



Volume 64, No.3

May, 2006

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Pennsylvania Academy of Science

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

Radisson Hotel
Pittsburgh

www.radisson.com/monroevillepa

March 29-April 1, 2007

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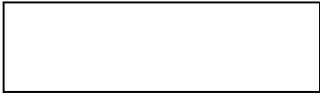
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The Pennsylvania Academy of Science Newsletter

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

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York, PA 17405-7199

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



ACADEMY OFFICERS

Deborah D. Ricker

President

Dept. of Biological Sciences
York College of PA
York, PA 17405-7199
Ph: (717) 846-7788 ext. 1510
Fax: (717) 849-1619
e-mail: dricker@ycp.edu

Valerie G. Kalter

President-Elect

Department of Biology
Wilkes University, Wilkes-Barre,
PA 18766
Ph: (570) 408-4725
e-mail: valerie.kalter@wilkes.edu

Jane E. Huffman

Immediate 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

Kenneth W. Thomulka

Treasurer

Univ. of the Science in Philadelphia
Dept. of Biological Sciences
600 S. 43rd Street
Philadelphia, PA, 19104
Ph: (215) 596-8923
Fax: (215) 596-8710
e-mail: k.thomul@usip.edu

Jennifer L. White

Treasurer - Elect

Department of Biology
East Stroudsburg University
East Stroudsburg, PA 18301
Ph: 570-422-3712
Fax: 570-422-3724
e-mail: jwhite@po-box.esu.edu

Richard L. Stewart Jr. &

Pablo R. Delis

Newsletter Editors

Department of Biology
Shippensburg University
Shippensburg, PA 17257
Ph: (717) 477-1095
Fax: (717) 477-4064
e-mail: rlstew@ship.edu

Michael Campbell

Recording Secretary/Archivist

Biology Department
Mercyhurst College, Glenwood Hills
Erie, PA 16546
Ph: (814) 824-2374
Fax: (814) 824-2188
e-mail: campbell@mercyhurst.edu

Robert B. Coxe

Corresponding Secretary

Membership Chair

Delaware Natural Heritage Program
4876 Hay Point Landing Rd.
Smyrna, DE 19977
Ph: 302-653-2880 x122
Fax: 302-653-3431
e-mail: robert.coxe@state.de.us

Shyamal K. Majumdar

Journal Editor

Department of Biology
Lafayette College
Easton, PA 18042-1778
Ph: (610) 330-5464
Fax: (610) 330-5705
e-mail: majumdass@lafayette.edu

Lewis M. Lutton

Book Treasurer

Department of Biology
Mercyhurst College
Erie, PA 16546
Ph: (814) 824-2372
Fax: (814) 824-2188
e-mail: llutton@mercyhurst.edu

Assad I. Panah

Webmaster

Dept. of Geology and Envir. Science
University of Pittsburgh- Bradford
Bradford, PA 16701-2898
Ph: (814) 362-7569
Fax: (814) 362-5088
e-mail: aap@pitt.edu

Peter M. Carando

Director,

PA Junior Academy of Science
New Castle Senior High School
2843 Graceland Road
New Castle, PA 16105
Ph: (724) 658-4098
e-mail: drifly@ccia.com

ADVISORY COUNCIL

Honorable Edward G. Rendell

Honorary Chairman

Governor,
Commonwealth of Pennsylvania
Governor's Mansion
Front & MacClay Streets
Harrisburg, PA 17102

Leonard Rosenfeld

Chairperson

College of Graduate Studies
Thomas Jefferson University
1020, Locust St., Suite 412
Philadelphia, PA 19107-2073
e-mail: leonard.m.rosenfeld@mail.tju.edu

Marlene Cross

Pennsylvania Talent Search

Biology Department
Mercyhurst College
501 E. 38th Street
Erie, PA 16546

FROM THE DESK OF THE PRESIDENT



I am honored to serve as President of the Pennsylvania Academy of Science, our states most outstanding, diverse, and committed group of science professionals, faculty, and students uniquely devoted to the advancement of science and education. For over 80 years, the Pennsylvania Academy of Science has dedicated its efforts toward:

- **Advancing the pursuit and application of science within the Commonwealth, both in academic and industrial settings,**
- **Enhancing the professional development of its members,**
- **Creating forums for professional dialogue among junior and senior scientists at all academic levels,**
- **Promoting scientific research, presentation and discussion among its members and the public at large, and**
- **Supporting educational initiatives devoted to the development of scientific skills and knowledge.**

Towards these ends, as President I pledge to work with my esteemed Academy colleagues in pursuing three important goals, which I have referred to as "The Three "M's": **Membership, Marketing and Money!**

Over the past several years, Academy membership has remained steady at approximately 500 individuals. And, each year, our Annual Meeting hosts over 250 scholars from approximately 35 schools throughout the Commonwealth. With an estimated 140 institutions of higher education in Pennsylvania, it is clear that we must broaden our outreach and invite participation from additional schools. Therefore, I propose to work closely with our PAS Campus Representatives to promote the Academy more widely and increase our overall membership by 10% in the next two years.

Continued on Page 3

This initiative will be supported by an intense focus on effectively promoting and marketing the mission and goals of the Academy. Working with members of the PAS Executive Board and the Advisory Council, I will strive to enhance the visibility of the Academy among academic, business, private and government sectors. I intend to explore internal recruitment initiatives using campus representatives, target on- or under-represented institutions within the Commonwealth, facilitate networking opportunities with the Advisory Council and effectively promote the Academy among science industries and organizations.

To underwrite these, and other, important endeavors, I intend to explore ways in which the Academy can obtain financial support from both public and private sectors. Several important initiatives that are currently underway include finalizing our grant application to the Pennsylvania Department of Education, seeking corporate sponsorship for annual science symposia, and petitioning members of the Advisory Council for sponsorship of various undergraduate research initiatives.

Together, we can make our Academy one of the pinnacle science organizations in the country. Recognizing, of course, that every long journey begins with a single step, I invite you to join me as we launch the Pennsylvania Academy of Science toward a bright and prosperous future!

Deborah D. Ricker, Ph.D.
Dept. of Biological Sciences
York College of PA
York PA 17405 - 7199
(717) 849-1619

e-mail: dricke@ycp.edu

DIRECTORS AT LARGE
(2005-2007) Fred Brenner
(2005-2007) Sherman Hendrix
(2006-2008) Marlene Cross
(2006-2008) Jane Cavender

Address Change and Membership Applications:

Robert B. Coxe, Membership Chairperson,
Delaware National Heritage Program, 4876 Hay Point
Landing Rd., Smyrna, DE 19977. (302) 653-2880 x122
e-mail: Robert.coxe@state.de.us

UPCOMING MEETINGS

The **83rd Annual PAS Meeting** will be held at the *Radisson Hotel, Pittsburg, PA, March 29-April 1, 2007*.

The **Society for the Study of Amphibians and Reptiles, the Herpetologists' League, the American Society of Ichthyologists and Herpetologist and the American Elasmobranch Society** will meet from *July 12-17, New Orleans, Louisiana*. Please visit the website for more information

<http://www.dce.ksu.edu/jointmeeting/>

The **Ecological Society of America 91st Annual Meeting** will take place *Aug. 6-11 2006, Memphis, TN*.

Please visit the website for more information
<http://www.esa.org/memphis/>

The **Wildlife Society Annual Meeting** will take place on *September 23-27, Anchorage, Alaska*. Please visit the website for more information

<http://www.wildlife.org/>

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/>

The **Pennsylvania Science Teachers Association (PSTA) Annual Convention** will take place on *Nov. 29 - Dec. 1, 2006, Hershey Lodge and Convention Center, Hershey, PA*. Please visit the website for more information

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

The **Entomological Society of American Annual Meeting** will take place *Dec. 10-13, 2006, Indianapolis, IN*. Please visit the website for more information

<http://www.entsoc.org/>

RECENT MEMBER PUBLICATIONS AND ACCOMPLISHMENTS

Radev, Valentin; Kanev, Ivan; and Fried, Bernard (2006).

Comments on eye-flukes (Philophthalmidae Looss, 1819) in the genera *Philophthalmus* and *Natterophthalmus*, with a re-designation of the type-species of *Natterophthalmus*.
Zootaxa 1223: 19 - 22.

Dear Friends,

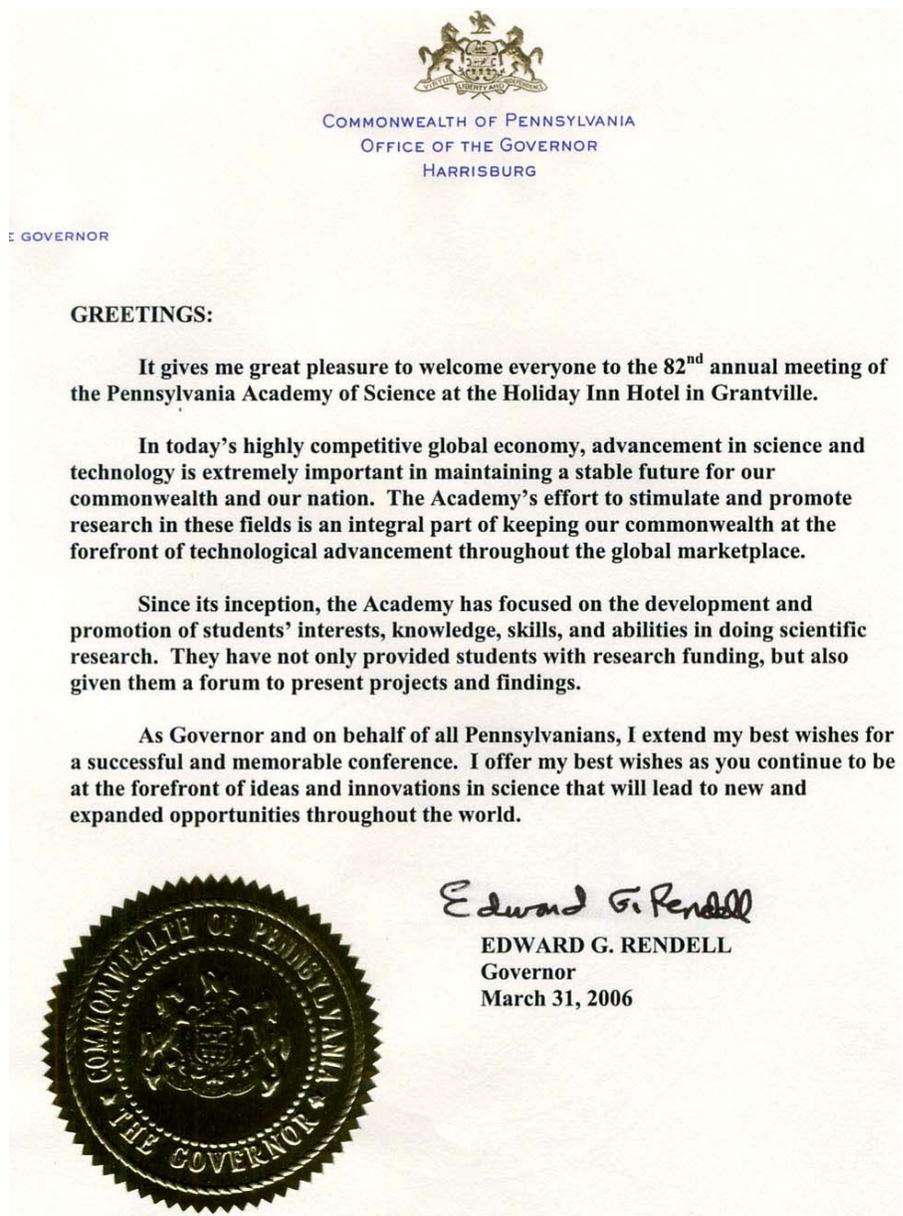
A successful meeting of the Advisory Council to the PAS was held on April 1st. I sincerely thank all Council members who attended and remind those who were unable to attend that we have a mechanism of appointing associate members to Council (to act in your absence so that your discipline/organization/institution is represented). Council received an in depth briefing on the strategic analysis of Academy operations which it had authorized in 2005. After Council had an opportunity to provide input following this briefing, this important study was presented to the Academy's Executive Committee the following day. This study gives the Academy much to think on and I have no doubt that its' new President, Prof. Deborah Ricker of York College, will see that appropriate introspection and implementation will occur. As the Academy further crystallizes its path for the future, Council will increasingly be called upon to guide and support this evolution.

Following the strategic review, Council was pleased to welcome Harry Kao, Executive Director of the Governor's Commission on Asian American Affairs. Mr. Kao presented a proclamation of greetings from Governor Edward G. Rendell and discussed with Council strategies for having the Academy more closely align itself with state government as an effective partner in enhancing the environment for science in the Commonwealth.

Council Secretary Fred Loomis is preparing a draft of minutes of our April 1st meeting. As soon as I have had a chance to review this draft, Fred will distribute to all Council members.

Best personal regards,

Len



The Pennsylvania Academy of Science 82nd annual meeting was held this past March 31-April 2 in Grantville, PA at the Holiday Inn. It included over 144 scientific presentations, several business meetings, social hours, dinners, as well as a photo contest. The following pictures were taken at the meeting and represent some of the activities that took place.



**82nd Annual Meeting of the PAS
Photo Contest
Submission**



Passing the gavel, from Jane E. Huffman (past-president) to Deborah D. Ricker (current-president). Saturday, April 1.



*Assad I. Panah
Webmaster
Saturday, April 1.*



**82nd Annual Meeting of the PAS
Photo Contest
Submission**





Valerie G. Kalter (president elect), Larry Klotz, Pablo Delis, and JR Stewart at meeting



**82nd Annual Meeting of the PAS
Photo Contest
Submission**



**82nd Annual Meeting of the PAS
Photo Contest
Submission**



**82nd Annual Meeting of the PAS
Photo Contest
Submission**



Deborah D. Ricker (President)



**82nd Annual Meeting of the PAS
Photo Contest
Submission**

**PA Academy of Science
82nd Annual Meeting
Dinner Speaker – Philip H. Hosbach**

**Vice President – Immunization Policy and Government Relations
Sanofi Pasteur
Vaccines: Past Present and Future**



L to R Robert Coxe (Dir. Special Events), Jane Huffman (PAS President 04-06), Bernard Fried (PAS President 72-74, Hosbach's Collegiate Advisor Lafayette College), Philip H Hosbach (Speaker), Deborah Ricker (Current PAS President), Leonard M. Rosenfeld (PAS President 92-94, Chair Advisory Council)

PENNSYLVANIA SCIENTISTS

Clarence J. Murphy
Professor Emeritus of Chemistry
East Stroudsburg University of Pennsylvania

Albert C. Zettlemoyer
(1915-1991)

This is the fourteenth in a series of articles describing the careers and accomplishments of scientists who were born or who worked in Pennsylvania.

Albert C. Zettlemoyer was born in Allentown, PA on July 13, 1915, the son of Frederick R. and Florence Zettlemoyer. He earned a B. S. in chemical engineering and a M. S. in organic chemistry from Lehigh University and a Ph. D. in physical chemistry from MIT. He then joined the faculty of the chemistry department at Lehigh University in 1941, where he spent the rest of career.

He was well known as a surface and colloid chemist and earned renown for his research, publishing more than 230 technical articles, eight book chapters and 10 patents.

At Lehigh he was a distinguished teacher and administrator, serving as vice-president for research from 1966 to 1969 and as vice president and provost from 1969-80. During his eleven years as provost he established more than two dozen academic programs including a Learning Center, continuing education and professional development for faculty.

He directed the research of more than fifty doctoral candidates and more than 200 master's degree students. One of his more significant contributions was the establishment in 1946 of the National Printing Ink Research Institute at Lehigh. In 1965 he was named as the first director of the Center for Surface and Coatings Research. In 1987 the center was renamed the Zettlemoyer Center for Surface Studies in his honor.

The American Chemical Society recognized his achievements with the Kendall Colloid Chemistry Award in 1968 and the Mosher Award for his lifetime contributions to the ACS in 1984. He served as president of the American Chemical Society in 1981.

On his official retirement in he was named Distinguished Professor Emeritus of Chemistry by Lehigh University. He remained active professionally, however, still directing research until two weeks before his death on January 27, 1991.

References: American Men and Women in Science, Obituary entered in the Congressional Record by Rep. Don Ritter (Feb.4, 1991)

Contributions to the newsletter should be submitted to the Newsletter Editors Richard Stewart and Pablo Delis at rlstew@ship.edu

These may include Pennsylvania Scientists, Recent Member Accomplishments, Science in the News, Natural History Articles, Learned Discourses, or other information pertinent to the Pennsylvania Academy of Science membership.

LEARNED DISCOURSES

Leopard Slug

Zach Pagel

(PAS New Member)

The Leopard slug is terrestrial, shell-less and can be up to 4 inches in length. They vary in color from yellowish-gray to brown, with black spots on the mantle near the head, black stripes extend along the rest of the body. Its head has two long tentacles with photoreceptors at the ends and two short sensory tentacles in front of the mouth. There is a breathing pore on the back part of the mantle on its right side. Gathered air under the mantle serves as a primitive lung.

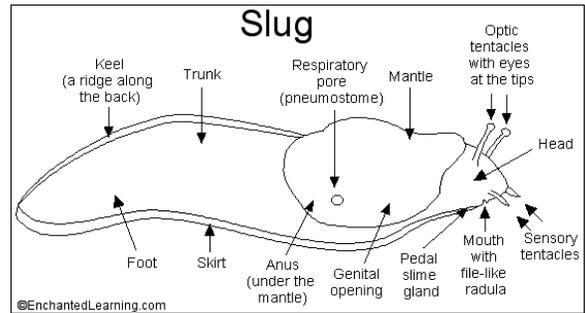
The Leopard slug is an introduced species in

Phylum: Molluska
Class: Gastropoda
Order: Stylommatophora
Family: Limacidae
Genus: *Limax*
Species: *Limax maximus*

North America and found in other temperate regions around the world. Their habitats are moist places in fields, woods, and

gardens, under wood, rocks, vegetation, and other shaded areas. In daylight, you can find them under rocks, logs, and similar places. Leopard slugs are usually nocturnal, but may be active in wet conditions. Normally, Leopard slugs absorb water via their muscular foot. If conditions are too wet, these slugs will give off excess water to avoid hyper-hydration. If conditions are too dry, they may aestivate, or become dormant. To survive winter

conditions, they perform a huddling behavior with one another to conserve body water and avoid dehydration. They will become active again when the ground surface temperature ranges from 44.2° to 65.7°F.



Leopard slugs have strong jaws that hold their food while a tongue, with teeth-like structures on it called a radula; it scrapes away food leaving a scar or hole. Leopard Slugs eat leaves, flowers, fruits, mushrooms, dead animals, and other slugs. As these slugs hunt, they slide along on a cushion of mucus slime. The slug uses the slime trail to return to the feeding spot. Incredibly, these slugs are capable of learning about their environment. They will respond to odors. When they find a bad smell around food, the slug learns to avoid the food. However, if it finds a bad smell and no food, and later, it discovers the same bad smell around food, the slug does not associate the smell with the food and will feed.



<http://www.fcps.k12.va.us/StratfordLandingES/Ecology/Mollusks/Leopard%20Slug/slug.jpg>

It is very interesting to discover the mating habits of the Leopard slug. First, they will circle each other near a ledge or on a tree branch. Then they intertwine their bodies and (large) reproductive



organs, which protrude (a lot) from their respiratory pore. Next, the couple will bungee from the branch and hang, suspended by mucus slime sometimes as long as 3 meters. Since slugs are hermaphroditic, both slugs will be able to have a clutch size from 50 to 130 clear eggs. Leopard slugs may exhibit aggression toward other slugs or snails when shelter sites for breeding are scarce.

New slugs will hatch the following spring and begin to move and feed almost immediately. Leopard slugs typically live up to three years.

Leopard slugs have many predators, including toads, turtles, beetles, birds, flies, and fireflies. When disturbed these slugs secrete colorless mucus, or lift its tail and vibrate it back and forth as a means of scaring a potential predator. Often, it closes its mantle over its head for protection. Many gardeners consider Leopard slugs terrible pests because of the damage they can do to a garden when there are many of them. Additionally, Leopard slugs can be an intermediate host for some trematode and nematode worms that can harm our pets.

References

- http://www.fcps.k12.va.us/StratfordLandingE/S/Ecology/mpages/leopard_slug.htm
- http://www.biokids.umich.edu/critters/information/Limax_maximus.html
- http://www.sewanee.edu/biology/courses/Bio304/2002/projects/slugs/1_title.html
- http://www.carnegiemn.org/test/lsp/accounts/li_maxi.htm
- <http://members.optushome.com.au/awnelson/davidavid/slug/>

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 (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 Delis
Department of Biology
Shippensburg University, Shippensburg, PA 17257

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 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 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

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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<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.

RECENT MEMBER PUBLICATIONS AND ACCOMPLISHMENTS

NUS College in Biovalley /Philadelphia

The National University of Singapore operates an outstanding program in Philadelphia wherein some of its' best students in science come to Philadelphia for a program of academic study in science and practical experience in corporate science. This year, the program manager and several student representatives attended the 82nd annual meeting of the PAS. One of these students Ms. Peiling Yap presented a poster on her research experience at Rheogene Inc.

**Dr. Charles Braddock Reif
Professor and Chair Emeritus of
Biology
Wilkes University, 1912-2006**

With sadness and respect, the Wilkes University Biology Department notes the passing of Dr. Charles B. Reif, Professor and Chair Emeritus on Wednesday, 19 April 2006. He was 93.

Born in Washington, D.C. and raised in Minneapolis, Minnesota, Chuck earned his Ph.D. in zoology from the University of Minnesota in 1941. His dissertation research addressed microscopic organisms living in streams feeding into Lake Superior, Minnesota. While a graduate student, Chuck shared an office with famed ecologist Raymond Lindeman. His experiences during that period were detailed in a fascinating essay that he authored published in *The Bulletin of the Ecological Society of America* in 1986.

Chuck joined the Wilkes faculty in 1942, where he served as a Professor of Biology and the department's first chairman. Chuck taught at Wilkes and presided over the Biology Department until his retirement in 1979, with the exception of a two-year tour of duty in the South Pacific with the US Navy in 1944 and 1945.

He taught a variety of courses and influenced thousands of students during his career. His offerings included histology, floristic biology, human anatomy and physiology, geology, and English. He was known to be demanding, having an uncanny ability to quickly learn the names of all of his students and remember their dates of classroom attendance - or lack thereof. Many of his students have achieved success in medicine and academia. Chuck will be remembered as a naturalist-scholar. Simply put, he loved nature, and devoted most of his life to accurately understand it and preserve it for future generations. He pursued a diverse range of

research projects, largely centered on his interest in the ecology of lakes. He conducted short-term and long-term analyses of dozens of Pennsylvania waterbodies, including Harvey's Lake, Lake Nuangola, and Lake Silkworth. He also conducted studies into the geologic history of northeastern Pennsylvania and the vegetation of an island in the Susquehanna River. His work, which often involved collaborations with students and fellow professors, were published in the *Journal of the Pennsylvania Academy of Science*, among other journals. He was a frequent attendee at PAS meetings, presenting contributed papers on his studies.

Chuck gave generously to a variety of institutions and organizations. At Wilkes, he and his students established the Charles B. Reif Scholarship Fund. He established the Charles Reif Undergraduate Research Endowment for the Pennsylvania Academy of Science, and the Raymond Lindeman award for the American Society for Limnology and Oceanography.

Chuck enjoyed a 46-year long marriage to Carolyn Lee Hoffa Reif. Chuck and Carolyn remained childless, which was in keeping with his concerns over the environmental impacts of overpopulation. Following Carolyn's death, Chuck married Dorothy Towne Schlichting Reif, whom he dated as a young man. They spent the last six years in Minnesota.

Memorial donations, if desired, may be made to the Charles B. Reif Scholarship Fund, Wilkes University.

Chuck's obituary was published in Times-Leader and Citizens' Voice

Prepared and submitted by Kenneth M. Klemow, Ph.D.

Biology Department, Wilkes University, Wilkes-Barre, PA 18766

e-mail: kklemow@wilkes.edu

Pennsylvania Science Talent Search



PJAS held its state-wide meeting / competition for 2006 at Penn State University on May 14, 15, and 16. Students who had won awards at their regional competitions came from all over the state to compete here. The following is a summary of the awards presented from the Pennsylvania Academy of Sciences through PSTS at this meeting. All of these awards are funded through endowments held by the Academy.

A total of 68 certificate and monetary awards were given through PSTS this year.
 Congratulations to these outstanding students!

Monetary Awards (students are listed with their region):

<u>Amount</u>	<u>Award</u>	<u>Recipients</u>
\$125	Oerlein Sr.	Caroline Schaer, 1B; Krista Kierys, 2; Caitlin Mingey, 10; Bernard Bonner, 2.
\$50	Oerlein Jr.	Colton Provias, 9; Chris Habiak, 3; Akansh Murthy, 7; Margaret Schervish, 7; Mondira Ray, 7; Megan Brown, 3.
\$125	Zappa	Phong Lee, 2; Heather Lynn, 9.
\$125	PSTS Sr.	Lauren Grant, 10; Christina Mowen, 8; Katherine Osenbach, 3; and Zhu Wang, 1C.
\$100	PSTS Jr.	Steven Baldassano, 1B; Eileen Ke, 1B; Brahma Kumar, 1B; Alex Rosen, 3.

Certificate Awards (students are listed with their region):

First Awards	Lauren Grant, 10; Christina Mowen, 8; Katherine Osenbach, 3; and Zhu Wang, 1C.
Junior Awards	Elizabeth Lakata, 1B; Steven Baldassano, 1B; Eileen Ke, 1B; William Gao, 1B; Brahma Kumar, 1B; Alex Rosen, 3; Kristen Severson, 1B; Andrew Zimmerman, 10; Franck Lin, 1B; David Shore, 1B; Agin Thomas, 1C; Adam Shore, 1B; Michael Sliozberg, 1C; Seth Bluestein, 1C; Daniel Zinshteyn, 1C; Stephanie Kye, 1B; Alexis Moshang, 1B; Caroline Schaer, 1B; Fuyuo Hagayama, 1C; Christopher Tralie, 1B; Anjani Chitrapu, 1B; Hanlong Chen, 1C; Prithi Chandra, 1C; Deepak Bapat, 1B; David Alberts, 1B; Li Ching He, 1C; Shaila Chempakaseril, 1C; Annie Ashok, 1C; Joe Plaksin, 1C; Julia Zvenigorodsky, 1C; Matthew Bilsky, 1B; Eric Prouty, 1C; Matan Segal, 1B; Eli Rosenwasser, 4; Imran Sheikh, 1C; Stacey Abraham, 1C; Kristen Gowing, 1B; Micah Toll, 4; Margaret LaBuz, 2; Megan Furner, 2; Alyssa Loutsion, 8; Jaimy Joy, 1C; Matthew Brasavage, 2; Romie Hecdivert, 1C.

This report was submitted by:
 Marlene Cross, Ph. D
 State Director, PSTS

The Pennsylvania Academy of Science Board of Directors met on April 2nd 2006 at the 82nd annual meeting in the Holiday Inn in Grantville, PA and passed the following resolution.

RESOLUTION ON TEACHING OF EVOLUTION

Be it resolved on this 2nd day of April, in the year 2006, the Executive Board of the Pennsylvania Academy of Science passed the following resolution on the teaching of science based evolution in accredited elementary and secondary schools (K-12) in the Commonwealth of Pennsylvania.

The theory of evolution is based on sound scientific principles and supported by over 145 years of research in all biological disciplines. It is the cornerstone of biological education around the world.

The scientific evidence and well supported data for evolution, as proposed by Darwin (1859) and refined through the modern synthesis by Dobzhansky, Chetverikov, Fisher, Wright, Simpson, Stebbins, Babcock, Gould, Freeman, Miller, Mayr and others, are overwhelming.

In contrast, there is no scientific evidence or supporting data for the idea of intelligent design. This theological/philosophical concept does not belong in the science curriculum, but perhaps in cultural, philosophical, or theological comparative studies.

Accordingly, be it resolved that the Executive Board of the Pennsylvania Academy of Science rejects the idea that intelligent design as an alternative to modern evolutionary theory be taught in science/biology classes in accredited elementary and secondary (K-12) schools across the Commonwealth of Pennsylvania.

Be it also resolved, that the Executive Board of the Pennsylvania Academy of Science supports the teaching of evolution, as supported by valid scientific evidence, in science/biology classes in accredited elementary and secondary schools (K-12) across the Commonwealth of Pennsylvania.

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

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

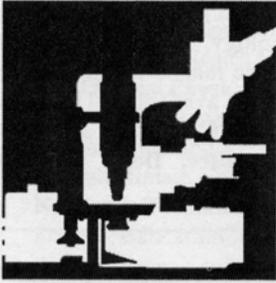
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Signature _____

Thank You.
Fred J. Brenner, Past PAS President



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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

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

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*.

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. 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 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 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:

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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.

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