



The Third Annual Celebration *of the* EAPS Patrons Circle

6:00 | Reception and Student Poster Exhibits

7:00 | Dinner and Program

Welcoming Remarks by Robert D. van der Hilst

Department Head — Earth, Atmospheric and Planetary Sciences

PRESENTATIONS

| **Maria Zawadowicz - 2016-17 Grayce B. Kerr Fellow**
Chasing the Clouds: My Time at MIT EAPS

| **Dr. Julien de Wit PhD '14 (XII)**
*New Worlds, New Discoveries:
A Major Leap in the Search for Life Beyond Our Solar System*

Closing Remarks by Neil E. Rasmussen '76, SM '80

EAPS Patrons Circle Chair

8:30 | Adjourn

ABOUT OUR SPEAKERS

Robert van der Hilst, Head of the Department of Earth, Atmospheric and Planetary Sciences (EAPS) is the Schlumberger Professor of Earth and Planetary Sciences at MIT.

Maria Zawadowicz (*Grayce B. Kerr Fellow*) is a graduate student in Dan Czizco's group studying atmospheric chemistry and climate.

Julien de Wit (*2011-12 Grayce B. Kerr Fellow*) is a postdoctoral associate in Sara Seager's group. Julien is leading the atmospheric characterization of the recently discovered exoplanets in the TRAPPIST-1 system.

Neil Rasmussen is an entrepreneur and high tech executive with a passion for health and the environment. He is a member of the MIT Corporation and the EAPS Visiting Committee, and chair of the EAPS Patrons Circle.

POSTER SESSION EXHIBITORS

Josimar Alves da Silva Jr. (*2015-16 Whiteman Fellow*)

The Kristin Bergmann Lab

Makayla Betts

Marjorie Cantine (*Whiteman Fellow*)

Tao Feng (*Callahan-Dee Fellow*)

Chen Gu (*2014-15 M. Nafi Toksöz Fellow*)

Mukund Gupta (*John H. Carlson Fellow*)

Maria Zawadowicz (*Grayce B. Kerr Fellow*)

MEET THE 2016-2017 EAPS FELLOWS



Tristan Abbott (*Norman C. Rasmussen Fellow*) started his PhD at MIT in Fall 2016 and is currently studying tropical convection with Prof. Timothy Cronin. He developed his interest in numerical and mathematical modeling of the Earth's atmosphere while at the University of Wisconsin-Madison as an undergraduate computer science major.



Ekaterina Bolotskaya (*Theodore R. Madden Fellow*) is a first year PhD student working with Prof. Bradford Hager. She is interested in the theory of fracturing and friction which may help us understand the origin and features of a fault's motion during natural and induced earthquakes. Ekaterina also completed Art School and enjoys drawing in her spare time.



Marjorie Cantine (*Whiteman Fellow*) is a second year PhD student in the Geology, Geochemistry and Geobiology Program working on Ediacaran rocks from California, Oman, and Newfoundland with Prof. Kristin Bergmann to better understand climate during the early evolution of animals. Marjorie is a graduate of Wellesley College and loves hiking and baking cakes.



Margaret Duffy (*Whiteman Fellow*) is a second year PhD student in Climate Science. Working with Profs. Paul O'Gorman and Mick Follows, Margaret's current projects use simple models to study 1) the change in tropical precipitation with increased greenhouse gas concentrations and 2) the distribution of copper, a trace metal, in the oceans. Prior to joining EAPS she studied Mathematics and Statistics as an undergraduate at Haverford College.



Tao Feng (*Callahan-Dee Fellow*) is a second-year PhD student in the Program in Atmospheres, Oceans and Climate (PAOC), studying the climate penalty and the long-term trend of wind speed with Profs. Noelle Selin and Susan Solomon. Tao is a graduate of Peking University with a BS in environmental science and a BS in economics. He hopes to combine environmental science with economics and to inform policy-making strategies on air pollution and climate change through his research.



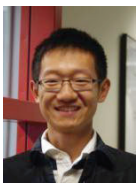
Manuel Flores-Torrez (*M. Nafi Toksöz Fellow*) is a fifth year PhD student in geophysics. His work combines computational modeling and analysis of massive seismic data sets with the aim of constraining the physical mechanism of intermediate-depth and deep earthquakes and their relationship to complex subduction zone processes. Before coming to MIT, Manuel completed his MS in physics at the Universidad de los Andes and his BS at the National University of Colombia.



Mukund Gupta (*John H. Carlson Fellow*) is a second year PhD student in the Program in Atmospheres, Oceans and Climate, studying with Prof. John Marshall. His research investigates the sensitivity of the climate to changes in its energy balance. Prior to MIT, Mukund earned a Masters of Mechanical Engineering from the University of Cambridge. He says, “I am honored to receive this fellowship and am very grateful for the opportunities it will provide me to pursue my research goals.”



Tianyi Huang (*Frederick Middleton Fellow*) is a second year PhD student in the MIT/WHOI Joint Program studying chemical oceanography with Prof. Ed Boyle. Currently, she uses chromium isotopes in ancient rocks to investigate atmospheric oxygen levels in ancient times. Previously, Tianyi earned a BS in chemistry from Peking University.



Ziwei Li (*Norman C. Rasmussen Fellow*) is a first year PhD student in the Atmospheric Sciences program. He is currently working with Prof. Paul O’Gorman on quantifying the dynamical contributions associated with precipitation extremes in the changing climate. Before joining EAPS, he was an undergraduate in physics and atmospheric sciences in Peking University.



Jeemin Rhim (*Shrock Fellow*) is a second year PhD student in the Geobiology program working with Profs. Shuhei Ono and Tanja Bosak. She uses a recently developed methane “clumped” isotopologue (e.g. $^{13}\text{CH}_3\text{D}$) analysis to investigate microbial methanogenesis, and also grows microbial communities under Archean-like conditions, in order to improve our understanding of some of the earliest forms of life on Earth.



Raphael Rousseau-Rizzi (*Norman C. Rasmussen Fellow*) has always been very curious and fond of learning—with that curiosity being fostered by observing the outdoors while sailing and hiking. Raphael found he naturally moved towards science domains, first studying aerospace engineering, then with a Masters in atmospheric sciences, and now as a first year PhD student working with Prof. Kerry Emanuel.



Eric Stansifer (*Shrock Fellow*) is a graduate student working with Prof. Dan Rothman on the geometric properties of river networks. Before coming to MIT, Eric studied math at Caltech, the University of Leiden, and Università degli Studi di Milano. He enjoys programming, board games, and puzzles in his free time.



Catherine Wilka (*Warren G. Klein Fellow*) is a second year PhD student studying climate physics and chemistry. Her work focuses on chemical changes in the stratosphere due to the monsoon and the influence of volcanoes. In her free time, Catherine is learning to sail on the Charles River and enjoys sampling the local Cambridge culinary scene.



Martin Wolf (*Grayce B. Kerr Fellow*) became interested in clouds watching them form over Lake Ontario in upstate New York. Today, his love for clouds has only grown deeper by studying their formation and climatic relevance in Prof. Dan Cziczo’s lab. Prior to joining the graduate program in EAPS, Martin obtained his B.S.E. in Chemical and Biological Engineering from Princeton University in 2015.



Maria Zawadowicz (*Grayce B. Kerr Fellow*) is a fifth year PhD student working in Prof. Dan Cziczo’s lab in EAPS. She is interested in development of field and laboratory instrumentation to solve problems in atmospheric chemistry and climate. Currently, she is working on mass spectrometry of single aerosol particles.

PAST EAPS FELLOWSHIP RECIPIENTS

2015-2016

Josimar Alves da Silva	<i>Theodore R. Madden Fellow</i>
John Biersteker	<i>Whiteman Fellow</i>
Christine Chen	<i>Callahan-Dee Fellow</i>
Margaret Duffy.	<i>Norman C. Rasmussen Fellow</i>
Tao Feng	<i>Warren G. Klein Fellow</i>
Charles Gertler	<i>Norman C. Rasmussen Fellow</i>
Mukund Gupta	<i>Frederick Middleton Fellow</i>
Niraj Inamdar	<i>Robert R. Shrock Fellow</i>
Shujuan Mao	<i>M. Nafi Toksöz Fellow</i>
Harry Matchette-Downs	<i>Schlumberger Fellow</i>
Jamie Potter	<i>Theodore Madden Fellow</i>
Jeemin Rhim	<i>Grayce B. Kerr Fellow</i>
Catherine Wilka	<i>Norman C. Rasmussen Fellow</i>
Martin Wolf	<i>Norman C. Rasmussen Fellow</i>
Madeline Youngs.	<i>Norman C. Rasmussen Fellow</i>

2014-2015

Jared Atkinson	<i>Whiteman Fellow</i>
Tom Beucler	<i>Neil and Anna Rasmussen Fellow</i>
Katie Castagno	<i>Neil and Anna Rasmussen Fellow</i>
Christine Chen	<i>Grayce B. Kerr Fellow</i>
Manuel Flores Torrez	<i>Theodore Madden Fellow</i>
Chen Gu.	<i>M. Nafi Toksöz Fellow</i>
Niraj Inamdar	<i>Grayce B. Kerr Fellow</i>
Christopher Kinsley	<i>Grayce B. Kerr Fellow</i>
Mingwei Li	<i>Whiteman Fellow</i>
Diamilet Perez-Betancourt	<i>Warren G. Klein Fellow</i>
Sandra Shedd.	<i>Whiteman Fellow</i>
Elena Steponaitis	<i>Grayce B. Kerr Fellow</i>
Haoyue Wang.	<i>Theodore Madden Fellow</i>

2013-2014

Mike Byrne	<i>Frank Fellow</i>
Danielle Gruen	<i>Neil and Anna Rasmussen Fellow</i>
Ben Klein	<i>Grayce B. Kerr Fellow</i>
Emily Matys	<i>Whiteman Fellow</i>
Michael McClellan	<i>Neil and Anna Rasmussen Fellow</i>
Sharon Newman	<i>Frank Fellow</i>
Shaojie Song	<i>Grayce B. Kerr Fellow</i>
Elena Steponaitis	<i>Warren G. Klein Fellow</i>
Matthew Webber.	<i>Whiteman Fellow</i>
Lucas Willemsen	<i>M. Nafi Toksöz Fellow</i>
Maria Zawadowicz.	<i>Grayce B. Kerr Fellow</i>

EAPS PATRONS CIRCLE

The Department of Earth, Atmospheric and Planetary Sciences launched the EAPS Patrons Circle in 2014 to recognize those who have made a gift or multi-year gift/pledge of \$70,000 or more to support our endowed or expendable fellowship funds. We are also pleased to include those who have made an irrevocable provision for EAPS graduate fellowships through an estate plan. A gift of \$1M names an endowed fellowship and helps to support one graduate fellow per year in perpetuity. An expendable gift of \$78,000 supports one graduate fellow for an academic year. Departmental fellowships are critical to our success in attracting and retaining the best students and faculty in the world, and in providing students with the flexibility to explore “out of the box” scientific interests. The Annual EAPS Patrons Circle celebration provides an opportunity for us to express our appreciation to our leading fellowship donors, and for Patrons and graduate fellows to meet and build lasting friendships.

PATRONS CIRCLE MEMBERS | 2016-2017

Roger J. and Noreen A. Breeding*
Patricia Callahan and David Dee
John H. Carlson
Arthur C. H. Cheng
Robert C. Cowen
George J. Elbaum and Mimi Jensen
L. Robert Johnson and Lisa A. Reich*
Peter M. and Martha K. Hurley
Breene M. Kerr†
Warren G. Klein†
Eric Michelman
Frederick A. Middleton Jr.*
Norman F. Ness*
Catherine B. Olkin and Terry Olkin
Donald L. Paul
Chengpin Peng
Peter Puster and Paula J. Waschbusch*
Neil E. Rasmussen and Anna Winter Rasmussen
John S. and Cynthia L. Reed
Peter H. Stone and Paola Rizzoli
M. Nafi Toksöz and Charlotte Johnson
Emily (Paddy) Wade
Jie Zhang

* Patrons Circle members who have provided for Graduate Fellowships through an estate plan.

† Deceased



Earth. Planets. Climate. Life.

MIT | EARTH, ATMOSPHERIC AND PLANETARY SCIENCES

At MIT's Department of Earth, Atmospheric and Planetary Sciences (EAPS), we are driven by curiosity. How did life originate? Is it unique to Earth? When did the oceans and atmosphere form? What can 4.3 billion year-old rocks tell us about our past and future climate and its influence on life? We delve into questions about the fundamental forces shaping the natural world, spanning the full scale of space and time—from microscale structures of minerals and aerosols to the composition of massive planetary bodies light years away; from earthquakes which strike in a split second to the co-evolution of life and environmental systems over billions of years. Our work stands at the crossroads between basic theory—be it physics, biology, or chemistry—and practical applications to sustain life on Earth, allowing us to both benefit from and protect our planet.

Learn more about our research and our people by visiting us online:

<http://eapsweb.mit.edu>

