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I.S. Department of Energy
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Subject: Final Conference Paper /Proceedings Report
Project Director(s): Fu, Rong
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"Symposium to Celebrate 40 Years of Climate Research
Period Covered: 7/1/2005 – 6/30/2006

The subject report is forwarded in conformance with the contract/grant specifications.

Should you have any questions or comments regarding this report(s), please contact the Project Director.

Sincerely,

Kamie Cunningham
Date Entry Specialist

Addressee: 2 copies

Final Report on DOE project for the symposium

“40 Years of Climate Research”

This symposium was held October 17-18, 2005, at the Charles H. Jones Auditorium in the Ford Environmental Science and Technology Building at the Georgia Institute of Technology. The objective of this symposium was to provide an opportunity for intellectually stimulating discussion on the processes in climate research during the past 40 years, especially in land-climate interaction and other areas related to Bob Dickinson’s work, and on outstanding issues in future research of land-atmosphere interaction and climate modeling. Themes covered by this symposium include a) Dynamics and Physics of the Atmosphere and Climate; b) Interaction between Terrestrial Biosphere, Hydrological Processes and Climate; and c) Present and Future Biosphere-Atmosphere Research.

This research was supported by the Office of Science (BER), US Department of Energy, Grant No. DE-FG02-05ER64078. Other sources of supports include NSF, Georgia Tech Office of the Provost and College of Sciences. We invited 24 speakers. Most of these speakers are recognized leading scientists in their fields who worked with Bob Dickinson during the past 40 years. In addition, approximately 50 young scientists and graduate students participated in the symposium. As the highlight of the symposium, Dr. Judith Curry, Chair of the School of Earth and Atmospheric Sciences, read a letter from Dr. Ari Patrinos, Associate Director of the Office of Biological and Environmental Research (OBER), congratulating Bob on his achievements, and congratulatory emails from Prof. Mike Wallace from the University of Washington and Prof. V. Ramanathan from the University of California, San Diego at the Symposium Banquet. Dr. Gary Schuster, Dean of the College of Sciences at Georgia Tech, Prof. Steven Schneider from Stanford University, Dr. Kevin Trenberth from NCAR, Dr. Piers Sellers from NASA Houston Center, and Prof. Steven Running from the University of Montana also offered congratulatory speeches at the banquet.

The symposium was well received by the participants. They were especially impressed by the high quality of the presentations and asked for copies of these presentations for their class teaching. To accommodate their requests, the School of

Earth and Atmospheric Sciences established a website after the symposium. The program of the symposium is attached.

**40 YEARS OF CLIMATE RESEARCH –
A CELEBRATION OF BOB DICKINSON'S CAREER**

All sessions will be held in the Charles H. Jones Auditorium, L1205 Ford ES&T Building

Monday, October 17, 2005

- 7:30 a.m. Continental Breakfast – Lower Atrium
- 8:15 a.m. ***Opening Session***
Judy Curry – Chair, School of Earth and Atmospheric Sciences
Gary Schuster – Dean, College of Sciences
Jay Fein – National Science Foundation
- 8:30 a.m. ***Session 1. Dynamics and Physics of the Atmosphere and Climate***
Chair: Peter Webster – Georgia Institute of Technology
*“Downscale intensification of equatorial vortices in zonally varying flow:
Insights into hurricane genesis in the present climate and in a warming world”*
David Randall – Colorado State University
*“Forty years of climate modeling:
What Bob Dickinson has seen and contributed to, so far”*
Jagadish Shukla – George Mason University
*“Seamless prediction of weather and climate:
Coordinated observation and prediction of the earth system (COPES)”*
- 10:00 a.m. Morning Break – Lower Atrium
- 10:15 a.m. Eugenia Kalnay – University of Maryland
“Land use and climate change”
Mingfang Ting – Columbia University
“The role of North American topography on Great Plains low-level jet”

Raymond Roble – National Center for Atmospheric Research
“On global change in the upper atmosphere”
- 11:45 a.m. Lunch – Lower Atrium
- 1:00 p.m. ***Afternoon Session***
Chair: Stephen Schneider – Stanford University
“Can we define, let alone prevent, ‘dangerous’ climate change?”
Kevin Trenberth – National Center for Atmospheric Research
“Changes in hurricanes and storms with climate change”
Kerry Cook – Cornell University
*“Delayed onset of the South American rainy season during the last glacial
maximum”*
Gerald North – Texas A&M University
“Ground truth studies for TRMM”
Mark Schoeberl – National Aeronautics and Space Administration
*“Bob Dickinson and the stratosphere:
What we knew then (1970s), and what we know now”*

- 3:30 p.m. Afternoon Break – Lower Atrium
- 3:45 p.m. Chair: Kuo Nan Liou – University of California, Los Angeles
“Some radiative forcing issues of mountain surface and aerosols/cirrus related to the Tibetan Plateau”
- Dennis Hartmann – University of Washington
“El Nino, stratospheric warmings, and recent trends in winter climate”
- Malcolm Hughes – University of Arizona
“A confounded mystery in the mountains”

Tuesday, October 18, 2005

- 7:30 a.m. Continental Breakfast – Lower Atrium
- 8:00 a.m. ***Session 2: Interaction between Biosphere, Hydrological Processes and Climate***
 Chair: Steven Running – University of Montana
“Incorporating terrestrial ecosystem processes into global climate models”
- Inez Fung – University of California, Berkeley
“Changes in land surface dynamics”
- Robert Jackson – Duke University
“Vegetation, water, and climate feedbacks”
- Piers Sellers – National Aeronautics and Space Administration
“Scaling up: taking land surface processes from the leaf to the planetary scale”
- Elisabeth Holland – National Center for Atmospheric Research
“Building on the Dickinson legacy, including nitrogen in Earth System Models”
- 10:30 a.m. Morning Break – Lower Atrium
- 10:45 a.m. Sharon Nicholson – Florida State University
“The Namib Desert: A natural laboratory for examining interactions between climate, the land surface, and the biosphere”
- Rong Fu – Georgia Institute of Technology
“Climate, vegetation, and human interaction over the Amazon”
- Soroosh Sorooshian – University of California, Irvine
“Parameterization of land-surface models using remote sensing and multi-criteria optimization methods”
- Xubin Zeng – University of Arizona
“Integration of satellite remote sensing with land modeling”
- 12:45 p.m. ***Session 3: Present and Future Biosphere-atmosphere Research***
 Chair: Inez Fung
 Robert Dickinson – Georgia Institute of Technology
“Issues of scaling and complexity in addressing land-atmosphere interactions”
- 1:15 p.m. Lunch – Lower Atrium
- 2:00 p.m. Symposium adjourns

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School of Earth and Atmospheric Sciences, Georgia Institute of Technology