2014 Brock International Prize in Education Nominee

Laurie Ruberg

Nominated by Robert Starr
Laurie Ruberg, received her Ph.D. in curriculum and instruction from Virginia Tech. She joined the Center for Educational Technologies at Wheeling Jesuit University in 1995 as a senior instructional designer and later (2005) became associate director. She manages the NASA Talk online collaborative, where she actively blogs, directs research, and leads several groups that draw diverse educational audiences. The Exploring the Environment–Global Climate Change collaborative on NASA Talk bridges Ruberg’s recently completed climate science web curriculum with live discussions and science teacher-focused blogs. Teachers from 42 states and 17 countries already have registered for the six Global Climate Change problem-based learning modules completed this year as part of a NASA Global Climate Change Education project she led.

Ruberg’s extensive background in education outreach, instructional design, and program evaluation reaches across both educational and technical/professional settings. She has received national awards for her multimedia curriculum design and program evaluation efforts.

“Continuous learning is an integral part of my work in instructional design, integration of new technologies, and program evaluation,” she says. “Each project involves a partnership with teachers who are open to trying new modes of instruction and who share an interest in finding ways to enhance and improve student learning.”
NASA Talk: An E-learning Mission Experience

Laurie Ruberg
NASA Talk Explorer
2008-2013
Mission

• Expand our understanding of how a web-based collaborative can help teachers become more aware of NASA STEM educational resources and how to use them with their students

• Use the resources of Web 2.0 to engage teachers in online discussions about NASA STEM education products and opportunities
Use NASATalk to explore new perspectives for collaborative professional development

Image credit: Hubble Space Telescope: NASA.gov
Wednesday, May 20, 2009 - Today is allegedly the 400th anniversary of Galileo's use of a telescope to confirm the Copernicus proposition that the planets, including Earth, revolve around the Sun. The NASA Hubble repair crew also makes their contribution to telescopic history today. The excitement, magnificent photos, and technological feats of the Hubble repair mission provide a great story to stimulate youth interest in science, technology, and engineering topics and careers. Your students can track the progress and access great images about the STS-125 mission on NASA's website. For quick facts and a rationale for all the excitement about this mission at today's Concord Monitor Editorial.

The image above shows NASA astronauts John Grunsfeld, rear, and Andrew Feustel at work to upgrade the Hubble Space Telescope during a spacewalk, Monday, May 18, 2009, with Earth shining over their shoulders. During this fifth and final visit to Hubble, the shuttle Atlantis astronauts outfitted Hubble with two updated science instruments, new batteries, and gyroscopes. The $220 million worth of new instruments should allow the telescope to peer even deeper into the cosmos—perhaps as far back as 13 billion years. Read more in "Astronauts Wrap Up Hubble Work" by AP writer, Marcia Dunn.
Who funded the development of NASATalk?

The NASA-sponsored Classroom of the Future, which has served as the space agency's principal research and development center for educational technologies, received funding to develop the NASATalk web-based collaborative.

Laurie Ruberg serves as project manager and lead designer for NASATalk.
Goals and Objectives

Develop a web 2.0 collaborative website to

• Share user-generated content
• Feature NASA programs and emerging educational technologies
• Disseminate expanded opportunities for collaboration
NASATalk Collaborators

NASA educators.. STEM teachers... product developers... curriculum designers... educational researchers... informal educators.. and all advocates for improving learning

Image credit: mynasadata.larc.nasa.gov

Image credit: sunjournal.com
Key opportunities NASA Talk has facilitated

1. NASA Connections
2. Promoting NASA educator opportunities
3. STELLAR Awards
4. Online discussion of ISTE Ed Tech Standards
5. Learning with Mobile Devices
6. Educator blogs
7. Professional collaborative groups
Partnerships across NASA Education including with:

- NASA Digital Learning Network (DLN)
- NASA Aerospace Education Specialists (AES)
- Electronic Professional Development Network (ePDN)
- Aeronautics and Spaceflight
- Earth & Space Education and Public Outreach
- NASA Earth and Space Science Missions

Regarding the image at left, Read more on NASATalk: Using NASA images to make digital quilts and word clouds...
NASATalk features live webinar presentations and workshops to support “Just in Time” educator professional development.

Rockets 2 Racecars links popular car racing with space-related technologies & math...
NASATalk featured a private collaborative and blog to support educator involvement in STS-131 thru STS-134 shuttle launches.
Venus Transit – June 5/6, 2012

Early stage Venus Transit
2. Promoting NASA Educator Opportunities

- Rocket-boys October Sky Launch
- Online events such as the Technology Triathlon
- NASA Langley Pre-service Teacher poster contest
- Pre-E Workshop
- NASA STEM Educators Conference
Preventing the “Summer Slide” with a NASATalk STEM Summer Camp
Read more about this Middle School STEM Camp on NASATalk
3. NASATalk STELLAR Awards were established in 2009 to recognize educators demonstrating excellent uses of NASA STEM materials in classrooms or informal settings.
NASATalk STELLAR Awards were established in 2009 to recognize educators demonstrating excellent uses of NASA STEM materials in classrooms or informal settings.

The STELLAR acronym highlights educator attributes that are recognized through this award: **S**uccessful **T**eachers **E**xplaining how they im**p**lement NASA resources to improve student **L**earning **A**nd stimulate STEM ca**R**eer interests.
STEELAR Award Winners Gallery

Eileen Poling (right) with her principal.

Garrison Hall.

Elizabeth Hoyson.

Amy Williams.

C.P. Gloria Samperio Ruiz

Are you the next STEELAR Awards winner?
4. ISTE Standards as NASA Talk Tech Topics

Show All TechTopics - TechTopics

With TechTopics we highlight promising educational technologies, tools, websites, resources, software, and hardware. We also provide a forum for in-depth discussion and commenting on particular educational technologies.

Topics are organized using the ISTE National Educational Technology Standards for Students. We have included additional categories for Knowledge and Comprehension Tools and other topics which do not fit neatly within one of the ISTE categories.

Feel free to add your own topics. Many of the original topics came from a research article on exemplary edtech published in October, 2008. For more information please see the article titled, "EdTech Exemplars."
5. Learning with Mobile Devices

iPads for Learning: Learning on the Go!
Good Luck!
The crew is counting on your success.

Press MENU and then PLAY to begin the game.

BACK NEXT
6. Educator Blogs

The NASATalk web site includes –

- 9 NASA partner blogs
- 9 NASATalk team member blogs
- 10 External partner blogs
- 6 Guest blogs (individuals or organizations having common interests with NASATalk)

Since Jan 2010 the NASATalk authors from the blog and collaborative groups have created 1973 articles, which are posted online.
Discussions about instructional design and Assessment on NASA Talk
7. Professional/Content Collaborative Groups

The NASATalk web site includes --
5 science-related collaborative groups
4 robotics-related collaborative groups
1 Engineering education collaborative group
1 K-4 STEM education collaborative group
2 Mathematics-related collaborative groups
4 STEM education collaborative groups
3 Research and evaluation collaborative groups
1 Project planning collaborative group
6 Archived (project completed) collaborative groups
AEA GEDI Internship

Starting in October 2011, the Wheeling Jesuit University Center for Educational Technologies is participating in the American Evaluation Association (AEA) Graduate Education in Diversity Internship (GEDI) Program. The photo collage (shown at left) features Tyra Good, our AEA GEDI intern, Debbie Piekka and Chuck Wood, who will both be contributing to Tyra’s intern experience as project mentors. Rodney Hopson, who is Tyra’s Duquesne University faculty mentor, and Laurie Ruberg, who is serving as the WJU/CET mentor. Each of us will be contributing to Tyra’s intern experience in different, complementary ways. We have set up this member-only collaborative and blog to provide an area where we can individually and collectively share experiences, insights, and ideas about STEM evaluation practices and processes. As Tyra will be working across two different locations during her WJU/CET internship, this virtual area for communications may provide a way to tie seemingly disconnected experiences into coherent themes.

With the Tyra’s internship experience as the focus of this collaborative, we’ll all work together to make the internship work a means to offer a window into the variety of evaluation needs and issues within this organization. We expect this to be a mutually beneficial partnership between all involved, and we look forward to additional input from the AEA as the sponsoring professional organization during this intern year.

After receiving applications from almost 80 applicants, AEA narrowed down the pool to candidates in closest proximity to the WJU/CET, and those with the best possible match to your organization. Interns were narrowed using the following criteria:

- Proximity
- Fit with organization
-Expressed interest in evaluation
-Exposure to evaluation
-Credentials (coursework, CV, etc.)

Let’s use this online collaborative and embedded blog to document the internship process as we learn together.

Go To AEA GEDI Journal Blog
Robots Collaborative Groups
Audience and Impact

Between Jan 1, 2010 and Sep 7, 2013
• 59,078 people visited the NASATalk web site
• 216,000 pages were viewed by 80,393 visitors
• Visitors came from all 50 States and 168 different countries outside the U.S.
• The average page view per visit was 2.7
• The average time per visit was 2:49 minutes
Laurie Ruberg, serves as the project manager, designer, recruiter, writer, and spokesperson for NASA Talk.

The ideas for outreach and participation across these varied and diverse communities reflect her conscious efforts to make NASA Talk a collaborative community that is used by many education groups.

*Alone we can do so little; together we can do so much* – Helen Keller
PROFESSIONAL AFFILIATIONS
Wheeling Jesuit University, Wheeling, WV
Center for Educational Technologies (1995 to present)
  Associate Director: Project management, project coordination, strategic and planning.
  Principal Investigator: NASA Explorer Schools Evaluation project; Mid-Atlantic Region
  Space Science Broker (MARSBB) program; NASA Innovations in Climate Education.
  Senior Instructional Designer: Lead designer for two NASA-funded curriculum
  development projects: BioBLAST®, a software-based curriculum supplement for high
  school biology classes, and the International Space Station Challenge, a web-based
  curriculum.

FUNDED DESIGN, DEVELOPMENT, AND EVALUATION PROJECTS
• Manager, NASA Talk.com, a Joomla!-based content management system (2008-present).
• Principal Investigator, Exploring Global Climate Change Through Problem-Based
  Learning, a two-year curriculum development project funded by NASA (2010-2013) that
  includes teacher registrations from 44 states and 18 countries.
• Principal Investigator: Project Research and Evaluation, CDC/NIOSH/OMSHR Contract
• Evaluator, Mining and Industrial Safety Technology and Training Innovation (MISTTI)
• Evaluator, NASA Earth and Space Online “Missions” for High School Learners with
• Project Manager/Instructional Designer, BLiSS-Sim, the first science education iTunes app
  developed by the NASA-sponsored Classroom of the Future, based on the COTF
  multimedia BioBLAST™ simulation data.
• Mid-Atlantic Region Space Science Broker/Facilitator, funded by NASA Science Mission
  Directorate (2001-2007) to support building strategic partnerships among scientists and
  educators in nine states and the District of Columbia.
• Principal Investigator, NASA Explorer Schools program evaluation (2005-2007), a national
  program designed to increase student interest and achievement in STEM-related content
  and careers by providing sustained professional development for teachers and
  administrators at ethnically diverse middle schools.
• Sr. Instructional Designer, International Space Station Challenge, web-based curriculum
• Sr. Instructional Designer, Project Manager, BioBLAST™, a multimedia curriculum for

Virginia Polytechnic Institute and State University, Blacksburg (1988-1995):
College of Education, Instructional Systems Development
  Research Associate: Research funded by NSF Undergraduate Course and Curriculum
  Development, “Development and Assessment of a Multimedia Plant Science
  Laboratory” NSF Curriculum Development Grant #92-2170-06. Dissertation research.
  Self-Instruction Curriculum Lab Manager: Computer lab technical support staffing.
Virginia Cooperative Extension Service Interactive Design and Development Group

Research Associate/Assistant Project Director: Served as team leader for development of Virginia Public Information Stations, a project funded by the U.S. Department of Agriculture and the Kellogg Foundation.

Human Services on Cable Inc., New Orleans (1985-1987)

Project Director: Served as program manager; provided leadership for the design and planning of a distributed human service information system. Implemented activities with support from a volunteer board of directors, community stakeholders, and local cable sponsor. Secured grant support and corporate funding to support program.

EDUCATION

Virginia Polytechnic Institute and State University, College of Education, Blacksburg
Ph.D. degree earned (1994) in Curriculum and Instruction

University of Iowa, College of Arts and Sciences, Iowa City
M.A. degree earned (1979) in English Literature.

Drexel University, College of Humanities and Social Sciences, Philadelphia
B.S. degree earned (1974) in Psychology and Education.

AWARDS AND RECOGNITIONS


Senior Instructional Designer/Project Lead for BioBLAST™ multimedia CD-ROM (1995-1999) that received the following awards:

• Copper AXIEM (Absolute Excellence in Electronic Media) Award, 1999.
• Distinguished Achievement Award for Excellence in Educational Publishing—Educational Technology Curricular Software, The Association of Educational Publishers, 1999, one of four finalists.
• CODIE AWARD for School Based Education Product—Best Product 1999, one of five finalists.

 Psi Chi psychology honorary fraternity, Drexel University chapter (1973).

PROFESSIONAL AFFILIATIONS

• American Educational Research Association—1991 to present
• American Evaluation Association—2007 to present
• National Science Teachers Association—1996 to present
• Professional Education Department, Wheeling Jesuit University – Adjunct Faculty 1997-1999 & 2007 to 2010
• Principal and Founder of PLANTS, LLC - a business formed (2013) to provide professional scientific and technical services related to plant growth and food production processes.
Professional services include educational workshops, hands-on training, professional development, and information assistance to promote sustainable agriculture practices.

COMMUNITY AND PROFESSIONAL VOLUNTEER ACTIVITIES
Member, Wheeling Hopeful City Community Renaissance Task Force – 2001 to 2004
Commonwealth Graduate Engineering Program, Advisory Board Member – 2005 to 2008
Area coordinator for Future City National Engineering Competition – 2003 to 2013

Reviewer for:
• Software Information Industry Association CODIE™ Judge
• American Educational Research Association
• American Evaluation Association
• NASA Education and NASA Science Mission Directorate E/PO Program
• National Science Foundation

PEER-REVIEWED PRESENTATIONS AND PUBLICATIONS


Ruberg, L. (1997, April). *What is BioBLAST and how does it link with NASA’s life science research?* Faculty seminar presented to NJ NSCORT faculty, Cook College, Rutgers University, NJ.


