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Iowa Academy of Science

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Iowa Science Teachers Section of the Iowa Academy of Science

November 15, 2006

Nadine Weirather, Editor

Contents of the ISTS E-Newsletter that Follows:

- **Notes from Your President, Gale Vermeulen**
- **A Message From Your Past President, Michael Clough**
- **A Message From Your President-Elect, Traci Maxted**
- **News**
- **Announcements**
- **Your ISTS Leadership Team**

Three Notes from your President:

1. Congratulations and Thank You

Congratulations and thank you to everyone who was involved in any way in planning, producing and/or attending the very successful **2006 ISTS Fall Conference** in Cedar Rapids. As I plan the 2007 conference, I very much appreciate everyone who took the time to record your thoughts on the survey. I will be contacting those of you who affirmed that you would like to

learn how to become more involved in the ISTS organization. We always need good people who are working to promote science education. We are in no way an elitist organization. We value everyone who is willing to serve. It takes so many people to put on a successful conference and so many of you are more expert than I in so many facets of the conference. I covet your suggestions and willingness to volunteer.

2. Spring 2007 ISTS elections

According to our by-laws, an ISTS election is held each spring, before the IAS Annual Spring Meeting. We are looking for volunteers willing to serve and as such we need names to put on the ballot for terms which are expiring in the spring of 2007. Our most urgent need is the office of President elect. Our presidency is divided into 3 years of service to give you an opportunity to learn the position: President Elect, President, and Past President. Each position has its own duties, as listed on the IAS (ISTS) web site under by-laws. <<http://ists.pls.uni.edu/>> I hope that you will be willing to serve your colleagues in this important role. Please contact me if you are interested, know someone who would be a good candidate, or if you have any questions.

3. Fall 2007 Conference

Plans are already underway and decisions are being made. Please plan now to attend the **2007 Fall ISTS Conference**. It is not too soon to start thinking about the 2007 Fall Conference. We would love to have you consider being a presenter in 2007! Our survey results indicated that attendees especially liked hands-on and demonstration type presentations given by regular classroom teachers, and they would like to see more elementary and middle school level presentations. Please think about what you have that you could share with others. Speaking from experience, it is very rewarding to be a presenter. Not only do you give ideas to others, but they give you ideas, too!

Gale Vermeulen
2006-2007 President
2007 Fall Conference Chair

[A Message from Your Past-President: Thanks!](#)

Over 400 teachers attended this fall's *Iowa Science Teachers Conference* where they eagerly chose from a variety of sessions directed at improving teaching and learning of science. Just as important, the conference also helps teachers maintain the high level of energy and passion for teaching that is crucial for effective teaching.

Many thanks go to the following individuals who worked tirelessly to ensure the conference was a success:

Danny Bergman (Program Chair)
Lynn Campbell (Elementary Section Breakfast Coordinator)
Sara Coleman (Chemistry Section Breakfast Coordinator)
Allison Donaldson (Facilities Coordinator)
Tom Ervin (Awards Coordinator and Conference Photographer)
Barb Jacobsen (Exhibit Hall Coordinator)
Kathy Lockard (ISTS Secretary)
Traci Maxted (ISTS President-Elect)
Jeanne Rogis (ISTS Treasurer)
Alicia Schiller (Life Science Section Breakfast Coordinator)
Ernie and Cheryl Schiller (Decorations)
Aaron Spurr (Registration Coordinator)
De Anna Tibben (Earth Science Section Breakfast Coordinator)
Gale Vermeulen (ISTS President)
Nadine Weirather (ISTS Newsletter Coordinator)
Jeff Weld (Conference Publicity)
Rick Wells (Corporate Sponsor Coordinator)

Thanks to Dr. Jim Colbert for his keynote address "Using Local Biodiversity and Service-Learning to Engage Students in Learning Biology". Many teachers commented how much they enjoyed and learned from his presentation.

The ISTS Conference Committee appreciates the significant financial support received by our corporate sponsors in support of ISTS and the fall conference. We are also grateful to the many exhibitors who were at this fall's conference.

Thanks also to the students who volunteered their time helping direct teachers to conference sessions and assisting in other tasks necessary to ensure the conference day was a success.

Finally, thanks to all who attended this fall's conference. You made worthwhile all the time and effort necessary to organize the fall ISTS conference.

Sincerely,
Michael Clough, ISTS Past-President and 2006 Fall Conference Chair

- *And now, from the President-Elect.....*

Thanks: I just want to thank everyone that participated in the 2006 ISTS fall conference. WOW! The conference was great and I had a good time. There were over 400 participants, presenters and exhibitors attending.

On the conference committee there are some great people. They are incredibly hard working and willing to help. It is an honor to be working with them. With everyone doing something, you do have the feeling of many hands making less work. Thanks for all the effort. -- Traci Maxted

Earning Participation Points: Did you vote in the election this November? Did you attend the ISTS fall conference? Did you give a presentation at the conference? Have you had a conversation recently with a colleague about NCLB or curriculum issues? Are you making plans for a class or other professional development? How would you grade yourself for your participation points this fall? What else is on the rubric? Reading the Iowa Science Teachers' Journal and reading this newsletter are possible activities. How about some extra credit? Write an article for the ISTJ. The editors will help you take an idea and turn it into an article. Already know how to write articles? Great! Make a submission to a publication. Each vote counts. It takes many votes to decide an election. Each one adds to the whole. Each member of ISTS contributes. Every member helps the mission of promoting professionalism in science education. Every member adds to the collective voice and helps make science noticed. Tell a colleague or friend why you joined ISTS. Help them see the benefits of being one of many voices that help promote science in Iowa and in our schools. Volunteer to be a part of that bigger reality. -- Traci Maxted

NEWS:

- **A NEW NAME?**

A Winning Section by Any Name: Science Teaching Section

The votes are in and the ballots are counted. The new official name of the Science Teaching Section is the "Iowa Science Teachers' Section," (ISTS). You may be saying to yourself... but weren't we the Iowa Science Teachers' Section all along? On paper the answer is no. In official records IAS had no

membership section named ISTS. Instead the 4 sections that included K-12 education topics were collectively referred to as ISTS. In the past this has caused confusion for new members who want to join ISTS and haven't been able to see ISTS on the IAS membership forms. Iowa Science Teachers' Section is the name that was selected by members in the fall online election. Other options were "Science Teaching Section" or "Iowa Science Educators' Section". Whether you see this as a new name for the section or the reinstatement of the name the section should have had all along, all can agree that ISTS is and has been an Iowa leader in science education.

• **Choose Your IAS Sections**

After the summer reorganizations of the Academy, IAS is now made up of 12 sections, including the Iowa Science Teachers' Section. As an Iowa Academy of Science member, you are entitled to join up to 4 IAS sections. As an educator or someone interested in science education in Iowa, you have naturally selected to be a member of ISTS. But what about your other three section selections? Before the section reorganization, ISTS was made up of 4 different Academy sections. Some ISTS members were members of one ISTS section and 3 different science 'content' sections (For example a High School Biology teacher may have chosen to be a member of the Science Teaching Section, Botany Section, Zoology Section and Conservation Section). But maybe you are an Academy member who selected all 4 of the K-12 teacher sections. Now you are a member of the ISTS section alone with 3 of your section selections left unused.

I'm writing this article to encourage you review the new IAS section list (available at: <http://www.iacad.org/sections.html>) and join three additional IAS sections. By becoming a member of additional sections you have more opportunities to network with the researchers who are working in Iowa on fields of science that interest you and your students. You will also get information about non-education opportunities related to these science fields which, while not specifically about how to teach the topic, may be about breakthrough research, Iowa connections to national issues, etc. Being a member of the other IAS sections that interest you also gives you a voice in the governing of those sections and another opportunity to express the direction, services and activities you want IAS to pursue. So when you get your membership renewal in the mail this fall, even if you've already paid your 2007 dues, please consider reviewing and renewing your section memberships by marking up to 4 section memberships on the card and returning it to the IAS Office.

- - Marcy Seavey, Program Director

- Fall Conference Summary

-- submitted by Tom Ervin

The ISTS 2006 Fall Conference at the Crowne Plaza Hotel in Cedar Rapids really showcased the talent that we have in Science Education here in Iowa.

At the noon Luncheon, several individuals were recognized for their contributions and achievements in Science Education in Iowa. Craig Leager of Des Moines, Christopher Parrish of Keota, Judy Stone of Cedar Falls, and Lesley Taylorson of Waterloo were all recognized for their receipt of the Iowa Academy of Science Excellence in Science Teaching Awards.



Jennifer Johnson, a 2nd Grade Math teacher from Des Moines and Mike Beranek a 3rd Grade Science teacher from West Des Moines were recognized for being Iowa's Finalists in the Presidential Award for Excellence in Mathematics and in Science Teaching.

With a plaque and Gavel, Traci Maxted of Cedar Rapids was recognized as the incoming President of the ISTS. She takes office in the Spring. Dr. Michael Clough of Iowa State University in Ames, was honored with a plaque signifying his outstanding efforts as the Chairman of the *2006 ISTS Fall Conference*.



Because of his long commitment to the environment including his development and direction of the Skunk River Navy, our Luncheon Speaker, Dr. Jim Colbert, was honored as the 2006 recipient of the individual ISTS Friend of Science Education Award.



Because of its continued investment and development of classroom and teacher enhancement activities, the Iowa Space Grant Consortium was honored as the 2006 recipient of the corporate ISTS Friend of Science Education Award. The award was accepted by long time ISTS colleague, Jay Staker.

ISTS Board Member, Aaron Spurr, in a special luncheon presentation, was the recipient of the NAGT Central Section Outstanding Earth Science Teacher Award. This award was presented by our friend and colleague, Sherman Lundy.

The final award recipient, was Dr. Tony Heiting. In his role, as the Iowa State Science Supervisor in the Department of Education, Tony has truly made an impact on science education as a result of his career long efforts on behalf of Science Education in Iowa. He is a worthy and logical selection as the recipient of the 2006 ISTS Distinguished Service Award.



- ***A Note About Our Sponsors....***

Our Corporate Friends of science education in Iowa did a grand job in support the ISTS 2006 Fall Conference. We saw support from the following corporate contributors:

Maytag of Newton, IA. and of Amana IA.

Rockwell Collins of Cedar Rapids, IA.

HACH of Ames, IA.

Iowa Space Grant Consortium of Ames, IA.

Integrated DNA Technologies of Coralville, IA.

Aegon Transamerican Foundation of Cedar Rapids, IA.

Cargill of Eddyville, IA.

Pioneer Hi-Bred International, Inc. of Johnson, IA.

The Scope Shoppe, Inc. of Elburn, IL.

Anderson & Erickson Dairy of Des Moines, IA.

We applaud and we thank these corporations for their support of science teachers and their students. **The Iowa Space Grant Consortium** was presented this year the "Corporate Friends of Science" award for their many years of support of science education in Iowa and for their support of ISTS. Jay Staker and Carmen Fuches received this award from our President at the conference luncheon.

In closing, thank you '**Iowa space Grant Consortium**' and thank you all corporate sponsors for your continued friendship to IOWA science teachers and to their students. The future is bright! -- Submitted by Rick Wells

Announcements:

- **CONGRATULATIONS!!!**

ISTS Member, Alicia Schiller, was named the National Outstanding New Biology Teacher for 2006

Alicia D. Schiller, Central Lee High School, Donnellson, IA, received the 2006 Outstanding New Biology Teacher Achievement Award. The National Association of Biology Teachers awards one award across the nation each year which recognizes outstanding teaching (grades 7-12) by a "new" biology/life science instructor (nominated within his/her first three years of teaching) who has developed an original and outstanding program or technique and made a contribution to the profession at the start of his/her career. This award is sponsored by the National Association of Biology Teachers (NABT).

Alicia was presented her award at the Honors Luncheon on Friday, October 13, 2006, during NABT's National Professional Development Conference in Albuquerque, New Mexico. NABT

was pleased to present Alicia with a plaque, \$500.00, a one-year complimentary membership in NABT and recognition in NABT publications. Several other vendors presented Ms. Schiller with awards designating her classroom teaching as a model for other new science teachers across America. Ken-A-Vision presented Ms. Schiller with a Video-Flex Camcorder Microscope for classroom use. Howard Hughes Medical Institute presented Ms. Schiller with a 5 Disk DVD Player and a Classroom Disk Set on Biological Science Topics.

Ms. Schiller is a General Biology Instructor and Advanced Biology Instructor at Central Lee High School in Donnellson, Iowa. She also sponsors the American Field Service Student Club assisting foreign exchange students attending Central Lee Schools. She also sponsors a very active science research club, called the Central Lee Science Club focusing on individual/group science research projects.



- **[Toyota International Teacher Program to Japan](#)**

Open to teachers of all disciplines in grades 9-12, nationwide, the Toyota International Teacher Program offers a fully-funded, 12-day professional development experience in Japan. Sponsored by Toyota Motor Sales, USA, the program will take place June 22 - July 7, 2007 and provide 40 educators with an opportunity to bring ancient and modern Japan back to their classrooms. Participants will travel through Tokyo, Nagoya, Kyoto and surrounding rural areas examining the history, education system, environment and industry of Japan.

Since 1999, groups of American educators have journeyed annually to Japan to explore the country's history, educational system, environment and technology. They have returned with renewed commitment as teachers and with fresh ideas for sharing first hand experiences and international perspectives with their students, colleagues and communities.

In sponsoring the program, Toyota Motor Sales, U.S.A., Inc. supports the involvement of today's educators in the critical arena of international study. We hope teachers from the Iowa Academy of Science will take advantage of the opportunity to apply to the program for travel to Japan in June 2007. To apply online, visit <www.iie.org/toyota>. The application deadline is January 08, 2007.

Joshua Beatty, toyotateach@iie.org
Assistant Director
Toyota International Teacher Program
Institute of International Education

• **Plotting Pluto's Comeback**

Although the International Astronomical Union is not scheduled to meet again until 2009, plans are being made for an ad hoc conference of astronomers next year to come up with another new definition of "planet," one that will almost certainly restore Pluto's status. To read the *Newsweek* article, visit <<http://www.msnbc.msn.com/id/15460884/site/newsweek>>.

• ***Everyday Science Explored***

A new series from National Public Radio (NPR), "Science Out of the Box," seeks to explain phenomena big and small in language we can all understand. Topic One: Why is it that shower curtains tend to bow in towards the shower when the water is running? To read the article and to listen to an explanation, visit <<http://www.npr.org/templates/story/story.php?storyId=6430581>>.

• **MidAmerican Energy Company Offers FREE Educational Materials**

As part of MidAmerican Energy Company's Energy for Education program, we are pleased to offer free educational materials to your school. With our Energy Efficiency World activity book, you can work with your students to perform engaging activities and experiments related to everyday energy-efficiency practices. This booklet is designed for students between third and sixth grade and can be used in a classroom setting or for students to use at home. An online teacher's guide is available to provide helpful background information, puzzle answers and direction on the included experiments. By relating energy efficiency to everyday life in a memorable way, students are able to better understand how they can make a difference in energy conservation.

To request your free MidAmerican materials go to www.midamericanenergy.com; select Safety; select Education Programs; and select Classroom Materials. Our booklets also are available in Spanish at no charge. For assistance, contact Donna Backstrom at 563-333-8617 or djbackstrom@midamerican.com.

- **ExxonMobil Expands Programs for Math and Science Education**

In a press conference that included PGA Golfer Phil Mickelson, the president and former president of the University of Texas, and the first African-American astronaut to walk in space, ExxonMobil announced it is expanding its programs for math and science educators and teachers by increasing the number of summer science camps for middle school students and tripling the number of the Mickelson ExxonMobil Teachers Academy with new academies in Texas and Louisiana. ExxonMobil has a long history of supporting programs that focus on the improvement of teaching and learning of science and math from pre-school through higher education, with programs that range from student initiatives and teacher support to the encouragement of women and minorities. To read more, visit http://www.exxonmobil.com/Corporate/Citizenship/gcr_education_100606.asp.

- **No Test Tubes? Questions Arise On Virtual High School Science**

An October 20 *New York Times* article explores online laboratory experiences and “a dispute with potentially far-reaching consequences.” As the College Board works to audit Advanced Placement (AP) science courses, college professors and online educators are discussing whether internet-based laboratories are an acceptable substitute “for the hands-on culturing of gels and peering through microscopes that have long been essential ingredients of American laboratory science.” The College Board has appointed three special panels that will determine whether high schools can apply the A.P. designation to online science courses starting next fall on the transcripts of students applying to colleges. Read the *New York Times* article (http://www.nytimes.com/2006/10/20/education/20online.html?_r=1&oref=slogin) and the NSTA position statement on Laboratory Science (<http://www.nsta.org/positionstatement&psid=16>).

- **ARMADA Project- Research and Mentoring Experiences for Teachers**

The University of Rhode Island's Office of Marine Programs is now accepting applications for the ARMADA Project- Research and Mentoring Experiences for Teachers. The ARMADA Project provides K-12 teachers an opportunity to actively participate in ocean, polar, and environmental science research and peer mentoring.

Selected Master Teachers (with five or more years teaching experience) are paired with leading scientists and participate in shipboard, field, or laboratory research with all expenses paid. Research experiences will take place during the summer, although there may be opportunities during the school year. Upon completion of their research

experience, Master Teachers develop ways to bring the fruits of their research experiences, including scientific data, methodologies, and technology into their classrooms. They share their experiences by mentoring new teachers in their school district and by presenting their results at the National Science Teachers Association National Conventions.

The ARMADA Project has involved teachers in research experiences all over the world. Past experiences include taking part in the largest North Pacific humpback whale study in the waters off the coast of Alaska, investigating the impacts of global change in the Arctic Ocean, monitoring and assessing tidal creeks in South Carolina, studying the impact of human activity on dusky dolphins in New Zealand, exploring the seafloor off the coast of Sumatra to better understand the forces that led to the 2004 Asian tsunami, water circulation studies in the Norwegian Sea, and a variety of ecosystem monitoring projects in the Bay of Fundy, Narragansett Bay, Gulf of Maine, Stellwagen Bank, Western Shelf of Florida, Sargasso Sea, Bahamas, Alaska, and Block Island Sound.

Application deadline is February 5, 2007

For more information about teacher qualifications, responsibilities, and to download an application see the ARMADA Project website www.armadaproject.org or contact Andrea Kecskes at 401-874-6211 or armada@gso.uri.edu.

- **"I See Ice" Viewer from the *Space Place***

Water is very abundant in the solar system. However, it is usually in a frozen state. From Mercury, the planet closest to the Sun, out to the Kuiper Belt, source of many comets, and beyond, scientists see evidence for ice, and maybe even liquid water. A new "I See Ice" activity on NASA's Space Place Web site explains why we are interested in all this ice and shows detailed and interactive images of all the places ice has been found so far. Go to <http://spaceplace.nasa.gov/en/kids/ice/>, or for the Spanish language version, go to <http://spaceplace.nasa.gov/sp/kids/ice/>

- **Frontiers in Physiology Fellowship: \$8500 Summer Research Opportunity**

Science teachers of grades 6-12 are invited to apply for this year-long immersion in the world of cutting-edge physiology research. Teamed with a local scientist,

Fellows do hands-on research for seven-eight weeks during the summer as well as explore and practice teaching methods that integrate inquiry, equity and the Internet into their classrooms. The Fellowship concludes with a trip to a scientific conference in 2008 in San Diego, CA. Awardees receive a stipend of up to \$8500 over the year that includes travel and a materials mini-grant. Applications are due January 11, 2007.

For more information, see the American Physiological Society's website:
<http://www.the-aps.org/education/frontiers/app.html>
or contact Mel Limson (mlimson@the-aps.org) in the APS Education Office.

● Einstein Fellowship seeks candidates for 2007-2008 school year - Application period Now Open!

The Albert Einstein Distinguished Educator Fellowship is a paid fellowship for K-12 math, science, and technology teachers. Einstein Fellows spend a school year in Washington, DC serving in a federal agency or on Capitol Hill. To be considered for an Einstein Fellowship, apply and submit three letters of recommendation online by January 8, 2007.

Apply online at
<https://applicationlink.labworks.org/applicationlink/default.htm>

For more information about the Einstein Fellows program visit
www.trianglecoalition.org/ein.htm or contact Andrea Bodmann at
bodmanna@triangle-coalition.org.

● E-SET and Iowa Space Grant Consortium

Greetings from E-SET and Iowa Space Grant Consortium,
We are very pleased to be able to announce another round of Iowa Space Grant Consortium Partner Schools teacher workshops to be held at NASA Centers. The announcement was released at the Iowa Science Teacher's Section Fall Conference and all the information is available on the Space Grant website at www.ia.spacegrant.org Click on the Precollege link and then click on the 2007 Partner Schools Application.

We have a very exciting opportunity with the program this year. The NASA Centers that are scheduled include Marshall Space Flight Center, Jet Propulsion Laboratory, and Kennedy Space Flight Center. The Kennedy trip is scheduled in June to try to coincide with the launch of the Shuttle. Barbara Morgan, educator astronaut, is scheduled for that flight. If you want to be a part of this exciting program and travel to a NASA Center to connect with NASA to learn how to enrich your science, math, and technology classrooms apply now. Travel and workshop expenses are covered by Iowa Space Grant Consortium! Details are in the Applications. Don't delay. Applications are due on December 22nd.

Contact me if you have any questions and don't miss out on this great opportunity. And remember, NASA is involved in all areas of science and engineering.

Jay Staker, Program Director
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<http://www.ia.spacegrant.org>

● *The NASA Space Place*

Deadly Planets

By Patrick L. Barry and Dr. Tony Phillips

About 900 light years from here, there's a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system.

Interested? Don't be. Going there would be the last thing you ever do.

The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles.

"It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.

Our own sun emits small amounts of pulsar-like X-rays and high energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from?

NASA's Spitzer Space Telescope may have found the solution. Last year, a group of astronomers led by Deepto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets!

As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field.

Wasted beauty? Maybe. Beichman points out the positive: "It's an awful place to try and form planets, but if you can do it there, you can do it anywhere."

More news and images from Spitzer can be found at <http://www.spitzer.caltech.edu/>. In addition, The Space Place Web site features a cartoon talk show episode starring Michelle Thaller, a scientist on Spitzer. Go to <http://spaceplace.nasa.gov/en/kids/live/> for a great place to introduce kids to infrared and the joys of astronomy.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

- Fall Conference Memories

photos by Tom Ervin





Your ISTS Leadership:

Iowa Academy of Science Mission:

- Promote scientific research and its dissemination
- Improve instruction in the sciences
- Promote public understanding of science
- Recognize excellence in science and science teaching.

Check out past issues of the ISTS newsletter at
<<http://ists.pls.uni.edu/newsletters/index.html>>.

Your ISTS Leadership Team can be found at:
<<http://ists.pls.uni.edu/officers.html>>.

******* We are always looking for good people. Send an email to Gale Vermeulen at vermeuleng@oskaloosa.k12.ia.us if you wish to be more involved.

Improve or contribute to this newsletter by sending a message to vermeuleng@oskaloosa.k12.ia.us or nweirather@central-lee.k12.ia.us.