

Appendix 1: Methodology and Conceptual Framework

The intent of the report is to give an overview snapshot of the IGERT program through the lens of the compiled annual reports of the individual IGERTs. Therefore, the methodology for the report is simple summation and reporting. No evaluation of the results or implications from these results have been drawn, as this is a descriptive report only.

The report summarizes the input of the 136 individual IGERT project annual reports submitted for the 2006-2007 collection period as submitted on the web-based reporting system for IGERT. Topics for summation were derived from the content of the reports which was itself developed using the IGERT Solicitation and NSF Strategic Plan as the guidelines. In 2008, the

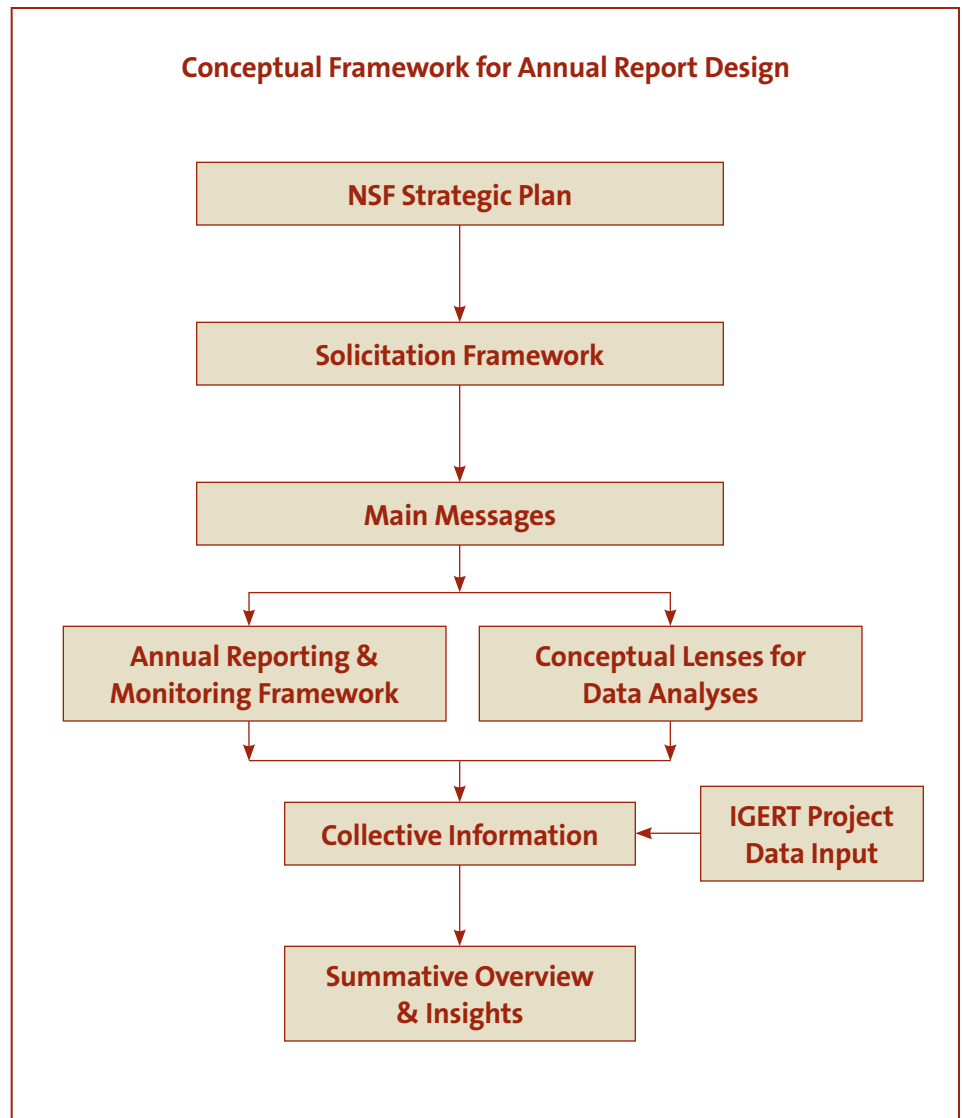
annual report for IGERT will again be upgraded allowing for a 2007-2008 report with greater richness.

The conceptual framework for this report illustrates the linkages among the NSF Strategic Plan, IGERT Solicitation, the IGERT annual project reports, and this descriptive report.

IGERT 2006-2007

Annual Report Concept:

Demonstrate the value of the IGERT program by providing IGERT stakeholders with an annual summary and overview of the progress, achievements, practices, and statistics of active IGERT projects.



Appendix 2: Photo Credits

Front Cover (left to right): 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

Marin Conservation Corps Director Deborah Schoenbaum and youth volunteers assisted with an eradication effort coordinated by an IGERT trainee. (0114432: Strauss, University of California Davis)
Credit: Ann Dickinson

"Flower Bouquet," a 3-D nanostructure grown by controlled nucleation of silicon carbide nanowires on Gallium catalyst particles. As the growth proceeds, individual nanowires 'knit' together to form 3-D structures.
Credit: Ghim Wei Ho and Prof. Mark Welland, Nanostructure Center, University of Cambridge

Elephants in Chobe National Park, Botswana. (0504422: Brown, University of Florida)
Credit: MT Brown

Brian D. Iverson, a mechanical engineering doctoral student at Purdue University, holds up a disk containing several "micro-pump" cooling devices, which are small enough to fit on a computer chip. The tiny pumps circulate coolant through channels etched into the chip.
Credit: David Umberger, Purdue University News Service

Page 9: Pampas grass (*Cordatella jubata*), an invasive species that naturalizes throughout California and still is readily available in the retail trade. (0114432: Strauss, University of California Davis)
Credit: Mandy Tu

Page 10 (top): A student tests the biofeedback for rehabilitation system being developed by the experiential media IGERT at ASU. (0504647: Rikakis, Arizona State University)
Credit: Tim Trumble

Page 10 (bottom): IGERT trainees and associates developing and testing the SMALLab environment. (0504647: Rikakis, Arizona State University)
Credit: Ken Howie

Page 11: Professor Stephen Walsh with GPS device in the Galapagos Islands. (0333193: Entwisle, University of North Carolina Chapel Hill)
Credit: Amy McCleary

Page 12: Laser mediated heat shocks. Transgenic wing tissue from *Bicyclus Anynana* butterflies showing EGFP expressing cells due to a line heat shock. Higher magnification of EGFP expressing cells. Wildtype wing tissue after line heat shock. Complex grid pattern of EGFP expression. Complex butterfly pattern of EGFP expression as a result of laser heat shock. Scale bar = 100 μm in all panels. (0114330: Cartwright, State University of New York Buffalo)
Credit: D. M. Ramos, F. Kamal, E. A. Wimmer, A. N. Cartwright, and A. Monteiro, "Temporal and spatial control of transgene expression using laser induction of the hsp70 promoter," BMC Developmental Biology, vol. 6, Nov 2006

Page 14: Atmospheric science laboratory classroom with meteorological instruments and data acquisition systems for hands-on learning. (0221688: Mehta, Texas Tech University)
Credit: Courtesy of Wind Science and Engineering Research Center, Texas Tech University - Kishor C. Mehta

Page 15 (top right): Molecular Dynamics of Monoamine Oxidase B: A Monotopic Membrane Protein: Images generated by William Allen using VMD (unpublished). This image shows a close up of the tail sections under investigation. (0333378: Duncan, Virginia Polytechnic Institute and State University)
Credit: William Allen

Page 15 (middle left): Tailored Macromolecules for DNA Complexation and Cell Transfection. (0333378: Duncan, Virginia Polytechnic Institute and State University)
Credit: John Layman

Page 16: Elephants in Chobe National Park, Botswana. (0504422: Brown, University of Florida)
Credit: MT Brown

Page 18 (top): As part of the up-and-coming \$1.4 Billion Spallation Neutron Source at Oak Ridge National Laboratory, Oak Ridge, Tennessee, the VULCAN engineering diffractometer is being developed. VULCAN's design allows for multiple detector-bank coverage with in-situ tension and compression capabilities. This setup is currently unavailable among neutron engineering diffractometers in the world. (09987548: Liaw, University of Tennessee Knoxville)
Credit: Adapted from Materials Science and Engineering A, 437, 126-133, 2006

Page 18 (bottom): 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

Page 19 (middle column): MAO-B dimer embedded into a lipid bilayer. (0333378: Duncan, Virginia Polytechnic Institute and State University)
Credit: William Allen

Page 20: Students and WISE personnel documenting damage caused by Hurricane Katrina. (0221688: Mehta, Texas Tech University)
Credit: Courtesy of Wind Science and Engineering Research Center, Texas Tech University' - Kishor C. Mehta

Page 21: 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

Page 22: Mini-Z THz spectrometer. (0333314: Wang, Rensselaer Polytechnic Institute)
Credit: Brian Schulkin

Page 23: Apparent slip velocity as a function of bulk shear rate (flow intensity) for a polydimethylsiloxane (PDMS) melt of molecular weight 970,000 in contact with a surface with tethered PDMS chains with a molecular weight of 96,000. The experimental data are by Durliat et al. [Europhys. Lett., 38, 383-388 (1997)]. (0221589: Denn, City University of New York City College)

Credit: The figure is from a paper "A stochastic chain simulation of wall slip in entangled polymer melts" by Fang Xu, Morton M. Denn, and Jay D. Schieber, to appear in the Journal of Rheology in May, 2006. NSF has permission to use the figure.

Page 26: TTU Windfluvana: 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 29 (left column): University of Maine Sensor Science, Engineering and Informatics Project. (0504494: Beard-Tisdale, University of Maine)
Credit: UMaine SSEI E. Roy

Page 29 (right column): Marin Conservation Corps Director Deborah Schoenbaum and youth volunteers assisted with an eradication effort coordinated by an IGERT trainee. (0114432: Strauss, University of California Davis)
Credit: Ann Dickinson

Page 30: Cathy McNally and Mr. Doto Masamba, a Saadani Park Ranger, recording river edge habitat condition during an ecological reconnaissance of the Wami River in Tanzania. (0504103: August, University of Rhode Island)
Credit: Baraka Kalanghe

Page 30 (bottom left): IGERT SKINS trainee Andrea Wesser served as a student volunteer during the 2006 Micro/Nano Summer Rootics Camp at the University of South Florida. (0221681: Bhansali, University of South Florida)
Credit: Praveen Sekhar

Page 31: 2007-2008 MCTP Fellows, October 3, 2007. Top row (L-R) Matthew Allen, Jeffrey Wright, Li-Min (Raymond) Chen; 2nd row (L-R) Zachary O'Brien, Gregory Kuzmanich, Steven Jonas; 3rd row (L-R) Iris Rauda, Danny King; 4th row (L-R) Michael Kahn, Cortnie Vogelsberg, Dyanara Parra, Laura Saldarriaga-Lopez, Sabah Bux; 5th row (L-R) Emil Song, Wyatt Nelson. Not pictured are Augustin Hong, Alexander Tucker-Schwartz. (0114443: Garrell, University of California Los Angeles)
Credit: UCLA Materials Creation Training Program

Page 35: The invasive Japanese mud snail, *Batillaria attramentaria*, may be small, but can have a tremendous impact on ecosystems of San Francisco Bay. (0114432: Strauss, University of California Davis)
Credit: Ann Dickinson

Page 36: MILES IGERT trainee, Abby Turpyn Peairs, presenting her research in the national conference. (Duncan: Virginia Polytechnic and State University)
Credit: Abby T. Peairs

Page 37: A student tests the biofeedback for rehabilitation system being developed by the experiential media IGERT at ASU. (0504647: Rikakis, Arizona State University)
Credit: Tim Trumble

Page 39: IGERT Trainee Scot Waye 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

Back Cover (left to right): Detecting Biological Samples Lab-on-a-chip being tested under fluorescence microscope for detection of biological samples.
Credit: Melvin Khoo, Sam Lu and Change Liu, University of Illinois at Urbana-Champaign

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

Kristen Baker views some of her study subjects, tobacco hornworms
Credit: Rick Fatica; Image courtesy Perspectives Magazine

