larva of *Dermacentor albipictus* are the only questing stage while each life stage of *Ixodes scapularis* must quest for a new host. In this study, we examined attachment sites of both species to determine characteristic distribution patterns. We collected ticks from over 200 hunter-killed deer, at LEAD, and quantified the observed topic distribution in those deer concurrently parasitized by these two species. Attachment locations were detected by utilizing equal search and collection effort (time) for ticks on the head, ears, neck, and axillary regions. From 2005 surveys, we have processed 1897 ticks, and collection efforts from 2006 are currently being finalized. From the data analyzed thus far, 54% of the ticks were attached to the head and neck region, while 46% were in the axillary region. *Ixodes scapularis* made up 82.3% of all ticks collected, and most of them came from the axillary region. A greater proportion of *Dermacentor albipictus* was found in the head/neck (30.2%) compared with the axillary region (2.8%) of the deer. These preliminary data suggest that there may be some attachment/feeding benefits or constraints on the host anatomy that result in the distinct patterns of distribution of the parasites, and especially *Dermacentor albipictus*. **(141)** – late submission, not in program.

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 2007 edition. The journal is in its 44th 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 Fall/Winter 2007 issue is **August 15, 2007**. 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

TOPICS FOR FUTURE ISSUES:

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

Visit us on the web at

<http://www.pitt.edu/~pageog/>

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: preferably no longer than 1,000 words, no more than 6 references, and at most one table or figure. Reference format should 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 (Microsoft Word), to Richard Stewart (rlstew@ship.edu). Submissions will be printed on a first-received basis when space limitations apply.

Learned Discourses Editors

Richard Stewart and Pablo R. Delis

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,
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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/>

**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) 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, e-mail: 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:

_____ to the Undergraduate Research Fund

_____ to the Journal of the Pennsylvania Academy of Science Endowment

Signature _____

Thank You.
Fred J. Brenner, Past PAS President

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 could 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*.

Submission by email is strongly encouraged. You may also 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. The PAS Research Grant Committee will evaluate all proposal reviews, 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 emails or materials to:

Dr. Jane Cavender,
Chairman PAS Research Grant Committee
Department of Biology
Elizabethtown College
Elizabethtown, PA 17022, e-mail: cavender@etown.edu

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. Universities, medical schools, pharmaceutical firms and professional societies in Pennsylvania formed the society. 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. A board of directors elected from its membership governs the society. 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 that 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

For further information contact

PSBR

Post Office Box 1163

Camp Hill PA 17001-1163

Ph: (717) 731 3557; Fax: (717) 731 3506; e-mail: psbr@psbr.org

PENNSYLVANIA ACADEMY OF SCIENCE-APPLICATION FOR MEMBERSHIP

Date: ____ / ____ / ____
 Last Name: _____ First Name: _____ Middle Initial or Name: _____
 Complete Mailing Address: _____ City: _____ State: _____ Zip: _____
 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
 Active Member - \$ 35.00 per year Student Member - \$17.50 per year Sustaining Member - \$35.00 or more per year
 Life Member - \$525.00 (*can pay in installments*) Non-profit Institution/Library Member - \$45.00 per year
 For-profit Institution/Library Member - \$150.00 per year
 Back Issue of *Journal* - \$15.00 each (List desired issue) _____ Contribution to PAS _____

Please return this application and first year's membership dues, made payable to the **Pennsylvania Academy of Science**, or an address change to: **Dr. Robert B. Coxe, Membership Chairperson**, Delaware Natural Heritage Program, 4876 Hay Point Landing Rd. Smyrna, DE 19977. Ph: 302-653-2880 x122, Fax: 302-653-3431 or e- mail: robert.coxe@state.de.us

Book Order Form

I want to order the following books:

- Wildlife Diseases: Landscape Epidemiology, Spatial Distribution, and Utilization of Remote Sensing Technology (\$60.00)
- Renewable Energy: Trends and Prospects
- Science, Technology and National Security
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- Ecology of the Wetlands and Associated Systems (\$50.00)
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TOTAL COST OF BOOKS ORDERED: \$ _____

Include \$5.00 Postage and handling per order: \$ 5.00

PA residents please add 6% sales tax*: \$ _____

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* Non profit Organizations, please provide tax exempt number:

Discounts on orders of 10 or more copies of a single title.

This book order form, together with the appropriate payment made payable to The Pennsylvania Academy of Science, should be sent to: Dr. Shyamal Majumdar, Department of Biology, Lafayette College, Easton, PA 18042.

Last Name: _____ First Name: _____ Middle Name or Initial: _____
 Complete Mailing Address: _____

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R. L. Stewart or P. R. Delis,
Editors of the Newsletter
Shippensburg University
1871 Old Main Dr.
Shippensburg, Pennsylvania, 17257

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