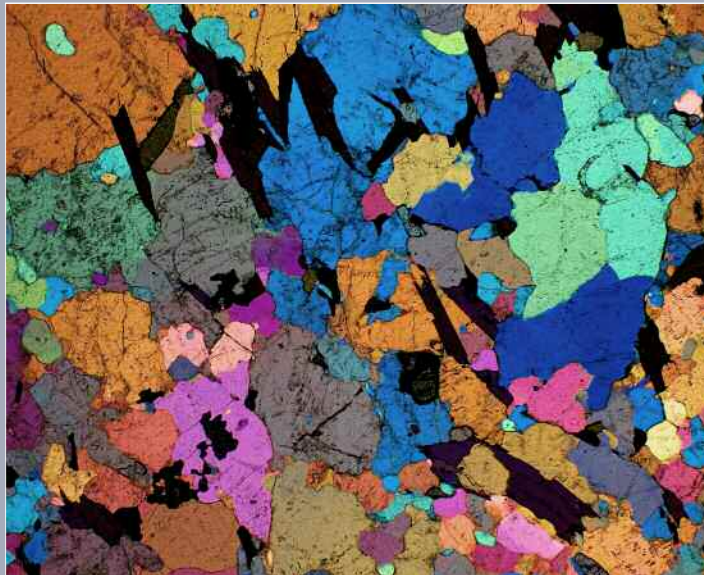


Awards, Education, Centers and Institutes, and Organizations



A thick quartz section was photographed by using interference cross-polarization photomicrography. The photomicrograph was captured at 20x magnification, with a digital Nikon D100 single lens reflex camera back, with the ISO rated at 200. The image was created to demonstrate how most colorless, translucent specimens (e.g., bone tissue, crystals), can be transformed to an image replete with a full-color spectrum. The resulting images have pseudo-hues that help delineate fine structures and details that might otherwise have gone unnoticed. The image was created by Bob Turner, director, BioMedical Graphics, as an example of this technique for Scripps Research investigators to consider using when illustrating their science. The photomicrograph received honorable mention in the 2007 Nikon Small World Photomicrography Competition.



Class of 2007

Kellogg School of Science and Technology

Staff Awards and Activities

Barbas, C.F. III—Fellow, American Association for the Advancement of Science; In-Cites Highly Cited Researcher, Thomson Scientific, Philadelphia, Pennsylvania; Member, Faculty in Chemical Biology, *Faculty 1000*, Biology Reports, Ltd.; Editorial Boards, *Bioorganic and Medicinal Chemistry Letters*, *Bioorganic and Medicinal Chemistry*.

Beutler, B.—William B. Coley Award for Distinguished Research in Basic and Tumor Immunology, Cancer Research Institute; Gran Prix Charles-Leopold-Mayer, Grand Prize, French Academy of Sciences; Doctor of Medicine Honoris Causa, Technical University of Munich, Munich, Germany.

Boger, D.L.—ACS Ernest Guenther Award in Natural Products Chemistry, American Chemical Society; Fellow, American Academy of Arts and Sciences; Olsen Lecturer, Utah State University, Logan, Utah; Editor-in-Chief, *Bioorganic and Medicinal Chemistry Letters*; Editorial Boards, Tetrahedron Publications, *Organic Reactions*, *Current Opinion in Drug Discovery and Development*, *Current Drugs*.

Bokoch, G.M.—Editorial Boards, *Journal of Leukocyte Biology*, *Journal of Biological Chemistry*, *Molecular Pharmacology*.

Brooks, C.L. III—Editor-in-Chief, *Journal of Computational Chemistry*.

Buchmeier, M.J.—Fellow, American Academy of Microbiology; Fellow, American Association for the Advancement of Science; Associate Director, Pacific Southwest Center for Biodefense and Emerging Infectious Diseases; Chair, American Society for Microbiology 6th Annual Biodefense and Emerging Diseases Research Meeting; Member, Scientific Advisory Boards, Biodefense and Emerging Infections Research Resources Repository, PathoSystems Resource Integration Center (Virginia Bioinformatics Institute), Predictive Biology Initiative, Pacific Northwest National Laboratories; Member, National Multiple Sclerosis Society Study Section; Editor, *Microbiology and Molecular Biology Reviews*; Associate Editor, *Journal of Virology*, *PloS Pathogens*, *Virology*, *Viral Immunology*, *BMC Microbiology*, *Virology Journal*.

Case, D.A.—Associate Editor, *Biopolymers*, *Journal of Molecular Biology*; Editorial Board, *Journal of Biomolecular NMR*.

Chisari, F.V.—Distinguished Scientist Award, Hepatitis B Foundation; Fellow, American Academy of Microbiology; Member, National Academy of Sciences; Member, Institute of Medicine, National Academy of Sciences; Member, Class IV Membership Committee, National Academy of Sciences; Member, Scientific Advisory Board, Center for the Study of HCV, Rockefeller University, New York, New York; Member, Scientific Advisory Board, Northeast Biodefense Center; ISI Highly Cited Researcher; Stone Memorial Lecture, Pennsylvania State University, University Park, Pennsylvania; Editorial Boards, *Journal of Virology*, *Viral Immunology*, *Virology*, *Microbial Pathogenesis*, *Journal of Clinical Investigation*.

Cleveland, J.L.—Editor, *Molecular and Cellular Biology*; Senior Editor, *Molecular Cancer Research*; Associate Editor, *Molecular Biology of the Cell*, *Cell Death and Differentiation*.

Curtiss, L.K.—Distinguished Achievement Award, American Heart Association; Fellow, American Heart Association; Associate Editor, *Journal of Lipid Research*; Editorial Board, *Atherosclerosis*, *Thrombosis, and Vascular Biology*.

Danuser, G.—Associate Editor, *IEEE Transactions on Image Processing*; Editorial Board, *Biophysical Journal*.

Dawson, P.E.—Member, Faculty in Chemical Biology, *Faculty 1000*, Biology Reports, Ltd.; Editorial Boards, *International Journal of Peptide Research and Therapeutics*, *Letters in Peptide Science*.

Dyson, H.J.—Editorial Boards, *Journal of Magnetic Resonance*, *Biophysical Journal*.

Elder, J.H.—Editorial Boards, *Virology*, *Journal of Virology*.

Gascoigne, N.R.J.—Member, Program Committee, American Association of Immunologists; Member, Cellular and Molecular Immunology A Study Section, National Institutes of Health; Section Editor, *Journal of Immunology*.

Gerace, L.—Editorial Boards, *Journal of Cell Biology*, *BMC Cell Biology*.

Goodin, D.B.—MERIT Award, National Institutes of Health.

Gottesfeld, J.M.—Associate Editor, *Journal of Biological Chemistry*.

Havran, W.L.—Editorial Board, *Immunological Reviews*.

Janda, K.D.—Section Head, Faculty in Chemical Biology, *Faculty 1000*, Biology Reports, Ltd.; Editorial Boards, *Chemical Reviews*, *Journal of Medicinal Chemistry*, *Combinatorial Chemistry Research and Applications*, *Bioorganic and Medicinal Chemistry Letters*, *Bioorganic and Medicinal Chemistry*, *Combinatorial Chemistry High-Throughput Screening*.

Johnson, E.F.—Editor-in-Chief, *Drug Metabolism and Disposition*; Editorial Board, *Molecular Pharmacology*.

Joyce, G.F.—Member, National Academy of Sciences; Member, External Advisory Board, Beckman Institute, California Institute of Technology, Pasadena, California; Head, Faculty in Chemical Biology, *Faculty 1000*, Biology Reports Ltd.; Associate Editor, *Evolutionary Computation*, *Origins of Life and Evolution of the Biosphere*.

Kenny, P.J.—Travel Fellow, Winter College on Brain Research, Snowmass, Colorado.

Lerner, R.A.—Doctor of Science, honoris causa, Oxford University, Oxford, England; 35th John Stauffer Lecture in Science, University of California, Los Angeles; Editorial Boards, *Bioorganic and Medicinal Chemistry*, *Bioorganic and Medicinal*, *Chemistry Letters*, *Catalysis Technology*, *Drug Targeting and Delivery*, *Journal of Virology*, *Molecular Biology and Medicine*, *Molecular Medicine*, *Vaccine*, *Angewandte Chemie*.

Lotz, M.—President, Osteoarthritis Research Society International; Member, Skeletal Biology and Skeletal Regeneration Study Section, National Institutes of Health; Member, Faculty in Medicine, *Faculty 1000*, Biology Reports, Ltd.; Associate Editor, *Arthritis Research and Therapy*; Editorial Boards, *Biotherapy*, *Osteoarthritis and Cartilage*, *Journal of Orthopedic Research*, *Modern Rheumatology*.

Miles, L.A.—Chair, American Heart Association Western States Affiliate Young Investigators' Forum; Chair, American Heart Association Western States Affiliate Peer Review Committee 4B; Member, *Faculty 1000*, Biology Reports, Ltd.; Editorial Board, *Frontiers in Bioscience*.

Milner, R.—Harry Weaver Neuroscience Scholar Award, National Multiple Sclerosis Society.

Mosier, D.E.—Editorial Board, *Journal of Virology*.

Nicoalou, K.C.—ISHC Senior Award Lecturer in Heterocyclic Chemistry International Society of Heterocyclic Chemistry; Honorary Fellowship, Indian Academy of Sciences; Joshua Jortner Distinguished Lecturer in

Chemistry, Tel Aviv University, Tel Aviv, Israel; Co-Editor-in-Chief, *Chemistry and Biology*; Editorial Boards, Tetrahedron Publications, *Synthesis*, *Carbohydrate Letters*, *Chemistry—A European Journal*, *Perspectives in Drug Discovery and Design*, *Indian Journal of Chemistry*, Section B, *Current Opinion in Bioorganic Chemistry*, *Current Organic Chemistry*, *Combinatorial Chemistry High-Throughput Screening*, *Organic Letters*, *ChemBioChem*, *Chemistry and Biodiversity*, *Bulletin for the Chemical Society of Japan*, *Chemistry—An Asian Journal*, *International Journal of Oncology*.

Oldstone, M.B.A.—Fellow, American Academy of Microbiology; Member, National Academy of Sciences, Institute of Medicine; Elected Member, Scandinavian Society of Immunology; American Association of Physicians; American Society for Clinical Investigation; Member, Scientific Advisory Committee, Pew Scholars Program in the Biomedical Sciences; Winford P. Larson Award Lecture, University of Minnesota Medical School, Minneapolis, Minnesota; Editor, *Virology*, *Current Topics in Microbiology and Immunology*; Editorial Boards, *Immunity*, *Journal of Clinical Investigation*.

Pollard, K.M.—Member, External Advisory Committee, Center for Environmental Health Sciences, University of Montana, Missoula, Montana; Peer Reviewer, Report on Assessing the Human Health Risks of Trichloroethylene: Key Scientific Issues, National Research Council.

Polich, J.—Editorial Boards, *Brain Topography*, *Brain and Cognition*, *Journal of Psychophysiology*.

Rebek, J., Jr.—Distinguished Scientist Award, American Chemical Society; Evans Award, Ohio State University, Columbus, Ohio; Creativity Award in Chemistry, Dance, and Music, University of Oregon, Eugene, Oregon; Member, Academia Europaea; Wyeth Lecturer, Princeton University, Princeton, New Jersey; Haberman Lecturer, Marquette University, Milwaukee, Wisconsin; Editorial Boards, Tetrahedron Publications, *Bioorganic and Medicinal Chemistry Letters*, *Bioorganic and Medicinal Chemistry*, *Journal of the Chemical Society—Perkin Transactions*, *Chemistry and Biology*, *Journal of Organic Chemistry*, *Current Opinion in Chemical Biology*, *Progress in Physical Organic Chemistry*, *Journal of Supramolecular Chemistry*.

Reed, S.I.—Editorial Board, *Molecular and Cellular Biology*.

Reisfeld, R.A.—Coeditor, *Journal of Clinical Laboratory Analysis*; Editorial Boards, *Bioconjugate Chemistry*,

Cancer Biotherapy and Radiopharmaceuticals, Cancer Immunology and Immunotherapy, Cancer Research, Clinical Cancer Research, Hybridoma, International Journal of Oncology, Journal of Immunology, Tumor Targeting.

Salomon, D.R.—Codirector, Center for Organ and Cell Transplantation, Scripps Health, Green Hospital, La Jolla, California; Associate Editor, *American Journal of Transplantation*; Editorial Board, *Transplantation*.

Schmid, S.L.—MERIT Award, National Institutes of Health; Fellow, American Association for the Advancement of Science; Board Member and Treasurer, Athena, University of California, San Diego; Member, Study Section for Program Pathway to Independence Awards (K99/R00), National Institutes of Health; Editor-in-Chief, *Molecular Biology of the Cell*.

Sharpless, K.B.—Marvel Lecture, University of Illinois, Urbana-Champaign, Illinois; K.T. Wang Bioorganic Lecture, Institute of Biological Chemistry, Taipei, Taiwan; Johnston Lecture, Emory University, Atlanta, Georgia; American Institute of Physics Nobel Laureates Minority Servicing Institutions Visitation Program, Texas Southern University, Houston, Texas; Editorial Boards, *Advanced Synthesis and Catalysis, Arkivoc, Beilstein Journal of Organic Chemistry, Bulletin of the Chemical Society of Japan, Chemistry—An Asian Journal, Chirality, Current Opinion in Drug Discovery and Development, Current Drug Discovery Technologies, Enantiomer, Organic Letters, Synlett, Topics in Stereochemistry*.

Stevens, R.C.—Editorial Boards, *Protein Expression and Purification, Biodrugs, Drug Discovery Today, The Protein Journal*.

Suhr, C.D.—Ho-Am Prize in Medicine, Ho-Am Foundation, Seoul, Korea.

Sutcliffe, J.G.—Member, International Advisory Board, International Institute of Molecular and Cell Biology, Warsaw, Poland; Editorial Boards, *DNA and Cell Biology, Molecular Neurobiology Reviews, Journal of Neuroscience Research, Journal of Molecular Neuroscience, Advances in Neuroscience, Journal of Neurochemistry*.

Torbett, B.E.—Consultant, Center for Biologics Evaluation and Research Response, Food and Drug Administration, States as Certifiers; Member, AIDS Molecular and Cellular Biology Study Section, National Institute of Allergy and Infectious Diseases; Reviewer, Special Emphasis Panel, Program Project in Myeloid Biology, National Heart, Lung, and Blood Institute.

Vogt, P.K.—Heinrich Pette Lecture, University of Hamburg, Hamburg, Germany; Chairman, Scientific Advisory Board, Oncogene Research Institute, University of Singapore; Member, Selection Committee, Robert Koch Foundation; Member, Board of Directors, Foundation for Advanced Cancer Studies; Editorial Boards, *Virology, Journal of Virology, Current Topics in Microbiology and Immunology, Cancer Research, Proceedings of the National Academy of Sciences, Blood Cells, Molecules and Diseases, Cell Cycle*.

Weissmann, C.—Sackler Lecture, Massachusetts Institute of Technology, Boston, Massachusetts; Inaugural Speaker, Professor Severo Ochoa Lectures, New York University, New York, New York; Editorial Board, *Prion*.

Whitton, J.L.—Chair, Special Study Section on Vaccine Development, National Institutes of Health; Member, Advisory Committee on Fellowships, National Multiple Sclerosis Society; Member, Advisory Board, Burroughs Wellcome Fund; Ad Hoc Member, Experimental Virology and Virology study sections, National Institutes of Health; Editor, *Virology*; Acting Editor-in-Chief, *Viral Immunology*; Editorial Boards, *Journal of Virology, FEMS Medical Microbiology and Immunology*.

Wilson, I.A.—Fellow, Royal Society of London; Fellow, American Academy of Arts and Sciences; Member, Scientific Advisory Board, Keystone Symposia; Associate Editor, *Journal of Molecular Biology, Immunity*; Editorial Boards, *Science, Journal of Experimental Medicine*.

Wittenberg, C.—Editorial Board, *Molecular and Cellular Biology*.

Wright, P.E.—Editor-in-Chief, *Journal of Molecular Biology*; Editorial Boards, *Biochemistry, Current Opinion in Structural Biology, Journal of Biomolecular NMR*.

Wüthrich, K.—Editor-in-Chief, *Journal of Biomolecular NMR*; Associate Editor, *Advanced Science Letters*; Editorial Boards, *Biochimie, Biomolecular NMR Assignments, Biopolymers, ChemBioChem, Chemical Physics Letters, Current Opinion in Structural Biology, IUBMB Life, Journal of Magnetic Resonance, Journal of Membrane Biology, Journal of Structural and Functional Genomics, Proteins, Structure*.

Yagi, T.—Special Reviewer, Neural Oxidative Metabolism and Death Study Section, National Institutes of Health; Editorial Board, *Journal of Bioenergetics and Biomembranes*.



Jeffery W. Kelly, Ph.D.

Kellogg School of Science and Technology

In 2007, the graduate program again had many accomplishments. At the beginning of the year, the graduate office processed more than 400 domestic and international applications to the Kellogg School of Science and Technology. During 3 weekends in February and March, visiting students were immersed in a social and academic whirlwind, including interviews with faculty and opportunities to speak with current students. The admissions committees offered positions to 97 students; 32 accepted the offer, including 2 students who will study on the Florida campus (among them, the first biologist) and 3 Skaggs Oxford Scholars.

During the spring, the graduate program deans initiated an external review of the administration of the graduate program. The review panel, which consists of W. James Nelson, Stanford University; Michael A. Marletta, University of California, Berkeley; Joanne Chory, The Salk Institute; and Larry Overman, University of California, Irvine, met privately with students, faculty, and other groups to determine if adequate staffing was in place to maintain the program's momentum of success.

In May, the annual commencement ceremony was again held at the Neurosciences Institute. Among the 27 graduating students was the first from the Florida campus, Porino Va. Marye Anne Fox, chancellor of the University of California, San Diego, gave the commencement address and received an honorary degree.

The new students started to arrive on the Scripps Research campuses in the summer. Events to ease their transition included a luncheon with the dean and associate deans, a picnic with the continuing students, and orientations by the graduate office and the human resources department. At the beginning of August, the new students began the required Critical Thinking and Communication in Science course developed by Francisco Asturias and Ashok Deniz, which includes information on applying for National Science Foundation and other fellowship awards.

The annual student/faculty symposium, held at the Bahia Resort Hotel on Mission Bay, kicked off the academic year for continuing students in California and Florida. For the first time, Skaggs Oxford Scholars who reside in the United Kingdom also attended the symposium. Christopher Vanderwal, 2004 chemistry alumnus and professor at University of California, Irvine, was guest speaker. A total of 165 students presented posters, and 17 students gave oral presentations. The gathering was honored to have Scripps Research trustee A. Brent Eastman, medical director, Scripps Health, join the luncheon.

As in previous years, the stipends and tuitions of the Kellogg School students were supported by generous donations from individuals, foundations, and corporations, including gifts from the American Chemical Society, the ARCS Foundation, Inc., the Ann and Bill Bauce Family Foundation, the Donald E. and Delia B. Baxter Foundation, David and Ursula Fairchild, the Gilula Memorial Fund, the Hertz Foundation, the Fletcher Jones Foundation, the Koshland Foundation, Novartis, the Gustavus and Louise Pfeiffer Research Foundation, Lesly Starr Shelton, and the Andrea Elizabeth Vogt Memorial Fund.

The administration of the Kellogg School continues to work on the 3-year process for reaccreditation. The institutional proposal to the Western Association of Schools and Colleges was accepted on the first submission, and the review panel considered it exemplary. The proposal is now being used as a model for other institutions involved in the process. A survey is being developed for distribution to the students, faculty, and

alumni to evaluate the overall effectiveness of graduate education at the Kellogg School.

With a graduate student population of 234, including 10 Florida students, 8 Skaggs Oxford Scholars, and 2 University of California, San Diego, Medical Scientist

Training Program (M.D./Ph.D.) students, the faculty and administration of the graduate program are preparing to face new challenges as these diverse intellectual individuals begin their careers in science.

**STUDENTS IN
CHEMISTRY AND
CHEMICAL BIOLOGY
PROGRAMS**

Adrian Accurso

Dartmouth College, B.A.

Klaus Albertshofer

State Agriculture Engineering School (Germany), B.S.

Erin Anderson

Illinois Wesleyan University, B.A.

Robert Aversa

Cornell University, B.A.

Daniel Bachovchin

Harvard College, A.B.

Catherine Barglow

Stanford University, B.S.

Robert Bates

Massachusetts Institute of Technology, B.S.

John Beierle

Boston College, B.S.

Jacqueline Blankman

Northwestern University, B.A.

William Brenzovich

College of William and Mary, B.S.

Steven Brown

University of Wisconsin, Madison, B.S.

Noah Burns

Columbia University, B.A.

Bradley Charette

University of Nebraska, B.S.

Jason Chen

Harvard University, A.B.

Ming Chen

Brown University, M.S.

Johnathan Chittuluru

Cornell University, B.A.

Chung-Han Chu

National Taiwan University, B.S.

Ryan Clark

University of California, San Diego, B.S.

Elizabeth Culyba

College of William and Mary, B.S.

Trevor Dale

Simon Fraser University, B.S.

Stephen Dean

Vanderbilt University, B.S.

Jessica DeMartino

University of Delaware, B.S.

Michael DeMartino

University of Delaware, B.S.

Damian Ekiert

University of Chicago, B.A.

Shelby Ellery

Cedar Crest College, B.S.

Michael Frederick

University of Minnesota, B.S.

Brian Frezza

Carnegie Mellon University, B.S.

Thomas Gaj

University of Arizona, B.S.

Joie Garfinkle

Boston College, B.S.

Christine Fang Gelin

University of California, Los Angeles, B.S.

Ramesh Giri

Tribhuvan University, M.Sc.

Yevgeniy Grigoryev

City University of New York, B.A.

Carlos Guerrero

Harvard University, B.A.

Benjamin Hafensteiner

University of Rochester, B.A.

Geoff Halvorsen

University of Illinois, B.S.

David Harris

Cornell University, B.A.

Jennifer Hazen

Franklin and Marshall College, B.A.

Simon Hilcove

Arizona State University, B.S.

Vu Hong

University of California, Berkeley, B.S.

Wooyoung Hur

Pohang University, B.S.

Yoshihiro Ishihara

McGill University, M.S.

Valer Jeso

Massachusetts Institute of Technology, B.S.

Robert Jones

Duke University, B.S.

Daisuke Kato

University of California, Davis, B.S.

Stephanie Kazane

Boston College, B.S.

Dong-In Koo

Brown University, B.S.

Paul Krawczuk

New York University, B.S.

Tun-Hsun Kuo

National Taiwan University, M.S.

Sen Wai Kwok

University of California, San Diego, B.S.

James Lajiness

Hope College, B.S.

Jonathan Lam

University of British Columbia, B.S.

Jolene Lau

California Institute of Technology, B.S.

Aaron Leconte

Carleton College, B.A.

Hyun Soo Lee

Pohang University, M.S.

Sangyeul Lee

University of California, Berkeley, B.S.

Ang Li

Peking University, B.S.

Weiwei Li

National University of Singapore, M.S.

Yee Hwee Lim

University of Bristol, B.Sc.

David Lin

Stanford University, B.S.

Ricardo Lira

University of California, San Diego, M.S.

Ewa Lis

Cornell University, B.A.

Chang Liu

Harvard University, B.A.

Jonathan Lockner

University of Illinois, Urbana-Champaign, B.S.

Jonathan Long

Columbia University, B.A.

Andre Loutchnikov

University of Toronto, M.S.

Colin Lowery

University of Virginia, B.S.

Costas Lyssiotis
University of Michigan, B.S.

Karen MacMillan
University of California,
Davis, B.S.

Thomas Maimone
University of California,
Berkeley, B.S.

Dena Marrinucci
University of Vermont, B.S.

Tiansheng Mei
Lanzhou University, B.S.

Jeremy Mills
Vanderbilt University, B.S.

Timothy Newhouse
Colby College, B.A.

Christine Nguyen
Boston College, B.S.

Andrea Nold
Indiana University, B.S.

Daniel O'Malley
Rice University, B.S.

Derrick Ong
National University of
Singapore, M.S.

Adrian Ortiz
University of Arizona, B.A.

Katerina Otrubova
San Diego State University,
M.S.

Paresma Patel
University of North Carolina,
Chapel Hill, B.S.

Francis Peters
University of New South
Wales, B.S.

Rajan Pragani
Goucher College, B.A.

Benjamin Pratt
Dartmouth College, B.A.

Stanislav Presolski
Colby College, B.A.

Jessica Rauschel
Texas A&M University, B.S.

Timothy Reichart
University of Virginia, B.S.

Jeremy Richter
Butler University, B.S.

Tucker Roberts
Vanderbilt University, B.S.

William Robertson
University of Colorado, B.A.

David Sarlah
University of Ljubljana, B.S.

Martin Schnermann
Colby College, B.A.

Ian Seiple
University of California,
Berkeley, B.S.

Ryan Shenvi
Pennsylvania State
University, B.S.

Jun Shi
Wuhan University, B.S.

Sarah Siegel
University of Virginia, B.S.

Corin Slown
Yale University, B.S.

James Solomon
University of California, San
Diego, M.S.

Theresa Tiefenbrunn
California Institute of
Technology, B.S.

Jennifer Treweek
California Institute of
Technology, B.S.

George Scott Tria
Boston University, B.A.

Hillary Van Anda
Bryn Mawr College, A.B.

Amira Moreno Vera
University of Pennsylvania,
B.A.

Florina Voica
Smith College, B.A.

Donghui Wang
Lanzhou University, B.S.

Jianhua Wang
University of Montreal, M.S.

Sheng-Kai Wang
National Tsing Hua
University, B.S.

Masayuki Wasa
Brandeis University, B.S.

John Whitaker
Washington State University,
B.S.

Landon Whitby
University of Utah, B.S.

SusAnn Winbush
University of California, Los
Angeles, B.S.

Isaac Yonemoto
University of Chicago, B.S.

Travis Young
Boston College, B.S.

Wayne Yu
Portland State University, B.S.

Andrea Zuhl
Northwestern University, B.A.

**STUDENTS IN BIOLOGY
AND BIOPHYSICS
PROGRAMS**

Phillip Aoto
University of California,
Irvine, B.S.

Kathryn Applegate
Centenary College, B.S.

Rena Astronomo
Simon Fraser University, B.S.

Michael Barnes
University of Notre Dame,
B.S.

Gira Bhabha
University of Chicago, B.A.

Eric Brustad
Purdue University, B.S.

Anne Bunner
Iowa State University, B.S.

Russell Burge
Arizona State University, B.S.

Stuart Cahalan
University of California, San
Diego, B.S.

Joshua Chappie
Brandeis University, M.S.

Stephen Chen
Rice University, B.S.

Yee-Ting Chong
Cornell University, B.A.

Eugene Chun
University of California,
Berkeley, B.A.

Ronald Coleman
California State University,
Fullerton, B.S.

Corey Dambacher
San Diego State University,
M.S.

Lorenzo de Lichtervelde
University of Louvain, B.S.

Neekesh Dharra
University of California, San
Diego, B.S.

Melissa Dix
Pennsylvania State
University, B.S.

Bao Duong
University of California, Los
Angeles, B.A.

Hunter Elliot
Colorado College, B.A.

Jason Fiedler
University of Minnesota, B.A.

Kelly Flanagan
Saint Louis University, B.S.

Anna Galkin
Cornell University, B.S.

Marin Gantner
University of Puget Sound,
B.S.

Sulagna Ghosh
University of Maryland, B.S.

Russell Gordley
Swarthmore College, B.A.

Daniel Groff
Albertson College, B.S.

Jing Guo
Peking University, B.S.

Peter Hawkins
Brigham Young University,
B.S.

- WeiWei He**
University of Science and Technology of China, M.S.
- Christine Johanna Heideker**
Julius Maximilians Universität Würzburg, Diplom.
- Ronald Hills**
Florida State University, B.S.
- David Horning**
Harvard University, A.B.
- Amanda Hoyt**
University of Washington, B.S.
- Julie Hsu**
University of California, Berkeley, B.A.
- Pei-hsin Hsu**
Stanford University, M.S.
- Audra Johnson**
San Francisco State University, B.S.
- Graham Johnson**
Johns Hopkins University, M.A.
- Paul Johnson**
University of Minnesota, B.S.
- Angeldeep Kaur**
Bryn Mawr College, B.A.
- Piotr Kazmierczak**
University of Warsaw, M.Sc.
- Donald Kerkow**
University of California, San Diego, B.S.
- Christopher Kimberlin**
University of California, Santa Barbara, B.S.
- Robert Kirchdoerfer**
University of Wisconsin, Madison, B.S.
- Marina Kolesnichenko**
Dartmouth College, B.A.
- Heather Kiyomi Komori**
Albertson College, B.S.
- Kristopher Koudelka**
University of Wisconsin, River Falls, B.S.
- Sherman Ku**
Georgia Institute of Technology, B.S.
- Jinny Kwong**
University of California, San Diego, B.S.
- Gabriel Lander**
State University of New York, Binghamton, B.S.
- Pick-Wei Lau**
University of Arizona, M.S.
- Daniel Leaman**
University of Pittsburgh, B.S.
- Marvin Jie Rong Lee**
Imperial College London, B.Sc.
- James Lim**
McGill University, B.S.
- Tracey Lincoln**
Williams College, B.A.
- Jingyun Liu**
University of California, Berkeley, B.A.
- Jiaozhi Lu**
University of Alberta, B.S.
- Victor Mitch Luna**
Stanford University, B.S.
- Rajan Mannige**
University of Houston, B.S.
- Katherine Marcucci**
Northwestern University, B.A.
- Christopher Martin**
Tufts University, B.A.
- Alexandre Matov**
Technical University Varna, M.Sc.
- Mayako Michino**
Georgia Institute of Technology, M.S.
- Takashi Miyamoto**
University of Tokyo, B.S.
- Crystal Moran**
Arizona State University, B.S.
- Crystal Moyer**
University of Pittsburgh, B.S.
- Anke Mulder**
Purdue University, B.S.
- Amber Murray**
Massachusetts Institute of Technology, B.S.
- Sherry Niessen**
McGill University, M.S.
- Katherine Petrie**
University of Pittsburgh, B.S.
- Emily Plummer**
University of Utah, B.S.
- Katie Podshivalova**
University of California, Santa Barbara, B.S.
- Ashley Pratt**
University of Colorado, B.A.
- Randor Radakovits**
Stockholm University, M.Sc.
- Sanjeev Ranade**
Northeastern University, M.S.
- William Ridgeway**
University of California, Berkeley, B.A.
- Cory Rillahan**
Tufts University, B.S.
- Sophie Rozenzhak**
Wayne State University, M.S.
- Erin Scherer**
University of Arkansas, B.S.
- Owen Siggs**
Australian National University, B.S.
- Gabriel Simon**
University of Pittsburgh, B.S.
- Peter Smith**
Purdue University, B.S.
- Sevil Sofueva**
International University Bremen, B.Sc.
- Luise Sternberg**
University of California, Los Angeles, B.S.
- Bogdan Tanasa**
"Gr. T. Popa" University of Medicine and Pharmacy Iasi, M.D.
- Shishi Tang**
University of Toronto, M.S.
- Megan Thielges**
Arizona State University, B.S.
- Miller Tran**
University of California, San Diego, B.S.
- Anne-Marie Turner**
Wake Forest University, B.S.
- Lisa Tuttle**
University of Minnesota, M.S.
- Sarah Voytek**
Brown University, B.S.
- Laura Walker**
University of Wisconsin-Madison, B.S.
- Andrew Ward**
Duke University, B.S.
- Peter Watson**
Carleton College, B.A.
- Stuart Webb**
University of California, Santa Barbara, B.S.
- Kathryn Weinell**
University of Colorado, B.A.
- Joann Wu**
University of California, San Diego, B.S.
- Fei Xu**
University of Science and Technology of China, B.S.
- Craig Yoshioka**
University of Florida, B.S.
- Jason Young**
University of Wisconsin, B.S.



Ronald A. Milligan, Ph.D.

The Center for Integrative Molecular Biosciences

The Center for Integrative Molecular Biosciences (CIMBio) was created in 2002 to foster collaborative research dedicated to elucidating the high-resolution structures, mechanisms of action, and in vivo dynamic behaviors of the cell's molecular machines. CIMBio now houses 20 research groups representing disciplines including chemistry, cell and molecular biology, electron microscopy, x-ray crystallography, advanced light microscopy, computational biology, and technology development. Floyd Romesberg, Philip Dawson, and Anette Schneemann have relocated their research groups here, occupying new laboratories on the second floor of the building and adding strengths in chemistry and structural biology.

Our faculty members have made a number of noteworthy scientific advances, a fact reflected in the number of papers published in top-ranking scientific journals. The following list highlights some of this groundbreaking science. In the journal *Cell*, Clare Waterman-Storer and her coworkers described fundamental dynamic molecular relationships that underlie rapid cell migration over substrates. Geoffrey Chang and members of his

laboratory published an article in *Science* describing the high-resolution structure of a membrane protein transporter involved in multidrug resistance. Also in *Science*, Bridget Carragher, Clint Potter, Jack Johnson, and their colleagues reported the structure of an infectious phage, including visualization of the capsid; the tightly spooled, packaged DNA; and the tail machinery that senses when packaging is complete. In an article published in *Nature*, groups headed by Dr. Carragher, Dr. Potter, and William Balch described the underlying structure of the coat protein complex-II molecular cage that mediates intracellular transport. Also in *Nature*, Ron Milligan and colleagues described the mechanism of minus-end directed motion by a microtubule-bound kinesin. In *Nature Medicine*, Mari Manchester's group reported the use of a fluorescently labeled plant virus as a biosensor for vascular imaging. This novel method can be used to effectively image the complete embryonic vasculature and highlight the process of angiogenesis in developing tumors.

It was a banner year for Clare Waterman-Storer. She received a number of honors and awards, including the R.R. Bensley Award in Cell Biology from the American Association of Anatomists, the Director's Pioneer Award from the National Institutes of Health, and an Established Investigatorship from the American Heart Association.

During November 2005, 41 students from the United States, Canada, and Europe attended a 9-day practical course in molecular microscopy run by the National Resource for Automated Molecular Microscopy, our Biomedical Technology Resource Center sponsored by the National Center for Research Resources. Leading scientists in the field participated in lectures, research seminars, and practical sessions that covered the theory and practice of electron microscopy and image analysis. The formal lectures and research seminars attracted many attendees from the local scientific community. In all, 27 instructors and 18 assistants were involved in the course. Financial support for the course was provided by the National Center for Research Resources; the Agouron Institute; FEI Company; Gatan Inc.; Protophysics Inc.; Tietz Video and Image Processing Systems; and Scripps Research.

The fourth in a series of training workshops on software for automated molecular microscopy was held in February 2006. Representatives from 5 institutions (Oxford; Purdue; Brandeis; University of California, San Diego; and State University of New York) attended and received intensive training on installation and use

of software developed at the National Resource for Automated Molecular Microscopy.

In the coming year, Scripps Research will be the first research institution worldwide to receive a novel compact synchrotron light source. This Scripps campus synchrotron, to be housed in CIMBio, will significantly accelerate the pace of determining challenging protein structures (e.g., membrane proteins and large macromolecular complexes) and structure-based drug design by enabling real-time experimental evaluation with high-intensity, tunable x-rays. This research is part of the new technology developments of the Accelerated Technologies Center for Gene to 3D Structure (<http://www.atcg3d.org>) in the laboratories of Peter Kuhn and Raymond Stevens.

These activities and successes during the past year highlight the collaborative, interdisciplinary nature of the science being carried out at CIMBio. The enthusiasm of our faculty, staff, fellows, and students and their commitment to our collaborative mission are also evident at the standing-room-only biweekly forums—short seminars designed to promote interdisciplinary interactions.



Tamas Bartfai, Ph.D.

Harold L. Dorris Neurological Research Institute

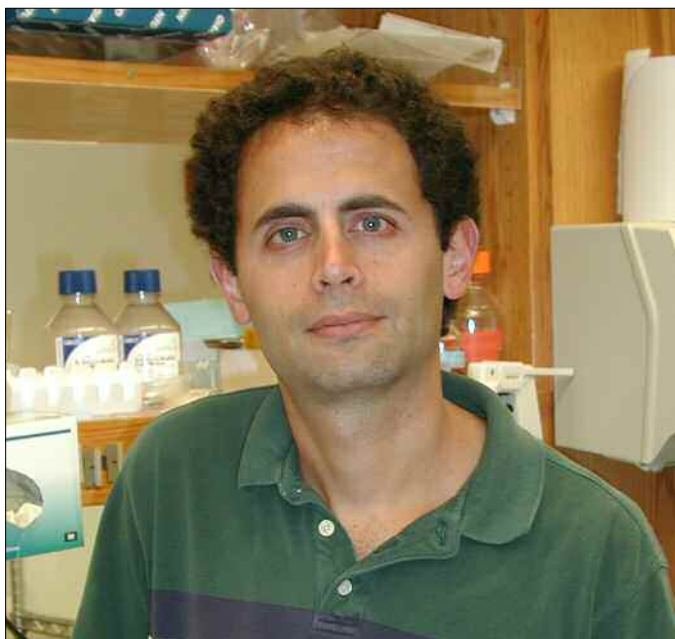
T. Bartfai, Ph.D., Director

Major depression and schizophrenia affect millions of people. Treatment of these conditions requires an understanding of their underpin-

nings, and this need is addressed by the Harold L. Dorris Neurological Research Institute. Founded in 1999 as the result of a \$10 million long-term commitment by Helen L. Dorris through the Harold L. Dorris Foundation, named in her brother's honor, the institute has attracted an international cadre of scientists from France, Switzerland, Sweden, Mexico, and Italy in such disciplines as neurology, immunology, chemistry, molecular biology, and endocrinology to study neurologic disorders.

The institute also funds the Helen Dorris Fellow in Schizophrenia, a named fellowship position for a post-doctoral researcher to study aspects of schizophrenia and depression from the neurobiological perspectives. The current fellow is Olivia Osborn, from Oxford University in England. The visiting professors at the institute in 2006 were the noted electrophysiologist and member of the French Academy of Sciences Henri Korn from the Pasteur Institute in Paris, France; noted pharmacologist and member of the Royal Swedish Academy of Sciences Lars Terenius from the Karolinska Institutet in Stockholm, Sweden; and molecular immunologist Hermann Gram from Basel, Switzerland.

In 2006, the faculty of the institute expanded beyond the founding members with the election of 2 talented young faculty members: Marisa Roberto, who is working on substance addiction, and Dorian McGavern, who is working on clearance of viral infections from the brain.



Ben Cravatt, Ph.D.

Helen L. Dorris Child and Adolescent Neuro-Psychiatric Disorder Institute

The sequencing of the human genome promises to propel humans into the age of molecular medicine, where complex diseases are diagnosed and treated in a patient- and target-specific manner. For the

nervous system, in particular, the postgenome era holds the potential to deliver groundbreaking new medicines for previously intractable psychiatric disorders including anxiety, depression, and schizophrenia.

However, in order to realize this goal, a new breed of research institute is needed that cultivates cross talk among many experimental disciplines. Indeed, unraveling the complexities of the human brain and behavior can only be achieved by bringing together scientists from diverse backgrounds and expertise, including chemistry, physics, genetics, and behavior.

The Helen L. Dorris Child and Adolescent Neuro-Psychiatric Disorder Institute was established with a generous gift from mental health advocate and San Diego State University professor emeritus Helen L. Dorris. Her interest in mental health advocacy led her to provide the funding to establish this institute, which has a strong emphasis on interdisciplinary approaches to studies of neurologic and psychiatric disorders.

Specifically, the aim of scientists at the institute is to uncover the pathologic basis of mental disorders and to develop therapies for these disorders. Several talented investigators have been recruited to join the institute. Together, these investigators are addressing many of the most challenging problems facing contemporary molecular and behavioral neuroscience. Their research promises to uncover fundamental mechanisms for brain function and to reveal novel strategies and targets for the treatment of nervous system disorders.



Steve Kay, Ph.D.

The Institute for Childhood and Neglected Diseases

The Institute for Childhood and Neglected Diseases (ICND) was established to apply cutting-edge research to understand the basic mechanisms that underlie diseases of childhood and orphan diseases that lack efficacious treatments. Diseases of both categories often affect populations in developing countries, where the health infrastructure may be too poor to support major research efforts on these problems.

Examples of such diseases include malaria, epilepsy, mental retardation, cystic fibrosis, chronic pain, and sleep disorders. The human and economic costs of these diseases are staggering. According to the World Health Organization, each year, the microorganism that causes malaria infects 300 million persons, and the

disease kills approximately 1 million persons. About 90% of the people who have malaria are in Africa, where the annual costs associated with the disease are \$12 billion. Malaria is the leading cause of childhood mortality in African countries.

Epilepsy is another widespread and costly disease. It affects about 2.3 million persons in the United States and accounts for \$12.5 billion in medical costs and reduced productivity each year.

Mental retardation is another condition that affects children everywhere; about 1% of American children 3 to 10 years old have mental retardation. During the 1995–1996 school year, about 600,000 6- to 21-year-olds with mental retardation in the United States received special educational services, at a cost of about \$3.3 billion.

Housed in a state-of-the-art, 54,000-square-foot building on the east side of the Scripps Research campus, the ICND is a focus group within Scripps Research for young scientists who are working in areas relevant to the ICND mission. The concept of the ICND grew out of conversations in 1996 and 1997 among Scripps Research president Richard Lerner; John Moores, who was interested in supporting research on illnesses that affect people in developing countries; and the brothers Bernard and Marc Chase, who were interested in supporting research on childhood diseases. John and Rebecca Moores, Bill Bauce, and other automobile enthusiasts donated a number of vintage automobiles, which were auctioned to support the ICND. The Moores went on to contribute a valuable coin collection, as well as pledging \$5 million to be awarded over 5 years.

The Human Genome Project has led to a deeper understanding than ever before of the mechanisms underlying human disease. The ability to study the draft mouse and human genomes in parallel is providing an unprecedented opportunity to create a road map for assigning a physiologic function to all of the 35,000–45,000 human genes. This formidable challenge requires complex multidisciplinary approaches that allow scientists to create and implement the most powerful research tools available. Investigators at the ICND use genomics, proteomics, and advanced microscopic imaging technologies; develop many novel transgenic animal models; and aggressively apply these technologies in an effort to understand the mechanisms of action of a variety of diseases and conditions—malaria, mental retardation, neurodegen-

erative diseases, neuropathic pain, deafness, sleep disorders, migraines, and epilepsy, for example—and to devise treatments for these maladies. ICND scientists plan to systematically study not only the genes associated with these abnormalities but also the interactions between the genes in living model systems.

ICND researchers have already been recognized by the international scientific community during the first 6 years of the institute's existence. In December 2002, 3 of the highly prized Top Ten Breakthroughs of the Year of Science magazine were results produced by ICND researchers working on the malarial genome, mechanisms of pain perception, and processes important for sleep disorders and seasonal depression. This remarkable level of achievement speaks to the investment made in these research areas and bodes well for further rapid progress in the future.

Faculty

Steve A. Kay, Ph.D.

Areas of Research

Molecular mechanisms of circadian rhythms and sleep disorders, genetics of anxiety, novel targets in neurodegenerative diseases

William E. Balch, Ph.D.

Protein trafficking and the molecular basis for the hereditary childhood disease cystic fibrosis

Kristin Baldwin, Ph.D.

Molecular biology of the sense of smell, genetic mechanisms governing neural circuit development in the olfactory system and cortex

Shelley Halpain, Ph.D.

Organization and function of the neuronal cytoskeleton, mechanisms underlying potential treatments for Alzheimer's disease and repair of neuronal damage after trauma

Mark Mayford, Ph.D.

Molecular basis of cognitive function, including learning and memory disabilities and mental retardation

Ulrich Müller, Ph.D.

Molecular cell biology of mechanosensory perception and childhood deafness

Ardem Patapoutian, Ph.D.

Ion channels and receptors involved in nociception and neuropathic pain

Elizabeth Winzeler, Ph.D.

Functional genomic approaches to identifying targets in Plasmodium, the parasite that causes malaria



SOCIETY OF FELLOWS EXECUTIVE COMMITTEE: *Left to right: back row: Kaustav Datta, Hunter Elliott, Gunnar Poplawski, Stephan Meister, Geza Ambrus-Aikelin, Steve Johnson, Scott Westenberger, Ryan Wheeler, Ralph Pantophlet, BinQing Wei, Jilla Sabeti, Roshni Mitra Chintalapati; front row: Anne Bellon, George Nicola, Vandana Ramachandran, Althea Capul, Olivier Harismendy.*

Society of Fellows

In its 45th year, the Society of Fellows took pride in maintaining its mission to serve the scientific community at Scripps Research, with particular emphasis on enhancing the trainee experience of junior scientists. We enjoyed a great year of bringing graduate students, postdoctoral fellows, and faculty members together in both professional and social arenas.

Our Distinguished Lecturer Series brought several prominent Nobel Laureates to lecture and, more importantly, to interact with postdoctoral scholars. The society is thankful to the speakers, Sydney Brenner and Andrew Fire, for their excellent presentations.

The society also sponsored a wide range of career development workshops and seminars, most notably several postdoctoral career events. Events included a San Diego lab management course for senior postdoctoral scholars and junior faculty, talks by an industry career panel, a nonindustry career panel, and an etiquette workshop and reception for postdoctoral scholars. These events were sponsored in partnership with Ryan Wheeler, manager of the Office of Postdoctoral Services, which has greatly expanded our reach by providing help in organizing events. We acknowledge Ryan's outstanding assistance and appreciate his commitment to fulfilling the society's aims.

The Fall Research Symposium was organized to draw postdoctoral scholars, graduate students, and faculty members together in an informal setting. The event, held in the Beckman Galleria, featured 72 poster and oral presentations covering research projects from all departments.

This year's social calendar was again packed with many entertaining events, including trips to the opera (*Don Giovanni* in Orange County), a camping trip on Catalina island, and our annual Big Bear ski trip. Monthly happy hours were held to promote interaction among scientists at Scripps Research and at nearby science institutions. This year's summer bash was held at the Hilton Torrey Pines in La Jolla. In addition, our Halloween yacht party was a memorable event with a cruise around San Diego Bay. Other notable social events this year included a day at the Del Mar races, a hockey night at Anaheim, and a spring party at Rock Bottom. The society also sponsored a play by the Scripps Research drama group called the *Mobility Pond*; the play was very well attended and enjoyed by all. We have also launched our first quarterly newsletter, which will keep the scientific community at Scripps Research abreast of all the society's events.

Finally, at the annual spring vendor show, the society played host to approximately 100 scientific vendors, who displayed their latest scientific equipment and technology.

The Society of Fellows executive committee expresses its sincere gratitude to the Office of the President and Postdoctoral Services at Scripps Research for enthusiastic and continued support of the society's activities.

EXECUTIVE COMMITTEE 2006-2007

Officers

<i>Vandana Ramachandran</i>	<i>President</i>
<i>George Nicola</i>	<i>Vice President</i>
<i>Olivier Harismendy</i>	<i>Treasurer</i>
<i>Stephan Meister</i>	<i>Social Cochair</i>
<i>Althea Capul</i>	<i>Social Cochair</i>
<i>Kaustav Datta</i>	<i>Distinguished Lecturer Series Chair</i>
<i>BinQing Wei</i>	<i>Career Development Committee Cochair</i>
<i>Steve Johnson</i>	<i>Career Development Committee Cochair</i>
<i>Florence Brunel</i>	<i>Vendor Show Cochair</i>
<i>Anne Bellon</i>	<i>Vendor Show Cochair</i>
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<i>Ryan Wheeler</i>	<i>Postdoctoral Services Office Liaison</i>
<i>Jilla Sabeti</i>	<i>Network for Women in Science Liaison</i>
<i>BinQing Wei</i>	<i>Website Co manager</i>
<i>George Nicola</i>	<i>Website Co manager</i>
<i>Gunnar Poplawski</i>	<i>Graduate Liaison</i>

Others

<i>Geza Ambrus-Aikelin</i>	<i>Ralph Pantophlet</i>
<i>Michael Huber</i>	<i>Chris Ramsey</i>
<i>Tina Marie-Mullen</i>	<i>Scott Westenberger</i>
<i>Lars Pache</i>	

Network for Women in Science

The Network for Women in Science (NWIS) at Scripps Research was founded by graduate students, postdoctoral fellows, and faculty in 2003. In the past 4 years, NWIS has strived to provide support, guidance, and opportunity for female scientists at Scripps Research; create awareness of issues that affect scientific career development and success; promote diversity at Scripps Research; and make a positive difference in the culture of science for the benefit of the entire scientific community.

During the past year, NWIS sponsored several events for career development and networking for junior scientists at Scripps Research. NWIS has hosted mentoring lunches at which junior scientists have the opportunity to informally connect with Scripps Research faculty. These lunches have provided a unique opportunity for networking across departments. In addition, NWIS has collaborated with the Kellogg School of Science and Technology Distinguished Lecturer Series. Through the Distinguished Lecturer Series, we have hosted 2 outstanding female scientists, Dr. Erin O'Shea from Harvard University and Dr. Elaine Fuchs from Rockefeller University. These leaders in their fields met informally with NWIS members to discuss obstacles and opportunities that arose throughout the lecturers' careers.

The NWIS officers express their appreciation to the Kellogg School of Science and Technology for its enthusiastic support of NWIS activities. In addition, we thank the following faculty for their participation and support of NWIS events: Linda Sherman, Erica Ollman-Sapphire, Bridget Carragher, Natasha Kralli, Clare Waterman-Storer, Sandra Schmid, Jamie Williamson, Kerry Mowen, Kathryn Crossin, and Kristin Baldwin.

Officers 2006-2007

<i>Anne Bunner</i>	<i>Cochair</i>
<i>Kiyomi Komori</i>	<i>Cochair</i>
<i>Jilla Sabeti</i>	<i>Secretary</i>

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