



PRINCETON ENERGY AND CLIMATE SCHOLARS GROUP (PECS) BEGINS FALL 2008

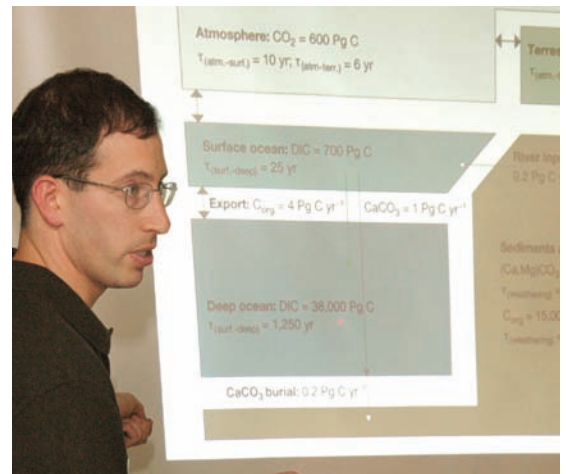
PECS ADVANCES SCHOLARLY EXCHANGES ON ENERGY AND CLIMATE

By Carol H. Peters

Two heads are better than one, or so the saying goes. Imagine fourteen scholars sharing their diverse research findings on energy and climate. Such an exciting discourse is currently underway at the University, among scholars who, until now, have rarely talked about their work outside the confines of their home departments.

Last Spring, the Siebel Energy Grand Challenge at the Princeton Environmental Institute initiated a new program called the Princeton Energy and Climate Scholars (PECS) Group, the first of its kind at Princeton. The group's goal is to encourage communication and scholarly exchange among doctoral candidates and faculty working on a broad range of energy and climate change related questions.

PECS was co-founded by Professor Robert Socolow of the Department of Mechanical and Aerospace Engineering and Woodrow Wilson School Ph.D. candidate Nicolas Lefèvre. The group is composed of four faculty members and ten Ph.D. candidates. The grad students come from five departments (Chemical Engi-



neering, Chemistry, Civil and Environmental Engineering, Geosciences, Mechanical and Aerospace Engineering) and the Woodrow Wilson School. In addition to Socolow, who serves as this year's faculty coordinator, PECS faculty board members are Professor of Near Eastern Studies Bernard Haykel, Geosciences and Woodrow Wilson School Professor Michael Oppenheimer, and Geosciences Professor Daniel Sigman.

PECS brings students together through

Geosciences Professor Daniel Sigman presents at the first PECS meeting. Photos: David Hunsinger

luncheon discussions with each other and dinners with faculty members. Since its inception this fall, PECS has met 10 times. Admission to the group was highly selective. Each student was nominated to membership in PECS by a faculty member, and the faculty board then had the difficult task of composing a group of ten. Socolow, looking forward to the success of PECS, said in September, "If PECS thrives, I expect that the barrier for students already here who are contemplating thesis research in energy and climate will seem less formidable. Down the road, the existence of PECS may help with graduate student recruitment."

Sigman, who presented a lecture at the PECS kick-off meeting in May 2008, said, "Addressing the impact of energy use on the global environment, and our options for minimizing this impact while fulfilling our energy needs, is an enormous challenge – perhaps the single most important one of the 21st century. At an intellectual level, the questions involved span many fields of study, from public policy, to engineering, to environmental science. In most cases, it will be impossible for a graduate student to develop a thorough understanding across this spectrum, especially since making progress in any given area often requires specialization. In PECS, we seek to foster the development of a network among promising graduate students involved in the broad energy/environment challenge. With that network in place, one can imagine a PECS Fellow who needs information about an area outside of their expertise, simply starting up a conversation with their PECS colleague. If that happens, either during or after these students' time at Princeton, great advances become possible."

Lefèvre, who serves as PECS's student coordinator this year, was inspired to create PECS with Professor Socolow because, as he says, "I was interested in creating a place where Ph.D. students working on various aspects of the climate and energy problem could get together to think and interact outside of their research boundaries. The objective is ultimately to broaden our horizons, learn from each other, and challenge our perspectives." **PEI**

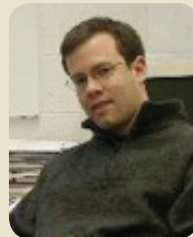
Graduate Students Explore the Benefits of PECS Membership

By Carol H. Peters

MIKE BURKE

Mechanical and Aerospace Engineering

I am very interested in participating in the Princeton Energy and Climate Scholars group



in order to diversify my background in the energy field. First of all, it provides an opportunity to converse with the current leading scientists in the field. But secondly and more importantly, I am

excited to meet and have discussions with my peers, who share an interest in energy and climate science. The monthly lunches will allow me to learn about the cutting edge research that is happening here in Princeton. Additionally, I will meet potential future leaders in the field, which will help me form relationships for later collaborative efforts across disciplines. The interactions with the PECS group will complement my routine exposure to and participation in energy issues. For example, I frequently participate in discussions on the lab's alternative jet fuels project and other energy issues with my advisors and fellow lab members in the lab lunchroom, and talk with my fellow MAE students about promising directions for batteries or solar cells in the department. I will contribute to PECS the technical background necessary to make informed policy decisions on emerging energy technologies as well as share relevant findings from research happening in Engineering by my classmates, my lab members and me. The PECS group will help supplement my understanding of energy and climate issues through interaction with people engaged with climate and policy issues, just as I will supplement theirs with advances in energy and fuel technologies.

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SARAH FAWCETT

Geosciences

I am excited about brainstorming with like-minded people who are all thinking about energy and climate, and approaching questions and solutions from a multitude of different perspectives and backgrounds. I hope that working with them will broaden my knowledge base and help to strengthen my research in this field.



ELENA KREIGER

Mechanical and Aerospace Engineering

As a graduate student, it is very easy to grow isolated and lose track of the greater impact that my work can have. PECS provides the opportunity to relate my research to a larger goal. The work of the other students and the invited speakers is inspiring. PECS also provides a dynamic environment in which we can debate and discuss broader topics related to climate and energy science than normally surface in the lab environment. The PECS environment not only provides additional motivation for my work but also allows me to explore ideas and fields related to my interests beyond the typical scope of my graduate research. Without any previous group to set a precedent, PECS has the potential to develop in many directions this year. I think that the first few months are necessarily being dedicated to learning about the other group members' specialties and interests. I think that PECS will start out primarily as a learning experience and a chance to create an interdisciplinary community interested in energy and climate science. From there, I hope that PECS will foster interdisciplinary collaboration and create a coherent energy and climate research environment on campus that can perhaps, in turn, educate the greater community on campus and beyond.



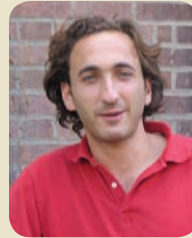
“PECS provides a diverse, thoughtful, non-specialist context for my research and future goals; I have already received implicit and explicit feedback about where to direct my “energy” in the future.”

— Chris Little

NICOLAS LEFÈVRE

Woodrow Wilson School

I was interested in creating a place where Ph.D. students working on various aspects of the climate and energy problem could get together to think and interact outside of their research boundaries. The objective is ultimately to broaden our horizons, learn from each other, and challenge our perspectives.



NING LIN

Civil and Environmental Engineering

My research is on Hurricane Multihazards Risk Analysis, which is a multi-disciplinary topic involving Atmospheric Sciences, Civil and Environmental Engineering, Probability and Statistics, Economics, and Policy. PECS will provide me with opportunities to learn more about these fields from the faculty associates and other students with various backgrounds. PECS will also provide me with the opportunity to present my research and interests in this important topic to a broader audience and draw attention from researchers as well as the general public.



CHRIS LITTLE

Geosciences

At Princeton, I have been fortunate to study climate physics as well as the economic and environmental implications of energy policy. As I near the completion of my Ph.D., I am considering whether my skills and knowledge will be best employed toward understanding geophysical processes or the interaction of energy and the environment. PECS provides a diverse, thoughtful, non-specialist context for my research and future goals; I have already received implicit and explicit feedback about where to direct my “energy” in the future.



ED MATTEO

Chemical Engineering

I'm hoping to gain a more holistic understanding of the climate change/energy intersection – to me



it's as if every PECS member each has a piece or a few pieces of the puzzle. In this way, I hope that we can all work together to put 'the pieces together.' Being an engineer, my instinct is to break complex problems into

smaller pieces and isolate the technical aspects from the human element. What makes climate and energy problems so fascinating is that the solutions to the problems are not purely technical – to solve these problems, the human element must be taken into account and confronted. Because of this complexity, one mind or discipline cannot solve these problems. Gaining skill and experience working in interdisciplinary teams will be necessary for anyone wishing to work on these problems. I think as the founding group it's important that we establish an identity for the group as this will likely serve as a template for successive years.

KELSEY MCNEELY

Chemistry

I expect that being a member of PECS will broaden my understanding of current energy and



climate issues as well as the research that is being done on and off campus to address these issues. The research-based mind set of graduate students gives us a unique set of tools with which to address the energy demand

and climate change issues that our generation has been presented with. The interdisciplinary nature of this group makes it especially exciting, since it provides us with the opportunity for intellectual interaction with those who, although they are outside of our own department, hold the same general research interests. I hope to help PECS develop into a forum for research discussions which can form into collaborations across all fields of research.

LAUREN PADILLA

Mechanical and Aerospace Engineering

I am most excited about the opportunity PECS will provide for collaboration among students with



very similar interests who are normally isolated from each other in their research. I think the group is about approaching the energy and climate change problem more holistically. Students and faculty from public policy, sciences,

and engineering are going to get together to discuss in detail each other's research. I know there is a lot to learn from how other disciplines approach the problem. The group will help put my research in a bigger context.

YUAN XU

Woodrow Wilson School

The participation in PECS gives me a good chance to know the full spectrum of the climate problem.



Engineering students will teach me technologies to achieve carbon mitigation in detail. Science students will lead me to a deeper understanding of climate change and the interference of human beings. Different from

research in a conventional discipline, my work is mainly problem-oriented with no pre-defined research methods. The exposure to many disciplines will inform me about potential methods and serve my goal well. My future collaboration with various disciplines can be more founded. In the coming year, I hope PECS can establish a good reputation in helping students "think big." **PEI**

"The interdisciplinary nature of this group makes it especially exciting, since it provides us with the opportunity for intellectual interaction with those who, although they are outside of our own department, hold the same general research interests."

— Kelsey McNeely