ATLAS Institute Recognition Ceremony
Friday, May 15, 2020
ATLAS Institute’s Programs of Study

Doctor of Philosophy, Technology, Media & Society
Master of Science, Technology, Media & Society with tracks in
Information & Communication Technology for Development
Creative Technologies + Design
Bachelor of Science, Technology, Arts & Media
Minor, Technology, Arts & Media

Doctoral Dissertation Abstracts

David Oonk
Assessing the Present and Future of Fracking Governance: Science, Expertise, and Policy of Fracking in Colorado’s Denver Julesburg Basin
The recent extraction of shale oil and gas through fracking in the United States has been responsible for a domestic production boom over the last two decades. There are long-term questions about greenhouse gas emissions related to fracking and questions whether this revolution is reinforcing US dependence on fossil fuels. These extraction technologies have changed the landscape of modern fossil fuel extraction where oil and gas fields are peppered with thousands of dispersed wells intermixed with residential communities. These conflicts present short-term questions about the impact of fracking emissions on nearby communities. Methane and air toxics emitted by wells that employ fracking create challenges for policy-makers considering climate goals and public health concerns. These emissions are invisible to the naked eye and their impacts are difficult to detect. Thus, taking measurements, analyzing data, and assessing the risks of fracking requires expertise from many different groups. Scientists, engineers, researchers, and experts from academia and industry interact with policy-makers and inform fracking governance and regulation. This research focuses on Colorado’s Denver Julesburg basin and looks at a case study of how the state regulates and addresses the present and future challenges of emissions related to fracking and how science and expertise inform those decisions. Fracking in Colorado presents a unique case to study the science and policy of a politically contentious and ‘risky’ technology.
Advised by Dr. Max Boykoff

Lila Finch
Luminous Science: An Investigation of Transdisciplinary Education
In most public education in the United States, we organize teaching and learning around siloed disciplines. Most educational research has focused on improving learning outcomes within those disciplines. However, this disciplinary focus creates dividing lines that limit the ideas, practices, representations, and identities that might be applied or acceptable in the classroom. My research investigates how to reimagine learning environments to be transdisciplinary in ways that bring together the arts, sciences, and computing in school-based education. This work begins with an overview of a pedagogical meta-design, called Luminous Science, and a concrete design instantiation of that meta-design, co-developed with teachers. The resulting classroom implementations are described, including the characteristics of students’ projects and teachers’ facilitation of those projects that were associated with greater transdisciplinarity.
Advised by Dr. Ben Shapiro

Clement Zheng
Everyday Materials for Physical Interactive Systems
We live in a built environment shaped by a wide range of materials engineered for different purposes. Computers have permeated many aspects of this built environment, from living spaces to clothing. This ubiquitous computing context requires a new way of looking at the materiality of interactive systems. I am particularly drawn towards everyday materials as a resource for designing and making physical interactive systems—a subset of computational composites where physical materials come together in a coherent assembly for human interaction. In my explorations, I leveraged everyday materials to surface new techniques for building computational composites. Inspired by the success of these explorations, I facilitated a class with graduate students who explored everyday materials for interaction design. In this dissertation, I detail the material-driven projects I engaged with as a researcher and facilitator. From these material-centered projects, I observed that everyday materials offer a rich variety of creative affordances and are accessible to designers and makers. However, I also observed that material-centered design projects are complex—requiring designers to navigate material, environmental, and contextual encounters to arrive at meaningful outcomes. I reflect on the opportunities and challenges that everyday materials offer for building physical interactive systems, and propose a system for organizing the different facets that designers engage with during material-centered design. Furthermore, I discuss my insights for facilitating material-centered projects, including strategies for catalyzing how designers “see” materials, the external representations that a designer makes, as well as the tools employed for investigating everyday materials.
Advised by Dr. Ellen Yi-Luen Do
Spring 2020 Degree Candidates

Doctor of Philosophy | Technology, Media & Society

Lila Finch                                David Oonk                                Clement Zheng

Master of Science | Technology, Media & Society

Phelan Bowie CTD                          Cassandra Goodby CTD                      Sam Miller CTD
Cody Candler CTD                          Farjana Ria Khan CTD                      Celeste Moreno
Gabriel Chapel CTD                        Grace Kroeger CTD                          Rona Sadan
Bryan Costanza CTD                        Ben Lee ICTD                               Mariana Tamashiro CTD
Maria Deslis CTD                          Jack Lewis CTD                             Christopher Vecchio CTD

Bachelor of Science | Technology, Arts & Media

Sophie Adams                                Hunter Haller                           Alexander Nelson
Joshua Aguilar-Wynn                         Tristan Hanna                           Kathy Nguyen
Jonathan Allen                              Damian Howard                           Nolan Ollada
Sahil Bajaj                                  Weiliang Jin, with honors
Divya Bandreddi                             Sky Johnson
Nathanael Bennett, summa cum laude          Thomas Kirby
Serena Buxton                                Ariel Klebanov
Allison Casey                               Josephine Klefeker
Jacky Cheung                                 Madeline LaMee
Dongjoon Choe                                Hai Li
Brittany Choy, cum laude                    Yamei Liao
Isabella Colosimo                           Xiang Luo
Xavier Corr, magna cum laude                Jennifer Mah, magna cum laude
Kenneth Cox                                 George Marshall
Jordan Denning, summa cum laude             Jack Marty, cum laude
Diana Duffy, magna cum laude                Napass Masathienvong
Sarah English, cum laude                    Kara Metcalfe, summa cum laude
Kyle Faucher, summa cum laude               Laura Murray, with honors
Alexander Fiel, magna cum laude             Jared Myers
Kirsten Garthwaite                          Jordan Nahabetian
Benjamin Gillespie                          Varun Narayanswamy, with honors
Joss Gitlin                                  ""
Candidates listed on this program have applied for graduation.
Publication in this program is not official certification that degree requirements have been met.

Minor | Technology, Arts & Media

Eleanor Alicea | Taylor Ehrlich | Megan A. Nyvold
Austin Argueso-Nott | Kaitlyn N. Engelson | Natalie K. Ocampo
Scott Beck | Ian N. Fauconier | Aidan Oconnor
Johanna E. Bellig | Graham W. Fee | Virginia Olmstead
Payton N. Bieker | Kyle Fowler | Cosmo Pallarito
Lanea B. Blackburn | Grace E. Francis | Hailee Pritchard
Evan D. Boretz | Katelyn R. Gelfand | Xinru Qian
Danielle K. Brown | Joseph A. Harig | James H. Ratzlaff
Elissa Buck | Katherine Harper | Madelyn L. Salvucci
Lara R. Buri | Claire E. Hentzen | Kelsey A. Schaefer
Sydney Burmood | Andrea M. Invernizze | Madeline Simard
Melissa Caliguire | Analise R. Iwanski | Valerie K. Sonnenberg
Nathan R. Cashmer | Yujie Jing | Natalie K. Swartwout
Nicole Cattin | Alexa G. Kane | Paige A. Tapia
Elliot Charland | Sarah M. Klingensmith | Morgan L. Walton
Katharine M. Chester | Rachel M. Kubitschek | Zora Watters
Cooper J. Colvig | Tanya W. Leung | Spencer A. Wegner
Abigail G. Cotter | Nicole P. Maggio | Sara Wilson
Madeline M. Cupchak | Stevan Maksimovic | Olivia J. Wohlner
Katherine Davis | Gabriela A. Manchano | Anna S. Wolniewicz
Olivia R. Dominguez | Mesa L. Martorell | Hannah L. Young
Wangyingshuai Dong | Rachel E. Matthews | Alanna M. Zelac
Johnathan H. Dressel | Peyton G. Miller | Rachel M. Zetzman
Pranathi Durgempudi | Skye T. Monroe | Yuan Zhuang
Robert B. Eckles | Hannah M. Morrison |