

THE WASHINGTON GEOENGINEERING CONSORTIUM

*A Scholarly Initiative of the
School of International Service, American University*

Year-end Report, 2014

Background and Highlights

The Washington Geoengineering Consortium (WGC) is a scholarly initiative of the School of International Service at American University. In the brief period since its launch in November 2013, the WGC has become an internationally recognized hub for a set of impactful research and outreach activities.

This year-end report pulls out some highlights from the WGC's first full year of operation and charts a course for future activities.

The WGC was established to be a constructive voice in the fast-evolving climate engineering conversation. We are particularly concerned with the social, political, and legal implications of emerging climate engineering technologies. Our work has three major components:

1. The production of high-level research and commentary
2. Acting as an honest broker in conversations within the climate engineering community
3. Education and outreach directed at policy and civil society leaders and the general public

Research

In its first full year, the WGC has staked out an important research agenda with five major components:

- a) human rights and climate engineering;
- b) international governance pathways for climate engineering;
- c) governance implications of oceans-based climate engineering schemes and ocean acidification;
- d) lessons to be learned from other complex technological domains; and
- e) climate engineering and the polar regions.

Journal articles, journal special issues, op-eds, and book chapters have been prepared or are in preparation in each of these areas (see below).

Work within the Climate Engineering Community

The WGC website and blog (www.dcgeoconsortium.org) has become a sought after and highly trafficked place for people looking to post and discuss work on climate engineering politics, ethics, and law. The site has hosted more than 30 guest posts and forums from high profile academic figures in 2014, with the expectation that 2015 will see a growth in this activity. The site also contains an array of research resources for researchers, members of the press, and the general public, including a timeline of the history of climate engineering and weather modification, and extensive collection of treaties and soft law documents pertinent to climate engineering governance.

Members of the WGC have given a number of academic presentations on both coasts of the United States during 2014, as well as in Canada, Europe, and Asia. We also have participated in workshops designed to educate members of the environmental community in developing countries about emerging climate engineering technologies and their potential environmental, political, and social implications.

Education and Outreach

The WGC has become a central actor within climate engineering conversations in Washington DC. We have offered, and will continue to offer, briefings to policy makers and members of civil society organizations. We also, through our website, media appearances, commentaries, presentations in community and academic forums, and social media presence, are reaching out in effective and impactful ways to publics beyond Washington DC.

WHAT IS CLIMATE ENGINEERING?

Climate engineering, or geoengineering, is an umbrella term for a set of protean technologies that have the potential to ameliorate some aspect of climate change. Interest in climate engineering has intensified substantially in recent years as it becomes increasingly obvious that the world community lacks the resolve to substantially reduce greenhouse gas emissions, which may result in temperature increases of 3-5 degrees Celsius over pre-industrial averages by the end of this century, with potentially catastrophic implications.

Those who work on climate engineering tend to group relevant technologies into two major categories. The first set, Carbon Dioxide Removal, describes a range of imagined technological options that may remove large amounts of carbon dioxide from the earth's atmosphere and hold it in long-term storage or apply it to productive use. The second set, Solar Radiation Management, refers to technologies that could reflect incoming sunlight back into space before it warms the earth's atmosphere.

The technologies under discussion are widely varied. Ideas under consideration range from introducing sulfate particles into the earth's stratosphere in an effort to reflect solar radiation, to dumping iron into the world's oceans to induce carbon-inhaling blooms of phytoplankton. Particular climate engineering options deserve to be considered on their individual merits. That said, one thing that unites those options that could make the most difference on climate change impacts in the near term is that they are controversial for a host of reasons.

The WGC is working to be an active and useful voice in the deliberations around climate engineering, by helping relevant actors sort through the controversies and comprehend the full implications, positive and negative, of research and development associated with climate engineering options and potential deployment.

Washington Geoengineering Consortium Personnel

The WGC has, to date, been a collaborative effort involving three figures:

Wil Burns, Ph.D., is presently a Scholar in Residence at the School of International Service. From 2012 to 2014 he founded and directed the MS in Energy Policy and Climate Program at Johns Hopkins University, where he taught courses in domestic and international climate change law and domestic energy law. He holds a Ph.D. in International Environmental Law from the University of Wales-Cardiff School of Law. He also serves as the Co-Chair of the International Environmental Law Committee of the American Branch of the International Law Association and is the President of the Association of Environmental Studies and Sciences. Prior to becoming an academic, Burns served as Assistant Secretary of State for Public Affairs for the State of Wisconsin and worked in the non-governmental sector for twenty years, including as Executive Director of the Pacific Center for International Studies, a think-tank that focused on implementation of international wildlife treaty regimes, including the Convention on Biological Diversity and International Convention for the Regulation of Whaling. He has published over 75 articles in law, science, and policy journals and has co-edited four books. His current areas of research focus are: climate engineering; international climate change litigation; adaptation strategies to address climate change, with a focus on the potential role of microinsurance; the effectiveness of international treaty regimes to conserve cetaceans (whales, dolphins and porpoises); and how to effectively operationalize the precautionary principle in international environmental treaty regimes.

Simon Nicholson, Ph.D., is Assistant Professor and Director of the Global Environmental Politics Program in the School of International Service. His research has focused on the politics of emerging technologies (including climate engineering), global food politics, and global environmental governance. Nicholson's research in these areas has been published in a wide range of leading journals and edited volumes, and he is a sought-after speaker and trainer. He is co-editor (with Paul Wapner) of *Global Environmental Politics: From Person to Planet* (Paradigm Publishers, 2014), and (with Sikina Jinnah) of *New Earth Politics* (MIT Press, forthcoming). His work on climate engineering is informed by a deep sense of concern about the lack of effective response to climate change coming from mainstream political and social processes. At the same time, prior work on the politics of technology tells him that promising technological responses to complex social problems can too easily go awry, or can fail to fulfill expectations, or can be repurposed for ill-conceived or nefarious ends, or can entrench the very dynamics that drive the problems to which the technologies are attempting to respond. He brings, in other words, cautious optimism to the engineering conversation, with emphasis on "cautious."

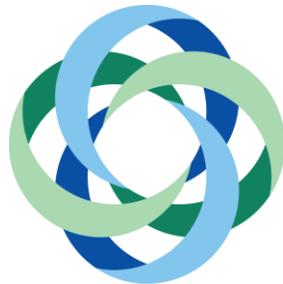
Michael Thompson graduated in 2013 from American University's School of International Service with an M.A. in Global Environmental Politics. He has been a researcher at the Smithsonian Institution in Washington, D.C., and The Energy and Resources Institute in Delhi, India.

The WGC also, during 2014, was fortunate to have the voluntary services of three student researchers: **Kat Diersen** and **Sharad Ghimire**, Masters candidates in the Global Environmental Policy Program in the School of International Service, and **Rachael Somerville**, senior in the Environmental Studies and International Studies programs.

Plans for 2015

Name Change

In early 2015, the WGC will announce a name change. We will soon be known as the ***Forum for Climate Engineering Assessment***, and will be rolling out a new logo and web presence.



FORUM *for*
CLIMATE ENGINEERING
ASSESSMENT

We are making this name change for two reasons. First, the WGC name, though it has gained a lot of visibility in very short order, is too easily misread as belonging to a group that is seeking to advance a pro-geoengineering agenda. That is not our mission. Our group is punctiliously agnostic about particular climate engineering technologies, and is instead working to ensure that deliberations about climate engineering in the scientific and policymaking arena are taking full account of all potential benefits and risks. Second, the new name is a more faithful rendering of the entire range of our activities, focusing particularly on our academic contribution as we assess pathways for robust climate engineering assessment and governance.

Appointment of Board of Advisors

With the rollout of a new name for our initiative, we will also announce the appointment of a Board of Advisors. The board will be an international body comprised of leading researchers and public intellectuals working on climate engineering. We expect the board to help position the WGC to be more effective in its public engagement, in particular.

Securing External Funding

The WGC is working actively with the International Affairs Research Institute (IARI) in the School of International Service to secure significant external funding for its research and public outreach work. The consortium now has the reach, profile, and recognition needed to make it an attractive grantee and partner for funded work. Among the avenues being explored is a major workshop grant through the National Science Foundation, being developed in conjunction with the Science and Technology Innovation Program at the Woodrow Wilson Center. This workshop grant application will be submitted in early 2015.

Research and Events

The members of the WGC have a range of ongoing research activities that will result in academic publications in 2015 (see below for a sampling).

Among the highlights include the guest editing of a special issue of the journal *Climate Law* devoted to climate engineering law and governance, being prepared for submission in early 2015, and a workshop

in January 2015 to be co-sponsored by the UC Berkeley Energy & Resources Collaborative China Focus, which will bring together UC-Berkeley students and 20 students from Chinese universities for a full-day workshop on climate engineering, including an interactive scenarios analysis component. We will also be hosting or co-sponsoring a string of high-level events during 2015, including events to coincide with release of a National Academy of Sciences report on climate engineering set for release in January.

CLIMATE ENGINEERING IN THE NEWS, 2014

Looking back, 2014 may well be seen as the year that climate engineering moved from the fringes of climate change discussions to the mainstream. The fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC), released during 2013 and 2014, contained substantial mention of climate engineering. So, too, did the US government's 2014 National Climate Assessment.

In the popular media, a flurry notable climate engineering stories were released towards the year's end, including:

- Henry Fountain, "[Climate Tools Seek to Bend Nature's Path](#)," New York Times, Nov. 9, 2014.
- Nature Editorial, "[Research into Climate Engineering Must Proceed—Even if it turns out to be Unnecessary](#)," Nature, Dec. 2, 2014.
- Erin Biba, "[Planet Reboot: Fighting Climate Change with Geoengineering](#)," Newsweek, Dec. 4, 2014.
- David Biello, "[Fact or Fiction: Geoengineering Can Solve Global Warming](#)," Scientific American, Dec. 12, 2014.
- Economist Editorial, "[Into the Great Wide Open: Geoengineering the Climate](#)," The Economist, Dec. 13, 2014.

The National Academy of Sciences has a major forthcoming report on climate engineering, due for release at the end of January, 2015. The WGC expects that release of the report will generate heightened interest in climate engineering. We will continue our public outreach work to ensure that relevant actors are well informed about the report's findings and implications, and to help nudge the climate engineering conversation in productive directions.

Calls for consideration of climate engineering technologies are set to grow louder as climate change impacts build and people around the world seek development of new forms of response. The WGC (soon to be the *Forum for Climate Engineering Assessment*), with the support of American University's School of International Service, will play a pivotal role in the emerging climate engineering deliberations.



APPENDIX – Work of Note from the Washington Geoengineering Consortium

Recent and Forthcoming Publications

- Wil Burns, Simon Nicholson, and Michael Thompson, guest co-editors of special forum in Global Environmental Politics on climate geoengineering and human rights, preparing for submission spring 2015.
- Wil Burns and Simon Nicholson, guest co-editors special issue of Climate Law on climate geoengineering law and governance, forthcoming 2015.
- Simon Nicholson and Michael Thompson, “Politics of Climate Engineering in the United States,” in Jason Blackstock et al. (eds.), “Geoengineering our Climate” (Routledge, forthcoming 2015).
- Wil Burns and Simon Nicholson, “Climate Geoengineering: Promise or Peril on a New Earth?” in Simon Nicholson and Sikina Jinnah (eds.), *New Earth Politics* (MIT Press, forthcoming 2015).
- Simon Nicholson, “Reimagining Climate Geoengineering,” in Hilal Elver and Paul Wapner (eds.) *Reimagining Climate Change* (Routledge, forthcoming 2015).
- Wil Burns and Andrew Strauss (eds.), *Climate Change Geoengineering: Philosophical Perspectives, Legal Issues, and Governance Frameworks* (Cambridge University Press, 2013).
- Simon Nicholson, “The Promises and Perils of Geoengineering,” in Worldwatch Institute, *State of the World 2013: Is Sustainability Still Possible?* (Island Press, 2013).
- Wil Burns, “Geoengineering the Climate: An Overview of Solar Radiation Management Options,” (2012) *Tulsa Law Review* 46(2) 283-304.
- Wil Burns, “Climate Geoengineering: Solar Radiation Management and its Implications for Intergenerational Equity,” 5 Stanford Journal of Law, Science & Policy (2011).
- RESEARCH IN PROGRESS – sole or co-authored journal articles on:
 - climate engineering and human rights;
 - governance implications of ocean acidification and ocean iron fertilization;
 - lessons for climate geoengineering from other complex technological domains;
 - analysis of environmental NGO positions on climate geoengineering and energy technologies (data gathered by SIS student research team).

Select Presentations (2014)

- October 2014: Wil Burns (convenor), “Climate Geoengineering and the Potential Role of International Law,” panel discussion, International Law Association Annual Meeting, New York.
- August 2014: “Climate Geoengineering and the Potential Role of Human Rights Regimes,” roundtable organized and moderated by WGC at the *Climate Engineering Conference 2014*, Berlin, Germany.
- August 2014: Simon Nicholson, “Assess, Test, or Terminate? What Future for Climate Engineering?” plenary roundtable presentation, *Climate Engineering Conference 2014*, Berlin, Germany.

- July 2014: Wil Burns, “The Policy Exigencies Driving the Push for Climate Geoengineering Research,” for The Environmental Leadership Program, University of California, Berkeley, CA.
- June 2014: Wil Burns, “Ocean Iron Fertilization as Climate Geoengineering and the Role of the United Nations Conventions on the Law of the Sea,” Zhejiang University, China.
- May 2014: Simon Nicholson, “Climate Geoengineering: Coming Soon to a Planet Near You?” TEDx talk, TEDx American University, Washington, DC.
- March 2014: Simon Nicholson, “The Climate Geoengineering Fix: What’s At Stake?” Yale/National University of Singapore, Singapore.
- February 2014: Wil Burns and David Keith, “Security and Sustainability Webinar,” Security and Sustainability Forum, Washington, DC.

Select Media (2014 and forthcoming)

- January 2015: (forthcoming) Wil Burns and others, invited to participate in roundtable on the Diane Rehm Show (NPR), to discuss launch of National Academy of Sciences report on geoengineering.
- November 2014: Simon Nicholson, 45 minute interview on climate geoengineering for the Discovery Channel’s “Curiosity Project.”
- October 2014: Simon Nicholson, “The climate geoengineering genie — Why we all need to be paying attention,” Op Ed in The Hill newspaper, October 8, 2014.
- June 2014: Simon Nicholson and Michael MacCracken, “Technology to the Planet’s Rescue?” –Op Ed in US News and World Report, June 6, 2014.
- April 2014: Simon Nicholson live interview about climate geoengineering (with David Keith and Jane Long) on Huffington Post Live for Earth Day.
- January 2014: Clive Hamilton, interview with Diane Rehm, NPR (at invitation of WGC).
- During 2014, WGC members were interviewed for and mentioned in stories that have appeared in the Boston Globe, Newsweek, ClimateWire, and elsewhere, and interviewed for two major new films and a long-form radio story in preparation on climate geoengineering.

Select Events (2014 and forthcoming)

- Spring 2015: (forthcoming) co-sponsored event with the Brazil Institute, Wilson Center, on the lessons for geoengineering from other complex technological domains
- February 2015: (forthcoming) co-sponsored event with Resources for the Future, to discuss rollout of National Academy of Sciences report on climate geoengineering
- September 2014: “Policy Dialogue: Do we Need International Governance of Climate Engineering? A Roundtable Discussion” Co-Sponsored by WGC, the European Trans-disciplinary Assessment of Climate Engineering & The Environmental Change and Security Program at the Wilson Center.
- January 2014: “Engineering the Climate—Who Wins? A Conversation with Clive Hamilton,” American University.

Social Media Outreach

- The WGC website has become a major gathering point for viewpoints on climate geoengineering. The WGC blog has hosted more than 30 guest posts and forums from high profile academic figures in 2014. See www.dcgeoconsortium.org



-**dcgeoconsortium** – more than 1,100 page likes



-**@ceassessment** – more than 450 followers