The Center for Educational Technologies
at WHEELING JESUIT UNIVERSITY

September 2012
The Center for Educational Technologies

• Conduct educational research – especially simulations and PBL, development and evaluation to improve learning through technology, from K-12.

• Have recently developed iPad app, videogame and virtual world education activities.

• Our Challenger Learning Center developed online role-playing missions for NASA, NOAA, NIH.

• Training and public outreach for mine & – dam safety.
**Who We Are**

- CET team includes 5 doctoral level researchers, 15 others, plus 7 CLC staff. 13 have been teachers.
- 100% self funded – grants from
  - NASA, NSF, NOAA, NIH, NIOSH, IUOE, Benedum Foundation
- Challenger Learning Center - part of CET - $500,000/yr, including $120K from WV Dept. of Education
- In 2012 CET will spend about $2.2 million
- Reach about 2,500 teachers and 30,000 students directly, plus ~1,250,000 through streaming
• *MoonWorld* explores learning opportunities within persistent virtual environments such as Second Life.
Would young people learn science better if it were packaged in a videogame?

*Selene* is a research game to explore learning in a videogame environment. Players (age 9-18) create a Moon through accretion, pepper it with impact craters, and then place vents for volcanic eruptions. Assessment is extracted from the players’ actions – identify *moment of learning.*
"The NASA Challenger Center field trip is the highlight of the year for the sixth grade students at Crafton Elementary. One child said he had been waiting since kindergarten to go on this unique ride into space."

Claire Rex
Pennsylvania Science Teacher of the Year
CyberSurgeons

- CyberSurgeons (National Institutes of Health) is a high school live simulation conducted through videoconferencing. Students play the role of emergency medical specialists on a medical mercy ship traveling up the Amazon River, stopping at ports of call and diagnosing unusual medical cases. The program teaches 21st century learning skills, addresses content standards in biology and health, and depicts scientific careers in a positive light.
STORM-E (National Oceanic and Atmospheric Administration) is a project to create online simulations of severe weather events. One is a category 5 hurricane along the Gulf Coast and the other is flooding in Appalachia. Students receive a continuous stream of real weather data, and act as meteorologists to prepare and update community officials of threats and to recommend responses.
BLiSS Sim

Description
You're stuck on the Moon or relocated to Mars—how are you going to survive for months and possibly years without resupply? This is the challenge you face in the Bioregenerative Life Support System Simulator, BLiSS Sim. It is based on investigations conducted by NASA scientists and engineers to explore how plants can be grown to provide air, water, and food for astronauts at a lunar base....

iPad Screenshots

Customer Ratings
Average rating for the current version: ★★★★★ 10 Ratings
Rate this application: ★★★★★
Help school districts, partner institutions, government agencies, and non-profit organizations to:

• Analyze program design
• Conduct program evaluations
• Support development and implementation of new programs
• Improve the efficiency of existing programs
• Develop grant proposals by serving as an external evaluator, which is required on Federal grants

Previous and current clients for CET Evaluation services include:

• NASA Explorer School Project, NASA Earth & Space Science Mission Directorate, NOAA, CDC NIOSH, NSF, Army Corps of Engineers, JesuitNet, and Challenger Learning Center

View example of evaluation work [NASA Explorer School Evaluation](#), which was recognized in the 2008 AERA Division H School Evaluation and Program Development Outstanding Publications Competition on Program Evaluation Studies.

Contact: [Laurie F. Ruberg, Ph.D.](#), Associate Director, WJU/CET
NASATalk News for STEM Educators - August 2012

Those Typically Behind the Camera Receive Recognition

Three members of the NASA-sponsored Classroom of the Future team received special recognition for their behind the camera support for the NASA Digital Learning Network (DLN).

The picture (at left) shows Dana Hackley, DLN coordinator, Don Watson, video support services manager, and Stacy Keller, video director/producer receiving their awards for outstanding service to students, educators, and colleagues through their technical expertise, team spirit, and initiative for the exemplary operation of the DLNtv Channel.

Follow this link to find out more about the DLN, DLNtv Channel, and how to request a Digital Learning Network event for your school or informal science program: Digital Learning Network Brings NASA Exploration Into STEM Topics
• NASA’s Digital Learning Network live programs to 1000s of school/yr are routed thru CET.

• NASA TV plans programming and conducts online streaming of current NASA TV shows.
Large parts of Texas suffered from severe drought in the summer of 2011. The burn scar is gray, vegetation is red, and bare or sparsely vegetated ground is tan. Water is navy blue.
High School Science Courses

NASA Earth & Space Missions

2-semester course where students act as NASA scientists predicting climate on a future Earth and using Kepler data to identify Earth-like planets around other stars.

Great Science Online – Physics

1-semester Physics elective course to excite students with NASA themes for examples and problems.
CET is assessing the mining industry’s safety training needs. The center is developing and pilot testing innovative training in the areas of hazard risk assessment and management; emergency preparedness and response; and repair and maintenance of equipment. In addition, CET is spearheading an evaluation process to maximize outputs and outcomes for all MISTTI project tasks.
CET applies instructional technology and effective design to update and create training materials relating to hazardous waste operations and emergency response, pandemic flu outbreaks, disaster site work, and construction operations.
Bluestone Dam Safety Assurance Project *US Army Corps of Engineers*

- Multi-agency, functional emergency preparedness exercise
- After-action and improvement planning
Bluestone Dam Safety Assurance Project  *US Army Corps of Engineers*

- Public communication
  - posters, video, flash animations, and other online resources
  - Phases of construction
  - Engineering solutions
  - Dam operations
  - Uncertainties of weather forecasting
NASA Earth & Space Missions

2-semester course with students acting as NASA scientists to predict climate on a future Earth and use Kepler data to identify Earth-like planets around other stars.

Great Science Online – Physics

1-semester Physics elective course to excite students with NASA themes in presentations and problems