

# **HPWREN LIVE**

## **Live Interactive Virtual Explorations**

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

**Preparation for fieldtrips  
to such sites**

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**2002-present**

**Kimberly Mann Bruch**

2002

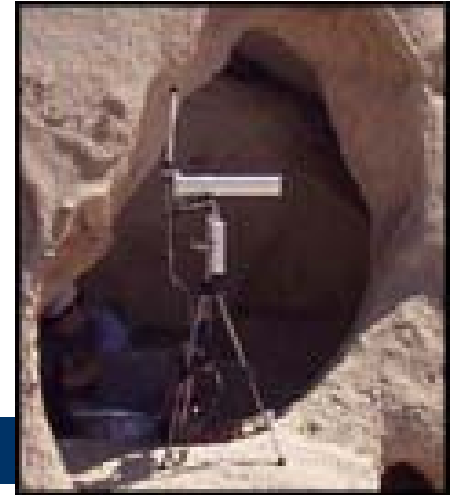
## Pala Learning Center: HPWREN Multicast Class



- HPWREN, Palomar College, and Tribal Digital Village Network 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 experiment 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

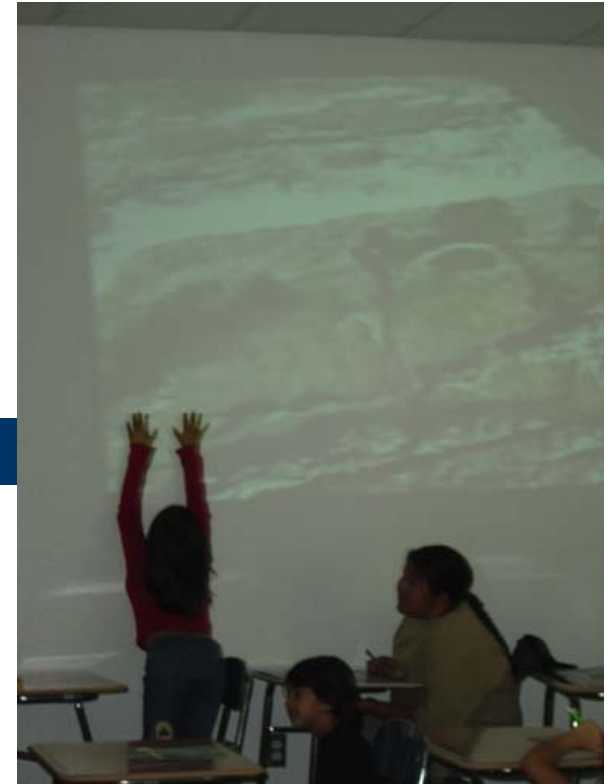


- Pala Little Feathers and Adult Education (Even Start) students participated in a LIVE activity between the Admin Building and Santa Margarita Ecological Reserve as well as the Palomar Observatory.
- Additional HPWREN LIVE activities included demos at the NSF booth during the AAAS meeting as well as demos at a San Diego Youth Science Fair.

2008

## HPWREN LIVE Pilot Activities

- HPWREN conducted two LIVE activities between Pala Even Start 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

## 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 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. (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.

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# Let the Exploration Begin!

