

# ERI SAIKAWA

Department of Environmental Sciences, Emory College  
Department of Environmental Health, Rollins School of Public Health  
400 Dowman Drive, Math and Science Center E512  
Atlanta GA, 30322  
(404) 727-0487  
eri.saikawa@emory.edu

## PROFESSIONAL EXPERIENCE

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### **Emory University** - Atlanta, GA, United States

*Assistant Professor January 2013 to Present*

- Department of Environmental Sciences
- Joint appointment with the Rollins School of Public Health, Department of Environmental Health
- Affiliated faculty in the Institute for Quantitative Theory and Methods (QuanTM), the East Asian Studies Program, and the Center for the Study of Law, Politics and Economics

### **China Research Center** - Atlanta, GA, United States

*Associate October 2014 to Present*

### **Massachusetts Institute of Technology** - Cambridge, MA, United States

*Visiting Research Affiliate January 2013 to Present*

*Research Scientist July 2012 to December 2012*

*Postdoctoral Associate October 2010 to June 2012*

- Center for Global Change Science, Department of Earth, Atmospheric, and Planetary Sciences
- Affiliated with the Joint Program on the Science and Policy of Global Change
- Postdoctoral Advisor: Prof. Ronald G. Prinn

## EDUCATION

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### **Princeton University** - Princeton, NJ, United States

**September 2005 – September 2010**

*Ph.D.*, Program in Science, Technology and Environmental Policy, Woodrow Wilson School of Public and International Affairs

- General Examinations: Atmospheric Chemistry and International Relations
- Dissertation Title: “Policy Diffusion of Emission Regulations for On-Road Vehicles: Causes and Benefits for Air Quality”
- Dissertation Committee Members: Profs. Denise Mauzerall, Christina Davis, Gilbert Rozman, and Michael Oppenheimer (examiner)

### **Indiana University** - Bloomington, IN, United States

**August 2003 – May 2005**

*Master of Public Affairs*, School of Public and Environmental Affairs

Overall GPA: 3.92

- Concentration in *Environmental Policy and Natural Resource Management*

### **University of Tokyo** - Tokyo, Japan

**April 1999 – March 2003**

*Bachelor of Engineering: Chemistry and Biotechnology*

Overall GPA: 3.75 Major GPA: 3.81 (GPA is calculated based on grades A, B, C, or D only, no +/-)

- Thesis Title: “Design of Supramolecular Structures Using the Interaction between Fullerene and Metalloporphyrine”

## PUBLICATIONS (Group members are underlined)

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18. Stockwell, C., T. Christian, D. Goetz, T. Jayarathne, P. Bhawe, P. Praveen, S. Adhikari, R. Maharjan, P. DeCarlo, E. Stone, E. Saikawa, D. Blake, I. Simpson, R. Yokelson, and A. Panday, “Nepal Ambient Monitoring and Source Testing Experiment (NAMaSTE): Emissions of trace gases and light-absorbing carbon from wood and dung cooking fires, garbage and crop residue burning, brick kilns, and other sources,” *Atmospheric Chemistry and Physics*, **16**, 11043-10081, doi:10.5194/acp-16-11043-2016.
17. Hossaini, R., P. K. Patra, A. A. Leeson, G. Krysztofiak-Tong, N. L. Abraham, S. J. Andrews, A. T. Archibald, J. Aschmann, E. L. Atlas, D. A. Belikovönisch, R. Butler, L. J. Carpenter, M. Dorf, A. Engel, W. Feng, S. Fuhlbrügge, P. T. Griffiths, N. R. P. Harris, R. Hommel, T. Keber, K. Krüger, S. T. Lennartz, Q. Liang, S. Maksyutov, H. Mantle, G. P. Mills, S. A. Montzka, M. A. Navarro, D. E. Oram, C. Ordóñez, P. I. Palmer, K. Pfeilsticker, J. A. Pyle, B. Quack, A. D. Robinson, E. Saikawa, et al., “A multi-model intercomparison of halogenated very short-lived substances (TransCom-VSLS): linking oceanic emissions and tropospheric transport for a reconciled estimate of the stratospheric source gas injection of bromine,” *Atmospheric Chemistry and Physics*, **16**, 9163-9187, doi:10.5194/acp-16-9163-2016.
16. Tian, H., C. Lu, P. Ciais, A. M. Michalak, J. G. Canadell, E. Saikawa, D. N. Huntzinger, D. R. Gurney, S. Sitch, B. Zhang, J. Yang, P. Bousquet, L. Bruhwiler, G. Chen, E. Dlugokencky, P. Friedlingstein, J. Melillo, S. Pan, B. Poulter, R. Prinn, M. Saunio, C. R. Schwalm, S. C. Wofsy, “The terrestrial biosphere as a net source of greenhouse gases to the atmosphere,” *Nature*, **531**, 225-228, 2016.
15. Zhong, M., E. Saikawa, Y. Liu, V. Naik, L. W. Horowitz, M. Takigawa, Y. Zhao, N.-H. Lin, and E. Z. Stone, “Air Quality Modeling with WRF-Chem v3.5 in East Asia: Sensitivity to Emissions and Evaluation of Simulated Air Quality,” *Geoscientific Model Development*, **9**, 1201-1218, 2016.
14. E. Saikawa and Selin, N., “The Impact of China’s Vehicle Emission Regulations on Regional Air Quality and Welfare in 2020” D. Shin (ed.), “*Hazardous Air Pollutants: Case Studies from Asia*”, Part II, Chapter 2, CRC Press, 2016.
13. Xiao, Q., E. Saikawa, R. Yokelson, P. Chen, C. Li, and S. Kang, “Indoor Air Pollution due to Yak Dung Combustion in Nam Co, Tibet,” *Atmospheric Environment*, **102**, 406-412, 2015.
12. R. L. Thompson, K. Ishijima, E. Saikawa, M. Corazza, U. Karstens, P. K. Patra, P. Bousquet, P. Bergamaschi, F. Chevallier, E. Dlugokencky, R. G. Prinn, R. F. Weiss, S. O’Doherty, P. J. Fraser, L. P. Steele, P. B. Krummel, A. Vermeulen, Y. Tohjima, A. Jordan, L. Haszpra, M. Steinbacher, S. Van der Laan, T. Aalto, F. Meinhardt, M. E. Popa, J. Moncrieff, and P. Bousquet, “TransCom N<sub>2</sub>O model inter-comparison Part II: atmospheric inversion estimates of N<sub>2</sub>O emissions,” *Atmospheric Chemistry and Physics*, **14**, 6177-6194, doi:10.5194/acp-14-6177-2014, 2014.
11. Saikawa, E., R. G. Prinn, E. Dlugokencky, G. Dutton, B. Hall, K. Ishijima, R. Langenfelds, Y. Tohjima, T. Machida, S. O’Doherty, R. F. Weiss, M. Rigby, S. O’Doherty, P. K. Patra, C. M. Harth, R. F. Weiss, P. B. Krummel, M. van der Schoot, P. J. B. Fraser, L. P. Steele, S. Aoki, T. Nakazawa, and J. W. Elkins, “Global and regional emissions estimates for N<sub>2</sub>O,” *Atmospheric Chemistry and Physics*, **14**, 4617-4641, doi:10.5194/acp-14-4617-2014, 2014.
10. R. L. Thompson, P. K. Patra, K. Ishijima, E. Saikawa, M. Corazza, U. Karstens, C. Wilson, P. Bousquet, P. Bergamaschi, E. Dlugokencky, C. Sweeney, R. G. Prinn, R. F. Weiss, S. O’Doherty, P. Fraser, L. P. Steele, and P. B. Krummel. “TransCom-N<sub>2</sub>O model inter-comparison Part I: assessing the influence of transport and surface fluxes on tropospheric N<sub>2</sub>O variability,” *Atmospheric Chemistry and Physics*, **14**, 4349-4368, doi:10.5194/acpd-14-4349-2014, 2014.
9. Saikawa, E. and J. Urpelainen. “Environmental Standards as a Strategy of International Technology Transfer.” *Environmental Science and Policy*, **38**, 192-206, 2014.
8. Saikawa, E., C. A. Schlosser, and R. G. Prinn, “Process modeling of global soil nitrous oxide emissions from natural processes.” *Global Biogeochemical Cycles*, **27**, doi:10.1002/gbc.20087, 2013 (Nature Geoscience Research Highlight, October 2013).

7. **Saikawa, E.** “Policy Diffusion of Automobile Emission Standards: Is there a Race to the Top?” *World Politics*, **65** (1), 1-33, 2013.
6. Q. Zhuang, K. Xu, J. Tang, M. Chen, **E. Saikawa**, Y. Lu, J. M. Melillo, R. G. Prinn, and A. D. McGuire, “Responses in global soil consumption of atmospheric methane due to changes in atmospheric climate, methane concentration, and nitrogen deposition.” *Global Biogeochemical Cycles*, **27**, doi:10.1002/gbc.20057, 2013.
5. **Saikawa, E.** “Domestic politics and environmental standards: China’s policy-making process for regulating vehicle emissions” J. Sato (ed.), “*Governance of natural resources: Uncovering the social purpose of materials in nature*”, Chapter 3, pp. 74-97, The United Nations University Press, 2013.
4. **Saikawa, E.**, M. Rigby, R. G. Prinn, S. A. Montzka, B. R. Miller, L. J. M. Kuijpers, P. J. B. Fraser, M. K. Vollmer, T. Saito, Y. Yokouchi, C. Harth, J. Mühle, R. F. Weiss, P. Salameh, J. Kim, S. Li, S. Park, K.-R. Kim, D. Young, P. G. Simmonds, A. McCulloch, P. B. Krummel, L. P. Steele, C. Lunder, O. Hermansen, M. Maione, J. Arduini, B. Yao, L. X. Zhou, H. J. Wang, J. W. Elkins, and B. Hall, “Global and regional emissions estimate for HCFC-22.” *Atmospheric Chemistry and Physics*, **12**, 10033-10050, doi:10.5194/acp-12-10033-2012, 2012.
3. M. V. Ramana, and **E. Saikawa**. “Choosing a Standard Reactor: International Competition and Domestic Politics in Chinese Nuclear Policy.” *Energy*, doi:10.1016/j.energy.2011.10.022, 2011.
2. **Saikawa, E.**, J. Kurokawa, M. Takigawa, J. Borken-Kleefeld, D. L. Mauzerall, L. W. Horowitz, T. Ohara, “The impact of China’s vehicle emissions on regional air quality in 2000 and 2020: a scenario analysis.” *Atmospheric Chemistry and Physics*, **11**, 9465-9484, 2011.
1. **Saikawa, E.**, V. Naik, L. W. Horowitz, J. Liu, D. L. Mauzerall, “Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing.” *Atmospheric Environment*, **4343** (17), 2814-22, 2009.

#### **UNDER REVIEW/WORKING PAPERS (Group members are underlined)**

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- Kishimoto, P., V. Karplus, M. Zhong, **E. Saikawa**, X. Zhang, and X. Zhang, “The impact of coordinated policies on air pollution emissions from road transportation in China,” *Transportation Research Part D: Transport and Environment*, in review
- Sclar, S. and **E. Saikawa**, Household Air Pollution in a Changing Tibet: A Mixed Methods Ethnography Amidst Particulate Matter and Black Carbon, *Human Ecology*, in review.
- Young, C. L., **E. Saikawa**, M. Trail, H. Kim, M. Zhong, Q. Wu, G. Janssens-Maenhout, J. Kurokawa, Q. Zhang, B. Zheng, Z. Klimont, and F. Wagner, “More than two gigaton CO<sub>2</sub> inventory disparity for China and India,” to be submitted.
- **Saikawa, E.**, M. Trail, Q. Wu, M. Zhong, C. L. Young, G. Janssens-Maenhout, Z. Klimont, F. Wagner, J. Kurokawa, A. Nagpure, and B. Gurjar, “Discrepancies in Emissions Estimates of Greenhouse Gases and Air Pollutant Precursors in India,” *Environmental Research Letters*, in review.
- **Saikawa, E.**, H. Kim, M. Zhong, Y. Zhao, G. Janssens-Maenhout, J. Kurokawa, and Q. Zhang, “Comparison of Emissions Inventories of Anthropogenic Air Pollutants in China,” *Atmospheric Chemistry and Physics*, submitted.
- Jayarathne, T., C. E. Stockwell, T. J. Christian, P. V. Bhawe, C. Rathnayake, Md. Robiul Islam, P. S. Praveen, A. K. Panday, S. Adhikari, R. Maharjan, J. D. Goetz, P. F. DeCarlo, **E. Saikawa**, R. J. Yokelson, and E. A. Stone, “Nepal Ambient Monitoring and Source Testing Experiment (NAMaSTE): Emissions of particulate matter from wood and dung cooking fires, brick kilns, generators, trash and crop residue burning,” to be submitted.
- Zhong, M., F. Chen, **E. Saikawa**, Uncertainties of Estimated PM<sub>2.5</sub>- and O<sub>3</sub>-Related Health Outcomes due to Present and Future Emissions, to be submitted.

## GRANTS

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- National Aeronautics and Space Administration (NASA), \$131,729, July 13, 2016 – June 12, 2019 “Use of Soil-Moisture Retrievals to Refine Global Land Trace Gases Emissions and their Climate Feedbacks” (co-PI, PI: Xiang Gao at MIT)
- Emory Global Health Institute, \$50,000, July 1, 2015 – December 31, 2016 “Quantifying the Relationship Between Air Pollution Exposure and Childhood Diseases in China” (PI)
- Emory Program to Enhance Research and Scholarship, \$10,000, January 1, 2016 (PI)
- National Science Foundation (NSF), \$151,212, August 1, 2014 – July 31, 2017 “Collaborative Research: Measurements of Selected Combustion Emissions in Nepal and Bhutan Integrated with Source Apportionment and Chemical Transport Modeling for South Asia” (co-PI, PI: Robert Yokelson at the University of Montana)
- National Oceanic and Atmospheric Administration (NOAA), \$364,786, August 2013 – July 2016 “Assessing the terrestrial and atmospheric nitrogen cycle: Implications for atmospheric chemistry and climate” (PI)
- National Oceanic and Atmospheric Administration (NOAA), \$71,743, August 2013 – July 2016 “Evaluating the relative importance of direct and indirect agricultural N<sub>2</sub>O emissions over the United States using forward modeling and atmospheric N<sub>2</sub>O and river nutrient data.” (co-PI, PI: Cindy Nevison at National Center for Atmospheric Research)
- China Transportation Grant, Energy Foundation, \$300,000, January, 2013 – February 2015. “An Integrated Assessment of Emissions, Air Quality, Economic, and Health Impacts of Transport Policies in China” (PI)
- China Partnership Seed Grants, Emory Global Health Institute, \$16,500, January-April, 2013. “Understanding the health burden in Tibetan households” (PI)

## FELLOWSHIPS, AWARDS & HONORS

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- Association for Women Geoscientists Distinguished Lecturer (2015 January – current)
- Emory Global Health Institute Faculty Fellow (2014 Fall – current)
- Multicultural Outreach and Resources at Emory (MORE) Faculty of the Year (May, 2015)
- Sustainability Incentives Fund for Climate@Emory work (October, 2014)
- Emory Sustainability Innovator Award (2014, 2015)
- Invitation to the Workshop on Atmospheric Composition and the Asian summer Monsoon (ACAM) (June, 2013)
- Invitation to DISCCRS (DISsertation initiative for Climate Change ReSearch) VII (October, 2012)
- Invitation to ACCESS (Atmospheric Chemistry Colloquium for Emerging Senior Scientists) XI and Gordon Research Conference on Atmospheric Chemistry (July, 2011)
- Invitation to National Center for Atmospheric Research Advanced Study Program Summer Colloquium (August 2010)
- Fellowship of Woodrow Wilson Scholars, *Woodrow Wilson Foundation* (2008-2010)
- Princeton Energy and Climate Scholar (2009-2010)
- Bradley Fellowship, *The Lynde and Harry Bradley Foundation* (2008-2009) [\$5625]
- Graduate Research Funding, *Center of Health and Wellbeing, Princeton University* (2008) [\$2125]
- Princeton University Graduate Fellowship (2005-2008)
- Dean’s Fund for Scholarly Travel, Travel grants for a conference, *Princeton University* (2008, 2009)
- Grants for summer research, *Princeton Institute for International and Regional Studies, Princeton University* (2006, 2007, 2008, 2009) [\$1000, \$1000, \$3000, \$3000]
- Grants for summer research, *Princeton University East Asian Studies Program, Princeton University* (2006, 2007, 2008) [\$500, \$1500, \$500]

- Murata Overseas Scholarship for Graduate Education Abroad (sole winner out of 111 applicants in a national competition, 2003), *Murata Overseas Scholarship Foundation* (2003-2005)
- Member, *The National Scholars Honor Society*, March 2008 to Present
- Member, *Pi Alpha Alpha Honor Society*, March 2005 to Present

## **OTHER PROFESSIONAL EXPERIENCE**

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### **The World Bank - Washington, DC, United States**

#### **Short Term Consultant** *January 2015 to Present*

- Research air pollution from transport sector in Nepal and Bangladesh.

### **Princeton University - Princeton, NJ, United States**

#### **Research Assistant** *November 2009 to February 2010, June 2010*

- Created a placement statistics exam for a course offered for the Health and Public Policy certificate.

### **Princeton University - Princeton, NJ, United States**

#### **Research Assistant** *December 2009*

- Research Assistant to Prof. Keren Yarhi-Milo on Japan's foreign relations.

### **Princeton University - Princeton, NJ, United States**

#### **Research Assistant** *February 2008 to November 2008, April 2010*

- Research Assistant to Prof. Christina Davis on trade policy.

### **The World Bank - Beijing, China**

#### **Temporary Consultant** *June 2007 to September 2007*

- Researched air pollution from transport sector in China and wrote policy pieces on vehicle emissions.

### **International Institute for Applied Systems Analysis - Laxenburg, Austria**

#### **Researcher - Young Scientists Summer Program** *June 2005 to August 2005*

- Researched cost-optimal solution for CO<sub>2</sub> and SO<sub>2</sub> emissions reduction in China as a start-up project for GAINS China.

### **The World Bank - Washington DC, United States**

#### **Temporary Consultant** *May 2004 to August 2004, December 2004*

- Researched four Asian cities (Jakarta, Shanghai, Beijing and Hanoi) on Integrated Air Quality Management. As part of the project, produced four databases and a report outlining knowledge base management for integrated air quality management.

### **Central Research Institute of Electric Power Industry - Tokyo, Japan**

#### **Research Assistant** *June 2003 to August 2003*

- Researched Japan's new renewable energy prospect for the future.

### **The University of Tokyo - Tokyo, Japan**

#### **Proofreader** *June 2003 to August 2003*

- Supervised the translation into Japanese of the book titled "Why Governments Waste Natural Resources" by William Ascher.

## **TEACHING EXPERIENCE**

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### **Emory University - Atlanta, GA, United States**

#### **Courses Taught**

- Air Pollution and Climate Change (ENVS 385) – Fall 2013
- Research Design and Practice (ENVS 460) – Fall 2013 with Gonzalo Vazquez-Prokopek
- Ecological Economics (ENVS 324/ECON 385) – Spring 2014, Spring 2015

- Global Change Sciences (ENVS 385) – Fall 2014
- Research Design (ENVS 560) – Fall 2015 with Gonzalo Vazquez-Prokopek
- Understanding Climate Change at the 2015 United Nations Meeting in France (ENVS 385/BUS 385/IDS 385) – Fall 2015 with Wesley Longhofer and Sheila Tefft
- Understanding Climate Change at the 2015 United Nations Meeting in France (ENVS 385/BUS 385/IDS 385) – Spring 2016 with Sheila Tefft
- Introduction to Atmospheric Chemistry (ENVS 328/CHEM 328) – Spring 2016

#### ***Guest Lectures***

- Sustainability Foundations (IDS 206) – Fall 2013
- Introduction to Environmental Studies (ENVS 131) – Fall 2013
- The Lifespan of Coal: From Formation to Burning (ENVS 491) – Spring 2014
- Advanced Language and Cultural Studies II (JPN 402) – Spring 2014
- Evidence Week (PACE) – Fall 2016
- Freshman composition (ENG180) – Fall 2016

#### **Princeton University - Princeton, NJ, United States**

*Assistance-in-Instruction September 2007 to January 2008*

- Quantitative Analysis for Public Policy (WWS303) – Prof. Graham Lord
- Nominated for the Association of Princeton Graduate Alumni Teaching Awards

#### **Indiana University, Bloomington - Bloomington, IN, United States**

*Teaching Assistant January 2005 to May 2005*

- Environmental Economics and Policy (V625) – Prof. Kenneth Richards

#### **Indiana University, Bloomington - Bloomington, IN, United States**

*Teaching Assistant August 2004 to December 2004*

- Public Management Economics (V517) & Financial Management (V361) – Prof. Rafael Reuveny

### **STUDENT MENTORING**

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#### **Emory University Ph.D. Student Advisees:**

Sam Peters (Environmental Health), main advisor, 2015 Fall –

Candis Hunter (Environmental Health), committee member, 2016 Spring –

#### **Outside Student Advisees:**

Michael McClellan (MIT, Earth, Atmospheric, and Planetary Sciences, Ph.D. student), committee member, 2016 Spring –

#### **Emory University Master's Student Advisees:**

Geoff Martin (ENVS MS, 2017), 2015 Fall – current, thesis advisor

Nicole Swartwood (MPH, 2017), 2016 Fall – current, research mentor

Futu Chen (MPH, 2016), 2015 Fall – 2016 Spring, thesis advisor

Seongmin Nick Shim (MPH, 2016), 2015 Fall – 2016 Spring, research mentor

Steven Sclar (MPH, 2015), 2014 Fall – 2015 Spring, thesis advisor

Wenlu Ye (MDP, 2015), 2015 Spring, research mentor

Qingyang Xiao (MPH, 2015), 2013 Spring, research mentor

#### **Emory University Undergraduate Student Advisees:**

Peter Marques Oliviera Soens (PHIS, 2019), 2016 Fall – current, research mentor (SIRE)

Jennifer Fundora (ENVS, 2018), 2015 Fall – current, Mellon Mays mentor (2016 Summer –)

Zijia Ye (CS/Math, 2018), 2014 Fall – 2015 Spring, research mentor

Abhishek Patel (BUS, 2017), 2014 Fall – 2015 Spring, research mentor (SIRE)  
Raquel Soat (POL/ENVS, 2017), 2014 Fall – current, research mentor  
Rachel Spector (BIO, 2017), 2013 Fall – 2015 Spring, research mentor (SIRE)  
Boya Sun (ENVS/ECO, 2017), 2016 Spring – current, research mentor  
Soungbin Yim (ENVS, 2017), 2014 Fall – current, research mentor (SRRP)  
Qianru Wu (ENVS/ECO, 2017), 2015 Spring – current, research mentor (SURE), Honor's thesis advisor  
Siyue Zong (ENVS 4+1 BS/MS, 2017), 2014 Fall – 2016 Spring, research mentor  
Caiwei Huang (POL, BA/MA, 2017), 2015 Fall – current, research advisor, Honor's thesis committee member  
Virginia Marie Loeffler (ENVS, 2017), 2016 Fall – current, Honor's thesis committee member  
Clara Beatriz Perez (SOC, 2017), 2016 Fall – current, Honor's thesis committee member  
Margarita Korobkov (ENVS, 2016), 2013 Fall – 2016 Spring, research mentor  
Anika Tabasam Rastgir (ECO/BIO, 2016), 2015 Fall – 2016 Spring, research mentor  
Camilla Schramek (ENVS/POL/Math, 2016), 2013 Fall – 2016 Spring, research mentor  
Cindy Chu (ENVS, 2016) – Honor's Thesis committee member (2016)  
Elyse Lim (BIO, 2015), 2014 Fall – 2015 Spring, research mentor  
Hankyul Kim (Math/ECO, 2015), 2013 Fall – 2015 Spring, research mentor (SIRE/SURE)  
Jacqueline Jaryi Yap (ENVS/EAS, 2015), 2013 Fall – 2015 Spring, research mentor  
Lucy Milus Anderson (ENVS/CHEM, 2013) – Honor's thesis committee member (2013)

## **OUTREACH ACTIVITIES**

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- Druid Hills Environmental Club (April, 2015)
- King Middle School (March, 2015)
- Atlanta Science Festival (2014, 2015, 2016)
- Science Day at Mill Springs Academy (May, 2014)
- Discussion with Sixth Grade Cadette Girl Scouts (January, 2014)

## **SERVICE RESPONSIBILITIES**

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- Mellon Mays Undergraduate Faculty Mentor, 2016 –
- Emory Climate Organization Faculty Mentor, 2016 –
- Emory Interview Selection Committee, 2016 Fall –
- Climate@Emory Co-Founder, 2014 –
- QuanTM Board Member, 2015 Fall –
- QuanTM Climate Change Seminar Series co-Chair (2016 Spring)
- Multicultural Outreach and Resources at Emory (MORE) Mentor (2014, 2015)
- Sustainability Visioning Committee Member (2015 Spring)
- ENVS Faculty Search Committee Member (2013, 2014)
- ENVS Seminar Series Chair (2013 Fall, 2014 Spring), co-Chair (2015 Spring)

## **MEDIA COVERAGE**

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- “Yak dung burning pollutes indoor air of Tibetan households.” EurekAlert!, [http://www.eurekalert.org/pub\\_releases/2015-01/ehs-ydb011515.php](http://www.eurekalert.org/pub_releases/2015-01/ehs-ydb011515.php), Jan. 15, 2015.
- “Yak Dung Is Making Climate Change Worse.” Slate Magazine, [http://www.slate.com/articles/technology/future\\_tense/2014/12/yak\\_dung\\_is\\_making\\_climate\\_change\\_worse\\_and\\_new\\_cookstoves\\_don\\_t\\_help.html](http://www.slate.com/articles/technology/future_tense/2014/12/yak_dung_is_making_climate_change_worse_and_new_cookstoves_don_t_help.html), Dec. 4, 2014.
- “Burning Trash Bad for Humans and Global Warming.” Scientific American, <http://www.scientificamerican.com/article/burning-trash-bad-for-humans-and-global-warming/>, Sep. 2, 2014.

- “Professor: Multiple disciplines needed to understand climate change.” Emory Magazine, [http://news.emory.edu/stories/2014/02/emag\\_saikawa\\_catalyst\\_for\\_change/campus.html](http://news.emory.edu/stories/2014/02/emag_saikawa_catalyst_for_change/campus.html), Feb. 19, 2014.
- “The growing role of farming and nitrous oxide in climate change.” Emory eScienceCommons, <http://esciencecommons.blogspot.com/2013/10/the-growing-role-of-farming-and-nitrous.html>, Oct. 9, 2013.
- “El Niño cycle has a big effect on a major greenhouse gas.” MIT News, <http://newsoffice.mit.edu/2013/el-nino-cycle-affects-nitrous-oxide-emissions-0927>, Sep. 27, 2013.

## INVITED SEMINAR PRESENTATIONS

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- “Estimating soil nitrous oxide emissions through modeling and measurements.” Presented at the Department of Geophysics at Georgia State University, September 8, 2016.
- “China’s air pollutant and CO<sub>2</sub> emissions – Uncertainty and Impacts.” Presented at the China Colloquium at Emory University, October 5, 2015.
- “Indoor Air Quality in Tibet and Emissions Estimates in Asia.” Georgia Institute of Technology Earth Sciences Seminar, Jan. 22, 2015.
- “China’s Environmental Challenges – air pollution and climate change.” Presented at the China Colloquium at Emory University, Nov. 21, 2014.
- “Win-Win-Win: Benefits of regulating vehicle emissions on air quality, human health, and the economy.” Presented at the National University of Singapore, June 19, 2014.
- “Global and regional emissions estimates for N<sub>2</sub>O – from bottom-up and top-down.” Presented at the College of Urban and Environmental Sciences, Peking University, Beijing, China, May 28, 2014.
- “Regional N<sub>2</sub>O emissions: Estimations through Process and Inverse Modeling.” Presented at the 3<sup>rd</sup> Asian APN workshop on Asian Greenhouse Gases Budget in Yokohama, April 9, 2014.
- “Global and Regional Emissions Estimates for N<sub>2</sub>O – from bottom-up and top-down.” Presented at the Center for Earth System Science, Tsinghua University, Beijing, China, Nov. 19, 2013.
- “Win-Win-Win: Benefits of regulating vehicle emissions on air quality, human health, and the economy.” Presented at the School of Public Policy, Georgia Institute of Technology, Oct. 10, 2013.
- “Policy Diffusion of Emission Standards: Is there a Race to the Top?” Presented at Political Science Colloquium, Emory University, Atlanta, Apr. 4, 2013.
- “Win-Win-Win: Benefits of regulating vehicle emissions on air quality, human health, and the economy.” Presented at the Center for Marine and Atmospheric Sciences, Hamburg, Germany, Jun. 14, 2012.
- “Benefits of regulating air pollution on air quality and health.” Presented at the International Centre for Integrated Mountain Development (ICIMOD) inception meeting for black carbon and other short-lived climate forcers, Kathmandu, Nepal, Apr. 2, 2012.
- “Policy diffusion of automobile emission standards: Is there a race to the top?” Presented at the International Centre for Integrated Mountain Development (ICIMOD) inception meeting for black carbon and other short-lived climate forcers, Kathmandu, Nepal, Apr. 2, 2012.
- “Process modeling of global soil nitrous oxide emissions – past, present, and future.” Presented at the Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA, Mar. 6, 2012.
- “Win-Win-Win: Positive impacts of regulating vehicle emissions on air quality, human health, and the economy (in Japanese).” Presented at the Department of Chemistry and Biotechnology, the University of Tokyo, Tokyo, Japan, Jan. 10, 2012
- “Understanding global HCFC-22 and N<sub>2</sub>O emissions.” Presented at the Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan, Jan. 6, 2012.
- “Sustainable Air Quality Regulation?” Keynote speech given at the Sustainability Symposium Series at the National Cheng Kung University, Tainan, Taiwan, Dec. 23, 2011.



- “Win-Win-Win: Benefits of regulating vehicle emissions on air quality, human health, and the economy.” Presented at the Department of Environmental Engineering, the National Cheng Kung University, Tainan, Taiwan, Dec. 22, 2011.
- “Win-Win-Win: Positive impacts of regulating vehicle emissions on air quality, human health, and the economy.” Presented at the Department of Environmental Studies, Emory University, GA, Dec. 5, 2011.
- “Scenario Analyses of China’s Vehicle Emissions on Regional Air Quality in 2000 and 2020.” Presented at the Harvard China Project Seminar, Harvard University, MA, Nov. 4, 2010.
- “Impacts of present and potential future emissions from China on air quality, premature mortality and radiative forcing.” Presented at the Institute on the Environment, University of Minnesota, Twin Cities, MI, Jun. 18, 2010.
- “Impacts of present and potential future emissions from China on air quality, premature mortality and radiative forcing.” Presented at the Earth, Atmospheric, and Planetary Sciences Department, Massachusetts Institute of Technology, Cambridge, MA, Apr. 28, 2010.
- “Impacts of present and potential future emissions from China on air quality, premature mortality and radiative forcing.” Presented at the NASA Goddard Institute for Space Studies, New York, NY, Feb. 5, 2010.
- “The Policy Diffusion of Automobile Emissions Standards: Is there a Race to the Top?” Presented at the School of Public and Environmental Affairs, Indiana University, Bloomington, Dec. 7, 2009.
- “The Policy Diffusion of Automobile Emissions Standards: Is there a Race to the Top?” Presented at the Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, Oct. 27, 2009.
- “The Impact Analysis of Aerosols from China on Global Air Quality, Premature Deaths and Radiative Forcing – Year 2000 and 2020 – (in Japanese).” Presented at the National Institute of Environmental Studies, Tsukuba, Japan, Aug. 20, 2009.
- “The Impact of Air Pollution from China on Air Quality, Premature Mortality and Radiative Forcing (in Japanese).” Presented at the Japan Agency for Marine Science and Technology, Kanagawa, Japan, Aug. 12, 2009.
- “The Impact of Aerosols from China on Global Air Quality, Premature Deaths and Radiative Forcing: The Dilemma between Air Quality and Global Warming.” Presented at the Princeton Energy Group Lunch Meeting, Princeton Environmental Institute, Princeton University, NJ, Oct. 3, 2008.
- “A Tool for Urban Air Pollution Analysis.” Presented at the World Bank, Washington, DC, Aug. 11, 2004.
- “Are We Ready for the Future? Visions and Voices for the Next Generation.” Main Plenary Panel at the 2002 Annual Meeting of the *Alliance for Global Sustainability*, San Jose, Costa Rica, Mar. 20-24, 2002.

## **CONFERENCE PRESENTATIONS (Atmospheric Science)**

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- “Comparison of Asian Emissions Inventories (invited talk).” Paper presented at the US EPA Emissions Inventory Conference, April 12-16, 2015.
- “Comparison of Emissions Inventories of Anthropogenic Air Pollutants in Asia (invited talk).” Paper presented at the American Geophysical Union Fall Meeting, Dec. 15-19, 2014.
- “Indoor Air Pollution due to Yak Dung Combustion in Nam Co, Tibet.” Paper presented at the International Workshop on Air Quality in Asia, Hanoi, Vietnam, June 24-26, 2014.
- “Indoor Air Pollution due to Yak Dung Combustion in Nam Co, Tibet.” Poster presented at the GEIA Annual Meeting, Boulder, CO, June 10-11, 2014.
- “Comparison of emissions inventories of anthropogenic air pollutants in Asia with a special focus on China’s transport sector.” Paper presented at the GEIA Annual Meeting, Boulder, CO, June 10-11, 2014.

- “Indoor Air Pollution due to Yak Dung Combustion in Nam Co, Tibet.” Presented at the 16<sup>th</sup> Conference on Atmospheric Chemistry, Atlanta, GA, Feb. 2-6, 2014.
- “Global and Regional Emissions Estimates for N<sub>2</sub>O.” Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 9-13, 2013.
- “Estimating impacts of Chinese transport emissions on Asian air quality and health.” Presented at the Urban Environmental Pollution Conference, Beijing, China, Nov. 18-20, 2013.
- “Indoor air quality in Tibet - survey and measurements.” Presented at Gordon Conference on Atmospheric Chemistry, West Dover, VT, Jul. 28-August 2, 2013.
- “Global and regional emissions estimates for N<sub>2</sub>O” Paper presented at the International Workshop on Inventory, Modeling and Climate Impacts of Greenhouse emissions (GHG’s) and Aerosols in the Asian Region, Jun. 26-28, 2013.
- “China’s vehicle emissions – new emissions inventories and their impacts on regional air quality.” Presented at the Workshop on Atmospheric Composition and the Asian summer Monsoon (ACAM), Kathmandu, Nepal, Jun. 9-12, 2013.
- “Possible ENSO Influence on Soil N<sub>2</sub>O Emissions and Atmospheric N<sub>2</sub>O Mole Fractions,” Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 3–7, 2012.
- “Estimating global soil N<sub>2</sub>O emissions using DNDC in CLMCN.” Presented at the CESM workshop, Breckenridge, CO, Jun. 20, 2012.
- “Process modeling of global soil nitrous oxide emissions.” Paper presented at the 2012 ACCENT-IGAC-GEIA conference, Toulouse, France, Jun. 13, 2012.
- “Global and Regional Emissions Estimates for HCFC-22.” Poster presented at the 2012 ACCENT-IGAC-GEIA conference, Toulouse, France, Jun. 12, 2012.
- “Global Soil Nitrous Oxide Emissions in a Future Climate.” Paper presented at the First Conference on Atmospheric Biogeosciences, Boston, MA, May 31, 2012.
- “Global and Regional Emissions Estimates for HCFC-22.” Paper presented at the 40<sup>th</sup> NOAA ESRL Global Monitoring Annual Conference 2012, Boulder, CO, May 17, 2012.
- “Process modeling of global soil nitrous oxide emissions – with a focus on natural soil.” Presented at the 2011 American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9, 2011.
- “Soil N<sub>2</sub>O emissions – past, present and future.” Poster presented at the World Climate Research Programme, Denver, CO, Oct. 24-28, 2011.
- “The impact of China’s vehicle emissions on regional air quality in 2000 and 2020: a scenario analysis.” Poster presented at the Gordon Conference on Atmospheric Chemistry, Mount Snow, VT, Jul. 24-29, 2011.
- “Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing.” Paper presented at the American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 15-19, 2008
- “Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing.” Paper presented at the Better Air Quality Conference, Bangkok, Thailand, Nov. 12-14, 2008.
- “Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing.” Poster presented at the Hemispheric Transport of Air Pollution Workshop, Washington D.C., Jun. 9-13, 2008.
- “Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing.” Poster presented at the 4<sup>th</sup> International Geosphere Biosphere Program Congress, Cape Town, South Africa, May 5-9, 2008.

## **CONFERENCE PRESENTATIONS (Political Science/Policy)**

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- “China’s War on Air Pollution.” Paper presented at China: Tradition and Transformation, a joint conference of Agnes Scott College and Emory University, Atlanta, GA, Oct. 30 – Nov. 1, 2014.

- “Effect of Fragmented Bureaucracy on Air Quality Management in the Road Transport Sector in China.” Paper presented at the Association for Asian Studies Annual Meeting, Philadelphia, PA, Mar. 25-28, 2010.
- “The Policy Diffusion of Automobile Emissions Standards: Is there a Race to the Top?” Paper presented at the International Studies Association Annual Convention, New Orleans, LA, Feb. 17-20, 2010.
- “The Policy Diffusion Mechanism of Automobile Emissions Standards and Its Impact on Automobile Exports.” Paper presented at the Association for Environmental Studies and Sciences Annual Meeting, Madison, Wisconsin, Oct. 8-11, 2009.
- “Environmental Cooperation in East Asia.” Paper presented at the Graduate Climate Conference, Seattle, WA, Apr. 8-9, 2006.
- “Interactive Models for Urban Air Quality Management.” with Nagaraja Rao Harshadeep et al. Poster presented at the Better Air Quality 2004, Agra, India, Dec. 6-8, 2004.

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## **PROFESSIONAL SOCIETY MEMBERSHIPS**

American Geophysical Union; European Geophysical Union; Earth Science Women’s Network

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## **PROFESSIONAL ACTIVITIES**

Reviewer for academic journals, including:

- Atmospheric Chemistry and Physics
- Journal of Geophysical Research – Atmospheres
- Journal of Geophysical Research – Biogeosciences
- Geophysical Research Letters
- Environmental Science and Technology
- Journal of Air & Waste Management Association
- Biogeosciences
- Atmospheric Environment
- International Journal of Environmental Research and Public Health
- American Political Science Review
- World Politics
- Energy Policy
- Environment International
- Journal of Environmental Policy and Planning
- Technological and Economic Development of Economy
- Plant and Soil
- European Journal of Soil Science

Reviewer for proposal reviews for the following agencies:

- National Aeronautics and Space Administration (NASA)
- National Oceanic and Atmospheric Administration (NOAA)
- National Science Foundation (NSF)
- Netherlands Organisation for Scientific Research (NWO)
- Marion Milligan Mason Award for Women in the Chemical Sciences
- Austrian Partnership Programme in Higher Education and Research for Development
- CRDF Global
- Oxford University Press

Reviewer for the following workshops:

- DISsertation Initiative for the advance of Climate Change ReSearch (DISCCRS)
- New Generation of Polar Researchers Symposium

Steering Committee Member:

- Chinese Ecosystem Research Network (CERN) – National Ecological Observatory Network (NEON) Summit (January 2014 – present)

Coordinating Lead Author:

- Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP) Air Pollution chapter (May 2016 – present)

Conference Session Chair Person:

- Convener: Closing the global nitrous oxide budget: magnitude, spatiotemporal patterns and responses, Fall American Geophysical Union Meeting, December 2015

## **SKILLS**

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- Statistics: STATA, SAS
- Atmospheric Modeling: MOZART-2, MOZART-4, WRF, WRF-Chem, RAINS-Asia
- Biogeochemical Modeling: CLM-CN
- Earth System Modeling: CESM
- Programming Languages: Fortran, NCL, IDL, Visual Basic, Java
- Mathematical Modeling: GAMS

## **LANGUAGES**

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Japanese (native), English (fluent), Korean (advanced), Mandarin (advanced), French (intermediate)