Agenda

Earth and Environmental System Modeling (EESM) PI Meeting

William F. Bolger Center
9600 Newbridge Drive, Potomac, Maryland 20854
November 5 - 9, 2018

DAY 1 - Monday, November 5, 2018

Joint Session

7:00	***Breakfast***	Franklin Building Lobby
Welcome		
8:15 - 8:25	*Dorothy Koch, Renu Joseph, Bob Vallario*	Ben Franklin
Context		
8:25 - 8:35	*Sharlene Weatherwax* Associate Director for Biological and Environmental Research	
8:35 - 8:45	*Gary Geernaert* Director for Earth and Environmental Systems Science	
Keynotes		
8:45 - 9:20	*Inez Fung, University of California, Berkeley* Ecosystem-Water-Climate Dynamics: Lessons and New Challenges	
9:20 - 9:55	*Patrick Reed, Cornell University* The Art of Complexity: Understanding Errors, Actions, and Exascale Community Ambitions in Multi-sector Modeling	
9:55 - 10:15	***Break***	Franklin Building Lobby
Science Area (SA) Overviews		
10:15 - 10:25	*Dorothy Koch* Earth System Model Development	Ben Franklin
10:25 - 10:35	*Renu Joseph* Regional and Global Model Analysis	
10:35 - 10:45	*Bob Vallario* Multisector Dynamics	
Next Steps		
10:45	*Renu Joseph*	

Panel Session in Plenary Ben Franklin
(Panelist remarks, panelist exchange, and audience interaction)

11:00 - 12:00	**Integrated Water Cycle**	
	Kate Calvin	PNNL, Coordinator/Moderator
	Bill Collins	LBNL
	Chris Golaz	LLNL
	Richard Lammers	UNH
	Ruby Leung	PNNL

12:00 - 1:30 ***Lunch*** Osgood Dining Room

Poster Sessions (3 in parallel)

1:30 - 2:50	**Extremes**	F21
	Coastal Systems	F1
	Tools, Frameworks, and Transitions to Exascale	F1

2:50 - 3:00 ***Break*** Franklin Building Lobby

Panel Sessions in Plenary Ben Franklin
(Panelist remarks, panelist exchange, and audience interaction)

3:00 - 4:00	**Extreme Scale Computational Modeling**	
	Michael Wehner	LBNL, Coordinator/Moderator
	Peter Caldwell	LLNL
	Forrest Hoffman	ORNL
	Michael Pritchard	UC Irvine
	Mark Taylor	SNL
4:00 - 5:00	**Extremes, Variability, and Change**	
	Christina Patricola	LBNL, Coordinator/Moderator
	Benjamin Kirtman	U of Miami
	Ian Kraukunas	PNNL
	Jerry Meehl	NCAR
	James Randerson	UC Irvine

Day 1 Closeout *Bob Vallario*

DAY 2 - Tuesday, November 6, 2018

Joint Session

7:00 ***Breakfast*** Franklin Building Lobby

Morning Breakouts (3 in parallel)

8:00 - 10:30 **Extremes** Ben Franklin

Travis O'Brien LBNL, Co-chair
Claudia Tebaldi NCAR, Co-chair
Ian Sue Wing Boston U, Co-chair

1. *Abagail Snyder*: Coherent Joint emulation of Earth System Model Temperature-Precipitation Realizations: Fldgen v2.0
2. *Céline Bonfils*: Forced Changes in Temperature and Precipitation and their Influences on Global Changes in Vegetation Distribution or Aridity
3. *Jiwen Fan*: Wildfire Impact on Environment Thermodynamics and Severe Convective Storms
4. *Stephen Price*: Probabilistic Sea Level Projections from Ice Sheet and Earth System Models (ProSPect)
5. *Colin Zarzycki*: Investigating New Coastal Storm Metrics and Domain Size Sensitivity over the Eastern U.S. with a Multidecadal VR-CESM

Coastal Systems F18-19

Mohamad Hejazi PNNL, Co-chair
Anastasia Piliouras LANL, Co-chair
Phillip Wolfram LANL, Co-chair

1. *Zeli Tan*: Soil Erosion and Organic Carbon, Riverine to Coastal Fluxes
2. *Bill Collins*: Extremes and Coastal Urban Systems
3. *Nathan Urban*: Climate Resilience and Coastal Impacts
4. *Christa Brelsford*: Coupled Infrastructure, Socioeconomic, and Natural Systems with a Tsunami Case Study

Tools, Frameworks, and Transitions to Exascale F3

Forrest Hoffman ORNL, Co-chair
Phil Jones LANL, Co-chair
Pat Reed Cornell, Co-chair

1. *Luca Bertagna*: Exploring the Use of Kokkos in HOMME to Achieve Performance on Multiple Architectures
2. *Phil Jones*: How to Drive Your New Hybrid Computer
3. *Michael Pritchard*: Deep Learning to Represent Subgrid Cloud and Radiation Processes in Climate Models
4. *Robert Jacob*: The E3SM Code Development Process

Poster Sessions (3 in parallel)

10:30 - 12:10	**Land and Land System Dynamics**	F1, F21
	High Latitudes	F23
	Data, Metrics, and Diagnostics	F22, F23
12:10 - 1:10	***Lunch***	Osgood Dining Room

Afternoon Breakouts (3 in parallel)

1:10 - 3:30 **Land and Land System Dynamics** F3

Gabe Kooperman U of Georgia, Co-chair
Ben Bond-Lamberty U of MD, Co-chair
Karen Fisher-Vanden Penn State, Co-chair

1. *Xiaojuan Yang*: How the Sources and Sinks of Carbon are Affected by Phosphorus Cycle Dynamics in the Amazon Region - A Modeling Study using ELMv1
2. *Adam Schlosser*: Confronting Global Water Risks into an Unprecedented Era: Successes and Challenges with Risk-Based, Multi-Sector Predictions
3. *David Lawrence*: Applying ILAMB to Several Generations of the Community Land Model to Assess the Relative Contribution of Model Improvements and Forcing Uncertainty to Model-Data Agreement

High Latitudes F18-19

Jennifer Holm LBNL, Co-chair
Wilbert Weijer LANL, Co-chair
Charles Zender UC Irvine, Co-chair

1. *Charlie Zender*: Climatic Responses to Future Trans-Arctic Shipping
2. *Matt Hoffman*: Effects of Ocean and Ice Shelf Basal Melt Variability on Sea Level Rise Contribution from Thwaites Glacier, Antarctica
3. *William Riley*: Non-Growing Season High-Latitude Plant Nitrogen and Phosphorus Uptake Impact Land Interactions with the Atmosphere and Climate

Data, Metrics, and Diagnostics Ben Franklin

Casey Burleyson PNNL, Co-chair
Paul Ulrich UC Davis, Co-chair
Jill Zhang LLNL, Co-chair

1. *Melissa Allen*: Energy-Water Nexus Knowledge Discovery Framework: An Integrated Platform for Integration, Analysis, and Synthesis of Spatiotemporal Data
2. *Peter Gleckler*: Using the PCMDI Metrics Package to Provide Objective Performance Summaries of all CMIP Class Models
3. *Khachik Sargsyan*: Overview of Uncertainty Quantification Methods for Complex Models
4. *Daniel Walton*: Do Dynamical and Statistical Downscaling Fundamentally Disagree on Climate Change?

3:30 - 3:50 ***Break*** Franklin Building Lobby

Breakout Session Report Outs (7-8 minutes)

3:50 - 4:40 — Ben Franklin

Extremes
Coastal Systems
Tools, Frameworks, and Transitions to Exascale
Land and Land System Dynamics
High Latitudes
Data, Metrics, and Diagnostics

Panel Session in Plenary: Interagency/Inter-organizational Perspectives
(Panelist remarks, panelist exchange, and audience interaction)

4:40 - 5:30 — Ben Franklin

Brita Bierwagen	EPA
David Considine	NASA
Jia Li	EPA
Alejandro Moreno	DOE
Mike Patterson	US CLIVAR
Jennifer Saleem Arrigo	USGCRP

Special Announcement and Final Remarks
5:30 - 5:40 — *Gary Geernaert* — Ben Franklin

Next Steps

5:40 - 6:00 — *Dorothy Koch, Renu Joseph, Bob Vallario*

DAYS 3 - 5

Agendas Follow for:

E3SM Community Model Development Activities

Regional and Global Model Analysis (RGMA) Activities

Multisector Dynamics Activities

DAY 3 - Wednesday, November 7, 2018

E3SM Community Model Development Activities

7:00	***Breakfast***	Franklin Building Lobby
Programmatic and Project Updates		Ben Franklin
8:30 - 8:45	Programmatic Updates *Dorothy Koch*	
8:45 - 9:00	E3SM Project Updates *Dave Bader*	
E3SM Experimental Campaigns		Ben Franklin
9:00 - 9:30	Water Cycle Campaign *Chris Golaz*	
9:30 - 10:00	Biogeochemistry Campaign *Kate Calvin*	
10:00 - 10:30	***Break***	Franklin Building Lobby
10:30 - 11:00	Cryosphere-Ocean Campaign *Steve Price*	
Community Engagement		Ben Franklin
11:00 - 11:30	E3SM Release – How to Work with E3SM *Renata McCoy, Rob Jacob*	
Coupled System Science Plans		Ben Franklin
11:30 - 12:00	Overview of E3SM Phase 2 Science and Development Plans *Ruby Leung*	
12:00 - 1:00	***Lunch***	Osgood Dining Room
Parallel Sessions - E3SM Future Developments and Partner Projects		
1:00 - 2:30	**v2-v3 Atmospheric Physics** *Chair: Shaocheng Xie* ● Overview of E3SM NGD-Atmospheric Physics for v2/v3 - *Xie* ● EAMv1P: Remarkable Improvements on Simulations of Present-Day Atmosphere - *Ma* ● A Unified Convection and Turbulence Parameterization: The EDMF Approach - *Teixeira* ● Organized Convection Parameterization - *Moncrieff* ● Implementation and Evaluation of the P3 Cloud Microphysics in the E3SM Atmosphere Model - *Zhang* ● Solar Radiation Benchmark - *Prather*	Ben Franklin

1:00 - 2:30 **v2-v4 Land/Energy** F3

Chair: Ben Bond-Lamberty

- Responses of the Carbon, Energy and Water Fluxes to Different Land Use and Land Cover Products in E3SM - *Jain*
- Economic Carbon Cycle Feedbacks May Offset Additional Warming from Natural Feedbacks - *Randerson*
- Connecting Climate Models to Energy Impacts - *Evans (for Deeksha Rastogi)*
- Soil Erosion Causes Substantial Loss of Terrestrial Carbon and Nutrients in Coastal Zones - *Tan*
- Precipitation Downscaling Method for Topography-Based Subgrid Structure in E3SM - *Tesfa*

2:30 - 3:30 **v3-v4 Atmosphere – Cloud-Resolving-Scales** Ben Franklin

Chair: Peter Caldwell

- Global Cloud-Resolving E3SM Overview - *Caldwell*
- Superparameterized E3SM - *Hillman*
- E3SM-FIVE Overview - *Yamaguchi*
- The Non-Hydrostatic Dycore Effort - *Steyer*

2:30 - 3:30 **v2-v4 Ocean/Cryosphere Developments** F3

Chair: Mark Peterson

- Overview of Ocean/cryosphere Development - *Petersen and Price*
- Ocean Vertical Mixing - *Van Roekel*
- Coastal Modeling - *Wolfram*
- Icebergs in E3SM - *Comeau*

3:30 - 4:00 ***Break*** Franklin Building Lobby

4:00 - 5:30 ***Coupled System Science – Results and Future Directions*** Ben Franklin

Chair: Susannah Burrows

- Overview - *Burrows*
- Some General Considerations about the Surface-Atmosphere Radiative Coupling in the Earth System Mode - *Huang*
- Land Cryosphere Biases and Their Impact on Atmosphere-Surface Exchange in E3SMv1 - *Brunke*
- High-Resolution Fully-Coupled E3SMv0.1 Approximate Present Day Transient Climate Simulations – *McClean*
- Global Phosphorus Redistribution and Climate Impacts from Wildfires in E3SM - *Xu*

Awards and Deep-Dives Performance Ben Franklin

6:00 **Award Presentations**

Dr. Sharlene Weatherwax

6:30 **Deep Dives Performance**

DAY 4 - Thursday, November 8, 2018

E3SM Community Model Development Activities

7:00	***Breakfast***	Franklin Building Lobby
Computation and Software		F9
8:30 - 9:00	**E3SM Computational Overview** *Mark Taylor*	
9:00 - 10:00	**E3SM Performance** *Chair: Phil Jones* ● Performance Improvement from Semi-Lagrangian Transport - *Bosler/Guba* ● Improving Performance via Physics/Dynamics Coupling - *Donahue* ● Performance Analytics Tool (PACE) - *Sreepathi* ● Visualizing Performance Profile - *Keen*	
10:00 - 10:30	***Break***	Franklin Building Lobby
10:30 - 11:30	**E3SM Infrastructure** *Chair: Rob Jacob* ● Diagnostics Package for Energy Exascale Earth System Model (E3SM_diags) - *Zhang* ● New Infrastructure and Examples of Code Verification in E3SM - *Wilke* ● Using LIVVkit to Evaluate Ice Sheet Surface Mass Balance in E3SM - *Kennedy* ● Modernization of the E3SM Single-Column Model - *Bogenschutz*	F9
11:30 - 12:30	**E3SM Next-Generation Software/Algorithms** *Chair: Andy Salinger* ● Improving Solution Accuracy and Convergence for Physics Parameterizations - *Wan* ● The Discrete Element Model for Sea Ice - *Turner* ● Improving ESM Predictions Using New Surrogate Modeling Approaches and Observation Networks - *Ricciuto* ● Beyond Bit-for-Bit, Reproducibility Testing CMDV-SM - *Kennedy/Mahajan*	F9
12:30 - 1:30	***Lunch***	Osgood Dining Room
1:00	Informal Discussion on Next-Generation Approaches to High-Resolution Model Initialization	F9

Poster Sessions

1:30 - 5:30 ***E3SM Community Poster Session***

1:30 - 3:30 **E3SM Community Poster Session 1** F1

- E3SM – v1 Results – BGC
- E3SM – v1 Results – Ocean-Cryosphere
- E3SM – v1 Results – Water Cycle
- E3SM – Ocean/Cryosphere (v2-v4)

3:30 - 5:30 **E3SM Community Poster Session 2** F1

- E3SM – Land/Energy
- E3SM – v4 Atmosphere
- E3SM – v2/v3 Atmospheric Physics
- E3SM – Next Generation Coupled System Science
- E3SM – Performance (v2)
- E3SM – Infrastructure (v2)
- E3SM – NGD-computation (v3-v4)

Evening Session

7:00 - 8:00 **E3SM Simulation Coordination Meeting** F3

DAY 5 - Friday, November 9, 2018

E3SM Community Model Development Activities

7:00	***Breakfast***	Franklin Building Lobby
Parallel Sessions - E3SM Project Group Meetings		
8:00 - 9:30	E3SM Water Cycle Coupled Group *Chair: Chris Golaz*	F3
8:00 - 9:30	E3SM NGD Software and Algorithms *Chair: Andy Salinger*	F15
8:00 - 9:30	E3SM NGD Land and Energy *Chair: Ben Bond-Lamberty*	F17
10:00 - 10:30	***Break***	Franklin Building Lobby
Parallel Sessions - E3SM Project Group Meetings		
10:00 - 11:00	E3SM Biogeochemical Cycles Coupled Group *Chair: Kate Calvin*	F3
10:00 - 11:00	E3SM NGD Atmospheric Physics *Chair: Shaocheng Xie*	F15
10:00 - 11:00	E3SM Infrastructure Group *Chair: Rob Jacob*	F17
Parallel Sessions - E3SM Project Group Meetings		
11:00 - 12:00	E3SM Cryosphere Coupled Group *Chair: Steve Price*	F3
11:00 - 12:00	E3SM Performance Group *Chair: Phil Jones*	F15
11:00 - 12:00	E3SM NGD Atmosphere-SCREAM *Chair: Peter Caldwell*	F17

DAY 1 - Monday, November 5, 2018
Regional and Global Model Analysis (RGMA) Activities

6:30 - 8:00 p.m.	**Group Meeting –** Interannual to Multidecadal Variability: Variability, Predictability, and Change *Contact Ben Kirtman, Wilbert Weijer, or Forrest Hoffman (forrest@climatemodeling.org)* if you'd like to participate	F3

DAY 2 - Tuesday, November 6, 2018
Regional and Global Model Analysis (RGMA) Activities

6:30 - 8:00 p.m.	**Group Meeting –** Synoptic to Interannual Variability: Variability, Predictability, and Change *Contact Travis O' Brien (TAOBrien@lbl.gov)* if you'd like to participate	F3

DAY 3 - Wednesday, November 7, 2018
Regional and Global Model Analysis (RGMA) Activities

1:00 - 2:30	**Posters –** *Synoptic to Interannual Variability: Variability, Predictability, and Change*	F1, F21, F22
4:00 - 6:30	**Posters –** *Interannual to Multidecadal Variability: Variability, Predictability, and Change*	F1, F21, F22, F23

DAY 4 - Thursday, November 9, 2018

Regional and Global Model Analysis (RGMA) Activities

7:00 ***Breakfast*** Franklin Building Lobby

Welcoming Plenary

8:00 **Regional and Global Model Analysis (RGMA)** Benjamin Franklin
Renu Joseph

8:10 - 10:10 **SFAs, Cooperative Agreements, and University Projects - Part 1** Benjamin Franklin

- 8:10 Water Cycle and Climate Extremes Modeling (WACCEM)
  Ruby Leung
- 8:25 Calibrated and Systematic Characterization, Attribution, and Detection of Extremes (CASCADE)
  Bill Collins
- 8:40 Clouds at LLNL: Observational Understanding and Diagnosed Simulations
  Steve Klein
- 8:55 Understanding Hydroclimate Data with Use-Inspired Metrics (HYPERION)
  Paul Ullrich
- 9:10 Framework for Assessing Climate Simulations Relevant to the Energy-Water-Land Nexus (FACETS)
  Bill Gutowski
- 9:25 Simulating Extreme Precipitation in the United States in the E3SM: Investigating the Importance of Representing Convective Intensity Versus Dynamic Structure
  Gabe Kooperman
- 9:40 Monsoon Extremes: Impacts, Metrics, and Synoptic-Scale Drivers
  William Boos
- 9:55 Madden-Julian Oscillation, Tropical Cyclones, and Precipitation Extremes in E3SM
  Daeyun Kim

10:10 ***Group Photo*** Franklin Courtyard

10:15 ***Break*** Franklin Building Lobby

10:30 - 12:00 **Breakout Session 1: Synoptic to Interannual Timescales - Research Gaps**
Whitepaper Leads: *Travis O'Brien, Ruby Leung*

Convection and Land-Atmosphere Interaction Benjamin Franklin
Leads: *Ruby Leung and Gabe Kooperman*

- A Hierarchical Evaluation of Mesoscale Convective Systems Simulated by Variable-Resolution MPAS-CAM in the Central US - *Jiwen Fan*
- Wildfire Impact on Environment Thermodynamics and Severe Convective Storms - *Zhe Feng*
- Sub-Cloud Moist Entropy Curvature as a Predictor for Changes in the Seasonal Cycle of Tropical Precipitation - *Bryce Harrop*

- The Madden-Julian Oscillation, Tropical Cyclones, and Precipitation Extremes in E3SMv1 - *Daehyun Kim*
- What are the Causes of a Warm Bias in Surface Air Temperature over Land? - *Hsi-Yen Ma*
- Radiative Forcing Associated with Regional Aerosol Emissions - *Brian Medeiros*
- Boundary Layer Diabatic Processes, the Virtual Effect, and Convective Self-Aggregation - *Da Yang*

Synoptic-to-Seasonal Variability F3

Leads: *Jian Lu and William Boos*

- High Mountains of Asia: Moisture Sources and Contribution to Summer Monsoon - *Moetasim Ashfaq*
- Intensification of the Pre-Meiyu Rainband in the Late 21st Century - *John Chiang*
- SOM-Based Hybrid Downscaling of AR Days - *Naomi Goldenson*
- The Origins of Sub-Seasonal triggers of South Asian Monsoon Onset - *Samson Hagos*
- Characterizing the Changes of the Top Atmospheric River Events over the California in the Future - *Xingying Huang*
- A Probabilistic Gridded Product for Daily Precipitation Extremes - *Mark Risser*
- Rossby Wave Breaking and Transient Eddy Forcing during Euro-Atlantic Circulation Regimes - *David Straus*
- Resolution Dependence and Rossby Wave Modulation of Atmospheric Rivers in an Aquaplanet Model - *Erik Swenson*
- Circumglobal Teleconnections and Linkages with Climate Extremes in the Northern Hemisphere Summer - *Haiyan Teng*

Extremes and Impacts F18-19

Leads: *Angie Pendergrass and Kevin Reed*

- Hurricane Rapid Intensification: 30-Year Trends and Significance of Ocean Salinity for its Prediction - *Karthik Balaguru*
- Using the Community Earth System Model Large Ensemble to Investigate Changes in Frequency of Major Precipitation Accumulations in a Warming Climate - *Naresh Devineni*
- The Origins of Sub-Seasonal Triggers of South Asian Monsoon Onset - *Patrick Kelly*
- Using the Community Earth System Model Large Ensemble to Investigate Changes in Frequency of Major Precipitation Accumulations in a Warming Climate - *Kevin Reed*
- CMEC Early Results: Extreme Temperature and Precipitation Metrics - *Michael Wehner*

12:00 ***Lunch*** Osgood Dining Room

1:00 - 2:45 **SFAs, Cooperative Agreements, and University Projects - Part 2** Benjamin Franklin

1:00 CATALYST
Jerry Meehl

1:15 Program for Climate Model Diagnosis & Intercomparison (PCMDI)
Karl Taylor

1:30 Reducing Uncertainties in Biogeochemical Interactions through Synthesis and Computation (RUBISCO)
Forrest Hoffman

1:45 High-Latitude Earth System Modeling (HiLAT-RASM)
Wilbert Weijer

2:00 Decadal Prediction and Predictability of Extremes in Ocean Eddy Resolving Coupled Models
Ben Kirtman

2:15 Mechanisms of Pacific Decadal Variability in ESMs: The Roles of Stochastic Forcing, Feedbacks and External Forcing
Emanuel Di Lorenzo

2:30 Reducing Uncertainty of Polar to Midlatitude Linkages using DOE's E3SM in a Coordinated Model-Experiment Setting
Gudrun Magnusdottir

2:45 - 3:30 **Breakout Session 2: Interannual to Multi-Decadal Timescales - Research Gaps**
Whitepaper Leads: *Ben Kirtman, Forrest Hoffman, Wilbert Weijer*

Multi-year Earth System Variability Benjamin Franklin

Chair: *Ben Kirtman, Jerry Meehl, Christina Patricola*

- Do Dynamical and Statistical Downscaling Fundamentally Disagree on Climate Change - *Neil Berg*
- Diversity of ENSO Events Unified by Convective Threshold Sea Surface Temperature: A Nonlinear ENSO Index - *Christina Patricola*
- Coupled CAPT: Using Ensemble Seasonal Hindcasts for Diagnosis and Attribution of Systematic SST Biases - *Angela Cheska Siongco*
- Diversity of Natural Variations of the Atlantic Meridional Overturning Circulation in the Community Earth System Model - *Wei Cheng*
- Is the AMOC and PMOC a Nature Seesaw Pattern of Modern Climate? - *Aixue Hu*
- Quantifying the Agreement Between Observed and Simulated Extratropical Modes of Interannual Variability - *Jiwoo Lee*
- *Plans and charge for remaining breakout activities*

Ecosystem Responses and Feedbacks F3

Chair: *Forrest Hoffman, Dave Lawrence, Charlie Koven*

- Forced Changes in Temperature and Precipitation and Their Influences on Global Changes in Vegetation Distribution or Aridity - *Céline Bonfils*
- Global River Responses to Rising CO2: Separating the Effects of Physiological and Radiative Changes on Streamflow and Flooding - *Megan Fowler*
- Increases in Freshwater Runoff at High Latitudes with Sustained Climate Warming Disrupts Marine Ecosystem Function in the Arctic Ocean - *Weiwei Fu*
- Greening of the Land Surface in the World's Cold Regions Consistent with Recent Warming - *Trevor Keenan*

- Evaluation of the Representation of Land-Atmosphere Interactions across Sub-Saharan Africa in the Coupled Model Intercomparison Project Phase Five - *Michael Notaro*
- Investigation of Under-Ice Phytoplankton Blooms in the Fully-Coupled, High-Resolution Regional Arctic System Model (RASM) with Marine Biogeochemistry - *Wieslaw Maslowski*
- *Plans and charge for remaining breakout activities*

High Latitude Processes and Feedbacks F18-19

Chair: *Wilbert Weijer, Hailong Wang, Gudrun Magnusdottir*

- Sea Ice-Originated Global Cooling as a Nonlinear Mode Response to Heat Perturbations - *Jian Lu*
- Effects of Ice and Permafrost on Delta Channel Dynamics - *Anastasia Piliouras*
- Impact of Sea Ice Anomaly on Antarctic Precipitation and Its Source Attribution - *Hailong Wang*
- Investigation of the Latent Heat Polynya to the North of Greenland in February 2018 - *Younjoo Lee*
- Reducing Uncertainty of Polar to Midlatitude Linkages using DOE's E3SM in a Coordinated Model-Experiment Setting - *Gudrun Magnusdottir*
- Sudden Antarctic Sea Ice Retreat, Connections to the Tropics, and Ocean Regime Change around Antarctica - *Gerald Meehl*
- *Plans and charge for remaining breakout activities*

3:30 - 3:45	***Break***	Franklin Building Lobby
3:45 - 4:50	**Breakout Session 2: Interannual to Multi-Decadal Timescales - Research Gaps**	
	Multi-year Earth System Variability (continued)	Benjamin Franklin
	Ecosystem Responses and Feedbacks (continued)	F3
	High Latitude Processes and Feedbacks (continued)	F18-19
4:30	**Plenary Presentation** *Simon Wang*	Benjamin Franklin
4:40	**Plenary Presentation** *Mike Pritchard*	Benjamin Franklin
4:50 - 6:30	**Breakout Session 3: Prioritized Research Goals**	
	Synoptic to Interannual: 3-, 5-, 10-Year Goals	Benjamin Franklin
	Interannual to Multi-Decadal: 3-, 5-, 10-Year Goals	F3
6:30	***Dinner***	Osgood Dining Room
7:30	E3SM Simulation Coordination Meeting *Ruby Leung*	Benjamin Franklin
9:00	**Adjourn**	

DAY 5 - Friday, November 9, 2018

Regional and Global Model Analysis (RGMA) Activities

7:00		***Breakfast***	Franklin Building Lobby
8:00		**Report Out from Breakout Sessions**	F18-19
	8:00	**Synoptic to Interannual Timescales** *Travis O'Brien, Ruby Leung*	
	8:15	**Interannual to Multi-Decadal Timescales** *Ben Kirtman, Forrest Hoffman, Wilbert Weijer*	
	8:30	Report out from Emulation and Hierarchical Modeling *Nate Urban*	
8:45		**Parallel Working Sessions**	
		Metrics and Diagnostics *Primary Participants: Peter Gleckler, Nate Collier, Olu Ogunro, Forrest Hoffman, Michael Wehner, David Lawrence, Bill Collins, Shaocheng Xie, Chengzhu Zhang*	F20
		Climate Information at Regional and Local Scales *Primary Participants: Bill Gutowski, Paul Ullrich, Ruby Leung, Alex Hall, Travis O'Brien*	F18-19
10:15 - 10:30		***Break***	Franklin Building Lobby
10:30		**Parallel Working Sessions** (continued)	
		Metrics and Diagnostics	F20
		Climate Information at Regional and Local Scales	F18-19
11:45		**RGMA Activities Wrap-Up** *Renu Joseph*	F18-19
12:00		**RGMA Activities Adjourn**	

DAY 3 - Wednesday, November 7, 2018

Multisector Dynamics Activities

7:00	***Breakfast***	Franklin Building Lobby
8:30 - 8:45	**Introduction – Goals/Objectives/Agenda** *Bob Vallario*	F17
8:45 - 10:45	**Team Summary Presentations**	F17
	IM3 *Ian Kraucunas* IHESD *Leon Clark/Mohamad Hejazi* PCHES *John Weyant/Karen Fisher-Vanden* IGSM *John Reilly/Ron Prinn*	
10:45 - 11:00	***Break***	Franklin Building Lobby
11:00 - 12:00	**Plenary Presentations/Discussion – Coastal Systems: Complex Natural and Infrastructural Landscapes** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Jordan Macknick* *Presenters: Ian Kraucunas, Klaus Keller, Lejo Flores*	F17
12:00 - 1:00	***Lunch***	Osgood Dining Room
1:00 - 2:00	**Plenary Presentations/Discussion – Scenario Research and Development** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Stephanie Waldhoff* *Presenters: Brian O'Neill, Erwan Monier, Gokul Iyer*	F17
2:00 - 3:00	**Plenary Presentations/Discussion – Model Coupling Methods** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Nathalie Voisin* *Presenters: Chris Vernon, Robert Link, Richard Lammers*	F17
3:00 - 3:15	***Break***	Franklin Building Lobby
3:15 - 5:45	**Parallel Breakouts**	
	Coastal Systems: Complex Natural and Infrastructural Landscapes *Co-chairs: Mohamad Hejazi, Robert Nicholas*	F5
	Scenario Research and Development *Co-chairs: John Weyant, Maoyi Huang*	F17
	Model Coupling Methods *Co-chairs: Karen-Fisher-Vanden, Andy Jones*	F20

DAY 4 - Thursday, November 8, 2018

Multisector Dynamics Activities

7:00	***Breakfast***	Franklin Building Lobby
8:00 - 9:00	**Plenary Presentations/Discussion – Urban Systems Dynamics and Evolution** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Sonny Kim* *Presenters: Melissa Allen, Andy Jones, Ryan McManamay*	F17
9:00 - 10:00	**Plenary Presentations/Discussion – Emulation and Hierarchical Modeling** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Kate Calvin* *Presenters: Corrine Hartin, Elodie Blanc, David Lesmes (DOE)*	F17
10:00 - 11:00	**Plenary Presentations/Discussion – Data and Community Data Platforms** (3 presentations with 25 minutes audience Q & A) *Coordinator/Moderator: Tom Hertel* *Presenters: Casey Burleyson, Budhu Bhaduri, Jay Hnilo (DOE)*	F17
11:00 - 12:30	**Parallel Breakouts**	
	Urban Systems Dynamics and Evolution *Co-chairs: Christa Brelsford, Adam Schlosser*	F5
	Emulation and Hierarchical Modeling *Co-chairs: Nate Urban, Ian Sue Wing*	F17
	Data and Community Data Platforms *Co-chairs: Vince Tidwell, John Weers*	F20
12:30 - 1:30	***Lunch***	Osgood Dining Room
1:30 - 2:30	**Parallel Breakouts** (continued)	
2:30 - 2:45	***Break***	Franklin Building Lobby
2:45 - 4:00	**Breakout Reports and Discussions** (plenary)	F17

- Coastal Systems: Complex Natural and Infrastructural Landscapes
- Scenario Research and Development
- Model Coupling Methods
- Urban Systems Dynamics and Evolution
- Emulation and Hierarchical Modeling
- Data and Community Data Platforms

4:00 - 5:30	**Plenary Discussion – Community Coordination** *Commentary: Leon Clarke, Pat Reed, John Weyant* *Presentation: Richard Moss* *Group Discussion Facilitator: Richard Moss*	F17
5:30 - 5:45	**Next Steps and Wrap Up**	F17

DAY 5 - Friday, November 9, 2018

Multisector Dynamics Activities

Ad Hoc Meetings - Coordination, Planning, and White Paper Development	F9A/B, F14, F23