



KAS Newsletter

The Voice of Science in Kentucky

www.kyscience.org Sarah Mardon, Editor February 2015

Enhanced Affiliates

- Alice Lloyd College
- Bellarmino University
- Berea College
- Brescia University
- Campbellsville University
- Centre College
- Eastern Kentucky University
- Georgetown College
- Kentucky Community & Technical College System
- Kentucky State University
- Midway College
- Morehead State University
- Murray State University
- Northern Kentucky University
- Spalding University
- Transylvania University
- University of Kentucky
- University of Louisville
- University of Pikeville
- Western Kentucky University

Honorary Patron

- Kentucky Science Center
- Lumins Associates

Sustaining Member - \$500 level

Member - \$250 level

- Asbury University
- Kentucky Wesleyan College
- Lindsey Wilson College
- Thomas More College
- University of the Cumberlands
- Wood Hudson Cancer Research Laboratory

Associate Member - \$100 level

- WKU Crawford Hydrology Lab

Faculty, staff and students at Enhanced Affiliate member organizations receive:

- free KAS membership
- online access to KAS Journal
- KAS Newsletter via e-mail

Current and archived issues of the KAS newsletter are available at www.kyscience.org. You may contact the Editor of the KAS Newsletter via e-mail at executivedirector@kyscience.org.

From the President.....

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Today, KAS is a financially stable, vibrant, and successful academy. KAS has been and is an effective, well-recognized advocate for science education and engagement and strong supporter of the commonwealth's efforts to attract research dollars. Over the coming months, not only we will be preparing for the 101st meeting at Northern Kentucky University, but also looking forward to where we want to be over the next decade and more. As we have ended the first century of the Academy, it will be a time to reflect on our history, understand where we are now, and begin to plan for the future. Annual meetings are now drawing 800 participants with more than 450 presentations, half of which are by students and early career scientists representing nearly all of Kentucky's universities and colleges. The inclusion of so many students doing excellent research bodes well for the future of science not only in Kentucky but wherever they should land.

A history of KAS over its first century has been published recently in the Journal (Volume 75 (1-2) pp. 1-34. 2014) and is available on our website ([kyacademyofscience.net](http://www.kyacademyofscience.net)). The article is based on Ted George's excellent publication on the history of KAS published in the Journal in 1992 with updates over the past 22 years. It was my task, with help from a number of Academy members, to add the more recent information to ensure our heritage is documented and recorded. For me it was a wonderful experience that forever increased my admiration for those who have gone before us. There was a call for formation of the Kentucky Academy of Science that was set for May 8, 1914. Forty-four people attended and the Academy was born. The number of members doubled to 91 by 1917. Membership grew steadily through the 1960 making a real jump in the 1970s to 900 by 1990. After Enhanced Affiliates were initiated in 2008, the membership is now more than 2600 in 20 disciplines. It is obvious that none of the founding fathers are still alive, but would they recognize the Academy of today, would they be pleased? The advances in science, technology,

and education should please them along with the growth of the membership.

What the next 100 years will bring? Academies do not run by themselves but are the collective wisdom, voice, and involvement of the entire membership. No organization can stand still and expect to meet the challenges of the future. Those challenges may be good or bad, and many will be just as unforeseen as in the first 100 years. The 101st year of the Academy presents an opportunity for us to begin strategic planning of where we hope to be in the next 5 years, 10 years, and perhaps beyond. So one of our goals for this year is to formulate a plan that can provide a roadmap for the Academy to continue to flourish, and as the process moves forward, the contributions of Academy members are paramount.

I encourage all members to visit our great website (<http://www.kyscience.org/>) for more information on this and other opportunities for involvement in Academy programs. To reiterate Past President KC Russell's words from his 2014 letter, we "ask all members to consider what you might be able to contribute in service to KAS, whether it be volunteering at a KAS event, giving a lecture on behalf of the KAS, making us aware of events that we may share, nominating someone for a superlative award, or serving as a Governing Board member or filling one of the open committee positions. If each member did just one thing to support the academy the impact would be significant."

Please feel free to contact me, Amanda, or members of the Board (listed in this Newsletter) with any and all suggestions, comments, questions, or concerns at any time. I wish all of you a great 2015.

-David S. White
dwhite@murraystate.edu

KAS Centennial meeting, November 14-16, Lexington, KY

Annual Meeting Registrations

Sponsors

Exhibitors

Newly elected Board Members:

Continuing Board members in 2015

Officers:

Division Representatives and At-Large Representatives Members:

Ex-Officio board members:

2015 Section Officers

Section	Chair	Secretary
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Message from the Executive Director

Invite KAS to your campus or business

Strategic Planning for the Future of KAS

KAS Membership

Affiliates

Kentucky Science Center Partnership

Kentucky Science Center early 2015 events

“Ask Our Scientists”

2015 KAS Research Grants winners



NOTEWORTHY NEWS



Carmichael's and Kentucky Science Center Present:

ALAN LIGHTMAN

Einstein's Dreams

The Diagnosis

Room

Screening

Event Details

[PURCHASE TICKETS](#)

Author Information Wanted!

GRANTS

Idea State U

Journal of the
Kentucky Academy of Science

Association of Southeastern Biologists

February 8th

Dr. Thomas G. Barnes, 1957-2014



Dr. Thomas G Barnes

photo courtesy of University of Kentucky

Dr. Richard K. Kessler (Chair) and Zeb Weese
(KHLCF Biologist)

Usually we use this space to highlight a project or initiative of the Kentucky Heritage Land Conservation Fund (KHLCF), but this issue we would like to highlight the career of a member of the KHLCF family whom we lost recently. Dr. Thomas G. Barnes, University of Kentucky Wildlife Extension Professor, passed away on October 12, 2014, after a long battle with illness. This is a great loss to the conservation community of Kentucky as well as to his loved ones. Dr. Barnes authored more than 50 scientific research articles, 60 cooperative extension publications and 100 magazine articles, most of which focused on native plants and natural areas. His research emphasis has been on the restoration of native grasslands and his extension programs focus on the conservation of biodiversity and wildlife management. Despite his illness he remained an active researcher; a paper he co-authored was published in the *Natural Areas Journal* the month of his passing.

He was a respected academic whose invasive species management research influenced land managers in Kentucky and throughout the nation, including the graduate students he mentored, but his real passion was educating the general public about biodiversity issues. In addition to his professional interests, Tom gave freely of his time and talents to many conservation organizations, including the KHLCF and the Kentucky Native Plant Society (KNPS). He regularly led field trips and gave presentations on biodiversity issues to groups of all

types, from local garden clubs to the KNPS Wildflower Weekends to the Lucy Braun Workshops at the Pine Mountain Settlement School. He truly loved nature for its beauty, as well as understanding its scientific importance.

An accomplished photographer, his photographs appeared in books, websites, calendars, magazines, and other outlets all over the world, including at the Chicago Botanical Garden, the Audubon Aquarium, the Smithsonian and the Bronx Zoo. He always allowed nonprofit groups free access to his photos provided they were used to educate the public on biodiversity issues.

Tom may be best known for his natural history books. *Kentucky's Last Great Places*, which featured many KHLCF sites, was nominated for the Kentucky Literary Award in non-fiction. His other books include *Gardening for the Birds*, *The Wildflowers and Ferns of Kentucky* with Hazard Community and Technical College's Dr. Wilson Francis, *The Rare Wildflowers of Kentucky* with the Kentucky State Nature Preserves Commission's Deborah White and Marc Evans, *The Gift of Creation—Images from Scripture and Earth* with Duke University's Norman Wirzba, and *How to Find and Photograph Kentucky Wildflowers*. A devout Catholic, he regularly contributed to [The EcoTheo Review](#), a nonprofit effort to unite the environmental and religious communities. His most recent book, [Kentucky, Naturally: the Kentucky Heritage Land Conservation Fund at Work](#), featuring information and photography on all the sites funded by the KHLCF to date, was published in July 2014 and featured in the August 2014 issue of the *KAS Newsletter*. *Kentucky's Last Great Places* also inspired the Kentucky Educational Television production of the same name in 2003, the most popular program in the network's history and featuring many KHLCF sites. In 2007 Tom created and hosted another popular KET program focusing on native plants, *A Walk Through Kentucky's Wildflowers*.

The KHLCF appreciates all the efforts Tom made in education, conservation, and research on our

conservation areas and encourages all KAS members to follow his example in engagement with Kentucky's citizens on conservation and science.

Selected publications:

Matt A. Bahm, Thomas G. Barnes and Kent C. Jensen. 2014. Evaluation of Herbicides for Control of Reed Canarygrass (*Phalaris arundinacea*). *Natural Areas Journal*, 34(4):459-464.
Joshua K. Adkins, Thomas G. Barnes. 2013. Herbicide Treatment and Timing for Controlling Kentucky Bluegrass (*Poa pratensis*) and Tall Fescue (*Festuca arundinacea*) in Cool Season Grasslands of Central Kentucky, USA. *Natural Areas Journal* 33(1):31-38.

Marvin E. Ruffner and Thomas G. Barnes. 2012. Evaluation of Herbicide and Disking to Control Invasive Bluestems in a South Texas Coastal Prairie. *Rangeland Ecology & Management* 65(3): 277-285.

Matt A. Bahm, Thomas G. Barnes, and Kent C. Jensen. 2011. Herbicide and Fire Effects on Smooth Brome (*Bromus inermis*) and Kentucky Bluegrass (*Poa pratensis*) in Invaded Prairie Remnants. *Invasive Plant Science and Management* 4(2):189-197.

Marvin E. Ruffner and T. G. Barnes. 2010. Natural Grassland Response to Herbicides and Application Timing for Selective Control of Tall Fescue, an Invasive Cool-Season Grass. *Invasive Plant Science and Management* 3(3):219-228.

T. G. Barnes. 2007. Using Herbicides to Rehabilitate Native Grasslands. *Natural Areas Journal*. 27:56-65.

T.G. Barnes. 2004. Strategies to Convert Exotic Grass Pastures to Tall Grass Prairie Communities. *Weed Tech.* 18:1364 – 1370.

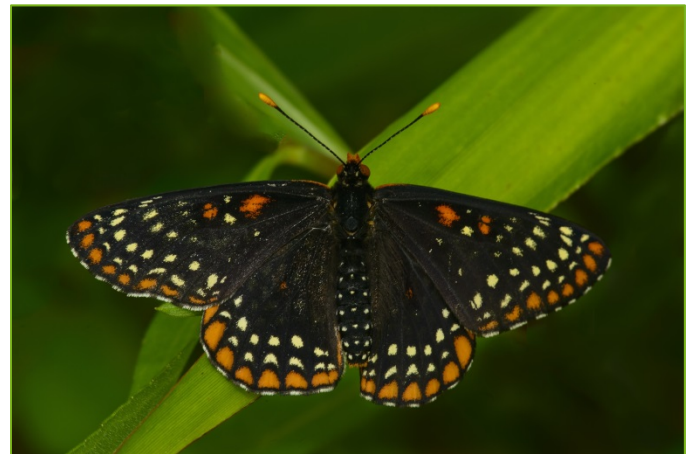
C. Rhoades, T. Barnes, and B. Washburn. 2002. Prescribed fire and herbicide effects on soil processes during barrens restoration. *Restoration Ecology* 10:656-664.

Washburn, B.E., T.G. Barnes, C.C. Rhoades, and R. Remington. 2002. Using imazapic and prescribed fire to enhance native warm season grasslands in Kentucky, USA. *Natural Areas Journal* 22(1):20-27.

Steen-Ash, S, T.G. Barnes, J.T. Hutchinson, J. L. Larkin, B. E. Washburn, J. L. Weese, H.F Yacek, Jr. Characteristics of gray squirrel release sites selected by nuisance wildlife control operators. *Proceedings of the Eighth Eastern Wildlife Damage Management Conference, Roanoke, Virginia, October 16-19, 1997.*



Tygarts SF - photo by Thomas G. Barnes from Kentucky, Naturally book



Baltimore checkerspot - photo by Dr. Thomas G. Barnes from Kentucky, Naturally book



Dr. Thomas G. Barnes at Brigadoon SNP photo by Zeb Weese

**Kentucky Girls STEM Collaborative
Working for Gender Balance in STEM**

Dr. Czarena Crofcheck



2014 KAS Research Competition Winners

<u>Section</u>	<u>Place</u>	<u>Name</u>	<u>Affiliation</u>
GRC	-	GRC	-
Agricultural Sciences	First Place	Congming Zou	University of Kentucky
Agricultural Sciences	Second Place	Alexandra Hitter	Kentucky State University
Agricultural Sciences	Third Place	Grant Curran	Kentucky State University
Anthropology and Sociology	First Place	William Witt	University of Kentucky
Cellular and Molecular Biology	First Place	Victoria Gilkison	Western Kentucky University
Cellular and Molecular Biology	Second Place	Xinyi Zhang	University of Kentucky
Cellular and Molecular Biology	Third Place	Zhaoshuai Wang	University of Kentucky
Chemistry: Analytical/Physical	First Place	Jennifer Naumovitz	Eastern Kentucky University
Chemistry: Analytical/Physical	Second Place	Panae Noomuna	Eastern Kentucky University
Chemistry: Analytical/Physical	Third Place	None	None
Chemistry: Organic/Inorganic	First Place	Tse-Hong Chen	Western Kentucky University
Chemistry: Organic/Inorganic	Second Place	Xin Liu	Western Kentucky University
Chemistry: Organic/Inorganic	Third Place	None	None
Computer and Information Sciences	First Place	Marc Beck	University of Louisville
Computer and Information Sciences	First Place	Duplicate	Duplicate
Computer and Information Sciences	Second Place	Bryan A. Knowles	Western Kentucky University
Computer and Information Sciences	Third Place	None	None
Computer and Information Sciences	Third Place	None	None
Ecology and Environmental Science	First Place	Benjamine Adams	University of Louisville
Ecology and Environmental Science	Second Place	Charlotte Hacker	Western Kentucky University
Ecology and Environmental Science	Third Place	Evan Gora	University of Louisville
Engineering	First Place	Pegah Kakavand	Western Kentucky University
Engineering	Second Place	Chaitanya Deepak Dogga	Murray State University
Engineering	Third Place	Abjulhameed Dawood	Western Kentucky University
Geography	First Place	Kianoosh Ebrahimi	Western Kentucky University
Geography	Second Place	Ellen Barringer	Western Kentucky University
Geology	First Place	Lee Anne Bledsoe	Western Kentucky University
Geology	Second Place	Trenede M. Garrison	University of Kentucky
Health Sciences	First Place	Jennifer Dumaine	Western Kentucky University
Health Sciences	Second Place	Stephen Wechman	University of Louisville
Mathematics	First Place	None	None
Microbiology	First Place	W.A. Weigel	University of Louisville
Microbiology	Second Place	Hitesh Kumar Waghvani	Western Kentucky University
Physiology and Biochemistry	First Place	Qian Chai	University of Kentucky
Physiology and Biochemistry	Second Place	Tulsi Modi	Western Kentucky University
Physiology and Biochemistry	Third Place	Yuechen Zhu	University of Kentucky
Psychology	First Place	Ashley Morris	Morehead State University
Psychology	Second Place	K.D. Nichelson	Morehead State University
Psychology	Third Place	Evan Rollins	Morehead State University

Science Education	First Place	None	None
Science Education	Second Place	None	None
Science Education	Third Place	None	None
Zoology	First Place	Sarah E. Goodyear	Western Kentucky University
Zoology	Second Place	None	None
Zoology	Third Place	None	None
URC Orals		URC Orals	
Agricultural Sciences	First Place	Richard Hulefeld	Kentucky State University
Agricultural Sciences	Second Place	Eugene Blair	Kentucky State University
Agricultural Sciences	Third Place	Chelsea Watts	Kentucky State University
Anthropology and Sociology	First Place	Heidi Vollrath	University of Kentucky
Anthropology and Sociology	Second Place	Kelly Snowden	University of Kentucky
Anthropology and Sociology	Third Place	Holden Hemingway	University of Kentucky
Botany	First Place	William Ciocca	Eastern Kentucky University
Botany	Second Place	None	None
Botany	Third Place	None	None
Cellular and Molecular Biology	First Place	Justin Gibson	Northern Kentucky University
Cellular and Molecular Biology	Second Place	Michael Bale	University of Kentucky
Cellular and Molecular Biology	Third Place	Alyssa Hubbard	Berea College
Chemistry: Analytical/Physical	First Place	Pyae Phyo	Berea College
Chemistry: Analytical/Physical	Second Place	Daniel Graham	Centre College
Chemistry: Analytical/Physical	Third Place	Andrew Sabelhaus	Northern Kentucky University
Chemistry: Organic/Inorganic	First Place	Andres Gasper	Northern Kentucky University
Chemistry: Organic/Inorganic	Second Place	Michael McCann	Berea College
Chemistry: Organic/Inorganic	Third Place	Thuy Do	Northern Kentucky University
Computer and Information Sciences	First Place	Jonathan Byrd	Morehead State University
Computer and Information Sciences	Second Place	None	None
Computer and Information Sciences	Third Place	None	None
Ecology and Environmental Science	First Place	Michon Martin	Berea College
Ecology and Environmental Science	Second Place	Michael Oxendine	Berea College
Ecology and Environmental Science	Third Place	William Hamilton	Western Kentucky University
Engineering	First Place	Jack Wassom	Western Kentucky University
Engineering	Second Place	Travis S. Miller	Morehead State University
Engineering	Third Place	William L. Roach-Barrette	Morehead State University
Geography	First Place	None	None
Geology	First Place	Nathaniel Crockett	Eastern Kentucky University
Geology	Second Place	Jerrad Grider	University of Kentucky
Geology	Third Place	Michaela Brook Curry	Western Kentucky University
Health Sciences	First Place	Sean Shumate	Northern Kentucky University
Health Sciences	Second Place	Josephine Brown	Northern Kentucky University
Health Sciences	Third Place	Chesika Crump	Murray State University
Mathematics	First Place	Larisa Gauze	Morehead State University
Mathematics	Second Place	Brittany Knapmeyer	Morehead State University

Mathematics	Third Place	Kirklyn Phelps	Morehead State University
Microbiology	First Place	Rachael Cicci	Northern Kentucky University
Microbiology	Second Place	Megan Holmes	Eastern Kentucky University
Microbiology	Third Place	Collin Johnson	Northern Kentucky University
Physics and Astronomy	First Place	Mary Spraggs	Western Kentucky University
Physics and Astronomy	Second Place	Clarissa A. Roe	Morehead State University
Physics and Astronomy	Third Place	Alekzander R. Kosakowski	Morehead State University
Physiology and Biochemistry	First Place	Krista Loose	Northern Kentucky University
Physiology and Biochemistry	Second Place	Chi Peng	Berea College
Physiology and Biochemistry	Third Place	Jonathon Webster and Lindsey Snider	Northern Kentucky University
Psychology	First Place	Andrea Merchak and Taylor Walker Smith	Centre College
Psychology	Second Place	Hillary Moore and Leah Storch	Centre College
Psychology	Third Place	Erika Ripperger and Allison Chumbley	Centre College
Science Education	First Place	Chioma Amaechi	Berea College
Science Education	Second Place	Yunpeng Xia	Berea College
Science Education	Third Place	Andrea P. Wilhoite	Morehead State University
Zoology	First Place	Brendan Hall	Northern Kentucky University
Zoology	Second Place	Lauren Ballou	Berea College
Zoology	Third Place	Danielle Frevola	Northern Kentucky University
		POSTERS	
Agricultural Sciences	First Place	Lin Peng	Berea College
Agricultural Sciences	Second Place	Adam Crisologo	Asbury University
Agricultural Sciences	Third Place	Lindsey Morris	Kentucky State University
Anthropology and Sociology	First Place	Lindsey Meador	Northern Kentucky University
Anthropology and Sociology	Second Place	Sydney Henderson and Tiffany Estep	Berea College
Botany	First Place	Benjamin Rasp	Morehead State University
Botany	Second Place	Mary Webb	Morehead State University
Botany	Third Place	Rebecca Graves	Kentucky State University
Cellular and Molecular Biology	First Place	Gabrielle Sevilla	Northern Kentucky University
Cellular and Molecular Biology	Second Place	Nova Arnold	Eastern Kentucky University
Cellular and Molecular Biology	Third Place	Alexis Carey	Transylvania University
Chemistry: Analytical/Physical	First Place	Theresa Ruwe	Northern Kentucky University
Chemistry: Analytical/Physical	Second Place	Frankie Wallace	Western Kentucky University
Chemistry: Analytical/Physical	Third Place	Kyaw Hpone Myint	Berea College
Chemistry: Organic/Inorganic	First Place	Andrew Norris	Berea College
Chemistry: Organic/Inorganic	Second Place	Anthony Boateng	Berea College
Chemistry: Organic/Inorganic	Third Place	Jacob Bonta	Eastern Kentucky University
Computer and Information Science	First Place	Amber Byrum	Bellarmine University
Ecology and Environmental Science	First Place	Chloe Lash	Valparaiso University

Ecology and Environmental Science	Second Place	Christopher Pauley	Asbury University
Ecology and Environmental Science	Third Place	James Brown	Northern Kentucky University
Engineering	First Place	Benjamin Turi	Bellarmino University
Engineering	Second Place	None	None
Engineering	Third Place	None	None
Geology	First Place	Catherine Sosso	Northern Kentucky University
Health Sciences	First Place	Clayton L. Royal	Lindsey Wilson College
Health Sciences	Second Place	Emily Igel	Northern Kentucky University
Health Sciences	Third Place	Sheniqua Austin	Berea College
Microbiology	First Place	W. Jared Brewer	Transylvania University
Microbiology	Second Place	Megan A. Peterson	Morehead State University
Microbiology	Third Place	Blake W. Nelson	Wittenberg University
Physics and Astronomy	First Place	Mikki Wilburn	Transylvania University
Physics and Astronomy	Second Place	Jaren Walden	Western Kentucky University
Physics and Astronomy	Third Place	Carson Price	Western Kentucky University
Physiology and Biochemistry	First Place	Victor Kremser	Morehead State University
Physiology and Biochemistry	Second Place	Dat Thinh Ha	Western Kentucky University
Physiology and Biochemistry	Third Place	Anna Owens	Kentucky Wesleyan College
Psychology	First Place	Sophie AL-Maamary	Berea College
Psychology	Second Place	Carter Baughman and Bryce Macy	Centre College
Psychology	Third Place	Laura Secord	Morehead State University
Science Education	First Place	Kaitlyn Reasoner	Berea College
Science Education	Second Place	Willie Gosnell	Berea College
Science Education	Third Place	Samuel Potter	University of Kentucky
Zoology	First Place	LeighAnne R. Main	Wittenberg University
Zoology	Second Place	Hanna Abe	Berea College
Zoology	Third Place	Brooke Washburn	Morehead State University

KAS 2014 Superlative Award winners

Early Career in Post-Secondary Education



Distinguished College/University Scientist



Outstanding KAS Service

**NEWS FROM THE
KENTUCKY SCIENCE CENTER**



Scientific Proofs

Outstanding College/University Teacher



Engineers Week 2015

February 26-28 2015

Posters-at-the-Capitol

anything,

3) PI Day/ Rube Goldberg Day 3.14.15

Posters-at-the-Capitol

3.14.15

Posters-at-the-Capitol

Posters-at-the-Capitol

UPCOMING EVENT

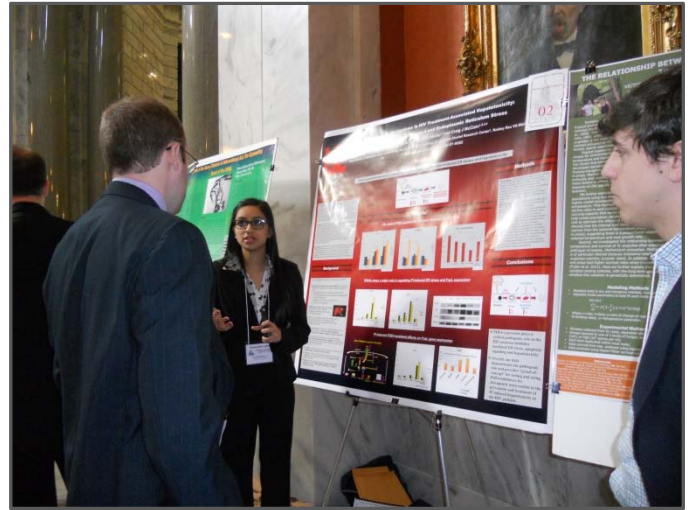
at-the-Capitol

Posters-

at-the-Capitol

Posters-





Photos from 2014 Posters at the Capitol. Left: James Brown, KAS Member, & Zach Poynter, both from NKU. Right: Priyanka Barve of Uof L.

Photos below are from the Annual Kentucky Academy of Science Meeting.

