



Iowa Science Teachers Section Iowa Academy of Science

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Nadine Weirather, Editor

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The gavel has been passed and we welcome Traci (left) as our new president. Gale will be 2007 Conference Chair as our past president.

Thanks for your service!



Messages From Your President:

1. A SPECIAL WELCOME:

Please join me in welcoming our new president-elect Morgan Masters. Morgan teaches at S.E. Polk Jr. High School near Des Moines and comes to us with experience and enthusiasm.

Also, we congratulate Jeanne Rogis, who was re-elected as our treasurer. Jeanne has done a great job and we look forward to her next term of service.

Would you like to be part of the leadership team? We always have job opportunities. Be a regional director, run for an office or serve as part of the conference committee. There is a niche for your expertise. Join us!

(Hope the biology teachers appreciate that reference – I teach physics!)

2. Opportunities

Opportunities for Learning is the theme for the upcoming ISTS fall conference. What is an opportunity? According to The American Heritage Dictionary it is a noun from the Latin *opportune* meaning “a favorable or advantageous combination of circumstances; suitable occasion or time.” We want to see you enjoy this favorable circumstance by joining us at this year’s conference.

Some more opportunity quotes include one by Seneca: “Luck is what happens when preparation meets opportunity.” Here’s one from Edison: “Opportunity is missed by most people because it is dressed in overalls and looks like work.”

We hope you make this an occasion to celebrate science teaching with us. Take the opportunity to be there Thursday, October 18, 2007 at the Five Seasons Crowne Plaza Hotel in Cedar Rapids.

Traci Maxted, ISTS President

A Memo From Your Past President:

“Opportunities for Learning”

The theme I have selected for the October 18, 2007 ISTS Fall Conference is “Opportunities for Learning”, and that’s exactly what we have in store for you. As life-long-learners, I’m sure all of you will want to

take advantage of the many learning opportunities the 2007 Fall ISTS Conference will provide.

Your first learning opportunity will be pre-conference workshops which will be held the evening before the conference begins. We are working on arranging a variety of great workshops from which you can choose. Be sure to consider them when you fill out your registration, which will be available at a later date, on the web site. Following the workshops, you're invited to attend the popular President's reception, hosted by our 2007-2008 President, Traci Maxted.

Of course beginning the next morning, Oct. 18, learning opportunities will abound all day long for you as you participate in the varied presentations that are always a part of our Fall Conference. Not only do you learn by being in the audience, but making a presentation yourself is a wonderful experience. Please visit the ISTS web site and fill out a presentation proposal form so that we may learn from you.

In addition to our featured luncheon speaker, Andrew Chaikin, who is a noted science journalist, author, speaker, an internationally renowned authority on space exploration, and who will also have a book signing at our conference, we will have other featured speakers throughout the day.

Of course we'll also have the ever popular commercial exhibitors, located in a larger area than last year. It's always great to learn what new wares they have to share with us.

Wow, how could we possibly pack any more learning opportunities into a one-day conference? I'm sure you won't want to miss this great learning opportunity, the 2007 ISTS Fall Conference. I hope to see you there.

Gale Vermeulen
Past President
2007 Fall Conference Chair

Meet Our President-Elect: Mr. Morgan Masters

This bio is taken from the SE Polk Website where Mr. Masters currently teaches. -ed.

Mr. Morgan Masters received his B.S. in Education degree majoring in General Science from Northeast Missouri State University and his M.S. in Science Education from the University of Iowa. He began

teaching junior high science in Chariton in 1969. After teaching junior and senior high science in the Chariton district for 26 years Mr. Masters taught 8th and 9th grade Earth and Physical science at Northview Middle School in the Ankeny Community School District for 8 years.

During this time Mr. Masters coached high school girls basketball, high school boys and girls cross country, junior high girls track and basketball and junior high football.

For the past three years Mr. Masters worked in Minnesota as a science test development specialist developing and editing science items in grades 4–12 for several different state departments across the U.S.

Mr. Masters and his wife have a son who is a chief petty officer in the U.S. Navy currently serving in San Diego, California and a daughter who lives in Cedar Rapids, Iowa.

He enjoys time with his family, backpacking, cross country skiing, biking, fishing, geocaching and playing the guitar. But one of his most favorite activities is helping young people learn and enjoy all of the outdoors and science around them.

Announcements

- ATTEND THE ISTS FALL CONFERENCE!!!

Make plans now to attend the ISTS Fall Conference on October 18, 2007. In the words of NSTA, you will:

- be among the first to learn about, and use, upcoming classroom tools directly from the companies themselves
- learn the latest science teaching trends
- fulfill professional development requirements
- share ideas with other science teaching professionals
- meet experts in the various science fields

- [Let Your Students' Imaginations Soar With *DISCOVER* Magazine](#)

DISCOVER magazine is holding a nationwide contest among third through eighth graders to design an image for the cover of its October issue, "The State of Science in America." The winning entry, to be selected by *DISCOVER*'s editorial team, will be the design that best captures the wonderment and possibilities of science. In addition to the winning entry, six finalists will be profiled in that issue and on the magazine's home page. The deadline for submission is Wednesday, **June 20, 2007**. Additional details on the competition, including the contest rules, are available at <http://www.discovermagazine.com>.



- HAMLINE UNIVERSITY HOSTS NATIONAL FORENSIC SCIENCE CONFERENCE

ST. PAUL, Minn. – Hamline University, the American Academy of Forensic Sciences and Court TV® are pleased to announce plans for the 12th Annual Forensic Science Educational Conference which will be held June 21-23, 2007, on the Saint Paul campus of Hamline University.

The goal of the three-day conference is to provide to middle- and high school science teachers instruction on the use of the scientific method in the investigation of crime. The following forensic disciplines will be included in both lectures and hands-on workshops: fingerprints, anthropology, firearms and tool marks, questioned documents, DNA analysis, trace evidence, blood stain pattern interpretation, pathology, entomology, and chemistry.

"The goal of the Forensic Science Educational Conference," notes Jim Hurley, Director of Development and Accreditation of the America Academy of Forensic Sciences, "is to increase science teachers' knowledge of the forensic sciences by providing them the background to enrich and develop challenging, innovative curricula."

Each day of the conference will include lectures and hands-on workshops conducted by Minnesota forensics specialists who are also members of the American Academy of Forensic Sciences. The teachers attending the conference will learn about experiments and exercises that are both age and grade appropriate to Minnesota's secondary science requirements. Moreover, they will

have opportunities to network with one another and to share teaching modules for activities, equipment lists, and reference materials.

"We are fortunate to have so many reputable and engaged forensic experts in the Minneapolis-Saint Paul area. They have consistently supported and been involved in all our forensic sciences education initiatives and we are excited that they will be participating, both as instructors and activity group leaders, in our conference," said Susan Myster, Director of the Forensic Sciences Certificate program at Hamline University.

There will also be sessions devoted to curriculum development and a luncheon presented by Court TV® featuring its education series *Forensics in the Classroom*.

Both continuing education and graduate credits are available to teachers who attend. For information about the event and/or an application, visit: www.aafs.org. The conference is limited to the first 100 teachers to register. Cost is \$250 per conference attendee. Limited scholarships are available.

Submitted by:

Katie Baustian

Administrative Assistant

Forensic Sciences Certificate Program

Office: 651-523-2579

Fax: 651-523-3170

- **Earth Science by Design Leadership Workshop**
For school leaders, college faculty, and staff developers

June 25-27, Cambridge, Massachusetts

- ◆ Learn how the *Earth Science by Design* professional development program brings "Understanding by Design" to Earth Science.
- ◆ See how *ESBD* helps teachers enhance their content and pedagogical knowledge and how to facilitate this experience with teachers.
- ◆ Analyze examples of *ESBD* science units which teachers have created and hear how the *ESBD* approach has affected teachers.
- ◆ Work with staff developers who have conducted the *ESBD* program with teachers.
- ◆ Receive all materials needed to offer the program, including a copy of the *ESBD Handbook for Professional Developers* and access to the *ESBD* Web Site.

For more information and to register, visit <http://www.esbd.org/>

Earth Science by Design (ESBD) is a year-long program of professional development which may be offered by a school, district, or other organization to middle and high school Earth science teachers. Funded by the National Science Foundation, ESBD is a field-tested, effective way to develop the pedagogical and content abilities of teachers.

- **News from the Space Place**

Even Solar Sails Need a Mast

by Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions-it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space Systems in Goleta, California.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used reliably for future space exploration. While actually flying

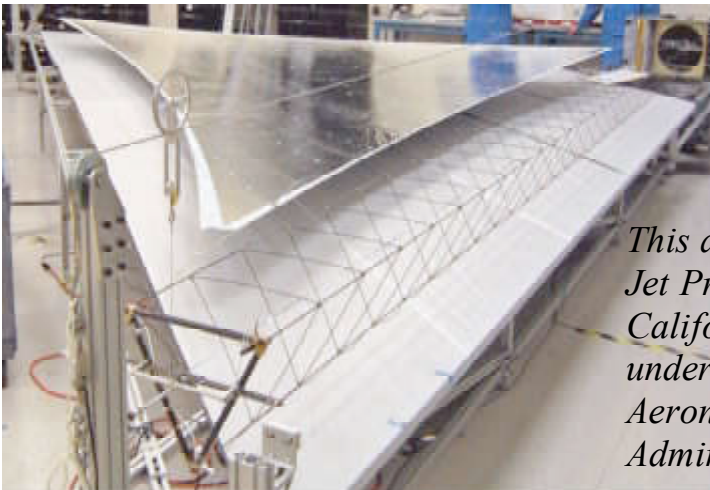
to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at nmp.nasa.gov/st8 Kids can visit spaceplace.nasa.gov/en/kids/st8/sailmast to see how SAILMAST is like a Slinky® toy in space.



*This article was provided by the
Jet Propulsion Laboratory,
California Institute of Technology,
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Aeronautics and Space
Administration*

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- **"Professor Starr's Dream Trip:
Or, how a little technology goes a long way."**

Another fun addition to the Space Place web site:

Professor Starr is an astronomer who has always been most curious about the asteroids. But he has no idea how to design a spacecraft and a mission that would let him explore them. Find out how the good professor finally gets his dream mission. Go to The Space Place web site at <http://spaceplace.nasa.gov/en/kids/nmp/starr>, and read the whimsical, rhyming story of "Professor Starr's Dream Trip: Or, how a little technology goes a long way." You'll be able to page through the storybook just as if it were made of real paper! (Or you can use the standard pdf version to print it out.)

Nancy Leon
Education and Public Outreach Lead
NASA New Millennium Program/Space Place
NASA/JPL 4800 Oak Grove Drive
Mailstop 301-235
Pasadena, CA 91109

(818) 354-1067
nancy.j.leon@jpl.nasa.gov

- **NASA +Express Mailing**

Learn about NASA Education and keep up with the new programs, materials and opportunities. Go to www.nasa.gov and click on **for Educators** at the top left of the page, then choose your level and click on that. You will see **+Express Mailing List** at the top right. Click on that tab and register. By registering you will get the information about Barbara Morgan and her work on STS 118, scheduled to launch in June. Morgan was selected as the backup candidate for the NASA Teacher in Space Program on July 19, 1985. From September 1985 to January 1986, Morgan trained with Christa McAuliffe. She was then the first educator astronaut. This is a wonderful opportunity to keep up with what is available.

Join the Express mailing list for educators to receive announcements of new NASA educational publications, Central Operations of Resources for Educators (CORE) multimedia materials, and other opportunities for educators.

You can read about Barbara and the rest of STS 118 at the educators' site http://www.nasa.gov/audience/foreducators/STS-118_index.html

Jay Staker, Program Director Extension - Science, Engineering & Technology (E-SET). Associate Director of Education, Iowa Space Grant Consortium Extension 4-H Youth Building, ISU Ames, IA 50011-3630

515-294-8417

FAX: 515-294-4443

Email jstaker@iastate.edu

<http://www.extension.iastate.edu/e-set> <http://www.ia.spacegrant.org>

- ***Facing the Future: People and the Planet***

Looking for an inspiring lesson to engage your middle and high school students? Or the perfect faculty workshop? *Facing the Future's* interdisciplinary activities are a starting place for young people to think critically about issues facing the planet and to find entry points for making a difference in their local and global communities.

- ◆ Download **FREE LESSONS**:

<http://www.facingthefuturedata.org/download.htm>

- ◆ Schedule a **WORKSHOP** at your school or district:

<http://www.teacherscorner.org/Workshops/workshops.html>

- ◆ **STUDENT TEXTBOOKS** provide in-depth coverage of global issues and sustainable solutions:

<http://www.facingthefuturedata.org/purchase.htm>

NEW *Facing the Future* products to look for in 2007 include:

- ◆ Two-week thematic unit on sustainability for middle school science and high school social studies classes,
- ◆ Two-week thematic unit on climate change, and
- ◆ Lessons for K-4 using sustainability as the context for learning.

Here's what teachers around the country are saying about the curriculum....

"I think these activities and materials are wonderful! I will be able to use a

number of them in my math classes. As a math teacher, it is great to have math lessons that are real life based and impact the students!" ~Middle School Math Teacher, Everett, WA

"I teach physical science at a Title 1 school in south Louisiana and I am grateful for your thoughtful curriculum. I am constantly trying to bring the outside world and struggles for justice into my classroom and your materials make that simpler. You do excellent, important work, thanks for making my life easier and my kids' lives more informed." ~ High School Physical Science Teacher, Baton Rouge, LA

"Facing the Future is an incredible resource. The activities are engaging and teach REAL issues." ~High School Social Studies Teacher, Community High School, Downers Grove, IL

Kim Rakow Bernier
Outreach Director

418 S. Arroyo Blvd. Pasadena CA 91105

Phone 626.698.0741 Email kim@facingthefuture.org Website www.facingthefuture.org

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 e-mail to tmaxed@cr.k12.ia.us if you wish to be more involved.)

Invitation to improve/contribute to this newsletter

How best can this newsletter serve you? Do you have something to contribute for the good of the ISTS membership? Zing a line at nweirather@central-lee.k12.ia.us or tmaxted@crk12.ia.us.