

The Pennsylvania Academy of Science



The Pennsylvania Academy of Science



News from the PAS President - Robert Coxe

2013 PAS Annual Meeting news

The highlight of the 2013 PAS Annual Meeting at UP-Bradford was the Marcellus/Utica Shale Drilling Symposium. About 300 people from Pennsylvania and surrounding states attended the meeting and 168 abstracts were presented. This number is roughly equal to the amount of registrants and abstracts from the Camp Hill meetings (2009 and 2010), but less than Cedar Crest College. As a result of having the meeting in the western part of the state we had attendees from schools that do not typically come to the meetings including UP-Johnstown and Penn State-Bernd. It is hoped that these newfound participants will come back to the meetings in another location. The Science Teacher Education Workshop hosted eight teachers and focused on issues presented at the Marcellus/Utica Shale Drilling Symposium. In the afternoon, the teachers, a student and professor from UP-Bradford, and I, participated in a mock town hall meeting involving issues learned from the Shale Drilling Symposium and an activity in “The Tuna” creek, performed earlier in the afternoon. Two articles were produced in the local paper, *The Bradford Era*, on activities presented at the workshop.



Many thanks go to Lynette Gerlin, of UP-Bradford Conference Services, and Assad Panah and Mary Mulcahy of UP-Bradford for helping to put together all of the details of the meeting. Additional thanks go to Assad for hosting the Marcellus Shale/Utica Shale Drilling Symposium. Many thanks also go to Vivian Coxe and Sue Morgan for putting together the Science Teacher Education Workshop.

2014 PAS Annual Meeting at Susquehanna University in Selinsgrove, PA

Plans for the 2014 PAS Annual Meeting are underway. The meeting will be held from Friday, March 21, 2014 to Sunday, March 23, 2014. The meeting theme will be water issues and specifically relating to the Susquehanna River. The water theme is a good follow through on the issues presented at the Shale Drilling Symposium. Carlos Iudica and Ahmed Lachhab, who are planning the meeting, are hoping for the largest attended meeting in PAS history. Given the location and the 90th anniversary we may be able to do this and are aiming for this goal. Be sure to check the PAS webpage (www.pennsci.org) for more information on the meeting as the date gets closer.

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Other happenings

The first fully electronic Pennsylvania Academy of Science Journal has come out after many months of hoping it would “be out soon”. The December 2012 electronic edition is also the first journal to have color photos. The electronic journal promises to provide world-wide publicity to the work of the Academy and the research of its members. Scanned copies of previous journal issues are gradually being uploaded to the webpage as they are scanned. The older journals provide insight into the ways that research used to be done, the history of the Academy, and pictures of familiar faces from an earlier time.

The executive committee of the Academy voted to support the STEM initiative from the National Association of the Academies of Science. The STEM program supports the teaching of Science, Technology, Engineering, and Math (STEM) in schools around the country.

Note about the Picture in the message

Behind me is the location for Duke’s Riverside Bar and Grill, which was the location of the Beachfront Hotel (building no longer standing) in Wormleysburg, Pennsylvania. The Beachfront Hotel was located across the Susquehanna River from the Pennsylvania Capitol building in Harrisburg, PA. The academy held its 1st Executive Committee meeting on November 28, 1924 and the 1st Annual Meeting of the Pennsylvania Academy on April 10-11, 1925 in the Senate Caucus Room in the Capitol and then met for dinner both times at the Beachfront Hotel. During the Executive Committee meeting and the 1st Annual Meeting the charter members of the organization worked to produce the original constitution, which was signed on April 11, 1925.



An invitation to submit manuscripts to the open-access
Journal of the Pennsylvania Academy of Science

Dear Colleagues,

As the editor for the journal I would like to extend an invitation to publish in the *Journal of the Pennsylvania Academy of Science*. Instructions for manuscript submission can be found on the Academy's web site and on the following pages of this Newsletter.

In 2012 the journal became open-access. It will continue to feature works of significance, originality, and relevance in all areas of biological science, chemistry, physics, geography, geology, curriculum and pedagogy. The journal will be published quarterly and will be found on the Academy's web site. It will continue to disseminate significant research and original papers, research notes and case studies that can be of interest to a wide audience of scientists.

Scientists submitting manuscripts will benefit from:

- Open access to all published contents ensuring the widest possible, barrier-free distribution of works at no charge to any readers.
- Online submission and editorial management system, professional review and editorial assistance, typesetting, proofreading and publication.

Address all inquiries relating to publication in the *Journal* to the Editor:

Jane E. Huffman
Department of Biological Sciences
Northeast Wildlife DNA Laboratory
East Stroudsburg University
East Stroudsburg, PA 18301
Phone: 570-422-7892
e-mail: jhuffman@esu.edu



PENNSYLVANIA ACADEMY OF SCIENCE
 JOURNAL INFORMATION FOR AUTHORS
 EDITORIAL POLICY AND FORMAT

The *Journal* of the Pennsylvania Academy of Science publishes original papers, research notes, commentary, and review articles in the natural, physical, engineering, and social sciences. All papers must discuss the relevance of the data presented and a clear interpretation of its meaning in view of current knowledge of the discipline concerned. Helpful references for the author are: (1) Day, R.A. 1983. How to write a scientific paper. 2nd ed. ISI Press, Philadelphia, xv + 181 pp.; (2) O'Connor, M. and F.P. Woodford. 1976. Writing scientific papers in English, Elsevier, Amsterdam, vii + 108 pp.; (3) MacGregor, A.J. 1979. Graphics simplified; and (4) How to plan and prepare effective charts, graphs, illustrations, and other visual aids, University of Toronto Press, Toronto, 1-64 pp.

Authors are requested to examine recent issues of the Journal in order to conform to the general style of the journal. Papers are accepted for consideration at any time. Submitted manuscripts are accepted for review with the understanding that the same work has not been published, copyrighted or submitted for publication elsewhere and that all persons cited as a personal communication have consented to be cited. Additionally, submission of the manuscript is a representation that all the authors for the said manuscript and the institution where the research was carried out have approved its publication. Signed authorization will be required as appropriate. Authors are billed for page charges to partially defray the costs of publishing.

Submit names, email and postal addresses, as well as the professional area of expertise of 4 possible reviewers who have agreed to review your manuscript. The reviewers must be outside the author's institution, possess a knowledge of current research in the area of study, and generally be professionally qualified to referee the paper. The peer reviewing process is the Editor's responsibility, and the reviewers are selected at the discretion of the Editor.

All authors are requested to conform to the following:

1. *General Format.* All papers should be typed, double spaced, and on good quality 8.5 x 11-inch (21.5 x 28 cm) bond paper, with 3 cm margins all around. *Do not use single spacing anywhere* (including Literature Cited), and do not use erasable bond paper. Normally, manuscripts will be organized as follows: (1) an unnumbered cover sheet with Title, Authors, their institutions and addresses, and name, address, and telephone number of the author to receive proof, (2) an unnumbered sheet with an Abstract, (3) Introduction, (4) Materials and Methods, (5) Results, (6) Discussion, (7) Acknowledgements, and (8) Literature Cited. All pages of the text, Introduction through Literature Cited, are to be numbered, and the names of authors should appear in the upper right-hand corner of each page. The text should begin in the middle of the first numbered page.

2. *Headings.* All headings are in CAPITAL letters and centered.

3. *Title.* Brief and to the point. It should inform the reader of the subject of the paper.

4. *Byline.* Include author's name, name of institution, department, address and zip code.

5. *Abstract.* A clear and concise paragraph summarizing the paper. Normally, it will be in lieu of a formal summary section.

6. *Introduction.* The introduction should be concise and offer only that information necessary to orient the reader to the purpose and scope of the paper. It should state the reasons for the work and cite only published literature relevant to the subject.

7. *Materials and Methods.* Describe materials, methods, and equipment. Avoid repeating previously published details, unless modifications are extensive. The necessity of conciseness should not lead to omission of important experimental details necessary for others to repeat the work. When applicable, describe the experimental design and justify its use.

8. *Results and Discussion.* The Results section is a clear and concise account of the findings. Data should be presented in the most efficient manner, either in text, tables, or illustrations. All tables and illustrations must be referenced in the text. The Discussion section should extend or contradict current published information on the subject. Limit the discussion to the relevant subject and avoid speculation.

9. *Acknowledgements.* These should be as brief as possible.

10. *Literature Cited and Footnotes.* Except for the title and author reference at the beginning of the paper, and superscript notation in tables, do not use footnotes. Create separate Appendices or an Endnotes section if additional supplementary text material is required. Place Endnotes section just before the Literature Cited section. Number each endnote within the Endnote section using Arabic numbers in the order in which they are referred to in the other sections of the manuscript. In other sections of the manuscript, place endnotes reference numbers in parentheses, and use the text style of type and not superscript. Place appendices after the Literature Cited section. Include a Literature Cited section: list references in alphabetical order by first author. Include only published references cited in the manuscript; unpublished work normally will be cited as personal communication (pers. comm.) in other sections of the manuscript, e.g., J.R. Halma (pers. comm.) or (J.R. Halma, pers. comm.). List all authors and full citation in the Literature Cited section. Use the most recent issue of the recognized abstracting authority to determine the correct abbreviations of periodical names (e.g., for biology use BIOSIS, Bioscience Information Service, Philadelphia, PA). If in doubt, do not abbreviate serial names. Use the following format and style for the Literature Cited section:

Journal- Monmonier, M. 1987. Title. *J. Pa Acad. Sci.* 62:73-77.

*Book (Select pages)-*Snedecor, G. W. and W. G. Cochran. 1976. Statistical Methods. The Iowa State Univeristy Press. Ames, IA, 237-238.

*Book (Complete work)-*Snedecor, G. W. and W. G. Cochran. 1976. Statistical Methods. The Iowa State Univeristy Press. Ames, IA, xix + 593 pp.

For *Internet* citation, choose either MLA, APA, Chicago or another appropriate style, but stay consistent in the manuscript.

In all but the Literature Cited section, cite all works by author and year. For works with one or two authors, include names in each citation, e.g., (Smith and Reif 1984), or, if authors' names are

used in the text- Smith and Reif (1984); for works by three or more authors, use et al. after the first author, e.g., (Gur et al. 1983), or, if the authors' names are used in the text- Gur et al. (1983). Research Notes with fewer than five references should be cited within the other sections of the manuscript thereby eliminating the need for a Literature Cited section. When references are cited within the text of other sections, include authors by last name only, and do not use et al. in the citation, e.g., for a journal article- (Genys, Harman and Fuller 1984, Proc. Pa. Acad. Sci. 58:67-69), or if authors are used in the text- Genys, Harman and Fuller (1984, Proc. Pa. Acad. Sci. 58:67-69); for a book-(Snedecor and Cochran, 1976, Statistical Methods, The Iowa State University Press, Ames, IA, 237-238), or, if authors are used in the text-Snedecor and Cochran (1976, The Iowa State University Press, Ames, IA, 237-238).

11. *Research Notes.* Papers submitted as short communications with an abstract are classified as Research Notes. Research Notes must contain the same basic quality of content and order of presentation as more substantial papers having content separated by section. Citations must follow the same format as articles.

12. *Tables and Illustrations.* Tables must have a title, be numbered in Arabic numerals, and be typed on separate sheets. Drawings and graphs must be drawn in solid black ink on good quality white bond paper. Photographs are to be good quality glossy prints with high contrast. All illustrations must be numbered and lettered using a mechanical lettering device, pressure transfer letters or computer printer. Make lettering large enough to be legible if reduction is necessary. Typewritten or dot matrix/computer

lettering is *not* acceptable for illustrations. Computer generated images or scans should be saved as Tiff, EPS, or JPEG files and may be supplied on CD(s) with a good laser or ink jet paper printout of the same. Author's name and figure number must be written on the back of each illustration; use a soft pencil for identification. Type the legends for all illustrations in consecutive order on a separate sheet.

13. If animals are used in the research, the author(s) must state in the material and method section that the study was conducted in accordance with the guidelines laid down by the U.S. Office of Laboratory Animal Welfare (or individual country of origin) and that the research was approved by the Institutional Animal Care and Use Committee.

14. *Page Charges, Proofs and Reprints.* Authors are charged per printed page to help the Academy defray the costs of publication. Galley proofs will be sent to the authors for checking; they must be returned to the Editor within a week after receipt.

15. *Editorial Policy.* Every paper is reviewed by the Editor and selected professional referees. Manuscripts will be returned or rejected if considered unsuitable for publication.

16. *Manuscripts and Correspondence.* Address all inquiries relating to publication in the *Journal* to the Editor: Jane E. Huffman, Department of Biological Sciences, Northeast Wildlife DNA Laboratory, East Stroudsburg University, East Stroudsburg, PA 18301. Phone: 570-422-7892, e-mail: jhuffman@esu.edu.

Pennsylvania Academy of Science Logo Competition



The Pennsylvania Academy of Science (PAS) is soliciting submissions for a creative, new logo to represent the Academy. The logo should represent the diverse nature of science to reflect the broad interests of the Academy's membership, and should in some way reflect the mission of PAS (see below). Logos submitted to the Academy will be reviewed by Academy members, and the winning submission will receive an award of \$100. The competition is open to the membership, and student entries may be sponsored by a PAS member.

The following are details to keep in mind regarding the submission:

- The logo should incorporate the letters "PAS," and may include the full name of the Academy.
- The Academy colors are blue and gold.
- Any images in the logo must be precisely sourced, and must be hand drawn, self-generated, or in the public domain.
- Logos will need to be submitted in a high resolution (600+ dpi), modifiable format (TIFF file format), with details reasonably clear when the image is expanded from 2 to 12 inches and in both greyscale and color.
- PAS reserves the right to modify the winning logo in consultation with the submitting author.
- The submitting author must be willing to grant the copyright for the logo to the Pennsylvania Academy of Science, or to grant a complete license that provides the Academy with full use of the logo in any capacity.

Mission Statement:

The mission of the Pennsylvania Academy of Science is to support the advancement of science, especially regarding topics that are timely and pertinent for the Commonwealth, and to disseminate these research findings to a broader community consisting of scientists, students, teachers, and government officials.

For additional information regarding the competition or to submit logo entries, please contact:

Andre Walther, Ph.D.

awalther@cedarcrest.edu

The Nature of a Name

Shamokin

“a place of eels” or “place of the horn”
Northumberland, Snyder, and Union Counties, PA
Robert Coxe

The name “Shamokin” is used for a number of natural features (creek and mountain), a dam, two boroughs, and a historic Native American village; all of which are in Northumberland, Snyder, and Union Counties. The Native American village was located near the present town of Sunbury, Pennsylvania, which is located across the Susquehanna River and northeast of Selinsgrove, Pennsylvania. Shamokin town was the seat of viceroyalty of the Confederacy of Six Indian Nations¹ and was therefore an important location in the history of Pennsylvania.

Shamokin comes from the Saponi Algonquin word “schahamukink”² or “schahamoki”³, which means “a place of eels”. Other sources, however, state that Shamokin comes from “Shumouk” meaning “place of the horn”^{4,5}. Due to the conflicting sources, it is unknown, which is the correct origin. The Iroquois name for Shamokin was “Otzinachson”⁶.

Today the word, “Shamokin”, is applied to a borough and creek in Northumberland County, a dam on the Susquehanna River between Snyder and Northumberland Counties, a borough called Shamokin Dam in Snyder County, and a mountain in Union County. The historic location of “Shamokin town” was near the current Borough of Sunbury, Pennsylvania. Sunbury is the site of the world’s largest man-made mountain, contained the largest textile mill in the world, and is the site of the first church with electricity in the world. Thomas Edison, also once lived in Sunbury.

Note: Selinsgrove, PA and Snyder County is where we are having the 2014 Annual Meeting of the Pennsylvania Academy of Science.

¹ Sipes, William B. 1875. *The Pennsylvania Railroad: Its Origin, Construction, Condition, and Connections; ...* (Philadelphia, PA: The Passenger Department). 281 pages.

² http://en.wikipedia.org/wiki/Shamokin,_Pennsylvania

³ Gannett, Henry. 1902. *The origin of certain place names in the United States*, vol. 8, issue 197. (Washington, DC: Government Printing Office). 280 pages.

⁴ https://www.princeton.edu/~achaney/tmve/wiki100k/docs/Shamokin,_Pennsylvania.html

⁵ http://www.shamokin57.com/shamokin_hist.html

⁶ Donehoo, George Patterson. 1998. *A history of the Indian Villages and Place names of Pennsylvania*. 290 pages.

Teacher Workshop Holds Third Meeting at UP-Bradford

By Vivian Coxe

The PAS/PJAS Teacher Workshop on shale gas drilling attracted a nice mix of participants, from grades 6-12 educators to college professors and students, an engineer, an ecologist, and a reporter from The Era, a Bradford newspaper. There were two articles in The Era about the teacher workshop and the 89th Annual Meeting of PAS held April 5-7, 2013 at UP-Bradford.

Many, many thanks go to Dr. Assad Panah, Professor of Geology and shale gas expert at UP-Bradford, for inviting the workshop participants to attend the shale gas symposium. A debt of gratitude, also, goes to Dr. Mary Mulcahy, Associate Professor of Biology and Division Chair of Biological and Health Sciences at UP-Bradford, and Dr. Ken Klemow, Professor of Biology and Environmental Science and Director of the Institute for Energy and Environmental Research of NE PA at Wilkes University. Mary and Ken provided an interesting program on watersheds and macro-invertebrate sampling at Tuna Creek by the campus.

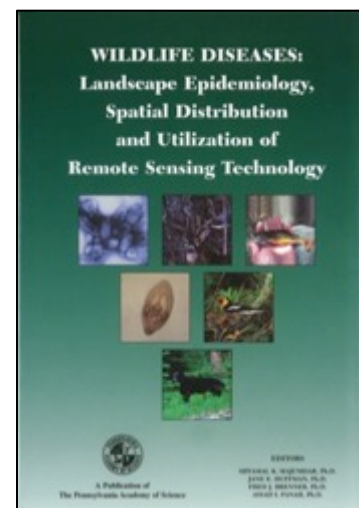
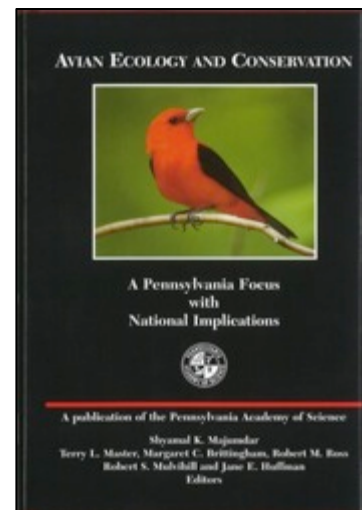
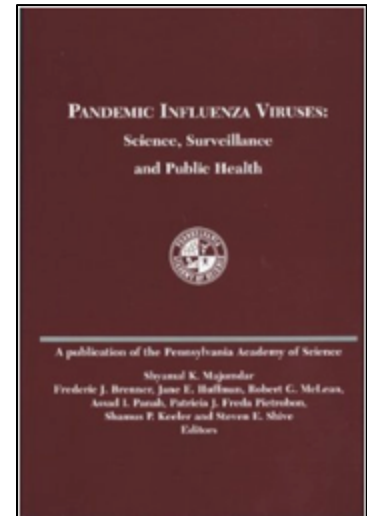
Participation was enthusiastic at the mock town hall meeting on shale gas drilling, the concluding session of the day. Susan Morgan, grades 6-8 Science Teacher at St. Elizabeth's Elementary School in Pittsburgh and also the Region 7 Director of PJAS, shared results of the mock town hall meetings that she held in her classes. Sue, along with Vivian Coxe, led the workshop participants through a spirited version of the same activity, as a culmination of the day's learning experience from the symposium and lab. It is refreshing to witness the expertise of teachers like Sue Morgan, who seeks new ways to motivate students with challenging activities. Way to go, Sue, and a big THANK YOU!!!

PAS Books on the Move

The most recent PAS book publication is now available for purchase through Amazon and the PAS web-site! *Pandemic Influenza Viruses: Science, Surveillance and Public Health*, edited by Shyamal Majumdar (Lafayette College), Frederic Brenner (Grove City College), Jane Huffman (East Stroudsburg University), Robert G. McLean (National Wildlife Research Center), Assad I. Panah (University of Pittsburgh), Patricia J. Pietrobon (Sanofi Pasteur), Shamus P. Keeler (University of Georgia), and Steve Shive (East Stroudsburg University) features introductory chapters on the history and science of influenza diseases, plus contributions on surveillance and tracking technology, public health strategies and planning, and vaccines. This book is a compilation of up-to-date scientific information of pandemic influenza with particular focus on the 2009 pandemic H1N1 virus and the 2005 highly pathogenic H5N1 virus, and contains chapters on the biology, ecology, immunology, and genetics of influenza viruses.

Check out the other recent PAS books on sale through Amazon. *Avian Ecology and Conservation: A Pennsylvania Focus with National Implications* (edited by Shyamal Majumdar, Terry Master, Maragaret Brittingham, Robert Ross, Robert Mulvehill, and Jane Huffman) published in 2010 offers 27 chapters by dozens of ornithological experts from Pennsylvania and other states, with cutting edge insights on habitats of PA breeding birds, migration and wintering ecology, conservation issues and challenges, and emerging issues such as climate change, wind power development, contaminants, and emerging diseases. The other recent book to buy is *Wildlife Diseases: Landscape Epidemiology, Spatial Distribution and Utilization of Remote Sensing Technology*, published in 2005. It has been a great seller, but a few copies are still available.

Finally, a unanimous vote by PAS Board members approved advancement of the next book project, tentatively entitled *Ecology and Conservation of Pennsylvania's Bats in a Time of Crisis*, with editors Howard P. Whidden (East Stroudsburg University), DeeAnn Reeder (Bucknell University), with Cal Butchkoski and Greg Turner (Pennsylvania Game Commission).



The Pennsylvania Academy of Science

PAS Grant and Prize Opportunities

Darbaker Prize - \$1000

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.

For further information contact:
Jane Huffman, Editor of PAS Journal
jhuffman@po-box.esu.edu

PAS Research Grants

Make sure you check out the PAS website (under "funding opportunities") for announcements, instructions, and deadlines for our *college and high school student research grants*.

Contact David Singleton (York College) for details at dsinglet@ycp.edu

The Pennsylvania Academy of Science

Reminder of PAS Mission

The mission of PAS is to “encourage scientific research; to promote interest in the teaching of science; to stimulate exchange of ideas among those engaged in scientific work especially in Pennsylvania; to assist in the development and distribution of information about the material, educational, and other resource and riches of the Commonwealth; and to arrange and prepare for publication such reports as may further these objectives, all of which purposes do not contemplate pecuniary gain or profit, incidental or otherwise, to the members of the corporation.” *Excerpt from PAS Constitution*

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 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 with 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 interest from our recently established Journal of the Pennsylvania Academy Endowment.

If you would like to contribute to either of these endowment funds please print off and complete the form on the following page.

Thank You.

Fred J. Brenner, Audit and Fundraising, Investment, Director-at-Large

2013 Annual Dues Notice Pennsylvania Academy of Science

If you did not attend the annual meeting at the University of Pittsburgh at Bradford (April 5-7, 2013), you may either complete this form and mail it to the PAS Treasurer, or you may complete the online membership form using the PayPal option available through the PAS website.

Please check the appropriate boxes below.

- Active Membership, active or associate \$35.00
 Sustaining Membership \$40.00 or more
 Student Membership \$17.50
 Life Membership (installment plan available) \$525.00
 Honorary member-Please return without remittance
 Tax deductible donation to the (dollar amount in addition to dues)

Student Research Fund _____

Journal Endowment Fund _____

I am a member of ___ AAAS, ___ PSTA, ___ PASA, ___ Pa. Wildlife Society
___ SCST (Pa.), ___ Pa. Biol Survey, ___ PAEP _____ Other : Please write in _____.
(This information influences our grant support for research)

Name: _____ Institution: _____

Address: _____

9 digit zip code: _____ Fax number: (____) _____

Office telephone number: (____) _____ Email: _____

My field of interest is _____

Please print this sheet and mail with check payable to **Pennsylvania Academy of Science** to:
Matthew Wallace, Treasurer
East Stroudsburg University
Department of Biological Sciences
200 Prospect Street
East Stroudsburg, PA 18301