Register by May 26 for biotechnology summer workshops

The registration deadline is May 26 for one or more of the biotechnology education workshops offered by the Office of Biotechnology at Iowa State University.

Educators in public and private schools or those who work with youth in 4-H or other community programs can strengthen and update their STEM-based curriculums with modern content, techniques, and activities in biotechnology and bioethics, while earning professional development or Iowa State University graduate credits at the workshops.

The workshops, instructed by Iowa State's biotechnology outreach education coordinator Mike Zeller and bioethics program director Clark Wolf, will be held in the Biotechnology Outreach Education Center (BOEC) on the Iowa State campus in Ames.

Iowa teachers can receive stipends of $50 per day to help cover their costs of attending. ISU Extension and Outreach educators or personnel can receive travel reimbursements of up to $50 per day.

Materials and stipends for the workshops are funded by Iowa State University and the Iowa Biotechnology Association.

Upon completion of any of the workshops, Iowa teachers and ISU Extension and Outreach educators are eligible to receive free supplies and equipment for specific lab protocols from the Office of Biotechnology.

For more information
For more information about the biotechnology education workshops, see the descriptions on the next page, contact Mike Zeller or Lori Miller toll-free in Iowa at 800 643-9504, or e-mail mzeller@iastate.edu or lorimill@iastate.edu.

For more information about the bioethics workshop, please contact Clark Wolf at 515 294-3068 or e-mail jwcwolf@iastate.edu.

Workshop registration
To register for any workshop, please contact Lori or use the online registration form available at www.biotech.iastate.edu/summer-training-courses-for-educators. Please submit your registration to arrive by May 26, 2015.

Next fall, the printed version of this newsletter will not be mailed. Instead, the fall issue will be sent as a PDF file attached to an e-mail message. To be sure you receive the fall issue, please send your e-mail address to lorimill@iastate.edu by July 1.

Connect to Biotech
www.biotech.iastate.edu
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Iowa State University
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ph. 515 294-9818
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Mike Zeller – Biotechnology Outreach Education Coordinator
mzeller@iastate.edu

Lori Miller – Program Secretary
lorimill@iastate.edu
Iowa Biotech Opportunities

Biotechnology education workshops

Biotechnology Education Workshop I
Iowa State University, Ames
June 8-11, 2015

This workshop course is directed at science, agriculture, family and consumer sciences, and ISU Extension and Outreach educators who want to gain the basic knowledge and laboratory skills necessary to teach biotechnology in their classrooms.

Teachers will learn how to prepare and instruct the laboratories in DNA extraction and quantification from various sources, DNA transformation, DNA fingerprinting, antibiotic resistance, biofuels, and more. Educators will prepare and perform the lab protocols as the students would do in class.

Credits
• 2 professional development credits for $25
• 1-2 ISU graduate credits for $452 per credit

Stipend
• $200 stipend for Iowa teachers ($50 per day) funded by the Iowa Biotechnology Association

Travel
• Travel reimbursement available for ISU Extension and Outreach educators/personnel (up to $50 per day)

Registration deadline
May 26, 2015

Biotechnology Education Workshop II
Iowa State University, Ames
June 22-25, 2015

This advanced workshop is open to science, agriculture, family and consumer sciences, and ISU Extension and Outreach educators who have attended one of the previous biotechnology workshops.

Educators will learn how to prepare and instruct advanced biotechnology laboratories in their classrooms. Activities will include marker assisted selection, DNA isolation, recombinant DNA techniques, DNA amplification, restriction analysis of DNA, bioinformatics, sequencing, genomics, and more. Educators will prepare and perform the lab protocols as their students will do in class.

Credits
• 2 professional development credits for $25
• 1-2 ISU graduate credits for $452 per credit

Stipend
• $200 stipend for Iowa teachers ($50 per day) funded by the Iowa Biotechnology Association

Travel
• Travel reimbursement available for ISU Extension and Outreach educators/personnel (up to $50 per day)

Registration deadline
May 26, 2015

Bioethics workshop

Bioethics Workshop I
Iowa State University, Ames
June 15-18, 2015

This course is designed for educators who want to incorporate discussion of ethical issues into existing science courses. Participants will create case studies designed to integrate ethical content in the science curriculum, and which might also be used to address such issues for extension audiences. The focus will be on ethical issues in science education, including agricultural biotechnology. Other bioethics topics will also be covered.

Participants will work through activities and case studies that they can take home and use in their classes. During the workshop, participants will be divided into groups. Each group will develop a study on a topic relevant to students who take their classes.

The workshop will also address some pedagogical issues, including appropriate objectives for bioethics units; alternative approaches to bioethics pedagogy; how to relate bioethics issues to personal ethical issues familiar to students; how to help students identify ethical issues; how to address bioethics while respecting diversity of views in the classroom; and assessment for bioethics units. Participants will leave with classroom-ready case study exercises for use in their own classes.

Credits
• 2 professional development credits for $25
• 2 ISU graduate credits for $452 per credit

Stipend
• $200 stipend for Iowa teachers ($50) per day

Stipends for the two biotechnology education workshops generously were provided by the Iowa Biotechnology Association.

To register for any workshop, contact Lori Miller (800 643-9504, lorimill@iastate.edu) or register online at www.biotech.iastate.edu/summer-training-courses-for-educators.
Iowa Biotech Opportunities

Travel
• Travel reimbursement available for ISU Extension and Outreach educators/personnel (up to $50 per day)

Registration deadline
May 26, 2015

Everyone invited to attend Iowa Academy of Science annual meeting April 17-18

The 127th Iowa Academy of Science (IAS) Annual Meeting will be held April 17-18 at the University of Iowa in Iowa City. Iowa’s scientists, science educators, and students are invited to attend events and hear invited speakers address topics that include Antarctica, the Internet, wind energy, floods in Iowa, Iowa City archaeology, and modeling of human diseases.

General session topics and speakers
Ten Seasons in Antarctica
Paul Jones, retired Montezuma, Iowa, biology, chemistry, and physics teacher
Raytheon Polar Services

The Internet: Past, Present, and Future
Daniel Reed, Vice President for Research and Economic Development, University of Iowa

Wind Energy: Past, Present, and Future
P. Barry Butler, Executive Vice President and Provost, University of Iowa

Symposia
Meeting participants also can attend a symposium of their choice:

Floods in Iowa
Dr. Gabriele Villarini, Dr. Nathan Young, Dr. Ricardo Mantilla – University of Iowa

The Past in Our Backyards: An Introduction to Iowa City Archaeology
John F. Doershuk, William E. Whittaker, Angela R. Collins, Cynthia L. Peterson – The University of Iowa Office of the State Archaeologist

Modeling Human Disease in Research Friendly Organisms
Dr. Lori L. Wallrath, Dr. Bryan Phillips, Dr. Robert Cornell – University of Iowa

Highlights
Other highlights of the meeting are the poster and oral research presentations of the Iowa Junior Academy of Science, the President’s Banquet on Friday evening, and award presentation events.

More information
For more information on additional speakers, events, the conference hotel, maps, and how to register, visit the IAS website at www.iacad.org.

By Mike Zeller
Biotechnology Outreach Education Center Coordinator

Going electronic
You may have been surprised to find this edition of the Iowa Biotech Educator in your e-mail mailbox and not as a hard copy in your postal mailbox.

This edition starts the gradual conversion to all electronic delivery of the newsletter by spring 2016. The winter 2016 edition will be our last hard copy printing for postal delivery. I would encourage you to take advantage of this e-delivery method by placing your entire school’s or district’s life science staff on the list to receive the Educator. You can always find copies of the newsletter on our website at www.biotech.iastate.edu/iowa-biotech-educator-newsletter/.

Spring schedules
Even though it doesn’t seem like it, spring is here. I would like to remind you that it is time to make final decisions about outreach and summer professional development opportunities here at the Biotechnology Outreach Education Center (BOEC) at Iowa State University.

Beginning June 8, three biotechnology workshops will be held on campus in Ames (see p. 1). This year’s workshop schedule again will be completed by the end of June. These workshops will

Continued on page 4
help you and your science departments meet many of your school’s STEM life science Iowa Core and Next Generation Science Standards criteria.

Past attendees have found it useful to attend a workshop(s) as a refresher to learn new content and to update knowledge of materials and techniques.

Maybe it’s time to attend the advanced workshop with activities that can be used in AP/Advanced Biology and/or update your content and technique knowledge.

Even if you don’t intend to visit Iowa State to attend one of the workshops, please take a minute to pass this information along to colleagues. These workshops are designed to bring the newest life science principles and techniques into their classrooms.

You might even look into bringing a team of colleagues from your department to the workshops. All workshops offer professional development credits for licensure and/or Iowa State University graduate credits.

**BOEC has been busy**

Since the last newsletter, I have been busy presenting to schools and groups on and off campus. Even though the weather has been a challenge, I will host or visit more than 1,400 students and adults this spring.

If you are thinking of planning a visit to the BOEC, or because of limited budgets want the BOEC to come to your school before the end of the school year, there are still dates left in May.

For those of you who have attended workshops and plan to take advantage of the free supplies and equipment, it is time to plan your order.

To schedule a visit date or order supplies, e-mail Lori Miller (lorimill@iastate.edu) or call our Iowa toll-free number at 800 643-9504.

**Spring/summer 2015**

This summer, the BOEC will be full of workshops and course offerings. I hope to see some of you in the Biotech workshops or around campus at other Iowa State programs. I especially look forward to helping everyone bring biotechnology into your classrooms this spring and starting again next fall.

The next issue of the *Iowa Biotech Educator* will greet you electronically as you arrive back at school in August.

That issue will announce all curriculum materials, familiar and new, and our current state outreach opportunities that could be available for you during the 2015-16 school year.

Have a great summer!

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**Please recycle lab supplies**

This is the final issue of the *Iowa Biotech Educator* for the 2014-2015 school year.

Before you leave for the summer, please recycle any free biotechnology lab supplies that you ordered from Iowa State’s Office of Biotechnology during this school year. Thanks for your help and have a great summer!

**How to recycle Iowa State supplies**

The 10X TBE bottles and unused pipette tips and boxes are refilled or reused for other teachers. To help keep costs down, please return these items to Lori Miller, Office of Biotechnology, 1210 Molecular Biology Building, Iowa State University, Ames IA 50011-3260. Please empty and rinse the 10X TBE bottles before you return them.

Educators trained by Iowa State University’s Office of Biotechnology receive free equipment, supplies, and instructional materials for biotech lab activities.

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Editor

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Iowa Biotech Competitions

Winners announced – STEM Education Awards for Inspired Teaching

The Iowa Governor's STEM Advisory Council and Kemin Industries have announced the six regional winners of the STEM Education Award for Inspired Teaching.

The award recognizes one teacher from each of the six STEM regions for their dedication and contributions to science, technology, engineering, and math (STEM) education for Iowa's K-12 students. Each winner receives a $1,500 award and an additional $1,500 to be used in their classroom.

The STEM Education Award for Inspired Teaching winners in each region are:

**Northwest**
Mike Wedge, science teacher and STEM coordinator at Sibley-Ocheyedan High School, Sibley, IA

**North Central**
Shelly Vanyo, science teacher and department head at Boone High School, Boone, IA

**Northeast**
Lisa Chizek, fifth and sixth grade teacher and STEM coordinator at North Tama Elementary School, Traer, IA

**Southwest**
Allison Gregg, second grade teacher at Sidney Elementary School, Sidney, IA

**South Central**
Kacia Cain, anatomy and biotechnology teacher at Des Moines Central Campus, Des Moines, IA

**Southeast**
Jason Franzenburg, technology education teacher at Davenport West High School, Davenport, IA

To learn more about the award or to find out how to nominate teachers for the 2016 award, watch the website at www.stemaward.fluidreview.com.

Anyone can submit a nomination, and all certified K-12 teachers in the state of Iowa who teach a STEM subject are eligible to win.

The Iowa Governor's STEM Advisory Council, an initiative created by Governor Terry Branstad in 2011, is co-chaired by Lieutenant Governor Kim Reynolds and Vermeer Corporation President and CEO Mary Andringa.

With bipartisan support from the Iowa Legislature, the initiative ensures that Iowa youth will be offered STEM programs to increase interest and achievement in STEM fields and prepare Iowa's future workforce. For more information, please visit www.iowastem.gov.

The STEM Education Award for Inspired Teaching is sponsored by Kemin Industries, a global molecular science company that develops and manufactures more than 500 specialty food ingredients to improve animal and human nutrition and health. Founded in Des Moines in 1961, Kemin is a strong advocate for STEM education in Iowa. Learn more at www.kemin.com.

Congratulate to 2015 Science Bowl Winners

**Iowa Regional High School Science Bowl**
Congratulations to the West Des Moines Valley students who won the 2015 Iowa Regional High School Science Bowl hosted by the U.S. Department of Energy's Ames Laboratory and Iowa State University in January.

Students Sunita Kolareth, Gabriel Mintzer, Charles Napier, Ryan Thompson, and Arun Velamuri and their coach Nate Speichinger advanced to the U.S. Department of Energy's National Science Bowl® to be held April 30-May 4 in Washington, D.C.

Congratulations also to runner-up Bettendorf High School and third place winner Dubuque Hempstead High School. Forty teams competed in this year's event.

**Iowa Regional Middle School Science Bowl**
Congratulations to the Ames Middle School students who won the 2015 Iowa Regional Middle School Science Bowl hosted by the U.S. Department of Energy's Ames Laboratory and Iowa State University in February. Twenty-four teams competed in the event.

The winning team of Ames students Andres Cordoba, Fergal Hennessy, Hannah Huang, Kettty Nguyen, Brennan Seymour and their coach Collin Reichert advanced to the National Middle School Science Bowl® in Washington, D.C., to compete April 30-May 4.

Congratulations also to Central Academy (Des Moines) for a second-place finish and Spencer Middle School that finished third.
About Iowa State’s Public Education Program in Biotechnology. . .

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Sustaining donor: Iowa Biotechnology Association
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