Earth System Prediction Working Group

Co-chairs: Kathy Pegion (George Mason University), Yaga Richter (NCAR), Steve Yeager (NCAR)
Role of ESPWG

• Serve the CESM and broader geoscience community by facilitating and coordinating fundamental research focused on understanding and advancing research on initialized Earth system prediction on timescales from subseasonal to decadal.

 Collect community input on priority experiments, infrastructure needs, and model/system developments needed to advance ESP research.

 Plan & execute large ensemble initialized hindcast / forecast simulations that are too computationally burdensome for individual researchers to undertake.

 Orchestrate the development of tools and frameworks to enable a broader community to explore predictability mechanisms and sensitivities to prediction system design.

 Promote collaborative multidisciplinary research and serve as a hub for coordination of effort.

 Provide a reliable, catalyzing forum for sharing the latest ESP science results.
ESPWG Inheritance

- Formation of CGD’s interdisciplinary Earth System Prediction group (late 2018)
- Past & ongoing data assimilation research in CISL and CGD
- Considerable experience with initialized prediction using CESM1:
  - S2S (Richter et al. 2020); SubX (https://iridl.ldeo.columbia.edu/SOURCES/.Models/.SubX/)
  - Decadal (Yeager et al. 2018); CESM-DPLE (http://www.cesm.ucar.edu/projects/community-projects/DPLE/)

MJO Prediction:

Athanasiadis et al. (2020, *npj Clim Atm Sci*)

LY2-8

Kim, Richter, Zane (2019)

NCAR CESM1

Athanasiadis et al. (2020, *npj Clim Atm Sci*)
ESPWG Updates

- Established in April 2020

- ESPWG mailing list: [http://mailman.cgd.ucar.edu/mailman/listinfo/cesm-espwg](http://mailman.cgd.ucar.edu/mailman/listinfo/cesm-espwg)
  - 150 members

- Coming soon: ESPWG web site under cesm.ucar.edu

- Plans for new initialized hindcast sets using CESM2 (attend Wednesday session for details):
  - S2S hindcasts from 1999-2019
  - Multi-year hindcasts from 1970-2019
# Inaugural ESPWG Session Agenda

## 2020 CESM Workshop

**June 15-17, 2020**

**Earth System Prediction Working Group**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:30 AM</td>
<td>Welcome</td>
<td>Kathy Pegion</td>
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<tr>
<td>8:45 AM</td>
<td>A New CAM6+DART 80-Member Ensemble Reanalysis for 2011-2019: Initial Conditions</td>
<td>Kevin Reader</td>
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<tr>
<td>9:00 AM</td>
<td>S2S with CESM1</td>
<td>Yaga Richter</td>
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<tr>
<td>9:15 AM</td>
<td>Advantages of 25Km resolution ocean model in GEOS Seasonal Prediction System</td>
<td>Andrea Molod</td>
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<tr>
<td>9:30 AM</td>
<td>Two-year Predictions of ENSO Event Duration during 1954-2015</td>
<td>Xian Wu</td>
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<tr>
<td>9:45 AM</td>
<td>On the prospect of developing seasonal to decadal soil moisture forecasting system</td>
<td>Sanjiv Kumar</td>
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<tr>
<td>10:00 AM</td>
<td>Decadal Prediction with CESM: recent progress &amp; outstanding challenges</td>
<td>Steve Yeager</td>
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<tr>
<td>10:15 AM</td>
<td>BREAK</td>
<td>BREAK</td>
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<tr>
<td>10:30 AM</td>
<td>The dlimpred diagnostic package</td>
<td>Riley Brady</td>
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<tr>
<td>10:45 AM</td>
<td>Near-term Simulation Plans</td>
<td>Co-chairs</td>
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<tr>
<td>11:00 AM</td>
<td>General Discussion</td>
<td>ALL</td>
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<tr>
<td>12:00 AM</td>
<td>Adjourn</td>
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