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To date, challenges associated with climate change have continued to impact all aspects of life. As 2019 comes to a close, we acknowledge that the collective scale of our creative efforts to confront the causes and consequences of a changing climate has not been commensurate with the scale of these intersectional climate challenges.

However, in partnerships and spirited collaboration with others around the world such as frontline communities, youth and decision-makers at many scales, we at Inside the Greenhouse (ITG) have continued to build momentum and hope as we work to catalyze positive changes that help close this climate action gap.

Clearly we do not and cannot do this alone. We continue to nurture research and practitioner alliances so we can more fully address these essential collective action challenges.

As the decade comes to a close, we share with you some of our ongoing research outputs, activities, aspirations and ambitions. In so doing, we also ask for your support so we can increase our impact in 2020 and beyond. Please enjoy the newsletter and consider donating to ITG.

Visit <https://giving.cu.edu/fund/cires-inside-greenhouse-gift-fund> to provide a tax-deductible gift before 2019 comes to a close. Any amount helps us as we continue to work to communicate about the critical importance of climate awareness, engagement and action in the 21st century.

Happy Holidays,  
Phaedra Pezzullo, Rebecca Safran, Beth Osnes 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>

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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>

## COURSE SPOTLIGHT



CU Student film festival which featured students' branding solutions regarding climate change. Photos: Andrew Anthony Patra.

### Art of Science Communication (taught by Becca Safran)

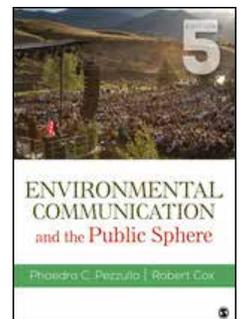
The Art of Science Communication Class: Branding Climate Change was co-taught for the second time by Dr. Rebecca Safran (Ecology and Evolutionary Biology) and Dr. Burton St. John III (Advertising, Public Relations and Media). 26 students from different schools and departments across campus worked on a number of exciting, interdisciplinary individual and group projects. The final exam for this class took the form of a film festival which was held in the University of Colorado's Natural History Museum on Friday, December 13 where eight student groups showed their final branding climate change projects. Each group presented their intentions for their projects before viewing their 2.5-minute films. A panel of judges, including ITG co-directors Dr. Beth Osnes and Phaedra Pezzullo and NEST (<https://www.colorado.edu/nest>) co-director Dr. Erin Espelie and longtime collaborator, Dr. Tyler Jones of INSTAR chose the top three films of the festival: "What do you know about the birds and the bees", "Sea Level Rise: Coming to an Inland City Near You", and "Climate Change and Mental Health". We thank Suzanne Balog, Events and Communications Specialist of the CU Natural History Museum and NEST Studio for the Arts for organizing and co-sponsoring the event. Feel free to check out these amazing student projects: <https://drive.google.com/drive/folders/19sytkUCQnxdLzN3GHjApv8lclj2XFnpKU>

### Environmental Tourism (taught by Phaedra Pezzullo)

Prof. Pezzullo taught a new senior seminar on environmental tourism this fall. Students examined and produced work about outdoor tourist selfies, environmental tourist destinations, and touring the climate crisis. As a capstone, the students explored how tourism impacts climate change, which tourist destinations are becoming impacted by climate change, and how certain destinations are becoming more popular as "last chance" experiences before climate irreparably transforms them.

### Environmental Communication (taught by Phaedra Pezzullo)

This course, based on Phaedra's co-authored textbook *Environmental Communication and The Public Sphere* (now in its 5th edition!): <https://us.sagepub.com/en-us/nam/environmental-communication-and-the-public-sphere/book252670>. In this class, Phaedra invited students to bring course readings and discussions in their own words, grounded in topics that move them.



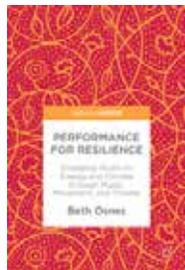
## RESEARCH SPOTLIGHT

We have continued to produce peer reviewed research outputs as an integrated component of our ongoing experimentations and explorations. Among them, co-Directors Phaedra Pezzullo and Max Boykoff have recently published articles in the new *Journal of Environment and Media*.

**'Between crisis and care: Projection mapping as creative climate advocacy'** by Phaedra Pezzullo assesses how environmental advocates have turned to projection mapping (also known as 'guerrilla projections', 'digital graffiti', etc.) to foster an ethic of care during this time of climate crisis. Her essay focuses on two 2015 projection mapping events: one in Vatican City and the other in Paris. She writes about how, although imperfect, projection mapping may orient attention, transform locations into public spaces for political engagement and cultivate collective imaginaries. Phaedra argues that by rethinking environmental media between climate crisis and care, we may contribute critiques but also regenerating creative communication for a just and vibrant future. Read more: <https://www.ingentaconnect.com/contentone/intellect/jem/2020/00000001/00000001/art00006>

**'Digital cultures and climate change: here are now'** by Max Boykoff explores how we are living through momentous times as we confront issues surrounding digital cultures and communications about climate change. Max posits that there is urgency derived from our recognition that climate change is 'here and now'. He points out that inequalities of power and access - in both digital cultures and in a changing climate - disadvantage individuals and communities who seek to take actions in the face of climate threats. Via digital cultures, Max argues that creativity is expanding rather than retracting from the challenge of meeting people where they are on climate change in the twenty-first century. Yet he points out that amid signs of progress and hope, there is much more work to be done. Read more: <https://www.ingentaconnect.com/contentone/intellect/jem/2020/00000001/00000001/art00003>

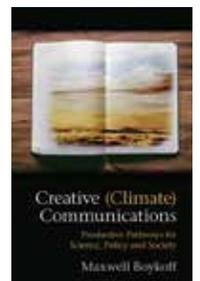
Continuing to develop curriculum based on co-Director **Beth Osnes'** book **'Performance for Resilience Engaging Youth on Energy and Climate through Music, Movement, and Theatre'** (<https://www.palgrave.com/gp/book/9783319672885>) and accompanying performance **Shine** (<https://insidethegreenhouse.org/shine>), Environmental Studies PhD student, Patrick Chandler and Beth have continued to partner with the Jefferson County School District. This represents a collaboration between two CU Boulder departments



Beth Osnes, Amanda Giguere, and Patrick Chandler at the Engaged Scholarship Consortium conference in Denver October 2019.

and the Jefferson County (JeffCO) School District (<https://www.jeffcopublicschools.org>) that enabled the authors to coproduce an embodied exploration of fossils, energy, and climate for 4th/5th grade students in Colorado. This project addresses the current lack of embodied participatory learning that enhances retention and understanding of climate change. Over the past year, CU faculty, staff, and students teamed up with administrative staff and teachers in JeffCO to pilot the first draft of this new curriculum. In the next year ITG will continue piloting lessons with a diverse set of 4th and 5th grade JeffCO teachers and document the coproduction framework that enabled this work to be successful. This work is funded by the CU Office of Outreach and Engagement.

In addition, this fall Max has published a handful of short articles and commentaries associated with his book **'Creative (Climate) Communications: Productive Pathways for Science, Policy and Society'** that was published this Fall 2019: <https://www.cambridge.org/us/academic/subjects/earth-and-environmental-science/environmental-policy-economics-and-law/creative-climate-communications-productive-pathways-science-policy-and-society>. For example, he wrote a Spanish-language piece 'Comunicación creativa sobre el cambio climático' for the December issue of the Valencia, Spain-based *Metode* magazine (<https://metode.es/noticias/las-formas-infinitas-de-la-naturaleza-protagonistas-del-nuevo-numero-de-metode.html>), and a piece called 'Why we should laugh about climate change' for *The Conversation* (<https://theconversation.com/leave-em-laughing-instead-of-crying-climate-humor-can-break-down-barriers-and-find-common-ground-120704>), and a piece called 'How to Talk Effectively about Climate Change' for *Scientific American* (<https://blogs.scientificamerican.com/observations/how-to-talk-effectively-about-climate-change>).



## CONFERENCE SPOTLIGHT

### Project Drawdown Conference

In October, ITG was invited by organizers of the 'Drawdown Learn Conference' to facilitate a workshop in New York. Co-director Beth Osnes was joined at the conference by CU students Sarah Fahmy (Theatre PhD), Lianna Nixon (Education MA), Patrick Chandler (Environmental Studies PhD), and Emmet Norris (Geology BA). CU alum, Dr. Chelsea Hackett also contributed to the workshop and performance. The conference involved more than two hundred participants.

ITG contributions focused on performance-based spectacle as a method for youth engagement. At the conference, ITG also launched the open educational resource, *Drawdown, Act Up!* for creatively engaging students in communicating Drawdown solutions from 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. ITG research on this project showed that the use

of 'good-natured' comedy and fun helps young people process negative emotions regarding global warming, feeds hope, and sustains commitment to climate actions. Each of the activities was linked to 'grab and go' lesson plans and curricula that have been classroom- and field-tested and are therefore ready for easy implementation in the classroom or informal learning environment. This work utilized methods for embodied youth engagement in communication top climate solutions. Framing the workshop and other activities at the conference was a giant Moving Mural, the pieces of which provided the transitions between songs and skits and, when brought together, revealed a final culminating message. The Moving Mural was led by local artist and ITG collaborator Juliana Forbes. Juliana also painted the butterfly costume/puppets that ITG Young Womxn's Voices for Climate have used at public spectacles—at climate strikes, conferences, and beyond (see below for more). Moreover, the design gained inspiration from Stephen Duncombe's open-source book *Dream*: [http://www.stephenduncombe.com/wp-content/uploads/2012/12/Dream\\_final.pdf](http://www.stephenduncombe.com/wp-content/uploads/2012/12/Dream_final.pdf).



Performance of *Drawdown Act Up!* by Inside the Greenhouse at the Drawdown Learn conference in New York, October 2019.



Boulder Artist Juliana Forbes, painting a Wester Tiger Swallowtail butterfly (left) and a Mural (right) for the Drawdown Learn conference.

# EVENTS HIGHLIGHT

## City of Boulder Climate Mobilization Action Plan

**B**ackstage on Sept. 27, 2019 at the City Mobilization Action Plan (CMAP) launch, nine Boulder middle and high school aged girls awaited their cue. Among them, two were dressed as rolls of recycled toilet paper, one as an old growth tree, another as an explorer, and two more as a carrot and a snow pea. They were dressed to enact top solutions to climate change as identified by *Project Drawdown* (<https://www.drawdown.org>). Together they make up the group Young Womxn's Voices for Climate, a partnership between SPEAK and Inside the Greenhouse, which is a group that uses performance-based methods to engage youth in authoring and communicating ways to enact top climate solutions within our community.

With over two hundred people in attendance, they performed their run down of the top five Drawdown solutions. To dramatize Drawdown solution number five, Tropical Forests, they enacted a skit and a song, featuring an old-growth tree and two costumed rolls of recycled toilet paper, to convey how reduction in use of paper products can help preserve tropical forests. They were invited earlier to perform for a Boulder City Council meeting by Boulder's senior environmental planners on July 9, 2019 to convey their perspective on why the council should approve the request to revise our city's climate action plan. Set to the Lion King's song, "Can You Feel the Love Tonight?" they performed their own version of "Wind Turbines are Beautiful" costumed



Young Womxn's Voices for Climate performing at the City launch for the Climate Mobilization Action Plan.

as wind turbines. These young womxn remain a strong voice in our community bringing fun and creative energy to this conversation while enriching our city's plan with valuable youth perspectives.

## Young Womxn's Voices for Climate: Climate Change Theatre Action

**O**n November 20, nine young women performed two brief plays, *It Starts With Me* and *The Butterfly that Persisted* for the citizens of Boulder. Our city recently launched our city mobilization to revise our climate action plan. Performers were Eliza Anderson, Lola D'Onofrio, Finny Guy, Olympia Kristl, Ting Lester, Uli Miller, Lerato Osnes, Leela Stuede, and Sofie Wendell.



Photos from the Young Womxn's Voices for Climate: Climate Change Theatre Action on November 20.

## EVENTS HIGHLIGHT

### Fridays for the Future

This fall, ITG has helped organize and support youth voices for the campus Climate Strike, in solidarity with events around the world. In September, representing youth, Niko Striphas from Bear Creek Elementary gave his premiere comedy act, stating, "But seriously, most elementary schools in Colorado were built without air conditioning because it used to be cooler. My school doesn't have air conditioning, and—because of global warming—some days classrooms are as hot as 90 degrees. It's not all bad news though—on the upside, we can conserve water in the school garden by just using our sweat....Thank you for being such a nice crowd. Climate change is no joke—I just like to laugh." In the December event, Niko was pictured on the front page of the local *Daily Camera* (<https://www.dailycamera.com/2019/12/06/climate-change-activists-at-cu-boulder-proclaim-action-is-needed-now>), with his creative climate communications sign. Throughout these Fall events, Young Womxn's Voices for Climate group (led by co-Director Beth Osnes) participated in the rally.



Scenes from the Youth Climate Strikes in front of Norlin Library on the CU Boulder campus.



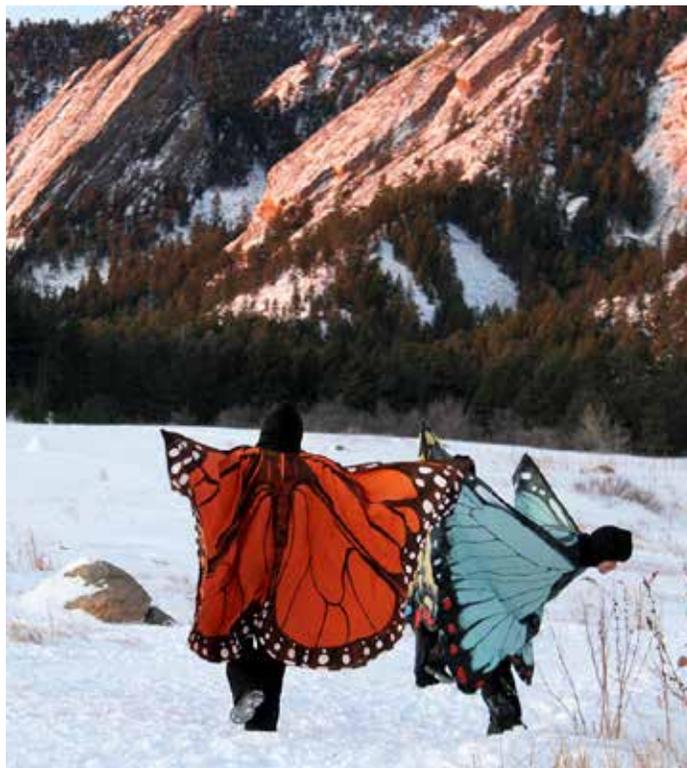
Climate Women's Voices spoke at the CU Boulder climate strike at CU Boulder. Photo: Ted Striphas.

## STUDENT SPOTLIGHT

Emmet Norris was the Fall 2019 intern for ITG. Among his many contributions, Emmet helped with preparations for the Drawdown Learn Conference in New York, mentioned above. He served as an enthusiastic thought partner in conceiving how to present the materials for our open educational resource entitled *Drawdown, Act Up! for creatively engaging students in communicating Drawdown solutions*: <https://insidethegreenhouse.org/content/draw-down-act>. He also worked with Ami Nacu-Schmidt in designing the grab-and-go curricula so that it is visually appealing and easy to follow.



His degree is a BA in Geology, where he focuses on the transport and fate of chemicals on the earth's surface using isotopic and chemical methods. He has researched carcinogenic chemical behavior in groundwater from industrial sources, the deposition of dust from global arid regions in high alpine soil systems, and organic aerosol production from agricultural burning. He is primarily interested in how modern climate change and human activity impact biogeochemical cycles and thus human health. He plans to continue studying aerosols, specifically investigating modern atmospheric dust systems, and how they are affected by and affect, human society.



Emmet Norris embodying a Blue butterfly with Sarah Fahmy as a Monarch at Chautauqua Park.

# ANNOUNCEMENTS

## Ongoing information-sharing, talks, festivals 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, in October ITG co-director Rebecca Safran and St. John III hosted KEH camera (<https://www.keh.com>) to Boulder to launch a collaborative project with the students in the 'Art of Science Communication' class.

The students met with CEO, Jon Safran and CCO, Danielle Porto Parra, to introduce the nuts and bolts of KEH's rebranding exercise, which includes a better highlight of their role in the circular and sustainable economy. The class then delivered eight, short branding films to KEH in early November; three of which will be utilized and featured in KEH media.

In December ITG co-directors Rebecca Safran, Phaedra Pezzullo, Beth Osnes and others participated in the final film festival event for the 'Art of Science Communication' class. This was the 10th film festival run by Rebecca Safran and her co-teachers over the last decade. In addition to the enrolled students, the audience consisted of individuals from within and outside of the CU community.

Throughout the fall, ITG co-director Max Boykoff delivered invited talks highlighting ITG at the Denver Museum of Nature & Science (<https://www.dmns.org>), a Center for a New Energy Economy event (<https://cnee.colostate.edu>) in Breckenridge, the Society of the Social Studies of Science conference in New Orleans and the Genome British Columbia meeting in Vancouver British Columbia.

Also this Fall, ITG co-director Beth Osnes worked with the sustainability offices at the University of Wisconsin, Milwaukee and Barnard College to use the medium of green suits to help students draw attention to sustainability projects on their campuses. This work will continue into the (northern hemisphere) Spring Creative Climate Communication course in a comprehensive visual campaign 'green' lighting the wide array of sustainability initiatives on the CU campus (so stay tuned for more about this in the next newsletter).



Rebecca Safran and St. John III hosted KEH camera to CU Boulder to launch a collaborative project with the students.



Students at Barnard College collecting embodying a single leaf as a form of climate communication through the ITG Green Suits project.

## ANNOUNCEMENTS

Also, on November 22, ITG co-sponsored a CU Boulder campus talk by Dean Jim White on climate change. He presented a talk entitled *'Can Humans and Nature Co-Exist? The Fundamental Challenges and Opportunities of Sustainability and Climate Change'* is the inaugural talk in the Boulder Faculty Climate Science and Education Committee biannual lecture series highlighting climate research by University of Colorado faculty.

Right: ITG co-director Max Boykoff introducing Dean White at the November 21 event. Photo: Phaedra Pezzullo.



Dean Jim White speaking at Old Main Chapel at CU Boulder on 'Can Humans and Nature Co-Exist?'. Photo: Ami Nacu-Schmidt.



CU Dance major Devon Ostheimer expressing the spirit of sustainability at CU. Photo: Lianna Nixon.

# ANNOUNCEMENTS

## Samplings of ITG in the news this Fall

- Rebecca Safran featured in 'Bird evolution in Asia shaped in part by giant plateau, study finds' in *Colorado Arts & Sciences magazine* November 21: <https://www.colorado.edu/asmagazine/2019/11/20/barn-swallow-evolution-asia>
- Beth Osnes quoted in 'A Little Humour May Help With the Climate Change Gloom' by Lakshmi Magon in *The Conversation* November 10: <https://theconversation.com/a-little-humour-may-help-with-climate-change-gloom-125860>
- Phaedra Pezzullo quoted in 'Travelers behaving badly: Is the conduct of tourists getting worse?' by Tamara Hardingham-Gill on *CNN International* October 9: <https://www.cnn.com/travel/article/tourists-behaving-badly/index.html>



Bird evolution in Asia shaped in part by giant plateau, study finds



A Little Humour May Help With Climate Change Gloom



Creative (Climate) Communications

- Patrick Chandler, Max Boykoff, and Beth Osnes highlighted in 'This Researcher Thinks It's OK to Joke About Climate Change' by Jeff Turrentine in *Natural Resources Defense Council magazine* October 25: <https://www.nrdc.org/onearth/researcher-thinks-its-ok-joke-about-climate-change>
- Max Boykoff interviewed about his book 'Creative (Climate) Communications' on 'Colorado Matters' with Ryan Warner on Colorado Public Radio September 23: <https://www.npr.org/podcasts/413443142/colorado-matters>

## Additional Announcements

This fall ITG thanks new donor Ms. Patricia Ohmen Sheffels from Bellevue Washington for her generosity. The ITG team was met with Pat during her visit to CU this fall term, along with CU Foundation specialist Michelle Gaffga. Pat graduated from CU Boulder in 1958 with a degree in Geography. Pat has taught in the classroom, was a city planner for Bellevue, Washington, and has traveled the world. ITG appreciates Pat's passion and determination to get involved. Pat credits her degree in geography for becoming interested in the environment and climate change. ITG is extremely grateful for our introduction to and new relationship with Pat!



Phaedra Pezzullo (left) and Rebecca Safran (right) with Pat Sheffels (center) and new ITG hats.

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>

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## 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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