

**Program on Integrated Assessment
Model Development, Diagnostics and
Inter-Model Comparisons (PIAMDDI):
An Overview**

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IAMC Annual Meeting

Washington Hilton Embassy Row Hotel

Washington, D.C.

What is the PIAMDDI?

A new DOE Office of Science sponsored program designed to improve the use and usefulness of integrated assessment models through

1. Cutting edge research in five key areas:
 - Technology
 - Uncertainty
 - Impacts and Adaptation
 - Regional Integrated Assessment
 - The Energy, Water, Land Nexus
3. A Research Program on IAM Diagnostics
4. A Research Program on IAM Model Comparisons

Who is on the Research Team

- **Three Project Co-Directors**
 - Noah Diffenbaugh, Stanford University
 - Karen Fisher-Vanden, Penn State University
 - John Weyant, Stanford University
- **19 PIs at 8 Universities and 2 National Laboratories (see Following project list)**

Structure of Research Consortium

- **10 Individual Projects in the Five Research Areas**
- **5 Diagnostics and Model Inter-Comparison Research Projects**
- **A Process for Integration Across the Fifteen Projects**
- **Several Mechanisms for Outreach to the Broader Research Community**

Focus Area #1: Advance the science in five selected areas

Research Area #1: Science and technology

RP #1: *Economics of Technological Change*

Karen Fisher-Vanden, Penn. State University

David Popp, Syracuse University

Ian Sue Wing, Boston University

RP#2: *Advanced Technology Assessment*

Sally Benson, Stanford University

John Weyant, Stanford University

Research Area #2: Impacts and adaptation

RP #3: *Importance of fine-scale climate processes for impacts/adaptation*

Noah Diffenbaugh, Stanford University

Tom Hertel, Purdue University

Ximing Cai, University of Illinois

RP#4: *Links between adaptation and technological change*

David Popp, Syracuse University

Karen Fisher-Vanden, Penn State University

Ian Sue Wing, Boston University

Research Area #3: Regional integrated assessment modeling

RP#5 Testing the Importance of Fine-Scale Climate Processes for Regional-Scale IAMs

Noah Diffenbaugh, Stanford University

Tom Hertel, Purdue University

Ximing Cai, University of Illinois

RP#6: Regional IA Modeling of Climate Change Impacts

Karen Fisher-Vanden, Penn. State University

Ian Sue Wing, Boston University

James Shortle, Penn. State University

Research Area #4: Key intersecting energy-relevant systems

RP #7: *New Capability in Climate/Land/Water/Energy Modeling*

Noah Diffenbaugh, Stanford University

Tom Hertel, Purdue University

Ximing Cai, University of Illinois

RP #8: *The Implications of Renewable Energy Resource Abundance and Land Use Opportunity Costs for the Expansion of Renewable Electricity*

Ian Sue Wing, Boston University

Research Area #5: Uncertainty

RP #9: Modeling Decision Making Under Uncertainty

Mort Webster, MIT

Ian Sue Wing, Boston University

Karen Fisher-Vanden, Penn State University

RP #10: Improving the Representation of Potential Climate Thresholds and the Associated Uncertainties in IAMs

Klaus Keller, Penn State University

Chris Forest, Penn State University

Focus area #2:

Inter-model testing and diagnostics

RP #11: Development of Methods for Inter-Model Comparison and Diagnosis

Bill Collins, LBNL, UC Berkeley

Noah Diffenbaugh, Stanford University

Chris Field, Stanford University

Ben Santer, Lawrence Livermore Laboratory

Karl Taylor, Lawrence Livermore Laboratory

John Weyant, Stanford University

RP #12: New Methods for Inter-Model Testing and Diagnostics

Patrick Reed, James Shortle, Thorsten Wagener, PSU

Focus area #3:

Ensemble-like analyses

RP #13: *Development of Principles for Ensemble Construction*

Bill Collins, LBNL and UC Berkeley

Noah Diffenbaugh, Stanford University

Chris Field, Stanford University

Ben Santer, Livermore National Laboratory

Karl Taylor, Livermore National Laboratory

John Weyant, Stanford University

Ensemble-like analyses (Continued)

***RP #14: Project on Model Comparison on
Uncertainties***

Bill Nordhaus, Yale University

***RP #15: Regional Prediction Uncertainties for
Impacts Research***

Chris Forest, Penn State University

Klaus Keller, Penn State University

Patrick Reed, Penn State University

Thorsten Wagener, Penn State University

Thank You