

GCCC2013

7th

GRADUATE CLIMATE CONFERENCE

WOODS HOLE, MA

NOVEMBER 1-3



Hosted by:

Woods Hole Oceanographic Institution and the
Program in Atmospheres, Oceans and Climate at
the Massachusetts Institute of Technology

Welcome to the 7th Graduate Climate Conference!

The goal of the GCC is to provide a discussion forum for graduate students undertaking research on climate and global change in an array of disciplines, including the atmospheric, biological, earth and ocean sciences. The format of the conference is designed to encourage new climate scientists to become acquainted with the details of diverse areas of climate research and to place their own research in the broader context of the climate science community.

The GCC was founded in 2006 by graduate students from the University of Washington. The founders originally wished to rotate the conference among several different institutions across the United States (and possibly beyond its borders); in accordance with this wish, this year's conference is organized by students in the **MIT Program in Atmospheres, Oceans and Climate** and the **MIT-WHOI Joint Program**, and is held at the **Woods Hole Oceanographic Institution**.

CONTENTS

Greetings from the co-chairs	2
Schedule	3
Sessions	4
Friday	4
Saturday	8
Sunday	15
Keynote speaker	19
2013 Executive Committee	20
Acknowledgments	21

Greetings from the co-chairs:

Welcome to Woods Hole and thanks for joining us at the 7th Graduate Climate Conference! We jumped at the opportunity to help plan and execute this year's conference based on our fantastic experience at last year's iteration in Washington. The GCC played a key role in helping frame our own personal research and developing our professional, scientific network and knowledge base; we wanted to be sure that graduate students in our field continue to benefit from this event. So, to that end, we've organized a broader, larger conference – this weekend, you'll be presented cutting-edge research on the dynamics and chemistry of the atmosphere, oceans and cryosphere as well as their interactions with terrestrial ecosystems and human society. It's our hope that you'll expand your understanding of 'climate' from the vantage point of new perspectives sampled from throughout the entire Earth system, and through this exploration, foster new professional relationships and collaborations which will last through your entire career!

Enjoy the Conference!

Daniel Rothenberg and Sarah Rosengard, co-chairs

GCC 2013 Website:
gradclimateconf.mit.edu

Scan this code with your
phone to access the GCC
web program, abstracts,
and more!



SCHEDULE

FRIDAY, NOVEMBER 1

10:00a	Bus departs from MIT campus to Woods Hole
12:00 - 1:30p	Lunch and Registration
1:30 - 1:45p	Introduction
1:45 - 3:15p	Session I: Paleoclimate and Cryosphere
3:15 - 3:30p	Break
3:30 - 5:00p	Session II: Hydroclimate
5:00 - 6:30p	Poster Session A
6:30 - 7:30p	Dinner
7:30 - 8:30p	Keynote Address
8:30p +	Social event and regular shuttles to Inn on the Square

SATURDAY, NOVEMBER 2

7:30 - 8:30a	Breakfast
8:30 - 9:55a	Session III: Aerosols, Clouds, and Atmospheric Chemistry
9:55 - 11:25a	Poster Session B
11:25a - 12:50p	Session IV: Humans, Climate, and Policy
12:50 - 1:50p	Lunch
1:50 - 3:15p	Session V: Atmospheric Dynamics I - Tropics
3:15 - 3:45p	Break
3:45 - 5:10p	Session VI: Atmospheric Dynamics II - Extratropics
5:10 - 5:25p	Break
5:25 - 6:50p	Session VII: Terrestrial Ecosystems
7:00 - 8:00p	Dinner
8:00p +	Social event and regular shuttles to Inn on the Square

SUNDAY, NOVEMBER 3

Daylight Saving Time ends at 2:00 AM- Turn clocks 1 hour back!

7:30 - 8:30a	Breakfast
8:30 - 9:55a	Session VIII: Ocean Dynamics
9:55 - 11:25a	Poster Session C
11:25 - 12:35a	Session IX: Ocean Biology and Chemistry
12:35a - 12:45p	Concluding Remarks
12:45p +	Lunch and Afternoon Activities
3:00p	Bus departs from Woods Hole to Boston and Logan International Airport

All conference sessions will take place in Clark.

SESSIONS

SESSION I: PALEOCLIMATE AND CRYOSPHERE

Session chair: Christopher Kinsley, MIT-WHOI Joint Program

This session has a broad scope exploring past climate and sea-level, with a particular focus examining the role and response of the cryosphere to climate forcing. The chosen talks give an introduction to some of these approaches, including remote sensing, geochemistry and numerical modeling, to explore the dynamics and interactions of ice, water, and climate today and in the past. The combination of past climate reconstruction with modern observations and modeling of the response of glaciers and ice sheets to warming is of particular scientific interest in the context of current climate change.

Intermediate water dynamics and origins during Heinrich Events in the North Atlantic

Tom Chalk, University of Southampton, UK (t.chalk@noc.soton.ac.uk)

Basal Hydrology and the Stability of Marine-Terminating Ice Streams

Alex Robel, Harvard University (robela@fas.harvard.edu)

Constraining ice sheet visco-elastic response to supraglacial lake drainage events

Laura Stevens, MIT-WHOI Joint Program (lstevens@whoi.edu)

Last Millennium Climate Change in CMIP5 Models

Alyssa Atwood, University of Washington (aatwood@uw.edu)

SESSION II: HYDROCLIMATE

Session chair: Mike Byrne, MIT

Despite its great societal importance, the hydrological cycle on regional scales is poorly understood. Because of this, projections for how the hydrological cycle may change with climate are highly uncertain. This session's talks will focus on the fundamental mechanisms controlling precipitation and evaporation on a variety of scales and in different climates, with the aim of improving our understanding of this critical element of the Earth system.

The effect of greenhouse-gas-induced changes in SST on the seasonality of tropical precipitation

John Dwyer, Columbia University (jgd2102@columbia.edu)

Impacts of climate change on the surface water balance of the central United States

Bo Dong, University at Albany - State University of New York (bdong@albany.edu)

Analysis of Changing Hydroclimatic Systems: Correlated Climate and Vegetation Parameter Impacts to Evapotranspiration Modeling

Morgan Levy, University of California - Berkeley (mclevy@berkeley.edu)

Influence of synoptic weather events on the isotopic composition of atmospheric moisture in San Diego, California

James Farlin, University of California - Davis (jpfarlin@ucdavis.edu)

POSTER SESSION A

Paleoclimate and Cryosphere:

A1. Interactions Between Precipitation and Temperature in Determining the Equilibrium of Glaciers

Jane Baldwin, Princeton University (janewb@princeton.edu)

A2. New insights from “clumped” isotopes on how the timing of soil carbonate formation affects paleoclimate reconstructions

Landon Burgener, University of Washington (landonburgener@gmail.com)

A3. Climate signals recorded in coral skeletons: from proxy development to paleoclimate interpretation

Thomas DeCarlo, MIT-WHOI Joint Program (tdecarlo@whoi.edu)

A4. Using organic geochemical methods to investigate paleotemperature and paleoprecipitation during “super interglacials” from Lake El'gygytgyn sediments

Greg de Wet, University of Massachusetts - Amherst (gdewet89@gmail.com)

A5. A magmatic trigger for the Paleocene-Eocene Thermal Maximum?

Andrea Dubin, MIT-WHOI Joint Program (adubin@mit.edu)

Hydroclimate:

A6. Modeling stream temperature for climate change analysis in the Connecticut River Basin

Lynn Brennan, University of Massachusetts - Amherst
(lynn.metcalf.brennan@gmail.com)

A7. A Sensitivity Theory for the Equilibrium Boundary Layer Over Land

Tim Cronin, MIT (twcronin@mit.edu)

A8. Impact of forcing data uncertainty on simulating snow: understanding the limitations of simulating the cryosphere response to climate

Karl Lapo, University of Washington (lapok@atmos.washington.edu)

A9. Impacts of climate change and change in irrigation management strategies on Evapotranspiration and agricultural water availability

Keyvan Malek, Washington State University (keyvan.malek@email.wsu.edu)

Aerosols, Clouds, and Atmospheric Chemistry:

A10. The Synoptic Climatology and Surface Temperature Impacts of Jet Contrail Outbreaks and Their Forecasting Applications

Jase Bernhardt, Pennsylvania State University (jeb5249@psu.edu)

A11. Determining the conditions necessary for cloud formation on Mars: Simulating ice nucleation in an electrodynamic balance

Shaena Berlin, MIT (sberlin@mit.edu)

A12. Natural Climate Variability and Air-Sea Heat Exchange Influences on the Atmospheric Potential Oxygen

Yassir Eddebbbar, Scripps Institution of Oceanography (yeddebbba@ucsd.edu)

A13. Characterizing a new ice nuclei counter: The SPectrometer for Ice Nuclei (SPIN)

Sarvesh Garimella, MIT (vesh@mit.edu)

A14. Changes in the radiation balance of the tropical tropopause layer

Daniel Gilford, MIT (dgilford@mit.edu)

Humans, Climate, and Policy:

A15. Beyond the Carbon Tax: Personal Carbon Trading and British Columbia's Climate Policy

Laura Guzman, Simon Fraser University, Canada (lguzmanf@sfu.ca)

A16. Developing Short-Term, Seasonal Climate Projections For Growers Using a High-Resolution Global Climate Model

Toni Klemm, University of Oklahoma (toni@ou.edu)

A17. Stakeholder Adaptation to Climate Change in Kansas: What have we learned?

Lisa Tabor, Kansas State University (lkt7779@ksu.edu)

Ocean Dynamics:

A18. Do submesoscale flows shallow or deepen the ocean mixed layer?

Liam Brannigan, University of Oxford, UK (brannigan@atm.ox.ac.uk)

A19. Characteristics of eddies shed from the Antarctic Circumpolar Current

Nicole Couto, Rutgers University (ncouto@marine.rutgers.edu)

A20. Using climate response functions to quantify ocean heat uptake

Yavor Kostov, MIT (yavor@mit.edu)

A21. A PV Budget in the Western North Atlantic

Isabela Le Bras, MIT-WHOI Joint Program (ilebras@mit.edu)

SESSION III: AEROSOLS, CLOUDS, AND ATMOSPHERIC CHEMISTRY

Session chair: Sarvesh Garimella, MIT

Processes involving aerosols and clouds are some of the least understood aspects of the climate despite a significant role in determining current and future climate. Presentations in this session will explore some of the ways aerosol particles interact with radiation, water vapor, and circulation, and how these interactions can influence climate on various length and timescales. In particular, speakers will present results from both modeling and observational studies that investigate several such interactions.

Semi-direct dynamical and radiative effect of North African dust transport on lower tropospheric clouds over the subtropical North Atlantic in CESM 1.0

Michael DeFlorio, Scripps Institution of Oceanography (mike.deflorio@gmail.com)

The Role of Aerosols in Shallow Tropical Convection

Alison Nugent, Yale University (adnugent@gmail.com)

The effect of atmospheric properties and processes on aerosol indirect effects in a trade cumulus regime

Kristina Pistone, Scripps Institution of Oceanography (kpistone@ucsd.edu)

Quantification of Atmospheric Aging and Properties of Ambient Black Carbon Aerosols

Misti Levy, Texas A&M University (misti.levy@gmail.com)

POSTER SESSION B

Aerosols, Clouds, and Atmospheric Chemistry:

B1. Improving dust emission characterization in climate models

Sagar Parajuli, University of Texas at Austin (psagar@utexas.edu)

B2. Evaluating the Role of Aerosol Mixing State in Cloud Droplet Nucleation using a New Activation Parameterization

Daniel Rothenberg, MIT (darothern@mit.edu)

B3. The US market for cool, clear skies: exploring key drivers of air quality impacts under climate change policy

Rebecca Saari, MIT (saarir@mit.edu)

B4. On the Development of Deep Convective Clouds with Varying Aerosol Loading

Azusa Takeishi, Yale University (azusa.takeishi@yale.edu)

Atmospheric Dynamics:

B5. Influence of the Antarctic Ozone Hole on Seasonal Changes in Climate in the Southern Hemisphere

Justin Bandoro, MIT (jbandoro@mit.edu)

B6. The role of Pacific and Southern Hemisphere variability on the southwest extension of the North Atlantic Subtropical High

Adam Bowerman, University of Texas at Austin (abowerman@utexas.edu)

B7. Superensemble of Regional Climate Model simulations for the western US using Climateprediction.net

Sihan Li, Oregon State University (sli@coas.oregonstate.edu)

B8. The tropical precipitation response to idealized mountain ranges and ocean heat fluxes

Elizabeth Maroon, University of Washington (emaroon@uw.edu)

B9. Diagnosis of physical contributors to CAPE buildup in severe thunderstorm environments

Vince Agard, MIT (jvagard@mit.edu)

Terrestrial Ecosystems:

B10. Variable temperature sensitivity of US maize yield across development stages

Ethan Butler, Harvard University (eebutler@fas.harvard.edu)

B11. Effects on the net ecosystem carbon exchange of temperature and soil moisture variability in a semiarid tropical grassland ecosystem

Josue Delgado-Balbuena, Instituto Potosino de Investigación Científica y Tecnológica A. C., Mexico (josue.delgado@ipicyt.edu.mx)

B12. The effects of glacial loss on high mountain riparian vegetation

Cristina McKernan, Colorado State University (cristina.mckernan@gmail.com)

B13. Physiological response to temperature across nine tree species in a northeastern temperate forest

Angelica Patterson, Columbia University (ap2275@columbia.edu)

Ocean Dynamics

B14. Tidally forced mesoscale variability in the Ross Sea from a regional ocean model

Stefanie Mack, Old Dominion University (scumb002@odu.edu)

B15. The Variability of Denmark Strait Overflow Water

Dana Mastropole, MIT-WHOI Joint Program (danam@mit.edu)

B16. Double Diffusion in Powell Lake: New insights from a Natural Laboratory

Benjamin Scheifele, University of British Columbia, Canada (bscheife@eos.ubc.ca)

Ocean Biology and Chemistry:

B17. Concentrations, turnover rates and sea-air fluxes of dimethylsulfide (DMS) in coastal and offshore waters of the SubArctic Pacific during summer 2010- 2011

Elizabeth Asher, University of British Columbia, Canada (lizzyasher6686@gmail.com)

B18. Influence of changing mineral dust inputs and anthropogenic aerosol emissions on the biogeochemistry of biologically-important trace metals in the North Atlantic

Pamela Barrett, University of Washington (barrettp@uw.edu)

B19. Impact of climate change, hydrology, and beach characteristics on microbial water quality throughout the Florida coast

Zhixuan Feng, University of Miami - Rosenstiel School of Marine & Atmospheric Science (zfeng@rsmas.miami.edu)

B20. Typhoon-Mediated Organic Carbon Export in the Western Pacific - The Role of Steep Mountainous Rivers

Jordon Hemingway, MIT-WHOI Joint Program (jheming@mit.edu)

B21. Simulating the effects of CO₂ enrichment on nitrogen metabolism in eelgrass (*Zostera marina* L.)

Malee Jinuntuya, Old Dominion University (mjinuntu@odu.edu)

SESSION IV: HUMANS, CLIMATE, AND POLICY

Session chair: Daniel Gilford, MIT

Couplings between the human and climate systems are both incredibly complex and incredibly important. The inevitable question of “How should societies address climate change?” has held prominent national and international stages very recently, and was highlighted by the largely successful Montreal Protocol in 1987. Approaches to answering this question have important political, economic, scientific, and social implications. In this session, we explore societal perspectives on climate change, mechanisms of adaptation and/or mitigation of climate change, and thought processes behind climate policy.

How grammatical choice shapes mass media representations of climate (un)certainty

Adriana Bailey, University of Colorado - Boulder (adriana.bailey@colorado.edu)

An Earth-system perspective to fisheries and fisheries economics

David Carozza, McGill University, Canada (david.carozza@mail.mcgill.ca)

Inter-Tribal Meeting on Climate Variability and Change

Paulette Blanchard, University of Oklahoma (paulette@ou.edu)

Climate Science, Social Science, and the Humanities: A Role for Critique?

Jessica Lehman, University of Minnesota (lehma287@umn.edu)

SESSION V: ATMOSPHERIC DYNAMICS - TROPICS

Session chair: Morgan O'Neill, MIT

The organization of convection occurs for a wider range of scales in the tropics than anywhere else on Earth. In this session we will hear first how local convection is impacted by a warming atmosphere. Then we will hear about organized convection in the form of both tropical cyclones and monsoons, through observational data and modeling. Finally the response of the Hadley circulation to climate change is discussed.

The temperature dependence of moist convection

Martin Singh, MIT (mssingh@mit.edu)

Examining the frequency, intensity, and sensitivity to SST of observed and model-generated tropical cyclones

Sarah Strazzo, Florida State University (ses09e@fsu.edu)

Synoptic scale monsoon vortices in idealized aquaplanet simulations

Varun Murthy, Yale University (varun.murthy@yale.edu)

Contrasting effects of aerosols and greenhouse gases on Hadley Cell energy transport: simulations and theory

Spencer Hill, Princeton University (spencerahill@gmail.com)

SESSION VI: ATMOSPHERIC DYNAMICS - EXTRATROPICS

Session chair: Andy Miller, MIT

The great breadth of large-scale atmospheric dynamics is reflected well in the variety of topics of this session. We will explore the scenario of a collapsing ice sheet as well as discuss the oceans influence on surface temperatures. Furthermore, we will discuss trends in both the tropospheric summers and the stratospheric spring.

Observational Trends and the Dynamics of Summer Temperature Extremes

Andrew Rhines, Harvard University (arhines@fas.harvard.edu)

Stratospheric Final Warming Events and their Surface Impact

Aditi Sheshadri, MIT (aditi_s@mit.edu)

On oceanic influence and patterns of temperature change

Karen McKinnon, Harvard University (mckinnon@fas.harvard.edu)

What will happen to the general circulation of the atmosphere if the West Antarctic Ice Sheet collapses?

Kat Huybers, University of Washington (kat.huybers@gmail.com)

SESSION VII: TERRESTRIAL ECOSYSTEMS

Session chair: Ethan Butler, Harvard University

The talks in this session cover a wide range of spatial and temporal scales from recent alterations of ecosystems at the stand level up to alterations of whole ecosystem composition since the last glacial maximum. To cover this range a wide array of techniques have been used incorporating field measurements, remote sensing, and process modeling. These talks deepen our knowledge of the coupled interaction of terrestrial ecosystems with the broader climate system through alterations in energy fluxes and the water and carbon cycles. Furthermore, they inform management decision-making by illustrating what change has occurred and the background of change against which this change operates.

Quantifying the range in variation in climate response and stand dynamics within range-margin jack pine (*Pinus banksiana*) populations in north-central Minnesota, USA

Kyle Gill, University of Minnesota (gillx096@umn.edu)

The times they are a-changin': observation and modeling of vegetation phenology under changing climate

Xi Yang, Brown University (xyang@mbl.edu)

Seasonality of Tropical Dry Forests and its Sensitivity to Climate Change

Xiangtao Xu, Princeton University (xiangtao@princeton.edu)

A global assessment of climate-driven vegetation change from the last glacial period to present

Connor Nolan, University of Arizona (cjnolan@email.arizona.edu)

SESSION VIII: OCEAN DYNAMICS

Session chairs: Isabela Le Bras and Alec Bogdanoff, MIT-WHOI Joint Program

The ocean helps transport heat to the poles, influences storm tracks and large-scale weather, and its circulation can directly affect coastal communities. Indeed, ocean dynamics play a key part in the climate system at many scales. In this session, we will hear analysis of both models and observations of everything from large-scale current systems to eddies and even fjord dynamics.

How sensitive is ocean model utility to resolution?

Maike Sonnewald, University of Southampton, UK (M.Sonnewald@noc.soton.ac.uk)

Observed strengthening of the Pacific Equatorial Undercurrent: coupled mechanisms, ocean dynamics, and implications

Elizabeth Drenkard, WHOI (edrenkard@whoi.edu)

Observational evidence of the abundance of mixed layer eddy induced stratification

Leah Johnson, University of Washington (leahjohn@uw.edu)

Fjord circulation and heat transport at the terminus of a major outlet glacier: the relative importance of glacial versus shelf forcing

Rebecca Jackson, MIT-WHOI Joint Program (rjackson@whoi.edu)

POSTER SESSION C

Paleoclimate and Cryosphere:

C1. Constraining rates of sea-level change at MIS5e using ^{230}Th s normalization of Red Sea sediments

Christopher Kinsley, MIT-WHOI Joint Program (ckinsley@mit.edu)

C2. Evaluating Paleo-sea level Proxies and Their Application to Statistical Ice Sheet Modeling

Kendra McKoy, Rutgers University (kendra.mckoy@gmail.com)

C3. Tropical North Atlantic temperature anomalies linked to AMOC variability across Dansgaard-Oscheger events

Andrew Parker, Texas A&M University (parkerao@geos.tamu.edu)

C4. Evidence of increased glacial melt in Antarctic coastal sea level rise

Craig Rye, National Oceanography Centre Southampton, UK (craig.d.rye@gmail.com)

C5. Temperature reconstructions of the Common Era: Impact of methods and source data

Jianghao Wang, University of Southern California (jianghaw@usc.edu)

Hydroclimate:

C6. Land-ocean contrasts in the response of the hydrological cycle and surface temperature to climate change

Mike Byrne, MIT (byrnem@mit.edu)

C7. Clarifying the Amount Effect

Mary Moore, Harvard University (moore3@fas.harvard.edu)

C8. Effect of fluvial sediment supply fluctuations on wave dominated deltas

Jacob Nienhuis, MIT-WHOI Joint Program (jhn@mit.edu)

C9. Does terrestrial water availability fundamentally depend on planetary temperature? An idealized modeling study

Jack Scheff, University of Washington (jscheff@uw.edu)

C10. Assessing Climate Change Impacts on Precipitation and Flood Damage in Wisconsin

Zachary Schuster, University of Wisconsin (Schuster3024@hotmail.com)

Atmospheric Dynamics:

C11. Identification of a Congo Basin Walker Circulation and its Interaction with the West African Monsoon

Naresh Neupane, University of Texas at Austin (nareshneupane@gmail.com)

C12. Circulation, moisture, and precipitation relationships along the South Pacific Convergence Zone in reanalyses and CMIP5 models

Matthew Niznik, Rutgers University (matthew.niznik@rutgers.edu)

C13. Comparison of a Moist Idealized Test Case and Aquaplanet Simulations in an Atmospheric General Circulation Model

Diana Thatcher, University of Michigan (dtatch@umich.edu)

C14. Physical Mechanisms Controlling Self-Organization of Convection in Idealized Numerical Modeling Simulations

Allison Wing, MIT (awing@mit.edu)

C15. Extratropical Lapse Rates in Very Hot Climates

Ryan Zamora, Texas A&M University (zamora.raz@gmail.com)

Ocean Biology and Chemistry:

C16. Primary production in salt marsh tidal creeks and the effect of nutrient enrichment

Evan Howard, MIT-WHOI Joint Program (ehoward@mit.edu)

C17. A Zonally-Banded Phytoplankton Response to 21st Century Climate Change in the Southern Ocean across the IPCC AR5 Earth System Model Suite

Shirley Leung, University of Washington (shirleyswirley@gmail.com)

C18. Otolith chemistry allows the discrimination of the estuarine nurseries of summer flounder along the US east coast

Antranik Kajajian, Old Dominion University (akajajia@odu.edu)

C19. Diatoms, sea ice, and upwelling: What controls barium cycling in the Southern Ocean?

Kimberley Pyle, Cardiff University, UK (PyleKM@cf.ac.uk)

C20. The Role of Minerals in Organic Carbon Export Across the Great Calcite Belt: Testing a Surface Ballast Mechanism in the Southern Ocean

Sarah Rosengard, MIT-WHOI Joint Program (srosenga@mit.edu)

C21. Climate change and coral connectivity

Sally Wood, University of Bristol, UK (sally.wood@bristol.ac.uk)

SESSION IX: OCEAN BIOLOGY AND CHEMISTRY

Session chair: Jordon Hemingway, MIT-WHOI Joint Program

On timescales of thousands of years or less, changes in ocean carbon budgets can have a drastic first-order control on atmospheric CO₂ levels. Complicating this picture is the fact that thousands of chemical reactions ranging from physically controlled (gas exchange), to geologically (seafloor weathering) and biologically (biological pump) influenced are constantly pushing and pulling on marine dissolved carbon levels. Here, speakers take both observational and numerical approaches to attempt to simplify this picture and understand how ocean chemical processes will respond to a changing atmosphere.

Evaluation of Coral records of equatorial Pacific Sea Surface Temperature

Alice Alpert, MIT-WHOI Joint Program (aalpert@mit.edu)

How does plankton distribution and activity influence the variability of carbon dioxide uptake in the North Atlantic?

Clare Ostle, University of East Anglia, UK (c.ostle@uea.ac.uk)

Numerical Simulation of Seafloor Weathering as a Climate Stabilization Mechanism

Navah Farahat, University of Chicago (navah@uchicago.edu)

KEYNOTE SPEAKER

Caroline Ummenhofer

Assistant Scientist in the Physical Oceanography Department at WHOI



Caroline Ummenhofer received a Joint Honours B.Sc. in Marine Biology and Physical Oceanography from the University of Wales, Bangor, UK, and a PhD in Applied Mathematics, specializing in climate modeling, from The University of New South Wales (UNSW), Sydney, Australia. Her PhD thesis received the Uwe Radok Award in ocean/atmosphere/climate science by the Australian Meteorological and Oceanographic Society. Caroline was a Postdoctoral Fellow at the ARC Centre of Excellence for Mathematics and Statistics of Complex Systems, held a Vice-Chancellor Postdoctoral Fellowship at UNSW, and was a Visiting Fellow with CSIRO Marine and Atmospheric Research in Hobart, Australia. Since 2012, she is an Assistant Scientist in the Physical Oceanography Department at Woods Hole Oceanographic Institution, Woods Hole, USA. Her research interests include interannual to decadal climate variability, the hydrological cycle, monsoon dynamics, ocean-atmosphere interactions, droughts, extratropical climate, hydroclimate paleo reconstructions of the last millennium, and the effects of climate variability and change on agriculture. In particular, her research focuses on Indian Ocean dynamics, its variability and role for regional rainfall variations and droughts in the surrounding countries, spanning from seasonal to decadal timescales. Her research on the importance of a re-occurring Indian Ocean temperature pattern for Australian rainfall was awarded the prestigious 2008 Land & Water Australia Eureka Prize for Water Research and Innovation and is meanwhile routinely used by the Department of Agriculture and Food in Western Australia as one of five key indicators of growing season rainfall for farmers. A key goal of Caroline's research has been to bridge the gap between ocean and climate dynamics and its impacts on end users. As such, she aims to provide practical outcomes of use to stakeholders in the agriculture and water management sectors, interacting with media, farmers' organizations, and the broader public.

2013 EXECUTIVE COMMITTEE

Sarah Rosengard‡ - srosenga@mit.edu
Daniel Rothenberg‡ - darothen@mit.edu
Christopher Kinsley* - ckinsley@mit.edu
Mike Byrne* - byrnem@mit.edu
Sarvesh Garimella* - vesh@mit.edu
Daniel Gilford* - dgilford@mit.edu
Morgan O'Neill* - moneill@mit.edu
Andy Miller* - awmiller@mit.edu
Ethan Butler* - eebutler@fas.harvard.edu
Isabela Le Bras* - ilebras@mit.edu
Alec Bogdanoff* - alecb@mit.edu
Jordon Hemingway* - jheming@mit.edu
Tim Cronin‡ - twcronin@mit.edu
Allison Wing - awing@mit.edu
Vince Agard - jvagard@mit.edu
Evan Howard - ehoward@mit.edu
Diamilet Perez-Betancourt - diamilet@mit.edu

‡ - conference chairs; † - abstract committee chair; * - session chairs

THANK YOU!

The Executive Committee extends its deepest gratitude to everyone who helped us plan this year's conference: Jim Yoder at WHOI for generously funding the conference and offering the use of WHOI facilities; Christine Maglio (MIT EAPS) and Christine Charette (WHOI) for overseeing the administration of our conference funds, travel reimbursements, and helping with other logistics; Alan Plumb (MIT EAPS) for serving as the PI of the proposal for funding via the National Science Foundation; Cambridge University Press for donating textbooks; Matt Rothenberg for his gratis donation of graphic design work; and the many students at MIT and Woods Hole who provided support and worked hard to put on this conference.

We would also like to thank our generous sponsors for making this conference possible -

Woods Hole Oceanographic Institution

National Science Foundation

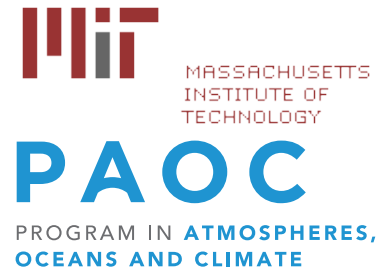
Massachusetts Institute of Technology

MIT's Department of Earth, Atmospheric, and Planetary Sciences

MIT's Program in Atmospheres, Oceans, and Climate

Cambridge Brewing Co.

Funding provided by:



In-kind support from:

