

HPWREN LIVE

Live Interactive Virtual Explorations

**Exploration and understanding
of hard-to-reach science and
history sites**

**Preparation for fieldtrips
to such sites**

2002-2012

Kimberly Mann Bruch

2002

Pala Learning Center: HPWREN Multicast Class

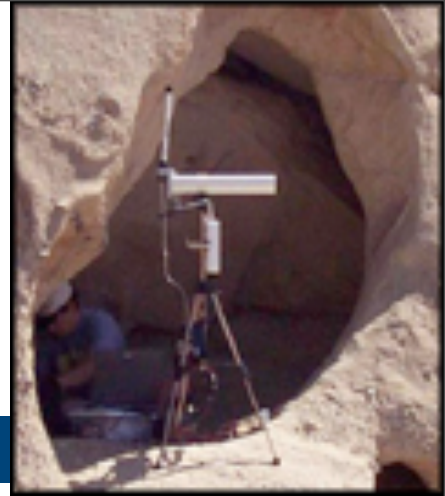


HPWREN, Palomar College, and Tribal Digital Village Network (TDVNet) offer a Computer Science and Information Systems course at the Pala Learning Center for Pala, La Jolla, Rincon, and San Pasqual Native Americans.

Experiments with vic (multicast tool) and rat (audio tool) were also utilized for occasional remote classroom sessions via HPWREN.

2003

Anza Borrego Desert: Remote Teacher Tour



Teachers attending the National Teacher Training Institute Conference in Irvine participated in an underwater tour of Crystal Cove State Park and examined fossilized oyster beds in nearby Fish Creek

(The remote Fish Creek is approximately 100 miles from Irvine.)

2006

Tests Resume: CA Wolf Center, Cabrillo National Monument, and CA Science Center



Experiments at California Wolf Center test Skype with PDA and then laptop. The team discovers that a backpack equipped with a laptop running Skype (and transmitting images via DV camera) produce the best results.

Backpack system replicated and used for experiments between Cabrillo and California Science Center. Also experimented with Remotely Operated Underwater Vehicle (ROV).

2007

Pala Even Start Tours Palomar Observatory and Santa Margarita Ecological Reserve via HPWREN LIVE



Pala Little Feathers and Adult Education (Even Start) students participated in a LIVE activity between the Admin Building and Santa Margarita Ecological Reserve as well as the Palomar Observatory.

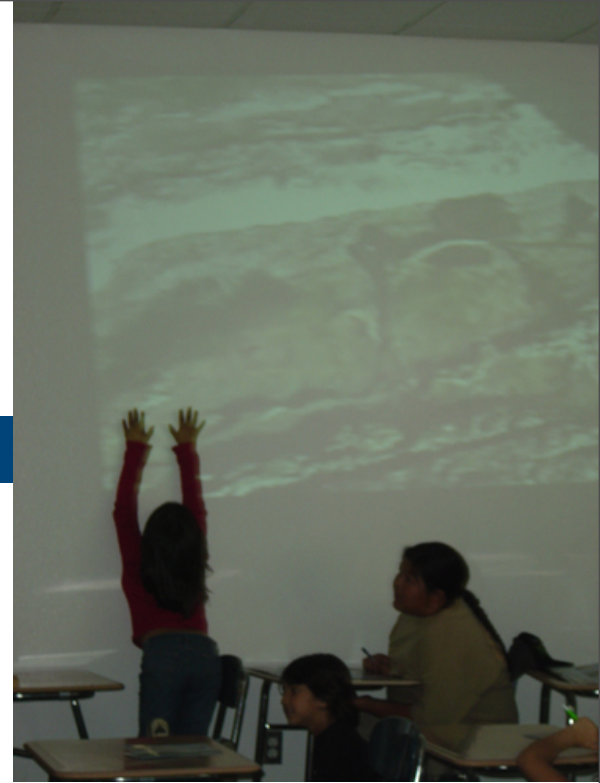
Additional HPWREN LIVE activities included demos at the NSF booth during the AAAS meeting as well as demos at a San Diego Youth Science Fair.

2008

HPWREN LIVE Pilot Activities

Two activities between Pala youth programs and Cabrillo tidepools. Activities included on-site geologist and hands-on activities with southern California shells.

Reuben H. Fleet Science Center's Astronomy Day 2008 included an HPWREN LIVE demo - featuring the telescopes at Palomar Observatory.

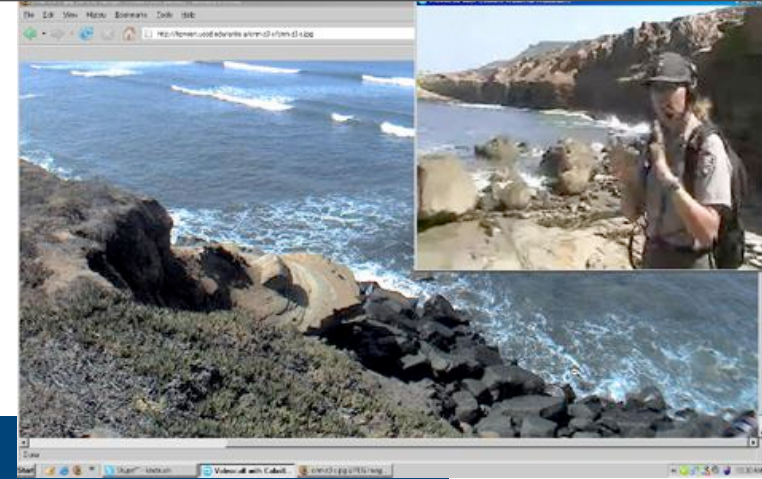


2008

HPWREN LIVE Pilot Activities

Activities included:

- Women in Science Summer Camp at Reuben H Fleet Science Center (Cabrillo LIVE)
- National Geographic Bioblitz Species Inventory (Santa Monica Mountains)
- Experiments with Off-Shore ROVE, Rural Science Class, and SDSC Building Dedication Demos
- National Park Service Workshop at Cabrillo for 35 Rangers from USA Parks



2009

HPWREN LIVE Pilot Activities



Activities included:

- Green Day and NanoDay at Reuben H Fleet Science Center (SMER and UCSD JSOE)
- George Wright Society Conference (Portland)
- National Association for Interpretation Conference (Hartford)
- Demos with Palomar Observatory, Cabrillo intertidal area, Birch Aquarium, SMER, and CA Wolf Center

2010

HPWREN LIVE Pilot Activities



Activities included:

- AAAS Family Science Days & TeacherTECH LIVE
- Old Point Loma Lighthouse Demos
- HACU Conference (San Diego)
- Dept of Interior Diversity Days (Washington, DC)
- Published text book chapter and journal article
- Sustainability Strategy

2011



HPWREN LIVE Pilot Activities

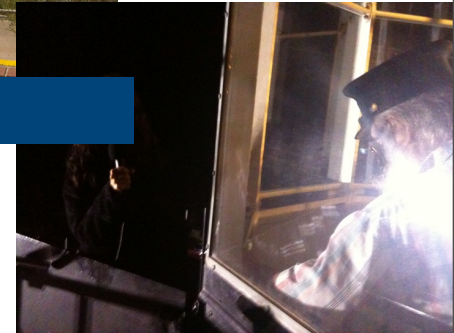
Activities included:

- NPS National Leadership Council
- Old Point Loma Lighthouse Demos
- San Juan Capistrano School District Demos
- NPS LIVE StSS Workshop
- Published journal article
- Sustainability Strategy



2012

HPWREN LIVE Pilot Activities



Activities include:

- California Wolf Center
- Point Loma Tidepools
- Guadalupe Mountains
- Published journal article
- Sustainability Strategy

Peer-Reviewed Publications Regarding LIVE



LIVE Textbook Chapter and Journal Articles

Bruch, K. M., Braun, H-W., Teel, S. (2010). Live Interactive Virtual Explorations via the High Performance Wireless Research and Education Network. In S. Mukerji (Ed.), Cases on Technological Adaptability and Transnational Learning: Issues and Challenges. Pennsylvania: IGI Global.

Bruch, K. M., Braun, H-W., Teel, S. (2010). Live Interactive Virtual Explorations at a Southern California Native American Learning Center: Case Studies and Lessons Learned. Journal of Cases on Information Technology. Pennsylvania: IGI Global.

Bruch, K. M., Braun, H-W., Teel, S. (2011). Evaluating the Effectiveness of Live Interactive Virtual Explorations Involving a Hard-to-Reach Native American Earth Lodge and a Pacific Island Volcanoes Site. Journal of Interpretation Research.

Bruch, K. M., Braun, H-W., Teel, S. (2012). Live Interactive Virtual Explorations Provide Students with Glimpse of Life at Old Point Loma Lighthouse in the late 1800s. Park Science.

Bruch, K.M., Braun, H-W., Kosmatka, J. (2013). Projects of Multiple Agencies Partner to Demonstrate Distance Learning Tools that Increase STEM Interest Among Under-represented High Schoolers.

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Let the Exploration Begin!

