

# The Open Modeling Foundation Initiative: a Scientific Community for Common Standards and Best Practices for Integrative Modeling of the Earth System

*A Workshop Hosted by the Institute for Advanced Sustainability Studies, Potsdam, Germany*

**Organizers:** Michael Barton (Dir, Network for Computational Modeling in Social & Ecological Sciences);  
Sander van der Leeuw (co-Dir, Analysis, Integration, and Modeling of the Earth System);  
Ortwin Renn (Dir, Institute for Advanced Sustainability Studies)

## Final Agenda and Schedule, 6 - 7 May 2019

### Background

This strategic planning workshop is the first of a series of meetings to discuss and organize an international scientific network to develop, deploy, and administer standards for modeling across the geophysical, environmental, ecological, and social sciences. This initiative emerges from a series of workshops that have taken place over the past three years in Europe, Asia, and North America to discuss challenges and opportunities for building new capacity for integrative modeling of coupled societal and biophysical dynamics. Such modeling is a key component to our ability to understand and plan policies to sustainably manage the human - natural world we inhabit.

Over the past year, numerous scientific networks that represent modeling science have expressed support for establishing a federated, meta - organization for modeling standards, the *Open Modeling Foundation*. These standards are envisioned to address issues of open accessibility of model code, model documentation and metadata, universal reusability of models, and potential interoperability. Such an organization could also provide professional and technological support to scientists who seek to follow such community - wide standards. This is the first of a series of workshops and planning meetings for the Open Modeling Foundation envisioned over the coming 1 - 2 years.

While a limited number of short talks will help frame topics for discussion, most of the workshop will be dedicated to substantive discussion of challenges and proposals for establishing the Open Modeling Foundation, including membership, governance, activities, infrastructure, and support.

### Monday, 6 May 2019

11:00 - 11:30: Registration

#### Introduction

11:30 - 12:00: Introductions by Ortwin Renn, Sander van der Leeuw, and Michael Barton

12:00 - 12:30: Examples of standards based model integration

LandTrans Project, Karin Frank, Helmholtz UFZ, Leipzig

COPAN Project, Jonathan Donges, PIK, Potsdam

12:30 - 13:00: General discussion of model integration and standards

**13:00 - 14:00: Lunch**

#### Integrative Modeling and Standards

14:00 - 14:15: Examples of modeling standards

ODD standard for model documentation, Volker Grimm, Helmholtz UFZ, Leipzig

14:15 - 15:30: Continue discussion of modeling standards (accessibility, documentation, reusability, interoperability, other?)

**15:30 - 15:45: Coffee Break**

### Envisioning a Community Standards Organization I

15:45 - 16:00: Introducing the Open Modeling Foundation, Michael Barton

16:00 - 17:00: Discussion of possible OMF organization, representation, and governance

## **Tuesday, 7 May 2019**

### Envisioning a Community Standards Organization II

09:30 - 9:45: Recap from day 1

9:45 - 10:30: Examples of organizing scientific communities

The Inter-Sectoral Impact Model Intercomparison Project, Franziska Piontek

Vienna Complexity Science Hub, Phillip Marxgut

Integrated Assessment Modeling Consortium, Matthew Gidden

**10:30 - 10:45: Coffee Break**

10:45 - 12:45: Prioritizing OMF Action Items

**12:45 - 13:45: Lunch**

### Roadmap for Sustainability

13:45 - 15:00: Incentivizing participation

**15:00 - 15:15: Coffee Break**

15:15 - 16:00: Funding

16:00 - 16:30: Wrap up

## **Attachments**

- Draft Open Modeling Foundation Charter - to serve as example for discussion of organization issues
- Example standards document - to serve as example for discussion of standards
- List of attendees

Thank you for attending this workshop, and contributing your voice and ideas to this initiative. We hope you and the organizations you represent will continue to participate in this international initiative.

Please contact Michael Barton <[michael.barton@iass-potsdam.de](mailto:michael.barton@iass-potsdam.de)> and copy Jana Fasheh <[Jana.Fasheh@iass-potsdam.de](mailto:Jana.Fasheh@iass-potsdam.de)> if you have questions or suggestions. Many thanks.

## Workshop Participants

Name	Affiliation
Juan Barceló	Universitat Autònoma de Barcelona Quantitative Archaeology Lab, Departament de Prehistòria
Michael Barton	Arizona State University School of Human Evolution & Social Change
Lavinia Baumstark	Potsdam Institute for Climate Impact Research
Tim Butler	Institute for Advanced Sustainability Studies
Jonathan Donges	Potsdam Institute for Climate Impact Research
Gunnar Dreßler	Helmholtz-Zentrum für Umweltforschung GmbH - UFZ
Karin Frank	Helmholtz-Zentrum für Umweltforschung GmbH - UFZ
Anastasis Giannousakis	Potsdam Institute for Climate Impact Research
Matthew Gidden	International Institute for Applied Systems Analysis
Volker Grimm	Helmholtz-Zentrum für Umweltforschung GmbH - UFZ
Jobst Heitzig	Potsdam Institute for Climate Impact Research
Geo Kocheril	Universität Kassel
Martin Lange	Helmholtz-Zentrum für Umweltforschung GmbH - UFZ
Mark Lawrence	Institute for Advanced Sustainability Studies
Sander van der Leeuw	Arizona State University School of Human Evolution & Social Change, School of Sustainability
Carsten Lemmen	Institute of Coastal Research, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany
Phillip Marxgut	Vienna Complexity Science Hub
Thomas Märzinger	BOKU-University of Natural Resources and Life Sciences, Vienna
Birgit Müller	Helmholtz-Zentrum für Umweltforschung GmbH - UFZ
Ilona Otto	Potsdam Institute for Climate Impact Research
Franziska Piontek	The Inter-Sectoral Impact Model Intercomparison Project
Ortwin Renn	Institute for Advanced Sustainability Studies
Pia-Johanna Schweizer	Institute for Advanced Sustainability Studies
Tim Tröndle	Institute for Advanced Sustainability Studies
Julia Zeilinger	BOKU-University of Natural Resources and Life Sciences, Vienna