

References

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- 3 National Science Foundation. (2006). *Evaluation of the Initial Impacts of the National Science Foundation's Integrative Graduate Education and Research Traineeship Program* (NSF 06-17). Arlington, VA: National Science Foundation Printing Office.
- 4 National Science Foundation. (2008). *Integrative Graduate Education and Research Traineeship (IGERT): 2006-2007 Annual Report* (NSF 08-40). Arlington, VA: National Science Foundation Printing Office.
- 5 Committee on Facilitating Interdisciplinary Research, Committee on Science, Engineering, and Public Policy (COSEPUP). *Facilitating Interdisciplinary Research*. (2004). Washington, DC: National Academies Press.
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Photo Credits

Front Cover (left to right): IGERT Fellow Amy Henry and Thai Ph.D. student Panpim Thongsripong collecting disease vectors in a tropical forest near Khao Yai National Park in Thailand. (0549514: Wilcox, University of Hawaii)

Credit: Ron Paik, University of Hawaii

Climate change represents one of today's most prominent scientific challenges, and polar bears are one of the many species affected by climate change. Charles Kolstad, principal investigator of an IGERT project bringing together economics and environmental science at the University of California at Santa Barbara (UCSB), gave graduate student Nick Burger an opportunity to work with him as a lead author of a section of the fourth report of the Intergovernmental Panel on Climate Change (IPCC). (0114437: Kolstad, University of California - Santa Barbara)

Credit: Susanne Miller, U.S. Fish and Wildlife Service

BLM co-camp director, Christopher Noyles, using the SUBR GPS equipment to measure the location of a Michigan Tech seismic monitoring system deployed on the Bering Glacier, Alaska. (0333401: Sutherland, Michigan Technological University)

Credit: Bob Shuchman, MTRI

University of Washington IGERT trainees and faculty work with Sichuan University students and Jiuzhaigou National Park Staff to establish permanent ecological plots in former Tibetan pastures and farm land. (0333408: Hinckley, University of Washington)

Credit: Julie Combs

BootCamp 2007 IGERT trainee Silvia Cermelli-Ferrante prepares samples in IGERT faculty member Dr. Edward Nelson's lab. IGERT students were introduced to flow cytometry, which is a technology that simultaneously measures and then analyzes multiple physical characteristics of single particles, usually cells, as they flow in a fluid stream through a beam of light. (0549479: Li, University of California - Irvine)

Credit: Rachel Mangold

Page 3: Members of the department of biological sciences at the University of Alabama, are shown at the Sipsey River floodplain in west-central Alabama, a field site used for research by IGERT trainees. (9972810: Ward, University of Alabama - Tuscaloosa)

Credit: Dr. Amelia K. Ward, Center for Freshwater Studies, University of Alabama

Page 4: Avoiding the tropical heat, Hawaii IGERT students sort collected mosquito samples late at night near Khao Yai National Park in Thailand. (0549514: Wilcox, University of Hawaii)

Credit: Ron Paik, University of Hawaii

Page 8: A northern saw-whet owl (*Aegolius acadicus*) in the Pacific Northwest Forest, part of a research study in the Pacific Northwest Forest by John Marzluff, College of Forest Resources, University of Washington. (0114351: Bradley, University of Washington)

Credit: John Marzluff, College of Forest Resources, University of Washington

Page 9: A Landsat Thematic Mapper satellite image from 2002 showing land cover for central Puget Sound in Washington State. These types of maps are used by IGERT PIs and trainees to better understand the ways in which humans interact with their environment. (0114351: Bradley, University of Washington)

Credit: Jeffrey Hepinstall, Urban Ecology Research Laboratory, Department of Urban Design and Planning, University of Washington

Page 10: This picture was taken in 2007, one year after the 2006 Tripod Complex Fire in northern Washington State. The wildfires were initiated by two lightning strikes and spread over 175,000 acres of mixed conifer forest in the Okanogan National Forest. The Tripod Complex was one of the largest wildfires in Washington in the past half-century, costing more than \$82 million in resources to fight. (0333408: Hinckley, University of Washington)

Credit: Joanne Ho, College of Forest Resources, University of Washington

Page 13: An O'ahu Early Detection Project intern, Joshua Atwood, and internship host Danielle Frohlich use a key to identify a non-native palm species during a botanical survey in Waipahu, O'ahu. (0504103: August, University of Rhode Island)

Credit: Joshua Atwood, University of Rhode Island

Page 14: AME IGERT personnel work with a stroke survivor using the mediated rehabilitation system developed by the program. (0504647: Rikakis, Arizona State University)

Credit: Hari Sundaram, Arizona State University

Page 15: An O'ahu Early Detection Project intern, Joshua Atwood, assists botanists from the O'ahu Invasive Species Committee in removing the invasive plant *Miconia calvescens* from Manoa Valley on the island of O'ahu. (0504103: August, University of Rhode Island)

Credit: Joshua Atwood, University of Rhode Island

Page 16: Brian Schulkin, an IGERT trainee and doctoral student in physics at Rensselaer Polytechnic Institute has invented an ultralight, handheld terahertz spectrometer called the Mini-Z. (0333314: Wang, Rensselaer Polytechnic Institute)

Credit: Rensselaer/Kris Qua

Page 17: TTUWindfluvana: Students and instructors visiting wind farm near Lubbock, Texas. (0221688: Mehta, Texas Tech University)

Credit: Courtesy of Wind Science and Engineering Research Center, Texas Tech University - Kishor C. Mehta

Page 18: Shubha Chakravarty conducting fieldwork in Kenya. (0333418: Stiglitz, Affiliation)

Credit: Shubha Chakravarty

Page 21 (bottom): This picture overlooks parts of the Okanogan National Forest that were not consumed by the 2006 Tripod Complex wildfire. The brown-colored trees signal that the area has been attacked by the bark beetle. Dead, standing trees (brown) intermixed with live trees increase the chances of fire occurring, and reduces the chance of survival of the neighboring live, green trees. This is because standing dead trees act as dry fuels in the canopy. They allow fire not only to burn on the ground, but also induce crown fire in the canopy. (0333408: Hinckley, University of Washington)

Credit: Joanne Ho, College of Forest Resources, University of Washington

Page 21 (top): Susannah Gordon-Messer demonstrates how to make slime during a program at the Discovery Museums in Acton, MA. (0549390: Marder, Brandeis University)

Credit: Vicki Green, The Discovery Museums

Page 22: Reference stand 10 of the H.J. Andrews Long-term Ecological Research (LTER) site provides long-term monitoring of forest conditions, allowing researchers to reconstruct past disturbances and understand how these past events have shaped the character of today's forest. (0333257: Jones, Oregon State University)

Credit: Al Levno, USDA Forest Service, Pacific Northwest Research Station

Back Cover (left to right): BootCamp 2007 IGERT students are trained inside the Integrated Nanosystems Research Facility on microfabrication techniques. Richard Chang (center) background IGERT trainee Mark Merlo. (0549479: Li, University of California–Irvine)
Credit: Rachel Mangold

Electrode array smaller than a penny. (0549352: Touretzky, Carnegie Mellon University)
Credit: Ryan Kely, Matthew Smith, and Tai Sing Lee, Center for the Neural Basis of Cognition, Carnegie Mellon University

IGERT Trainee Scot Wayne presented a 30-minute discussion of common indoor air pollutants and their sources to kick off a trainee-organized public workshop on indoor air quality. (Corsi: University of Texas Austin)
Credit: Ralph Barrera, Austin-American Statesman