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Inside the Greenhouse (ITG) has continued to build momentum this fall, with many ongoing pursuits to re-tell climate change stories in compelling and resonant ways. Our fall semester activities included a number of great events along with new research outputs. Also, this fall we have been working to revamp the searchable database of projects on our website (<http://www.insidethegreenhouse.org>) - featuring students' compositions as well as past events and interviews - in order to make our work more accessible and useful for others looking to integrate creative works into their ongoing climate communications.

In addition, we're very pleased to announce that Professor Phaedra C. Pezzullo has joined us in our ongoing efforts. Phaedra is an associate professor in the Department of Communication here at the University of Colorado (CU) Boulder. She has collaborated with us over the past years on workshops in communications skills, curriculum planning, and more as she has increasingly focused on climate science communication and just transition policy. She is committed to public engagement, as she has consulted with cities and NGOs on just transitions for climate change and environmental justice organizing, participated in the International Environmental Communication Association's Climate Negotiations Working Group at COP21 in Paris, and provides trainings in climate science communication. Her background in communication and environmental justice provides key touchstones for our group. Among her many research contributions to date, Phaedra authored the award-winning book *Toxic Tourism: Rhetorics of Travel, Pollution and Environmental Justice* in 2007. She also co-edited *Environmental Justice and Environmentalism: The Social Justice Challenge to the Environmental Movement* in 2007 and edited *Cultural Studies and the Environment, Revisited* in 2010. In addition, she has co-edited two editions of the award-winning textbook *Environmental Communication and the Public Sphere* in 2016 and 2018 (with three-time Sierra Club president Robert Cox). For more information about Phaedra's ongoing work, check out her professional website: <https://phaedracpezzullo.com>. As a new co-director, Phaedra significantly strengthens our capacity going forward.

As we continue with our work, your support is critical. Please visit <https://giving.cu.edu/fund/cires-inside-greenhouse-gift-fund> to provide a tax-deductible gift before the new year arrives. Any amount helps us as we continue to work to communicate about the critical importance of climate engagement.

Happy holidays,
Rebecca Safran, Beth Osnes, Phaedra Pezzullo and Max Boykoff (Inside the Greenhouse co-directors)

Support ITG!

To support our work with your donation go to:

<https://giving.cu.edu/fund/cires-inside-greenhouse-gift-fund>

Be Boulder.
University of Colorado Boulder

Subscribers to ITG will be notified by email when a new edition is available, and may access it either in pdf or html format. The newsletter is also available online at:

<http://www.insidethegreenhouse.org/about/newsletters>

RESEARCH NOTES

We have continued to produce peer-reviewed research outputs emanating from our ongoing experimentations and explorations. Among them:

'A Laughing Matter? Confronting Climate Change through Humor'

Boykoff, M. and Osnes, B., 2018. *Political Geography*, <https://doi.org/10.1016/j.polgeo.2018.09.006>

In this article, Beth Osnes and Max Boykoff interrogated the essential question 'why fuse climate change and comedy?' They explored how humor and comedy have been increasingly mobilized as culturally-resonant vehicles for effective climate change communications, as everyday forms of resistance and tools of social movements, while providing some levity along the way. They critically examined ways in which experiential, emotional, and aesthetic learning can inform scientific ways of knowing. Beth and Max analyzed these dynamics through the 'Stand Up for Climate Change' initiative - a multi-modal experiment in sketch comedy, stand-up and improvisation involving undergraduate students, and an international video competition - that we have ongoing through ITG here at the University of Colorado. They found that progress is made along key themes of awareness, efficacy, feeling/emotion/affect, engagement/problem solving, learning and new knowledge formation, though many challenges still remain.

'Evaluating the Perils and Promises of Academic Climate Advocacy'

Boykoff, M. and Oonk, D., 2018. *Climatic Change*, <https://doi.org/10.1007/s10584-018-2339-3>

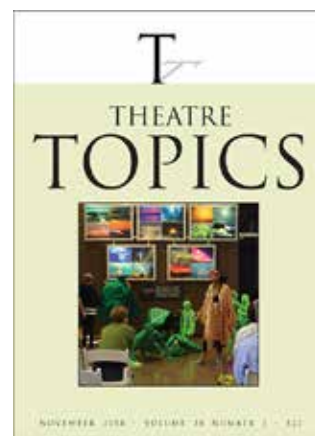
In this article, Max Boykoff and David Oonk examined the central questions 'what are causes and consequences of academic climate advocacy in contemporary times?', 'should it be celebrated and pursued, or derided and

eschewed?' and 'does advocacy in various forms tarnish or enhance the reputation of science?'. They conducted a survey of US-based natural- and social-science climate researchers/scholars and analyzed interviews from an ITG partnership with the 'More Than Scientists' project. Among their findings, there was broad agreement that climate change is a pressing issue, yet among social scientists, women are more likely to agree that advocacy should not be criticized than their male social scientist counterparts. Furthermore, younger respondents were more likely than older respondents to be compelled to change by advocacy from someone with a smaller carbon footprint. Meanwhile, social scientists were more likely than natural scientists to be compelled to change by someone with a smaller carbon footprint. Max and David concluded that ongoing conflation of 'advocacy' overall generates a need for ongoing efforts to improve understandings of distinctions between different kinds of advocacy (e.g. between advocacy for evidence-based climate science and advocacy for particular policy outcomes).

'Youth Shine in Performance for Resilience'

Osnes, B., 2018. *Theatre Topics* 28(3), 191-202, <https://doi.org/10.1353/tt.2018.0043>

This article by Beth Osnes demonstrates the efficacy and value of using performance for including the contributions of adolescents, primarily ages 9-14, to their city's plan for resilience, especially related to issues of energy and climate. It tells the story of the ITG tour of the original musical, Shine, and the lessons learned from the many communities that performed Shine as a way to include youth voices in creating desirable futures.



STUDENT SPOTLIGHT



Photo above: CU Boulder graduate student Molly McDermott installs old nests in a sculpture built by Aaron Treher as part of an experiment to test when Barn Swallows visit the structure. Photo: Patrick Campbell.

Molly McDermott is a PhD Student in the Safran Lab (Ecology & Evolutionary Biology) studying interactions between migration and mating behavior in barn swallows.



Photo below: CU Boulder graduate student Molly McDermott (left) [along with Sheela Turbek (right)] fit a Barn Swallow with a geolocator tag at a colony in Hygiene, CO. These tags will store data on an individual bird's movements during migration and the non-breeding season. Photo: Nancy Tankersley.

In Molly's words:

"I have long been fascinated by animal adaptation. Growing up in Alaska, I observed moose, chickadees, and ptarmigan. I marveled at their ability to survive harsh winters and put a great deal of energy into antlers, songs, and colorful plumage. My current field work focuses on tracking individual barn swallows - familiar farm residents here in Colorado - to measure how wintering conditions affect breeding performance. In my master's research, I studied how climate-driven vegetation change in the Arctic may impact insects and the migratory songbirds that depend on them to feed nestlings.

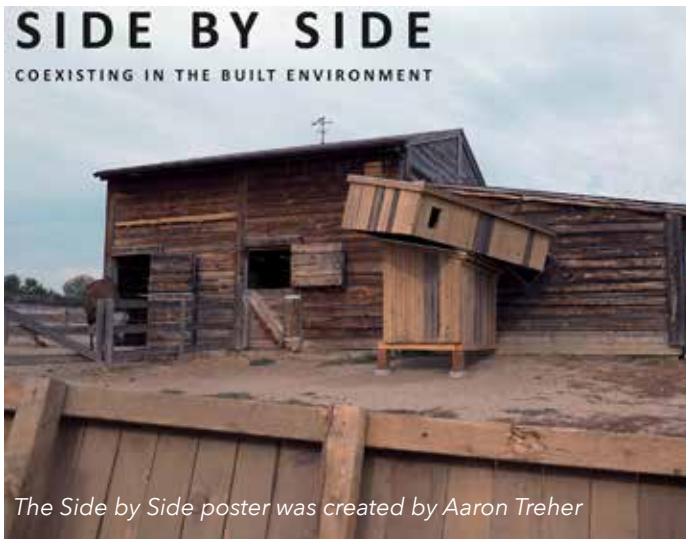
In addition to my biological interests, I have a background in music and I'm interested in communicating scientific information via creative disciplines. This past summer I had fun collaborating with Aaron Treher (Art & Art History) and Rebecca Safran (Ecology & Evolutionary Biology, Inside the Greenhouse) on creative barn swallow habitat. Aaron built a sculpture with rural building styles and materials, intended for both humans and birds to use. I tested under what conditions barn swallows visited the sculpture. Our project culminated in "Side by Side", a public outreach event sponsored by NEST Studio for the Arts and Inside the Greenhouse."



EVENTS HIGHLIGHTS

Side by Side

In early September, ITG co-hosted an event to highlight a science-art collaboration. This event was organized by Molly McDermott (PhD student, Safran Lab) and a recent graduate of the CU MFA program in sculpture, Aaron Treher. Open to the public, the event took place on the Cargill Ranch in Longmont, CO and highlighted Treher's living sculpture and Safran's research program on barn swallows. The sculpture was installed adjacent to a barn where Safran and her team have been studying barn swallows for about ten years. The event began with a series of short talks, including by Richard Cargill (landowner, founder of the Save Our St Vrain Valley (SOSVV)) and members of the Safran group, who talked about both local and international research on barn swallows. ITG's Beth Osnes led a group dance to commemorate the art-science collaboration that is at the core of ITG's mission. Attendees were then invited to have lunch and explore the sculpture as well as various scientific posters and to work on craft projects including nest construction and postcard making.



Molly McDermott (left), Aaron Treher (center left), Rebecca Safran (center right), and Richard Cargill (right). Photo: CU photographer Patrick Campbell.

Carbon Neutral Cities Alliance

Also in early September, the City of Boulder, the University of Colorado and the Carbon Neutral Cities Alliance (<https://www.usdn.org/public/page/13/CNCA>) hosted a local climate action town hall in Boulder's local radio and community center, eTown. At the event, representatives from cities including Copenhagen, Rio de Janeiro, Melbourne, New York City, Oslo and Yokohama discussed how their communities are addressing climate change. Several cities presented video shorts demonstrating examples of local climate innovations. ITG co-sponsored the event. Beth Osnes spoke on behalf of ITG. Phaedra Pezzullo spoke on behalf of the other event co-sponsors, the Center for Communication & Democratic Engagement (CDE) and the Just Transition Collaborative (JTC). The event emphasized how local work in one city may be shared globally through global networks of researchers and practitioners, as we collectively attempt to address the challenges we face with community and laughter.



Carbon Neutral Cities Alliance reception where Beth Osnes spoke to attendees about ITG and Phaedra Pezzullo represented CDE and JTC. Photo: Max Boykoff.



Beth Osnes (left), Becca Safran (center) and Max Boykoff (right) at the Carbon Neutral Cities Alliance gathering in Boulder, Colorado.



Mark Chambers, NYC Mayor Chief Sustainability Officer, shares humor and climate solutions. Photo: Phaedra C. Pezzullo.

EVENTS HIGHLIGHTS

Young Women's Voices for Climate

In November, Young Women's Voices for Climate sang and danced their own rousing version of "What's Climate Got to Do with It?" along with personal declarations on their views on climate.

Young Women's Voices for Climate is a part of Beth Osnes' research with Chelsea Hackett of New York University to use performance-based methods to support young women in empowering their own voices. Young Women's Voices for Climate combines the creative work/research of Osnes on young women's vocal empowerment with creative climate communication through ITG. Osnes meets with a Boulder group of nine young women once a week to use their voices to speak up for climate.

They performed as an opening for a lecture entitled "Young People and Climate Change Communication: On the Importance of Taking Account of Emotions & Coping Strategies" by Dr. Maria Ojala, Associate Professor at Örebro University, Sweden. This event took place in the Sustainability, Energy and Environment Complex at CU. Having young people there at the event sharing their feelings and emotions about climate change through performance supported the value of Ojala's research and deepened the experience of the event for most everyone. For the girls, it was empowering to be heard by the audience of over 100 people.



Members of Young Women's Voices for Climate along with Dr. Maria Ojala (center right).



Members of the Young Women's Voices for Climate Change performing in November.

Xiuhtezcatl Martinez

In December, Xiuhtezcatl Martinez (<https://www.earthguardians.org/xiuhtezcatl>) visited the CU Boulder campus. Through the event sponsored by ITG, he spoke to about 400 students, staff and faculty on campus as part of the 'Introduction to Environmental Studies' course at CU. Xiuhtezcatl describes himself as a teenager struggling to navigate a world facing the challenges of climate change. However, he is also an indigenous climate activist, hip-hop artist, and powerful voice on the front lines of a global youth-led environmental movement. And he is Earth Guardians Youth Director: <https://www.earthguardians.org>. Xiuhtezcatl is currently a lead plaintiff in a youth-led lawsuit against the federal government for their failure to protect the atmosphere for future generations. Some of his fellow plaintiffs joined Xiuhtezcatl for the CU talk.

Xiuhtezcatl has spoken around the world, from the Rio+20 United Nations Summit in Rio de Janeiro (2012), to addressing the General Assembly at the United Nations in New York city. So his visit to CU was a great opportunity for attendees to hear his inspiring words. As a leader for his generation and others to come, educating about the state of the planet, his talk was an inspiration to those in attendance.



Xiuhtezcatl Martinez and fellow Earth Guardians speaking at CU. Photo: Katie Weeman.



Xiuhtezcatl Martinez (center left) with ITG co-directors Max Boykoff (left), Becca Safran (center right) and Beth Osnes (right).

ANNOUNCEMENTS

ITG Comedy & Climate Change Short Video Competition 2019

In this 3rd annual competition, we seek to harness the powers of climate comedy through compelling, resonant and meaningful videos - up to 3 minutes in length - to meet people where they are, and open them up to new and creative engagement. Successful entries will have found the funny while relating to climate change issues. Each entry will be reviewed by a committee composed of students, staff and faculty at CU Boulder. First prize will win US \$400, second prize earns US \$250 and third prize earns US \$100. Deadline for entries is April 15. See our webpage for more details about how to apply and other restrictions: <http://www.insidethegreenhouse.org/node/3557>.



ITG 'Drawdown Act Up' project mentioned by Paul Hawken at the 'Drawdown Learn' conference.

Ongoing information-sharing, talks and workshops

This fall, Inside the Greenhouse co-directors have participated in a number of information-sharing workshops and have given many talks involving creative climate communications.

Among them, ITG co-director Rebecca Safran spent a good bit of the fall conducting data analysis, manuscript preparation, some travel for fieldwork, collaborative research, and speaking events. Of note, in November Becca gave a presentation as part of the Kansas State University's Science Communication annual conference titled 'The Art of Science Communication Through Story and Film'.

In September ITG co-director Max Boykoff gave an invited talk highlighting ITG as part of a workshop dubbed 'Narratives, New Media and Mass Communication'. This was hosted by Chatham House and Leo DiCaprio Foundation' and took place as part of 'Climate Week'

activities surrounding the United Nations General Assembly meetings in New York. Also in September, Max delivered an invited presentation about ongoing ITG comedy and climate change efforts, as part of a conference called 'Unnatural Disasters' at the University of Illinois.

In October, ITG co-director Beth Osnes presented and participated in the 'Drawdown Learn' conference at the Omega Institute in New York. Drawdown has published the book *Drawdown: The Most Comprehensive Plan Ever to Reverse Global Warming* (<https://www.drawdown.org>) that lists and explains impactful solutions to climate change. At their conference, two hundred people from around the country participated in three days of workshops, talks, and panels to work to activate Drawdown solutions to climate change through education. This participation was part of a continued collaboration called 'Drawdown, Act Up' which supports students in designing embodied activities/games and skits to activate Drawdown solutions for youth.

ANNOUNCEMENTS

Also in October, ITG co-directors Max Boykoff and Phaedra Pezzullo co-presented with climate scientist Prof. Katharine Hayhoe a workshop at the University Cooperation for Atmospheric Research (UCAR) Annual Members Meeting titled “When Facts Are Not Enough: How to talk to people about climate change”. Phaedra and Max were excited to engage this community the week after the 2018 IPCC report was released. Participants engaged in discussions about how they are perceived publicly, using social media in effective ways, and adapting messages to connect with audiences rather than using the outdated information deficit model of communication, which assumes universal messages and one-way communication.

In recent months, ITG co-director Phaedra Pezzullo delivered talks in Shanghai and Beijing. Then in November, as Director of the Center of Communication and Democratic Engagement, she hosted faculty from Shenzhen University (SZU) of China, through a program co-sponsored by the National Communication Association (organized by the CU Denver Department of Communication), to talk about the art and science of climate communication.

Taking advantage of interdisciplinary initiatives at CU Boulder, she brought visitors to tour: (1) the NEST exhibition Embryonic (provided by Jorge Pérez Gallego, Ph.D. in astronomy, M.F.A. in design), which includes an emergent student collaboration to design activated carbon air purifiers for nail salons and the better known time lapse video work of melting glaciers from James Balog; and (2) the CU Art Museum exhibit, Documenting Change: Our Climate, The Rockies (provided by Curator Hope Saska, PhD), which considers how maps, photography, and paintings of the past might not only be aesthetically compelling, but also provide insight to changing landscapes.



Max Boykoff (left), Phaedra Pezzullo (center), and Katharine Hayhoe (right) presented at the University Cooperation for Atmospheric Research (UCAR) Annual Members Meeting this fall.



Prof. Pezzullo gave SZU visitors a sneak peek at the coedited collection she is working on related to China and green communication. One chapter of particular interest was a comparison of polling in China and the United States on public opinion about climate change. Photo: Tiara Na'puti.



Jorge Pérez Gallego describes a piece involving acorns as indexes for trees to visitors from SZU. Photo: Tiara Na'puti.

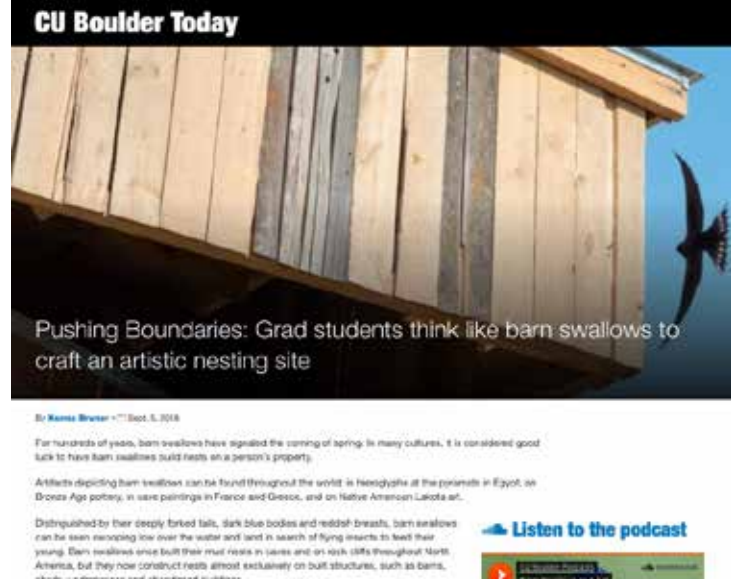


A graduate student from China studying in Denver and a graduate student from Brazil studying in Boulder enjoyed talking about pandas. Photo: Tiara Na'puti.

ANNOUNCEMENTS

ITG in the news

- The Political Geography paper by Max and Beth was highlighted on Colorado Public Radio on September 26, 2018.
- Inside the Greenhouse was highlighted in a September 5, 2018 CU Boulder Today article: Pushing Boundaries: Grad students think like barn swallows to craft an artistic nesting site by Kenna Bruner: <https://www.colorado.edu/today/2018/09/05/pushing-boundaries-grad-students-think-barn-swallows-craft-artistic-nesting-site>
- Inside the Greenhouse was highlighted in a August 27, 2018 Sierra Magazine article: A Theory of Climate Change—and Climate Wonder—for the Classroom by Jonathan Hahn: <https://www.sierraclub.org/sierra/theory-climate-change-and-climate-wonder-for-classroom>



Going forward, you can also follow us via Twitter (@ITG_Boulder), Instagram ('everydayclimate') and Facebook:

<https://www.facebook.com/Inside-the-Greenhouse-at-CU-Boulder-1267256946701231>

More information can be found on our website:

<http://www.insidethegreenhouse.org>

ABOUT US

Creative framing and storytelling of issues surrounding climate change through video, theatre, dance, and writing can connect a wider audience to the deep and pressing need to address climate change. Project leaders Max Boykoff (Associate Professor, Environmental Studies; CIRES Fellow), Rebecca Safran (Associate Professor, Ecology and Evolutionary Biology), Beth Osnes (Associate Professor, Department of Theater and Dance) and Phaedra Pezzullo (Associate Professor, Department of Communication) have been producing events and classes over the past six years under the banner of the 'Inside the Greenhouse'. Support for this work catalyzes creative climate communication and builds capacity among CU Boulder undergraduate and graduate students in particular. Our efforts to engage our students, those working at the science-policy interface, and the public alike seek to help concerned make climate change meaningful in the lives of everyday people. Students are involved directly and collaboratively connecting work in the classroom to applied contexts.



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