

KAS Newsletter

January
2016

Kentucky Academy of Science

www.kyscience.org

Fostering Scientific Discovery and Understanding in Kentucky

Greetings to the membership of the KAS,

As we embark on the second century for the KAS, I wanted to encourage members to participate in the process of steering the Academy along its way. There are two principal ways in which you can help. Last summer, the Governing Board worked to create a strategic plan for the start of the next hundred years. It was refined and revised through the Fall, and was posted at the Annual Meeting held at NKU in November. This plan created a more focused vision and mission, and lists strategies, activities, and directions that were considered to be relevant for the KAS in the coming years. As this plan so far has basically been the work of perhaps a dozen people, it would no doubt benefit through discussions with the membership at large. Please examine the Strategic Planning Report, and provide feedback either to me (e.jerde@moreheadstate.edu), or to the Executive Director (executivedirector@kyscience.org). This report can be accessed at <http://kyacademyofscience.net/about/>.

A second way in which members can be of service is to become involved with any of a number of KAS committees, which are listed on the website <http://kyacademyofscience.net/about/committees-2/>. Many of these have positions for at-large KAS members, and would benefit greatly by additional perspectives. As with many organizations, the real work gets done by the committees, and if you have ideas for making the KAS better or more effective as the “voice of science in Kentucky”, a committee might be just the thing! KAS has grown to over 3000 members, and if you care about the sciences in Kentucky, I encourage everyone to be involved as we continue to move into the second hundred years of the organization.

Have a great 2016!

Eric Jerde, KAS President



New KAS Committees: Help Foster Scientific Discovery & Understanding in Kentucky!

Committee on Science Education & Advocacy shall be responsible for the consideration of legislation that affects the scientific interests of the Commonwealth of Kentucky and the Academy and shall recommend to the Executive Committee appropriate action to be taken.

Public Engagement Committee shall develop a communications plan that includes engaging the public in the work of the Academy.

Internal Communications Committee shall develop mechanisms to publicize Academy events, including annual and special meetings of KAS and the spring symposium of KJAS.

Membership Committee shall periodically review and update, if necessary, criteria and procedures for membership and provide leadership in devising and implementing recruitment activities. It shall be the goal of the Committee to increase membership through active programs of outreach to non-members.

Grants & Awards Committee shall be responsible for evaluating research proposals, distributing funds and shall have accountability in the use of research funds.

Executive Director's Report

Amanda Fuller

The 2015 KAS Annual Meeting was held November 13th and 14th at Northern Kentucky University.

Registration: 818 total, with approximately 35% professionals and 65% students.

[Compare to 2014: 850 registrations including approx. 60% students.]

200 people joined us for the “Night at the Museum” at Cincinnati Museum Center.

THANK YOU to a fantastic team of volunteers from NKU, the KAS Governing Board, and other members who helped out! Thank you to all at NKU who helped on local arrangements: Melony Stambaugh, Dick Durtsche, KC Russell, Richard Boyce, Debra Pearce, Sharmanthie Fernando, Stephanie Konkel, Judy Voelker, Lili Ma, and Miriam Kannen.

(Report continued on next page)



Add KAS to Your Email Lists!

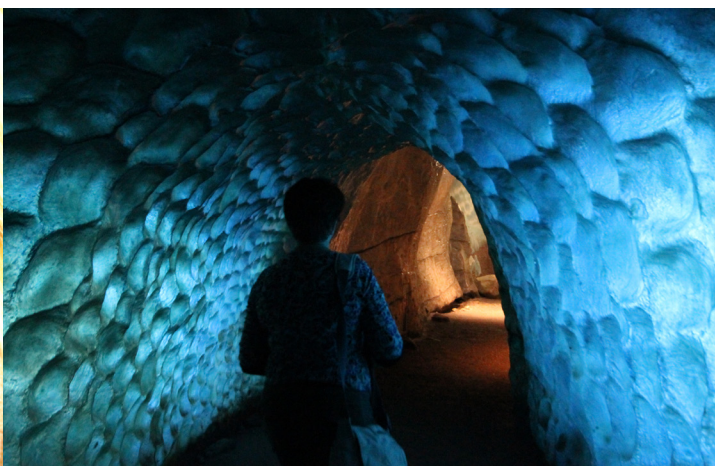
If your department or institution has an email list, add me to it! I am happy to share announcements about your events with fellow KAS members around the state. executivedirector@kyscience.org



NIGHT AT THE MUSEUM

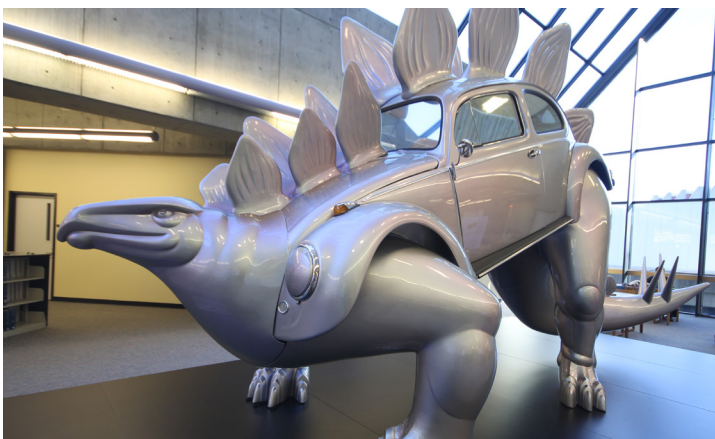
Above left: Astronaut Kevin Ford talks to a KAS attendee at the Cincinnati Museum Center.

Above right: The museum's cave exhibit.

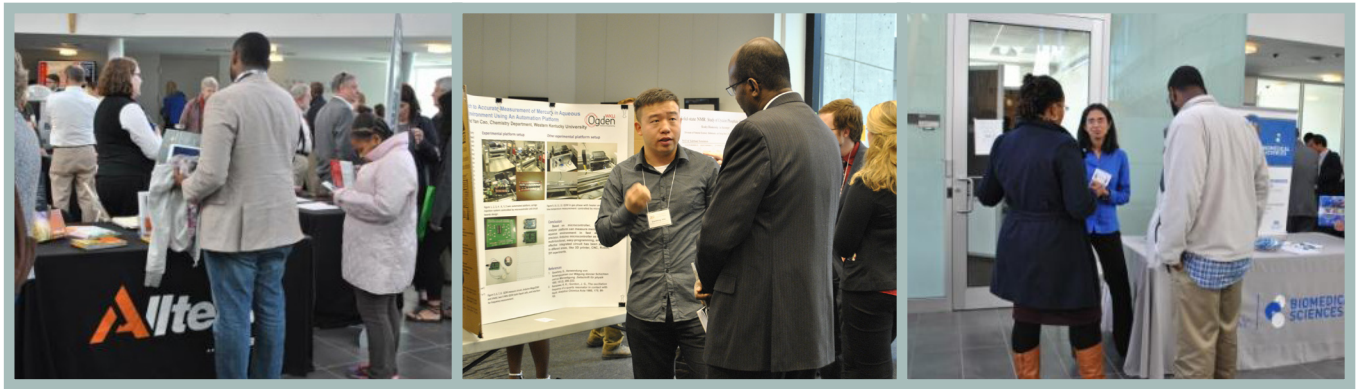


NKU CAMPUS

Right: The dinosaur-themed art “Stegowagenvolkssaurus” in NKU’s Steely Library



Photos this page: Andy Dyson



Photos on pages 3-4: Hannah Hughes

Thank You to Our 2015 Sponsors and Exhibitors!

Platinum level

Sullivan University College of Pharmacy
ASRC Michelin

Gold level

Kentucky Science and Technology Corporation
Eastern Kentucky University Graduate School
Clariant

Silver level

MPD Inc
Ohio Valley Scientific

Friend level

Kentucky Science Center
Warren RECC
Newport Aquarium

Exhibitors

Alltech, Inc
Kentucky Biomedical Research Network (KBRIN)
Kentucky Science Center
Kentucky State Nature Preserves Commission
Kentucky State University Aquaculture Program
Morehead State University Space Science Center
Murray State University College of Science, Engineering, and Technology
NKU Center for Global Engagement and International Affairs
Sullivan University College of Pharmacy
University of Kentucky College of Pharmacy
University of Kentucky Graduate School
University of Kentucky Office of Biomedical Education
University of Louisville School of Interdisciplinary and Graduate Studies
Researchers at Undergraduate Institutions Section, Ecological Society of America
Vernier
Western Kentucky University Ogden College of Science & Engineering

Partner Revenue

<u>Year</u>	<u>Exhibitor</u>	<u>Sponsor</u>	<u>Total Advertisers</u>	<u>Partner Revenue</u>
2006	\$2,175	\$0		\$2,175.00
2007	\$2,100	\$1,650		\$3,750.00
2008	\$1,950	\$2,000		\$3,950.00
2009	\$2,025	\$2,300		\$4,325.00
2010	\$1,350	\$3,650		\$5,000.00
2011	\$1,925	\$3,300		\$5,225.00
2012	\$3,125	\$3,975		\$7,000.00
2013	\$2,250	\$2,950		\$5,200.00
2014	\$3,490	\$5,375	\$200	\$9,065.00
2015	\$2,350	\$4,050	\$700	\$7,100.00

Kentucky Academy of Science Annual Meeting 2015

Program Coordinator's Report: November 13, 2015

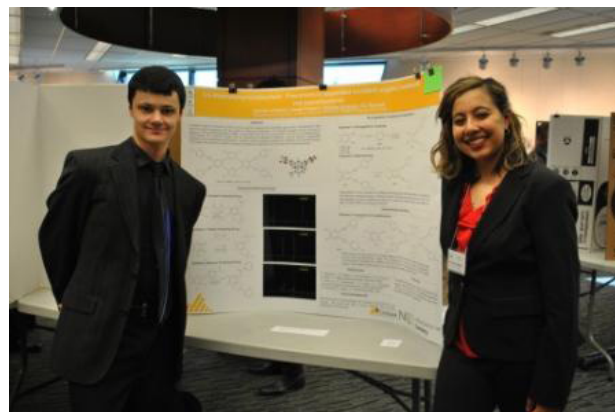
Melony Stambaugh

I. Total abstracts 452

a. Decrease of 41 from 2014	
b. Total oral presentations	206
i. GRC	52
ii. URC	104
c. Total poster presentations	238
i. URC	139

II. Abstracts by affiliation

	2015	2014
Alice Lloyd College	1	0
Asbury U	9	11
Bellarmine U	6	8
Berea College	41	45
Brescia	0	0
Campbellsville U	2	4
Centre College	14	19
Eastern Kentucky U	39	49
Georgetown College	2	5
KCTCS	7	3
Kentucky Biomedical	0	2
Kentucky Science Center	0	0
Kentucky State U	49	41
Kentucky Wesleyan College	2	4
Lumins	0	0
Midway University	0	0
Morehead State U	43	63
Murray State U	20	15
Northern Kentucky U	99	59
Spalding U	1	1
Transylvania U	0	12
U of Kentucky	29	43
U of Louisville	28	28
U of Pikeville	9	10
U of the Cumberlands	1	1
Western Kentucky U	45	66
WKU Crawford	0	1
Wood Hudson Cancer Research Laboratory	5	3



III. Abstracts by Section

	2015	2014	2013
Agricultural Sciences	37	37	32
Anthropology and Sociology	24	10	9
Botany	12	17	12
Cellular & Molecular Biology	41	36	41
Chemistry: A/P	31	30	25
Chemistry: O/I	44	44	42
Computer Information Sciences	18	8	17
Ecology and Environmental Sciences	59	58	60
Engineering	14	17	19
Geography	8	11	6
Geology	8	10	13
Health Sciences	11	25	17
Mathematics	10	8	14
Microbiology	18	26	16
Physics and Astronomy	31	16	29
Psychology	31	35	40
Science Education	14	20	23
Zoology	15	27	21



2016 KAS Governing Board Members

Eric Jerde
President

Darrin Smith
President-Elect

Jennifer Birriel
Vice President

David White
Past President

Pamela Feldhoff
Secretary

Rodney King
Treasurer

Amanda Fuller
Executive Director

Moira O'Keeffe
Newsletter Editor

Ruth Beattie
Director, Junior Academy of Science

Melony Stambaugh
Program Coordinator

Nancy Martin
AAAS/NAAS Representative

Michael Fultz
Biological Sciences Representative

Maggie Whitson
Biological Sciences Representative

R. Douglas Chatham
Physical Sciences Representative

Richard Gelderman
Physical Sciences Representative

Gregory Corso
Social & Behavioral Sciences Representative

Kerrie McDaniel
Social & Behavioral Sciences Representative

Andrew Deane
At-Large Representative

Mary Janssen
At-Large Representative

Jerzy Jaromczyk
Journal Editor

Welcome to the New KAS Board Members

The Nominations and Elections Committee congratulates those who were elected to office and expresses sincere appreciation to all those willing to serve the Academy by allowing their names to be placed into nomination.

Please join us in welcoming these newly-elected Governing Board Members: Vice President, Jennifer Birriel, Morehead State University; At-Large Representative, Andrew Deane, University of Kentucky; Biological Sciences Representatives, Michael Fultz, Morehead State University and Maggie Whitson, Northern Kentucky University; Social and Behavioral Sciences Representative, Greg Corso, Morehead State University.

More information about the Board, including contact details, can be found at http://www.kyacademyofscience.net/kas/members/governing_board.php

Journal of the Kentucky Academy of Science Deadlines: March 1 and September 1

All manuscripts and correspondence concerning manuscripts should be addressed to the Editor:
Dr. Jerzy W. Jaromczyk, jurek@cs.engr.uky.edu

Guidelines for submission are at: <http://kyacademyofscience.net/publishing-in-the-journal/>

Planning for Louisville 2016

The 2016 KAS Annual Meeting will be held Nov 4-5, 2016 at the University of Louisville. If you would like to help with local arrangements please get in touch with Amanda at executivedirector@kyscience.org

Thank you to all who completed the evaluation for the 2015 meeting – we will be taking your input into account as we plan and schedule the 2016 meeting.



Science Education Partnerships with the Kentucky Science Center

KAS members have been stepping up to help with science education programming! We would like to send a shout out to members who have volunteered for Science Center programs recently:

Nancy Martin, Gabe Draper, Chris Harding, Ken Thompson, Debbie Yoder Himes & her lab, Delano Turner (Waters Corp), Eric Wooldridge, Moondil Jahan, Megan Chandler, Jennafer Grindrod, David Brown, Carolyn Owens, and Roman Yampolskiy. A special shout out goes to Kerrie McDaniel and Gabe Draper, who presented a fantastic program for teachers at the Kentucky Science Teachers Association (KSTA) meeting in November and introduced P12 teachers to ways KAS can help teachers in their classrooms!

If you are interested in mentoring or otherwise serving as a resource for a science teacher near you, please get in touch with us – KAS would be pleased to make the introduction.



A science teacher participating in the KAS workshop at the KSTA meeting practices a lesson on buoyancy.

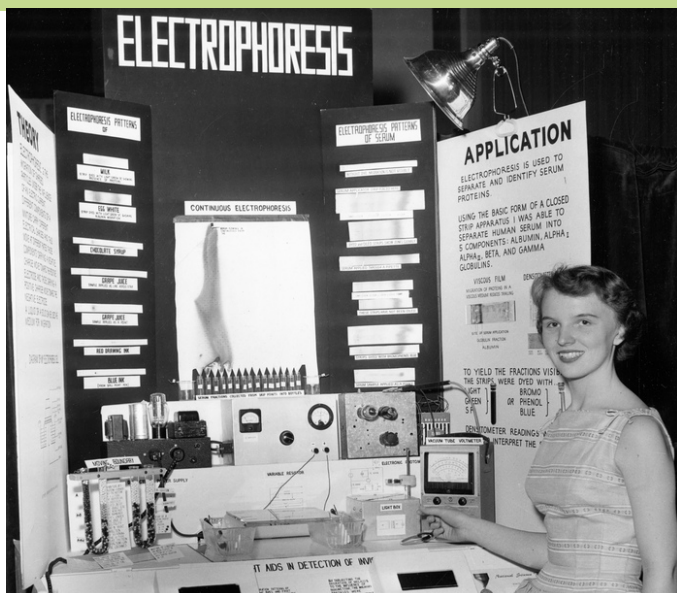
National Engineers Week at the Kentucky Science Center February 25 – February 27

This three-day event is dedicated to sharing engineering concepts, lessons, and career options with the Center's many visitors. Past activities have included stations on robotics, rockets, hacked/modified inventions, and much more. In the past three years, we have seen over 6500 individuals attend this event along with the assistance of over 950 hours of volunteer and partner participation. This science celebration provides a valuable opportunity for visitors to interact with professionals in the field and to be exposed to a variety of engineering careers. The most common type of partner program for Engineers Week is a table-top activity with a volunteer to share a brief hands-on lesson, but you can share what you do best!

On Thursday and Friday, the event will run from 10:00am to 2:00pm for elementary school field trips. Saturday is 11:00-4:00pm to accommodate a wider family-oriented group of visitors. Virtual presentations are welcomed via SKYPE.

To sign up, contact Andrew Spence, Manager of Public Programs and Events at Andrew.Spence@louisvilleky.gov or (502) 560-7129.

Support Youth in STEM: Serve as a Science & Engineering Fair Judge!



1956, Allentown, Pennsylvania. Smithsonian Institution Archives.

Louisville's DuPont Manual Science & Engineering Fair

Saturday, March 12, 120 W. Lee St, Louisville, KY 40208

Louisville's DuPont Manual Science & Engineering Fair needs judges in a variety of categories. Use the link to register as a judge:

https://dupontmanual.stemwizard.com/public/site/judge_register

If you have questions or need assistance with registration contact: chitraandvenkat@gmail.com

The Louisville Regional Science & Engineering Fair

Saturday, March 5, 2016, Kentucky Science Center, 9am – 5pm

The LRSEF is currently in need of professionally qualified volunteer judges in the STEM (science, technology, engineering and math) fields for both morning (9:30-11:30am) and afternoon (12:30-3:00) judging. Judges can serve at the Senior (grades 9-12) and/or the Junior levels (grades 6-8). **The deadline to register is Monday, February 22 – please register soon!**

Visit lrsef.stemwizard.com (in the top corner go to Registration > Judge) and sign up today. Please sign up and check your information – there are NEW categories this year! We will use your submitted information to assign judges. Feel free to recruit fellow colleagues – this is a wonderful experience for the students to interact with professionals! Thank you for your interest!

LRSEF is internationally affiliated with the Intel Science and Engineering Fairs and hosts projects in 22 categories ranging from Animal and Plant Sciences to Environmental Management and Sciences to all areas of Engineering. For more information contact Stuart Williams, Head of LRSEF Judging Committee, stuart.williams@louisville.edu.

In the News: Kentucky's New Education Commissioner is a Scientist

Stephen Pruitt, Kentucky's new Education Commissioner started his career as a high school chemistry teacher. In addition, he served on the National Academies of Science Committee on Conceptual Framework for New Science Education Standards which developed the *Framework for K-12 Science Education* – a foundational document for the Next Generation Science Standards.

Read more about Dr. Pruitt at <http://education.ky.gov/commofed/Pages/default.aspx>

CALENDAR

JANUARY

Big Bone Lick, Birthplace of Vertebrate Paleontology

Friday, January 29, 2016, 7:30 pm

The Kentucky Paleontological Society (KPS) presents this talk with Dr. Glenn Storrs, Withrow Farney Curator of Vertebrate Paleontology, Cincinnati Museum Center, <http://www.cincymuseum.org/research/vertebrate>

Lexington, Kentucky, Mines and Minerals Resources Building, Room 101, Rose Street, UK Campus.
For further information: Daniel J. Phelps (859) 296-4870 or (859) 402-4337 (cell)

Wood Hudson Cancer Research Celebration, Sunday January 31

Wood Hudson Cancer Research Center celebrates 35 years of discovering new knowledge regarding the causes, diagnosis and treatment and prevention of cancer. Join them as they commemorate 35 years of partnership and hard work in cancer research.

12:30pm - Cocktails

1:00pm - Luncheon

1:30pm - Presentation and Awards

To be held at The Syndicate, 18 E Fifth
available. RSVP by Jan. 22 to

St., Newport, KY. Tickets are \$35 and sponsorship opportunities are
Julie Althaver, jalthaver@woodhudson.org

FEBRUARY

Citizen Science Workshop:

Take a Lichen to Air Quality, February 26-27, 2016

(Rescheduled from January date due to weather.)

Join experts from Eastern KY University, the KY Division for Air Quality, and Pine Mountain Settlement School for this FREE citizen science workshop. Participants will help collect important scientific information about Kentucky's air quality by identifying and monitoring lichen – the green stuff growing on trees – and take measurements to submit to a website where scientists can use this data to learn more about the health of our environment.

We will hear from Roberta Burnes, the education specialist with the Kentucky Division of Air Quality, Billy Bennett, Director of the Center for Environmental Education at ECU, and Melinda Wilder, Director of Natural Areas at ECU about how to collect and share our data. We will spend the rest of the day investigating the lichen on trees in the James E. Bickford State Nature Preserve, located on the Settlement School's campus, and at Lilley Cornett Woods in Letcher County. All ages welcome, and no prior experience is necessary. Please dress for the outdoors and bring snacks and water for the trail. Workshop begins after dinner Friday evening. Meals from Friday dinner through Saturday dinner and lodging for Friday night will be provided at no cost to participants. Registration at: <http://www.pinemountainsettlementschool.com/registration.php?id=184>

A second workshop is planned for May 6-7, 2016. <http://www.pinemountainsettlementschool.com/events.php>

FEBRUARY

Photo: "Hops" by Paul Miller,

Kentucky Science Center's "Scientific Proofs" series

February 9, 6:00 PM, 636 E. Main St in Louisville

Jay D. Gatrell, Ph.D. Professor of Geography & Environmental Studies at Bellarmine University will present **Place, Water, & Beer: A Geography!** Guests will also enjoy some LN₂ Ice Cream courtesy of the KSC Education Department.

Kentucky Science Center hosts the "Scientific Proofs" series on the 2nd Tuesday of every month at Goodwood Brewery. <http://kysciencecenter.org/grownups/scientific-proofs/>

Louisville's Beargrass Creek Alliance

"Demystifying Native Plants" on February 17, 7:00 PM

St. Andrew's Episcopal Church at 2233 Woodbourne Ave in Louisville

This winter Community Meeting will feature speaker Margaret Shea, who started the Dropseed Native Plant Nursery 11 years ago in Goshen, KY. She has a M.S. in ecology from Indiana University and has worked for a number of Kentucky conservation organizations.

The talk is free and open to everyone. <http://kwalliance.org/february-17-demystifying-native-plants/>

2016 Darwin Lecture, Friday, February 19, 7pm

University of Kentucky, Seay Auditorium ,

Agricultural Science North

"Darwin and the Origin of Whales (Cetacea)" by Dr. Phillip D. Gingerich, University of Michigan.

Posters at the Capitol, Feb 25, 2016 in Frankfort, KY

See flyer on page 15 for details!

MARCH

Kentucky Science Center's hypotheSIPS, Thursday,

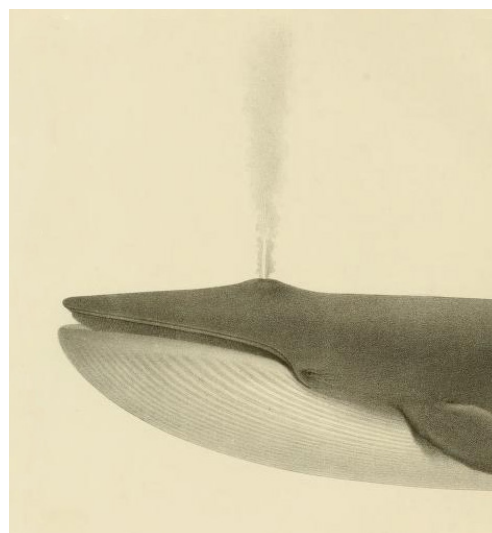
March 3, 2016, 727 W Main St Louisville

Cheers! Raise a glass of your favorite wine and spirits as we discover the fermentation, chemistry, and distillation science that makes them possible.

\$20 Kentucky Science Center Members

\$25 Non-Members

Check our website (kyscience.org) for updates on science events around Kentucky and send your event announcements to: executivedirector@kyscience.org



Opportunities

University of Louisville's Research Experience for Undergraduates (REU) Program in Plant Biology plans to review applications for the 2016 program starting **March 1, 2016**. The website for information and application forms is <http://louisville.edu/biology/REU>. The website states: "The National Science Foundation-funded Plant Biology REU program is a 10-week program that gives undergraduates an immersive research experience in one of several plant research laboratories in the Biology Department at the University of Louisville. We are working toward obtaining funding to continue to offer the program in the Summer of 2016. Along with research experience, additional educational activities help prepare students for graduate school and beyond. Students are matched with a researcher in their field of interest. Areas of research include biochemistry, development, ecology, genetics, genomics, and molecular biology."

The Eastern Kentucky University Division of Natural Areas is pleased to announce the availability of funding for students conducting research at one or more of EKU's natural areas as part of their study: Maywoods Environmental and Educational Laboratory, Lilley Cornett Woods Appalachian Ecological Research Station, and Taylor Fork Ecological Area. Funding is available to students at any college or university and consists of up to \$500 and housing (if needed). **The deadline to apply is 14 March 2016.** Guidelines for proposals and more information can be found at <http://naturalareas.eku.edu/student-grant-aid-program>. For information about our natural areas, visit <http://naturalareas.eku.edu>. If you have any questions, contact Dr. Stephen Richter, Associate Director for Research, EKU Natural Areas (stephen.richter@eku.edu).

Are you hosting an REU program in 2016? If we don't have it listed on our page, please send the announcement & application deadline to executivedirector@kyscience.org

More REU (Research Experiences for Undergraduates) postings for 2016: KAS has compiled a list of summer research opportunities for students. Deadline for *most* of these programs is March 1, 2016. Find the listing here:

<http://kyacademyofscience.net/membership/research-experiences-for-undergraduates-reu-in-kentucky/>

KET and PBS have announced the 4th annual PBS LearningMedia Digital Innovator program in which K-12 teachers and administrators are recognized for their creative use of digital media in the classroom. All educators who meet the entry requirements, follow the guidelines and submit their application to the Digital Innovators Program will be rewarded with year-long professional development opportunities.

The call for entries closes **February 8, 2016**. Educators should submit a 60- to 120-second video to showcase their innovative use of digital technology in their classroom to inspire students. Entrants should also complete a profile and answer two essay questions. The PBS LearningMedia Digital Innovators' application is available at www.pbslearningmedia.org/digitalinnovators.

One educator from each state will be named as Lead Innovator. The Lead Innovators will receive a three-day, all-expense paid trip to Denver, Colorado, to participate in the 2016 PBS LearningMedia Digital Summit and the International Society for Technology in Education (ISTE) conference.

The 2016 PBS LearningMedia Digital Innovators will be announced in March. For more information on KET's PBS LearningMedia service in Kentucky, visit: www.ket.pbslearningmedia.org

Section Leaders 2016

This list and email links to section chairs are online at:
<http://www.kyacademyofscience.net/kas/content/disciplines.php>

(When you log in, you can also access a KAS member directory, which can be sorted by section!)

Agricultural Sciences	Section Chair - Thomas Kingery Section Secretary - Jean Gumirakiza
Anthropology and Sociology	Section Chair - Benjamin Freed Section Secretary - Andrew Deane
Botany	Section Chair - Benjamin Adams Section Secretary - Brad Ruhfel
Cellular and Molecular Biology	Section Chair - Robert Wyatt Section Secretary - Emily Shifley
Chemistry: Analytical / Physical	Section Chair - None Chosen Section Secretary - None Chosen
Chemistry: Organic / Inorganic	Section Chair - Judy Jenkins Section Secretary - KC Russell
Computer and Information Sciences	Section Chair - Jerzy Jaromczyk Section Secretary - Muzaffar Ali
Ecology and Environmental Science	Section Chair - Ben Brammell Section Secretary - Maheteme Gebremedhin
Engineering	Section Chair - Aaron Daley Section Secretary - None Chosen
Geography	Section Chair - John Metz Section Secretary - Demetrio Zourarakis
Geology	Section Chair - Ann Harris Section Secretary - David Dockstader
Health Sciences	Section Chair - Joseph Mester Section Secretary - Bruce Branan
Mathematics	Section Chair - R. Douglas Chatham Section Secretary - Andy Martin
Microbiology	Section Chair - Lingyu Huang Section Secretary - John Carmen
Physics and Astronomy	Section Chair - Jon Gaffney Section Secretary - Marilyn Akins
Physiology and Biochemistry	Section Chair - Patrick Mineo Section Secretary - Michael Smith
Psychology	Section Chair - Mykol Hamilton Section Secretary - Richard Osbaldiston
Science Education	Section Chair - Shen Liu Section Secretary - Karen Hlinka
Zoology	Section Chair - David Eisenhour

More Opportunities and Research Funding Resources

[Grants.gov](http://www.Grants.gov) - Find research funding opportunities from all federal agencies.

Kentucky Science and Engineering Foundation (<http://ksef.kstc.com/>) invests in research and development activity to promote innovation, new product development and commercialization, and build a pipeline of new ideas and technologies that could add value to the scientific and economic growth in Kentucky.

EPSCoR (http://www.nsf.gov/od/oia/programs/epscor/nsf_oia_epscor_index.jsp) assists the National Science Foundation in its statutory function "to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education." Kentucky is one of the states targeted for research funding through EPSCoR.

Alltech's Young Scientist Program aims to reward students for innovative agriscience research. Global winners will receive cash prizes. The undergraduate winner will receive funding for graduate school. They also offer the graduate winner a post-doc position in an Alltech Bioscience Center (Dunboyne, Ireland or Lexington, Kentucky, US) for up to 2 years. (Details at <http://kyacademyofscience.net/alltech-cash-prizes-internship-programs-for-young-researchers/>)

And don't forget about KAS research grants, due in November each year. 2016 winners will be announced in February.

<http://kyacademyofscience.net/programs/kas-research-grants/>

Science & Technology Job Postings

KAS maintains a list of local & regional STEM job openings at our website:

<http://kyacademyofscience.net/membership/job-postings/>

Send us your job postings (with closing date) to share: executivedirector@kyscience.org

Update on “Innovation: An American Imperative” A Report from AAAS

KAS signed on to this statement in 2014 calling for greater public investment in the sciences, and AAAS has been promoting it to policymakers in Washington. Find it at <http://www.amacad.org/pdfs/InnovationAmericanImperativeCalltoAction.pdf>

Capitol Hill Symposium – On October 20, a public symposium on Innovation: An American Imperative was held in the U.S. Capitol Visitors Center in Washington D.C. The symposium featured remarks by Members of Congress and a discussion with industry leaders of federal policies and investments that would promote innovation, stimulate economic growth and prosperity, and ensure our health and national security. A [media release](#) about the event, media coverage, and a [video](#) of the event are now available at www.innovationimperative.org.

Statement Delivery to Congress – A copy of the statement was emailed to every Member of Congress and to relevant congressional committees. Hard copies of the statement will be delivered to each Member office as a follow-up.

Congressional Visits – Organizers of the statement arranged dozens of meetings with Members of Congress and/or their staff to deliver the statement and discuss ways to advance its recommendations. Many other endorsing organizations have also arranged congressional visits to discuss the statement.

Social Media – Organizers and endorsers of the statement have been tweeting with the hashtag #InnovationImperative to promote the recommendations of the statement via social media.

HOW KAS CAN HELP

To build more support for the policy and funding recommendations in the statement, we need your help in promoting and utilizing the statement in your advocacy efforts. Your continued promotion of the statement with Members of Congress, governors, state legislators, and the media is important to advancing our shared agenda.

Please refer to and share the statement in your advocacy efforts on innovation. This could include arranging congressional meetings to talk specifically about the statement or just sharing the statement when discussing with Congress innovation-related issues. Please also refer to the statement in letters, media releases, and statements your organization puts out in the coming weeks and months. This will help demonstrate the widespread support for its recommendations, and signal why it is important that Congress act on them. Please continue to use the hashtag #InnovationImperative when releasing such documents. Finally, please consider seeking an op-ed about the statement and its recommendations.

Working together, we can help ensure that our shared commitment to innovation stays on the agenda of policymakers. On behalf of our entire coalition, thank you for your continuing efforts.

Sincerely,

The [American Academy of Arts and Sciences](#), the [American Association for the Advancement of Science](#), the [Association of American Universities](#), the [Association of Public and Land-grant Universities](#), [Battelle](#), the [Coalition for National Science Funding](#), the [Coalition for National Security Research](#), the [Council on Competitiveness](#), the [Energy Sciences Coalition](#), the [Task Force on American Innovation](#), [The Science Coalition](#), and [United for Medical Research \(UMR\)](#).

The Kentucky Academy of Science Supports Strong Science Education and the Next Generation Science Standards

Everyone agrees that Kentucky needs good paying jobs, and that our strongest growing sectors are STEM-driven jobs (12 out of 20 of the “Best” jobs in the coming decade are STEM-based jobs)

In Kentucky leading industries include:

- Healthcare - 13 out of 20 of the fastest growing jobs nationally are in Healthcare
- Aerospace - Kentucky’s #1 export is Aerospace (Aircraft Engines and parts) - \$7.8 Billion in 2014. Kentucky is the #3 Aerospace exporter in US (after WA and CA).
- Auto industry - Adds \$14 billion annually to the state’s GDP.

KAS would like to make sure our workforce of the future is prepared by keeping the Next Generation Science Standards. The NGSS were developed collaboratively with states and other stakeholders in science, science education, higher education, and industry. Kentucky must retain high science standards to keep our economy strong!

Senate Bill 1 proposes a process for reviewing academic standards and assessments. Find out more at <http://www.lrc.ky.gov/record/16RS/record.htm>. The legislative message line is 1-800-372-7181

Student Research Competition Winners, KAS Annual Meeting - Nov 13-14, 2015

Graduate Research Competition

Kristy	Allen	Agricultural Sciences	First Place	Kentucky State University
Srijana	Thapa Magar	Agricultural Sciences	Second Place	Kentucky State University
Brett	Maxwell	Agricultural Sciences	Third Place	Western Kentucky University
Jennifer	Hubbard-Sanchez	Anthropology and Sociology	First Place	Kentucky State University
Pathmanesan	Sanmugeswaran	Anthropology and Sociology	Second Place	University of Kentucky
Daniel	Joseph	Anthropology and Sociology	Third Place	University of Kentucky
Richa	Singhal	Cellular and Molecular Biology	First Place	University of Louisville
Christopher	Fields	Cellular and Molecular Biology	Second Place	Western Kentucky University
Benjamin	Shaw	Cellular and Molecular Biology	Third Place	Eastern Kentucky University
Jason	Payne	Chemistry: Analytical/Physical	First Place	Western Kentucky University
Ka Wai	Kwong	Chemistry: Organic/Inorganic	First Place	Western Kentucky University
Allison	Durr	Chemistry: Organic/Inorganic	Second Place	Eastern Kentucky University
Thulitha	Abeywickrama	Chemistry: Organic/Inorganic	Third Place	Western Kentucky University
Faezeh	Tafazzoli	Computer and Information Sciences	First Place	University of Louisville
Keishin	Nishiyama	Computer and Information Sciences	Second Place	University of Louisville
Elaheh	Arabmakki	Computer and Information Sciences	Third Place	University of Louisville
Matthew	Reid	Ecology and Environmental Science	First Place	University of Louisville
Kari	Dupler	Ecology and Environmental Science	Second Place	Eastern Kentucky University
Victoria	Prescott	Ecology and Environmental Science	Third Place	University of Louisville
Jennafer	Grindrod	Engineering	First Place	Morehead State University
Armin	Maraghehmoghaddam	Engineering	Second Place	Morehead State University
Jonathan	Fitzpatrick	Engineering	Third Place	Morehead State University
Andrew	Gott	Geography	First Place	Kentucky State University
Ann	Harris	Geology	First Place	University of Kentucky
Michael	Robbins	Physics and Astronomy	First Place	Morehead State University
Anu	Kini	Physiology and Biochemistry	First Place	Western Kentucky University
Brittany	Rice	Physiology and Biochemistry	Second Place	Eastern Kentucky University
Kelly	Smith	Psychology	First Place	Northern Kentucky University

Undergraduate Research Competition - Oral Presentations

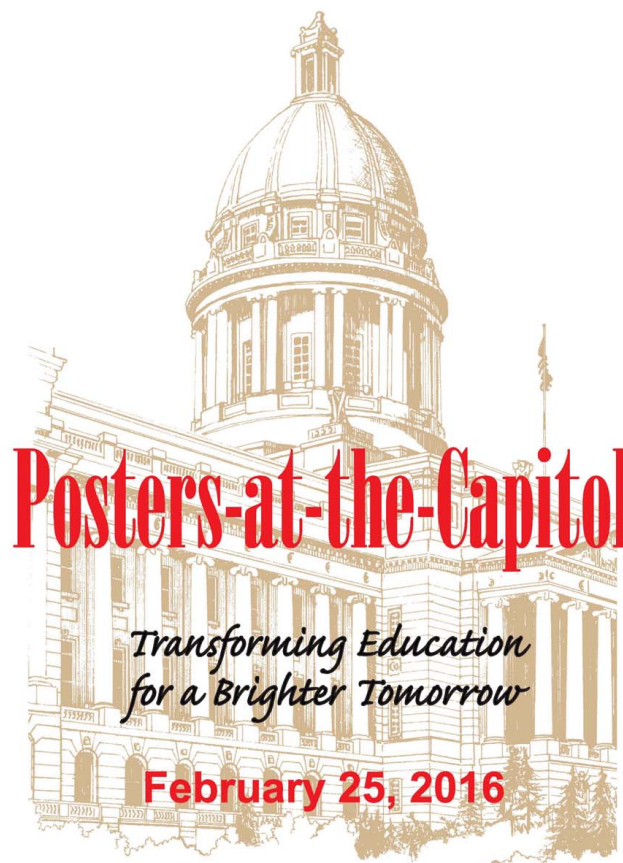
Joe	Hood	Agricultural Sciences	First Place	Western Kentucky University
Lindsey	Meador	Anthropology and Sociology	First Place	Kentucky State University
Megan	Beckerich	Anthropology and Sociology	Second Place	Northern Kentucky University
Tyler	Hoard	Botany	First Place	Murray State University
Breanna	Knicely	Botany	Second Place	Morehead State University
Moondil	Jahan	Botany	Third Place	Berea College
Hsuan	Peng	Cellular and Molecular Biology	First Place	Berea College
Seth	Reasoner	Cellular and Molecular Biology	Second Place	Berea College
Ashley	Munie	Cellular and Molecular Biology	Third Place	Murray State University
Kyaw	Hpone Myint	Chemistry: Analytical/Physical	First Place	Berea College
Andrew	Schlereth	Chemistry: Analytical/Physical	Second Place	Eastern Kentucky University
Cory	Owens	Chemistry: Analytical/Physical	Third Place	Western Kentucky University
Alma	Onate	Chemistry: Organic/Inorganic	First Place	Northern Kentucky University
Sarah	Siemer	Chemistry: Organic/Inorganic	Second Place	Northern Kentucky University
Aubrey	Penn	Chemistry: Organic/Inorganic	Third Place	Western Kentucky University
Benjamin	Turi	Computer and Information Sciences	First Place	Bellarmine University
Zane	Dixon	Computer and Information Sciences	Second Place	Morehead State University
Alex	Cass	Computer and Information Sciences	Third Place	Morehead State University
AnnaJoy	Thompson	Ecology and Environmental Science	First Place	Georgetown College
Jordan	Robbins	Ecology and Environmental Science	Second Place	Murray State University
Emily	Griggs	Ecology and Environmental Science	Third Place	University of Kentucky
David	Mays	Engineering	First Place	Morehead State University
Troy	Stafford	Engineering	Second Place	Morehead State University
Andrew	Cavins	Engineering	Third Place	Morehead State University
Jacob	Wilkins	Geography	First Place	Western Kentucky University
Jacob	Robin	Geology	First Place	Eastern Kentucky University
Elijah	Wolfe	Geology	Second Place	Eastern Kentucky University
Leena	Ibrahim	Health Sciences	First Place	Northern Kentucky University
Jamie	Weimer	Health Sciences	Second Place	Northern Kentucky University
Monique	Frisby	Health Sciences	Third Place	Kentucky State University
Nathan	Dasenbrock-Gammon	Mathematics	First Place	Northern Kentucky University
Andrew	Davis	Mathematics	Second Place	Western Kentucky University
Janie	Knell	Mathematics	Third Place	Morehead State University
Laura	Mims	Microbiology	First Place	Eastern Kentucky University
Gidgett	Taylor	Microbiology	Second Place	Kentucky State University
Collin	Johnson	Microbiology	Third Place	Northern Kentucky University

Terri	Perrino	Physics and Astronomy	First Place	Thomas More College
Jessica	Farrell	Physics and Astronomy	Second Place	Morehead State University
Lauren	Duffy	Physics and Astronomy	Third Place	Morehead State University
Jacob	Meece	Physiology and Biochemistry	First Place	Asbury University
William	Hamilton	Physiology and Biochemistry	Second Place	Western Kentucky University
Kaitlyn	Reasoner	Physiology and Biochemistry	Third Place	Berea College
Shelby	Cansler	Psychology	First Place	Berea College
Ashley	Merkin	Psychology	Second Place	Centre College
Sangyi	Hu	Psychology	Third Place	Centre College
Kaylind	Batey	Science Education	First Place	Centre College
Michael	James	Science Education	Second Place	Berea College
Allison	Litmer	Zoology	First Place	Northern Kentucky University
Danielle	Scott	Zoology	Second Place	Wittenberg University
Danielle	Frevola	Zoology	Third Place	Northern Kentucky University

Undergraduate Research Competition - Poster Presentations

Meredith	Anderson	Agricultural Sciences	First Place	Asbury University
Thomas	Trivette	Agricultural Sciences	Second Place	Kentucky State University
Chelsea	Holleman	Agricultural Sciences	Third Place	Murray State University
Jessica	Bolte	Anthropology and Sociology	First Place	Northern Kentucky University
Karen	Ely	Anthropology and Sociology	Second Place (tie)	Northern Kentucky University
Stefan	Kienzle	Anthropology and Sociology	Second Place (tie)	Northern Kentucky University
Sabra	Tomb	Botany	First Place	Wittenberg University
Glen	Kalisz	Botany	Second Place	Eastern Kentucky University
Stephanie	Gehrlich	Cellular and Molecular Biology	First Place	Northern Kentucky University
Miranda	Combs	Cellular and Molecular Biology	Second Place	Northern Kentucky University
Eiman	Ashraf	Cellular and Molecular Biology	Third Place	University of Kentucky
Theresa	Ruwe	Chemistry: Analytical/Physical	First Place	Northern Kentucky University
Adaeze	Iloegbunam	Chemistry: Analytical/Physical	Second Place	Northern Kentucky University
Sara	Keshtvarz	Chemistry: Analytical/Physical	Second Place	Northern Kentucky University
Boubacar	Cherif	Chemistry: Analytical/Physical	Third Place	Berea College
Haleh	Jeddi	Chemistry: Organic/Inorganic	First Place	Western Kentucky University
Samuel	Effoe	Chemistry: Organic/Inorganic	Third Place	Berea College
Bret	Wisecarver	Computer and Information Science	First Place	Morehead State University
Jordan	Watkins	Computer and Information Science	Second Place	Morehead State University
Ronald	Sams	Ecology and Environmental Science	First Place	Asbury University
Marisa	Derenzo	Ecology and Environmental Science	Second Place	Northern Kentucky University
Cierla	McGuire	Ecology and Environmental Science	Third Place	Asbury University
Denzell	Barnett	Engineering	First Place	Berea College
Jordan	Wells	Engineering	Second Place	Kentucky State University
Jamie	Farrar	Geography	First Place	Eastern Kentucky University
Laura	Norris	Geology	First Place	Eastern Kentucky University
Cassie	Simpson	Geology	First Place	Eastern Kentucky University
Hailey	Shanahan	Health Sciences	First Place	Northern Kentucky University
Kidist	Ashami	Health Sciences	Second Place	Berea College
Tyler	Ogden	Health Sciences	Third Place	Asbury University
Thomas	Gregory	Microbiology	First Place	Western Kentucky University
Ryan	Donkin	Microbiology	Second Place	Eastern Kentucky University
Amberlee	Grau	Microbiology	Third Place	Northern Kentucky University
Caleb	Hughes	Physics and Astronomy	First Place	Murray State University
Nathanael	Bodine	Physics and Astronomy	Second Place	Berea College
Yhenew	Kassie	Physics and Astronomy	Third Place	Berea College
John N	Alcorn	Physiology and Biochemistry	First Place	Morehead State University
Tatiana	Mikhailova	Physiology and Biochemistry	Second Place	Berea College
Zachary	Abbott	Physiology and Biochemistry	Third Place	Morehead State University
Carmellia	Jackson	Psychology	First Place	Berea College
Taylor	Walker-Smith	Psychology	Second Place	Centre College
Shannon	Layman	Psychology	Third Place	Eastern Kentucky University
James	Casper	Psychology	Third Place	Morehead State University
Mackenzie	Ridley	Science Education	First Place	Berea College
Shelby	Nemec	Zoology	First Place	Northern Kentucky University
Morgan	Stacy	Zoology	Second Place	Berea College
Molly	Miller	Zoology	Third Place	Northern Kentucky University

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Posters-at-the-Capitol is designed to celebrate the research, scholarly, and creative experiences of undergraduate students at Kentucky's public institutions of higher education. It provides students with the opportunity to present their projects to state legislators and to impress upon them the importance of faculty-mentored projects to the overall education of Kentucky students. Poster presentations are being sought from undergraduates in ALL DISCIPLINARY AREAS.

Abstract Deadline:
Wednesday, October 14, 2015

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<http://campus.murraystate.edu/services/URSA/>

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