Editor's note: Welcome to the premiere issue of *Inside ESSIC*, a periodic newsletter for members and friends of the ESSIC community. We invite comments about, and submissions to, this newsletter; send them to Marilyn Millstone at millstone@essic.umd.edu

ESSIC brings together scientists from many different professional, educational and cultural backgrounds and perspectives. Some scientists are researchers who work directly for ESSIC; others are faculty in several University of Maryland departments - -Geography, Geology, Meteorology – who are affiliated with ESSIC. ESSIC also partners with such institutions as the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA). The first two issues of *Inside ESSIC* profile the people who are part of our collaborative community.

I would like to extend a warm welcome to the scientists from the Satellite Climate Studies Branch of NOAA/NESDIS; they are formally relocating to ESSIC this month and joining their colleagues in the Cooperative Institute for Climate Studies (CICS). ESSIC was recently asked to administer this cooperative venture between NOAA and the University of Maryland, in order to foster closer collaborations between CICS and ESSIC scientists.

Collaboration is the key, of course, to the future of Earth System Science and the success of interdisciplinary organizations like ESSIC. We sometimes forget this, laboring, as we often do, alone in our offices, facing computers. I hope, then, that you will take the time to page through this newsletter, read about your colleagues and greet each other in the hallways. From such casual encounters are exciting collaborations born. Finally, launching a new publication like this is a major undertaking; many thanks to Marilyn Millstone for bringing this newsletter together. - - Antonio Busalacchi
Profiles of ESSIC Personnel

As many of you may have noticed, ESSIC has grown dramatically during the past year. This issue of Inside ESSIC profiles all ESSIC personnel whose last names fall in the first half of the alphabet. The second issue, to be published shortly, will profile everyone else.

Phil Arkin is Deputy Director of ESSIC. He is also a Senior Research Scientist specializing in observation and analysis of precipitation, including how precipitation responds to, and affects, various aspects of the Earth System. Previously, Phil worked as a research scientist and manager at NOAA for more than 20 years. He has a doctorate in meteorology from the University of Maryland.

Mamoudou Ba is a Faculty Research Assistant working on the Global Precipitation Climatology Project. Prior to coming to ESSIC, Mamoudou was a UCAR Visiting Scientist at NOAA/NESDIS, where he focused on developing a rainfall estimation algorithm using GOES multispectral measurements. His research centers on using remote sensing techniques to derive and study atmospheric and surface parameters; he is particularly interested in monitoring surface radiation budgets and rainfall using satellite data. Mamoudou has a doctorate in remote sensing from the Université Paul Sabatier, Toulouse, France.

Ferdinand Baer, an ESSIC affiliate, has been a Professor in the Department of Meteorology since 1977, when he joined the newly created department as its first chair. His research interests include atmospheric dynamics, numerical weather prediction, numerical analysis, initialization, spectral methods, atmospheric energetics, gravity waves and high-performance computing applications. He is currently developing a multi-resolution climate model designed to predict climate on regional and global scales. He has a doctorate in geophysical science from the University of Chicago.
**Mark Baith** is the Manager for ESSIC’s IT Administration & Planning Group. He is the contact person for many technical service-related aspects of the Center, including the management of science-research and business services computing. Prior to his appointment at ESSIC, Mark spent more than 20 years working in science operations support at the NASA Goddard Space Flight Center, most recently serving as Division Systems Manager for Goddard’s Laboratory for Hydrospheric Processes.

**Joaquim Ballabrera Poy** is an Assistant Research Scientist whose work focuses on combining data and models to better understand the role of the ocean before El Niño events. Prior to joining ESSIC in September 2000, he did doctoral research in data assimilation at the NASA/Goddard Laboratory for Hydrospheric Processes. A native of Barcelona, he has a doctorate in geophysics from Université Joseph Fourier, Grenoble, France.

**James Beauchamp**, an ESSIC Faculty Research Assistant since October 2000, primarily supports the tropical ocean modeling research of Ragu Murtugudde. Before coming to ESSIC, he worked in the Laboratory for Hydrospheric Processes at NASA Goddard Space Flight Center. He has a master’s in meteorology from Pennsylvania State University.

**Alexei Belochitski** joined ESSIC in February 2003 as a Faculty Research Assistant working with Michael Fox-Rabinovitz. His research focuses on the variable-resolution, stretched-grid approach to the Global Circulation Model (GCM) for regional and subregional climate study. A native of Russia, Alexei has a master’s in meteorology from the University of Oklahoma.
**Ernesto Hugo Berbery** is an Associate Research Scientist in the Department of Meteorology and an ESSIC affiliate. His current research centers on the mesoscale nature of monsoons in North and South America, and their relation to the hydrologic cycle of medium-to-large basins. A native of Argentina, Hugo has a doctorate in meteorology from the University of Buenos Aires.

**Saroj Bhandari** is ESSIC’s Administrative Assistant. She assists with reception, travel, correspondence, seminars, and other special events. Prior to arriving at ESSIC in May 2002, she was in technical and scientific support with the Department of Electrical Engineering at the University of Maryland. A native of India, Saroj has a bachelor’s degree in economics from Delhi University, India.

**Robert Bindschadler**, an ESSIC Adjunct Professor since 2002, is a Senior Fellow at NASA Goddard Space Flight Center. His research focuses on the dynamics of glaciers and ice sheets and investigating how remote sensing can be used to improve our understanding of the role of ice in the Earth’s climate. He has measured ice velocity and elevation using both visible and radar imagery, monitored melting of ice sheets by microwave emissions, and detected changes in ice-sheet volume by repeat space-borne radar altimetry. Bob has a doctorate in geophysics from the University of Virginia.

**Charon Birkett**, an Assistant Research Scientist, joined ESSIC in October 2001. Based off-site at the Biospheric Sciences Branch of NASA Goddard Space Flight Center, Charon researches how satellite radar altimetry can be used to derive height (stage) variations for the world’s largest lakes, rivers and wetlands. A native of the United Kingdom, she worked in the Mullard Space Science Lab at University College, London, before coming to the U.S. Charon has a doctorate in astronomy from Leicester University.
**Lahouari Bounoua**, an Assistant Research Scientist, joined ESSIC in 2000 after five years as a member of the research faculty of the University of Maryland Department of Meteorology. His current research centers on enhancing current understanding of land-surface processes and their interactions with the physical climate system at different space and time scales, using multi-scale remote sensing data, modeling and advanced analytical tools. A native of Algeria, he has a doctorate in meteorology from Florida State University.

**Christopher Brown** is a Visiting Associate Research Scientist from NOAA. An oceanographer, he uses remote sensing to address and understand biological patterns and their biogeochemical consequences in the global ocean. In addition, his academic interests include oceanic biogeography - past, present and future, and the remote detection, characterization and prediction of marine organisms. Chris has a doctorate in oceanography from the University of Rhode Island.

**Michael Brown** is Professor of Geology and Chair of the Department of Geology and holds an affiliate appointment in ESSIC, where he served as Interim Director from 1998-2000. Mike's principal research interests are in high-T metamorphism, including crustal melting, and the application of petrology to understanding the tectonics of mountain belts. The founding editor of the *Journal of Metamorphic Geology*, Mike was previously Professor of Geology and Head of the School of Geology at Kingston University in London. He has a doctorate in geology from the University of Keele, United Kingdom.

**Antonio Busalacchi** is Director of ESSIC and a Professor in the Department of Meteorology. Tony came to ESSIC in 2000, after serving as Chief of the NASA/Goddard Laboratory for Hydrospheric Processes. In 1999, he was appointed Co-Chairman of the Scientific Steering Group for the World Climate Research Programme on Climate Variability and Predictability (CLIVAR). Tony’s ongoing area of research is the role of tropical ocean circulation in the coupled climate system. He has a doctorate in oceanography from Florida State University.
Robert Cahalan is a Senior Research Scientist at NASA/Goddard and a Visiting Senior Research Scientist at ESSIC. He is chair of the 3DRT Working Group of the International Radiation Commission, NASA Project Scientist for the EOS SORCE mission that launched in January 2003, and Project Scientist of the International Inter-comparison of 3D Radiation Codes (I3RC). His research focuses on climate and cloud structure. Robert has a doctorate in physics from the University of Illinois.

Lei Cao is the Payroll/Accounting Associate for both ESSIC and the Department of Geology. She handles payroll, employee enrollment in health and retirement plans, tuition remission, address changes, faculty leave and other human resources-related work. She has a bachelor’s in information science from the University of Maryland.

Linda Carter is ESSIC’s Executive Administrative Assistant. She manages all paperwork on faculty appointments and travel, coordinates seminars, retreats and other special events, and supervises support staff. Linda is also the initial contact person for all ESSIC inquiries. Prior to coming to ESSIC in 2000, Linda was a home daycare provider for 12 years.

Dmitry Chalikov joined ESSIC as a Senior Research Scientist in February 2003. Previously a Project Scientist at NOAA for 11 years, he came from St. Petersburg, Russia, where he was Branch Chief at the Institute of Oceanography. His research focuses on numerical modeling of geophysical fluid dynamics for simulating large-scale and small-scale processes, including boundary layers, oceanic and atmospheric circulation, turbulence, and wave dynamics. Dmitry has a doctorate in oceanography from the Russian Academy of Sciences.
**Fu-Lung Chang**, an Assistant Research Scientist, came to ESSIC in 2001 after working as a researcher at the Canada Centre for Remote Sensing. Fu-Lung is currently focused on developing remotely sensed cloud retrievals, and on enhancing the use of satellite data from NASA and ground data from the Department of Energy’s atmospheric radiation measurement program. A native of Taiwan, he has a doctorate in atmospheric sciences from Oregon State University.

**Ruiming Chen** is a Faculty Research Assistant working with Zhanqing Li. Before coming to ESSIC, she worked as a commercial software developer. A native of China, Ruiming has a master’s in remote sensing from Boston University and a master’s in computer science from Johns Hopkins University.

**James Christian** is an Adjunct Assistant Professor whose research focuses on the biogeochemical cycles of carbon, nitrogen, phosphorus and iron in the global ocean. With colleagues at ESSIC and NASA, he constructed several physical-biological ocean models that have been used to study seasonal, interannual and interdecadal variability in the upper ocean ecosystems of the tropical Pacific and Atlantic Oceans. He has also studied physical-biological interactions in the tropical oceans using ocean-color remote sensing. Jim has a doctorate in oceanography from the University of Hawaii.

**Pubu Ciren**, an Assistant Research Scientist at ESSIC since 2001, is working on satellite remote sensing of ultraviolet radiation, radiative transfer modeling and the study of Asian dust. Prior to arriving at ESSIC, he did postdoctoral research at the Canada Centre for Remote Sensing in Ottawa. A native of Tibet, Pubu has a doctorate in atmospheric science from the University of Bergen, Norway.
Maureen Cribb is a Faculty Research Assistant working with Zhanqing Li. She is currently developing surface radiation budgets for use by the climate modeling community and working on surface albedos over the south-central United States and the Arctic. Before joining ESSIC, Maureen worked at the Canada Centre for Remote Sensing. A native of Canada, she holds a master's in atmospheric science from Dalhousie University in Halifax, Nova Scotia.

Ruth DeFries holds a joint appointment with ESSIC and the Department of Geography, where she is an Associate Professor. Ruth investigates the relationships between human activities, the land surface, and the biophysical and biogeochemical processes that regulate Earth's habitability. Previously, she worked at the National Research Council with the Committee on Global Change and taught at the Indian Institute of Technology in Bombay. She has a doctorate in geography and environmental engineering from Johns Hopkins University.

Rossana Del Vecchio is a Research Associate working with Ajit Subramaniam on remote sensing of chromophoric dissolved organic matter in coastal waters and the effect of the Amazon River plume in the tropical Atlantic. A native of Italy, Rossana has a doctorate in marine and estuarine environmental sciences from the University of Maryland.

Andrew Dessler is an Associate Research Scientist whose work focuses on water vapor in the upper troposphere and lower stratosphere. He is the author of the book The Chemistry and Physics of Stratospheric Ozone. Andy has a doctorate in chemistry from Harvard and did his post-doctoral work through the National Research Council at NASA Goddard Space Flight Center. He joined ESSIC's predecessor -- the Joint Center for Earth System Science (JCESS) - -in 1996.
Russ Dickerson is Chair and Professor in the Department of Meteorology and an ESSIC affiliate. Prior to arriving at the University of Maryland in 1982, Russ was with the National Center for Atmospheric Research and the Max Planck Institute for Chemistry. His research focuses on the chemistry of the polluted and remote atmosphere, the marine boundary layer, the interactions of aerosols and gas-phase chemistry, and the contrast of emissions in the developing world with those of the developed world. Russ has a doctorate in chemistry from the University of Michigan.

Mark Fahnestock, an Adjunct Assistant Professor at ESSIC, is a Research Associate Professor at the University of New Hampshire. A glaciologist, Mark investigates ice flow mechanics and surface conditions on the large ice sheets; his work has taken him to Alaska, Greenland and Antarctica. He has a doctorate in geology from the California Institute of Technology.

James Farquhar has a joint appointment with ESSIC and the Department of Geology, where he is an Assistant Professor. His research focuses on stable-isotope geochemistry, particularly atmosphere-surface interactions, atmospheric evolution, sulfur and oxygen biogeochemistry, meteorites, isotopic exchange and thermometry. He holds a doctorate from the University of Alberta.

Ralph Ferraro is a Visiting Assistant Scientist at ESSIC through the Cooperative Institute for Climate Studies (CICS), part of the Satellite Climate Studies Branch of NOAA. His research focuses primarily on using passive microwave satellite measurements to study the hydrological cycle of the earth. A scientist with NOAA since 1991, Ralph has a master’s in meteorology from the University of Maryland.
Michael Fox-Rabinovitz is a Senior Research Scientist at ESSIC whose research involves developing variable-resolution, stretched-grid (SG) GCMs and SG-DASs (Data Assimilation Systems) for regional climate studies of monsoons, droughts and floods. He also engages in collaborative studies of atmospheric pollution. Previously a Senior Research Scientist at the NASA Goddard Space Flight Center, Michael has a doctorate in dynamic meteorology from Moscow State University.

Julio Friedmann, an ESSIC affiliate, is an Assistant Resident Scientist in the Department of Geology. His research focuses on the long-term record of climate change, in particular long and complete time-series dealing with lacustrine systems. He also studies potential mitigation strategies for global climate change, including geological carbon sequestration. He has a doctorate in geology from the University of Southern California.

Kimberley Frye is Coordinator for Administrative Services for ESSIC and the Department of Geology. She coordinates hiring and benefits and handles special human resources issues. Prior to joining this department in 1998, she was the administrative assistant at the University of Maryland's Institute for Governmental Service. She has a bachelor’s degree in geography from the University of Maryland.

Samuel Goward, an ESSIC affiliate, is a Professor in the Department of Geography. Interested in land remote sensing, geographic data handling, bioclimatology and global change, his research projects include using commercial terrestrial remote sensing systems to enhance Earth System Science, and prototype implementation of a Research Environment for Advanced Landsat Monitoring (REALM), among others. Sam has a doctorate in physical geography from Indiana State University.
**Arnold Gruber**, Visiting Senior Research Scientist at ESSIC, is also Chief of the Satellite Climate Studies Branch of NOAA/NESDIS, which is co-located at the Cooperative Institute of Climate Studies (CICS) within ESSIC. He specializes in using satellite data to study Earth's climate system. Arnie is currently analyzing precipitation data from the Global Precipitation Climatology Project and studying outgoing long-wave radiation and the global water balance. He has a doctorate in meteorology from Florida State University.

**Eric Hackert** is a Faculty Research Assistant working with Antonio Busalacchi’s research group. Before joining ESSIC in 2000, he was a principal scientist in the Oceans and Ice Branch at Goddard Space Flight Center. His research interests include ocean data assimilation, altimetry, ocean modeling, hydrographic and flux observations, and scatterometry. Eric has a master’s in meteorology from the University of Wisconsin.

**Michael Harman**, ESSIC’s Accounting Associate, handles purchasing, as well as the accounting for research grants. Michael has been with the University of Maryland for three years; previously, he was a Fiscal Account Supervisor with the Maryland Department of Housing and Community Development for 14 years.

**Andrew Harris** is an Assistant Research Scientist in the Cooperative Institute for Climate Studies (CICS), now an element of ESSIC. He is based at the NOAA Science Center in Camp Springs, Maryland, where he was for two years a UCAR Senior Visiting Scientist. His primary interest is in developing a physically based sea surface temperature (SST) processing and reprocessing capability for NOAA weather satellites. Previously, Andy was at the United Kingdom Meteorological Office, where he designed the ATSR processing system for the Hadley Centre Climate Prediction Programme. He has a doctorate in climate and remote sensing from University College, London.
**Richard Hartle** is a Visiting Senior Research Scientist at ESSIC and a Senior Staff Scientist at NASA Goddard Space Flight Center. A specialist in planetary atmospheres, Dick serves as a liaison and technical advisor to ESSIC. During his nearly forty-year career at NASA, he has done research on the solar wind, planetary atmospheres and ionospheres, plasma physics, and gas dynamics. At Goddard, Dick has been the Head of the Planetary Atmospheres Branch, Project Scientist for the Earth Observing System, and Assistant Chief of the Laboratory for Atmospheres. He has a doctorate in physics from Pennsylvania State University.

**Marc Imhoff**, an ESSIC Adjunct Associate Professor, is Project Scientist for the Earth System Science Pathfinder Project of NASA's Earth Science Enterprise. His current area of research is determining the consequences of human activity on the biosphere, with special emphases on the carbon cycle, water cycle, and biodiversity. Marc has a doctorate in biological sciences from Stanford University.

**Eugenia Kalnay** is a Distinguished University Professor in the Department of Meteorology and an ESSIC affiliate. She worked at the Massachusetts Institute of Technology (MIT), NASA/Goddard and the National Centers for Environmental Prediction before coming to the University of Maryland. Eugenia's recent book, *Atmospheric Modeling, Data Assimilation and Predictability*, reflects her research interests. She is also interested in climate problems. A native of Buenos Aires, Eugenia has a doctorate in atmospheric sciences from MIT.

**Alan Jay Kaufman** is an Associate Professor in the Department of Geology and an ESSIC affiliate. His research focuses on determining changes in paleoclimate by charting the isotopic composition of the oceans through time. Most of these studies center around Neoproterozoic (ca. 1000-544 million-year-old) sedimentary successions in Svalbard/East Greenland, Namibia, Arctic Canada and Alaska, India and the United States. Jay has a doctorate in biogeochemistry from Indiana University.
Axel Kleidon, an Assistant Professor in the Department of Geography and an ESSIC affiliate, develops and uses simulation models to investigate atmosphere-biosphere interactions. He is currently working on process-based modeling of plant biodiversity and on thermodynamics of climate system processes. Axel has a doctorate in meteorology from the University of Hamburg, Germany.

Vladimir Krasnopolsky was appointed as an ESSIC Adjunct Professor in January 2003. A native of the former Soviet Union, he earned his doctorate in physics at Moscow State University and worked in theoretical nuclear physics there before immigrating to the U.S. in 1989. Vladimir has worked for NCEP/NOAA since 1990 and currently focuses on meteorological and oceanic applications of satellite data and on various neural network applications in meteorology, oceanography and satellite remote sensing.

Jurgen Kröger has been a Research Associate at ESSIC since July 2002. Interested in long-term variability of sea surface temperatures and subtropical cells, he is currently developing numeric models of the tropical and subtropical Atlantic Ocean. A native of Germany, Jurgen has a doctorate in physical oceanography from the Institut für Meereskunde (IFM), Kiel, where he also did postdoctoral research.

Hai-Tien Lee is a Research Associate with the Cooperative Institute for Climate Studies (CICS), an element of ESSIC. His research focuses on thermal radiation, radiative transfer and radiation budgets. Previously, Hai-Tien was a Research Scientist with the NOAA/NCEP Climate Prediction Center, where he developed the NOAA UV Index operational forecast system. A native of Taiwan, Hai-Tien has a doctorate in meteorology from the University of Maryland.
Alan Leonardi joined ESSIC as a Research Associate after working as a Naval Research Laboratory Fellow and a NASA Earth System Science Fellow. He currently focuses on modeling inter-annual to inter-decadal variability in the Pacific Ocean, emphasizing low- to mid-latitude oceanic variability, its interaction with the overlying atmosphere, and its affect on the surrounding land surface processes. Alan has a doctorate in physical oceanography from Florida State University.

Zhanqing Li is a Professor in the Department of Meteorology and has a joint appointment with ESSIC. His areas of research include: remote sensing and understanding interactions between the radiation budget, clouds, and aerosols; environmental and climate changes, particularly as they relate to East Asia; monitoring and mapping biomass burning and its effect on the carbon budget in North America; global ultraviolet radiation and ozone depletion. A native of China, he has a doctorate in meteorology from McGill University, Montreal, Canada.

We hope you have enjoyed this issue of Inside ESSIC. Our next issue, featuring profiles of ESSIC staff and affiliates M-Z, will be published soon.

REMINDER: MARYLAND DAY IS APRIL 26! If you would like to help with the design and/or staffing of the ESSIC booth, contact Maureen Cribb at mcribb@essic.umd.edu