NSF's Investment in Education during International Polar Year

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OPP Office Advisory Committee November 9, 2007





Goals for IPY Education

Inspire

"I want to study the polar regions"

"I could be a scientist"

Educate

"The polar regions are important regulators of earth's climate"

"My students enjoy learning science when we do science"

"There is less ice than there used to be."

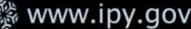
IPY Legacy

"Presenting polar science to this crowd made me feel like a rock star - people wanted my autograph"

"I learned about the Arctic Skyping with a student who lives there."

"Think of what we have learned in 50 years since IGY"





Criteria for Successful Proposals

- Develop innovative science education resources
- Engage diverse and underrepresented communities
- Use recent advances in research on STEM education
- Encourage interdisciplinary teaching and learning
- Attract and develop the next generation of polar researchers
- Reflect the international aspect of IPY, building partnerships and collaborations where possible
- Evaluate the impact of the project on the audience



Summary of Competitions

	2006 Competition	2007 Competition
Proposals Received	64 (49 projects)	77 (56 projects)
Proposals Funded	11	21
Projects Funded	9	14
Success Rate	18%	25%
Funding Requested	\$50 million	\$75 million
Funding Total	\$5.7 million	\$10.5 million



Summary by Audience

	2006 Competition	2007 Competition	Total
K-12	2	5	7
Undergrad/Grad	3	3*	6
Informal Science	4	8*	12
Total	9	14	23

^{*}denotes some awards to be made in 2008





Partnerships

Education and Human Resources	Office of Polar Programs
Dave Campbell	Renee Crain, OPP
Al DeSena	Kim Silverman, OPP
Valentine Kass	
Eileen Lewis	Interagency
Sharon Locke	Christos Michalapalous, NOAA Education
Sonia Ortega	Frank Niepold, NOAA Climate Change
Keith Sverdrup	Jackie Poston, EPA Alaska Region
Sandra Welch	Ming-Ying Wei, NASA Education
Other NSF Partners	
Cassandra Dudka, OISE	
Jill Karsten, Geosciences Education	

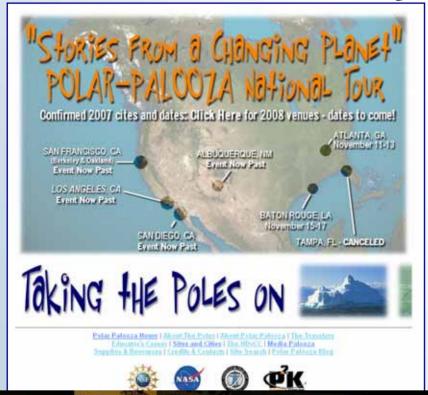


What's Happening?!

Informal Science Education		
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Project Title	Investigator	Institution
Engaging Antarctica	J. Michael Farrell	University of Nebraska-Lincoln
Polar-Palooza	Geoffrey Haines-Stiles	Geoffrey Haines-Stiles Productions
Live from the Poles: A Multimedia Educational Experience	Christopher Linder Paul Fontaine	Woods Hole Ocean Institution Museum of Science Boston
Polar Hydrobot Simulator	Brad McLain	Space Science Institute
Ice Stories: A Public Educational Resource for IPY	Mary Miller	Exploratorium
Improving the Public's Understanding of Polar Research Through Hands-On Fellowships for Science Journalists in the Arctic and Antarctic	Christopher Neill	Marine Biological Laboratory
Encounters: Radio Experiences in the North	Richard Nelson	Raven Radio
Pole to Pole	Moira Rankin	Soundprint Media Center, Inc.
Ice Planet Earth	Annette Schloss	University of New Hampshire



Events Already Taking Place







http://www.pbs.org/newshour/bb/environment/july-dec07/greenland 08-01.html

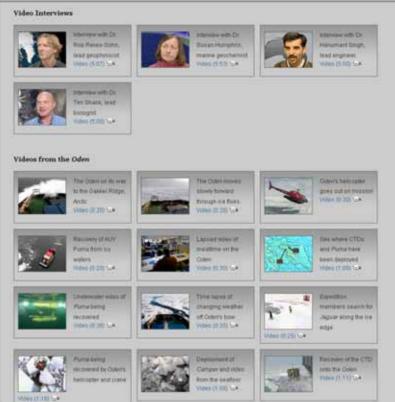




Live From the Poles

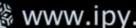
Next expedition Nov 11





http://polardiscovery.whoi.edu/multimedia.html

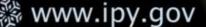




Graduate & Undergraduate Students

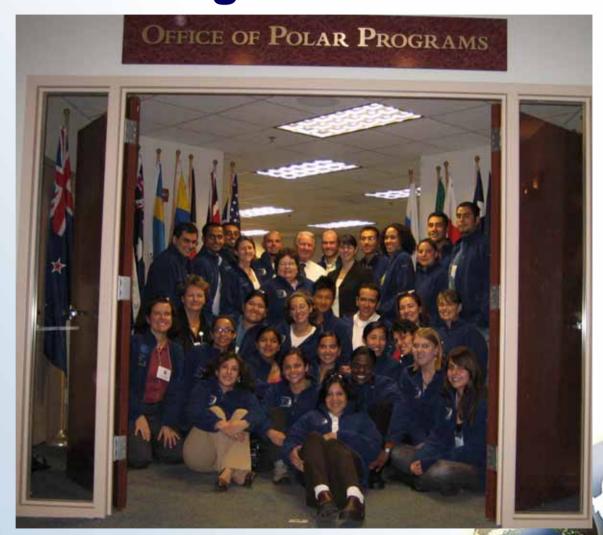
Graduate and Undergraduate		
Adapting SENCER to the Arctic - Improving Polar Science Education as a Legacy	Lawrence Duffy	University of Alaska Fairbanks
The Polaris Project: Rising Stars in the Arctic	Robert Max Holmes Andrew Bunn Katey Walter John Schade Karen Frey William Sobczak Sudeep Chandra	Woods Hole Research Center Western Washington University University of Alaska Fairbanks St. Olaf College Clark University College of the Holy Cross University of Nevada Reno
IPY-ROAM: International Polar Year Research and Educational Opportunities in Antarctica for Minorities	Craig Tweedie	University of Texas El Paso
Fostering Collaborative, Interdisciplinary Relationships among the "New Generation" of Polar Researchers Participating in the IPY	Susan Weiler Sheldon Drobot	Whitman College University of Colorado, Boulder

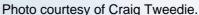




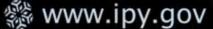
Graduate & Undergraduate Students

Students participating in the International Polar Year Research and Educational Opportunities in Antarctica for Minorities visit NSF.









Projects for K-12 Teachers, Students

K-12 Education		
Antarctic Penguins, Teaching the Science of Climate Change: A Celebration of IPY	David Ainley	H.T. Harvey & Associates
Beyond Penguins and Polar Bears: Integrating Literacy and IPY in the K-5 Classroom	Kimberly Lightle	Ohio State University
SPRINTT: Student Polar Research with IPY National (and International) Teacher Training	Glen Schuster	The U.S. Satellite Laboratory, Inc.
Teachers' Domain - Polar Sciences	Theodore Sicker	WGBH Educational Foundation
IPY STEM Polar Connections	Morton Sternheim	University of Massachusetts Amherst
Polar TREC-Teachers and Researchers Exploring and Collaborating	Wendy Warnick	Arctic Research Consortium of the U.S.
Additional IPY Activities		
National Science Teachers Association Symposia for IPY	Al Byers	National Science Teachers Association
An IPY Symposium: New York and Polar Research - A Partnership Spanning the Centuries	Stephanie Pfirman	Columbia University
Barrenlands Traverse: Snowstar 2007	Matthew Sturm	U.S. Army Cold Regions Research and Engineering



Live and Archived Materials



ive From IPY! 🔞



/irtual Base Camp Expeditions

Antarctic Undersea ROV Human Impacts in Antarctica Oden Antarctic Expedition '07 Antarctic Ice Sheet Studies South Pole Ozone Changes Antarctic Weather Stations Oden Antarctic Expedition 186 SEDNA Beaufort Sea Ice Baring Ecosystem Study Greenland Snow Studies **Arctic Tundra Dynamics** Bering Sea Predators **Greenland Education Tour** Greenland Seabird Ecology Climate Change Svalbard Alaska Climate Variation **Kuril Islands Biocomplexity** STHBA Antarctic Sea Ice

Previous Expeditions Photo Gallery Project Maps Legend

Current Expeditions

Upcoming Expeditions

Completed Expeditions

Recent Posts

Polar Bears Posted: November 07 11:04 am By: Guest

Ham Radio contact Posted: November 06 9:10 pm By: Guest

Photo Gallery

Antarctic Undersea ROV

Ms. Bell's Journal Ask the Team Photo Gallery



Paul Dayton in dive gear Date: 11/05/2007



Paul Dayton with Date: 11/05/2007



Group with VideoRay Date: 11/05/2007



Stacy baking Pumpkin Pie Date: 11/05/2007



Marcus checking Date: 11/05/2007



Helicopter bringing supplies Date: 11/05/2007



Goggles with Date: 11/05/2007



Computers at **Hew Harbor** Date: 11/05/2007







Additional IPY Activities



Synergy and Legacy

- Curriculum and teaching materials developed plus Teacher Professional Development experiences
- Video, audio, planetarium, museum and other exhibits that will live on for many years to come
- Researcher professional development
- Lehrer News Hour Polar Palooza Video
- IPY Education PI web conferences
- IPY.gov







