

# Iowa Academy of Science

## The New Bulletin

Volume 8 Number 3 Fall 2012



*The Iowa Academy of Science is established to further scientific research and its dissemination, education in the sciences, public understanding of science, and recognition of excellence in these endeavors.*

### Message from the Executive Director

With summer waning, autumn in the air, and a new academic year underway IAS Fall Bulletin is here to inform you about what is happening with your Iowa Academy of Science. The 125th IAS Annual Meeting will be held at Simpson College in Indianola on April 19th and 20th. Let's make this a banner year for the Academy by increasing membership in all categories. Remind your non-member colleagues about the importance of supporting the Academy and its mission. The Academy provides opportunities for teachers, researchers, students from elementary through graduate level, and the general public and facilitates communication between academic, business, governmental, non-profit, and other groups or individuals.

The ISTS Fall Conference will be held on October 15th and 16th at Iowa State University. Spread the word about this excellent conference for Iowa's science teachers. If your interest is science teaching this is a must conference to have on your schedule. For more information about the conference events and to register please go to the IAS website at [www.iacad.org](http://www.iacad.org).

Your annual fall mailing from IAS will be in your mailbox soon. The fall mailing includes your 2013 renewal notice, the Call for Papers, and information about award nominations and making donations to the Academy. Please take a few minutes to look through the mailing to learn more about the Academy and to renew for 2013.

To learn more about Academy activities and how you may become involved read the IAS Bulletin and check out the website at [www.iacad.org](http://www.iacad.org). Our website and web address are about to change – look inside for more information.

Craig Johnson, Executive Director

### Congratulations Jody Stone!

Congratulations to IAS Member, Jody Stone for her selection as Iowa's 2011 Presidential Award for Excellence in Mathematics and Science Teaching. Jody has presented at numerous ISTS Fall Conferences and has been an active member of the Academy since 1992. She is involved with the development of CRISTAL and BIOMES, taught high school chemistry at Malcolm Price Laboratory School and preservice educators at UNI. Jody will be honored on Monday October 15th at the ISTS Fall Conference.



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# OUR STUDENTS, OUR FUTURE:

the social responsibility to effectively teach science

## ISTS Fall Conference

### Monday Night October 15th, Activities at Reiman Gardens, Ames

- 4:00-5:45 **Registration Desk Open** at Reiman Gardens
- 4:30-5:30 **A Guided Tour of Reiman Gardens—**  
Portions of tour will be outside, weather permitting
- 5:30-6:30 **PAEMST Recognition Dinner—**  
Join IAS and the Dept. of Education in congratulating Iowa's 2011 Presidential Award for Excellence in Mathematics and Science Teaching Winner—Jody Stone
- 6:30-7:00 **Social**
- 7:00 **Iowa Governor's STEM Advisory Council—Update**  
Dr. Jeff Weld
- 8:00 **Experience and develop your own star party!** Mini hands-on workshop!
- 8:30-9:00 **Iowa Science Teaching Section Chair's Reception**  
Join ISTS Chair De Anna Tibben, Conference Chair Adam Puderbaugh, and Vice Chair Eric Hall and your fellow educators for refreshments and conversation.

Registration Required, On-Site registration Available.  
[www.iacad.org/ists](http://www.iacad.org/ists)

All Monday night events and dinner: \$16.00

Thank you to PAEMST for sponsoring tonight's programs.



## **ISTS Fall Conference**

**Tuesday October 16th, Activities at Scheman Center, Ames**

**Lunch Keynote speaker: Dr. William McComas Beaks  
The Beagle, and other Historical Misconceptions  
about Evolution and its Nature.**



Evolution is the most important concept in modern biology but is also one of the most misunderstood both from a scientific and historical perspective. This illustrated talk will focus on the key aspects of evolution by natural selection, widely held misconceptions regarding the nature of evolution itself, the role of the Galapagos Islands in the discovery of organic evolution, the impact of the finches on Darwin's thinking, and the fascinating parallel discovery of natural selection by Alfred Russel Wallace. The photographs illustrating this talk are the result of visits to the Galapagos Islands and Down House, Darwin's home outside of London. The article on which this talk is based, *The Discovery and Nature of Evolution by Natural Selection: Misconceptions and Lessons from the History of Science* (American Biology Teacher) won the Distinguished Achievement Award from the Association of Educational Publishers.

Conference activities include:

- Interest Area Breakfasts
- More than 70 Concurrent Sessions covering all subjects and grade levels
- Exhibit Hall
- Keynote and Award Luncheon
- Door prizes
- Network with colleagues from across the state.

**Advance Program available online with descriptions of all sessions!**

**Register today! [www.iacad.org/ists](http://www.iacad.org/ists)**



# SIMPSON COLLEGE

## Call for Papers

125th Annual Meeting

Iowa Academy of Science  
April 19 & 20, 2013  
Simpson College  
Indianola, Iowa

Iowa scientists, engineers, science educators and science students are cordially **invited to submit abstracts to be considered for poster or oral presentation** at the 125<sup>th</sup> Annual Meeting of the Iowa Academy of Science. Whether your work is in progress or complete, you are encouraged to submit an abstract. Presenting at the IAS Annual Meeting is an excellent opportunity for you and your colleagues to interact with other Iowa scientists.

Our meeting offers a friendly atmosphere for undergraduate and graduate students to gain experience in presenting their research to others. *You do not need to be a member of the Academy to present at the Iowa Academy of Science Annual Meeting.*

Abstract submission is open through February 8<sup>th</sup>, 2013.

### Abstract Submission

Includes publication of your abstract in the *Proceedings of the Iowa Academy of Science*, a complimentary conference registration for the primary presenter including access to more than 120 scientific presentations by Iowa scientists, keynote speakers, symposia presentations and more.

Submit an abstract today!



Visit [www.iacad.org](http://www.iacad.org).

Click on the Submit Abstract button.

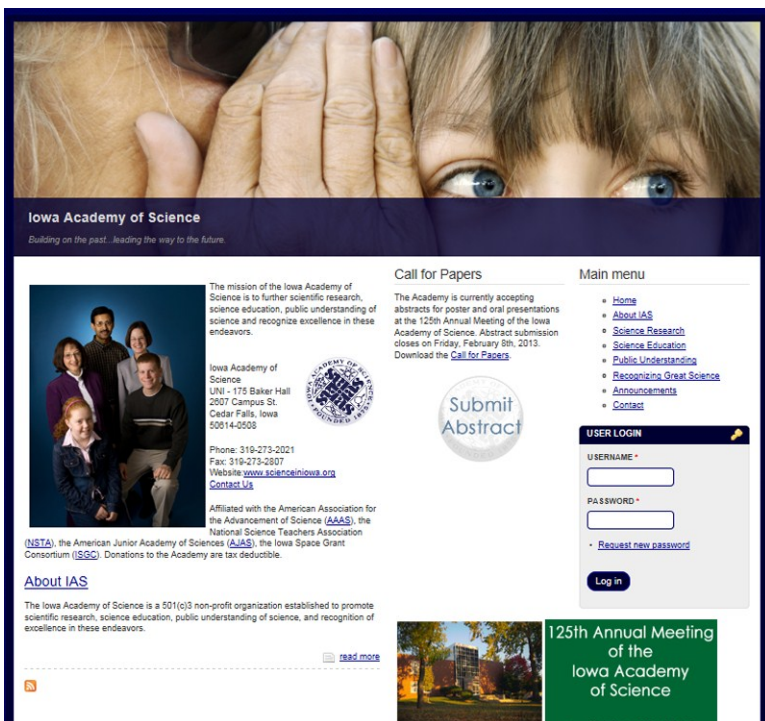


Abstract Submission Deadline is Friday, February 8<sup>th</sup>, 2013.



# Sneak Peek at Academy's new web design.

The Academy's website is about to undergo a transformation. For your enjoyment and comment—here are some of the first screenshots of the new design which features a rotating header image depicting various science images and the tag line—Building on the past... leading the way to the future.



Content will be organized much like the current site, with sections reserved for each of the Academy's 4 mission areas—Science Research, Science Education, Public Understanding of Science and Recognition of Excellence. Academy programs and activities that overlap in mission will be available under all relevant mission areas. Most areas also have new and updated content designed to highlight current Academy activities as well as honor our rich history.

The transition from traditional html to drupal (a content management system used for web development) will eventually result in the member and non-member Academy sites merging into one platform (no more Member-clicks), increased protection of IAS volunteer email addresses (contact page allows user to send emails without divulging the email address to web crawlers and non-member visitors), the abilities for members to subscribe to IAS and ISTS Announcements via RSS feed (you pick how and when you receive notifications), better forms and the ability to allow specific members to review specific form submissions and more.

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The New Bulletin is a publication of the Iowa Academy of Science and is distributed to current IAS members 3-4 times per year.

Volume 8 Number 3 Fall 2012 also available online at: <http://www.iacad.org>

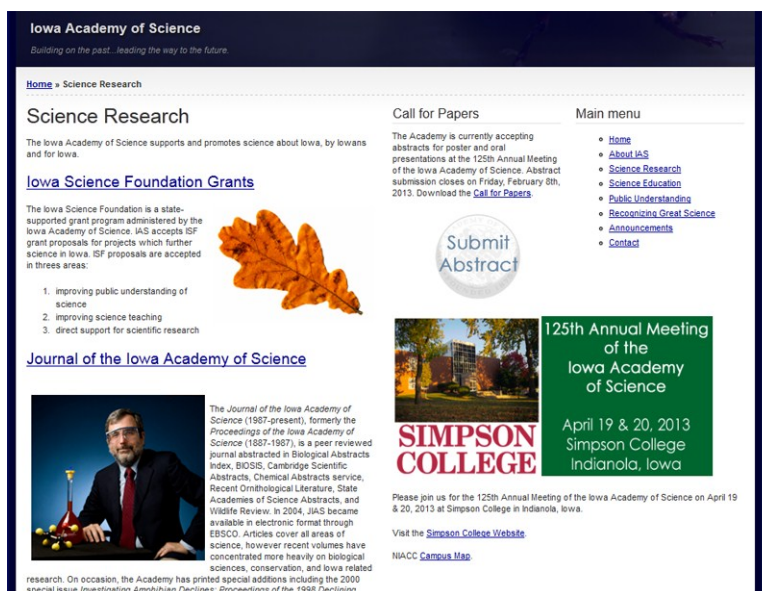
Managing Editor: Craig Johnson  
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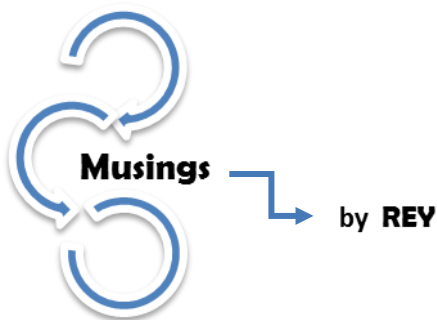
**Article Submission:** The deadline for submission of articles for Vol. 8 #4 is December 1, 2012. Articles must be pre-approved. For more information contact Craig Johnson, IAS Executive Director, at [craig.johnson@uni.edu](mailto:craig.johnson@uni.edu)

**Advertising Rates:** request advertising information from [iascience@uni.edu](mailto:iascience@uni.edu)

Watch for the official release late this fall! At the time of release, the Academy's website URL will change from: [www.iacad.org](http://www.iacad.org) to [scienceiniowa.org](http://scienceiniowa.org)



scienceiniowa.org



## Getting More Science Teachers to Model “Doing” Science

Why is there not more attention for getting all students (and teachers) actually “doing” science in every K-16 science classroom? The faulty assumption is that there is information thought to be accurate that all must “Know” before really “Doing” science. Most science teachers continue to use typical science textbooks and lab directions in excess of 90% of the time! Doing science means urging all to personally explore nature with attempts to explain the objects and events encountered. It also means exploring what others have done (and reported) as ways of evaluating their initial ideas as well. Science cannot be done in a vacuum! It takes “doing”, “trying”, “creative thinking”, and “evidence gathering”! Textbooks, lab manuals, and other quick fixes are all opposite examples of actually “doing science”.

Most Professional Development efforts invite persons with current understandings of science to tell, share, and encourage others to remember and repeat relevant research results. This view of doing science is what characterizes presentations for conferences and for most Professional Development efforts which are typically designed to influence the science that is taught. There should be major efforts to produce students who recognize and produce questions and then proceed to investigate them personally. It is then important to establish the validity of explanation with actual evidence collected. Such actions would illustrate “doing science”.

Could not Professional Development efforts (including reports at conferences) start with problems/questions by the attendees followed by varied attempts to answer them? This could lead to collection of multiple responses and encourage the sharing of such evidence in science classrooms? Could there be some focus on results from students as well as the changes in teaching noted. These could occur after actual Professional Development sessions or experiences with conference “presentations”?

We need more than happy attendees; we need reporting of new approaches to teaching which can be tried and evaluated after each Professional Development experience!

Science is typically taught by sharing explanations and interpretations of others. These are then used to determine what is put in textbooks. Merely repeating this information is used for evaluating student learning. Student ideas and involvement are not expected nor are they welcomed. Science is too often like art or drama where teachers admire and/or criticize the performances of their best students. Standardized tests too often require only students to repeat what has been presented or assigned by teachers. The information included in textbooks or directions for doing laboratories too often only focus on students remembering and/or duplicating performances with no use of questions, possible answers, real investigations, or interpretations.

Such typical teaching does not consider how science can be done better and made a part of efforts illustrating real learning as an experience itself! Treating Professional Development efforts as science (i.e., questions about the objects and events in nature) should not only be a goal for reform teaching but an outcome after real and personal experiences with science.



*By Robert E. Yager*

*Professor of Science education*

*University of Iowa*

Looking for a way to  
contribute to science?  
Join the Citizen Science  
Alliance:

[www.citizensciencealliance.org](http://www.citizensciencealliance.org)



## Iowa needs the Iowa Academy of Science.

I am often asked to describe the Iowa Academy of Science. People are surprised to hear the Academy was founded in 1875. They are also surprised to hear the Academy has over 700 members. When they hear what the Academy is doing they are impressed that Iowa has an organization where professionals work together to advance science research, science education, and the public understanding of science.

Times have changed since 1875 but the fundamental reason for the Academy has not. Science professionals have been very effective when it comes to making advances in our individual disciplines but we are not as effective when it comes to working on common interdisciplinary interests.

The current emphasis on STEM initiatives is forging new relationships. But not only is there a need for science professionals to cooperate on STEM issues there are many other reasons to collaborate. The routine and intentional exchange of ideas, research, and common interests across disciplines builds long-lasting relationships. Instead of reacting in crisis mode when challenges arise we should be intentional about building long term relationships across disciplines that anticipate and address problems before a crisis hits. It is better to be proactive than reactive.

The Iowa Academy of Science is perfect for this job. The Academy was patterned after the AAAS (American Association for the Advancement of Science) which was formed in 1848. The Iowa Academy of Science is to Iowa what AAAS is to the global community; a general science organization serving scientists, educators, students, and citizens. It is a professional organization with the expertise to provide reliable information for science related decisions. IAS is the essence of what a state-wide science organization dedicated to facilitating communication and collaboration looks like.

The Academy serves Iowa in many ways, we just need to grow. Members who have attended IAS conferences, and in particular the business meeting at the IAS Annual Meeting, understand where the Academy is headed unless we grow. To keep the organization viable we need the cooperation of every member and the participation of many more individuals, businesses, and institutions.

The Iowa Academy of Science is a professional organization serving science and all STEM disciplines. More importantly it serves Iowa. It reaches students from elemen-

tary through graduate school. It reaches science professionals. In ISTS it includes the equivalent of the state science teachers association in other states. It has the expertise to provide valuable science information to decision-makers. It reaches the public.

When you talk with your colleagues about the Academy be sure to mention how important it is for Iowa to have a general science organization dedicated to on-going communication and collaboration and how important it is for them to join. We are the equivalent of AAAS for Iowa. If we think of ourselves in that way we will have a much broader vision of what having the Iowa Academy of Science means for Iowans.



—Craig Johnson

*Executive Director*



## Announcements, Events & Deadlines

### ISTS Fall Conference

October 15 & 16, 2012  
Scheman Center on the ISU Campus, Ames

Abstract Submission Due, IAS Annual Meeting  
February 8th, 2013

Advance Registration Deadline,  
IAS Annual Meeting, April 5th, 2013

### 135th Annual Meeting of the Iowa Academy of Science

April 19 & 20, 2013  
Simpson College Campus, Indianola



Do you have know of an event that should be listed in here? Contact [iascience@uni.edu](mailto:iascience@uni.edu) and let us know!

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## **Iowa Academy of Science**

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