



Kentucky Academy of Science

# NEWSLETTER

*The Voice of Science  
in Kentucky*

<http://www.kyscience.org>

May 2007

### Affiliates

#### Fellow - \$1,000 level

- Morehead State University
- Murray State University
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- University of Louisville
- Western Kentucky University
- KBRIN (Kentucky Biomedical Research Infrastructure Network)

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#### Associate Member - \$100 level

- Hoffman Environmental Research Institute
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### Newsletter Advertising Rates\*

Ad Size	Non-Member	KAS Member
Standard		
Business Card	\$30	\$27
1/4 page	\$45	\$40
1/2 page	\$80	\$72
Full page	\$150	\$135

\*Per Issue

## The Kentucky Junior Academy of Science: The future of science in Kentucky



Winners at the 2007 KJAS Spring Symposium.

The Kentucky Junior Academy of Science held its annual Spring Symposium on Saturday, April 21, 2007, on the campus of Campbellsville University. Seventy-eight students entered the competition. Congratulations to all of the winners! The overall winner of the Life Sciences Division was Mark Vitale from duPont Manual High School in Louisville. Dhanar Damddar, also from duPont Manual, was selected as the overall winner in the Physical Sciences Division. These two young scientists will represent Kentucky at the national American Junior Academies of Sciences meeting to be held February 14-18, 2008, in conjunction with the American Association for the Advancement of Science meeting in Boston. The theme of the upcoming national meeting will be Science and Technology from a Global Perspective. At its annual meeting the Junior Academy also elected state officers for the upcoming year. Retiring KJAS Director Elizabeth Kay Sutton received a well-deserved round of applause for her years of leadership and service to the Junior Academy. A dozen members of the Kentucky Academy of Science served as judges in the thirteen sections. See related stories on pages 4 and 5.

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## KAS Members in the News

**Dr. Joe E. Winstead**, Professor of Biology and Dean, College of Science and Technology at Southern Arkansas University, received the Elizabeth Ann Bartholomew Award on March 31, 2006 at the annual meeting of the Southern Appalachian Botanical Society (SABS). This award is presented to individuals who have distinguished themselves in professional/public service that advances knowledge and appreciation of plants and their scientific, cultural, and aesthetic values. Dr. Winstead taught at Western Kentucky University from 1968 through 1996, and served as Department Chair at Morehead State University for two years. He is a long-time member of the Kentucky Academy of Science (KAS), and served as President of the Academy from 1984 to 1985.



*Dr. Joe E. Winstead, left, and Dr. Kenneth Barnett Tankersley are two Kentucky Academy of Science members in the news.*

**Dr. Kenneth Barnett Tankersley**, Anthropology Professor and Director of the Native American Studies Program at Northern Kentucky University, recently was appointed by Governor Ernie Fletcher to the Kentucky Native American Heritage Commission. The Commission's aims include communicating the rich diversity, heritage, and concerns of Kentucky's Native American population. Tankersley, a member of the Kentucky Center for Native American Arts and Culture Board, is of Cherokee and Piqua Shawnee descent. Tankersley has served as script writer, consultant, prop designer, etc. for numerous Native North American documentary films for National Geographic Television, NOVA, Animal Planet, BBC Nature, Discovery Channel, and PBS. He is the co-author of *Sitting Bull's Pipe: Separating Myth from History* (with Robert Pickering) and *In Search of Ice Age Americans* (with Douglas Preston). Ken is currently secretary of the KAS Anthropology & Sociology section.

## 2007 Annual Meeting Announcements

This year's meeting will be co-hosted by the University of Louisville and Bellarmine University, in Louisville, KY on November 8-10, 2007. The theme will be *Health in Kentucky*.

### KAS Governing Board Changes

Guenter Schuster has resigned his position as AAAS/NAAS representative and his ad hoc seat on the KAS board. Dr. Schuster has served as the AAAS/NAAS representative for the past seven years and on the KAS board for 10 years. KAS would like to thank Dr. Schuster for his many years of service and dedication to this organization. The American Association for the Advancement of Science, (AAAS), is an international non-profit organization dedicated to advancing science around the world by serving as an educator, leader, spokesperson and professional association. The National Academy of Sciences (NAS) is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare.

### Message from the Executive Director

Let us know your thoughts on the KAS website as we continue to make updates. Please visit [www.kyscience.org](http://www.kyscience.org) for information regarding KAS activities and other scientific events in Kentucky as well as for job openings. If you have information regarding science related activities in Kentucky you would like posted in the news/announcements sections of the webpage please email the Executive Director.

The Program Committee has been busy working on plans for the 93rd Annual Meeting. Make sure November 8-10 is on your calendar. As the Executive Director I will be in charge of the registration process. We will again offer the option of online registration as well as mailing in your registration. Our programmer is currently working on a program change that will allow registrants to pay for multiple registrations via Pay Pal with one transaction. We realize professors often want to pay the registration fees for their students and the system we had in place last year made this difficult to complete.

We would also like to say thank you to all of our 2007 affiliates. Your support enables KAS to complete our mission to encourage scientific research, to promote the diffusion of scientific knowledge, and to unify the scientific interests of the Commonwealth of Kentucky. We would like to say a special thanks to Murray State University who has upgraded their affiliation to an Institutional Fellow.

We appreciate your support!! Please feel free to contact me if you have KAS related questions or would like to discuss a KAS issue.

Best wishes,

Jeanne Harris, KAS Executive Director  
[executivedirector@kyscience.org](mailto:executivedirector@kyscience.org)  
859-227-2837

### Employment Opportunities Now Listed at [www.kyscience.org](http://www.kyscience.org)

**Research Assistant:** Human Health and Nutrition; Community Research Service, Kentucky State University. Interested candidate may send copy of CV, three references to Dr. Avinash Tope, [atavinash.tope@kysu.edu](mailto:atavinash.tope@kysu.edu) or at 502-597-6012.

### In Memoriam: Jeffrey D. Jack (1963 – 2007)

Dr. Jeff Jack, a valued member of the University of Louisville faculty and former faculty member at Western Kentucky University, died tragically in an automobile accident on New Years Day. His positive outlook and concern for practical problems attracted large numbers of graduate and undergraduate students to his lab. In eleven years as a faculty member he supervised 4 high school students, 21 undergraduate research projects, and 22 Masters and PhD students. These traits also made him a valued colleague who had a genuine concern for all with whom he collaborated.

## Research Funds Available

### Special Research Program

The program of KAS special research awards is directed particularly to faculty in Kentucky higher education institutions, public or private, involved primarily in undergraduate education. Awards of up to \$10,000 will be available as funding allows.

### Undergraduate Research Program

KAS makes available funds for research planned and conducted by undergraduate students of Kentucky colleges and universities under the supervision of a faculty member who is a member of the Kentucky Academy of Science. Currently, two undergraduate research grant programs are available: Undergraduate Research Supply Grants with awards of up to \$500, and Summer Undergraduate Research Grants with awards of up to \$3,000.

### Marcia Athey and Botany Funds

The KAS Foundation makes available through the Marcia Athey Fund and the Botany Fund monies for research planned and conducted by students of Kentucky secondary schools, colleges, and universities under the supervision of a faculty member, and if funds permit, faculty research projects. Faculty sponsors/researchers must be KAS members. Awards normally are in the several hundred dollars range, though in extraordinary circumstances some higher awards may be possible.

**Funding Request Deadline** for all programs: must be received by November 15, 2007. Detailed instructions for preparing proposals can be found on our web site at [www.kyscience.org](http://www.kyscience.org). For more information contact:

**George F. Antonious, Ph.D.**  
Kentucky State University  
Department of Plant and Soil Science  
Water Quality/ Environmental Toxicology  
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Frankfort, KY 40601  
Office: 502-597-6005  
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Fax: 502-597-6381  
E-mail: [george.antonious@kysu.edu](mailto:george.antonious@kysu.edu)

## Call for Nominations for Superlative Awards

*The Kentucky Academy of Science seeks nominations of individuals who have made outstanding contributions to scientific research and education in the Commonwealth in the five areas designated below. Details of qualifications and content of nomination packages will soon be available on the KAS website. September 20, 2007 is the deadline for nominations. All nominations and supporting materials should be sent in electronic format; e-mail attachments must be in MS Word format. Send to:*

**Robin Cooper, Chair**  
KAS Committee on Awards  
Department of Biology  
University of Kentucky  
Lexington, KY 40506

(859) 257-5950

[RLCOOP1@pop.uky.edu](mailto:RLCOOP1@pop.uky.edu)

**Outstanding Academy Service:** The recipient shall have been a long time member of the Kentucky Academy of Science and shall have made significant contributions to the growth and development of the Academy.

**Distinguished College/University Scientist:** The recipient shall have made some significant contribution to academic research in Kentucky.

**Outstanding College/University Teacher:** The recipient shall have made some significant contribution primarily to science teaching but also to research at the college/university level in Kentucky.

**Outstanding Secondary School Science Teacher:** The recipient shall have made some significant contributions to the teaching of science at the middle and high school level in Kentucky.

**Distinguished Professional Scientist (in a non-academic position):** The recipient shall have made some significant contributions to science in Kentucky.

## Call For Papers

The *Journal of the Kentucky Academy of Science*, now in its 68th year, is published through Allen Press each spring and fall and is abstracted through BioOne. The *Journal* publishes peer reviewed articles from all disciplines within the Academy. Turnaround time usually is six months or less, and page charges (\$35/page) are very reasonable. The *Journal* accepts regular articles (12-20 manuscript pages), scientific notes (2-5 pages), and will accept Letters to the Editor. The *Journal* also seeks series of manuscripts that

result from special workshops or conferences. In these cases, a special editor may be appointed. All manuscripts should be sent to:

**David White, Editor J-KAS**  
Hancock Biological Station  
561 Emma Drive  
Murray KY 42072

Instructions for authors can be found at [www.kyscience.org](http://www.kyscience.org). Please call 270-474-2272 or e-mail the editor at [david.white@murraystate.edu](mailto:david.white@murraystate.edu) for more information.

# Junior Academy of Science 2007 Spring Symposium Winners

HS - *High School*; FR - *Freshman*; MS - *Middle School*

## Behavioral and Social Sciences

HS 1st: Mark Vitale, duPont Manual  
HS 2nd: Teresa Goetz and Becca Short, duPont Manual  
HS 3rd: Ann Cooper, Lafayette

## Biological Topics I

HS 1st: Lucy Yan, duPont Manual  
HS 2nd: Anne Yang, duPont Manual  
FR 1st: Suraj Kannan, duPont Manual

## Biological Topics II

HS 1st: Tuan Ngo, Ballard  
HS 2nd: Olga Hajishengallis, duPont Manual  
HS 3rd: Emily Darling, duPont Manual

## Botany

HS 1st: Ivy Nguyen and Lucy Peterson, duPont Manual  
HS 2nd: Aisha Odell, duPont Manual  
FR 1st: Kasey Uhlenhuth, duPont Manual

## Chemistry

HS 1st: Ashley Fields and Kristen Fields, Ballard  
HS 2nd: Nambi Arumugam, duPont Manual  
HS 3rd: Alka Tyagi, duPont Manual  
FR 1st: Melisa Stephen, duPont Manual

## Computer Science & Mathematics

HS 1st: Udit Bajas, duPont Manual  
HS 2nd: Arooshi Kumar and Rajita Kumar, duPont Manual  
HS 3rd: Allan Hsiao, duPont Manual  
FR 1st: Dhvani Shah, duPont Manual

## Earth & Space Science

HS 1st: Dhanur Damddar, duPont Manual  
HS 2nd: Hannah Sonnier, duPont Manual  
FR 1st: Sophia Mitchell, duPont Manual

## Engineering

HS 1st: Noy Schael, duPont Manual  
HS 2nd: Mariam Ahmed, duPont Manual  
HS 3rd: Lloyd Fowler, duPont Manual  
MS 1st: Richard Cooper, Morton Middle School

## Environmental Science

HS 1st: Nick Crawford, duPont Manual  
HS 2nd: Aaron Dailey, duPont Manual  
HS 3rd:(tie) Kyle Bragiusky & Kevin Tong, duPont Manual  
FR 1st: Nicholas Do, duPont Manual  
Middle School 1st: Ben Scryton, duPont Manual

## Microbiology

HS 1st: Sam Burgin, Ballard  
HS 2nd: (Redacted) duPont Manual  
HS 3rd: Emmy Tran, duPont Manual  
FR 1st: Nikil Kukkala, duPont Manual

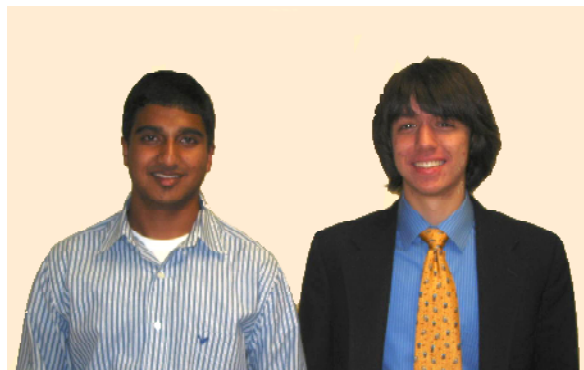
## Physics

HS 1st: Sahas Narain, duPont Manual  
HS 2nd: Ramapriya Rangaraju, duPont Manual

## Zoology

HS 1st: Morgan Davenport, Ballard

Overall Winners were chosen in Life Sciences - Mark Vitale of duPont Manual High School (below right) - and Physical Sciences - Dhanur Damddar, also of duPont Manual (below left). Vitale presented a paper entitled "The Effects of Video Game Experience on Laparoscopic Surgery Proficiency." Damddar presented a talk entitled "Breakthrough Substitutions of Synthetic Binders with Natural Chitosan in the Prevention of Soil Erosion."



## Call for Nominations to KAS Governing Board

The Kentucky Academy of Science Nominations and Elections Committee is seeking assistance from the KAS membership in our effort to identify a ballot of quality candidates to assume leadership roles within the Academy for next year. KAS members interested in nominating colleagues for these vacant positions, or individuals willing to volunteer to be placed on the ballot, should forward the name, e-mail address/phone number for each candidate, and indicate the leadership position of interest. Then Nominations and Elections Committee will contact each candidate to request the necessary information to be included on the ballot. This is an extremely important responsibility for the members of KAS and the committee needs your assistance in identifying candidates for these vacancies. The membership is being contacted at this time for nominations for the following offices:

- Vice President
- Biological Sciences Representative
- At Large Representative

Any member may nominate another member for Vice President or At Large Representative. However, for Biological Sciences Representative, the nominator must identify with that Division. Please send nominations by August 1, 2007 to:

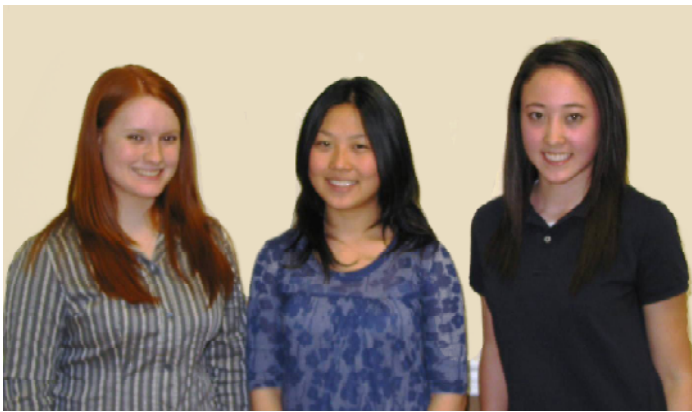
David Olson, Chair  
KAS Committee on Nominations and Elections  
Department of Psychology  
150 University Bldg Box 687  
Morehead State University  
Morehead, KY 40351

(606) 783-2987  
d.olson@morehead-st.edu

# KJAS Kentucky Junior Academy of Science

The Junior Academy was begun over fifty years ago to foster an interest in science for middle school and high school students in Kentucky. Members of the Kentucky Junior Academy have the opportunity to :

- interact with other high school students across the state who are interested in science and technology,
- apply for money to design and complete science projects,
- present projects at the annual KJAS meeting, and
- publish an abstract in the Journal of the Ky Academy of Science.



2007-2008 State Junior Academy Officers (left to right):  
 President Kristen Fields, Ballard High School; Vice-President Lucy Yan, duPont Manual High School; Secretary Ann Cooper, Lafayette High School



Dr. Ruth E. Beattie

At its most recent meeting, the Kentucky Academy of Science Governing Board approved the appointment of Dr. Ruth E. Beattie as Director of the Kentucky Junior Academy of Science. Ruth Beattie is an Associate Professor and Director of Undergraduate Studies in the Department of Biology at the University of Kentucky. She joined the faculty of the University of Kentucky as an instructional specialist, where her primary responsibility is teaching large enrollment freshman level biology and microbiology classes. She has extensive experience as a science fair judge and has been the local host for regional and international biology conferences.

The Science Education Committee of KAS has identified the strengthening of the Kentucky Junior Academy of Science as its number one priority for the up-coming year.

This committee along with the KJAS Steering Committee will focus on the following:

- Increasing the number of schools involved in the academy
- Providing resources for teachers (Ex. Maintaining a panel of scientists who would be willing to speak to classes, identifying professional development and grant funding opportunities)
- Strengthening our relationship with other professional organizations (ex. KSTA)

If you have any suggestions for the committee please send them to Ruth Beattie at [rebeatl@email.uky.edu](mailto:rebeatl@email.uky.edu)

## Yes, I Want to Join the Kentucky Academy of Science

Check appropriate boxes

### Individual Membership

(January to December)

- \$35 Active Member
- \$15 Student member (College)
- \$10 KJAS member (K-12)
- \$50 Family member
- \$400 Life member

### Educational/Industrial Affiliate Membership

- \$5,000 Patron
- \$2,000 Associate Patron
- \$1,000 Fellow
- \$500 Sustaining Member
- \$250 Member
- \$100 Associate Member
- \$25 High School Member

### Check up to 3 sections of interest:

- Agricultural Sciences
- Anthropology & Sociology
- Botany
- Cell & Molecular Biology
- Chemistry
- Computer & Information Sciences
- Ecology & Environmental Science
- Engineering
- Geography
- Geology
- Health Sciences
- Mathematics
- Microbiology
- Physics & Astronomy
- Physiology & Biochemistry
- Psychology
- Science Education
- Zoology

Voting Section Choice \_\_\_\_\_

Payment Enclosed \$ \_\_\_\_\_

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Employer or School \_\_\_\_\_

E-mail \_\_\_\_\_

Please make checks payable and mail to:

The Kentucky Academy of Science  
 PO Box 22579  
 Lexington, KY 40522-2579

For questions regarding KAS call 859-227-2837



Kentucky Academy of Science

PRE-REGISTRATION FORM
93rd ANNUAL KAS MEETING

NOVEMBER 8-10, 2007

Hosted by: The University of Louisville and Bellarmine University

PLEASE PRINT

Name Badge to Read
Street Address
City, State, Zip
School/Employer
Email Address
Telephone Number
KAS Section (if member)

Meeting Pre-Registration Fee Schedule

2007 KAS Member Rate

Table with 2 columns: Member Type, Rate. Rows: KAS Regular Member (\$30.00), KAS Student Member (\$5.00)

Non Member Rate

Table with 2 columns: Member Type, Rate. Rows: Professional (\$55.00), Student (\$5.00)

Friday KAS Awards Banquet Tickets (based on availability) \$25/Each
Number of tickets you are purchasing @ \$25 each

NOTE Banquet is free to students entering the URC (Undergraduate Research Competition).
However, you MUST PRE-REGISTER to receive a free ticket. Check here if you are entering the URC competition and wish to receive one free banquet ticket: Yes No

2008 KAS Membership Dues

Table with 2 columns: Member Type, Rate. Rows: Regular Member (\$35.00), Family Member (\$50.00), Student Member (\$15.00), Life Member (\$400.00)

PRE-REGISTRATION/2008 KAS MEMBERSHIP TOTAL \$

Received by Date

Return Form and Payment to:

KAS

PO Box 22579

Lexington, KY 40522-2579

PRE-REGISTRATIONS ACCEPTED UNTIL OCTOBER 20, 2007

For questions regarding registration please contact Jeanne Harris at 859-227-2837.or
executivedirector@kyscience.org

# PAPER SUBMISSION FORM

KENTUCKY ACADEMY OF SCIENCE

93rd ANNUAL MEETING

Co-hosted by the University of Louisville & Bellarmine University

Louisville, Kentucky

November 8-10, 2007

Title of Paper (Please type or print) \_\_\_\_\_

(An abstract must be submitted with this form. See website, [www.kyscience.org](http://www.kyscience.org), for guidelines for preparation of abstract.)

Author(s) (check presenter) (one author must be a KAS member)	KAS		Institutional Affiliation	Position (circle)			
	Member			High School	Undergrad	Graduate	Professional
_____	Yes	No	_____	H	U	G	P
_____	Yes	No	_____	H	U	G	P
_____	Yes	No	_____	H	U	G	P
_____	Yes	No	_____	H	U	G	P

\*Sponsor \_\_\_\_\_

\*All undergraduate or high school students who are not members of KAS must be sponsored by a member of the Academy. There is not a limit on the number of student papers a member may sponsor.

\_\_\_\_\_ Check if entering the Undergraduate Research Competition. The URC presentations will be given ONLY on Friday.

\_\_\_\_\_ Check if entering the Graduate Research Competition. (Oral Presentations only)

### Check Section in Which Paper will be Presented

_____ Agricultural Sciences	_____ Geology
_____ Anthropology and Sociology	_____ Health Sciences
_____ Botany	_____ Mathematics
_____ Cellular and Molecular Biology	_____ Microbiology
_____ Chemistry	_____ Physics and Astronomy
_____ Computer & Information Science	_____ Physiology and Biochemistry
_____ Ecology & Environmental Science	_____ Psychology
_____ Engineering	_____ Science Education
_____ Geography	_____ Zoology

### Type of Presentation (Check one)

\_\_\_\_\_ Oral Presentation using Power Point (15 min. max.) - load presentation prior to beginning of session  
\_\_\_\_\_ Poster Presentation - a 4' x 6' poster board will be provided.

Session Time Preference for Oral Presentation ( 1 = first preference; program requirements may restrict honoring preferences)

\_\_\_\_\_ Friday a.m. \_\_\_\_\_ Friday p.m. \_\_\_\_\_ Saturday a.m.

Name and Mailing Address of Contact Person (undergraduate student use mentor as contact person)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Phone \_\_\_\_\_  
\_\_\_\_\_ Fax \_\_\_\_\_  
\_\_\_\_\_ E-mail \_\_\_\_\_

Return this form and a single spaced abstract by **October 6, 2007** to: Robert Creek, KAS Program Coordinator, Department of Biology, Eastern Kentucky University, Richmond, KY 40475. Phone (859) 623-6646; Fax (859) 622-1399; e-mail: [robertcreek@bellsouth.net](mailto:robertcreek@bellsouth.net).

**PLEASE NOTE: In order to present you MUST also register to attend the annual meeting.**

## GUIDELINES FOR PREPARATION OF ABSTRACTS FOR PAPER AND POSTER PRESENTATIONS

1. Text of abstracts must be 250 words or less.
2. Abstracts must be on white, good quality paper (8.5 x 11 in.). They must be **single** spaced throughout and have a margin of 1 inch all around.
3. Use a type size of 10cpi (12 -point) and the same font throughout: do not use bold. Italics should be used only for the scientific names of the organisms and other expressions that conventionally appear in italic type.
4. Do not justify the right-hand margin.
5. The address should contain the capitalized name(s) of the author(s), department, university or company, name of the city, name of the state (use two-letter abbreviation, e.g. KY, IN, OH.) and the zip code.
6. In multi-authored abstracts, the name of the presenter of the paper will be indicated by an asterisk.
7. Use standard, well-known abbreviation when the use of abbreviations is necessary.
8. When using abbreviations for chemical compounds, spell out the name in full at the first mention and follow with the abbreviation in parentheses; use the abbreviation thereafter. Do not abbreviate chemical compounds in the title of the abstracts.
9. Any special symbols not on your word processor must be carefully drawn in by hand with fine pen and black ink.
10. Scientific names of organisms should be in italics (not underlined). Spell out generic names the first time they are used; afterwards these names should be abbreviated to first letter (plus a period) when followed by a specific epithet unless confusion may result with another abbreviated generic name in the abstract.
11. In the upper right hand corner of the abstract, type in CAPITALS the name of the section in which your paper or poster is being presented.
12. The following is an example of a portion of a proper abstract.

BOTANY

Taxonomic status of the varieties of Seneca snakeroot, *Polygala senega* (Polygalaceae). AMY E. TRAUTH\* and ROBERT F.C. NACZI, Department of Biological Sciences, Northern Kentucky University, Highland Heights, KY 41099.

Seneca snakeroot, *Polygala senega* (Polygalaceae), is an uncommon plant ranging throughout most of eastern North America. Two varieties have been described for the species: variety *senega* and variety *latifolia*. The taxonomic...

13. The abstract must be sent with your Paper Submission Form to the Program Coordinator listed at the bottom of the form.

## PUBLICATION OF ABSTRACTS IN THE JOURNAL

If you would like to submit your abstract for publication in the Journal, the guidelines are the same as above. Please send your abstract as an email attachment in Word to robert.barney@kysu.edu and mail a check for \$15.00 made payable to the Kentucky Academy of Science to cover publication costs (invoices will not be sent). Abstracts for publication must be received by the Abstract Editor by December 1.

Dr. Robert J. Barney  
Abstract Editor  
Atwood Research Facility  
Kentucky State University  
Frankfort, KY 40601  
robert.barney@kysu.edu