

Comparative Media Studies | Writing

# *In Medias Res*

2019

CELEBRATING TWENTY YEARS OF CMS



Massachusetts  
Institute of  
Technology

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## IN MEDIAS RES

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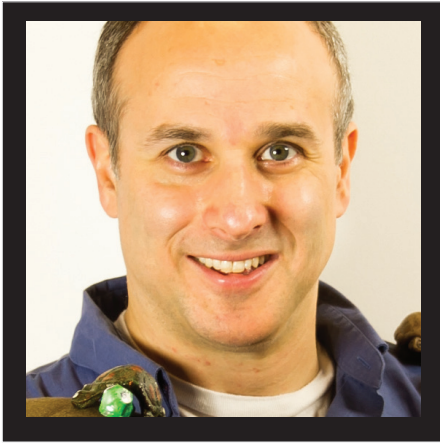
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# TWENTY YEARS

By Professor Eric Klopfer



Welcome to the 2019/20 academic year at Comparative Media Studies/Writing. The last months have been a filled with wonderful moments as we celebrate the twentieth anniversary of the Comparative Media Studies program. It's one that even before its merger with Writing and Humanistic Studies in 2012 had become an enormously influential collection of scholars and practitioners.<sup>1</sup> In part because it was a "program" long before it became a permanent humanities section, it has a chance to experiment with a model not seen in the humanities at MIT or, really, at other schools. Namely, under early leadership by professors Henry Jenkins and William Uricchio, it went beyond the classroom and created research groups funded by both internal and outside sponsors — foundations, companies, government agencies. That was partly to test and prove the worth of humanities research in having an effect beyond the academy but also partly out of simple necessity. We wanted to cover master's students' costs, and you do that by providing them with research assistantships that others value. Over the years that has meant correctly anticipating all kinds of

new research topics with applications beyond a university campus. Just a sample: experimentation in uses of play, games for education, digital humanities, civic media, V.R. in documentaries, artistic applications of A.I., new approaches to teaching digital literacy, and using MOOCs to train educators.

In the same vein, CMS has pushed the field forward through ambitious things like large conferences (Media in Transition, the Future of News and Civic Media, Futures of Entertainment) and more targeted ventures like our visiting scholars and postdoc programs, which have given space for people to develop their research at the same time they cross-pollinate ideas and approaches with our faculty and graduate students.

None of this is to say success and growth over the last two decades was predictable, let alone a straight line. The steps taken to ensure the health of the program by merging with WHS is a story told well elsewhere, but the mini-stories in the next piece told by the people who have been here all twenty years is the first time we've highlighted the improvisation of the early days. All their stories have in common some version of "I was asked if I was interested, and I said yes, though, honestly, I had no idea how it would turn out."

But for a minute let's look at success using data points from CMS Day 1 versus today. It started off as a couple professors carrying over some of Literature's film and media studies subjects. But twenty years later it has been home to over six hundred people — graduate students, faculty, visiting scholars, administrative staff, and others — and that doesn't include undergraduates, who have provided incredible energy as majors, UROPs, and contributors to community initiatives like the Media Spectacle, which gave students a chance to screen their productions. And I mentioned conferences earlier but that's not to overlook the incredible number of other events we have hosted; a recent count put it at over seven hundred. Many of them have been collaborations with other departments and other schools, helping to give more weight to the *comparative* in our name. Many have been Independent Activities Period offerings,

which non-academic staff have often used to share their passions. And a few have been enormous public draws. I'm thinking of when we've hosted Neil Gaiman, the stars of Mystery Science Theater 3000, and GZA of the Wu-Tang Clan.

Of course you can also measure success in terms of funding. MIT as an institution, in particular our school's dean's office, has provided key financial support, but let's look just at external funding for research projects: by a conservative measure, it adds up to over \$36 million. Support from the National Science Foundation, MacArthur, Microsoft, and dozens of others has meant not only being able to generate high-impact research but fully fund every graduate student, nearly unheard of for humanities master's degrees.

About the CMS graduate program specifically, I should acknowledge the incredible quality of the scholarship produced by its students. I'm sure many of them would agree that the thesis requirement ("a substantial research paper or comparable exercise that satisfies MIT's scholarly standards and uses methods appropriate to the topic and fields") feels a bit like a Ph.D. dissertation compressed into two years, but the payoff is really something. Several theses have been expanded into books. A substantial number played a direct role in alums' landing their first post-graduate jobs. It's also a testament to the commitment shown by faculty thesis advisors, as well as readers who are often from outside MIT.

Last, I simply want to acknowledge how impressive this past year has been and what an honor it is to begin my term as Head following Professor Ed Schiappa's six years in this position. As you will see in these pages, CMS/W as a whole is a thriving community, with undergraduates winning writing prizes, faculty continuing to think through hard questions, and alumni making great leaps in their careers. Let's keep up the good work.

<sup>1</sup> Though this issue is focused on Comparative Media Studies, the history of the Writing program is just as interesting, with its key years being 1972, when it was begun as a "pilot", and 1977, when it was revised and formalized. Opinions about it ran hot. We will visit its story in a future issue, but for those interested, you should stop by MIT's archives and request the minutes of the May 18, 1977, faculty meeting, pages 9-22.

# THE 20TH ANNIVERSARY OF CMS

Andrew Whitacre with William Uricchio, Kurt Fendt, Philip Tan, Jim Paradis, and Edward Barrett

On the occasion of the Comparative Media Studies program's first decennial, back in 2009/10, we did a deep dive into its milestones. I have the commemorative publication<sup>1</sup> here on my desk. A timeline runs along the footer of eight pages, marking moments like faculty approvals for our degree programs, awarding of major funding for research projects, and our hosting of big conferences. Important stuff but mostly about nailing down a chronological history that, until then, hadn't been written out. Likewise, in pieces by Professor William Uricchio and then-Dean Deborah Fitzgerald, we reviewed the rationale for Comparative Media Studies. Let's describe those pieces' tone as "intellectual hagiography": that our bet was right, this place is great, and we knew all along it would be. And our bet *was* right. And this place *is* great. But, if we're honest, to say "we knew it all along" may have been a sleepy-cat-level stretch. It turns out Athena didn't leap fully armed from Zeus' head.

The default approach for this year's account would be to write an updated version of those tenth anniversary pieces, I guess with more humility given the existential challenges we faced that very year and that continued until our successful joining with Writing and Humanistic Studies in 2012/2013. But that would be treading the same ground. Reconsidering that piece today, it turns out the path we didn't take is perhaps more interesting: people chose to join CMS long before it was a fixed thing, and we never asked why.

To get a sense, I spoke with the five people who have been affiliated with CMS for all twenty years. What I found in talking at this personal rather than institutional level was that the draw of CMS was simultaneously more idealistic and pragmatic than we've described in the past.

Those five are Professors William Uricchio and Jim Paradis; lecturers Kurt Fendt and Edward Barrett; and alum and current research scientist Philip Tan. Together they give a sense of what it was like to found the academic equivalent of a start-up, with its mix of strategic successes and simple good fortune.

I'll start with Philip. A Singapore native, he came to MIT planning to study computer science. (While no surprise to anyone here, the number is nevertheless striking to many outsiders: more than a quarter of MIT undergrads pursue one of the Electrical Engineering and Computer Sciences majors, slightly more than all other majors in the School of Engineering combined.<sup>2</sup>) If you take 1999 as CMS's starting point, as we usually do, that's when Philip was a junior, and he knew by that point that he wanted to major in Comparative Media Studies...except, there wasn't a major yet. He instead declared what's called a "major departure". The School of Humanities, Arts, and

Social Science approved his proposal, a major he called "Film & Media Studies and Media Arts & Sciences". His proposal foreshadowed the official major that was to come. It included Literature subjects like the Film Experience, Introduction to Media Studies, Science Fiction, and Interactive and Non-Linear Narrative. And it effectively set a precedent for the interdisciplinary approach required in today's major — subjects from the Media Lab; Science, Technology, and Society; Acoustics, an EECS subject; and Foundations in the Visual Arts, an Architecture subject. Edward Barrett served as his advisor.

Philip's experience was also an example of a recurring theme here, how our lives seem to have intellectual gravity, not necessarily gravity in terms of seriousness but rather how it pulls people's outside interests in. Or more prosaically, other people need collaborators, and when they hear you share an interest, they jump at the chance to work together. Philip told me, "I'm just this dude hanging around [building] 14" — the campus home of most of MIT's humanities programs — "and I got roped into a lot of things." He said that being an undergrad concentrator at the same time the first couple classes of CMS graduate students came through meant there was "a tangle of both undergraduate and grad students who had this kind of peer-to-peer relationship." To compress the timeline a bit, while in the master's program Philip was able to work with Professor Thomas DeFrantz on incorporating in his interests in music, dance, and DJ'ing and his work in games. The latter eventually resulted in his 2003 master's thesis, *Tensions in Live-Action Roleplaying Game Design: A Case Study with the MIT Assassins' Guild*<sup>3</sup>, with Barrett again serving as his advisor. That, in turn, led to games research-focused opportunities after the master's program, including co-directing the Singapore-MIT GAMBIT Game Lab. When the grant for the lab ended in 2012, Philip stayed on to (among other things) co-teach one of our most popular subjects, CMS.608/CMS.864 Game Design. This, again, from someone who came to MIT expecting to study computer science.

Now to return to Ed Barrett. He's another one whose outside interests converged within CMS. A poet who joined MIT's Writing program in a year marked by disasters (*Challenger*, Chernobyl, Bill Buckner), triumphs (a flyby of Halley's comet, *perestroika*, the first unrelated surrogate mother), and disaster-triumphs (the invention of listservs, the "Hand of God" goal, Roy Cohn's death), Ed saw writing and technology became a focus of his work almost as soon as he got here, when Professor Jim Paradis asked him to join the Athena Writing Project, an early program launched in 1983 for digitally sharing and commenting on text. Many MIT classes took to it, especially within the humanities. Again, though well-known as a poet, Barrett became an authority on hypertext and interactive writing. With Philip Tan as his T.A., Ed taught the first MIT class on the process for creating

<sup>1</sup> [cmsw.mit.edu/anniversary](http://cmsw.mit.edu/anniversary)

<sup>2</sup> [registrar.mit.edu/statistics-reports/enrollment-statistics-year](http://registrar.mit.edu/statistics-reports/enrollment-statistics-year)

<sup>3</sup> [cmsw.mit.edu/tensions-in-live-action-roleplaying-game-design](http://cmsw.mit.edu/tensions-in-live-action-roleplaying-game-design)



websites, Communicating in Cyberspace, and he edited or co-edited six volumes for MIT Press under the series title *Digital Communication*. The publication dates on those books are startling. *Text, ConText, and HyperText Writing with and for the Computer* came out in 1988, still a year before the first commercial internet service provider connected users to each other. By 1995 he was already looking at “narrative and other navigational structures in various interactive multimedia systems”. The series culminated in 2001 with *The MIT Guide to Teaching Web Site Design*. It took just fifteen years to go from no one having any idea whether it’s practical to network computers to edit each other’s stuff, to authoritative essays saying in essence “obviously yes, it’s practical, and beyond that, here’s how you make the final product look good.”

Still, there was enormous uncertainty on the value of something like the Athena Writing Project. The late George Champine wrote a history of Project Athena<sup>4</sup> (as the full distributed computing network was known), in which he mentions that he, Barrett, and Paradis included a “fallback to traditional paper and pencil teaching if the workstation system fails.” But like CMS’s attitude toward most projects, the team exuded some justified optimism. “Although the tools developed are presently not widely available,” Champine wrote, “eventually such tools will be commonplace.”

Paradis was a bigger force behind the success and sustaining of CMS than our prior histories have given him credit for. The strategies he and Professor Kenneth Manning were employing in the 80’s and 90’s to develop a media studies curriculum helped lend substantial institutional support to the creation of the CMS degree programs later on. Crucially, as head of Writing and Humanistic Studies, Jim offered WHS as a co-sponsors of the fledgeling CMS program, along with Literature and Foreign Languages and Literatures. That part I knew, but I wasn’t aware of the key role he played the savvy hires of faculty who served as the bridge between writing and media studies curricula. Together with CMS co-founder Henry Jenkins, Paradis hired computational writing/media scholars Nick Montfort and Fox Harrell and documentary film scholar Vivek Bald. All three were based in WHS but were tied to CMS through various contributions like teaching and advising.

What I also didn’t know until talking with Ed and Jim was how big a factor undergraduate demand played in solidifying internal support for CMS, its degrees, and its model of combining academics with hands-on work. It was simple in fact. Students kept asking for new classes and kept filling them up. There aren’t many concrete measures of a field’s perceived “value” in a university, but enrollment is one of them. It wasn’t long before Comparative Media Studies became the humanities section with the most majors, minors, and concentrators. From just a few subject offerings, it has grown to offer more than seventy.

Part of that success was due to partnerships outside MIT. Jenkins and others searched out external funding for projects that provided for undergraduate research opportunities and research assistantships to cover graduate student costs. But they also searched out like-minded faculty. That’s what brought Professor William Uricchio to MIT from

<sup>4</sup> *MIT Project Athena: A Model for Distributed Campus Computing*.



MIT Building E10, on the site of what became the Media Lab’s Building E14, was the first campus home for CMS graduate students.



The cover of the 10th anniversary commemorative publication.

Utrecht University. As William wrote to me when I asked him about it:

I was [Utrecht’s] first professor of media studies and designed a program that had a lot of similarities to CMS. We organized subsequent professorships in media history, theory, and technology, cutting across object-specific silos of “film”, “television”, and “new media”. What really worked in the Dutch context was collaborating with partners outside the university, that is, with groups like the Netherlands Film Museum and the Institute for Sound and Vision — both internationally cutting-edge organizations. And we worked with industry players like Endemol; festivals like IDFA; and an array of social movement partners. So the resonance with what would become CMS was clear. Henry Jenkins called, I answered, and I was in place for CMS’s first full year of operations.

William has obviously been here ever since, but he's been active beyond teaching and personal research. He has served as principal investigator for a number of research groups, with arguably his biggest success being the Open Documentary Lab, launched in 2012.

Lecturer Kurt Fendt, the last of the five lifers I interviewed, had a similar experience. At MIT since 1993, he was teaching German in the Foreign Languages and Literatures section and within a few years running a lab with FLL colleague Ellen Crocker, trying to develop large-scale media projects for different languages and cultures. It was under CMS's guidance that the lab turned into what became a CMS research group (first named Metamedia, then HyperStudio). But Kurt was also running a forum called the Humanities Technology Think Tank that, in an echo of Ed Barrett's work, brought faculty together to discuss the potential of digital media technologies for humanities research and education. "It must have been through those conversations and my work in the lab," Kurt told me, "that Henry invited me to be part of the discussions that conceptualized a graduate program." He also mentioned something that comes up a lot around here: the satisfaction that comes with working with graduate students. I asked Kurt when CMS first felt "real" to him, and he said it was when the first five graduate students settled into an office next to his in the old building E10, where the newer Media Lab building now stands. There were times he could have left MIT for other opportunities, he said, but working with graduate students and being part of CMS is, well — it's twenty years later and he's still here.

Let's use William's quote above and Kurt's experience to step back and appreciate the transformation of the program from a Literature offshoot to the program it is today. William was just the second professor of Comparative Media Studies. There was a joint, untenured appointment between CMS and Writing and Humanistic Studies that existed for a bit, and many faculty from other humanities sections contributed to teaching and advising, but effectively Henry and William were it. That, of course, was unsustainable, and when the program's future was in doubt after Henry departed for a great opportunity at USC in 2009<sup>5</sup>, Jim Paradis and Dean Deborah Fitzgerald (primarily but with additional credit due others) created this thing now known as Comparative Media Studies/Writing. Since then, under headships by Jim and Edward Schiappa and support from current Dean Melissa Nobles, the number of CMS faculty lines has swelled from two to eleven, with seven of them tenured, and another eleven faculty on the Writing side.

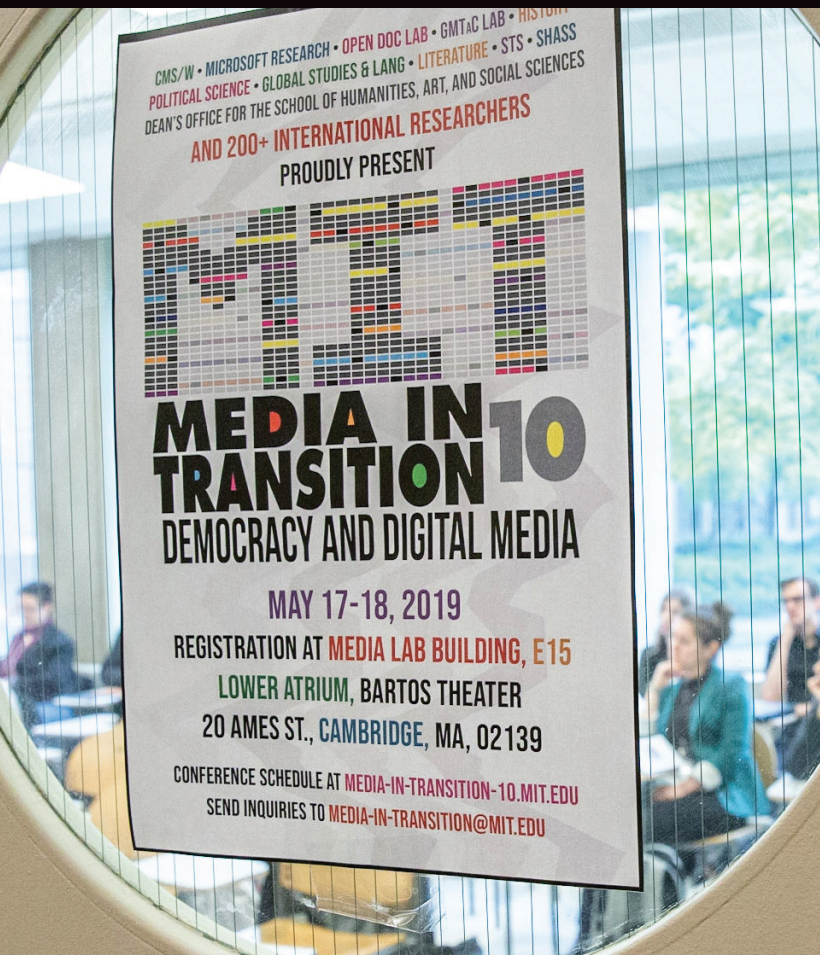
That's worth highlighting both for the stability it provided but also, to reiterate, how student demand pushed news interests into Comparative Media Studies. Games course enrollment drove us to expand further into gaming culture with the hire of T.L. Taylor. The popularity of cross-listed education classes made it natural to bring both Eric Klopfer and Justin Reich over from the Department of Urban Studies and Planning. And there are similar examples when it came to filling curricular needs in media topics like conservative television,

activist media, and Latin America.

Last, I encourage you to go back and read our tenth anniversary magazine, not just to side-eye the "we knew it all along" mode but to read some other essential names and terms. Dean Phil Houry, Chris Pomiecko and the Media Spectacle, *re:constructions*, Literature Professor David Thorburn, the Communications Forum...CMS as a program and Comparative Media Studies/Writing as a community wouldn't be what it is without them. ●

<sup>5</sup> [henryjenkins.org/blog/2008/11/professor\\_jenkins\\_goes\\_to\\_holl.html](http://henryjenkins.org/blog/2008/11/professor_jenkins_goes_to_holl.html)





Photos clockwise from left: The official MiT10 poster. CMS graduate students Sam Mendez and Josefina Buschmann. Tarleton Gillespie, senior principal researcher at Microsoft Research New England, presents during the closing plenary, “Digital Technologies and Cultures”.

All photos by Danny Goldfield.

## THE 10<sup>TH</sup> MEDIA IN TRANSITION CONFERENCE.

To follow are remarks made by Professor Lisa Parks to open this year’s Media in Transition conference. But to preface them, it’s worth mentioning there are handful of origin stories for the Comparative Media Studies program, mostly depending where you start. Generously, that could be 1978, when Political Science professor Ithiel de Sola Pool founded the MIT Communications Forum, the moment MIT became a place that didn’t just make tools for media (think of Doc Edgerton’s invention of stroboscopic photography in 1931) but one that generated and debated media’s core intellectual issues; we’re now all familiar with the knot in your stomach of worrying that media technology is outpacing our ability to understand its uses and implications, but that was true in 1978 too — yet without the ethos<sup>1</sup> provided by decades of growth and refinement. Hence the Communications Forum as a starting point.

Or, more narrowly, start in 1982, when MIT introduced its Film and Media Studies concentration into the undergraduate curriculum.

Or you could get into “necessary vs. sufficient”. Would there be a justification for the CMS graduate program without, in the early ’90’s, the creation of the undergraduate major and minor departures in humanities?

Or do you peg things to 1998 when at a faculty meeting Professor Henry Jenkins, then based in Literature, successfully motioned for the approval of a master’s degree in Comparative Media Studies?

All of those are fitting in their own way, but in the “folk history” of the program, we consider the launch of CMS to be the Media in Transition conference in 1999.<sup>2</sup> It was preceded both by a book series (edited by Jenkins and Literature professor David Thorburn) and, perhaps confusingly, a close-ended conference series also called Media in Transition.<sup>3</sup> But the 1999 conference was the first time MIT gathered an international audience of scholars in the context of MIT’s having a standalone, permanent home for media studies. That makes this year, 2019, one to celebrate — the twentieth anniversary of CMS and tenth iteration of Media in Transition. The conference has a well-deserved reputation as accessible to young scholars and for being a few steps ahead of its field(s) as a whole. Past conferences anticipated streaming TV, distributed misinformation campaigns, content personalization, the blurring of public and private lives, rebellions against media authority, etc. So besides joining us in celebrating these moments, we encourage you to read this year’s conference papers at [media-in-transition-10.mit.edu](http://media-in-transition-10.mit.edu). If past gatherings are a guide, you can expect these papers to be at the center of debate in the years to come.

—Andrew Whitacre

1 In the early Greek sense: as a place to dwell, intellectually or morally.

2 For a deeper dive, check out our 10th anniversary publication: [cmsw.mit.edu/anniversary](http://cmsw.mit.edu/anniversary)

3 [web.mit.edu/m-i-t/conferences](http://web.mit.edu/m-i-t/conferences)

*Opening remarks by Professor Lisa Parks at Media in Transition 10: “Democracy and Digital Media”, held at MIT on May 17-18.<sup>4</sup>*

I’m glad my colleagues are here with me — Heather Hendershot and William Uricchio. Heather directed our graduate program for six years, and William has run and, with Henry Jenkins, built up the Comparative Media Studies program for twenty years.

So our reception tonight is to both honor and thank all of the conference attendees as well as the founders of the CMS program here at MIT — Henry Jenkins and William Uricchio and other faculty and students involved in this conference, such as Ian Condry, Jiang Wang, Jim Paradis, Ethan Zuckerman, and others. We also have thirty-plus alums from the CMS graduate program who are participating in the conference this year, and who have over the years helped to build up this conference and our department. So we really want to thank and recognize all of you.

Another person crucial in building up CMS and this conference was David Thorburn, who with Henry in the early days was really important in building up the Media and Transition conference and editing the first two volumes from MIT Press, which came out in 2003.

I just wanted to mention a few things about the amazing alums, and I’m not going to do justice to all of them because the list isn’t exhaustive. It’s very long and impressive.

Philip Tan has been working with us all day. He graduated in 2003 and is the creative director of the MIT Game Lab and teaches game design and creating video games here at MIT. Sam Ford is here. He is director of cultural intelligence — what a great job name — for Simon and Schuster and is also co-leading various initiatives in the future of work in Kentucky.

Huma Yusuf, you heard her on our plenary today. She graduated in 2008 and has worked with the Wilson Center as a Pakistan scholar. She is also a weekly columnist for *Dawn*. There are probably many updates that she has about her professional career, including being recently named one of Foreign Policy’s top 100 women on Twitter.

Elyse Graham is an assistant professor of digital humanities at Stony Brook University. She just published last year a book entitled *The Republic of Games: Textual Culture Between Old Books and New Media*. These are people I haven’t even met yet, and I hope to meet you guys.

A 2003 alum of our undergraduate program, Charisse L’Pree is now a professor at Syracuse’s Newhouse School of Public Communications and does crucial work on media and identity construction. She also raised a vital question on the session we were just on about racial politics in regard to digital media and democracy, which we all need to continue to work on and think about.

Lilia Kilburn is now a Ph.D. student in anthropology at Harvard and does great work on vocality and sound technologies, media and communication disorders, kinship, and intimacy, and is also doing work in Cameroon.

Josh Cowls, a 2017 graduate, is now a data ethics researcher at the



*With Professor Heather Hendershot (right), Professor Lisa Parks delivers remarks at the first evening’s welcome reception.*

Alan Turing Institute in the British Library in London and is also Ph.D. student at the Oxford Internet Institute.

I know there are a lot of people that I have not mentioned. I’m going to mention one more.

Mariel García-Montes graduated last year. She’s a public interest technology capacity builder and researcher from Mexico. She was so active at MIT and in CMS while she was here, and her main topics of interest are privacy and information security, social exclusions in technology and participatory processes. She’s starting the doctoral program in History, Anthropology, and Science, Technology, and Society at MIT in the fall.

Before I hand it off, I want to thank our current CMS graduate student volunteers who I have gotten to well over the past two to three years and honored to work with. Rachel Thompson, Annie Wang, Libby Falck, Matt Gradon, Sam Mendez, Iago Bojczuk, Josefina Buschmann, James Wilson, Anna Chang, Rehka Malhotra, and Sultan Sharrief. All of these students have been actively involved in this conference and organizing it.

They have greeted and registered you, presented you with a pre-conference and media-based demos, and will change your life tomorrow night with their DJing.

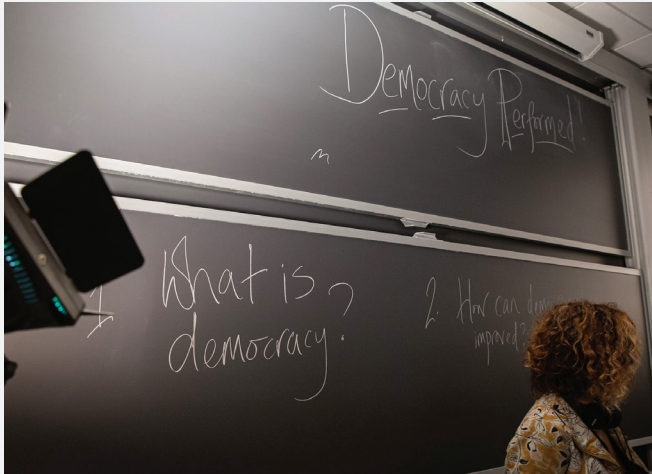
And Andrew Whitacre, our communications director.

Thank you for being here. There’s a lot more people to thank here, including our department head Ed Schiappa and our staff, Jessica Tatlock and Sarah Smith.

We’re so happy you guys are here. We haven’t had the conference for a while. It used to be fifty to one hundred people. This year we got over three hundred responses to the call for papers, and we’re doing our best to accommodate the swell of interest in these issues these days. So thank you so much. We’re really honored you’re here. ●

<sup>4</sup> A video of these remarks is available at [youtu.be/k9zVubLcAXk](https://youtu.be/k9zVubLcAXk).





*Clockwise from top right: Associate Professor of Writing and Digital Media Vivek Bald. CMS program co-founder Henry Jenkins with Charisse L'Preé (S.B., CMS and Brain and Cognitive Science, '03). Alums Anika Gupta (S.M., CMS, '16) and Vicky Zeamer (S.M., CMS, '18). Graduate student Annie Wang and near-alums Libby Falck (S.M., CMS, '19), James Bowie-Wilson (S.M., CMS, '19), Sultan Sharrief (S.M., CMS, '19), and Rachel Thompson (S.M., CMS, '19). The pening reception in MIT Building E15. The session "Democracy Performed".*





*Alums (including those just three weeks from graduation) with professors Heather Hendershot, Henry Jenkins, and William Uricchio.*



*Senior Lecturer Kurt Fendt and Professor Ian Condry interviewed during the "Democracy Performed" session.*

# GAME CHANGER

## CHRISTOPHER WEAVER AND THE HISTORY OF VIDEO GAMES AND GAME STUDIES AT MIT

CMS/W Staff

In the mid-1980's, an electrical engineer and sports fan named Ed Fletcher approached his boss with a simple question: The communications consultancy firm Fletcher worked for had just acquired a Commodore Amiga computer.<sup>1</sup> Could he use it to build a football-themed video game? Christopher Weaver, S.M. '85, the company's founder and president, had a background in physics, engineering, and computer science but had spent most of his professional life in broadcast television. He had never played a sports video game before, but he agreed and months later, saw Fletcher's work.

"It was really very boring. He put in the same inputs and got the same outputs," Dr. Weaver explains. "I said, look, let's build a physics engine<sup>2</sup> bounded by the rules of football and see what it looks like. It will be a hell of a lot more dynamic."

The result was Gridiron!, the first sports game to incorporate real physics into gameplay.<sup>3</sup> While the game's graphics were primitive, Gridiron!'s pixelated players were modeled off of stats from real life football stars, giving players different masses and accelerations. Players with larger masses could block and break tackles, but speedier players could beeline to the end zone, adding a never-before-seen layer of reality-based strategy to sports simulators. Weaver formed Bethesda Softworks<sup>4</sup>, released Gridiron! as the company's first title in 1986, and watched as the game captured attention from football and video game fans as well as Electronic Arts, already a Goliath game company that hired Weaver's team and used Gridiron!'s engine as the basis for the original Madden game series. Suddenly, Weaver was a game pioneer entirely by accident.

"Sometimes not having a lot of knowledge about an area can be a good very useful thing," he says. "It forces you to look at it with untutored or naive eyes."

After more than thirty years in the game industry, Weaver still tries to approach the field from new angles and encourages his students to do the same. A longtime Research Scientist and Lecturer at CMS/W, Dr. Weaver spent nearly two decades at Bethesda, overseeing seminal titles including the massively popular Elder Scrolls RPG series, before co-founding the multimedia development company ZeniMax Media, Inc.<sup>5</sup> Weaver returned to his *alma mater* in 1998 to teach courses in game theory and development as well as media systems.

1 [en.wikipedia.org/wiki/Amiga#Commodore\\_Amiga](https://en.wikipedia.org/wiki/Amiga#Commodore_Amiga)

2 [en.wikipedia.org/wiki/Physics\\_engine](https://en.wikipedia.org/wiki/Physics_engine)

3 [beta.washingtonpost.com/news/sports/wp/2018/08/09/this-forgotten-video-game-helped-pave-the-way-for-madden-nfl/](https://beta.washingtonpost.com/news/sports/wp/2018/08/09/this-forgotten-video-game-helped-pave-the-way-for-madden-nfl/)

4 [bethesda.gamestudios.com](https://bethesda.gamestudios.com)

5 [zenimax.com](https://zenimax.com)

Weaver's work both as an instructor and in bolstering MIT's game studies curriculum have rippled through the industry. Started informally in the late '90's by Henry Jenkins and William Uricchio, the flexible curriculum originally centered largely on game design and research. Weaver brought a much-needed industry perspective, and as

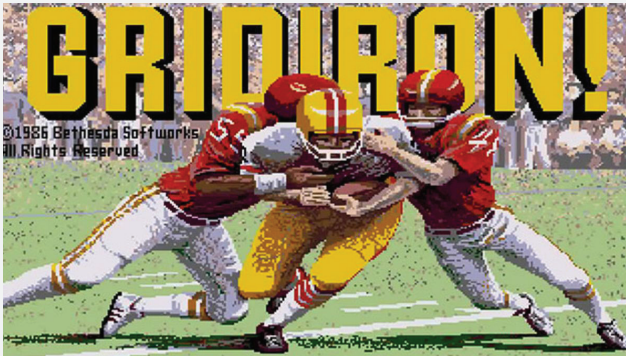
### LISTEN TO OUR PODCAST OF CHRISTOPHER WEAVER'S TALK "AMPLIUS LUDO, BEYOND THE HORIZON"

[cmswm.it/christopher-weaver](https://cmswm.it/christopher-weaver)



"While the appeal of games may be universal and satisfy our innate desire to play, the powerful dynamics that govern our behavior within games is even more interesting than the play itself. Can we broaden our understanding of play mechanisms by applying the subliminal mechanics of play beyond games? In this episode, Professor Weaver discusses how games work and why they are such potent tools in areas as disparate as military simulation, childhood education, and medicine."





Weaver's company Bethesda Softworks produced *Gridiron!*, the first sports video game to try to incorporate real-world physics.

game engines like Unity and Flash enabled small teams to make interesting projects, he began to teach an popular games industry course. Since its inception, the MIT games curriculum has transformed to include both game studies and design courses as well as coursework in virtual reality, data storytelling, and games for social change.

Doris C. Rusch, founder of the Play for Change lab at DePaul University, connected with Weaver after taking his class in 2006.

In that class, “I learned that all my lofty, artsy ambitions, they have to measure up to reality,” Rusch said in a CMS/W interview. “...If the game is not entertaining, then nobody’s going to care about all of the positive stuff you’re trying to put into it. It’s about keeping that engagement and the game play front and center.”

Troy Ko, who graduated from the Sloan School of Management in 2011, recalls Dr. Weaver challenging existing paradigms.

“When you meet him, just be prepared to think critically,” Ko said. “Be prepared to come in with an open mind because he’s going to introduce all of these ideas and push you and nudge you in different directions to really question the norm and how things are done.”

Today, Dr. Weaver splits his time between teaching in Comparative Media Studies/Writing — he has long taught CMS.610 Media Industries and Systems: The Art, Science and Business of Games<sup>6</sup> — and the MIT Microphotonics Center. He also teaches STEM development at Wesleyan University and co-directs the Videogame Pioneers Initiative<sup>7</sup> in the Lemelson Center for the Study of Innovation and Invention within at the National Museum of American History. His goal is to broaden the reach of games and help students understand how to apply the power of game tools to break ground in areas ranging from education to medicine to senior care.

“There’s a lot of research now that is demonstrating that if you want to teach, simulate, or train, if you’re capable of using some of these tools, you’ll have a higher success ratio than standard methodology that’s been developed during the Industrial Revolution,” Dr. Weaver says. “We have a whole 21<sup>st</sup> century to bring students into.” ●

<sup>6</sup> [catalog.mit.edu/subjects/cms](http://catalog.mit.edu/subjects/cms)

<sup>7</sup> [invention.si.edu/videogame-pioneers-initiative](http://invention.si.edu/videogame-pioneers-initiative)



## THE SMITHSONIAN VIDEO GAME PIONEERS INITIATIVE

Christopher Weaver helped launch a project to preserve the legacy of video game pioneers. With the Smithsonian’s Lemelson Center for the Study of Invention and Innovation, the initiative has collected in-depth oral histories and preserved original documents. Those histories include early figures like Ralph Baer, pictured above, but also — critically — source code, graphics, and computer platforms.

To their credit, many scholars and archivists have recognized the unique challenges and opportunities of cataloging and preserving material related to video games. At CMS/W, that has meant some creative approaches. Professor Nick Montfort has acquired and maintains a variety of older console models and uncovers how to program them in ways that reveals underlying technology. Similarly, CMS/W staff in the past have installed modern computers in ’80’s-era arcade cabinets, giving a feel for how contemporary games may have been played with a joystick and two big buttons. Elsewhere, over the last decade, scholars have published papers that walk others through game preservation. For example, a 2009 piece, “Before It’s Too Late: A Digital Game Preservation White Paper,” described how essential industry participation is.

But the Smithsonian and Weaver’s work acknowledge a hard truth: the elders are passing away. Baer himself died in 2014. We were fortunate to have hosted him for a talk back in 2009.<sup>1</sup> Others here have looked back at older games, such as last spring’s talk with Jaroslav Švelch on computer games in communist Czechoslovakia, and there have been critical approaches with preservation being a method rather than end in itself. That would include games beyond the video variety, such as Research Scientist Mikael Jakobsson’s work on colonialist (and counter-colonialist) board games.

Ultimately, though, the Video Game Pioneers Initiative will be central to future generations hearing from primary sources.

<sup>1</sup> [cmsw.mit.edu/ralph-baer-electronic-product-creation/](http://cmsw.mit.edu/ralph-baer-electronic-product-creation/)



June 16, 1888  
**PAPER SERIES.**  
 OF  
**ICE-READING.**  
 SEMIMONTHLY:  
 AT BOSTON AS SECOND-CLASS MATTER

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**LOOKING BACKWARD.**

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*Utopian ideas don't have to be entirely serious to be effective in provoking people to change their thinking and move toward a better future.*

## WRITING THE FUTURE WITH UTOPIAS

LITERARY UTOPIAS CAN PROVOKE OUR CRITICAL FACULTIES AND OPEN OUR MINDS TO IMAGINATIVE — AND TRANSFORMATIVE — IDEAS.

*By Professor Nick Montfort*

*This article is adapted from Nick Montfort's book "The Future," part of the MIT Press Essential Knowledge series.*

If we start our search for utopias from the United States, one vision, and one particular book, looms particularly large. This is Edward Bellamy's 1888 novel, *Looking Backward: 2000–1887*. Set in Boston in the year 2000, it follows the experiences of a man who, like an even more dormant Rip Van Winkle, entered a trance in 1887 and was brought out of his suspended animation in good health more than a hundred years later. What he found, as the book's preface explains, was "a social order at once so simple and logical that it seems but the triumph of common sense." He tours the city, learning about the improved working conditions and the

abundance of food and goods available to everyone. Boston, and the United States, have been transformed into a bountiful socialist utopia.

Soon after the novel was published in 1888, its publisher was acquired, the book was reissued, and it became tremendously popular. A million copies were sold in two years, with only *Uncle Tom's Cabin* and *Ben-Hur* outselling it, and in those cases over a longer span of time. Dozens of clubs were started to discuss the socialist ideas of the book. These groups<sup>1</sup>, organized by "Bellamyites," were called "nationalist clubs" because of negative associations with the term "socialism," but they were closely related to the concept of socialism and did not have any particular relationship to what we now think of

<sup>1</sup> <https://www.ozy.com/flashback/how-a-book-inspired-socialist-utopia-clubs/93270>

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*The plausible portrayal of women working in all roles in society was meant to show that — even in a society that has both men and women — it does not make sense to restrict women to only a few social roles.*

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as nationalism. These clubs were only around for a few years, but they, and Bellamy's book, were an important influence on the Theosophical movement<sup>2</sup>, which went on to establish a dozen utopian communities in the United States. The impact on American writing was strong, too, with more than 150 books being written in response to "Looking Backward" — including exuberant sequels and several books opposed to the ideas of the original novel.

The new society in *Looking Backward* is based on ideas that precede the book; this society is also presented well in the context of the novel. The narrator, Julian West, is from the same time as his early readers, and it's of course necessary for people from the year 2000 to explain to him how this strange new society works. The difference between the improved social order and that of 1887 is illustrated throughout the book, but perhaps never as memorably as when the narrator finds that a sudden downpour has begun and he — and, it seems, everyone else — is without an umbrella: "The mystery was explained when we found ourselves on the street, for a continuous waterproof covering had been let down so as to enclose the sidewalk and turn it into a well-lighted and perfectly dry corridor, which was filled with a stream of ladies and gentlemen dressed for dinner." As one of the natives explains, "the difference between the age of individualism and that of concert was well characterized by the fact that, in the nineteenth century, when it rained, the people of Boston put up three hundred thousand umbrellas over as many heads, and in the twentieth century they put up one umbrella over all the heads."

Bellamy's novel presents a society of abundance in which each person is allotted a specific amount of what is produced, a bounty that is clearly greater than anyone would need but is still regulated. To mete out the many goods, Bellamy introduced what he called the "credit card," the first use of the term, although it didn't actually allow purchases on credit. Industries have been nationalized in the book, and this credit card system allows for the equal distribution of goods. Rather than paying anyone more, those who have to do particularly unpleasant work simply get to work fewer hours. Women have a more equal role in society and are part of the workforce, although "the heavier sorts of work are everywhere reserved for men, the lighter occupations for women."

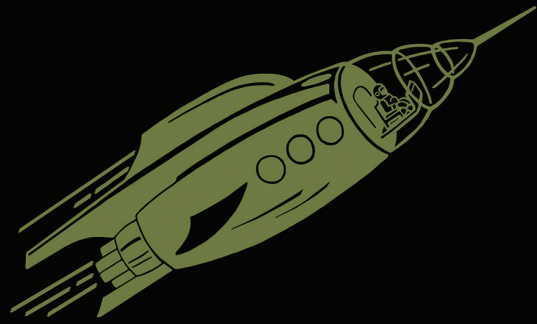
Another intriguing model society, which responded to this particular aspect of Bellamy's, was presented by American author Charlotte Perkins Gilman in her novella *Herland*, originally published in 1915. In this book, three adventurous men locate an isolated community

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<sup>2</sup> <https://www.britannica.com/topic/theosophy>

## THE FUTURE

NICK MONTFORT



THE MIT PRESS ESSENTIAL KNOWLEDGE SERIES

that is entirely female. (The women of *Herland*, it is explained, are able to reproduce without men.) The girls and women are highly accomplished at all necessary work, from tasks that are traditionally considered feminine in U.S. culture, such as child-rearing, to building houses. They prosper, eschewing rote learning, governing their society deliberately, and wearing clothing that has numerous pockets.

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*Even implausible aspects of utopian fiction can be useful. They can point out, as with any satire, how outrageous our current society is.*

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While "Herland" does offer some suggestions as to the social order, and promotes certain types of feminist thought about society, it seems unlikely that Gilman was literally suggesting that the best society would be a secluded, nonindustrial one with only women. More likely, her plausible portrayal of women working in all roles



12 V T O P I A E I N S V L A E T A B V L A .



A woodcut map by Ambrosius Holbein that accompanied a 1518 edition of More's Utopia.



in society was meant to show that — even in a society that has both men and women — it does not make sense to restrict women to only a few social roles. Aside from the implausibility of asexual reproduction, critics take issue with some other aspects of *Herland*, including its attitude toward native people, who are repeatedly disdained as “savages.” Despite such flaws, the novel remains a powerful work of imagination, particularly given that it was published before women even had the right to vote throughout the United States.

Utopian writing existed long before Bellamy and Gilman, of course. Plato first developed an ideal society of philosopher-kings (a community that entirely excluded poets) in his *Republic*, which predated the Christian Era by almost four centuries. But the genre of writing takes its name from a short book in Latin by Thomas More, *Utopia*, which was published in 1516. The book isn’t, strictly speaking, about the future — it describes a fictional society of that time. But it clearly suggests some ways that Western, and particularly English, society could be different in times to come. The book describes the highly systematic functioning of island residents, people who behave in many ways like monks following the Rule of Saint Benedict: They live communally, doing manual labor. More’s *Utopia* has been described as “a communist community, enhanced by Christian values.”

There are a few differences from either the modern-day communist concept or monastic life, of course. Unlike a monastery, the land of *Utopia* is a heterosocial place, and people get married and raise children. Each person who is about to marry is presented with his or her potential partner, naked, and allowed an inspection — sensible, More explains, because one considers even a horse very thoroughly for any sign of ill health before purchasing it. It seems difficult to understand this procedure as a serious proposal, but, at the same time, it might point out that marriage is impractical between two people who know very little about each other in other ways. Why would we demand to take the saddle off the horse and inspect it closely while not giving the same concern to our betrothed?

One lesson in future-making — or imagining and consciously trying to contribute to a particular future — that can be seen here is that utopian ideas don’t have to be entirely serious to be effective in provoking people to change their thinking and move toward a better future. The pre-marriage inspection can be read in several ways — as making fun of people’s obsession with physical attractiveness, for instance, or as making fun of marriage as an institution that establishes ownership, like the ownership of a horse, of one person by another.

*Utopia* is almost certainly not a full-on parody of More’s society. It presents an alternate society in which there are few laws, people live communally and sustain themselves by cultivating and making what they need, and people pursue learning throughout their lives. Most of the ideas are presented, as with Plato’s *Republic*, as ways society could be reordered and improved. So, it’s interesting to see a few cases in which the customs of the Utopians strain credulity. One effect that this can have is stimulating multidimensional thinking about current society and the way that it’s organized. Another effect is that it can remind us to be critical and thoughtful. Even if we like the direction

an author is taking and the type of society that is being proposed, we shouldn’t accept every new idea presented as if it were a new doctrine.

More’s *Utopia*, Bellamy’s year-2000 Boston, and Gilman’s all-female society are all presented as ideal, or close to ideal, as was the republic that Plato described. Those who study utopian thought and writing distinguish, however, between a utopia or “no place” and a eutopia or “good place.” A utopia is an invented society, existing beyond history as an alternative to present societies, but it doesn’t have to be perfect. It doesn’t even have to be better, so a fictional society that is presented as negative and deeply flawed, a dystopia, can also be seen as a type of utopia. There are also notable novels that are set “no place” and present societies that have some positive and some negative aspects; these include Jonathan Swift’s *Gulliver’s Travels* and Samuel Butler’s *Erewhon*.

One way that utopias can function is by portraying a plausible alternative to the current social configuration. More’s book prodded readers to think about how communal living without private property might be possible. Bellamy’s made it seem plausible that a well-planned society could produce more than enough for everyone to live well and could happily distribute that wealth equally. And, even if readers of Gilman’s book didn’t think that an all-female society was actually the best idea, they could probably believe many aspects of the portrayal of women working in every possible role in a community. If we can imagine such possibilities within the framework of fiction, this can make it easier to think of them in our own reality.

Even implausible aspects of utopian fiction can be useful. They can point out, as with any satire, how outrageous our current society is. They can also encourage us to think critically as we imagine a better society. Also, they might help to expand the limits of what we consider possible. Because utopian fiction takes us away from the specifics of our current place and situation and transports us to no place, it allows us to come to new insights that can then be applied to the world we live in. Perhaps an all-female society existing for thousands of years isn’t plausible, but if it were, wouldn’t the women in it be capable of doing anything that was needed? If so, isn’t it reasonable to allow women to occupy any role in our mixed-gender society? Utopian thinking is of course often associated with silliness and impossible, impractical ideas, but when it’s done effectively, shifting our thinking from our current place to no place can help us get out of a rut.

A future-maker might do something clever by coining a term or inventing something specific. This can be useful, but this is seldom as powerful as developing an overall, coherent vision that can be worked toward, engaged with deeply, or opposed. Although it’s interesting to note that Bellamy is (at least approximately) the inventor of the credit card, his real influence is seen in dozens of organizations founded to think through and promote his work, and the dozens of books written to continue the conversation he started.

There is room in a utopia for plausible, sensible alternatives to today’s practices. Likewise, there is room for the absurd and the outrageous, which can provoke our critical faculties, opening our minds to unusual — and transformative — ideas. ●



# THE SEA WITCH





WHEN I WAS YOUNGER, I WAS TOLD TALES OF THE SEA WITCH, WHO FINDS WHAT ONE HAS LOST

SHE IS NOT EASY TO SEEK OUT, BUT SHE IS ALWAYS NEAR THE SEA. AND IF YOU DO FIND HER, SHE GRANTS THREE FAVORS FOR YOUR WISH.



WE LIVED BY THE SEA. ITS CALL TUGGED AT MY HEART, A CRY FOR SOMETHING I DID NOT KNOW TO MISS.

WHEN MY MOTHER LEFT AND IT WAS JUST ME BY THE SEA, THE LONELINESS IN MY HEART GREW STRONGER, UNTIL IT WAS TOO STRONG TO BEAR.



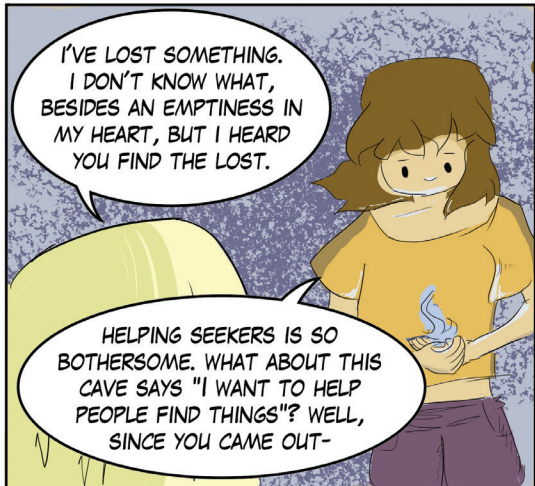
SO I SOUGHT OUT THE SEA WITCH, IN HOPES OF FINDING WHAT MY HEART WAS CRYING OUT FOR.





EXCUSE ME?

WHAT DO YOU WANT?

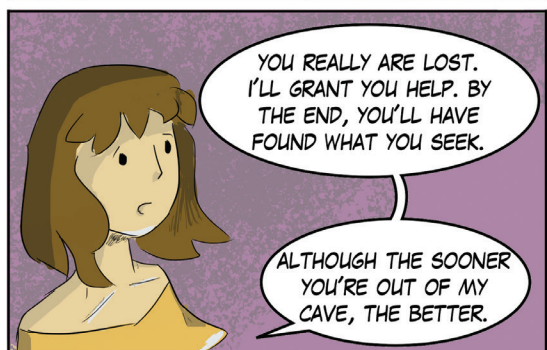


I'VE LOST SOMETHING. I DON'T KNOW WHAT, BESIDES AN EMPTINESS IN MY HEART, BUT I HEARD YOU FIND THE LOST.

HELPING SEEKERS IS SO BOTHERSOME. WHAT ABOUT THIS CAVE SAYS "I WANT TO HELP PEOPLE FIND THINGS"? WELL, SINCE YOU CAME OUT-

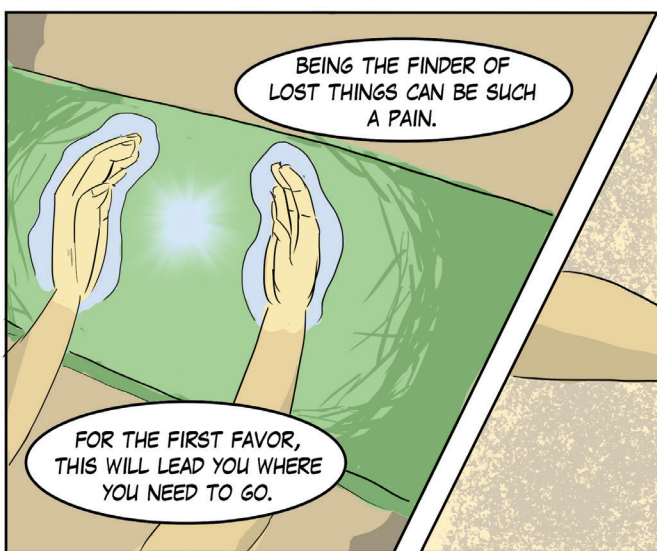


OH.



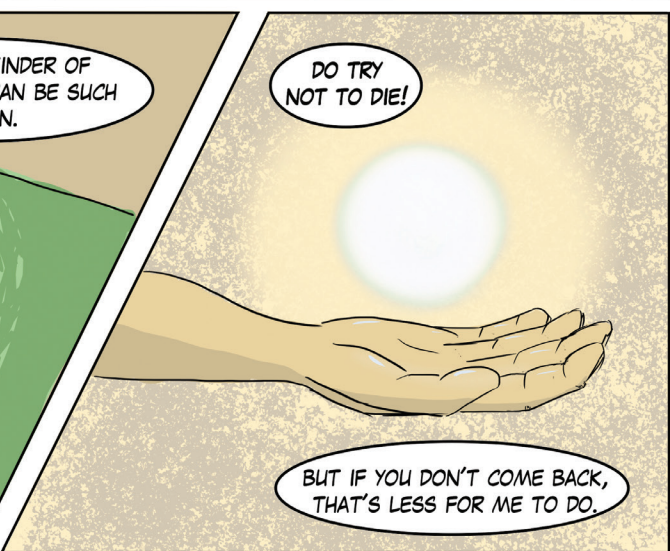
YOU REALLY ARE LOST. I'LL GRANT YOU HELP. BY THE END, YOU'LL HAVE FOUND WHAT YOU SEEK.

ALTHOUGH THE SOONER YOU'RE OUT OF MY CAVE, THE BETTER.



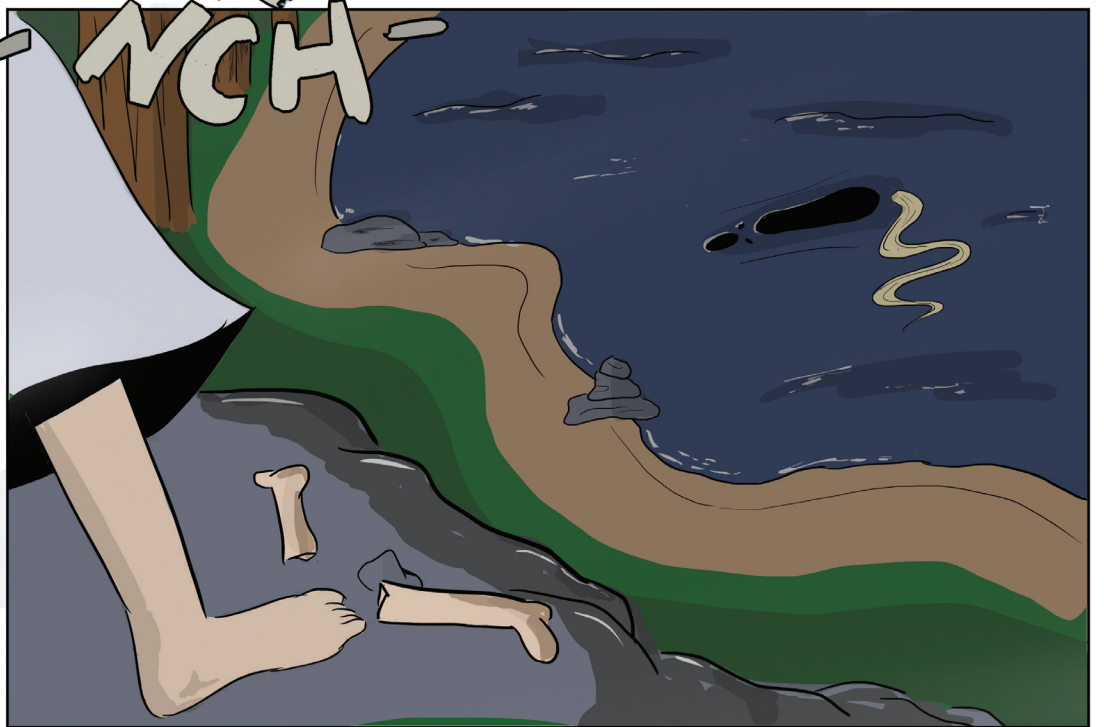
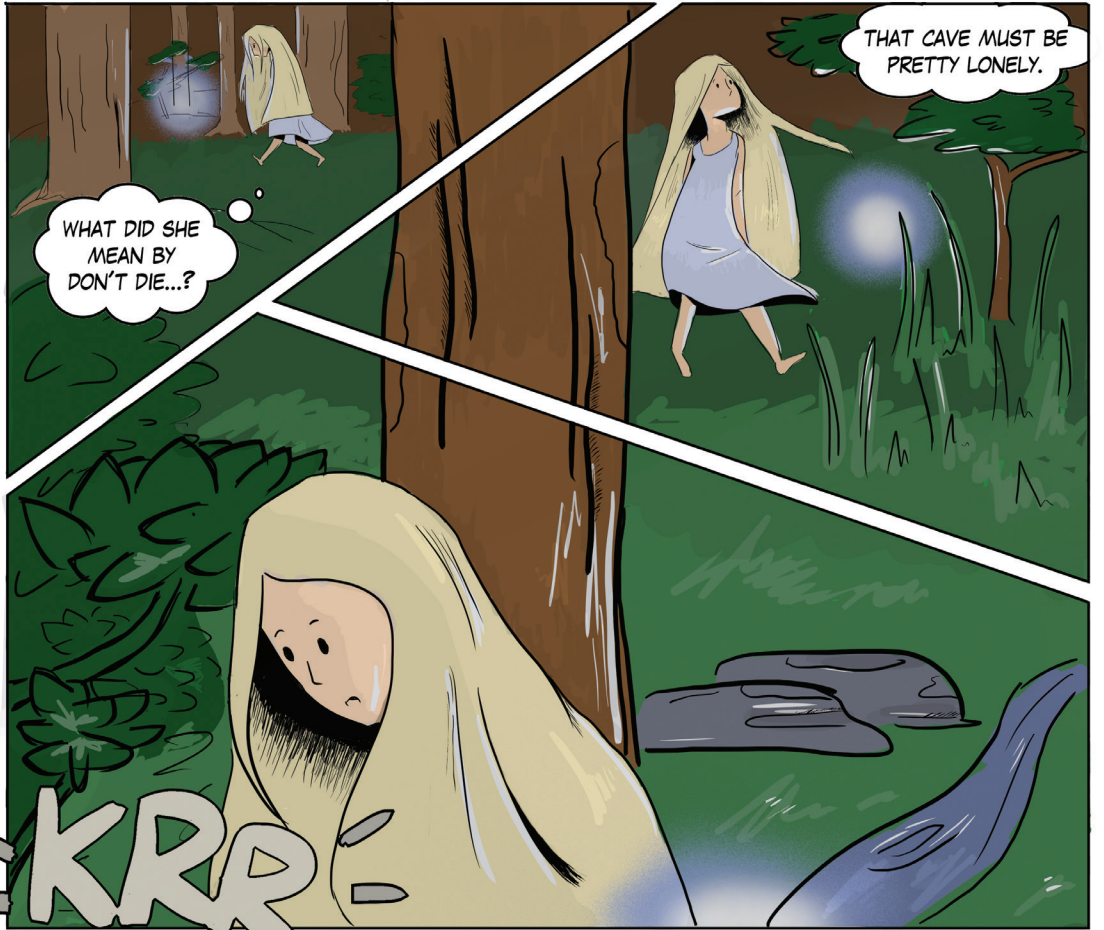
BEING THE FINDER OF LOST THINGS CAN BE SUCH A PAIN.

FOR THE FIRST FAVOR, THIS WILL LEAD YOU WHERE YOU NEED TO GO.



DO TRY NOT TO DIE!

BUT IF YOU DON'T COME BACK, THAT'S LESS FOR ME TO DO.



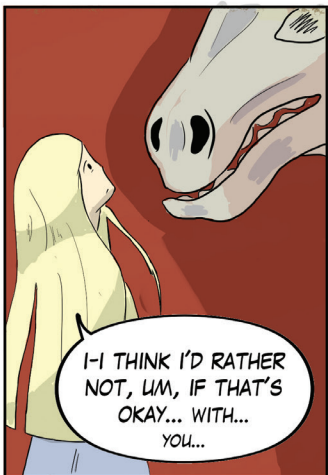




AH, LITTLE ONE ...



I DO HUNGER SO ...  
WON'T YOU TAKE A RIDE ON MY BACK?



I-I THINK I'D RATHER NOT, UM, IF THAT'S OKAY... WITH... YOU...



HA HA HA  
NO MATTER. YOU'D TASTE FAR TOO MUCH OF THE SEA.



AND I ONLY EAT MEN ANYWAYS  
I SEE THE SEA WITCH SENT YOU.  
WHAT DO YOU SEEK?

I DON'T KNOW. SHE... WOULDN'T SAY.



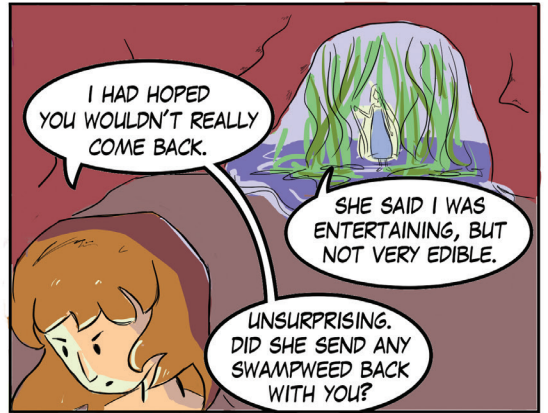
THEN. YOU HAVE BEEN ENTERTAINING, IF NOTHING ELSE. SO,



IN RETURN, I FREELY OFFER TO YOU A LOCK OF MY MANE



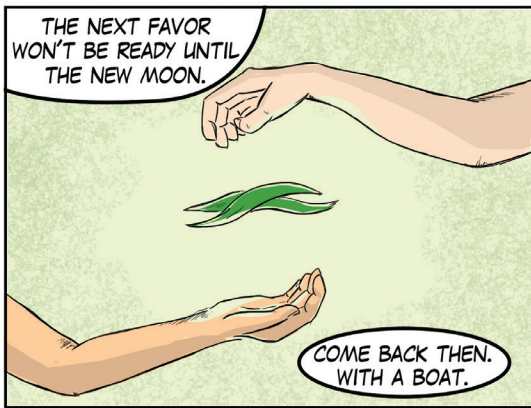
AND, DO SEND ANY LOST TRAVELERS MY WAY, WON'T YOU?



I HAD HOPED YOU WOULDN'T REALLY COME BACK.

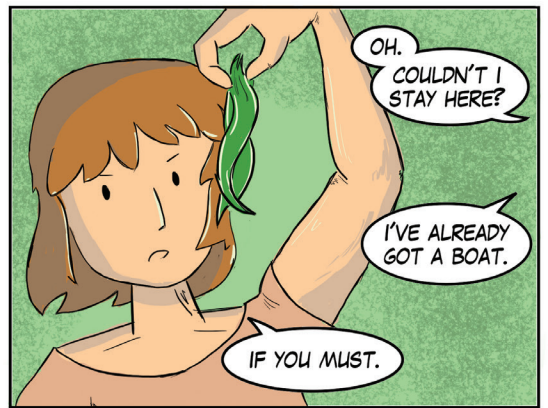
SHE SAID I WAS ENTERTAINING, BUT NOT VERY EDIBLE.

UNSURPRISING. DID SHE SEND ANY SWAMPWEED BACK WITH YOU?



THE NEXT FAVOR WON'T BE READY UNTIL THE NEW MOON.

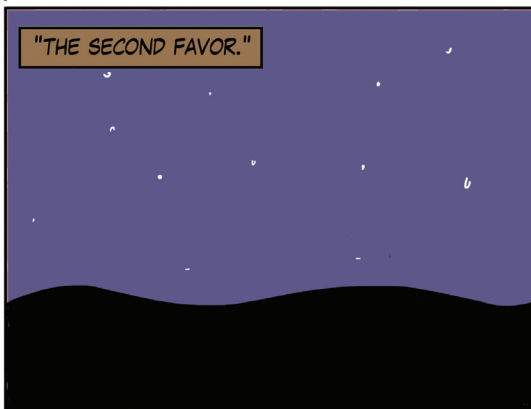
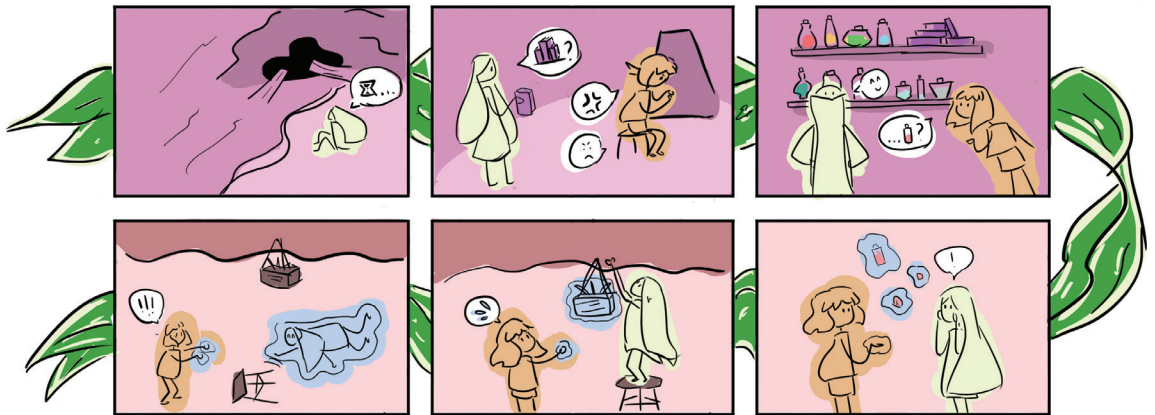
COME BACK THEN. WITH A BOAT.



OH. COULDN'T I STAY HERE?

I'VE ALREADY GOT A BOAT.

IF YOU MUST.

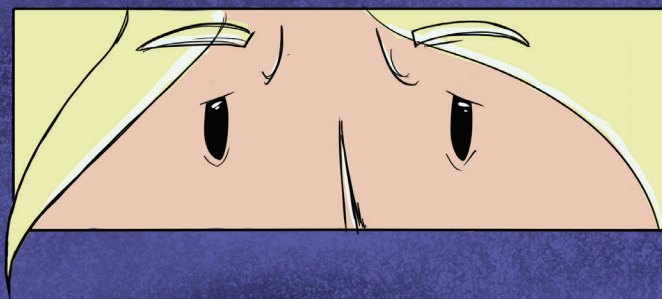


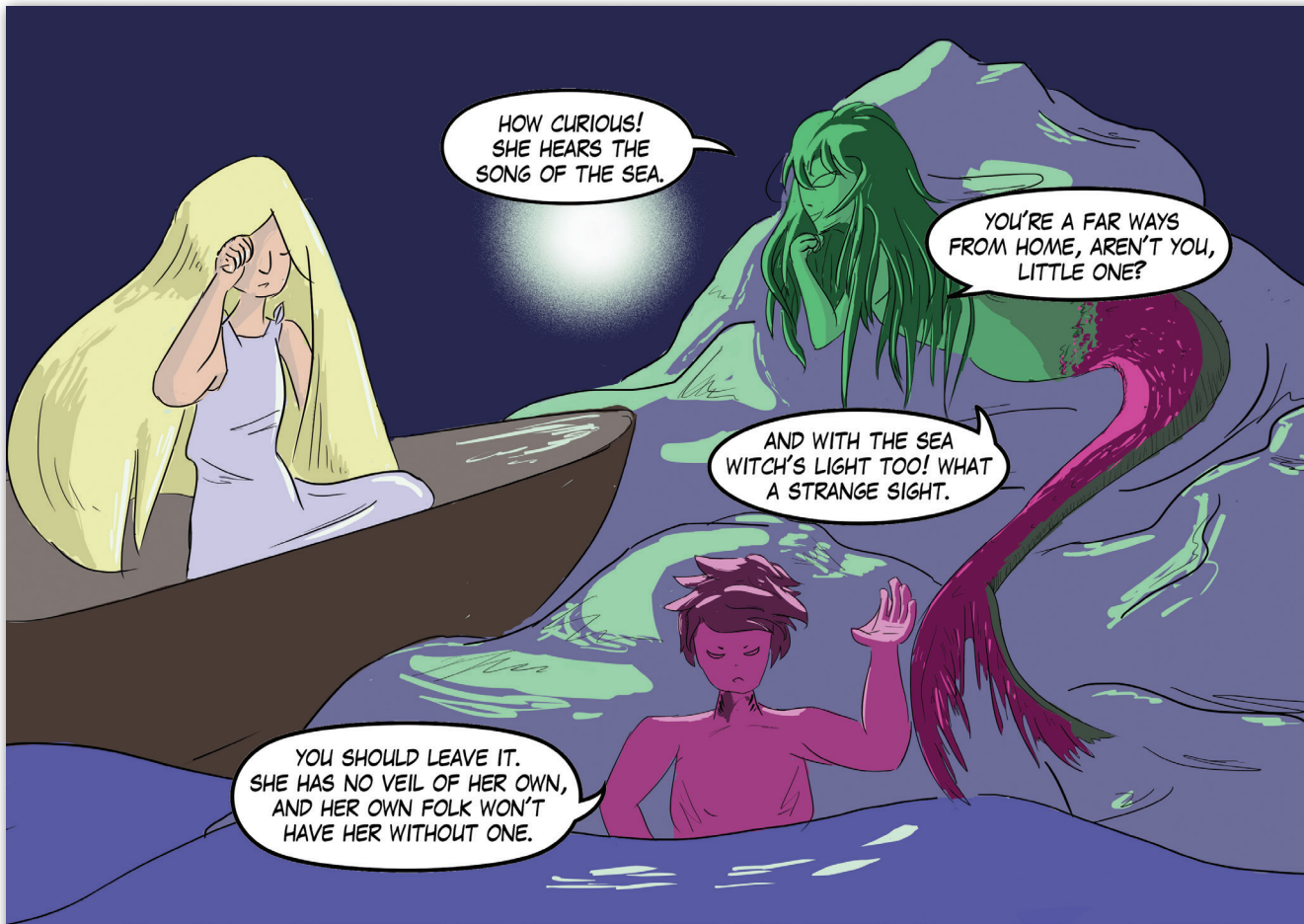
"THE SECOND FAVOR."



"THE WITCHLIGHT WILL LEAD YOU AGAIN."





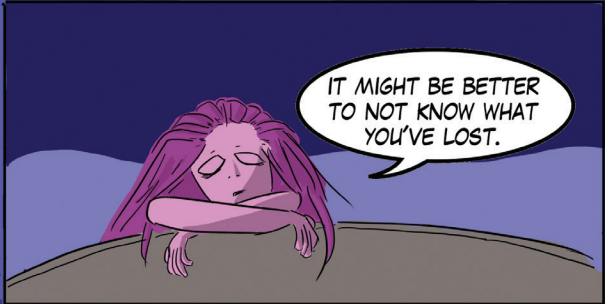


HOW CURIOUS!  
SHE HEARS THE  
SONG OF THE SEA.

YOU'RE A FAR WAYS  
FROM HOME, AREN'T YOU,  
LITTLE ONE?

AND WITH THE SEA  
WITCH'S LIGHT TOO! WHAT  
A STRANGE SIGHT.

YOU SHOULD LEAVE IT.  
SHE HAS NO VEIL OF HER OWN,  
AND HER OWN FOLK WON'T  
HAVE HER WITHOUT ONE.



IT MIGHT BE BETTER  
TO NOT KNOW WHAT  
YOU'VE LOST.

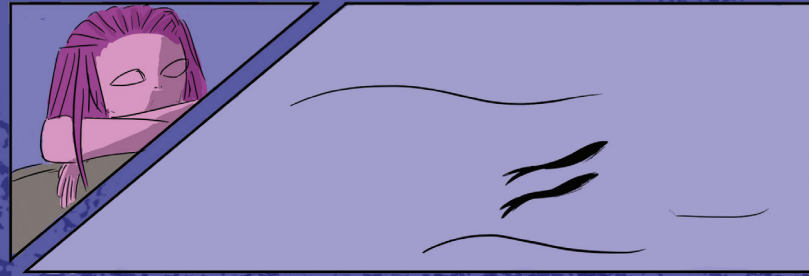


I DON'T THINK  
SHE CAN HELP YOU.



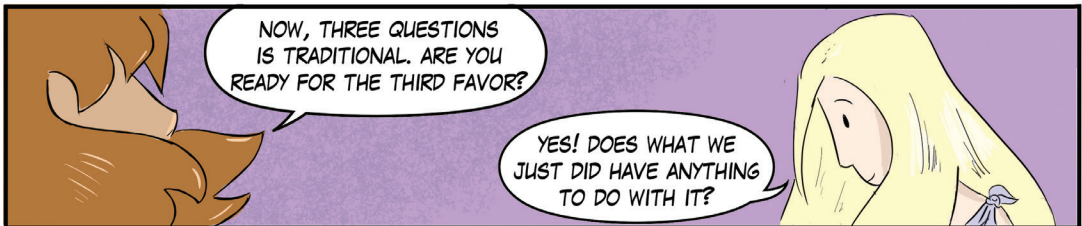
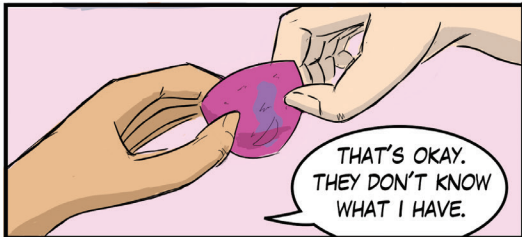
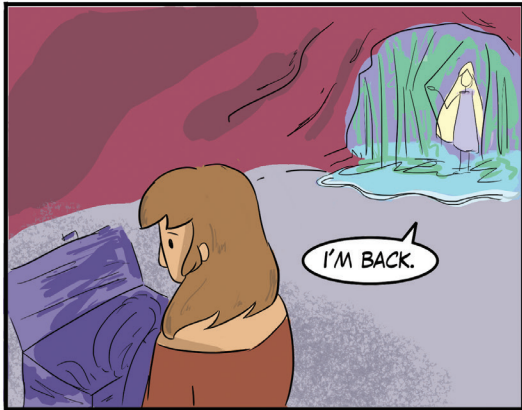
SHE SAID I'D  
FIND IT. IS THERE  
NO OTHER WAY?

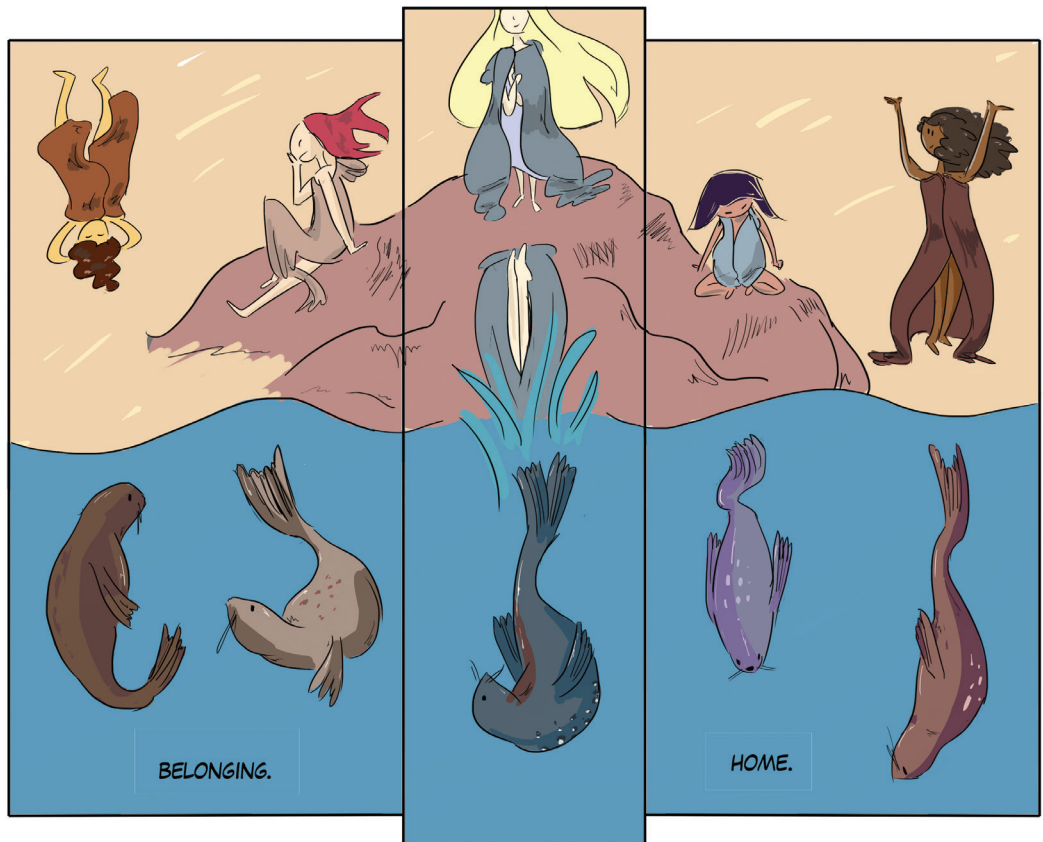
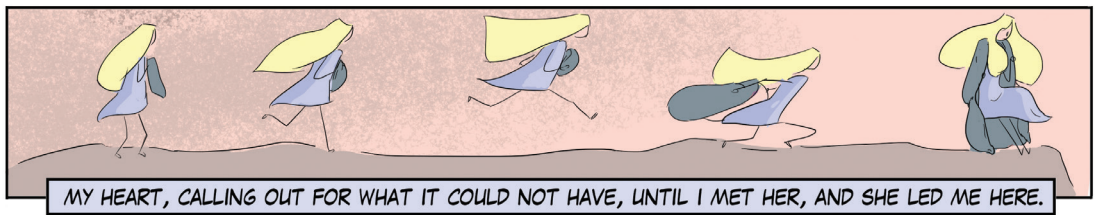
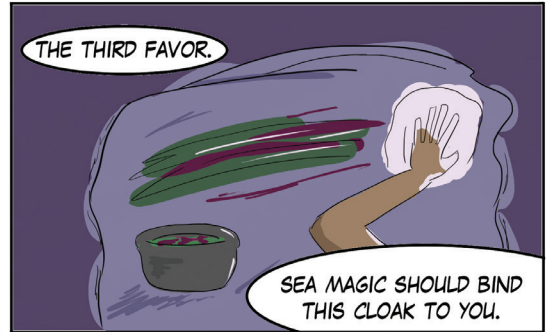
CAN'T YOU JUST  
TELL ME?



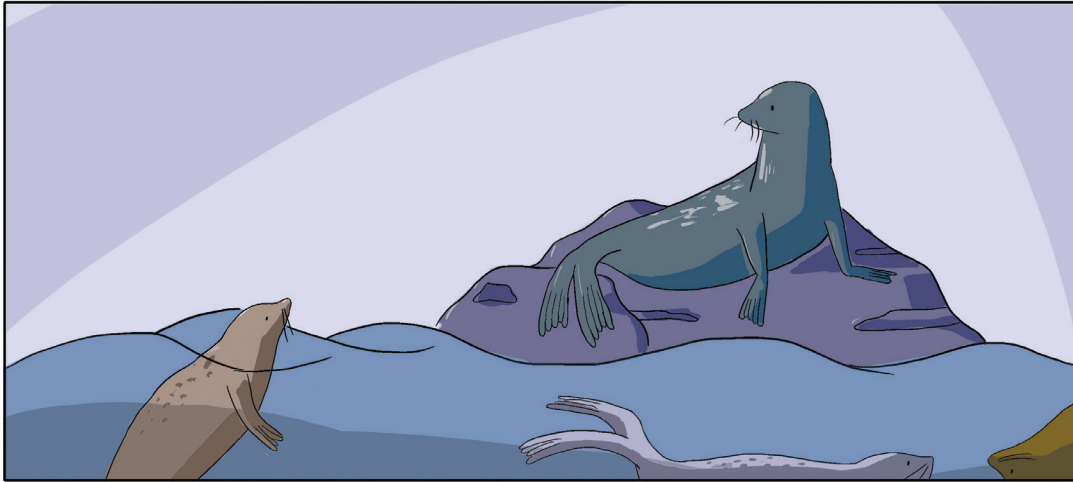
HERE. SEA MAGIC IS  
POWERFUL.  
AND LIKE  
CALLS TO LIKE.  
PERHAPS IT  
WILL HELP.



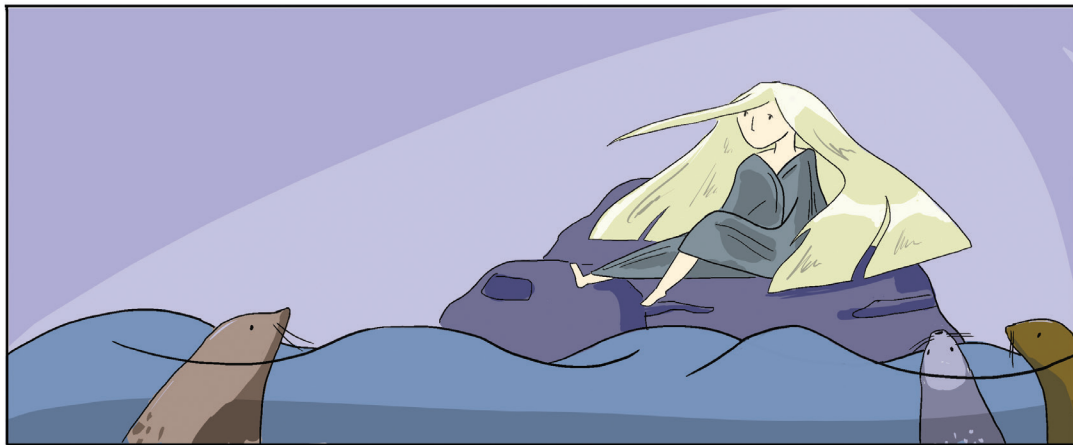




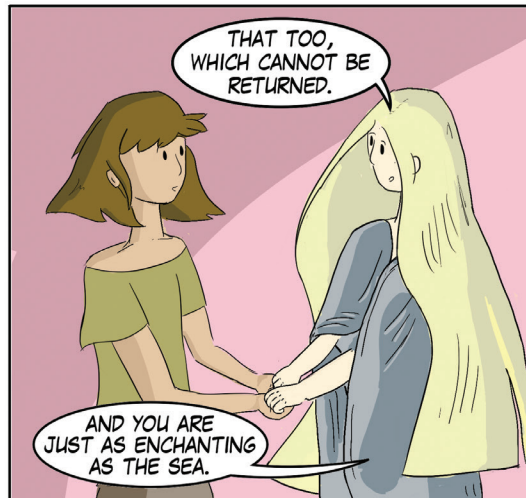
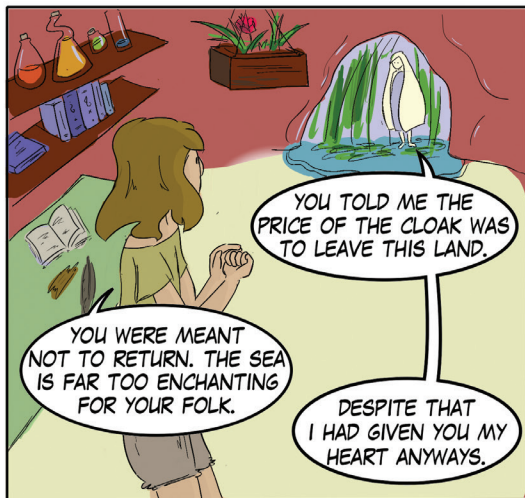




I HAD FOUND WHAT I DID NOT KNOW I HAD LOST. AND FOR A WHILE, MY HEART WAS SOOTHED.  
BUT THE LONGING RETURNED SOON ENOUGH, STRONGER THAN BEFORE.  
A TUG THAT COULD NOT BE EXPLAINED AWAY.



IN FINDING WHAT MY HEART KNEW IT HAD LOST, I HAD LOST THAT WHICH I DID NOT KNOW  
I HAD FOUND. BUT THIS ONE, I DID NOT NEED A WITCH TO FIND AGAIN.  
THIS ONE, I KNEW WHERE TO FIND AND WHAT TO SAY.



THE



END



# COLLECTIVE WISDOM

## WHY CO-CREATE AND WHY NOW?

William Uricchio and Katerina Cizek

*Collective Wisdom<sup>1</sup> is a hybrid field study that sets out to map, define, and shed light on co-creation methods within media (arts, documentary, and journalism) and adjacent areas of knowledge (design, open-source tech, urban and community planning). While the concept of co-creation is gaining prominence, it is an ancient and under-documented dynamic. Media co-creation has particular relevance in the face of today's myriad of challenges, but is not without risks and complications. In this study we identify four types of co-creation in media: within communities (in person and on-line); across disciplines and organizations, and increasingly, humans co-creating with living systems and artificial intelligence (AI). We also synthesize the risks, as well as the practical lessons from the field on how to co-create with an ethos grounded in principles of equity and justice. This qualitative study is not comprehensive, but it is a first step in articulating contemporary co-creative practices and ethics, and in doing so it connects unusual dots.*

Travelling to the Qobustan petroglyph site, across the flats of central Azerbaijan, one arrives at the base of a sudden, enormous heap of rocky boulders jutting out of the semi-desert. Up inside the rocks, in hidden crevices and sprawled across its interior rock faces, lies a spectacular collection of more than 6,000 prehistoric rock carvings etched over the course of 40,000 years. The petroglyphs feature human figures dancing, warriors with lances in their hands, antelopes and wild bulls fleeing, battle scenes, long boats with lines of armed rowers, caravans of camels, and images of the sun and stars. Here, inscribed in stone, is life on earth, and the cosmos as understood by humanity over millennia. These carvings also provide evidence of the recurrent practice of the co-creation processes that have shaped our languages, music, early texts, performance, architecture, and art over the millennia.

## BACKGROUND AND CONTEXT

The concept of co-creation appears to be swirling into popular usage, but the practice is nothing new. Since the dawn of humanity in Africa, co-creation practices have offered alternatives to media projects sparked by single-author visions. Take for instance, the ancient art of rock carvings.



The Qobustan Petroglyph site in Azerbaijan features more than 6,000 prehistoric rock carvings. Photo by Walter Callens.

<sup>1</sup> This piece is the executive summary of the field study "Collective Wisdom: Co-Creating Media Within Communities, Across Disciplines, and with Algorithms." The complete document in its official layout/design, along with the full list of co-authors and contributors, is available at [cocreationstudio.mit.edu](http://cocreationstudio.mit.edu). Collective Wisdom is a project of the MIT Open Documentary Lab, one of Comparative Media Studies/Writing's research groups.



"Marshmallow Laser Feast" Ocean of Air at Saachi Gallery (2019).

Yet, these collective practices are often under-documented, under-recognized, and under-funded, especially in the past 150 years, with the industrialization of cultural production. Eurocentric commerce and scholarship have tended to focus on industrial forms of top-down production, meaning-making, and media that privilege the idea of a singular author, and by extension a singular authority. This methodology of media production often serves as a rationalization of extractive, harmful, and commodifying practices.

By contrast, as Chimamanda Ngozi Adichie said in her 2009 lecture<sup>2</sup>: “When we reject the single story, when we realize that there is never a single story about any place, we regain a kind of paradise.” Co-creation is increasingly recognized in such areas as education, healthcare, technology and urban design. Although each of these and other fields have distinct approaches, fundamentally co-creation is an alternative to — and often a contestation of — a singular voice, authority, and/or process. Further, within digital infrastructures, the lines between audiences, subjects, and makers are blurred, and often erased.

## DEFINITION AND TYPES

As a result of this study, we have arrived at the following definition of media co-creation:

Co-creation offers alternatives to a single-author vision, and involves a constellation of media production methods, frameworks, and feedback systems. In co-creation, projects emerge from a process, and evolve from within communities and with people, rather than for or about them. Co-creation also spans across and beyond disciplines and organizations, and can also involve non-human or beyond human systems. The concept of co-creation reframes the ethics of who creates, how, and why. Our research shows that co-creation interprets the world, and seeks to change it, through a lens of equity and justice.

To clarify, we do not oppose authorship and attribution as valid cultural modes, especially in a time of social breakdown in trust and consensus around verifiable facts. Despite rigor and resonance with audiences, media makers who have practiced and modelled deep media co-creation approaches for decades, notably many artists of color, have been sidelined or dismissed as making *community media*. More than ever, media makers from all cultural backgrounds and lived experiences are required to contest threats to democracy, particularly in the context of extractive technology economies and pathologies of trolling.

Recognizing the systemic supports and extensive literature dedicated to single authorship, this study aims to articulate the values and affordances of co-creation, and argues for their importance in an age of digitally-enabled cultural change and the socially-mandated reassessment of *business as usual* within the field of media making. Additionally, would-be media (and research) *subjects* demand more than representation; they are actively participating in both shaping and

telling their stories, especially online. Many are critical of long-standing, extractive storytelling practices in documentary, journalism, and the arts, and are disinclined to perform their trauma or otherness for the narrow lens of an authoritative outsider. More broadly, audiences from all cultural backgrounds and lived experiences are asking new, more complex questions pertaining to power imbalances implicit in legacy-storytelling contracts between makers and subjects.

### Types of co-creation

We have distinguished four types of co-creation that are often interlinked: within communities (real world and virtual), across disciplines, and humans working with non-human systems. These types of co-creation have distinct qualities and concerns.

Co-creation within communities, is the most commonly identified protocol in this study. While we have separated in-person and online co-creation in order to highlight unique conditions and challenges, most contemporary community projects involve in-person and online practices. The following describes the types of co-creation that were investigated in this study, and the major issues that were considered with each:

**1. Co-creation within communities, in-person.** With community based co-creation, central discussions in our interviews revolved around power dynamics and relationships, i.e., who decides the terms of engagement, what media is made and by whom, and why and who benefits from this type of project. Key concerns identified included the hidden, unfunded work of co-creation. Artists of color and other historically marginalized groups are often burdened with additional responsibilities not recognized in formal media-making.



*The Quipu Project (2015) in Peru worked within local community structures and networks. Photograph courtesy Maria Court and Rosemarie Lerner.*

**2. Co-creation on-line and with emergent media.** On-line, the blurred boundaries between makers, *subjects*, and audiences afford new opportunities, but also open up new risks vis-à-vis questions of ownership, governance, and authority. Distinct questions around issues of ac-

<sup>2</sup> [ted.com/talks/chimamanda\\_adichie\\_the\\_danger\\_of\\_a\\_single\\_story/transcript](http://ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story/transcript)

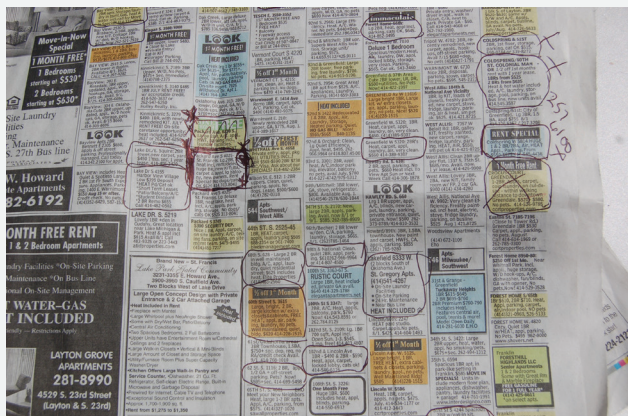


countability and trust arise with journalism in particular. Additionally, in projects involving emergent media, co-creators often prioritize training, literacy, and community access to expensive and complex technologies, which are considered crucial for inclusion and equity.



*Fireflies VR (2018) is one the worlds' first participatory Virtual Reality projects, and is a co-creation with the Brownsville Criminal Justice Center.*

3. *Co-Creation across disciplines and beyond.* When co-creation teams cross disciplinary lines, institutions, organizations, scholars, and makers embark on parallel paths of discovery rather than privileging one discipline's priorities over the other. This often requires comparatively long timelines and joint spaces. Importantly, these projects are frequently partnered with communities outside the academy. Many consider that co-creation resides beyond inter-disciplinary space, and prefer the terms *trans-disciplinary*, or even *anti-disciplinary* to describe their practices.



*Eviction Lab is an ongoing co-created, trans-disciplinary project that draws on the collective expertise of sociologists, statisticians, economists, journalists, web engineers, and community members who all are engaged in documenting the rising crisis of evictions across America in real-time.*

4. *Co-Creation between Humans and Non-Human Systems.* In a more speculative type of co-creation, artists, scientists, and provocateurs are also examining their relationships with living systems, artificial intelligence (AI) as well as technological infrastructures. These processes

too, de-centralize single authorship, but consider questions about the definition of agency and singularity that ask what co-creating with non-human systems looks like, and ponders the phenomena of humans increasingly becoming entangled within larger systems and infrastructures.



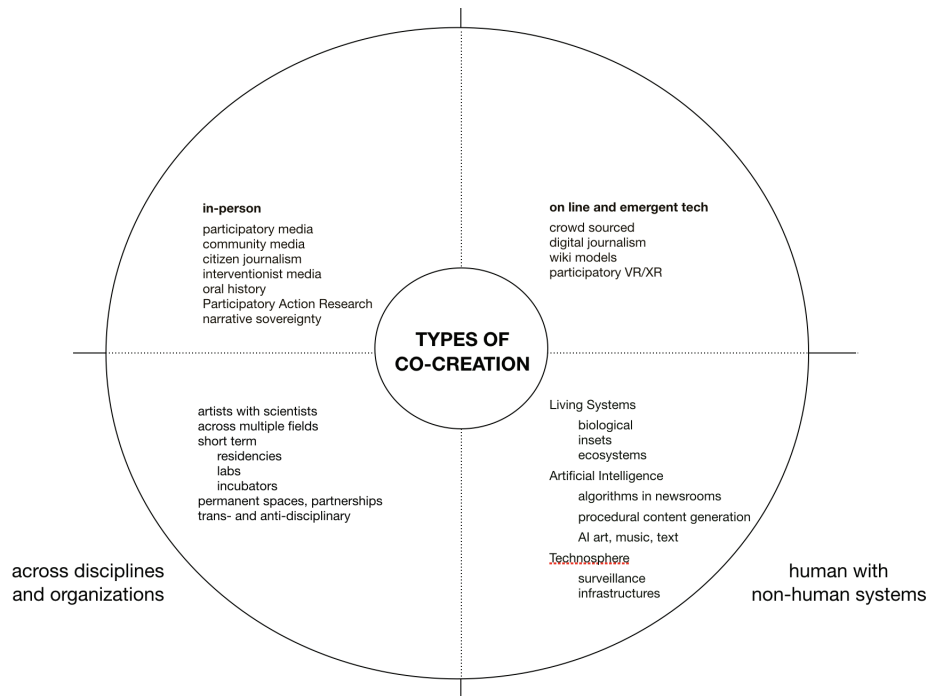
*Souguwen Chung co-creates performative visual art with robots called DOUG (2018)*

## WHY CO-CREATE NOW?

Throughout the research participants identified these key reasons to co-create in this historical moment:

- Co-creation helps us **navigate uncharted territories** of change that are sweeping the planet: technology, digital culture, political and economic upheavals, all intertwining in patterns that legacy 20th-century models of media production are unequipped to handle.
- Co-creation **confronts power systems** that perpetuate inequality, and offers alternative, open, equitable, and just models of decision-making that is rooted in social movements.
- Co-creation can help **tackle complex problems**, especially climate crisis in the epoch of the Anthropocene, with the commitment to finding solutions at the local level.
- Co-creation **deals with time differently**, and recalibrates our sense of time, by insisting on responsiveness but at the same time expanding the timeframe of consequences.
- Finally, co-creation is part of an ecosystem that can **redefine concepts of the public good, civic trust, and the commons**, including our public spaces, cities, platforms, and narratives.

There is a political yearning and narrative turn toward a more



ethical and respectful form of storytelling as expressed by participants in this project, one made possible in the co-creation process. A central question emerged during the study: How do we share the world with

each other in equitable and just ways?

## KEY FINDINGS

We heard, throughout the research, that:

- Co-creation does not replace single authorship but is an equally valid approach to making media, one that has not been well-documented, recognized, and properly funded.
- Co-creation cannot occur without equity and justice, but it can also offer a way to deepen and extend equity and justice.

Therefore, in this study, we identified the following findings:

### Co-creation has risks

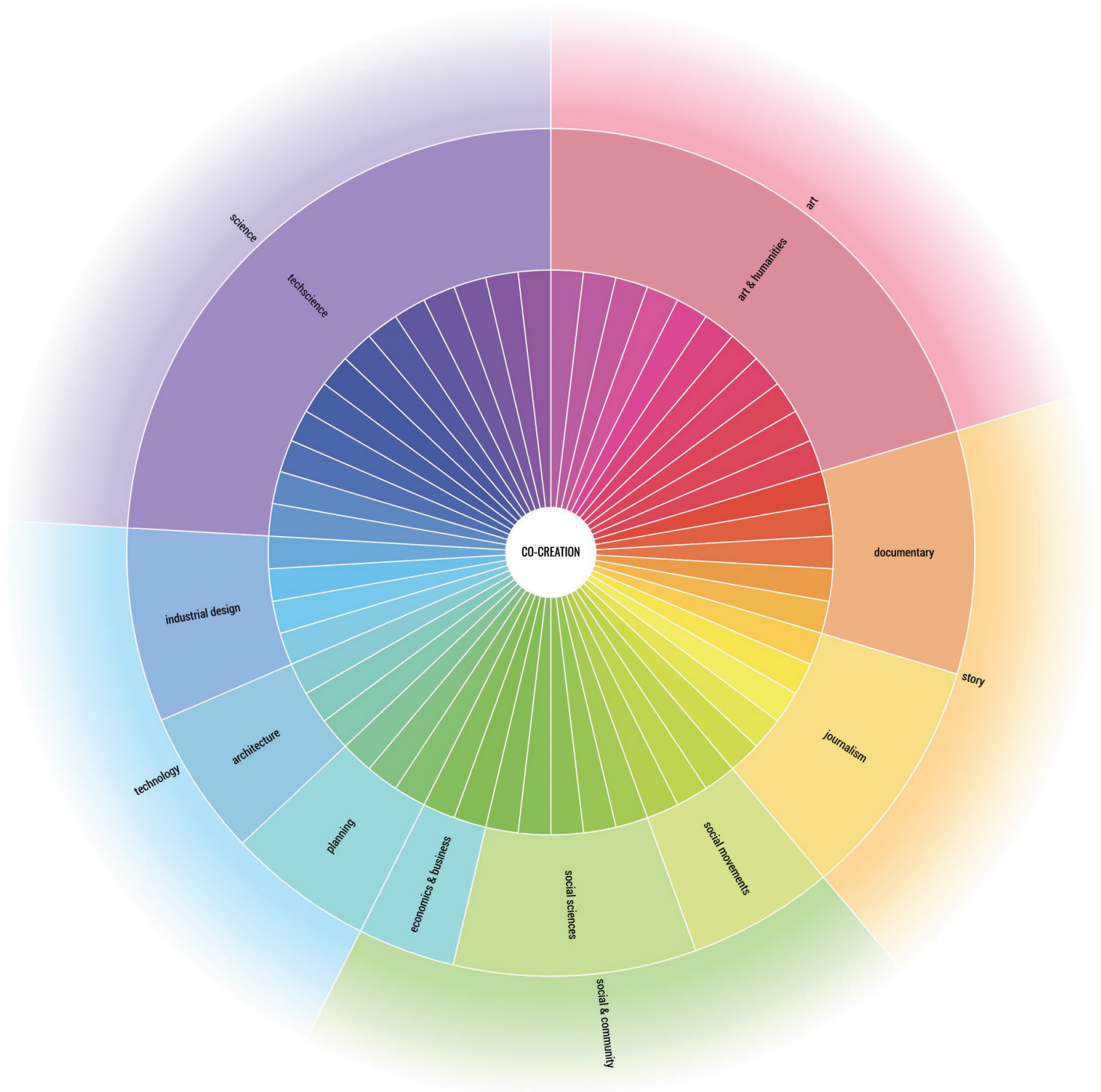
While co-creation has a proven track record of negotiating divides, and the results emerge as more than the sum of their parts, it can also be abused. Numerous risks were articulated by participants across the research who warned that co-creation could:

- Threaten editorial integrity and artistic independence.
- Heighten expectations of trust, commitment, and time on all sides.
- Marginalize makers and their work by categorizing them into the sub-genre of *community media*, especially artists of color.

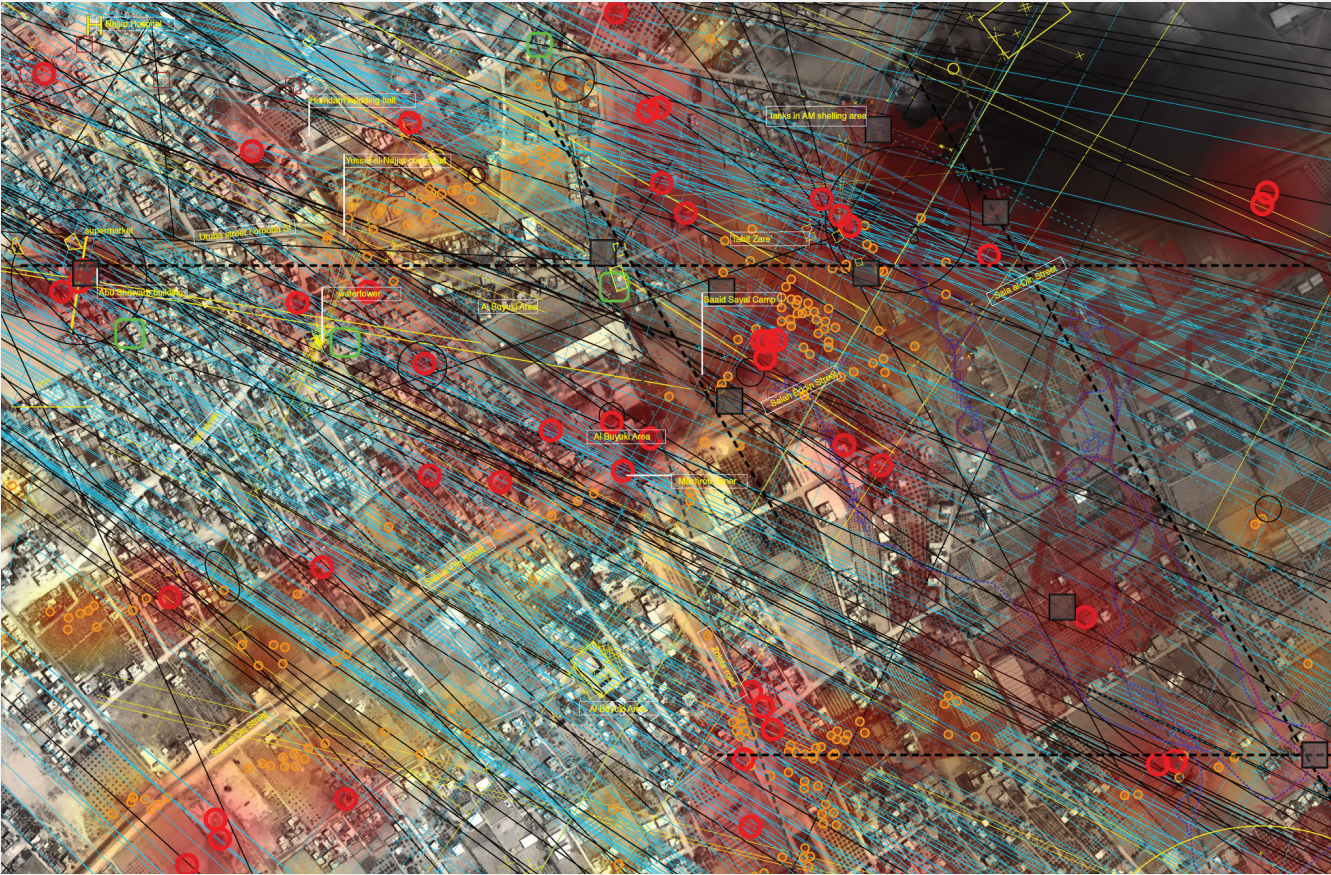


*The climate crisis is a central theme in the work of Marina Zurkow, a media artist exploring interactions between nature and culture, focusing on issues such as invasive species and petroleum dependence. Her work utilizes a variety of media, including animation, dinner parties, biological materials, and software. Pictured above: still from Mesocosm (Wink Texas), and Hazmat Suits for Children, 2012.*









*Forensic Architecture is an interdisciplinary research agency made up of architects, artists, filmmakers, journalist, software developers, scientists, lawyers, and a network of collaborators, based at Goldsmiths, University of London. The agency develops novel evidentiary techniques and tools “for analysing and presenting state and corporate violations of human rights across the globe (which) involve modelling dynamic events as they unfold in space and time by creating navigable 3D models, filmic animations of environments undergoing conflict, and conceiving of interactive cartographies on the urban or architectural scale. The agency also develops open source software that facilitates collective research together with victim groups and stake holders”. They collaborate with activists, legal prosecutors, and human rights organizations such as Amnesty International and the UN. Forensic Architecture is also an academic field started by Israeli architect Eyal Weizman which combines these two perspectives to turn the architecture practice into “a methodological and analytic device, with which to investigate armed conflicts, environmental destruction and other political struggles”.*

*Image of Rafah, courtesy of Forensic Architecture.*

- Have unintended consequences, especially online and with AI.
- Exploit labor, steal ideas and profit from them.
- Be co-opted for the marketing of projects that reproduce power inequities.

#### **Co-creation lives within an ecosystem of practices**

Co-creation lives within a large dynamic ecosystem of practices situated across many areas of knowledge.

#### **Co-creation has best practices and practical lessons from the field**





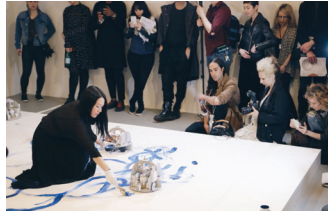


Several recurrent, key, practical lessons emerged from our conversa-

tions with co-creators. The following approaches help to both facilitate co-creation and mitigate risks. Co-creation:

- Begins with deep listening, fostering dialogue and learning rather than coming in with preset agendas.
- Involves identifying common principles and negotiating terms and benefit agreements on individual, organizational, and community levels. These terms are determined beforehand to ensure equity and inclusion, by clearly spelling out decision-making, ownership, and governance issues.
- Involves balancing the project’s process with the outcomes, rather than pre-defining relationships and processes solely by the deliv-



LANDMARK CO-CREATED MEDIA PROJECTS

	<p><b>Question Bridge</b> – This is a documentary project in which the co-creators interviewed Black men across the US; these men were invited to record questions for subsequent interviewees. The project has taken many forms including a five-channel video installation, book, mobile app, and community events.</p>
	<p><b>Edge of the Knife</b> – This is a dramatic feature film shot entirely in the Haida language (British Columbia, Canada), and was co-created by three organizations: the Haida Nation governmental body, Isuma Productions (a Canadian Inuit Production Company), and the University of British Columbia.</p>
	<p><b>The Panama Papers</b> – A global collective of investigative journalists from 107 global news organizations who joined forces in 2016 to interpret the largest data leak in history. It brought down governments, presidents, and it marked the biggest effort ever in journalism to collaborate rather than compete.</p>
	<p><b>Family Album USA</b> – Artist Thomas Allen Harris co-creates a living and growing family picture album of America by traveling across the country and inviting community members to share images and stories from their personal family archives. The resulting work involves live interactive performances, documentary films, web projects, and now, a TV special series on the PBS (US) television network.</p>
	<p><b>DOUG</b> – Artist Sougwen Chung co-creates paintings with a robot in front of live audiences. The robot is prompted by both the artist's actions and live data from urban surveillance systems.</p>
	<p><b>The Folk Memory Project</b> – Based in Beijing China, the collective invites young filmmakers to visit their home (in rural communities) to document the experiences of relatives and elders during the Great Famine of 1959-61. This growing body of work now includes over one thousand interviews. The collective performs the recordings to live audiences, using projection, dance, and multimedia.</p>
	<p><b>Eviction Lab</b> – This is a co-created, trans-disciplinary project that draws on the collective expertise of sociologists, statisticians, economists, journalists, web engineers, and community members who all are engaged in documenting the rising crisis of evictions across America in real-time.</p>

erables.

- Fosters diverse, alternative forms of narrative structures. Co-creators can shed linear, conventional formats, and embrace non-linear, open-ended, ongoing, multi-vocal and circular, spiral narrative forms.
- Centers healing, safety, and sustainability by employing trauma-informed practices. Co-created media projects are deeply connected to the well-being (and transformation) of the participants and community rather than repeating and reproducing trauma for the benefit of audiences or end-users. As such, ritual often replaces performance in co-creative practices.
- Both allows for, and demands, appropriate forms of leadership, language, and technology.
- Provides community access to technological and media digital literacy as core to many co-creative projects.
- Demands alternative models of funding, evaluation, and impact.
- Involves always being iterative, circling back (rather than ploughing ahead).

## FIELD STUDY APPROACH

In the interest of accountability, we acknowledge that due to institutional constraints and proximity, this study has two primary authors — a scholar and a documentarian — who are not living at the social locations reflective of where some of this work emerged.

To begin to address these constraints, our approach to this work was designed to reflect multiple perspectives. Our research team was multidisciplinary, comprised of journalists, technologists, placemakers, researchers, and students who are concerned with the history, relevance and opportunity of collective methods. Additionally, we intentionally sought out the expertise of members of historically marginalized communities both within and outside academia. We invited co-authors to write chapters and participate in the conversations, and in one case we were invited to enter into a written community benefit agreement. Finally, we embarked on an extensive participatory reviewing and editing phase of this document.

Overall, we conducted 99 individual interviews and held 10 group discussions; a total of 160 people working in media and related fields participated actively in the study. Recognizing that this approach is not comprehensive, we will publish this manuscript as a live, dynamic study on innovative digital platforms that enable further conversations and that will encourage more voices to join the discussion.

We conducted a literature review and gathered lists of 222 readings and 251 projects relevant to this field of study. We used a hybrid methodology, with a first phase of exploratory, open-ended, one-on-one interviews with key practitioners and stakeholders (including a

snowball methodology to help identify other potential participants/projects). We combined this approach with a second phase informed by participatory design, and that involved group discussions. The geographic scope of the project was significantly limited to North America, although several projects and people reside elsewhere in the world. Further, many participants referenced work tied to their ancestral and diasporic communities.

Some of the questions posed in this study are based on 20 years of the team's co-creative experience. This includes Katerina Cizek's decade-long sojourn at the National Film Board of Canada where she worked on two long-form, co-creative documentary projects that involved in-person and on-line communities, and were interdisciplinary, as well as involved non-human systems. After Professor William Uricchio and director Sarah Wolozin invited Cizek to join the MIT Open Documentary Lab as a visiting artist in 2015, the team soon recognized a need for a hub to document, research, incubate, and support co-creative practices. Work on the Co-Creation Studio was begun with seed funding from MacArthur Foundation, with the idea and funding for this field study originating with JustFilms at the Ford Foundation.

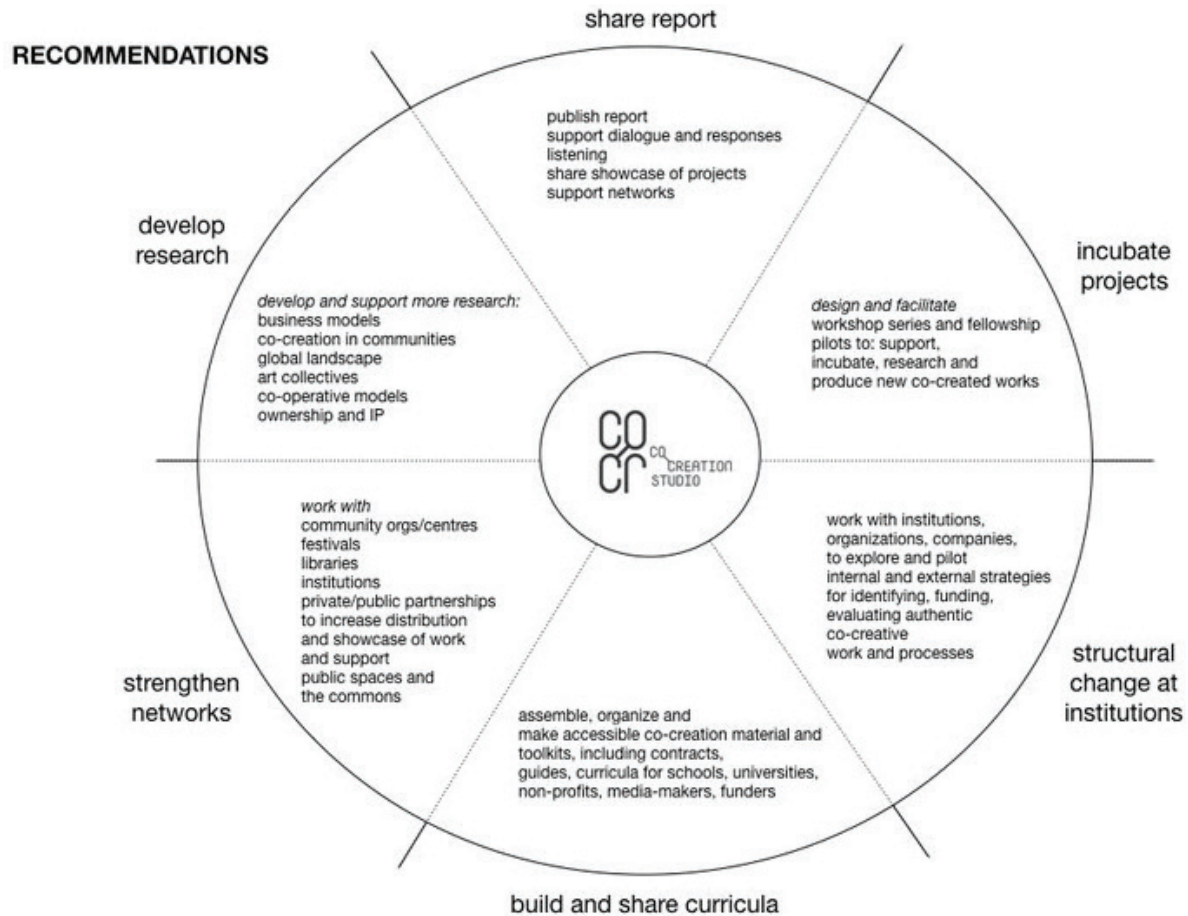
The team sought to take active measures to arrive at a field study that is reflective, as much as possible, of a wide range of worthy work, of politically challenging content, and actionable tools. This field study sought to: document historical and contemporary co-creation projects; identify risks and tensions as well as practical approaches; co-define co-creation practice and principles; highlight types of co-creation occurring across media disciplines and adjacent fields; and showcase exceptional projects.

Most importantly, this worked is shaped by many. Author and placemaker Jay Pitter guided the MIT symposium, and contributed valuable key questions as well as a framework for the executive summary. Further, this report includes chapters that highlight the first-person voices of the Detroit Narrative Agency (DNA), Amelia Winger-Bearskin, Louis Massiah, and an extended excerpt from a conversation between Thomas Allen Harris, Michèle Stephenson, Maori Holmes, Maria Agui Carter, and Juanita Anderson. The report also features papers and spotlights (case studies) written by Sarah Wolozin, Dr. Richard Lachman, and Sara Rafsky. The report is polyvocal in that it is primarily built of direct quotes from over 100 interviews and discussions. It also includes vibrant examples of 251 such as the following, which suggest the diversity and abundance of approaches to co-creation projects:

## RECOMMENDATIONS FOR MEDIA CO-CREATION

Overwhelmingly, the research points to recommendations that involve supporting and investing in process, not solely in deliverables or products. This recommendation extends across individual projects, community initiatives, institutional support, and identifies a need for systemic changes in the ways media are produced and connected to social movements. Some of this work may be appropriate in partnership with the Co-Creation Studio at MIT Open Documentary Lab,





while other work may best be suited elsewhere. Our key recommendations follow.

**1. Research**

More research should be conducted by multiple stakeholders in order to map and understand operations of co-creation given the context of a dominant culture, predisposed to individual ownership, accumulation, and appropriation. We need to understand the implications of co-creation in a society of systemic inequity and in an era of fast-changing biological and technological (AI, e.g.) developments. We need to continue to learn from historic and current human practices by studying and understanding co-creation: in business/organizational models; in diverse communities; internationally; in ownership and intellectual-property models; art collectives; co-operative economic models; transdisciplinary models and partnerships in art and AI; in deep fake and synthetic media, and in new forms of convening.

**2. A Library of Toolkits and Curricula**

There is a need to create resources for teaching, sharing, and learning co-creative models. This involves co-creative strategic planning that will create networks and hubs to document, organize, and create an ac-

cessible library of existing toolkits (contracts, worksheets, community agreement forms), best practices, and that will map failures through modular curricula. These networks and hubs should include: media-makers; community groups; non-profits; private companies; public institutions; media institutions, and universities. The resources would be intended for professional development as well.

**3. Structural Changes at Institutions**

More research and testing within institutions, both public and private, must be undertaken, by acknowledging and funding process, and not just product. Modes of creation beyond traditional authorship should be recognized. This will develop pathways for co-creative practices internally, and methods to reach communities that already co-create. These processes must be ethical, just, transparent, and equitable.

**4. Spaces for Incubation and Production**

More sustainable programs, fellowships, workshops, and incubators should be developed to facilitate co-creative projects that honor the processes, multiple partnerships, and length of project time frames needed. The governance of these spaces and projects needs to be interrogated. These sites need to provide adequate resources, mentors,



*Zhang Menqi dances with Grandma Lei in the Folk Memory Project, a co-creative, ongoing program that animates intergenerational rural communities through oral history, documentary, dance, and collective healing. Photograph courtesy of The Folk Memory Project.*

cross-disciplinary supports, witnesses, and, intentional healing and trauma-informed practices should be implemented.

### 5. Networks for Distribution

Spaces and networks for distributing co-creative projects need to be supported. These spaces include community centers, libraries, alternative spaces, schools, festivals, and universities. This space might be with allied funders engaged in projects.

## CONCLUSION

Of the thousands of engravings at the Qobustan petroglyph site in Azerbaijan, one inscription was likely the work of a single person. Probably the last carving of note here is graffiti, at the base of the site — carved out by a Roman legionary passing through in the First Century C.E., one who chiseled out a version of the message, “I was here.” The sentiment feels lonely, almost mournful, however, when juxtaposed against the collective spirit rising from the petroglyphs across the interiors of the massive rock faces, and surviving across millennia. What vibrates instead is something joyful and ecstatic, a proclamation that, “We are here!”

Together, we share a vast history of co-creation. From early rock art, to the development of our sacred texts, to the politicized twentieth-century newsreel collectives, to the latest experiments in immersive technologies fuelled by AI, co-creation is remarkably commonplace. But it is also remarkably invisible. Before it is co-opted by digital empires, and marketeers, we have a chance to define it, claim

it, and ground it to principles of equity, justice and authentic collective models of ownership.

Media co-creation allows for new, better questions, and for paths in which there are not always singular answers. Co-creation can enrich daily practice, it demands self-reflection, and forges harmonious, equitable relationships between partners, within and across communities, beyond disciplines, and working with non-human systems, many of which we do not yet fully understand.

Throughout the making of this study, primarily through the listening, we have been humbled and inspired by the phenomenal stories of co-creation, and by the openness of all stakeholders to learn from each other and to engage in courageous questioning. The conversations have been nuanced, messy, difficult, exciting, and above all, overflowing. Co-creation carries with it a profound respect for each person’s unique expertise, and also the knowledge that we must share both the burden and the liberation of determining our future collectively. There is an urgency to the challenges we face in this moment in history, and no one person, organization, or discipline can determine all the answers alone.

Making can divide, alienate, and exploit — or it has the potential to be inclusive, equitable, and respectful. The latter conditions are far more conducive to the collective efforts it will take to address the immense challenges of structural inequality, exponential population growth, the Anthropocene, and the ever-diminishing resources that follow in their wake. In reaching beyond the mere sum of our collective intelligence, we stand a chance at finding our collective wisdom. Co-creation offers hope. ●



# RIVERS AND ROADS: RETRACING TIME IN LASSEN NATIONAL PARK

Emily Levenson, '22

Each year, an editorial board of CMS/W lecturers puts together Angles, a collection of the best work from students in introductory writing subjects. Emily Levenson's piece below is one of eleven pieces selected this year and one of three under the umbrella of "Landscape and Memory," with the others collected under "Identity and Experience," "Identity and Experience," "Issues in Science and Technology," and "Profiles". You can read them all at [cmsw.mit.edu/angles/2019](https://cmsw.mit.edu/angles/2019).

Every summer, my family makes the five hour drive from Berkeley, California to the Warner Valley — home to lush green meadows and tall pine trees nestled amidst three mountains. For thirteen miles from Chester, the nearest logging town, you pass through dense, dark forest only to have the road open up into a pale yellow and spring green clearing. Mountains Harkness and Kelly frame the road. The narrow asphalt leads directly towards Mt. Lassen in the north. An outcropping of rock on the volcano's face looks like an eye from miles away. My dad and I always joke that it's the villain Count Olaf's hideout from *A Series of Unfortunate Events*.<sup>1</sup>

The road skims the perimeter of the meadow, which quickly transitions into a bog, shrouded from view by a dry line of evergreen trees. Two simple wooden cabins on stilts with big decks face each other next to a little bubbling creek. My grandparents built these cabins a generation ago after purchasing the land from one Mr. Lee, a cattle rancher who owned the valley ("Warner Valley Wildlife Area"). My dad came here every summer as a kid, and now the familiar greenery and crisp air mark my own time off from school.

The Lassen National Park boundary signs create a ring around our property, little aluminum plaques painted white with matte olive text, nailed into the soft bark of conifer trees. Long before this place was mine, its natural beauty captivated travelers' imagination. I recently discovered a guidebook for the park from 1929. The author speaks with reverence about the power of the natural processes that shaped the land, capturing my wonder over seventy years before I was born.

Time, and Nature in her further processes of creation, caused decomposition of the lavas by which soil was formed. Forest growth commenced—to

<sup>1</sup> A Series of Unfortunate Events is a children's series by Lemony Snicket, which follows the miserable lives of three orphans. Their dastardly relative, Count Olaf, perpetually tries to steal the siblings' fortune in cruel and creative ways. Olaf's symbol is an eye, tattooed on his bony ankle.



This stream has been redirected countless times by aspiring hydraulic engineers such as these, equipped with sticks and shovels. Pictured: My little sister Eva (left) and her friend (right).

hold in storage moisture from the rains. Gradually in outward appearance this barren lava field was softened by the beauty of lake and forest, pleasant brooks and lovely flowers. The work of the old volcano was done, yet it has continued from time to time in less significant bursts of present-day activity, as though, like some old gentleman impelled by vanity, to voice in later generations the importance of past accomplishment. (*Lassen Glimpses: The Lassen Park Guide Book*, 3)

Each trip to Lassen is marked by the same traditions. We swim in the Feather River; we visit Drakesbad Guest Ranch to feed carrots to their horses. If we're lucky, we get to hang out in the pool, which is directly fed by water from the mineral hot springs in the neighboring foothills. According to a historical report by the Park Service, Drakesbad was originally just a series of campsites and a log cabin built by a trapper named Drake in the late 1800s. The Sifford family bought the property around the turn of the century and brought in guests by the hundreds to drink from the mineral springs, fish, and hunt. In 1914, Mt. Lassen erupted and continued to expel ash for the better part of a decade, drawing in adventurous tourists and getting the resort on its feet (Hoke, Warner, 9).

Now, when we get cabin fever, the short drive down the road

provides a welcome excursion. My dad knows the people who run the place by name, even though we've never once stayed there as guests. Drakesbad boasts several trailheads, so we usually hike into some primordial wasteland with a name like "Devil's Kitchen," marked by the smell of sulfur and steam pouring out of the ground. An excerpt from the book *Romance of the National Parks* (2009) referred to Lassen as "an arena where interpretation of the processes of creation may be graphically illustrated for laymen" (James). The earth seems to breathe through these geothermal hotspots, and the landscape comes alive right in front of us.

But first, the Feather River. The walk down to the swimming hole is always rich with anticipation. The dusty path curves through brittle trees until broad boulders come into view. Now comes the choice, to scramble down the sunbaked rocks or keep to the dirt path down to a grassy rectangle the size of a patio. The river glistens, and you can see every calico stone that lines its floor. When I see the water, I feel the freezing burn in my throat, a premonition, the feeling of all my nerves lighting up when I dive into the river of snow melt. The sun relentlessly beats down on my already sunburned shoulders. Pine needles prickle my unprotected bare feet. We lay out our beach towels, bright crayola-box hues of turquoise, orange, and magenta. Shirts come off, sunscreen sprayed on, egg salad sandwiches and green grapes enjoyed in the spotted shade of sparse, young evergreen trees.

This is the mountains to me. Reading on the rocks with my feet dangling in the icy water. Turning sideways to squeeze through a diagonal crevice between two boulders, a pathway down to a secret grotto. My brother claims that he saw a frog in there once. Dad said he'd pay us a quarter for every frog we saw. They'd died out in droves over the past few decades. When he was a kid, the brooks were bubbling with amphibian croaking, but the frogs only exist in our collective memory now.

I stand on the edge of the grey rock, toes inches from the edge, peering down at sunlight flickering on deep green water. I can just barely see the pebbles several feet beneath the surface. A deep breath. A glance back at the boy behind me. A leap into first exhilarating nothingness and then an iciness shooting through every vein. And a moment of peace. And then my head bursts out of the water. I consider whooping like my dad always does, then think better of it. I am seven years old, and then fourteen, and then seventeen. When I'm a kid, the boy is my brother, cheekily telling me to kiss my biceps and yell "Firepower!" to work up the courage to leap into the water. In middle school, the boy is a teenage family friend. He's loud and teases me for being "basic" when I wear knee socks with shorts. He and his twin sister are a year older, and I desperately want their approval. Last summer, the boy is my boyfriend, brought on family vacation as a last hurrah before he moves away and we break up for college. He tells me that this place feels like home now, too. I don't want this spot to be his. It's mine, my dad's, my brother's. We let visitors in for a look around and share the bliss of the Feather River with them for a week at a time. In the end, this spot holds our intertwined family history, ever growing.

Preparing to jump from just a few feet above the river always makes my hands shake, and I have to dance around to brush off my jitters.

Meanwhile, my dad has no fear plunging in from the rock six feet above, which gives me heart palpitations. Back home, Dad works managing budgets for the city and county of San Francisco. I imagine him making million-dollar decisions for one of the biggest cities in the country, just by shifting over columns in a spreadsheet. It's the kind of work that requires good sense and a level head. That responsible civil servant is another creature from this effortlessly adventurous mountain man.

When I'm fourteen, my dad and I drive along the bumpy backroads to Cinder Cone. We have the only car on the flat highway from here to the horizon. We see an unkempt dirt road split off. The sign points to a town, eighty miles away. Imagine, we're already in the middle of nowhere and somewhere off far in the wilderness lies...something. Someone. We swear that one day, we'd like to turn off on that road and drive for a few hours, just to see who lives out there.

We drive all the way to the side of Lassen National Park opposite the cabin. The beginning of the hike is just an average stroll through the forest, but normality is left behind when cooled lava beds become a wall along the trail. Soon, a black cone of sand towering into the sky comes into view. It looks like an artifact of an alien world, bare except for a few lonely trees poking out of the earth. From directly below, the path spiraling up its side looks like a forty-five degree angle. For every step up the black gravel, my feet slide a few inches back down the trail. I'm not sure you could even call it a trail. It is a flat stretch of sand that blends into the slope. Dad teaches me the "Sierra Step," a tired backpacker's method of taking nano-sized breaks to avoid stopping completely. For every three steps, you pause for a beat. One, two, three, rest. One, two, three, rest. I try not to look down.

To pass the time, he tells me about his time in the Peace Corps. These are my favorite stories because the young, male protagonist is simultaneously courageous and naive, lost and virtuous. This adventurer joined the Peace Corps because he didn't know what to do after graduating college. He learned Ciluba (a central African language) and fish farming and set off for two years in Zaire, now known as the Democratic Republic of the Congo. Arrogantly, he brushed off warnings from members of his first village while choosing where to build his home. Within months, his new hut was eaten from the inside out by termites, since he had it built directly on an underground termite mound. Another time, my dad (or this Tintin-like hero whom my dad talks about<sup>2</sup>) accidentally bought rotten hippopotamus meat from the market and only realized his error a bite away from painful food poisoning. When he walked into a new village, there to build fish ponds and make friends, children would run away screaming. They thought he was a ghost or the bogeyman, there to punish them for not doing their chores.

My dad knows everything, and in the mountains he is both a novel and an encyclopedia. Swashbuckling and rule breaking, world traveler, adventurer, explorer. He once convinced a National Park Ranger to

<sup>2</sup> *The Adventures of Tintin by Hergé is a 20th-century Belgian comic book series that follows a reporter (Tintin) who gets in trouble and goes on worldwide adventures. My dad tried to read me the original French versions as a kid, but that didn't go too well because I don't speak French. We had to settle for the translations.*





*There's no shade on Cinder Cone, so you better bring your best floppy hat.  
Pictured: My dad.*



*A fever dream of a landscape.*

go off trail with him in a geothermal area where falling through the brittle ground would mean third-degree burns. If they made one wrong step, getting help would require a helicopter lift to the nearest hospital, at least fifty miles away, after someone hiked far enough to find cell service to call the authorities. Luckily, they made it through unscathed, but I could never imagine taking that risk on a whim.

With no distractions but the butterflies looping through the breeze and lizards peeking over the edges of rocks, we talk deeply and for hours. It feels like we've gone back in time. The internet seems but a twinkle in some military computer scientist's eye, and I am hiking up an ancient cone of volcanic sand in the middle of the wilderness. We reach the peak.

In one direction, the Painted Dunes look like someone took buckets of rusty red and violet hues and poured them over a windy beach. Next to them, the Fantastic Lava Beds are a harsh field of jagged, porous igneous rock. Visible in a far corner of the park, Mt. Lassen winks its eye behind miles and miles of burned forest; the leafless trees are veterans of the wildfires. Where I am at a loss for words, the 1929 guidebook describes the scene for me:

In part a fertile land of Nature's agriculture, contrasted by bits of present-day volcanics; all combined to make more interesting the magnificent spectacle of the old volcano rising in the midst. Perhaps nowhere in the world is the work of Nature in relation to physical geography evidenced more clearly or more interestingly. Here is a museum—a rather special treasure chest of Nature's varied handiwork. (Lassen Glimpses: The Lassen Park Guidebook, 4)

The landscape is oblivious to the breath caught in my throat. I don't think my presence would even register on its geological timeline. I like to think that my family has etched some dent into its surface,

our notch nicked into the bark of a massive Jeffrey pine tree. Still, I suppose we are just passing through.

This alien world is one where my mind feels clear and exhilarated. The wind picks up as we walk the perimeter of the crater at the top of Cinder Cone, and I grab my dad's hand. I picture myself falling down the mountain, scraping my hands and knees on the sand. He keeps me upright and stands in between me and the edge.

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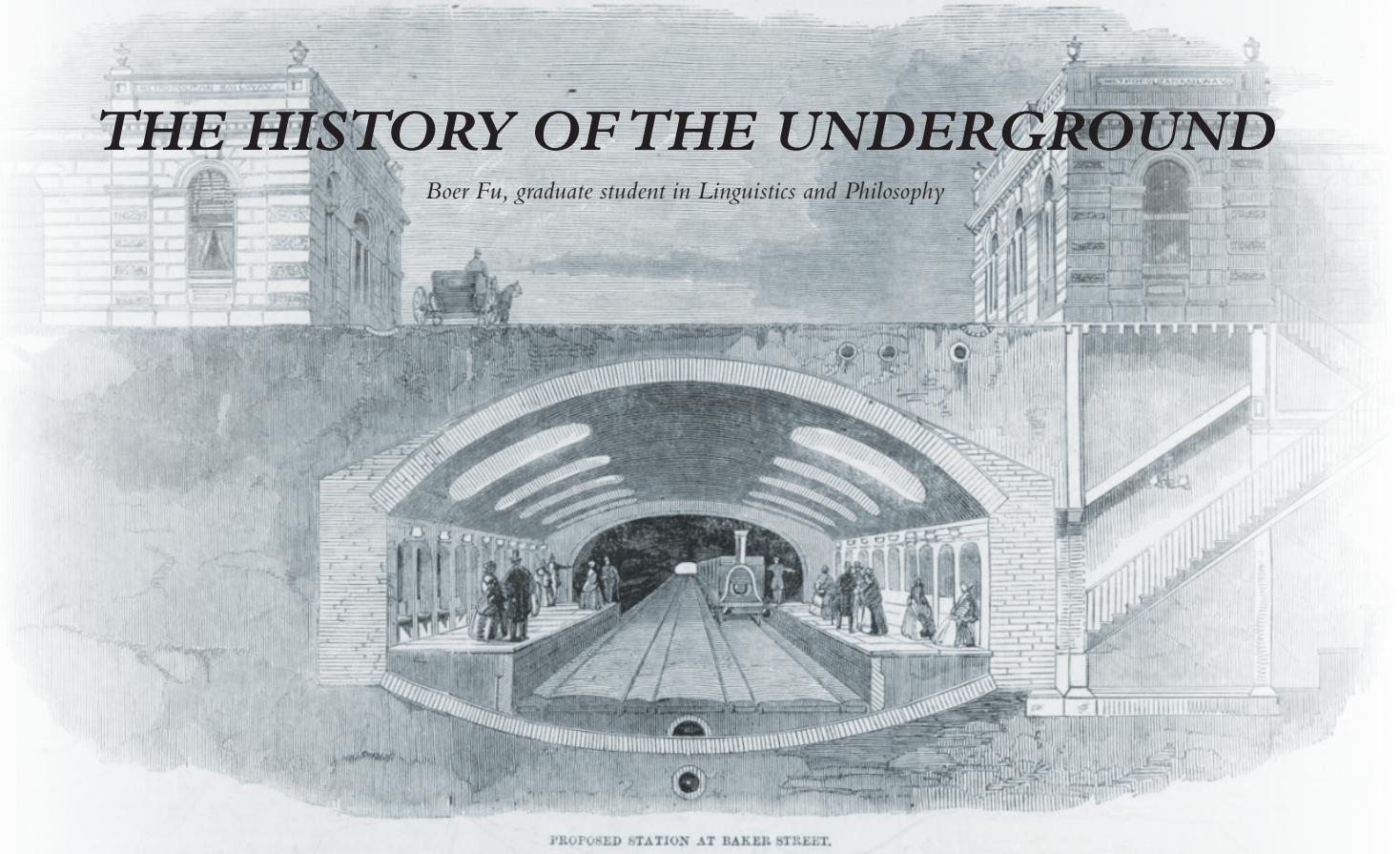
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# THE HISTORY OF THE UNDERGROUND

*Boer Fu, graduate student in Linguistics and Philosophy*



*“The History of the Underground” won first place in the Obermayer Prize for Writing for the Public, part of the 2019 Iona Karmel Writing Prizes. The dozen-plus prizes are awarded every May by Comparative Media Studies/Writing. This competition was named in honor of the late Iona Karmel, novelist, poet and Senior Lecturer in the writing program. Throughout her teaching career, Karmel’s outstanding contributions to creative writing at MIT were her inspirational teachings and relationships with students.*

**Y**ou are standing on a platform underground of Baker Street, but there is plenty of natural light coming through the glasses in the arched roof. The train is nowhere to be seen yet, but you can faintly hear a rhythmic rumbling coming from deep inside the tunnel. Many people, like you, stand on their tiptoes to have a proper look, men wearing top hats, and women with skirts that touch the floor. The thundering becomes louder and louder. Before you see the headlight of the train, you hear a sonorous whistle first. Then the steam locomotive comes into full view, elegantly stopping by the platform. The crowd jostled forward, while a guard’s booming voice is carried down the platform, asking people to go to the carriage that corresponds to the class on their tickets. You re-examines your ticket, 3<sup>rd</sup> class, and is delighted to find you are standing on the right section of the platform. Stepping onto the train, you find that all the seats have been taken. But that’s no matter, you are content with standing. A whistle sounds off from the platform, and the train begins to move.

Once inside the tunnel, the windows become pitch black. You see a blurry reflection of yourself by the flickering gas light anchored on the walls of the carriages. The air is hot and steamy, with a tinge

of the smell of smoke. At first, you think nothing of it, as this is nothing compared to the constant whiff of manure on the roads above ground. But after a few stops, the sulfuric smell becomes more and more unbearable. A child bursts out crying in the corner, and you begin to wonder if you are going to die of suffocation right here on the spot. The train pulls to a stop, and a voice on the platform cries out: King’s Cross. You feel much relieved, only one more station to go. You happen to look across the carriage to see someone reading a newspaper. On the front is a picture of the American president, Abraham Lincoln, under which is the latest development of the war going on across the Atlantic.

The date is January 10, 1863. And you are one of the 30,000 Londoners who rode the world’s first underground railway, the Metropolitan Railway, on its opening day.

The Metropolitan Railway was the brainchild of Charles Pearson, a solicitor to the City of London. He first proposed the idea of an underground railway transportation in the 1840s, to relieve the working class of their cramped living situation in the city by helping them move to the suburbs.

It was a time that saw the rapid development of intercity railways. Ever since the opening of the first passenger rail service powered by steam locomotives between Liverpool and Manchester in 1830, there had been a wave of railway constructions heading into London. The first to reach the capital was the London and Croydon Railway, opening its south bank terminus London Bridge in 1836. Euston opened in 1837, Paddington in 1838, Waterloo in 1848, etc.

The frantic period of building railways into London by various companies gave rise to the high concentration of train stations in central London today — almost twenty. But they weren’t so central in



## 2019 ILONA KARMEL WRITING PRIZES WINNERS

### Boit Prize for Engineering Writing

1st: Amy Fang, "How Bake Time and Ingredient Ratios Affect Cookie Texture"  
2nd: Kristen Frombach, "Haugh Model and Modification"

### Boit Manuscript Prize, Essay

Jessica Adams, "After the Storm"

### Boit Manuscript Prize, Fiction

1st (Tie): Rona Wang, "Idols", and Jocelyn Shen, "Time Zone"  
2nd: Daniel Guberek, "Paths That Can't Be Traced"  
Honorable Mention: Sam Pauley, "A Fool's Errand"

### Boit Manuscript Prize, Poetry

1st: Sophia E Diggs-Galligan, "Sylvian Fissure"  
2nd (Tie): Gailin Pease, "Years Spent Wanting", and Jullianna R Bracco, "Text Your Friends and Water Your Plants"  
Honorable Mention (Tie): Fatima Gunter-Rahman, "Life's Small Questions", and Katie O'Neil, "A Natural Body"

### DeWitt Wallace Prize for Science Writing for the Public

1st: Mimi Wahid, "Urban Forestry"  
2nd: Leah Yost, "Unimaginable Magnitude"  
Honorable Mention: Joe Faraguna, "We Are All Slime Molds at Heart"

### Ellen King Prize for First-Year Writing

1st: Ruby Kharod, "Unprepared" (essay)  
2nd: Nicole Munne, "March 14th" (short story)

### Enterprise Poets Prize for Imagining a Future

1st: Jessica Adams, "If Jesus Had an Instagram"  
2nd (Tie): Luiza Bastos Lages, "Fictional Landscapes", and Sachin Bhagchandani, "Simulated Reality Machine"

### The Rebecca Blevins Faery Prize for Autobiographical Essay

1st: Chloe Yang, "Battle Hymn of a Tiger Child"  
2nd: Rona Wang, "The Moon and Her Lady"

### King Prize for Writing Science Fiction

1st: Steven Truong, "The Little Sparrow"  
2nd: Daniel Guberek, "Recreation at a Library"  
Honorable Mention: Sam Ingersoll, "The Fish Tells You to Wander"

### Obermayer Prize For Writing on the History of Innovation (Graduate Students)

Kallirroï Retzepi, "You the Users"

### Obermayer Prize For Writing on the History of Innovation (Undergraduate Students)

1st: Yiwei Zhu, "Evaluating South East Asian Souvenirs"  
Honorable Mentions: Steven Truong, "The Chronology of Horology", and Jessica Adams, "Beyond Objectivity"

### Obermayer Prize for Writing for the Public

1st: Boer Fu, "The History of the Underground"  
Honorable Mention: Agnes Cameron, "Hiding in Plain Sight"

### Robert A. Boit Prize (Essay)

1st: Gabriella Zak, "More Than a Pretty Picture"  
2nd: Gailin Pease, "Following Spiders"  
3rd Prize: Lily Jordan, "Problem Exists between Chair and Keyboard"

### Robert A. Boit Prize (Poetry)

1st: Rona Wang, "affirmative reaction"  
2nd: Sophia E Diggs-Galligan, "Other People"  
3rd Prize: Ayse Güvenilir, "Where I Come From"  
Honorable Mention: Olivia (Liv) Koslow, "The Eye Behind Itself"

### Robert A. Boit Prize (Short Story)

1st: Chloe Yang, "The Flavor Engineers"  
2nd: Ivy Li, "The Veteran's Blue Flowers"  
3rd Prize: Hannah Ledford, "Devised Eggs"  
Honorable Mention: Gailin Pease, "Tidal Restoration"

### S. Klein Prize (Scientific Writing)

1st: Leah Yost, "The Problem with Pain"  
2nd: Andrea K. Beck, "Mentor Motivations"

### S. Klein Prize (Technical Writing)

1st (Tie) Brigid Bane, "Dopaminergic projections from the ventral tegmental area (VTA) to the posterior basolateral amygdala (pBLA) help extinguish fear memories" and Kimberly Feng, "Cellular Modulation of Allograft Injury in a Model of Lung Transplant"

### Vera List Prize for Writing on the Visual Arts

1st: Zhexi Zhang, "Lu Yang, Chaos and Cosmos"  
2nd: Jocelyn Shen, "Between Barbed Wire: A Visual Analysis of TIME's Welcome to America"

the mid 19th century. What was considered urban London consisted of only two areas, the City of London (the skyscraper-controlled financial district today), and Westminster (where government and theaters are located). Anywhere else are suburbs or villages. The choice of locations for these stations is quite similar to airports today — far away from the city. The reason?

The government at the time decided to ban railway constructions inside the city, probably because it was an eyesore to the urban aesthetic. Another reason was that rich people, who owned properties in the city, were more vocal against their houses being torn down for the construction of railways, whereas the poor who lived on the outskirts of the city were, well, no one listened to the poor.

So the million pound question was: how to further transport the passengers from the big London termini into the actual city. And Pearson thought of a way: if no tracks can be built on the streets of the city, then why don't we build them under the streets?

The proposal was welcomed by the different railway companies that were interested in sending their passengers into the heart of the city. And they offered to contribute financially to the project. Indeed, the first portion of the Metropolitan Railway that was built ran between Paddington and Farringdon. With Farringdon being the train station closest to the City of London at the time, the line linked it up with several major stations on the northern periphery of the city, all the way from the westernmost and furthestmost Paddington, via Marylebone, Euston, St. Pancras, and King's Cross.

Construction of the underground railway began in October, 1859. It was headed by engineer Sir John Fowler, using a method called "cut-and-cover". It is exactly as the name suggests, a trench was cut on the surface of the road, and covered later to form a tunnel. A thoroughfare on the north side of London was completely cut open for a few years, with hundreds and thousands of laborers digging, laying down tracks, and building up the ceiling of the tunnels with bricks and steel. Where the line had to go under houses, those houses were torn down. Many poor people were dislocated to further suburbs, with a measly compensation from the railway company, but not much more than the degree of dislocation of any previous railway works on the ground. And where the line met rivers or underground streams, the waters were diverted and tamed in steel pipes that became sewers.

On January 10, 1863. The final product was ready. Trains of carriages were running in the tunnels, powered by steam engines. A bizarre choice, by our modern standard, to use in a fairly enclosed space with not much ventilation. Yet it was the only reasonable choice for power, the alternative being horses. Horses couldn't pull multiple carriages. They were too slow. They would freak out in the dark tunnels, and bring manure to the underground, too. But engineers did anticipate the production of steam and smoke in the tunnels, and they came up with all sorts of modifications to the steam engine to adapt it for the new operation. A specially-fine coal was used, a water-cooling tank was enlarged, giant ventilation shafts were created, etc. But when the trains started running in 1863, people found that the improvements were almost negligible. More ventilation shafts were built, fans were implemented, the glass ceilings in Baker Street station were broken through. Still, the tunnels were filled with smoke and

soot. The *Times* famously described a ride underground as "a mild form of torture which no persons would undergo if he could help it."

But the thing is, most people couldn't help it. Londoners, rich and poor, flocked to the Metropolitan line. City clerks (white collars) traveled from their comfortable suburban cottages to the city in the 1st or 2nd class carriages, and the working class from their rented accommodation in the 3rd. A special workman's fare was created by the government, providing a 60% discount on the ticket on the 5:30am and 5:40am trains. Victorian workers weren't so picky about having to wake up early. They had to, anyway. Before the advent of the underground trains, it took many of them more than an hour to get to work, using the only means of transport available to them — feet.

The following decades saw the extension of the Metropolitan line that created many new suburbs and pushed the city boundary further out, as well as the addition of the District line and the Circle line. But it wasn't until the year 1890 that London commuters were finally able to breathe properly in a tunnel that is not filled with smoke.

The City and South London Railway was a first in many ways. It was the first underground railway to use electricity, instead of steam, as a source of power. It was the first deep-level underground, or "tube," built using the Greathead shield. Named after the South-African-born engineer James Henry Greathead, it was a huge metal cylinder, that could be lowered deep underground. Once it was lying down comfortably, it can be pushed forward in a horizontal direction, with laborers standing on scaffolds inside the cylinder, digging away earth in the front. Another group of workers in the back laid the bricks or concrete to form the actual walls of the tunnel, with the help of tunnel-sized metal rings. The Greathead shield was actually inspired by the Brunel shield, which was developed by the French genius Marc Isambard Brunel to dig the Thames Tunnel back in 1826, the first underwater tunnel (a walkway tunnel) in the world. The 1890 tube was also the first railway in Britain to have no class distinctions between carriages and have a flat fare for everyone.

The initial success of the underground in London had caught the attention of railway magnates and city officials all over Europe and across the Atlantic, but the smoke-filled tunnels had put many cities off the idea of constructing their own underground railway. However, this all changed in 1881, when Werner von Siemens built the first electric tram line in Berlin. Prior to this, trams were driven by horses on tracks in the streets. Later in 1888, America also welcomed its first electric tram service, in hilly Richmond. It was designed by the American engineer Frank Sprague. He implemented a third rail on the ground, to relay electricity to the motor on the tram. He also added a rod on top of the tram to connect it to an overhead wire to further power the tram. This rod had another function, making sure that the tram did not run off rail, which would stall traffic. The news of Sprague's work in Richmond spread to Boston, where America's first underground railway would be built.

In 1887, Henry Whitney, the king of Boston streetcars (again, horse-drawn trams on rails) and owner of vast land in Brookline, already aware of Sprague's experiments, first proposed to build an electric subway in downtown Boston. It was in response to the congestion of road traffic. On Tremont Street, horse-drawn private carriages, horse-



drawn omnibuses, horse-drawn streetcars, followed one after another, with so little space in between, that the whole street ground to a halt from dawn to dusk, and completely blocked the way of horse-drawn ambulances and horse-drawn fire trucks in an emergency.

Henry Whitney managed to bring Sprague and electric railway to Boston, but he wasn't able to bring about a subway. That grander vision had to be achieved by the mayor Nathan Matthews, Jr., His repropoed subway plan was passed by Bostonians in a referendum in November 1894, but only by a small margin. Many people were opposed to the idea of venturing into the underworld before their time was due.

Construction began in March, 1895, using the cut-and-cover method as the Metropolitan in London. The first section to be built was between Arlington and Park Street. Soon, the southern and eastern edges of Boston Common were disemboweled. Trees had to be replanted elsewhere, telephone and telegraph wires had to be rerouted, sewage and gas pipes had to be approached with caution. And, much to the shock and dismay of citizens, human remains had to be unearthed and reburied elsewhere, 910 in total. Furthermore, tragedy had to be endured, when construction of the subway caused a leak in a gas pipe underground at the corner of Tremont and Boylston, resulting in an explosion that killed ten passersby on March 4, 1897. Miraculously, the subway was unharmed in the explosion. And merely six months later, it opened.

On the morning of September 1, 1897, the subway tunnel welcomed its first passengers. They came in a car numbered 1752, driven by James Reed. Some of them came on board in Allston, some on Pearl Street in Cambridgeport, and many more were picked up along the way after the car crossed the Charles River on Harvard Bridge. The car was brimming with passengers, many of whom stood on the edge, with their heads, arms, and legs hanging outside the car, when it was greeted by a huge crowd at the entrance to the subway right before Arlington. In the clamor of the crowd, the car bowed down and disappeared into the tunnel.

The scene that greeted the brave passengers was a pleasant surprise. What they expected was a dark, damp, and chilly underworld, but what they saw was an underground palace brightly lighted with electric bulbs. And the air they were breathing in was even better than that above ground. No horse manure! When the car stopped at its final destination, Park Street, many passengers enjoyed the ride so much that they refused to leave, determined to go on another round.

In the century (and a half) that followed the inauguration of their underground railways, both London and Boston saw dramatic geographical growth. The metropolitan area of Greater London today is estimated to be 606 square miles. What used to be London's city proper, an area little more than a square mile, is no longer crammed with dignitaries, merchants, laborers, prostitutes and common thieves. Now it is deemed to be a place only proper for work and not stay. Its population today is a measly 9401. As to Boston, people who consider themselves Bostonians reside in Brookline, Watertown, Medford and beyond. Without a rapid and affordable form of transport, the common people would have been trapped in a small radius from city center, forever doomed to toil their way to work on their two feet. ●

# MEET THE NEW GRADUATE STUDENTS

## COMPARATIVE MEDIA STUDIES



**Diego Cerna Aragon** is a technology and media researcher from Peru. His work focuses on discourse analysis, expert knowledge and the uses of new technologies. He earned a bachelor's degree in Communication from the University of Lima.

In Peru, Diego worked as a communications official and researcher at the Institute of Peruvian Studies, one of the most long-standing think tanks in the country. During this experience, he explored how bureaucrats employed different new technologies, such as digital platforms for technical cooperation and algorithmic systems for socioeconomic classification.

Diego has also been involved in political transparency initiatives from civil society. He was part of Open Parliament, a project dedicated to gather, store and publish data from official activities of members of the Peruvian Congress.

At MIT, Diego works as a research assistant at the Global Media Technology and Cultures Lab.

For his master's thesis, he plans to research the practices employed by experts, journalists, and government officials to combat disinformation in the Peruvian public sphere.



**Will Freudenheim** is a researcher and game designer. His work is focused on investigating how people read and ascribe meaning to their environments through emerging media platforms, and considering new applications of contextual media in the development of educational tools.

Will graduated from Wesleyan University with a Bachelor's degree in Science in Society. His honors thesis presented a theoretical framework called the "embodied interface" to study the unique facets of augmented reality, examining the relationships between graphical interfaces, locative media, human environmental perception, and networks of human and algorithmic actors in the production of experiences of space.

Recently, Will worked as a game designer and resident at NYU's Game Center Incubator, where he co-led the development of a puzzle and exploration game called Crosshatch. At MIT, Will joins the Education Arcade, where he hopes to participate in creating games and systems to invite students to develop new understandings of their environments.

In his free time, Will likes to compose music and sound design for independent animators.



**Elon Justice** is a videographer and writer with an interest in digital media platforms and co-creative storytelling. She graduated from Western Kentucky University in 2017 with a B.A. in TV/Film Production and a minor in Creative Writing, and most recently worked as a commercial producer for a local television station in

Bowling Green, KY.

An Eastern Kentucky native, Elon has long been acutely aware of media portrayals of underrepresented populations that are often one-dimensional, stereotypical, or altogether inaccurate. She aims to combat this phenomenon by working alongside these populations to co-create media that allows for more varied and truthful representations of their regions.

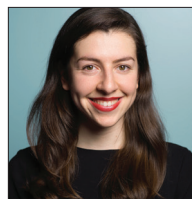
In her free time, Elon enjoys traveling, over-analyzing her favorite music and TV shows, and teaching others how to correctly pronounce her name (Hint: It's not like Elon Musk).



**Andrea Kim** is a documentarian and media-maker interested in how media technologies and storytelling practices build social narratives. In undergrad, Andrea drew from feminist and decolonial theories of embodiment to understand immersive media by how it organizes the perceptual modes of the material body. This interest

in the body has led her to her work at the Center for Global Women's Health Technologies at Duke, where she investigated how the design of medical technologies influences access to cervical health in low-resourced settings. To this end, she is developing The (In)visible Organ, a documentary film and digital storytelling initiative to destigmatize reproductive health.

At heart, Andrea is interested in participatory learning and socio-cultural exchange in the context of an increasingly globalized world. In the past, she worked in schools in Durham, NC, and Arusha, Tanzania, to incorporate visual learning to education curriculum. Recently, Andrea worked with Moroccan youth in Agadir with the goal to creatively engage future leaders through activities like building a flashlight circuit and co-creating portraits with their peers. At MIT, Andrea is working with the Open Documentary Lab to explore collaborative and immersive storytelling methods.



**Roya Moussapour** is a researcher and designer passionate about increasing educational equity and access for diverse populations of students. She is interested in the use of educational technology in the K-12 system, and hopes to study how design of educational tools is expanding from a narrow focus on numerical evaluation

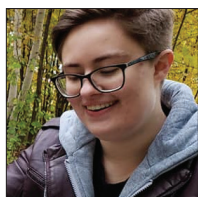
towards a broader inclusion of multiple intelligences, such as creativity and collaboration.

Roya holds a Bachelor of Arts in Physics with a minor in Education from Bowdoin College. At Bowdoin, she conducted research in both experimental physics and education and spent time working with



students in Maine public schools. Prior to attending MIT, Roya worked at Compass Lexecon, an economic consulting firm in Boston, providing data analysis and research for litigation and labor matters in the aviation and energy industries.

At MIT, Roya works in the Teaching Systems Lab, exploring and developing unique methods for teacher learning. Outside of her academic pursuits, Roya serves as concertmaster of the Boston chapter of the Me2/Orchestra, an ensemble with a mission to erase the stigma surrounding mental illness through performance and outreach.



**JJ Otto** (pronouns they/he) is a writer, researcher, and gamer most recently from Minneapolis, MN. In writing, JJ explores unique ways to present stories, and spends a lot of time world-building for TTRPGs. As a researcher, JJ's interests center on games and storytelling in general as versatile mediums to incite social change and promote personal growth. Particularly, JJ is interested in tabletop games as platforms to teach creative writing and social skills, and assist in the safe exploration of one's identity. Through novel narrative structures, cooperative play, and thoughtful representation, JJ aims to help bring new players and experiences to game culture and make it more accessible to diverse groups.

JJ graduated from the University of Rochester with a B.A. in Psychology and a B.S. in Brain and Cognitive Sciences. While in college, they worked as a research assistant for various psychology labs and conducted an independent study on the game *This War of Mine* to learn more about how games influence our empathy and social consciousness. In Denmark, JJ studied the development of the asexual community in Copenhagen, and learned a lot about identity development, exposure to diverse identities, and the importance of representation for those in marginalized communities. The winter before graduating JJ worked with an indie game team at GLITCH to create a puzzle game in just 24 hours, and they took the game to a couple conventions for playtesting. After graduating, JJ continued to attend game events at GLITCH, and worked for Pearson Clinical Assessment as a field research coordinator.



**Mike Sugarman** is a writer, musician, and organizer in underground music interested in the means communities use to build and maintain themselves. He graduated from Columbia with a degree in Film Studies and has spent the time since enmeshed in experimental and dance music scenes in New York and Chicago, fascinated by their ad hoc infrastructure and working to bolster community within by way of running publications, booking shows, and exploring means for musicians and partiers to act as members of both their music community and broader urban or social communities.

Spurred by the tragic Ghost Ship fire in Oakland in 2016, Mike started the Groove Café project in Chicago to develop and disseminate safety protocols for DIY events. The project quickly expanded to build other resources that could support the structures and people par-

ticipating in the wider underground, ranging from publishing mental health resources and releasing fundraiser albums on a digital record label to disseminating literature that could help music venues make their bathrooms accessible, pleasant spaces.

He hopes to pursue community-strengthening media practices during his research in CMS and work in the Center for Civic Media.

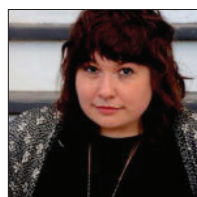


**Kelly Wagman** is a researcher, technologist, and designer. She is interested in understanding how we can design and build inclusive and ethical sociotechnical systems. In previous work she has examined the effects of disconnecting from Facebook and looked at public perceptions of digital assistants through memes and search queries. While at MIT she is excited to be working with the Global Media Technology & Cultures Lab.

Prior to MIT, Kelly worked as a research assistant at Microsoft Research where she collaborated with the Economics group and the Social Media Collective on quantitative and qualitative social science research projects. Previously, she worked as a software engineer at Microsoft in Office 365, and at Facebook.

Kelly graduated from Brown University with a double major in Computer Science and Economics. She enjoys yoga, rock climbing, matcha lattes, electronic music, sewing, and exploring new places.

## SCIENCE WRITING



**Ashley Belanger** is a journalist whose reporting, features, and essays explore the tensions between what science discovers and what humans experience. Captivated by neuroscience and technology, as an arts critic, she garnered recognition for essays discussing scientific theories in the context of pop music. Through her career, she's engaged

communities both local, as associate editor of Orlando Weekly, and national, as culture writer for the classic television network MeTV. In her freelance reporting, she works to connect public health studies to critical social issues and has generated in-depth web features for Teen Vogue on complex topics, including child marriage and school shootings. She earned a B.S. in Journalism from the University of Florida and, through the Graduate Program in Science Writing, plans to continue investigating public health studies to increase awareness of underreported women's issues.



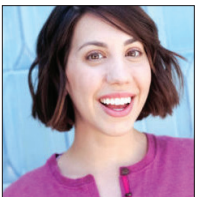
**Fernanda de Araújo Ferreira** watched her first science classes under a desk, drawing while her mother taught plate tectonics to geology students. She took her first official university-level science classes while majoring in General Biology at the Universidade de Brasília (UnB) in Brazil and is now completing her Ph.D. in

Virology, studying the nature of the latent reservoir of HIV-2, at Harvard University.

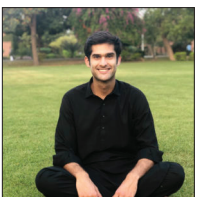
She initially got into science writing as an excuse to take deep dives into various areas of science, from zoopharmacognosy to AI, that were not HIV-2. After writing for Harvard's Science in the News and GSAS Bulletin, as well as taking courses through Harvard's creative writing program, she's excited to pursue science journalism full-time. She writes about all areas of science (including math!), but has a special love for infectious diseases and, unsurprisingly, plate tectonics.



**Rachel Fritts** grew up taking every opportunity to explore the natural world, whether by catching salamanders in her back yard, hiking in the Rocky Mountains, or inspecting tide pools on family vacations. That early interest led her to pursue a B.A. in Biology from Grinnell College and an M.S. in Marine Environmental Management from the University of York, before returning to Grinnell for a year-long editorial fellowship. Rachel's environmental journalism to date has focused on sustainable resource use and wildlife conservation, and can be found at publications like Pacific Standard, Mongabay, Ensia, and Hakai Magazine. She also writes video scripts about evolution for the PBS Digital Studios channel Eons.



**Jessie Hendricks** joins the Graduate Program in Science Writing after eight years in Los Angeles, where she has spent time as an actor, science communicator, and content creator. She currently produces and hosts SCIENCECED, a scicomm podcast for the SoCal Science Writing group, as well as serves on their membership committee. She has written and hosted many science videos on the YouTube channel Everyday Science, including parody science music videos and a series on the periodic table called #ElementADayInMay, as well as written and guest-hosted for other outlets such as Skybound Entertainment's Gamma Ray TV. She got her start in science communication while producing citizen science outreach videos for the NOAA Northwest Fisheries Science Center on harmful algal blooms. Her current science writing interests include science storytelling in the entertainment industry, science history, quantum entanglement, and shark immunology.



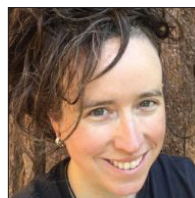
**Zain Humayun** grew up reading and playing football in Islamabad, a city nestled in the Himalayan foothills. In his science books, he discovered electricity and the water-cycle — phenomena as enchanting as the magic in his fantasy novels. At the Lahore University of Management Sciences, Zain grappled with integrals

in physics before switching to computer science, attracted by the discipline's unrelenting emphasis on logical clarity. His classes on networks, algorithms, and artificial intelligence offered a close look at the inner workings of the Internet. After being inspired by a creative writing class with novelist Bilal Tanweer, Zain returned to his computer science coursework with a renewed interest in storytelling

and the human lives affected by big tech, automation, and algorithmic bias. Zain hopes to address the gap between the world's understanding of computers, and our ever-growing dependence on them.



**Lucy Jakub** is an essayist and editor. She grew up on the coast of Maine. As a nonfiction major at Columbia University, she developed a mantra for her writing: "follow the weird." After following the weird through the frat houses of the Upper West Side, it led her to more interesting subjects—bedbugs, blobfish, radiolarians, and speculative biology. Since graduating she has worked at The New York Review of Books, finding commissions for her favorite science writers, removing em dashes, and inserting Oxford commas. She hopes to continue to support print media and long-form journalism from the other side of the editor's desk. When she's not writing, she's baking elaborate desserts for her friends and listening to Björk sing about plate tectonics.



**Kate Petersen** spent her early adulthood living in wilderness, traveling by freight train, and being generally feral. Her drive to investigate and experience the manifold facets of life eventually drew her back to civilization to study biology and ecology at the Evergreen State College in Olympia, Washington. She has

published papers on lichen and bryophyte ecology, and conducted field studies on the open Atlantic Ocean and deep in the Sierra Nevada Mountains. She is pursuing a career in science communication because she observes the information gap between scientists and non-scientists increasing while anthropogenic impacts on the biosphere reach apocalyptic levels. She hopes that her work will support well-informed social and policy decisions going forward. She is also counting on science journalism to abet her enduring ambition to learn about everything. Kate goes to mountains and old forests whenever she can, and makes art from sticks, bones, and fiber.



**Nafisa Syed** grew up in Champaign-Urbana, Illinois, where she read almost everything she could get her hands on. She had her first experiences with journalism and with the real-world scientific process in high school, producing a radio documentary with her local NPR station and helping excavate human bone in a bioarcheology lab. She graduated from MIT in 2019 with a double-major in Biology and Brain and Cognitive Sciences. While a college student, she became the first editor of *The Tech's* Science section, worked in a neurolinguistics lab studying how the brain produces and interprets language, and spent a semester interning at NOVA Next. As an aspiring physician and writer, Nafisa hopes to use her year in the graduate program to become well-versed in writing about public health and medicine so that she can effectively use her communication skills and future medical expertise to serve the public. ●



# ALAN LIGHTMAN'S NEW NOVEL ABOUT CAMBODIA AND FAMILY

*THREE FLAMES* EXPLORES THE FRACTURES AND BONDS AMONG KIN IN A REBUILDING SOCIETY

Peter Dizikes  
MIT News Office

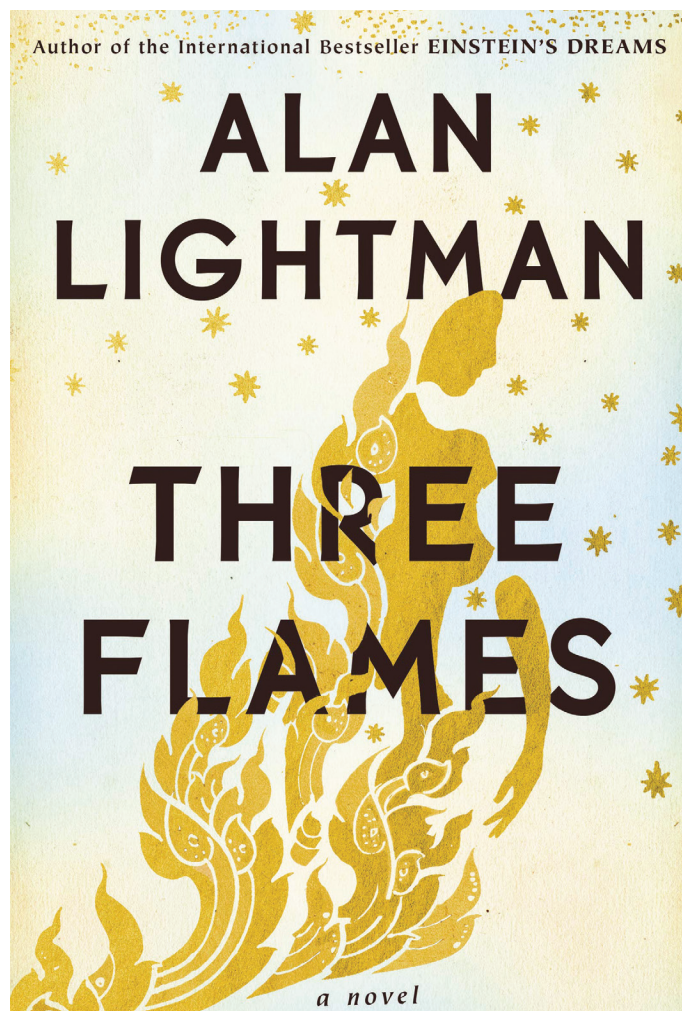
*Alan Lightman, Professor of the Practice of the Humanities at CMS/W, is a physicist who made a leap to becoming a writer — one with an unusually broad range of interests. In his novels, nonfiction books, and essays, Lightman, a professor of the practice of the humanities at MIT, has explored many topics, from science to society. His new novel, Three Flames, recently published by Counterpoint Press, follows the fortunes of a family in post-civil war Cambodia. It's a topic Lightman knows well: He is the founder the Harpswell Foundation, which works to empower a new generation of female leaders in Cambodia and across Southeast Asia.*

## What are the origins of “Three Flames”?

I've been working in Cambodia for fifteen years, and I've spent a lot of time there, and I've heard a lot of stories of families, particularly [about] the residue of the Khmer Rouge genocide in the mid-1970s. Just about anybody you meet in Cambodia today has a relative who was killed or starved or tortured over that period of time. So it's affected everybody in the entire country. And I have been very interested in how a country can recover its humanity after that kind of devastation, when family members were turned against each other. The Khmer Rouge soldiers rounded up anybody that they had the slightest suspicion about, and encouraged families to turn in anybody that they had any suspicion about. It disrupted families and led to an every-person-for-themselves mentality, which still hasn't disappeared.

In the face of all that destruction and moral degradation, I also heard stories of courage and resilience and forgiveness. After many years, I thought I was beginning to understand the culture enough to begin writing stories about it. But I waited 10 years before I started writing anything. You have to understand a culture much more deeply to write fiction about it than to write nonfiction, because fiction involves small daily mannerisms, which you have to get right. And you don't pick that up from a couple of trips.

**Q: There are many connected stories in this novel, and many distinctive characters. What is the main theme, and how did you weave that in throughout different parts of the book?**



The overriding story is the struggle that women have in a male-dominated society. And that, of course, is true not only in Cambodia but in many countries, even the U.S. Almost every chapter of the book has that struggle in it....A number of the [other] themes in the book are universal. I hope the themes of redemption, and forgiveness, and revenge, and women's struggles will go beyond Cambodia.

Five years ago, I wrote the first chapter of the book, about the mother, Ryna. When I wrote that, it was a stand-alone short story [published in the journal *Daily Lit*, and as an Amazon Kindle single]. In that story, I mention other members of the family. One daughter is married off to a rubber merchant; another one went to Phnom Penh to work to pay off a family debt; the son is kind of a ne'er-do-well; the father is very ignorant, sexist, and condescending. About a year after writing the first story, I began wondering about the other family members. Once you write a character in fiction, they come to life and stay in your head. And so I decided I would write a story about each member of the family. Of course, I had to interweave all the stories, as they involve the same family.

**How did you then assemble those elements into a cohesive story? It must have been fairly complicated to place these**

parts of the story into a larger narrative.

After I had written the book, I decided to place the stories in the order where they would have the most dramatic impact. For the story about Pich, the father, I wanted to wait until that character had been developed to show how he became the person he is, because none of us are all good or bad. The story about Nita [a daughter of Pich], I wanted to save until the later part of the book because it's such a shocking story. The story about Srepov has to come last, because she's the only hope for the future. The date of each story is when the most dramatic action happened to each character, the most influential [moment] in shaping who they are.

[In books], there are two times that are important. There's chronological time, and then the time of readerly experience. Taking the Pich story as an example, in my view as a writer it's more powerful to first see Pich as he is today, an unsympathetic, dictatorial, cruel father, and to even grow to hate him. Then, only later in the book, we see him in childhood and see the forces that shaped him as he is. To save the childhood portrait for later, that's a more powerful experience for the reader.

## A CONVERSATION WITH T.L. TAYLOR ABOUT ANYKEY

*Professor of Comparative Media Studies T.L. Taylor spoke with Andrew Whitacre about AnyKey, "an advocacy group that supports diversity, inclusion, and equity in competitive gaming."*

**AW: Let's set the scene. What is AnyKey?**

TLT: AnyKey<sup>1</sup> amplifies, connects, and empowers marginalized players and their allies through research and strategic initiatives. It was co-founded by myself and Dr. Morgan Romine<sup>2</sup> in 2015 with the sponsorship of the Electronic Sports League and Intel. We co-direct it with her focusing on initiatives and me on research. This year we're also lucky to have Dr. Johanna Brewer join us as a Research Associate. Morgan and I had both been working in esports for over a decade at that point (myself as a researcher and her having had founded the Frag Dolls, a major women's esports team, and then going on to do research for her Ph.D. by working the games industry) and had been seeing firsthand for many years some of the critical issues when it came to diversity and inclusion. When, due to Intel's interest in supporting various diversity projects, we got the opportunity back then to put our heads together to see if we could make some positive change, we jumped at the chance. Given we both have research backgrounds, we were also committed to the idea of doing empirically grounded

interventions.

**So then for people who might not be familiar with the issues involved, what is AnyKey looking to address...and how?**

Though women have been involved in esports from its earliest days, there has also long been a persistent pattern of exclusion and limits to participation. This ranges from outright harassment to less overt barriers like access to competitive networks or low-level stigmatization. The impact of this has been that even though women now play games at levels rivaling men, and are indeed often interested in competition, they face additional hurdles when it comes to moving into esports. In many ways we are doing the kind of advocacy work you saw early on for women's participation in traditional athletics. AnyKey works to intervene in a variety of ways. We offer things like spotlight videos on women who are "making it" in esports (inspired by Billie Jean King's remark "You have to see it to be it") to concrete Codes of Conduct or best practices guidelines that organizations are free to use and adopt. We support others who are working in the space already. For example, our affiliates program spotlights inclusive communities, esports teams, and individual content creators in gaming. This year we are focusing on developing an Inclusion 101 curriculum for gaming and esports clubs on college campuses. We're also currently running a pledge campaign<sup>3</sup> where folks can agree to support inclusive, welcoming game communities and get a Twitch badge (a little icon that shows up next to their name on that site) so others can see they've signed. We've had over 317,000 people take the pledge so far! I often think of this as playing a long game for broad cultural and institutional change - you have to be working from a variety of angles from the symbolic to policy projects and you have to build networks and alliances across a lot of different stakeholders.

**You said you and Dr. Romine do empirically grounded interventions. Which reminds me to mention you're the first sociologist at CMS/W and one of only a tiny number of sociologists at MIT altogether — and most of those are economists. What's a strength of sociology that someone trained in humanistic research methods should hopefully appreciate?**

Sociologists, even when doing theoretical work, tend to be committed to understanding society as it actually functions and with an eye toward things like power, stratification, social order, and change. The kind of work I do — qualitative and often ethnographic — really has its strength in being able to get at the meaning making people give to their lives and actions, the granularity of action on the ground (by individuals, groups, or institutions), and to generate knowledge that may be on the front edge of social change (seeing patterns or processes that are bubbling up, not yet widespread enough to be well captured or even formulated through quantitative measures). The key to all research projects is making sure your methods are aligned with your questions. For myself, the kinds of questions I'm generally interested

<sup>1</sup> [anykey.org](http://anykey.org)

<sup>2</sup> [linkedin.com/in/morganromine](https://www.linkedin.com/in/morganromine)

<sup>3</sup> [anykey.org/en/pledge](http://anykey.org/en/pledge)





## ANYKEY'S "KEystone" CODE OF CONDUCT FOR GAMING COMMUNITIES

[anykey.org/en/keystone-code](https://anykey.org/en/keystone-code)

### Compassion

You value the diverse perspectives, backgrounds, and opinions of others, even when different from your own. You appreciate that all viewpoints come from the life experiences of fellow human beings. You understand that online interactions impact real people in real ways, both offline and online.

### Respect

You respect everyone regardless of their background, identity, physical appearance, or beliefs. Even in competitive gaming where "trash-talk" is common, you are a good sport and respect opponents as fellow human beings, keeping the banter to the game, not ever making it personal.

### Integrity

You behave honorably and honestly. You take responsibility for your words and actions. While playing games, you honor the rules and spirit of honest competition.

### Courage

You have the courage to moderate your own behavior, speak out against harassment, and report violations by others. You do not tolerate harassment or hate speech of any kind, even when you are not directly involved.

in are best addressed through qualitative projects that often develop over years.

**You used the term "low-level stigmatization" earlier. What does look like to someone who hasn't experienced it?**

Women can experience pushback or questioning about their game choices (including being directed to certain genres and away from others when they visit game stores, for example) or the intensity with which they play (especially if they have professional competitive ambitions). While gaming has become a widespread leisure activity and a part of people's daily lives, there still remain those who question if women can be "real gamers" or if a passionate interest in gaming undermines femininity. Anyone who follows the struggles women have faced in traditional sports will recognize these patterns immediately.

**Part of AnyKey's interventions has been to produce whitepapers<sup>4</sup> to share best practices, correct?**

The whitepapers we have produced serve to present research findings and offer concrete recommendations or tips. For example, at the beginning of October we published a significant piece on collegiate esports.<sup>5</sup> There is growing interest and activity in bringing competitive gaming to university campuses but we want to make sure key critical issues are not lost. We've offered a number of concrete recommendations to help faculty, staff, and students build positive, inclusive esports spaces. Those include things like undertaking a diversity audit and holistic selection criteria for varsity teams. Previously we've issued guidelines for tournament organizers to help them produce more gender inclusive tournaments or tips for moderating their live stream broadcasts. The resources we provide mix in research findings, to help people get a sense of key issues, with concrete suggestions about how to improve things.

**Every sport works hard to increase the number of youth who play it — in part to develop the kind of talent that in the long-term leads to professional stars. Some of those sports have high financial or cultural barriers to entry; it sounds like esports has a bit of both, and often that means the onus falls on players themselves to effect change. So what advice would you give, say, a middle schooler from a marginalized background when they want to set up an esports team at their school?**

There is tremendous power in building your own esports community from the ground up. Often that just means finding a place for people to get together, bring their devices, and compete in friendly matches. Starting small, working with the enthusiastic community is key. It's also important, even in those smaller spaces, to make sure you are keeping an eye on if you are creating a welcoming club that people

<sup>4</sup> [anykey.org/en/resources](https://anykey.org/en/resources)

<sup>5</sup> <https://anykey-resources.s3.amazonaws.com/publications/AnyKey.pdf>

you don't know may also want to participate. Gaming is a widespread activity lots of people enjoy so make sure you are providing an environment for the range of students at your school you might like to play, and compete. Have a Code of Conduct in place (feel free to use our AnyKey "Keystone Code"<sup>6</sup>) and support a range of games and devices. Not everyone has a PC or laptop or prefers the kinds of games you and your friends might so make sure you are welcoming to all kinds of gamers.

**When I first interviewed you in 2013 soon after you joined CMS/W as a faculty member<sup>7</sup>, I didn't ask a seemingly obvious question. How did gaming come to be your focus? That and virtual worlds have been the topic of all of your work, all the way back to your dissertation.**

My dissertation work back in the 1990's was actually on embodiment in virtual environments, not gaming specifically. I came to gaming as a research area because a number of my participants back then had started playing *EverQuest*, one of the earliest massively multiplayer online games, and I was desperate for a distraction from the work of the dissertation so checked it out. But from nearly the moment I started playing it I recognized there was a lot to be researched there. I folded a bit of it in to my dissertation but it wasn't until really after I wrapped up that project that I turned to gaming in earnest (and what would eventually become my first book, *Play Between Worlds*<sup>8</sup>). It's been a fascinating path from those early days of gaming to what we are seeing happening now in esports and live streaming (the subject of my most recent book, *Watch Me Play*<sup>9</sup>)!

## 2019 THESES

### COMPARATIVE MEDIA STUDIES

**Rachel Thompson**, *Incomplete Sentences*. Exploitation and empowerment in American incarceration media.

**Matthew Graydon**, *Manufacturing Dissent*. Assessing the methods and impact of RT.

**Josefina Bushmann Mardones**, *Operational Atmospheres*. [blurb needed]

**Libby Falck**, *Play for Change*. Educational game design for grassroots organizing.

**James Bowie Wilson**, *Roguelife*. On death in play. [longer blurb needed?]

**Sultan Sharrief**, *Between Institutional Lines*. Designing for long-term

social change.

**Rekha Malhotra**, *Last Night A DJ Queered My Life*. Exploring and disrupting the mythologies of a critical popular media practice.

### SCIENCE WRITING

**Diego Arenas**, *Minding the Empathy Gap*. How insights into brains and behaviors are placating polarization.

**Brittany Flaherty**, *The Conservation Sacrifice*. Why New Zealand is willing to kill for its birds.

**Eva Frederick**, *Plague of Absence*. Insect declines and the fate of ecosystems.

**Devi Lockwood**, *The Living Library*. An indigenous community in the Peruvian Amazon is combating climate change, deforestation, and loss of traditional knowledge by preserving their plants in the wild.

**Emily Makowski**, *Mass Appeal*. Saving the world's bananas from a devastating fungus.

**Emily Pontecorvo**, *Navigating the 21st Century Without Vision*. How the iPhone changed the landscape for assistive technology and fueled the movement fighting for digital accessibility.

**Madeleine Turner**, *Future Talk*. The race to build a bot that gabs like a human.

**Gina Vitale**, *Asbestos, USA*. Ambler, Pennsylvania once thrived as the asbestos capital of the world — now it grapples with the waste that was left behind. ●

<sup>6</sup> [anykey.org/en/keystone-code](http://anykey.org/en/keystone-code)

<sup>7</sup> [cmsw.mit.edu/power-up-with-taylor-and-hendershot](http://cmsw.mit.edu/power-up-with-taylor-and-hendershot)

<sup>8</sup> [mitpress.mit.edu/books/play-between-worlds](http://mitpress.mit.edu/books/play-between-worlds)

<sup>9</sup> [watchmeplay.cc](http://watchmeplay.cc)



# UPDATES FROM THE CMS/W COMMUNITY

## RESEARCH GROUPS

You can read the full text of this and previous year's updates at [mit.edu/annualreports](http://mit.edu/annualreports).



Rahul Bhargava, Research Scientist, continued his data literacy advocacy and was invited to run a workshop at the 2nd UN World Data Forum. He was invited as a speaker for the National Academies roundtable on Data Science in Post-Secondary education and as a keynote speaker for the Stanford Data on Purpose conference. His papers, "Cultivating a Data Mindset in the Arts and Humanities" and "Creative Data Literacy: A Constructionist Approach to Teaching Information Visualization," were respectively published in *Public* and the *Digital Humanities Quarterly*.

Sasha Costanza-Chock, Mitsui Career Development Associate Professor, continued their work on design justice, a term used by Costanza-Chock to address the need for design that is intersectional and that, instead of reinforcing power dynamics, enables social justice for underserved populations. Their essay on the topic, "Design Justice, A.I., and Escape from the Matrix of Domination," was selected as a \$10k prize winner of the *Journal of Design and Science* "Resisting Reduction" competition. Additionally, Costanza-Chock's co-written report, "#MoreThanCode: Practitioners reimagine the landscape of technology for justice and equity," provided an overview of technologists and other professionals in the field. Among other panels, Costanza-Chock was invited to present at EYEO; the Harvard Kennedy School 2018 Public Interest Technology Summit; the University of the Azores International Colloquium: Youth and Global Movements; the MIT Collective Wisdom Symposium; and

"A Convergence at the Confluence of Power, Identity, and Design," at Harvard Graduate School of Design.

The Media Cloud team worked to expand the tool's collections this year, reaching the 1 billion mark for news stories in the database after finalizing a complete review of its sources. The userbase of the project continues to grow at a rate of about 2,000 users per year. This year the tools were mentioned in and used in such publications as *The Washington Post*, *Columbia Journalism Review*, *The Atlantic*, and *BuzzFeed*.

Finally, Ethan Zuckerman is currently finalizing a new \$1.85 million award from the Knight Foundation. This award will allow the Center to expand the Media Cloud platform to establish the International Hate Observatory, which will index and analyze a broad range of user-generated content to improve understanding of how hate speech emerges and spreads.

[civic.mit.edu](http://civic.mit.edu)



The Design Lab (formerly the Mobile Experience Lab) seeks to reinvent and creatively design connections among people, information, and places. Using cutting-edge information and mobile technology, the lab seeks to improve people's lives through the careful design of new social spaces and communities.




Professor Casalegno extended his leave from MIT, to a total of two years, continuing his leadership at Samsung Design Innovation Center in San Francisco. After a successful year of leading a global team of designers and engineers to bring forth the value of design research to the global consumer-electronics company, he has decided to dedicate an additional year to solidify his work in the company. Yihyun Lim, Research Associate at the Design Lab is leading the research group.

The lab has continued to collaborate with

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long-time partner ENI, within the MIT Energy Initiative, to research in the field of IoT applied to wearable technology and portable robotics for safety in the workplace. Following the previous work done in the development of Advanced Safety Devices, including a full working prototype of a smart helmet with augmented communication through AR and integrated sensors for safety detection, the team expanded the research focus to the areas of portable robotics and compact drones for remote inspection of confined spaces. This year in June 2019, the Design Lab team presented ongoing research and demonstrated select features from the working prototype of Pegasus, a hybrid drone-rover robotic inspection system, at MITEI-ENI Workshop in Milan. Related research of previous year's work on smart helmet (user evaluation and analysis) was presented at the PETRA conference in Greece.

In its third year of sponsored research with PUMA, the Design Lab team of researchers and students continued to work on adaptive sportswear experiences.

Previous years' research with Puma in applying auxetic meta-material structures for customized comfort and improved performance (through generative design and digital simulation) resulted in commercialization as Puma's next line of innovative running shoes. The lab has continued to work closely with Puma innovation and production team to optimize the design for manufacturing. The outcomes of this research collaboration are projected to be available in the market as a form of high-performance running shoe in Spring 2020.

The lab completed the Connected Lighting for Caring City project, a collaborative research project funded by Philips Signify (Philips Lighting). In this project, the Design Lab team researched societal and user values of "caring" through ethnography, envisioned future experiences (across home, work, and public urban areas) of connected dynamic lighting supported by an AI agent.

In addition to sponsored research projects, the lab has continued its efforts in running two internal research observatories; User-Value Experience Research and Emerging Technologies Research. Using primary and secondary research methods the research team engaged in consolidation, analysis, and evaluation of collected qualitative data and produced two internal report books.

Two other notable workshops were also hosted by the Design Lab team. The first one, Augmented Tailor Workshop with an Italian brand Brunello Cucinelli, looked into the impact of connected technology in augmenting tailor's handcraft work. Outcomes of the exercise was presented in Cucinelli headquarters in Solomeo, Italy. A second workshop was in collaboration with the New England Aquarium of Boston, and the Open Ocean Initiative at MIT Media Lab. Participating researchers, scientists, and professionals envisioned experiences and products to raise awareness of ocean conservation through design thinking exercises.

Most recently, Professor Casalegno taught MIT Professional Education Courses this summer, titled "Innovation: Beyond the Buzzword". Co-instructed by Yihyun Lim, this fourth annual course introduced participants (forty mid-level professionals from various industries) to the concepts in design

thinking and innovation through lectures and hands-on workshop sessions.

*design.mit.edu*

## the education arcade

The Scheller Teacher Education Program and The Education Arcade explore the potential of games and simulations as media that supports learning both in and out of the classroom. Over the past year STEP has continued work funded by five National Science Foundation grants aimed to integrate science and computer science education in upper elementary and high school students with Starlogo Nova, a web-based 3D modeling tool.

The Lab created and piloted educational games in the genre we call pSims (participatory simulations), exploring innovative uses of mobile technology to engage youth in STEM learning and 21st Century skills. The development team worked toward completion of the Virus Game, and began design of two additional ecology-themed games. Pilot testing included 23 groups of participants (ages 10+). Additional partnerships, sponsorship, and research opportunities continue to be explored.

Three hundred Biology teachers from almost every timezone around the world are participating and sharing their knowledge and expertise with each other in a MOOC we launched, titled "BioGraph: Teaching Biology through Systems, Models, & Argumentation." In it, participants learn how to integrate computational modeling, a systems perspective, and the practice of scientific argumentation, into their biology classes.

STEP has also continued work with collaborators such as the Emerson Collective on implementing project based learning in their XQ Schools, the MIT Game Lab on co-developing a virtual reality game (CLEVR) funded by Oculus Facebook and the Woodrow Wilson Fellowship Foundation to develop their Masters of Education curriculum for the Woodrow Wilson Academy.

The Science and Engineering Program for Teachers (which partners with MIT alumni clubs) was successfully held again this year

with significant expansion to programming thanks to new funding. The program almost doubled in size thanks to funding from alum Rick Barry.

The lab also serves as a co-organizer for the Connected Learning Summit, with over six hundred attendees.

*educationarcade.org*



The Game Lab, as part of its mission to bring together scholars, creators, and technologists, this past year has been devoted to exploring the use of play in varying contexts, including education and technology.

The seven courses offered by the Game Lab, connected with its research and development opportunities, have maintained MIT's standing within the Princeton Review's top schools for undergraduate or graduate study of game development for a ninth year running.

In Fall 2018, the Game Lab co-hosted the Boston Festival of Indie Games for its sixth year. Over 3,000 people attended the event across multiple locations at MIT to see games developed by 300 invited developers and studios, giving students direct access to practitioners in game development. The event was covered in national media, placing MIT and the MIT Game Lab as a center for independent game development.

The Game Lab has been pursuing projects in collaboration with the entertainment video game industry through the Ludus Center for Games, Learning, and Playful Media, a membership-based research consortium. Recently, the MIT Game Lab concluded a research relationship with Stockholm-based King Entertainment, creators of Candy Crush Saga, to conduct design research around tools to assist game developers with assessing diversity in the character designs in their games. A new research relationship has



begun with Bose, of Framingham, Mass., to conduct design research around creating audio-only augmented reality experiences.

As part of a broader research project focused on surveying representations of European colonialism in board games, an MIT CAST-funded proposal is supporting design and development work to create a “counter-colonialist” board game about topics of importance to the people of Puerto Rico, such as local government and international response to the devastation caused by Hurricane Maria.

In collaboration with the MIT Education Arcade, the Game Lab is in the middle of an 18-month project, titled CLEVR (Collaborative Learning Environments in Virtual Reality), investigating the use of virtual reality games to help students understand issues of scale in biological systems, particularly at the cell and DNA level. Prototype development and initial research is supported by a \$450,000 unrestricted gift from Oculus. Additional funds have been provided through the MIT Integrated Learning Initiative to support further study and investigation using VR in education.

[gamelab.mit.edu](http://gamelab.mit.edu)



The Global Media Technologies and Cultures Lab, had a very busy year. Members of the lab conducted fieldwork in connection with an NSF-supported international research project called Network Sovereignty: Sociotechnical relations in rural low-income communities. They made research trips to Browning, Montana to work with the Blackfeet Community College. They led community forums in Browning about internet services and social media use on the Blackfoot Indian Reservation and conducted qualitative interviews with fifty community members. They also traveled to Tanzania in to conduct fieldwork related to this project and inter-

viewed fifty community members in Bunda and in several communities around Dar es Salaam. The lab also launched a Network Sovereignty blog on their website. The purpose of the blog is to spotlight and interlink a community of researchers who are studying network infrastructures (internet, mobile phones, video streaming, satellites, data centers, etc.) and to raise awareness about their research projects and facilitate connections between them.

In December 2018 Parks and collaborator Professor Jennifer Holt spent a week in Washington, D.C., to work on the Surveillance Pressure Points project, which investigates how advocacy groups formulate digital rights agendas within a highly commercialized digital culture. They conducted qualitative interviews with representatives of different digital privacy advocacy organizations, including Public Knowledge, Center for Democracy & Technology, Access Now, Electronic Frontier Foundation, and several others. Lab R.A.’s have transcribed the interviews, and they are continuing research and will write up findings and submit an article to a peer-reviewed journal in the coming months. This work was supported by a small grant from the International Policy Lab at MIT.

In January 2019 four members of our lab traveled to Dar es Salaam, Tanzania, to lead a two-week workshop called Social IT Solutions (SITS), supported by a J-WEL grant.<sup>1</sup> The team consisted of Professor Parks and three CMS grad students.

An important goal of the GMTaC lab has been to provide research and publishing opportunities for MIT students. This past year the lab has made significant progress on several co-authored research publications. Parks and RA Matt Graydon published an article called, “Connecting the Unconnected: A Critical Assessment of US Satellite Internet Services, in the refereed journal, Media, Culture and Society; Parks and RA Rachel Thompson have an article entitled “The Slow Shutdown: Internet Regulation and Constraints among Online Content Creators in Tanzania, 2010-18,” in review

<sup>1</sup> [globalmedia.mit.edu/research/current-projects/social-it-solutions-workshop](http://globalmedia.mit.edu/research/current-projects/social-it-solutions-workshop)

with the International Journal of Communication; and Parks and R.A. Iago Bojczuk and pre-doc lab fellow Gabriel Pereira are nearly finished with an article on WhatsApp and the Brazilian Elections and plan to submit it to Global Media and Communication. Beyond this, R.A. Han Su is working with lab affiliate Professor Jing Wang on an article about the role of Chinese companies in global streaming platforms. They are glad to report a productive year in terms of co-authored research publications both submitted and in the pipeline. Beyond this, R.A.’s post blogs about various global media and IT issues and projects on our lab website.<sup>2</sup>

The GMTaC Lab hosted several visitors this year, including Native American drone activist and creator of Digital Smoke Signals, Myron Dewey. During his visit Dewey gave a public lecture in the CMS and Civic Arts Lecture Series, screened his documentary film, *Awake: A Dream from Standing Rock*, and met with AISES students at MIT as well as with students SHASS and in the Media Lab. The Office of the Vice Chancellor for Diversity and Equity helped support the AISES meeting. They lab also hosted Professors Caren Kaplan (UC Davis) and Haidee Wasson (Concordia University) who came to campus to give lectures in the CMS colloquium and civic arts series and met with students and faculty members.

[globalmedia.mit.edu](http://globalmedia.mit.edu)



The Imagination, Computation, and Expression Laboratory (ICE Lab), established at MIT in 2010, applies A.I. and cognitive science approaches to the research and development of interactive narratives, videogames, virtual reality, social media, and related forms of digital media. Outcomes of recent ICE Lab projects include a three-year MIT CSAIL-Qatar Computing Research Institute (QCRI) collaboration researching culturally-specific everyday uses of virtual identities in social media and videogames (with the Middle East and North Africa region as

a case study). This research analyzed a dataset of over 42,000 publicly available social media profiles using computational approaches (archetypal analysis) augmented with social science-based semi-structured interviews. This resulted in a set of five needs/values exhibited by Qatari users supporting their creativity in effectively using virtual identities: Arab cultural features, self-expression, social connections, social monitoring, and physical and virtual identity contrasts; it also resulted in guidelines to support developers of virtual identity systems in better serving these users while preserving their cultural values and creative agency. Another ICE Lab outcome is MazeStar, an NSF-supported computer science learning curriculum and educational computer game creation platform that engages students in learning computer science concepts while seeing themselves as powerful STEM learners and doers. Last, as mentioned in his individual update below, Professor Harrell was appointed the director of the new Center for Advanced Virtuality.

[icelab.mit.edu](http://icelab.mit.edu)



The Open Documentary Lab (ODL) brings storytellers, technologists, and scholars together to advance the new arts of documentary. Founded by Professor William Uricchio and directed by Sarah Wolozin, the lab is a center of documentary scholarship and experimentation at MIT. Through courses, workshops, a fellows program, public lectures, experimental projects, and research, the lab educates and actively engages the MIT community and the larger public in a critical discourse about new documentary practices and encourages people to push the boundaries of non-fiction storytelling. The lab currently has two graduate students, one faculty affiliate (Vivek Bald) and collaborations with leading institutions including Sundance institute, Mozilla Foundation, and PBS. It has attracted the interest of major foundations including the MacArthur and

Ford foundations.

This year ODL completed and launched their field study, *Collective Wisdom: Co-Creating Media within Communities, across Disciplines and with Algorithms*. Authored by Professor William Uricchio and researcher Katerina Cizek together with several co-authors, this first-of-its-kind field study of the media industry highlights trends, opportunities, and challenges to help advance the understanding and recognition of co-created works and practices—efforts that live outside the limits of singular authorship.

ODL hosted and curated a Collective Wisdom symposium in May with over two hundred invited guests, five panels, break-out sessions, performances and an exhibit. They officially launched a co-creation studio, starting with a four-day workshop with a Bolivian filmmaking team who is designing a robot. This workshop was funded by Ford Foundation. The studio is developing partnerships with Mozilla Foundation, Sundance Institute, Witness and others.

ODL received a new three-year \$900k grant from the John D. and Catherine T. MacArthur Foundation in September and also received a new \$100k grant from the Ford Foundation for the co-creation studio.

The lab continued its fellows program, lecture series, convenings, and resource development. In the spring, Dr. Sandra Rodriguez offered MIT's first course on Virtual Reality, CMS.S60, Hacking VR for the third year in a row. Through a grant from the MIT Alumni Funds, the course was accompanied by an XR lecture series open to the MIT community and the public. Oculus supplied the equipment.

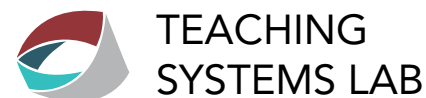
ODL continued to develop Docubase, a curated, interactive database of the people, projects, and tools transforming documentary in the digital age. The lab's Medium publication, "Immerse: Creative Discussion of Emerging Non-fiction Storytelling", which lab director Sarah Wolozin serves as editor-at-large continues to thrive. It has received funding from the Knight Foundation and Ford Foundation and includes contributions by MIT faculty, researchers and students.

This spring, ODL Director Sarah Wolozin continued her speaking and writing engagements with a sneak peak presentation

of the forthcoming Collective Wisdom study at Sundance Film Festival as well as an article in Immerse<sup>3</sup> about her observations at Sundance. She, as well as William Uricchio and Sandra Rodriguez, participated and spoke at a summit about Arts and AI curated by Columbia University and hosted by the The New Museum of Contemporary Art. In May, Kat Cizek, William Uricchio, Rashin Fahandej, and Sarah formed a panel and presented their findings in the Collective Wisdom study.

ODL Principal Investigator William Uricchio gave several talks and keynotes including "The Electric Gaze: an international seminar on the intersections between image, technology, and critical thought" at Cineteca Madrid, "Interrogating XR: media identity and apparatus in an era of change" at Utrecht University, and many more. He also published several articles including "Augmenting Reality: The Markers, Memories, and Meanings Behind Today's AR," in *Urban Interfaces: Media, Art and Performance in Public Spaces*.

[opendoclab.mit.edu](http://opendoclab.mit.edu)



The MIT Teaching Systems Lab—established in 2015 by Assistant Professor Justin Reich—designs, implements, and researches the future of teacher learning. All around the world, education stakeholders are calling for more ambitious teaching and learning in classrooms: less rote recitation and more active, engaged learning. The only way that will be possible is if we can dramatically increase the quantity and quality of teacher learning available to educators throughout their careers. TSL works on this urgent, global challenge through designing and researching the future of online and blended learning for educators, and through developing a series of teacher practice spaces that allow educators to rehearse for and reflect

<sup>3</sup> [immerse.news/field-notes-at-sundance-excitement-anxiety-and-an-ecosystem-in-the-making-e08d4b7300e8](https://immerse.news/field-notes-at-sundance-excitement-anxiety-and-an-ecosystem-in-the-making-e08d4b7300e8)



upon important decisions in teaching. The lab has two research scientists, three post-doctoral researchers, five instructional design staff, three graduate students from Comparative Media Studies and from Electrical Engineering/Computer Science, and thirteen undergraduates who work with the lab during the year.

Justin Reich won the Jan Hawkins Award for Humanistic Research in Learning Technologies from the American Education Research Association.

This past spring, Teaching Systems Lab staff taught a new class, Education Technology Studio to thirteen MIT undergraduates and students from Wellesley and Harvard Medical School. The course focused on the development, deployment, and evaluation of education technology projects. The culminating final project was a public presentation of students education technology innovations, recorded and circulated to PK-12 members of the Jameel World Education Lab.

TSL ran four MOOCs on edX, including Launching Innovation in Schools, Competency-Based Education: The Why, What, and How, Design Thinking for Leading and Learning, and Envisioning the Graduate of the Future, enrolling approximately 15,000 participants and awarded 1,553 certificates.

At the request of MIT's Dean of Digital Learning, the lab conducted an evaluation of the supply chain management MicroMasters, the first MicroMasters program offered by MIT which admitted students to an accelerated blended master's program on the basis of performance in MOOCs and a proctored exam. At the request of the Associate Dean for Digital Learning, we conducted a program evaluation of the new Quantum Computing MOOCs (six of them, taught on edX) and professional education courses (four of them, taught on MITxPRO). They analyzed patterns in terms of demographics, participation and completion of the six MITx courses on edX, finding similar ones to other demanding courses.

A full list of TSL publications can be found at [tsl.mit.edu/about/#publications](http://tsl.mit.edu/about/#publications).

[tsl.mit.edu](http://tsl.mit.edu)

## THE TROPE TANK

The Trope Tank, directed by Professor Nick Montfort, is a lab for research, teaching, and creative production. Its mission is to develop new poetic practices and new understandings of digital media by focusing on the material, formal, and historical aspects of computation and language.

During 2018–2019, the Trope Tank was fortunate to have CMSW's support for a graduate research assistant, Judy Heflin. This support allowed regular research to continue and a new project to be established. Also part of the core team this academic year, and continuing with the Trope Tank, are Angela Chang, Ph.D., a volunteer research associate, and Sebastian Bartlett, a visiting undergraduate.

The literary magazine *Taper* continued into its second and third issues; a call for work for issue four was posted.

[trope-tank.mit.edu](http://trope-tank.mit.edu)



[wrap@mit.edu](mailto:wrap@mit.edu)

Writing,  
Rhetoric,  
And  
Professional  
Communication

Writing, Rhetoric, and Professional Communication (WRAP), a teaching and research group of nearly forty lecturers within CMS/W, collaborates with MIT faculty in every department to teach written, oral, and visual communication to over 4,000 students a year in more than a hundred communication-intensive (CI) subjects. WRAP also teaches the foundational writing subjects (CI-HWs) in CMS/W. WRAP is devoted to teaching students how to analyze and produce effective communication, and is led by Director Suzanne Lane and Associate Director Andreas Karatsolis.

WRAP guides MIT students from the essay exam that they take online before entering as freshmen, through their four required communication-intensive subjects, and into

their graduate education. WRAP administers the graduate writing exam, teaches the graduate subjects 21W.800J—Business Writing for Supply Chain Management, and 21W.801J—Thesis Writing for Supply Chain Management, provides instruction in professional communication in 16.995: Doctoral Research and Communication Seminar and 1S.977: Special Graduate Subject in Civil and Environmental Engineering, and provides integrated communication workshops for Leadership in Global Operations (LGO). In this past year, WRAP has collaborated with new communication-intensive subjects in Civil and Environmental Engineering, Mechanical Engineering, Brain and Cognitive Sciences, and Management, and is working with NEET (New Engineering Education Transformation) to develop NEET-specific CI subjects. Throughout the year, WRAP offers workshops outside of CI-subjects as well, such as a workshop on poster presentations to students in the MIT Energy Initiative, and a thesis-writing bootcamp for graduate students in Mechanical Engineering. During Independent Activities Period, WRAP offers workshops in Communicating Science to the Public, Writing Successful Proposals, Reasoning and Argumentation, and Beyond Citation: Understanding How to Reason with Sources, as well as numerous workshops on oral presentations.

In terms of special projects, most of our time this year was dedicated to the creation of a new system for assessing writing.

WRAP's affiliated research lab, ArchiMedia, investigates how digital media is shaping professional communication practices, and how digital tools can be used (and designed) to teach professional communication.

With funding from the National Science Foundation, WRAP is participating in a multi-institutional project (with Dartmouth, the University of Pennsylvania, North Carolina State University, and the University of South Florida) to study the effects of teaching undergraduate STEM students how to effectively peer review each other's texts.

In 2016, WRAP received a three-year grant of \$240,000 from the Davis Educational Foundation to collaborate with science and engineering faculty to produce “disciplinary reasoning diagrams” of six different STEM

fields, and this grant is now coming to an end. These reasoning diagrams function as discipline-specific maps that visualize relationships between concepts and the reasoning patterns that connect them.

Finally, with the aid of an Alumni Funds grant, ArchiMedia has been developing Metalogon, an online tool for rhetorically analyzing speeches and oral presentations. The platform allows teachers and students to upload video recordings of presentations, and then to embed commentary on rhetorical elements, which plays back in real time.

[cmsw.mit.edu/wrap](https://cmsw.mit.edu/wrap)

## PERSONAL UPDATES

**Jim Bizzocchi** (S.M., Comparative Media Studies, '01) has formally retired but continues at Simon Fraser University as a Professor Emeritus. He is still doing some academic writing and supervising a few graduate students.

Jim recently presented papers at the Canadian Society for Digital Humanities — one on virtual reality and the other on generative video. He is working on his video art, which includes the further development of a generative autonomous video editing system. He has two projects on that system: his ongoing work in ambient video art and his latest project on a generative documentary system. He is happy to be associated with the the Open Documentary Lab on that project and looks forward to more consultations with ODL's founder and principle investigator Professor William Uricchio and lab director Sarah Wolozin.

**Candis Callison** (S.M., Comparative Media Studies, '02) was elected to the American Academic of Arts and Sciences, joining the more than thirteen thousand scholars elected since the Academy's founding in 1780, "in cross-disciplinary efforts to produce reflective, independent, and pragmatic studies that inform public policy and advance the public good."

With University of British Columbia colleague Mary Lynn Young, she recently co-authored *Reckoning: Journalism's Limits and*



*The CMS master's class of 2019. Back row Matthew Graydon and James Bowie-Wilson. Front row: Josefina Buschmann, Rachel Thompson, Rekha Malhotra, Libby Falck. (Not pictured: Sultan Sharrief.)*

*Possibilities*, which is due out in December from Oxford University Press.

In January, **Kurt Fendt** was appointed Senior Lecturer in CMS/W. At the same time, he made the Active Archives Initiative the new home for many former HyperStudio projects. He gave a number of invited and peer reviewed talks at the Folger Library, at the Intentionally Digital/Intentionally Black conference, the University of Innsbruck and others. In October 2018, he organized an interdisciplinary round table on the influence of the Bauhaus at the German Studies Association annual conference; in July he gave a one-week workshop at the NEH Summer Institute "Museums: Humanities in the Public Sphere"; shortly afterwards, the 4th Art Biennale opened at the Haus der Kunst in Munich to which he and CMS grad student Ben Silverman contributed a collaborative archival work on the after-WWII history of Third Reich art objects.

*Introduction to Game Analysis*, a book by **Clara Fernández-Vara** (S.M., Comparative Media

Studies, '04) came out in its second edition<sup>4</sup> last spring. The original edition was mostly written while she was still a postdoctoral associate at CMS.

**Garret Fitzpatrick** (S.M., Science Writing, '12) was promoted to the Head of Products at Shell TechWorks, an innovation center in Cambridge developing new, cleaner energy technologies. Meanwhile, he and his wife, Megan, made the move to the 'burbs with their two sons, Gavin and Dylan. They now live in Framingham, Mass.

**Conor Gearin** (S.M., Science Writing, '16) moved back to Massachusetts in late 2018 after finishing his M.S. in biology at the University of Nebraska Omaha. In October, his essay first published in *The Millions* came out in *The Best American Science and Nature Writing 2019*. He and fellow alum **Raleigh McElvery** (S.M., Science Writing, '17) released a new podcast, "BioGenesis," from the MIT De-

<sup>4</sup> <https://www.routledge.com/Introduction-to-Game-Analysis-2nd-Edition/Fernandez-Vara/p/book/9780815351849>



partment of Biology and the Whitehead Institute.

Systems Administrator **Mike Gravito** made an appearance in a *Boston Globe* article catching up with past recipients of college scholarships provided by George Weiss, the founder of the nonprofit organization Say Yes to Education.

At the AAAI 2019 Spring Symposium, collaborators with Professor **Fox Harrell** presented a model for virtual worlds that may facilitate training for teachers and students who encounter racial issues in the classroom. The model was incorporated into “Passage Home VR,” a prototype aiming to help parents understand how they are socializing their children to think about race and ethnicity.

Professor **Heather Hendershot** was selected as a 2019 Knight Visiting Nieman Fellow at Harvard University and, for the 2019/20 academic year, a fellow at the Stanford Humanities Center.

**Liwen Jin** (S.M., Comparative Media Studies, '08) works at frog as Global Marketing Director, and constantly travels between Boston, New York, and Shanghai for work. With this role, she manages frog’s global knowledge management and marketing analytics, and she also leads client engagement and the revenue team in frog China. She recently published a Chinese book *Meditation from a Balcony* on Amazon US. The book is a collection of her essays written over the past decade on a myriad of topics including human nature and relationships, cultural differences between East and West, youth and maturity, love and affinity, philosophy and life, etc. The book has been ranked #1 of best-sellers and #1 of new releases in the Kindle ebooks Chinese (traditional) category since it went live in October 2019.

Earlier this year **Jameel Khalfan** (S.B., Computer Science and Comparative Media Studies, '06) left his job leading content partnerships for a mobile storytelling platform and is now working at Google leading efforts on its new Play Pass game subscription. He says has been a big change but is excited to shape the future of premium gaming.

He was also appointed to the MIT Corporation Visiting Committee for the Humanities, which covers CMS. It has been a lot of fun seeing old professors and meeting new ones and seeing what the administrative side of academia looks like.

Professor **Thomas Levenson** published “Game over, the Chinese have won,” in *The Boston Globe*, arguing that China’s long-term threat to America’s tech dominance isn’t stolen intellectual property but rather that the U.S. “chose to surrender its commanding role in the search for [scientific] knowledge — and by doing so, abandoned a unique and often overlooked source of American power.”

**Marjorie Liu**, teaching The Art of Comic Book Writing this fall, won her third consecutive best graphic story Hugo Award for her writing in *Monstress*.

Recent graduate **Rekha Malhotra** (S.M., Comparative Media Studies, '19) was featured on news.mit.edu by the MIT Office of Graduate Education, highlighting how as a New York City D.J., she “draws inspiration from the intersection of art and activism.”

Motherboard, the technology section from VICE, covered the culture around “demoscenes” by profiling Professor **Nick Montfort**’s Synchrony, “one of the US’s last active demoparties, where programmers showcase artistic audiovisual works made in marathon coding sessions.”

CMS graduate student **Sam Mendez** received the 2019 Benjamin Siegel Writing Prize from the MIT Program in Science, Technology, & Society. The prize committee, comprised of STS professors Merritt Roe Smith and Roz Williams, selected his paper “All of Us? A Case for Ritual Communication in Community Engagement for Health Equity.”

**Andrew Moseman** (S.M., Comparative Media Studies, '08), formerly the Digital Director at *Popular Mechanics*, became a Senior Writer in Advancement Communications at Caltech. He covers the Institute’s major research initiatives and the philanthropy that supports them.

A short story excerpt from lecturer **Micah Nathan**’s next novel is included in a forthcoming anthology, *From Sea to Stormy Sea* (Pegasus Books, Dec. 2019). , “Get Him,” is described as “Midwest crime stuff, ca. 1950.”

**Samira Okudo** (S.B., Computer Science, Comparative Media Studies, '19) received a Fulbright Fellowship to work in Brazil with university students training to be English-language instructors.

In May, Professor **Lisa Parks** delivered the 2019 commencement address at the University of Montana, her *alma mater*.

**Les Perelman**, former director of Writing Across the Curriculum at MIT who also served as Associate Dean of Undergraduate Education, was named a “Champion of Public Education” by the New South Wales Teachers Federation.

Postdoc **Alex Pfeiffer** developed the game “Gallery Defender” with colleagues from the Texas A&M University (Livelab). It follows a combined game-based learning and assessment approach. The learning part and the exam are based on the same game mechanic and the same subject area, but still take place separately. The special feature of the game, however, is that the exam results are encrypted on blockchain-based tokens. The approach can be seen as one of the first in the world to take advantage of Blockchain Technology to store and share exam results, especially from a game-based exam environment.

**Kendra Pierre-Louis** (S.M., Science Writing, '16), a reporter at the Climate desk at *The New York Times*, authored a piece for *The Open Notebook* called “Navigating Newsrooms as a Minority”. In it, she documented the kind of racism found in many work environments but also examples specific to journalism, such as when minority reporters are doubted for their ability to report on stories outside their communities but then accused of preferential bias when they do report on them.

**Aswin Punathambekar** (S.M., Comparative Media Studies, '03) has co-edited the book *Global Digital Cultures: Perspectives from South*

Asia. And after nearly thirteen years at the University of Michigan, he will be taking up a faculty position in the Department of Media Studies at the University of Virginia starting. He is excited to join two fellow CMS alums at Virginia, **Kevin Driscoll** ('09) and **Lana Swartz** ('09).

Lecturer and Open Documentary Lab fellow **Sandra Rodriguez** shared a 2019 Prix Ars Electronica in the computer animation category for their work on Manic VR, “a virtual reality documentary that introduces users to the complex world of bipolar disorder.” Sandra also welcomed Laetitia, a daughter, on October 14.

**Thalia Rubio** is excited about being the Interim Director of the Writing and Communication Center until July, 2020, when **Elena Kallestinova** will join from Yale University. As always, she reminds us, send your students to the WCC for professional guidance in written and oral communication. The WCC is also presenting workshops on topics such as writing an abstract or a grant application; avoiding plagiarism; procrastinating better; and explaining your research to people outside your field.

**M.R. Sauter** (S.M., Comparative Media Studies, '13) is now Assistant Professor at the University of Maryland's College of Information studies, where they are “exploring how innovation economy companies work with local and national governments to redevelop urban areas and jumpstart lagging economies.”

Professor **Edward Schiappa** completed his term as CMS/W Head after six years. He published three articles in 2019: “Sophisticated Modernism and Truth,” in James E. Katz & Kate K. Mays, eds., *Journalism and Truth in an Age of Social Media*; “Communication Instruction in Science & Engineering Universities: The MIT Experience,” *International Journal of Management and Applied Science*; and “Will & Grace,” in *The State of SIE: Mapping the Landscape of Social Impact Entertainment*. He is now working on a book titled *The Challenge of Defining “Sex” and “Gender”: The Transgender Exigency*.

For the past year and a half, **Karen Schrier Shaenfield** (S.M., Comparative Media Studies, '05) has been working as a Belfer Fellow at the ADL, where she is researching games, inclusion, and identity. She created a [whitepaper](#)<sup>5</sup> that explores game design, empathy, and bias and a [game jam guide](#)<sup>6</sup> for creating identity-related games. In addition, the third volume in her edited series *Learning, Education & Games* is coming out in November 2019. It is called “100 Games to Use in the Classroom & Beyond” — and it's free to download from ETC Press (Carnegie Mellon) and features games made by current and former MIT folks. She still an Associate Professor/Director of Games at Marist College in Poughkeepsie, New York, but now lives in beautiful South Salem (with two kids, a husband, and some cats). Come visit!

**Parmesh Shahani** (S.M., Comparative Media Studies, '05) continued with the flying the CMS flag in India, when he hosted The Great Indian Fandom Studies at the Godrej India Culture Lab, which he runs. This was India's first-ever, full-blown academic fandom conference. This historic event brought together fan studies scholars, fandom community managers and more on the same stage and it was absolutely “fan-tastic”. He also continued being fabulous, by speaking at conferences within India and outside, about LGBTQ India and intersectionality.

At the end of June, **Steven Strang** stepped down as director of the Writing and Communication Center, a position he held for 37 years, ever since he started the WCC in 1982. The WCC has worked with thousands of clients including undergraduate and graduate students, post-docs, faculty, staff, and spouses. He will remain teaching Rhetoric for the next couple of years.

Professor **T.L. Taylor**'s book on game live streaming, *Watch Me Play* (Princeton, 2018), received the American Sociological Association Communication, Information Technologies, and Media Sociology (CITAMS) section's 2019 book award. She was also

inducted as a MIT MacVicar Faculty Fellow last March and was one of several CMS/W faculty featured in a series on “Ethics, Computing, and A.I.” by MIT's School of Humanities, Arts, and Social Sciences. She discussed the “environment for ethical action,” arguing that “we can cultivate our students as ethical thinkers but if they aren't working in (or studying in) structures that support advocacy, interventions, and pushing back on proposed processes, they will be stymied.”

Collaborators from the Teaching Systems Lab and MIT Open Learning, including research scientist **Meredith Thompson**, Teaching Systems Lab Associate Director **Rachel Slama**, and Professor **Justin Reich**, published “Teacher Moments: A Digital Simulation for Preservice Teachers to Approximate Parent–Teacher Conversations” in the *Journal of Digital Learning in Teacher Education*.

Professor **William Uricchio** published “Rethinking the social documentary” in the edited volume *The Playful Citizen: Civic Engagement in a Mediatized Culture*, published by Amsterdam University Press. He also published “Augmenting Reality: The Markers, Memories, and Meanings Behind Today's AR” in a special issue of the *Leonardo Electronic Almanac* dedicated to urban interfaces.

This summer, Professor **Jing Wang** celebrated the 10<sup>th</sup> anniversary of the founding of NGO2.0 and launched a new project “Future Village” in collaboration with Shenzhen Open Innovation Lab and the School of Experimental Art at the Chinese Academy of Fine Arts. Her new book *The Other Digital China: Nonconfrontational Activism on the Social Web* is due out in December.

In January in New York, **Jia Zhang** (S.M., Comparative Media Studies, '13) married Eric Ross Finkelstein. The two met as undergraduates at the Rhode Island School of Design. Jia, who received her Ph.D. from the Media Lab following her time in the CMS program, is now a Mellon Associate Research Scholar at Columbia University's Center for Spatial Research. ●

<sup>5</sup> [adl.org/media/13011/download](https://adl.org/media/13011/download)

<sup>6</sup> [adl.org/media/12529/download](https://adl.org/media/12529/download)



# FALL 2019 EVENTS

Thursday, Sep 12, 5pm | 56-114

## **Amplius Ludo, Beyond the Horizon**

**Christopher Weaver**, Founder of Bethesda Softworks, will discuss how games work and why they are such potent tools in areas as disparate as military simulation, childhood education, and medicine.

Thursday, Sep 19, 5pm | E15-318 (Open Area)

## **Sound, Learning and Democracy: The Curvature of Social Space-Time through Japanese Music, from Underground Techno to Pop Idols**

**Ian Condry** explores contemporary Japanese music, with a comparison of diverse examples, such as female Japanese rappers, underground techno festivals, the virtual idol Hatsune Miku, and the pop idol group AKB48.

Monday, Sep 26, 5pm | E15-318 (Open Area)

## **Poet/Programmers, Artist/Programmers, and Scholar/Programmers: What and Who Are They?**

**Nick Montfort** develops computational poetry and art and has participated in dozens of literary and academic collaborations.

Monday, Sep 30, 7pm | 32-141

## **The William Corbett Poetry Series**

The inaugural event, featuring poets Ruth Lepson, Keith Jones, Daniel Bouchard, Fanny Howe, Roland Pease, Michael Franco, Patrick Pritchett, Ed Barrett.

Thursday, Oct 3, 5pm | E15-318 (Open Area)

## **Pomegranate**

**Helen Elaine Lee** reads from the manuscript of her novel, “Pomegranate,” about a recovering addict who is getting out of prison and trying to stay clean, regain custody of her children, and choose life.

Oct 9-11 | E15

## **Design and Semantics of Form and Movement**

The DeSForM conference seeks to present current research into the nature, character and behavior of emerging typologies of connected and intelligent objects within adaptive systems.

Thursday, Oct 10, 5pm | E15-318 (Open Area)

## **How Entertainment Can Help Fix the System**

**Anushka Shah** asks, our trust in politics and public institutions is falling globally — can entertainment and pop culture be a way out?

Thursday, Oct 17, 5pm | E15-318 (Open Area)

## **If I Could Reach the Border...**

**Vivek Bald** will read from a new essay that uses a teenage encounter with police and the justice system to explore questions of immigrant acceptability, racialization, and the South Asians American embrace of model minority status.

Monday, Oct 22, 7pm | 32-155

## **The William Corbett Poetry Series**

**Andrea Cohen** is the author of six poetry collections, including, most recently *Nightshade and Unfathoming*.

Thursday, Oct 24, 5pm | E15-318 (Open Area)

## **Why Co-Create? And Why Now? Reports from A Field Study**

**William Uricchio** on how co-creation is picking up steam as a claim, aspiration, and buzz-word du jour. But what is and why does it matter?

Thursday, Nov 7, 5pm | 56-114 | Co-hosted with the MIT Program on Science, Technology and Society

## **Artificial Intelligence & Modern Warfare**

**Lucy Suchman**'s concern is with the asymmetric distributions of sociotechnologies of (in)security, their deadly and injurious effects, and the legal, ethical, and moral questions that haunt their operations.

Thursday, Nov 14, 2pm | E51-095

## **Comparative Media Studies Graduate Admissions Information Session**

Meet faculty and research managers, learn about the program, and ask questions. Followed by our weekly colloquium. Livestream available.

Thursday, Nov 14, 5pm | E15-318 (Open Area)

## **Design Based Research on Participatory Simulations**

**Eric Klopfer** and The Education Arcade are working on a set of “Participatory Simulations”: mobile collaborative systems-based games.

Friday, Nov 15, 3pm | 14E-304

## **Graduate Program in Science Writing Information Session**

Meet faculty, learn about the program, and ask questions. Livestream available.

Thursday, Nov 21, 5pm | E15-318 (Open Area)

## **Portable Postsocialisms [*postsocialismos de bolsillo*]**

**Paloma Duong** on “how revisiting our assumptions about digital media and cultural agency, both in Cuba and in the broader hemispheric context, can speak to the dreams and demands of constituencies that operate between, beneath, and beyond the pressures of global markets and the nation-state.”

Thursday, Dec 5, 5pm | E15-318 (Open Area)

## **Play as Transformative Work**

**T.L. Taylor** will explore the ways game live streamers are transforming their otherwise private play into public entertainment.

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*A full schedule, including special events, is available at [cmsw.mit.edu/events](https://cmsw.mit.edu/events). Miss an event? Catch up at [cmsw.mit.edu/media](https://cmsw.mit.edu/media).*

# RECENT PODCASTS AND VIDEOS

## **“Bringing the War Home” – Visual Aftermaths and Domestic Disturbances in the Era of Modern Warfare**

[cmswm.it/kaplan](https://cmswm.it/kaplan)

**Caren Kaplan** focuses on the period from the Vietnam War into the “War on Terror” through Martha Rosler’s photo collage series “House Beautiful: Bringing the War Home” (1967–2004).

## **The Language of Civic Life: Past to Present**

[cmswm.it/hart](https://cmswm.it/hart)

The University of Texas’ **Roderick Hart** argues that raucous disagreements draw citizens in, at least enough of them to sustain civic hope.

## **Protecting the Water in Solidarity and Unity**

[cmswm.it/dewey](https://cmswm.it/dewey)

**Myron Dewey** has pioneered the blending of citizen monitoring, documentary filmmaking, and social networking in the cause of environment, social justice and indigenous people’s rights.

## **The Julius Schwartz Lecture**

[cmswm.it/bendis-mit](https://cmswm.it/bendis-mit)

Last November We welcomed award-winning comics creator **Brian Michael Bendis**, one of the most successful writers working in mainstream comics.

## **Practitioner-led Research to Reimagine Technology for Social Justice**

[cmswm.it/morethanocode-podcast](https://cmswm.it/morethanocode-podcast)

**Sasha Costanza-Chock** explores key findings and recommendations from #MoreThanCode, a recently-released field scan based on more than 100 practitioner interviews.

## **Marisa Morán Jahn**

[cmswm.it/jahn-podcast](https://cmswm.it/jahn-podcast)

Jahn is a multi-media artist, writer, educator and activist, whose colorful, often humorous uses of personae and media create imaginative pathways to civic awareness of urgent public issues.

## **Daniel Bacchieri**

[cmswm.it/bacchieri](https://cmswm.it/bacchieri)

Bacchieri is an award-winning Brazilian journalist, documentary film maker and collaborative web developer/curator, whose visually inspiring StreetMusicMap platform has been widely praised for its curation of street performers from across the globe.

## **“Collective Wisdom” Keynote**

[cmswm.it/collective-wisdom](https://cmswm.it/collective-wisdom)

Critically-acclaimed filmmaker and artist **Thomas Allen Harris** reveals his process, experiences, and unexpected outcomes working with communities in online and offline shared spaces and places.

## **Erik Loyer**

[cmswm.it/podcast-erik-loyer](https://cmswm.it/podcast-erik-loyer)

Loyer’s award-winning work explores new blends of game dynamics, poetic expression and interactive visual storytelling.

## **Do-it Yourself Cinema: Portable Film Projectors as Media History**

[cmswm.it/wasson](https://cmswm.it/wasson)

**Haidee Wasson** explores the vibrant place of portable film devices in the history of small media, repositioning the “movie theatre” as the singular or even central figuration of film presentation and viewing.

## **Thumbs Type and Swipe**

[cmswm.it/DIS-Boyle](https://cmswm.it/DIS-Boyle)

**Lauren Boyle** and DIS enlist leading artists and thinkers to expand the reach of key conversations bubbling up through contemporary art, culture, philosophy, and technology.

## **The Battle of Algiers as Ghost Archive: Specters of a Muslim International**

[cmswm.it/daulatzai](https://cmswm.it/daulatzai)

**Sohail Daulatzai** on the film’s “competing narratives, a battleground over the meaning and memory of decolonization and Western power, and a site for challenging the current imperial consensus.”

## **Computer Games in Communist Czechoslovakia as Entertainment and Activism**

[cmswm.it/svelch](https://cmswm.it/svelch)

**Jaroslav Švelch** discusses the surprising ways computer hobbyists in Czechoslovakia challenged the power of the oppressive political regime and harnessed early microcomputer technology for entertainment and activism.

## **Social Media Entertainment**

[cmswm.it/social-media-entertainment](https://cmswm.it/social-media-entertainment)

Media scholars **Stuart Cunningham** and **David Craig** propose challenging accounts of the political economy of digital media, the precarious status of creative labor and media management, and the possibilities of progressive cultural politics in commercializing environments.

## **“The Good Stuff”: The Intersections of Work, Leisure, and Relational Bonding on Tumblr and Patreon**

[cmswm.it/guarriello](https://cmswm.it/guarriello)

**Nick-Brie Guarriello** on the political economies and labor demands of micro-celebrity and influencer culture.

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*Ready for more podcasts and videos? Catch up, or subscribe for just-posted ones, at [soundcloud.com/mit-cmsw](https://soundcloud.com/mit-cmsw) and [cmswm.it/cmsw-youtube](https://cmswm.it/cmsw-youtube).*





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