

## Eisenman Receives 2012 Cryosphere Young Investigator Award

*Ian Eisenman received the 2012 Cryosphere Young Investigator Award at the 2012 AGU Fall Meeting, held 3–7 December in San Francisco, Calif. The award is for “a significant contribution to cryospheric science and technology.”*

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### Citation

One can appreciate that sea ice is a barometer and important feedback for climate change when one considers the ice-albedo feedback in a comparative sense. Whereas the Greenland ice sheet is 3 kilometers thick, sea ice is 3 meters thick, underlain by an ocean deeper than the Greenland ice sheet is thick. During a season, the areal change of Arctic sea ice cover is roughly 4 times larger than the area of Greenland. These huge annual oscillations in the ice cover have occurred for longer than humanity has been able to ponder them. This is just one of the many aspects that capture our attention in considering the scientific problem of sea ice and climate, which is a principal area of interest for Ian Eisenman.

There are three general approaches to the problem: using climate models, interpreting satellite data, and developing low-order theoretical descriptions. All encounter significant but varied problems; all are necessary ingredients to develop a tapestry of understanding. Ian's background in applied mathematics and geophysics has allowed him to embrace all of these approaches. In the middle of his Ph.D. at Harvard with Eli Tziperman, he began to develop a dual approach—theory and climate models—triggered by the 2006 summer program in geophysical fluid dynamics at Woods Hole. The participation of the late Norbert Untersteiner in that program provided a motivation to pursue the goal of constructing an observationally consistent low-order thermodynamic theory coupling sea ice growth to climate. Ian excels at distilling the complex processes governing sea ice into relatively simple theoretical models, which he studies carefully to enrich our intuition of how sea ice cover varies naturally and may respond to climate changes. In addition, understanding

that our main daily observables of ice cover come from satellites, Ian delved into their analysis, among many other things, with Tapio Schneider and David Battisti, from tropical to polar, while a postdoc at both Caltech and the University of Washington. This year he joined the faculty at Scripps, where he continues to think about the ice while gazing out at the beach.

It is a pleasure that a person of Ian Eisenman's creativity and skills is being recognized by the AGU Cryosphere Young Investigator Award. We all look forward to seeing what set of issues in the cryosphere he will address next.

—TAPIO SCHNEIDER, California Institute of Technology, Pasadena; ELI TZIPERMAN, Harvard University, Cambridge, Mass.; and JOHN S. WETTLAUFER, Yale University, New Haven, Conn.

### Response

I am honored to receive this award from the Cryosphere Focus Group and glad for the opportunity it gives to acknowledge some of the people who have contributed to my scientific growth.

I have been fortunate to have terrific mentors who have shaped my approach to science: Daniel Aalberts, who mentored my transition into the physical sciences when I was an undergraduate philosophy major; Eli Tziperman, my Ph.D. advisor, who taught me a broad approach to research questions; Tapio Schneider, my postdoc advisor, who showed me how to be rigorous and thorough while he led a fun and effective research group; and David Battisti, my postdoc co-advisor, who insightfully guided my work and continues to be an inspiration.

Other less formal mentors have also profoundly influenced my development. I am grateful to John Wettlaufer, who nominated



*Ian Eisenman*

me for this award. He supervised me during a summer in Woods Hole, when my interest in the cryosphere firmly took root, and he has been a mentor and collaborator ever since, teaching me about sea ice and frequently providing guidance. I am also grateful to the late Norbert Untersteiner, whose wisdom and friendship gave me insight into the physics of sea ice as well as confidence in my research, and to Cecilia Bitz, who taught me about modeling sea ice and helped guide much of my research.

I thank many members of the cryospheric sciences community for inspiring conversations and encouragement, including Ron Kwok, John Walsh, Ron Lindsay, Don Perovich, Steve Vavrus, Walt Meier, Helen Fricker, Hajo Eicken, Mike Winton, Ken Golden, and Eddy Carmack. It's truly a privilege to work and interact with this community.

I am grateful to have wonderful peers, as both collaborators and friends, including Woody Fischer, Kyle Armour, Tim Merlis, Simona Bordoni, Yohai Kaspi, Jen Kay, Mark Flanner, Brian Rose, and many others.

And lastly, I would like to thank my wife and children, who have enriched my life.

—IAN EISENMAN, Scripps Institution of Oceanography, La Jolla, Calif.