

NASA ECOLOGICAL MODELING WORKSHOP

*MARCH 29 to APRIL 1, 2005
ASILOMAR CONFERENCE CENTER
PACIFIC GROVE, CALIFORNIA*

Organizers:

*Earth Science Division,
NASA Ames Research Center*

Sponsors:

*The Center for Health Applications of
Aerospace Related Technologies*



NASA Ames Research Center



NASA Applied Sciences Program



SCIENTIFIC PROGRAM

Tuesday, March 29

RECEPTION

17:00-18:00 Reception and Welcome, Merrill Hall

18:00-19:00 Dinner, Dining Hall

09:30-10:00 *Challenges in Modeling Spatio-temporal Variation in Biogeophysical Fields: Examples from Ecological Remote Sensing*
Geoffrey M. Henebry, University of Nebraska, Lincoln

10:00-10:30 *The Terrestrial Observation and Prediction System: Integration of Model, Climate, and Remote Sensing Data for Ecosystem Monitoring and Forecasting*
Ramakrishna Nemani, NASA Ames Research Center

Wednesday, March 30 (Merrill Hall)

WELCOME

07:30-08:10 Breakfast, Dining Hall

08:15-08:30 *Welcome and Opening Remarks*
Cindy Schmidt, NASA Ames Research Center

08:30-09:00 *Introduction to the NASA Applied Sciences Ecological Forecasting Program*
Woody Turner, NASA HQ

09:00-09:30 *Introduction to the NASA Applied Sciences Invasive Species Program*
Ed Sheffner, NASA HQ

SESSION 1:

Models and Modeling Approaches for Ecological Management

Moderator: Woody Turner, NASA HQ

10:30-11:00 Break

11:00-11:30 *Biophysical and Land-use Controls of Biodiversity: Regional to Continental Scales*
Andrew Hansen, Montana State University

11:30-12:00 Session 1 Panel Discussion

12:00-13:00 Lunch, Dining Hall

SESSION 2:

Habitat Suitability and Niche Modeling for Invasive Species

Moderator: Ed Sheffner, NASA HQ

13:00-13:30 *Application of Structural Models to Invasive Species Management*
David Spencer, USDA

Wednesday, March 30 (cont'd.)

13:30-14:00	<i>Ecological Niche Modeling and Environmental Forecasting Using Remotely Sensed Data and a Genetic Algorithm</i> Ed Wiley, University of Kansas	16:45-17:15	Session 3 Panel Discussion
		17:15-18:15	Poster Session, Merrill Hall
		18:15-19:00	Dinner, Dining Hall
14:00-14:30	<i>Advances in Ecological Niche Modeling</i> David Stockwell, San Diego Super Computer Center	19:30-21:00	Issues in Ecological Modeling: an optional, informal discussion open to all workshop participants. Led by Ed Sheffner and Woody Turner, NASA HQ.
14:30-15:00	Session 2 Panel Discussion		Location: Dolphin Room
15:00-15:15	Break		

SESSION 3:

Remote Sensing, Ecosystem Observation and Environmental Change

15:15-15:45	<i>Climate Change Impacts on the Biosphere: What Should We Look For?</i> Steve Running, University of Montana
15:45-16:15	<i>Space Based Ornithology: On the Wings of Migration and Biophysics</i> Jim Smith, NASA Goddard Space Flight Center
16:15-16:45	<i>New Directions in Spatial Modeling of Terrestrial Biodiversity for Conservation Assessment and Planning</i> Simon Ferrier, New South Wales Department of Environment and Conservation, Australia

Thursday, March 31 (Merrill Hall)

07:30-08:10	Breakfast, Dining Hall		Dale Quattrochi, NASA Marshall Space Flight Center, and Amanda Sue Niskar, CDC
08:15-08:35	<i>Welcome to Day 2 and Recap</i> Ed Sheffner and Woody Turner, NASA HQ		
08:35-09:00	<i>Introduction to the NASA Applied Sciences Public Health Program</i> John Haynes, NASA Headquarters	11:00-11:30	<i>Satellite Detection of Ebola River Hemorrhagic Fever Epidemic Trigger</i> Compton J. Tucker and Jorge E. Pinzon, NASA Goddard Space Flight Center
SESSION 4:		11:30-12:00	Session 4 Panel Discussion
	Modeling, Remote Sensing, and Other Techniques for Extending Geoscience to Public Health	12:00-13:00	Lunch, Dining Hall
09:00-09:30	<i>Landscape Ecology of Microbial Pathogens: A Neo-Pavlovskian Approach to Landscape Epidemiology</i> Durland Fish, Yale University	13:00-14:00	Special Session: <i>Extending the use of satellite data sets or derived products in ecological models, followed by audience feedback on obstacles encountered and lessons learned.</i> Moderator: Bradley Reed, SAIC, USGS National Center for Earth Resources Observation and Science
09:30-10:00	<i>Invasion and Dispersal of Vector-borne Diseases: Landscape Determinants and Ecological Forecasting</i> Uriel Kitron, University of Illinois		
10:00-10:30	Break		
10:30-11:00	<i>Environmental Public Health Tracking: Health and Environment Linked for Information Exchange-Atlanta (HELIX-Atlanta): A Cooperative Program Between CDC and NASA for Development of an Environmental Public Health Tracking Network in the Atlanta Metropolitan Area.</i>		
		SESSION 5:	
			The Multiscale Issue: from Local Observations to Regional Conclusions and Back Again Moderator: John Haynes, NASA HQ
		14:00-14:30	<i>A Regional Project for Modeling Dengue in Latin America and the Caribbean</i> Joan Aron, SCS/CRN/CHIEX

Thursday, March 31 (cont'd.)

14:30-15:00	<i>The Time is Right to Deliver Operational Ecological Forecasts for Use in Decision Support Systems</i> Dick Barber, Duke University	17:30-18:00	Session 6 Panel Discussion
15:00-15:15	Break	18:00-19:00	Dinner, Dining Hall
15:15-15:45	<i>The Invasive Species Forecasting System</i> John L. Schnase, NASA Goddard Space Flight Center	19:00-20:00	Issues in Ecological Modeling: an informal discussion open to all workshop participants. Led by Ed Sheffner, Woody Turner and John Haynes, NASA HQ. Location: Dolphin Room
15:45-16:15	Session 5 Panel Discussion	20:00-22:00	Bonfire at Barbecue Area/Bonfire Pit

Session 6:

Extending the Use of Predictive Models for Decision Support

Moderator: Ed Sheffner, NASA HQ

16:15-16:40	<i>Satellite Data Analysis and Ecosystem Modeling for U.S. Carbon Management</i> Chris Potter, NASA Ames Research Center
16:40-17:05	<i>SERVIR: an Environmental Monitoring and Decision Support System for Mesoamerica</i> Danny Hardin, University of Alabama in Huntsville
17:05-17:30	<i>Predicting Mosquito-borne Virus Activity in California for Decision Support</i> Chris Barker, University of California, Davis

Friday, April 1 (The Chapel Room)

07:30-8:30	Breakfast, Dining Hall
08:30-09:00	Welcome to Day Three and Recap Ed Sheffner, Woody Turner and John Haynes, NASA HQ
09:00-10:30	Summary Session A: <i>Common themes: are there common approaches and models that appear to work across the applications areas and yet require further development? How should further investments in ecological modeling be directed? What are the current needs in terms of data sources, infrastructure, and models?</i> Moderators: Ed Sheffner, Woody Turner and John Haynes, NASA HQ
10:30-11:00	Break and Hotel Checkout
11:00-12:15	Special Session B: Next steps and how to proceed with them. Potential new collaborations and sharing of models, data sources and resources. Plans for publication of workshop proceedings. Moderators: Ed Sheffner, Woody Turner and John Haynes, NASA HQ
12:15-12:30	Closing Remarks
12:30-13:30	Lunch, Dining Hall

Note:

Wireless Access:

The Dolphin Room will be available from 07:00 until 19:00 each day for informal meetings and wireless internet access. Wireless internet access will also be available in the Asilomar Lobby at all times.

Poster Session:

Currently a poster session is scheduled for 17:15 - 18:15 on Wednesday, March 30. Authors will put up their posters Wednesday morning and should plan to be available at their posters during the poster session. Poster authors will need to mount posters on provided boards which have a tackable surface. Each poster must be no wider than 4ft (120cm), but can be taller than 4ft; 36" x 48" is the recommended size.