



Artificial Intelligence for Earth System Predictability (AI4ESP) Workshop Agenda

EVERYONE must register for public sessions [here](#) (**DO NOT USE CALENDAR LINK**)

Click [here](#) to join our Slack workspace

Times Are North American Eastern Time Zone

October 25: Day 1 (Week 1)

12:00 [Section Presentation \(Hickmon, Geernaert, Helland\)](#)

Welcome - Nicki Hickmon

Deputy Director for Science Programs, DOE Office of Science - Harriet Kung

Introduction to AI4ESP initiative - Nicki Hickmon

Earth & Environmental Systems Sciences Division (EESD) - Gary Geernaert

Advanced Scientific Computing Research (ASCR) - Barb Helland

13:15 [AI4ESP Workshop Structure & Charge](#) - Haruko Wainwright

[AI4ESP State-of-the-Science](#) - Haruko Wainwright, Forrest Hoffman, Scott Collis

14:00 Break

14:15 Panel Discussion

Panel Chair: Rick Stevens

Panel: Grace E. Kim, Prabhat Ram, Kirk Borne

15:00 Earth System Predictability Session - [Atmospheric Modeling](#) (Invited Only)

Session Chair: Ruby Leung - [Presentation](#)

17:00 Adjourn

October 26: Day 2 (Week 1)

12:00 Plenary talk - Amy McGovern

12:15 Plenary talk - Pierre Gentine

12:30 Break

12:45 Earth Science Topic Session - [Land Modeling](#) (Invited Only)

Session Chair: Beth Drewniak

14:45 Break

15:00 Cross-cut Session - [Data Acquisition to Distribution](#) (Invited Only)

Session Chair: Giri Prakash

17:00 Adjourn

November 1: Day 3 (Week 2)

12:00 Reports From Previous Sessions

- Atmospheric Modeling
- [Land Modeling](#)
- Data Acquisition



12:30 Break

12:45 Earth Science Topic Session - [Human Systems & Dynamics](#) (Invited Only)

Session Chair: Christa Brelsford

14:45 Break

15:00 Earth Science Topic Session - [Hydrology](#) (Invited Only)

Session Chair: Charuleka Varadharajan

17:00 Adjourn

November 2: Day 4 (Week 2)

12:00 Plenary talk - Chaopeng Shen

12:15 Plenary talk - Rob Ross

12:30 Break

12:45 Earth Science Topic Session - [Watershed Science](#) (Invited Only)

Session Chair: Mavrik Zavarin

14:45 Break

15:00 Cross-cut Session - [Neural Networks](#) (Invited Only)

Session Chair: Auroop Ganguly

17:00 Adjourn

November 8: Day 5 (Week 3)

12:00 Reports From Previous Sessions

- Human Systems & Dynamics
- Hydrology
- Watershed Science
- Neural Networks

12:30 Break

12:45 Earth Science Session - [Ecohydrology](#) (Invited Only)

Session Chair: Forrest Hoffman

14:45 Break

15:00 Cross-cut Session - [Surrogate Models & Emulators](#) (Invited Only)

Session Chair: Nathan Urban

17:00 Adjourn

November 9: Day 6 (Week 3)

12:00 Plenary Talk - Tapio Schneider

12:15 Plenary Talk - Alison Appling

12:30 Break

12:45 Earth Science Session - [Aerosols & Clouds](#) (Invited Only)

Session Chair: Po-Lun Ma

14:45 Break

15:00 Cross-cut Session - [Knowledge-Informed Machine Learning](#) (Invited Only)

Session Chair: Frank Alexander

17:00 Adjourn

November 22 - No Meeting

November 23 - No Meeting

November 29 Day 7 (Week 4)

12:00 Reports From Previous Sessions

- Ecohydrology
- Surrogate Models and Emulators
- Aerosols & Clouds
- Knowledge-Informed Machine Learning

12:30 Break

12:45 Earth Science Session - [Coastal Dynamics, Oceans & Ice](#) (Invited Only)

Session Chair: Matt Hoffman

14:45 Break

15:00 Cross-cut Session - [Knowledge Discovery & Statistical Learning](#) (Invited Only)

Session Chair: Xingyuan Chen

17:00 Adjourn

November 30: Day 8 (Week 4)

12:00 Plenary talk - Laure Zanna

12:15 Plenary talk - Katie Dagon

12:30 Break

12:45 Earth Science Topic Session - [Climate Variability & Extremes](#) (Invited Only)

Session Chair: Maria Molina

14:45 Break

15:00 Cross-cut Session - [Explainable/Interpretable/Trustworthy AI](#) (Invited Only)

Session Chair: Line Pouchard

17:00 Adjourn

December 2: Day 9 (Week 5)

12:00 Reports From Previous Sessions

- Coastal Dynamics, Oceans, & Ice
- Knowledge Discovery & Statistical Learning
- Climate Variability & Extremes



- Explainable/Interpretable/Trustworthy AI

12:30 Break

12:45 Cross-cut Session - [Hybrid Modeling](#) (Invited Only)

Session Chair: Sivasankaran Rajamanickam

14:45 Break

15:00 Cross-cut Session - [AI Architecture Co-Design](#) (Invited Only)

Session Chair: Jim Ang

17:00 Adjourn

December 3: Day 10 (Week 5)

12:00 Reports From Previous Sessions

- Hybrid Modeling
- AI Architecture & CoDesign

12:15 Workshop session wrap-up and discussion motivation

12:30 Break

12:45 Panel/Open Discussion (Invited Only)

Common challenges & opportunities

Resources, capabilities, and facilities (DOE + Multi-agency)

14:45 Break

15:00 Panel/Open discussion (Invited Only)

Short-term, 5-year, 10-year goals

Earth system predictability and applied math and computer science research priorities

17:00 Adjourn

December 6

12:00 - 16:00 Editing Meeting (Invited Only)

December 20

12:00 - 16:00 Editing Meeting (Invited Only)