



TIDE *Inside* E

Technology, Innovation, Design, and Engineering

Wednesday, August 8, 2007

ITEA Member Barbara Morgan to Deliver Lessons in Space

Text excerpted from Delaware AeroSpace Education Foundation press release dated July 15, 2007 and from an article by Andrew Trotter that was originally published in Education Week.

For 21 years, 112 teachers from around the country have been waiting for one special space shuttle flight. Today their wait will be over as many of them gather at Cocoa Beach, FL to watch Barbara Morgan lift off as a crew member of mission STS-118 on the space shuttle *Endeavour*.

In 1985 Christa McAuliffe was selected as the first "Teacher in Space," with Morgan as her backup, from the 114 state finalists in the Teacher in Space Project. McAuliffe, along with the rest of the *Challenger* crew, perished seconds after liftoff while a stunned nation, including her Teacher in Space colleagues, watched.

In the ensuing years, Morgan continued working with NASA's education program, even while in her classroom. Eventually, in 1998, being selected as an Educator Astronaut Candidate, she successfully completed her two years of training to become an official member of the Astronaut Corps. She was assigned a flight and named Mission Specialist in 2002.

The Teacher in Space Project evolved into the Teaching from Space Program, and now the Educator Astronaut Program. Barbara Morgan is the first NASA Educator Astronaut selected for that newest program and is the first to fly with that designation. Including teachers on flights was a goal and dream of the Teachers in Space/Space Ambassadors that has

finally been realized with Morgan as a crew member of STS-118.

The Teachers in Space (TIS) who were involved in the inaugural program have continued to make a broad impact in their communities, states, and nationally. Designated by the NASA Administrator in June 1985 as Space Ambassadors (SAs), members of this group have been passing on their space education expertise, knowledge, resources, and experiences since their first gathering in Washington, DC in 1985. Many have continued as exemplary classroom teachers, leaders in curriculum, school administrators, museum and planetarium directors, aerospace industry employees, and creators of new statewide innovative programs. Some have continued in these roles, and others are now exploring new and exciting initiatives and interests.

On the STS-118 mission, the crew of the space shuttle *Endeavour* will conduct a variety of educational activities. The activities, targeted to K-12 students, are add-ons to the shuttle crew's primary missions, which include attaching a huge truss segment to the orbiting International Space Station. Ms. Morgan, a former elementary school science teacher, will operate the shuttle's mechanical arm to transfer equipment from the shuttle to the space station.



Official patch of NASA's STS-118 mission.

You can follow the launch countdown at www.nasa.gov/mission_pages/shuttle/main/index.html.

Ms. Morgan will also help conduct three planned live "downlink" sessions, in which students will ask questions that they have prepared in advance. Students will take part in the 20-minute downlink sessions, which will be broadcast live on NASA Television, from one of three sites.

The educational activities for the mission will be framed within three "big questions": How will people live and work in space? How will they stay healthy and physically fit in space? How will they grow food in space?

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Barbara Morgan speaks to an audience of students and media during a demonstration at Space Center Houston.

Seeding Interest in Space

To address the third question, on the challenge of growing food in space, the shuttle crew members will transfer to the space station two small, collapsible growth chambers for plants, one containing basil seeds, the other containing lettuce seeds. The transparent tops of the chambers are accordion-shaped and will expand as the plants grow. A space-station crew member will tend the plant experiment and take video and still images of the progress of growth.

That activity is also connected to a school-based "engineering design challenge" that will be open to any teachers and students beginning this fall. It consists of having students design and build plant growth chambers that could withstand conditions on the surface of the moon. Teachers will be able to download free instructions for the activity and will also be able to request packets of basil seeds that were flown on STS-118, which NASA will distribute this fall (along with basil seeds that were not flown, for comparison). Students will grow

the seeds in their growth chambers.

The engineering design challenge was created with the help of the International Technology Education Association, and the project is based on ITEA's content standards for technological literacy. The association has helped organize several professional development sessions for teachers about the challenge prior to the mission.

Setting an Example

Another post-mission unit that NASA is offering schools involves health and fitness lessons in which students can do exercises modeled after the real-life physical training of humans traveling in space. The NASA Fit Explorer project calls for students to

track their progress, learn the science behind nutritional and physical fitness, and relate physical Earth-based needs to the requirements of exploring in space.

Additional educational aspects during the mission include the use of the space station's EarthKAM, which is accessible via the World Wide Web, and communications between mission participants and amateur radio users on Earth.

Some education-related activities have taken place in advance of the mission, such as a pennant-design challenge for students. The winning pennant, by a student from Mount Laurel, N.J, is to be unfurled in space. Similar activities have been conducted during previous shuttle missions. But NASA officials said Ms. Morgan, in her role as a crew member, will be perhaps the most powerful lesson on the flight for students.



Crew: Pictured from left are astronauts Rick Mastracchio, mission specialist; Barbara R. Morgan, mission specialist; Charlie Hobaugh, pilot; Scott Kelly, commander; and Tracy Caldwell, Canadian Space Agency's Dave Williams, and Alvin Drew, all mission specialists.

ITEA Conference Planning is Under Way

Mark your calendar now to attend ITEA's 70th Annual Conference, **Teaching TIDE with Pride**, in Salt Lake City **February 21-23, 2008**. For three days, you'll attend information-packed sessions to learn key strategies to help you to remain at the top of your teaching profession.

Leading-edge keynote presentations are planned, with invited speakers Barbara Morgan and Dr. Raymond Ballard. ITEA member Barbara Morgan is the first NASA educator mission specialist, flying on STS-118 this month. Dr. Ballard is founder of The JASON Project, a nonprofit subsidiary of the National Geographic Society that delivers middle-grade curricula developed in conjunction with research explorations currently underway at NOAA, NASA, and National

Geographic. Through the standards-based curricula and advanced technology, students learn by "joining" scientists on their missions.

In addition to these high-caliber keynote presentations, we've carved out plenty of time to give you the opportunity to network with your colleagues and share ideas in over 100 professional development learning sessions. There are also seven additional specialized workshops scheduled as well as the traditional meal events like Yearbook Dinner and ITEA Awards Luncheon.

On Thursday and Friday, you will meet top corporate leaders at the ITEA trade show and also hear about



the latest offerings during the special Action Labs presented by cutting-edge companies.

The ITEA Conference provides the perfect combination of top-notch educational sessions, networking activities, and plenty of opportunities to relax and enjoy all that Salt Lake City has to offer. It is truly a walking city, with many activities available for you to enjoy at no charge.

FINDING FINANCIAL ASSISTANCE

"Teaching TIDE with Pride"

ITEA Salt Lake City, February 21-23, 2008



Before you apply...

- Compile facts on the ITEA conference.
- Create talking points as to how this conference program could improve education for your students.
- Stress to the administration that you will be attending as a representative of the school and district.
- Print the preliminary program and share it with your potential funding source.
- Apply to be part of the program, e.g., the Technology Festival.
- Have a small budget put together based upon the costs involved.
- Apply to be a Teacher or Program Excellence winner.

Where to look for funding sources...

- Talk to your immediate supervisor about using professional development monies.
- Ask your local PTA for assistance.
- Become friends with local civic groups that support education.
- Contact your district or state supervisor who deals with technology education.
- Do a search of local educational foundations.
- Check with your local teachers' union.

For more detailed information about funding, go to www.iteaconnect.org/Conference/funding.htm.

PATT-19 Conference

The PATT-19 Conference will take place in conjunction with the 2008 ITEA Annual Conference in Salt Lake City, Utah.

The theme for PATT-19 is **“Research on Technology, Innovation, Design, and Engineering (TIDE) Teaching.”**

The Annual ITEA conference is a meeting place where technology educators from around the world share ideas about all aspects related to the teaching and learning of technology. Research is one of those aspects. The PATT-19 conference serves as the international part of the program where research is presented and discussed. The focus for the 2008 conference is on research contributing to technology education that is aimed at teaching that combines

elements of technology, innovation, design, and engineering. This links with the main theme of ITEA’s 2008 Annual Conference: **Teaching TIDE with Pride.**

Two sorts of papers are possible:

1. **Theoretical considerations:**
 These papers study the way elements of technology, innovation, design, and engineering can be combined in a curriculum or in projects. Theoretically the four terms are related, but how?
2. **Practical experiences:**
 These papers offer examples of educational situations where the four elements of TIDE have in effect been combined. In particular, papers are welcome that also offer evaluative data on these situations: Did it really work?



Papers/proposals can be submitted to **Dr. Marc J. de Vries** (m.j.d.vries@tue.nl). The deadline for submission is **October 15, 2007.**

Presenters will be notified about acceptance. Full papers are due **January 31, 2008.**



EXPERIENCE ENGINEERING AND MAKE A DIFFERENCE!

Attention Teachers!

- Are you looking for a program to enhance your high school science, technology, engineering or math curriculum?
- Are you looking for a design competition where your students do more than build just another robot?
- Would you like to win a trip to Washington, DC or cash for your school?

Try the **NEDC**...a **free** design competition where teams of high school students create Assistive Technology devices to help people with disabilities.

Registration opens **September 5th!**

www.jets.org/nedc



National Engineering Design Challenge

Your students will:

- Experience engineering while helping others;
- Increase their disability awareness;
- Reach out in their community.



The NEDC is a program of **JETS**
 To learn about other programs go to www.jets.org.

Apply Today to Become a NASA Explorer School

Applications are now available for educators interested in joining NASA Explorer Schools during the 2008-2009 school year. Schools from the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands may apply for the NES 2008-2009 school year. NES offers unique opportunities designed to engage and educate the future scientists/technologists/engineers who may someday advance U.S. interests in space exploration.

Teams composed of full-time teachers and a school administrator develop and implement a three-year action plan to address local challenges in science, technology, and mathematics education for Grades 4-9. Selected schools are eligible to receive funding during the three-year partnership to purchase technology tools. The project also provides educators and students with content-

specific activities that can be used within the curricula to excite students about science, technology, engineering, and mathematics.

Applications are due **January 31, 2008**. For more information, visit <http://explorerschools.nasa.gov/portal/site/nes/menuitem.3a9dc5f6e0302a448258f708c41a5ea0/>.

Congratulations!

On July 2, 2007 **Ken Starkman** accepted a new position at Madison Area Technical College in Madison, Wisconsin. Ken currently serves on the ITEA Board of Directors as the immediate Past President. Madison Area Technical College (MATC) is the technical and community college for the greater Madison area. It is dedicated to providing accessible, high-quality instruction and technical experience to meet the needs of its students, community, and area employers. MATC serves approximately 44,000 individuals annually. Recently reorganized into centers, Ken is the Dean for the Construction, Manufacturing, Transportation, and Apprenticeship Center. The center offers over 40 programs that lead to an associate degree, diploma, or certificate. To learn more about MATC visit www.matcmadison.edu.

"Planet X-treme Weather"

Few places on Earth have perfect weather. We complain about the heat, the cold, the hurricanes and tornadoes, the rain and snow, or the drought. But compared to other places in our solar system, even Earth's worst weather is wimpy! Visit the **Space Place** at <http://spaceplace.nasa.gov> for a whirlwind tour of weather throughout the solar system. Find out about the hottest, coldest, windiest, and just plain weirdest planets and moons in our neighborhood. Click on "**Amazing Facts**" and "**Planet X-treme Weather**" to begin your tour.

SHOW YOUR "TIDE PRIDE!"

Complete your professional look while advocating for the field of technology education

Start off with a "Teaching Tomorrow's Innovators" backpack. This sturdy carry-all can easily transport your lesson plans, books, antacids, and more! The backpack is navy with the "Teaching Tomorrow's Innovators" logo in pale yellow.

Now just \$25.00!
While supplies last.



Complete your professional look with ITEA's TIDE logo shirt, which helps promote technology education AND resists wrinkles at the same time!

Sizes S-XL: \$33.00 Sizes XXL: \$35.00

Order before August 31st, and get a FREE TIDE static cling decal for your classroom.



Start your 2007 school year with your most professional foot forward... while forwarding the field of technology education.

Call 703-860-2100 to order TODAY!
Shipping fees apply.

Passages

Herbert Siegel, 89, passed away on July 16, 2007. Born in Brooklyn, NY in 1918, he graduated from Brooklyn Technical High School and from Oswego State Teachers College as a member of the Class of 1941. Upon his return from WW II, Herb began a distinguished career with the New York City Board of Education as a teacher and as a school administrator where he eventually rose to become Director of Industrial Arts for the City of New York.

Excerpted from the 7/18/2007 issue of the Syracuse Post Standard.

ITEA Life Member, **W. Rollin Williams III**, passed away during the second week of July, 2007. He was a University of Maryland graduate and former Dean at East Tennessee State. He also served as an ACIATE President and AIAA Board member.

Long-time ITEA member, **John Peter Bonaventure**, age 58, died Tuesday, July 18, 2007. He was born in Bridgeport, CT on September 4, 1948 and received his bachelors degree in Technology Education from Central

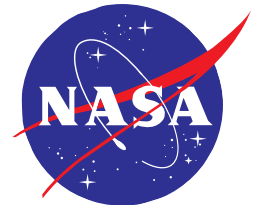
Connecticut State University and his masters from Southern Connecticut. He recently retired from Foran High School after 35 years of teaching. He was Chair for the Professional Development Connecticut Technology Education Department and Chair for the Technology Education Department of the Milford Public Schools. For online condolences please visit www.dennisanddarcy.com.

Excerpted from the 7/19/2007 issue of the Connecticut Post.

Subject: NASA History Division Fall 2007 Internships

The **NASA History Division** is seeking undergraduate and graduate students for fall 2007 internships. The History Division maintains archival materials to answer research questions from NASA personnel, journalists, scholars, students at all levels, and others from around the world. The Division also edits and publishes several books and monographs each year and maintains a large number of Web sites on NASA history. Students of all majors are welcome to apply.

While detailed prior knowledge of the aeronautics and space fields is not necessary, a keen interest and some basic familiarity with these topics are needed. Strong research, writing, and editing skills are essential. Experience with computers, especially HTML formatting, is a plus. Intern projects are flexible. Typical projects include handling a wide variety of information requests, editing historical manuscripts, doing research and writing biographical sketches, updating and creating Web pages, and identifying and captioning photos. The deadline for fall applications is **August 15, 2007**. For more information, visit: <http://history.nasa.gov/interncall.htm>.



"Extreme Redesign" Global Design and 3D Printing Contest

The Dimension 3D Printing Group, a business unit of Stratasy, Inc., has announced the launch of its fourth annual "**Extreme Redesign: The Ultimate 3D Printing Challenge**," a global design and 3D printing contest for high school and college students that awards scholarships to the winners.

Again this year Dimension calls on computer-aided-design (CAD) students worldwide to submit their most creative, useful, and innovative Extreme Redesigns. Whether it's

a new perspective on an everyday product or a fresh vision for updating a famous piece of art, animation, or architecture, Dimension will award student winners \$2,500 or \$1,000 scholarships based on their design's creativity, usefulness, part-integrity, and aesthetics. Dimension also will award teachers of the three first-place student winners a laptop computer for use in the classroom.

This year's contest will include an "art and architecture challenge," open to both high school and university stu-

dents, in addition to the high school and university engineering categories included in previous years.

Final submissions must be post-marked by **December 31, 2007**. Winners will be selected in February 2008. Complete contest rules and submission information is available at www.dimensionprinting.com/education/extremeredesign.shtml.

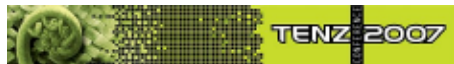
For video, photos, and descriptions of last year's winning Extreme Redesigns, visit www.dimensionprinting.com.

Conference Opportunities



September 14-15, 2007 The Leadership Conference on Aviation and Space Education (LCASE) will be held at the Marriott Crystal Gateway in Arlington VA. Information can be obtained at www.lcase.info/.

September 27-29, 2007 The Minnesota Technology Education Association (MTEA) will hold its 2007 Fall Conference, *Tech Ed – Back to the Future II*, at the St. Cloud Holiday Inn. Visit www.mtea.net or contact **Dr. Mike Lindstrom**, Fall Conference Program Chair (763-506-1115/W; 763-506-1003/Fax) or **Dan Lundborg**, Registration Chair (763-506-5467/W; 763-323-7926/H) for general information.



October 2-5, 2007 TENZ (Technology Education New Zealand), along with Auckland University, will hold its 2007 conference at the Waipuna Hotel, Mt. Wellington, Auckland, New Zealand. With the imminent introduction of the revised New Zealand Curriculum Framework, technology education is facing new challenges and opportunities. One of the themes of the conference is to explore these challenges and opportunities and create a vibrant vision for the future growth and well-being of technology education. Visit www.tenz2007.auckland.ac.nz for details.

October 11-13, 2007 The state of New Hampshire will host the **New England Association of Technology Teachers (NEATT)** conference, *A NEATT Foundation to Build Upon*, in Worcester, MA. For immediate updates, check the NEATT website at www.neatt.org/.

October 16-18, 2007 Save the date for the **National Conference on Aviation and Space Education**, which will be held at the Crystal Gateway Marriott in Arlington, VA. More information will be coming soon.

October 18-20, 2007 The Florida Technology Education Association will hold

its 78th Annual Professional Development conference, *Inspiring today, applying tomorrow*, at the Holiday Inn Hotel & Suites Harbourside in Indian Rocks Beach. Information is available at www.ftea.com/conferences_&_workshops.htm.

October 19, 2007 The Technology Education Association of Maryland will present the **Seventh Annual Technology Education TECH EXPO 2007** at the Baltimore Museum of Industry, 1425 Key Highway, Baltimore, MD 21230. The theme this year is *TEAM's All-Star Line-Up: CATTs, PLTW, STEM and VSC*. This is TEAM's Annual Conference for all technology education teachers and supervisors in the State of Maryland. To help or present, contact **Will Johnson**, EXPO 2007 Coordinator, at wjdjwin@aol.com. Additional information can be found at www.techedmd.org/conference.htm.

October 25-26, 2007 The Department of Technology, State University of New York at Oswego, presents its **68th fall conference** for technology teachers and other professionals: *Technology Education: Inspiring Outstanding Performance*, on the Oswego campus in Wilber, Park, and Sheldon halls. New this year are sessions on technology education for science and mathematics elementary classes to encourage integrative learning. For more information, visit www.fallconference.com or contact **Judith Belt**, Conference Chair at jbelt@oswego.edu.

October 25-27, 2007 The Society of Women Engineers will present its 2007 National Conference, *Women IN TUNE with TECHNOLOGY*, at the Nashville Convention Center in Nashville, TN. Conference tracks are Professional Development, Technology, Career Transition, Academic Diversity, and Leadership Coaching. The conference will include presentations, workshops and sessions, panel discussions, Career Enhancement Series (CES), poster presentations, tours, and local community outreach in addition to its 2007 Career Fair. For complete conference information, visit www.swe.org/2007.

October 27, 2007 The Ohio Technology Education Association (OTEA) Fall Conference will focus on the role of technology education as a STEM partner. Contact **Timothy Tryon** at Timothy878@zoominternet.net for details.

November 1-2, 2007 The 22nd Annual Colorado Technology Education Conference, *Reaching New Heights*, will take place at the Copper Conference Center in Copper Mountain, CO. Complete information about the conference is available at www.cteaonline.org/.

November 8-9, 2007 The Technology Education Association of Pennsylvania (TEAP) will hold its 55th Annual Conference at the Radisson Penn Harris Conference Center in Camp Hill, PA. Visit the TEAP website at www.teap-online.org/index2.htm and click on "conference" for complete information.

November 9-11, 2007 The Institute of Electrical and Electronic Engineers (IEEE) will present a special conference in Munich, Germany, *Meeting the Growing Demand for Engineers and Their Educators 2010-2020 Summit*. A call for papers has been issued and can be accessed at www.ieee.org/web/education/preuniversity/globalsummit along with additional information.

February 21-23, 2008 The 70th Annual ITEA Conference, *Teaching TIDE With Pride*, will be held in Salt Lake City, UT. The latest information and details are available on the ITEA website at www.iteaconnect.org/Conference/conference-guide.htm.

March 28-29, 2008 The Ohio Technology Education Association (OTEA) Annual Spring Conference will be held at Worthington Kilbourne High School in Worthington, Ohio. The conference will be an extension of the 2007 OTEA Fall Conference, with topics of discussion focusing around STEM and other educational topics. Visit www.otea.info for the latest details.