



**Center for
Science and the
Imagination**

**Arizona State
University**

**2021/22
Annual Report**



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Imagination**

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University**



**A message from
Ed Finn**

This report marks the ninth year of the Center for Science and the Imagination, a number that has prompted us to begin reflecting on our long-term plans. In this edition of our yearly activity index, you will find a growing scale of impact. For the first time, CSI's work was featured in a national museum, thanks to our creative collaboration with the Smithsonian Institution. The "FUTURES" exhibition at the Arts and Industries Building in Washington, D.C. ran from November 20, 2021 through July 6, 2022, and welcomed 650,000 in-person visitors. CSI convened eight teams of curators and researchers affiliated with different Smithsonian museums and entities to imagine the future of their work and the communities they serve. We brought these teams together with artist Brian Miller and authors Madeline Ashby and Tochi Onyebuchi to create museum posters and works of short fiction that imagine topics like museums in space, extending the voting franchise to children, and vaccination via mosquitoes. The poster collection for "Future Visions 2071" was on view at the Arts and Industries Building, and all materials are available on Slate's Future Tense channel.

CSI also continued our tradition of working with a wide and ever-expanding list of research sponsors. Ruth Wylie secured our largest funding award yet this May for the Arizona STEM Acceleration Project (ASAP), which the Arizona Department of Education is funding at \$10 million. The project will provide professional development training and stipends for hundreds of K-12 teachers in the state, with additional support for reaching and engaging rural schools and underrepresented groups. We're also excited to welcome three veteran teachers to work on the project at CSI: Amanda Whitehurst, Mike Vargas, and Shahla Naraghi.

Bob Beard led the development of a second new funding proposal for the Veterans Imagination Project (VIP), which has been greenlit by the ASU Women and Philanthropy organization. VIP addresses the critical need to support veterans in imagining positive and fulfilling career futures as they transition back to civilian life post-service. After piloting the concept with a small group of ASU student veterans in the spring of 2022, Bob, Ruth, and I developed the Women and Philanthropy proposal, and Bob delivered an impressive final pitch. The award is a significant vote of confidence from an amazing group of community leaders, and we are excited to conduct two eight-week community workshops and develop a train-the-trainer model during the funded period. We see this work as just the beginning, and hope to share the VIP concept with veterans and communities around the state and the country.

Our long-running climate futures work achieved a new level of public recognition this year thanks to our Climate Imagination Fellows Vandana Singh, Hannah Onoguwe, Gu Shi, and Libia Brenda. This initiative seeks to catalyze communities around the world to imagine positive climate futures as a means to inspire climate action in the present. Supported by a grant from ClimateWorks, the project held events in partnership with the British Library, Future Tense, the Hay Festival Arequipa, and TED. For TED's Project Countdown, we ran a futures workshop building on project advisor Kim Stanley Robinson's novelistic call to arms *The Ministry for the Future*. Robinson and fellow Vandana Singh both delivered TED talks that have been viewed a cumulative 2.4 million times. The project continues as our fellows complete their own novelette-length positive climate futures, which will become part of a collection that includes nonfiction, flash fiction, and original artwork.

Our other fellowship project this year was just as exciting. A cohort of five Applied Imagination Fellows came together last summer to pursue a range of projects intended to strengthen and deepen our collective capacity for imagination: Panthea Lee is working to advance equity and inclusion for communities identifying as Asian and Pacific Islander in the New York area; Sultan

Sharrief is advocating for the unhoused in Los Angeles; Regina Kanyu Wang is completing a documentary about women in science fiction and science in China; Benjamin Ong is exploring community gardening and urban foraging in Kuala Lumpur; and Ian Edwards is reimagining global finance to support sustainable development from his home base in coastal Massachusetts. Together, these projects are broadening our shared horizons as to what applied imagination means, and bringing CSI's mission and methods to communities of practice around the world.

2022 also saw the launch of another exciting public conversation about the powerful feedback loop between science fiction and real technological innovation. The Applied Sci-Fi Project is led by external CSI fellow Kevin Bankston and supported by the Sloan Foundation. Working with me and graduate student Rizwan Virk, Kevin is bringing together leading authors, science fiction scholars, and technology-industry experts to discuss the past and future trajectory of this interchange. Throughout the year, we will host four public events and invitational workshops, which will inform a series of white papers and other public resources on the topic.

As CSI matures, we are working to document and share our insight and methods, contributing to the broader field of imagination research. To that end, we published "Collaborative Imagination: A Methodological Approach" in the journal *Futures* in September 2021, distilling several years of experience into a framework for fostering shared imagination. We also published a paper synthesizing results from our AI Policy Futures project led by fellow Andrew Dana Hudson in *AI and Society*, as well as two learning science papers on Frankenstein and the essay anthology *Sickness, Systems, Solidarity: A Pandemics and Games Essay Jam*.

The center also welcomed an accomplished set of visitors this year—in person and virtually—to lectures, meetings, and classes, including the leading computational culture scholar N. Katherine Hayles, Stanford d. school executive director Sarah Stein Greenberg, Dreamscape CEO Walter Parkes, science fiction author Tochi Onyebuchi, and our external fellows Vandana Singh, Kevin Bankston, Andrew Dana Hudson, Michael G. Bennett, and Madeline Ashby.

We continue to be inspired and educated by the amazing work all of you in the CSI community are doing, and we look forward to imagining collaboratively with you in the coming year. As ever, please be in touch with your ideas, questions, and visions of the future.

Looking forward,

A handwritten signature in black ink, appearing to read "Ed Finn". The signature is fluid and cursive, with the first name "Ed" being larger and more prominent than the last name "Finn".

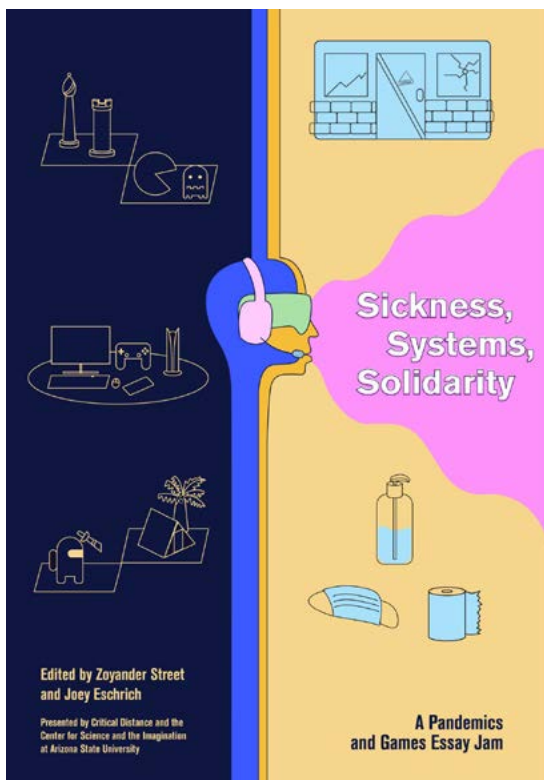
Ed Finn
Director

Mission

**Igniting
collective
imagination
for a better
future.**

CSI Publications 2021/22

Books



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Wylie, R., Hawkins, R., Kanoria, J., & Maclay, C. (2022, February 9). Creating the Next Generation of Educational Learning Material: Lessons from the Evoke Storytelling Initiative. <https://anchor.fm/world-bank-edutech/episodes/Creating-the-Next-Generation-of-Educational-Learning-Material-Lessons-from-the-Evoke-Storytelling-Initiative-e1e5j3e>

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About the Center

At the Center for Science and the Imagination at Arizona State University, our mission is to ignite collective imagination for a better future. We create inspiring, inclusive, technically grounded visions of the future by bringing together artists, authors, and educators with scientists, technologists, policy thinkers, and community members. We publish collections of science fiction, nonfiction, and art; lead informal and formal education initiatives around science, technology, culture, and society; host public events and forums and create podcasts and videos about science fiction, media arts, and possible futures; conduct interdisciplinary research about collaboration and imagination; and more.

Our projects have been supported by NASA, the U.S. National Science Foundation, the William and Flora Hewlett Foundation, the Alfred P. Sloan Foundation, Intel Corporation, Google, the U.S. National Endowment for the Humanities, Arizona Department of Education, Ingka Group, the Spencer Foundation, the ClimateWorks Foundation, and the World Bank.

We have collaborated with organizations including the U.S. National Renewable Energy Laboratory, Slate magazine, New America, the Society for Scholarly Publishing, National Novel Writing Month, the Science Fiction Research Association, Leonardo/The International Society for the Arts, Sciences, and Technology, the MIT Press, the Mexican Space Collective, CoFUTURES at the University of Oslo, Creative Nonfiction magazine, the National Informal STEM Education Network, and the Joan Ganz Cooney Center at Sesame Workshop.

Land Acknowledgment

We acknowledge and pay respects to the Akimel O'odham, Yavapai, Pee Posh, and other Indigenous Nations and people that have inhabited this land for centuries. Their care, keeping, and imagination of these lands allow us to be here today.

12

Science & Imagination

New platforms for storytelling and conversation.

26

Networks of Imagination

A global ecosystem for big ideas.

40

Applied Imagination

Igniting collective imagination to adapt and aspire.


48


The Future of Learning


Designing tools to fathom a complex world.


56

Looking Ahead

	Climate Imagination	14
	Smithsonian: Future Visions 2071	18
	Imagination, Annotated	21
	Future Tense	22
	Imagining Transmedia	25

	Sickness, Systems, Solidarity	29	Science Fiction Sparkle Salon	34
	Imagining Intelligence	30	Our Future Life	34
	CSI Skill Tree	32	Vital Signs	35
	Imaginary Papers	33	Student Success	36

	Applied Imagination Fellows	42
	Veterans Imagination Project	44
	Applied Sci-Fi	47

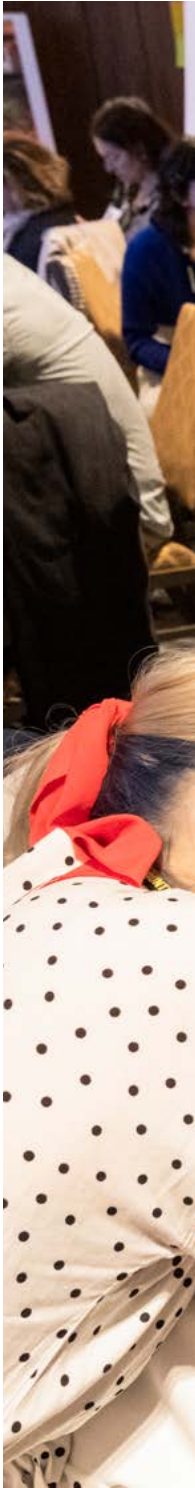
	Arizona STEM Acceleration Project	51
	Designing for Dreamscape	52
	EVOKE	55



Science & Imagination

How can we harness imagination as a resource for confronting our biggest problems? How can we tell new stories that inspire hope, agency, and ambition?

Participants at the workshop "The Ministry for the Future: Imagining New Realities," at the TED Countdown Summit in Edinburgh, Scotland.



Center for Science and Imagination



Photos of Libia Brenda, Hannah Onoguwe (credit: Greatman Shots), Gu Shi, and Vandana Singh (credit: Claudia Ruiz Gustafson).



Climate Imagination

The Fellowship

When we think of climate, the stories we tell about the future are frequently bad: megastorms, crop failures, and heat waves loom over us, sending a signal that the problem is so vast, so complex, that it's out of our control. That narrative is compelling for some, but leaves others feeling hopeless, helpless, and disillusioned. Even the most ardent champions of decarbonization sometimes focus more on sounding the alarm than on imagining and mapping out what success might look like. Without positive climate futures, visions of climate adaptation and resilience that we can work toward, it's much harder to motivate broad-based efforts for change in the present.

The Climate Imagination Fellowship seeks to inspire a wave of narratives about what positive climate futures might look like for communities around the world. Our goal is to curate and share amazing stories about persistence,

adaptation, resilience, and joy in the face of adversity, and to invite people to imagine their own climate futures—to feel both agency and responsibility for defining a future that spurs us to take action today.

We need hopeful stories about how collective action, aided by scientific insights, culturally responsive technologies, and revolutions in governance and labor can help us make progress toward inclusive, sustainable futures. These visions should center on how we can create a vibrant, thriving, interconnected global society that celebrates local variations and solutions while achieving the international coordination and shared values we need to meet the challenges of climate chaos.

The Climate Imagination Fellowship is an effort to model how we might generate the kinds of stories we need, drawing on the talents of top

Science & Imagination

science fiction authors from different parts of the world, as well as a network of experts on climate science, governance, ecology, and other essential fields.

The fellowship is supported by a grant from the ClimateWorks Foundation, and is presented in partnership with the United Nations Climate Change High-Level Champions team and TED Countdown.

Fellows and Collaborators

Our four Climate Imagination Fellows are talented science fiction authors from around the world:

- Libia Brenda, a writer, editor, and translator based in Mexico City, Mexico
- Hannah Onoguwe, a writer of fiction and nonfiction based in Yenagoa, Nigeria
- Gu Shi, a science fiction author and urban planner based in Beijing, China
- Vandana Singh, a speculative fiction author, physics professor, and climate researcher born and brought up in New Delhi, India and based in Framingham, Massachusetts

Renowned climate fiction novelist and environmental writer Kim Stanley Robinson serves as the project's senior advisor, and Xia Jia, a speculative fiction author and scholar of Chinese literature, is a collaborator on the project, and has joined several of our public events.

The Almanac

In 2023, in advance of the United Nations COP 28 climate summit in the United Arab Emirates, we will publish a *Climate Action Almanac*, bringing together inspiring short fiction about climate futures created by our fellows with a range of nonfiction pieces, visual art, and do-it-yourself activities for local climate action. In addition to our fellows, the book will include perspectives from across the globe—from Cuba, Brazil, and Germany to Malaysia, Nigeria, and Scotland.

Global Events

We hosted a series of seven virtual public events in the fall of 2021 to celebrate the launch of the fellowship, open spaces for discussion and deliberation about positive, locally responsive climate futures, and connect our fellows with experts in climate science, literature, and politics.

- “The Days After Tomorrow: Climate Fiction for the Future,” cohosted with the British Library, featuring fellows Libia Brenda, Hannah Onoguwe, and Vandana Singh; Claire Armitstead, associate culture editor for The Guardian; and renowned literary theorist and novelist Amitav Ghosh
- “Workshop on Reimagining Climate Futures,” cohosted with the *Journal of Science Policy & Governance* and the UK Science & Innovation Network, featuring fellows Libia Brenda, Hannah Onoguwe, and Vandana Singh; Adriana Bankston, CEO of the *Journal of Science Policy & Governance*; and Emily Cloke, British Consul General in Los Angeles
- “Unlocking Our Climate Imagination,” cohosted with Future Tense, featuring fellows Libia Brenda, Hannah Onoguwe, and Vandana Singh; novelist Kim Stanley Robinson; UN High-Level Climate Champion Nigel Topping; and Bina Venkataraman, editorial page editor at The Boston Globe and former climate policy advisor to U.S. President Barack Obama
- “Cli-Mates: Climate Futures Conversations from Scotland,” cohosted with the science fiction magazine *Shoreline of Infinity*, featuring fellows Libia Brenda and Hannah Onoguwe; novelists Kim Stanley Robinson and Ken MacLeod; fiction author and literature scholar Xia Jia; fiction author and journalist Gabriela Damián Miravete; ethnographer of futures Laura Watts;



novelists Tendai Huchu and Kim Stanley Robinson; political scientist Lawrence Drietas; and science writer and editor Pippa Goldschmidt

- “Crafting Climate Futures: From Story to Policy,” cohosted with the Olaf Stapledon Centre for Speculative Futures at the University of Liverpool, featuring fellows Vandana Singh and Hannah Onoguwe; fiction author and literature scholar Xia Jia; novelist Kim Stanley Robinson; and climate literature scholar Adeline Johns-Putra
- “Imagining Our Climate Futures,” part of the Hay Festival Arequipa, Peru, moderated by Ed Finn and featuring fellows Vandana Singh and Libia Brenda
- “Seeing the Future: What Do Success and Failure Look Like?” cohosted with the Woodwell Climate Research Center, featuring fellow Vandana Singh; fiction author and literature scholar Xia Jia; climate scientist Jennifer A. Francis; and Bina Venkataraman, editorial page editor at The Boston Globe and former climate policy advisor to U.S. President Barack Obama
- “Flipping the Script on Climate,” cohosted with SciRens and NYC Women Filmmakers, featuring fellow Vandana Singh; filmmakers Taryn O’Neill and Tamara Krinsky; Ed Finn; actors Christina Ochoa, Marc A. Samuel, Monste Hernandez, David Blue, Tara Platt, and Kavi Ladnier; climate scientist Kate Marvel; climate policy researcher Manjana Milkoreit; and activist and writer Gia Mora



Top left: Postcard illustration “Suburb” by João Queiroz.
Center: Designer Wendy E. Brawer, founder of Green Map System, at the workshop “The Ministry for the Future: Imagining New Realities,” at the TED Countdown Summit in Edinburgh, Scotland.

Bottom left: Climate Imagination Fellow Vandana Singh delivers her TED Talk, “A Sci-Fi Story of Earth’s Renewal,” at the TED Countdown Summit in Edinburgh, Scotland.



TED Countdown Summit

In October 2021, fellow Vandana Singh, senior advisor Kim Stanley Robinson, and CSI's Ruth Wylie traveled to the TED Countdown summit in Edinburgh, Scotland, where thinkers and creators from around the world gathered to explore pathways toward a net-zero future. They hosted a collaborative workshop, "The Ministry for the Future: Imagining New Realities," and Singh delivered a TED Talk, "A Sci-Fi Story of Earth's Renewal," a performative piece of speculative fiction about the fundamental interconnectedness of human communities, nonhuman beings, and Earth systems. The video has been viewed more than 829,000 times.

At an earlier TED conference in Monterey, California, Robinson delivered a virtual TED Talk, "Remembering Climate Change...A Message from the Year 2071," also a piece of speculative fiction, looking back from fifty years in the future to narrate how humanity ended the climate crisis and restored the damage done to Earth's biosphere. The video has been viewed more than 1.7 million times.

Postcards from the Future

Postcards from the Future is an at-home activity we developed to provide opportunities for people around the world to share their positive, locally rooted visions of climate futures. We commissioned twelve original illustrations of future landscapes from Brazilian digital artist João Queiroz—from mountains and jungles to swamps, rolling fields, river deltas, and deserts—which serve as points of inspiration for messages from the future to the present.



Learn more and create your own postcard at <https://climateimagination.org/postcards-from-the-future>.

Top right: Novelist and senior advisor Kim Stanley Robinson at the workshop "The Ministry for the Future: Imagining New Realities," at the TED Countdown Summit in Edinburgh, Scotland.

Bottom right: Postcard illustration "City" by João Queiroz.



Smithsonian: Future Visions 2071

In 2021, curators from the Smithsonian Institution's Arts and Industries Building invited CSI to collaborate on the museum's first large-scale exploration of the future, in honor of the Smithsonian's 175th anniversary.



Whereas museums are traditionally understood as repositories of the past, "Future Visions 2071" challenged Smithsonian research teams to envision possible future timelines informed by inquiries, investigations, and field research

happening today at museums and laboratories all around the world. These discussions were bolstered by queries, prompts, and speculative leaps from award-winning artist Brian Miller and acclaimed science fiction writers Tochi Onyebuchi and Madeline Ashby, who brought these future visions to life through forward-looking exhibition posters and flash-fiction stories—full narratives, each fewer than 2,000 words—set in the year 2071.

Following in the Smithsonian's rich tradition of curation and interpretation, this new collection of stories and art was included alongside historical artifacts, experimental prototypes, and immersive experiences as part of the "FUTURES" exhibition. The exhibition was on view at the Arts and Industries Building from November 20, 2021 through July 6, 2022, where it encouraged 650,000 visitors to consider a multitude of possible futures.

For those who were unable to attend the exhibition in person, both the stories and art were published online on Slate's Future Tense channel. Additionally, CSI organized two public events to delve deeper into this unique collaboration: an online panel discussion with Ashby, Miller, Onyebuchi, and "FUTURES" curator Glenn Adamson, presented in collaboration with Future Tense, and a session about science fiction for civic engagement at the 2021 World Science Fiction Convention in Washington, D.C.

The "FUTURES" exhibition, in the Smithsonian Arts and Industries Building in Washington, D.C. Photo by Albert Ting.



Science & Imagination

Future Visions 2071 Stories



“In Pursuit of Extra-Terrestrial Life” by Madeline Ashby, in collaboration with the National Air and Space Museum



“30-Second Situation” by Tochi Onyebuchi, in collaboration with the National Museum of African American History and Culture



“Blood Stream” by Tochi Onyebuchi, in collaboration with the Smithsonian Conservation Biology Institute and National Museum of Natural History



“Herëka” by Tochi Onyebuchi, in collaboration with the Smithsonian Institution Archives, the Smithsonian Data Science Lab, and the American Women’s History Initiative



“Claremont v. Florida” by Madeline Ashby, in collaboration with the National Museum of American History



“Speculation” by Madeline Ashby, in collaboration with the Smithsonian Astrophysical Observatory



“Assists” by Madeline Ashby, in collaboration with the Lemelson Center for the Study of Invention and Innovation at the National Museum of American History, and Rayvon Fouché at Purdue University



“Equipoise” by Tochi Onyebuchi, in collaboration with the Smithsonian Tropical Research Institute

Art by Brian Miller.





Imagination, Annotated

In February and April 2021, CSI's Ed Finn and Joey Eschrich and David H. Guston of ASU's School for the Future of Innovation in Society hosted two editorial workshops for *Imagination, Annotated*, a new book series we are launching with the MIT Press. This series opens up great works of speculative fiction to new readers and contemporary concerns, unearthing the seeds of imagination that have shaped our collective dreams of the future. Inspired by our success with 2017's *Frankenstein: Annotated for Scientists, Engineers, and Creators of All Kinds*, each volume is annotated by experts to delve into its historical context and enduring questions, and to make these works relevant for diverse future-makers, especially STEM students and practitioners.

By curating and explicating historical futures from the nineteenth and twentieth centuries, we hope to inspire reflection and include contemporary readers in a continuing conversation around the question of what kind of world we want to live in. Through annotations, original essays, and discussion prompts, *Imagination, Annotated* volumes grapple with scientific creativity and responsibility, as well as the interplay of technical and moral imagination.

These editorial workshops welcomed a diverse range of scholars, writers, and editors from around the world to learn more about the new series and collaboratively discuss possible themes, titles, and approaches. Conversation ranged from early feminist utopias to contemporary films, video games, and books, and several promising proposal ideas have emerged from the two workshops. As editors finalize their proposals and share them with the MIT Press, we look forward to bringing the series to life in the coming year.

An illustration by Emile-Antoine Bayard for Jules Verne's 1865 science fiction novel *De La Terre à la Lune* (*From the Earth to the Moon*).



Future Tense

Future Tense is the citizen's guide to the future. A partnership of Arizona State University, Slate, and New America, Future Tense explores how emerging technologies and scientific discoveries will change the way we live.

Future Tense seeks to understand technological breakthroughs and what they mean for our environment, our systems of governance and democratic values, how we relate to each other, and what it means to be human. We consider these themes in commentary on Slate, through podcasts and public events, technically grounded science fiction, and public forums for deliberation and debate.

CSI is ASU's hub for Future Tense, working to involve more faculty, staff, and students in the partnership and to connect Future Tense more deeply with the university's academic, knowledge, and learning enterprises.

Future Tense Fiction

CSI continues to publish Future Tense Fiction, a monthly series of science fiction stories on Slate. Each story is accompanied by original artwork and a response essay by a writer with expertise in a relevant field.

Future Tense Fiction is an exciting extension of the larger Future Tense partnership between ASU, Slate, and New America. We're also proud to partner with 3 Arts Entertainment, a talent management and production company based in Los Angeles. 3 Arts complements our existing networks with its track record of major successes, including the TV series *The Good Place*, *Parks and Recreation*, and *Russian Doll* and the feature films *The Blind Side*, *A Scanner Darkly*, and *Edge of Tomorrow*. Several Future Tense Fiction stories have been optioned for adaptation, and are in various stages of the production process.

Future Tense Fiction stories continue to earn accolades in the science fiction community, with stories from the project being featured in the anthologies *The Best American Science Fiction and Fantasy 2021*, edited by John Joseph Adams and Veronica Roth; *The Best Science Fiction of the Year, Volume 6*, edited by Neil Clarke; and *The Year's Best Science Fiction, Volume 2*, edited by Jonathan Strahan.

Our stories published in 2021-2022 are:

July 2021: "Collateral Damage," by Justina Ireland, with a response essay by military historian and science fiction critic Andrew Liptak

August 2021: "The Beauty Surge," by Laura Maylene Walter, with a response essay by environmental engineer Rolf Halden

September 2021: "The Wait," by Andrea Chapela, translated from Spanish by Emma Törzs, with a response essay by science and technology researcher Vivette García-Deister

October 2021: "Furgen," by Andrew Silverman, with a response essay by canine psychology researcher Clive D.L. Wynne

November 2021: "Ride," by Linda Nagata, with a response essay by cities and transportation journalist Henry Grabar

January 2022: "If We Make It Through This Alive," by A.T. Greenblatt, with a response essay by technology, disability, and society scholar Damien P. Williams

February 2022: "Good Job, Robin," by JoeAnn Hart, with a response essay by food studies scholar Christy Spackman

March 2022: "Empathy Hour," by Matt Bell, with a response essay by climate migration researchers Tim Robustelli and Yuliya Panfil

Science & Imagination



April 2022: “The Woman Who Wanted To Be Trees,” by Cat Rambo, with a response essay by digital afterlife expert Tamara Kneese

May 2022: “Out of Ash,” by Brenda Cooper, with a response essay by climate researcher Molly Brind’Amour

June 2022: “This, but Again,” by David Iserson, with a response essay by philosopher Eric Schwitzgebel

Future Tense Fiction Podcast

In the fall of 2022, Future Tense will introduce a Future Tense Fiction podcast on the Slate podcast network, featuring some of our favorite stories from the series alongside conversations with authors and experts. The podcast will be hosted by science journalist Maddie Stone, the editor of the newsletter The Science of Fiction, which covers how science and storytelling intersect.

Top left: Illustration for A.T. Greenblatt’s story “If We Make It Through This Alive,” by Natalie Matthews-Ramo, incorporating photos by Ruben Hanssen/Unsplash, Ravi Sharma/Unsplash, and Brandon Green/Unsplash.

Top right: Illustration for JoeAnn Hart’s story “Good Job, Robin,” by Shasha Léonard.

Bottom left: Illustration for David Iserson’s story “This, but Again,” by Natalie Matthews-Ramo.

Bottom right: Illustration for Andrew Silverman’s story “Furgen,” by Natalie Matthews-Ramo.





Pete Buttigieg, U.S. Secretary of Transportation, at a construction site. Buttigieg was part of the Future Tense event “Imagining Transportation Futures” in April 2022.

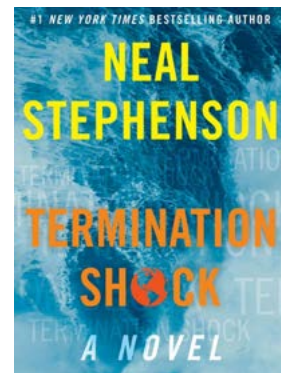
Event with Sec. Pete Buttigieg

In April 2022, Future Tense hosted a virtual event, “Imagining Transportation Futures,” featuring a conversation with U.S. Secretary of Transportation Pete Buttigieg and Paul Butler, president of New America. The event also featured a discussion with three Future Tense Fiction authors—Annalee Newitz, Linda Nagata, and Tochi Onyebuchi—moderated by CSI’s Ed Finn. At the event, we explored how designing transportation infrastructure necessarily involves futures thinking and long-term projections about opportunities, challenges, and consequences, and how narrative visions of the future can help us think creatively about organizing and connecting our communities.

During the conversation, Sec. Buttigieg emphasized the need to design adaptable infrastructure for uncertain futures, and to begin our thinking about infrastructure investments with people, rather than roads, tunnels, or bridges: “What we’ve got to do is invest in the things we know we’re going to need no matter what, and then create room for other things to happen that might be very difficult to picture. And the best way to do that is to not think about the asset first, but to think about the people it’ll affect first.”

Event with Neal Stephenson

In December 2021, Future Tense hosted a virtual event to celebrate the launch of Neal Stephenson’s novel *Termination Shock*, a science fiction thriller about climate change and geoengineering. CSI’s Ed Finn moderated the event and interviewed Stephenson about the politics of climate change, the role of technology in confronting the climate crisis, and the ways that billionaires might act as major figures in this fight—with unpredictable consequences.



Videos of these events are available to watch on YouTube, and at newamerica.org/future-tense/events.

Imagining Transmedia

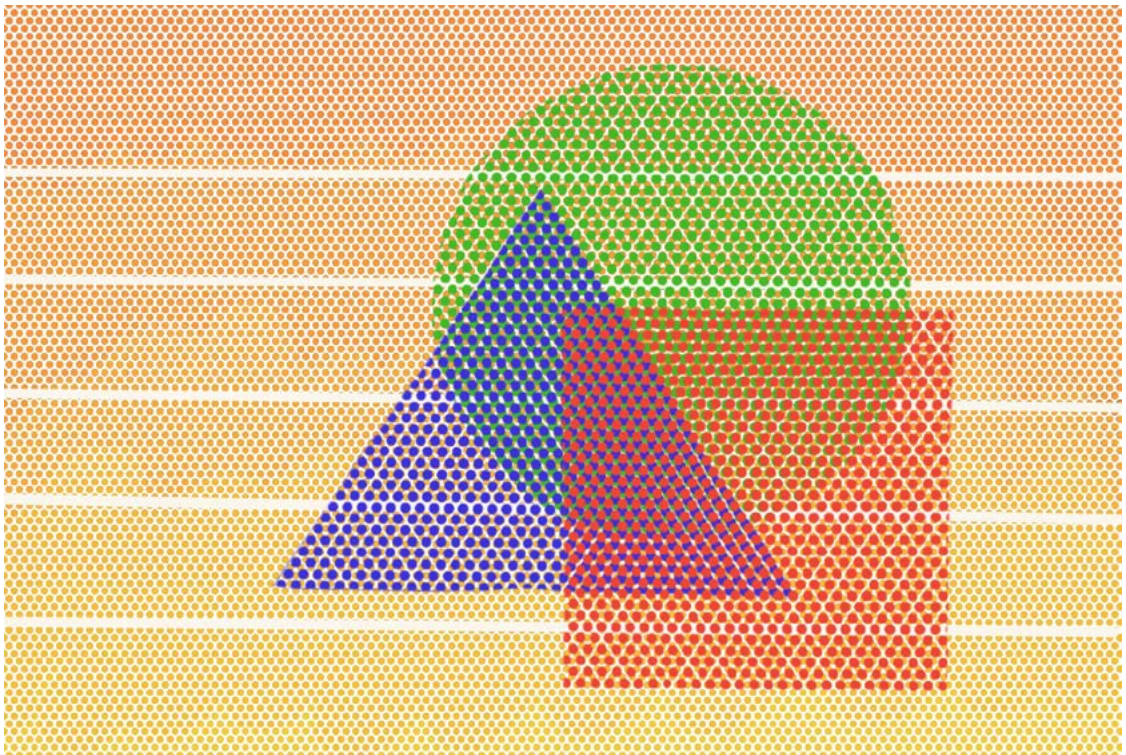
Depending on how you count, transmedia is entering its third, or fourth, or fifth decade as a critical term. However, as a mode of human engagement and connection entangled with media consumption and literacy, the form is likely much older. Understanding this phenomenon from some of its earliest practices to today, when almost every cultural act involves the processes of creation, collaboration, and transmission, is at the heart of *Imagining Transmedia*, a collection of essays curated and edited by CSI, under contract from the MIT Press.

The manuscript, currently under review, continues work that began as part of CSI's Frankenstein200 project. Inspired both by lessons learned and lingering questions from our own educational transmedia experience,

CSI invited a group of authors from around the world to pen fifteen original essays about what transmedia means now, what it could be, and the ethical considerations of this still-being-defined space.

Contributors to *Imagining Transmedia* include tenured scholars and seasoned industry professionals, as well as emerging thinkers and creators born and raised in the transmedia ecosystem.

This material is based upon work supported by the National Science Foundation under grant number 1516684.



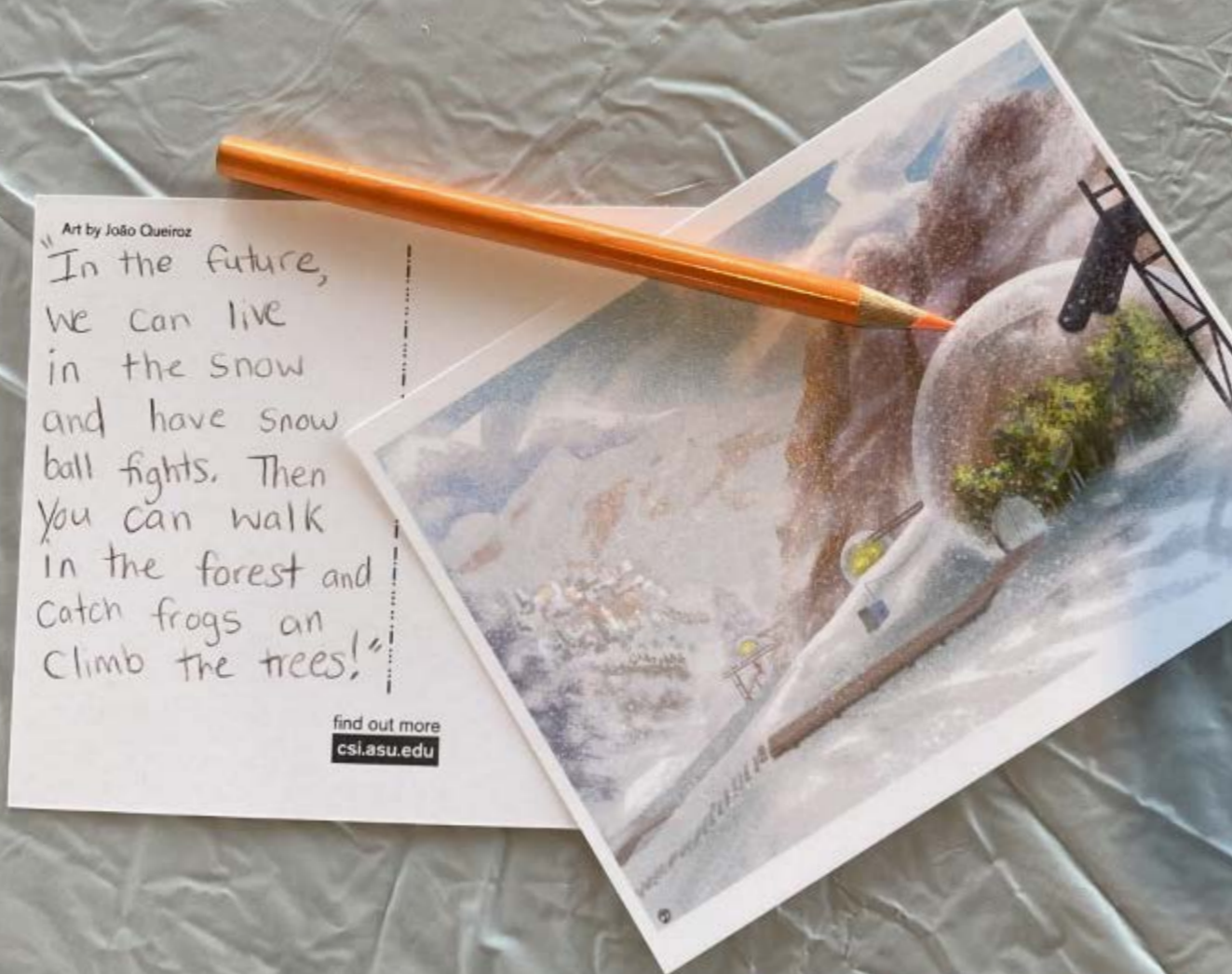
Networks of Imagination

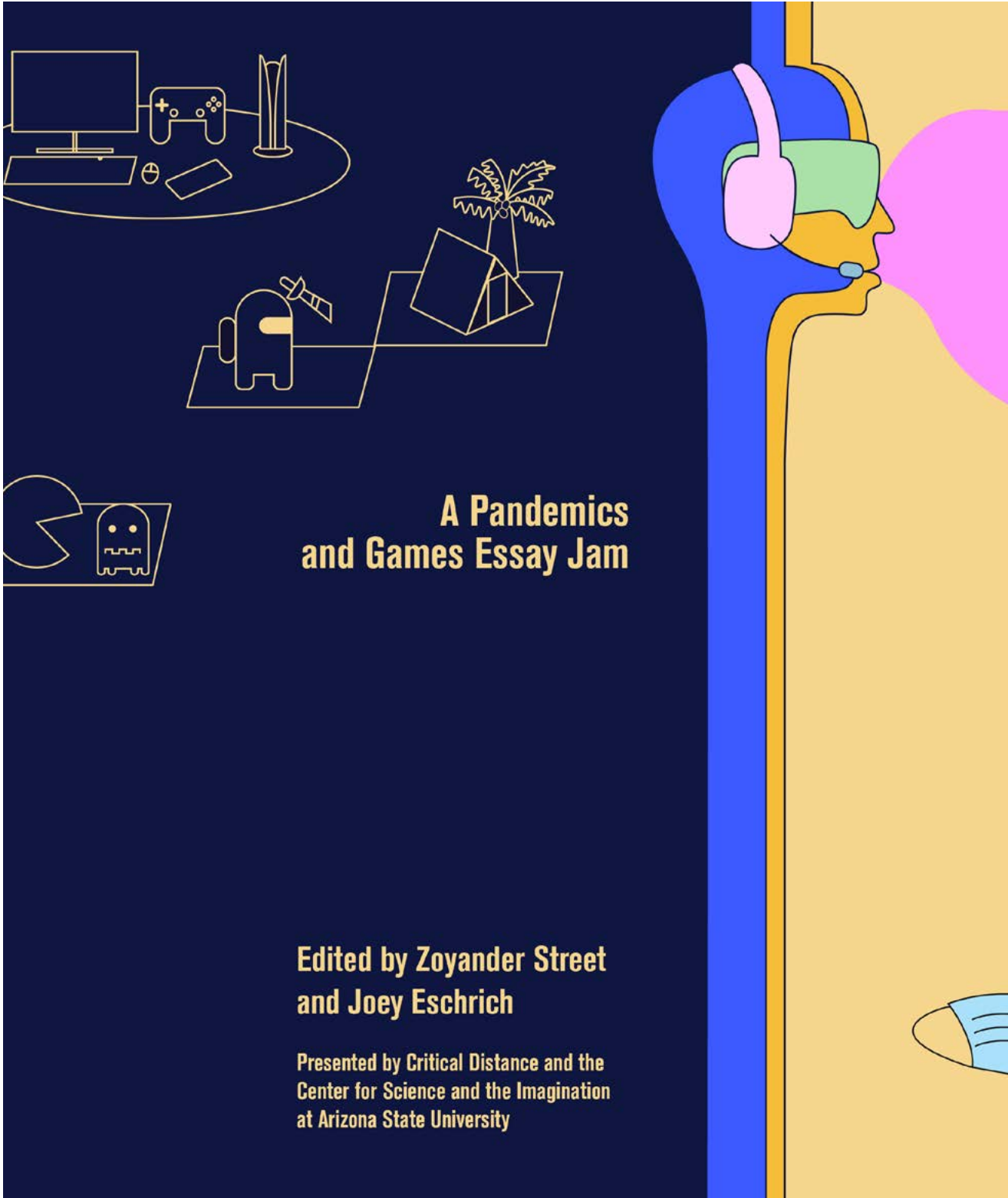
How can we bring together the world's most imaginative and ambitious thinkers about the future? How do we invite everyone into those conversations?

A missive created as part of our Postcards from the Future activity, which is one element of our Climate Imagination Fellowship project on positive climate futures. Featuring an illustration by João Queiroz.



Center for Science and Imagination





A Pandemics and Games Essay Jam

**Edited by Zoyander Street
and Joey Eschrich**

Presented by Critical Distance and the
Center for Science and the Imagination
at Arizona State University

Sickness, Systems, Solidarity

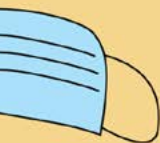
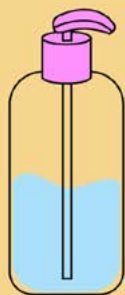
Networks of Imagination

Sickness, Systems, Solidarity

In January 2021, CSI collaborated with Critical Distance, a games criticism website and network, on the Pandemics and Games Essay Jam, which invited contributors from around the world to contribute 500-800 word micro-essays deliberating on the tangled relationships between pandemics and games.

In March 2022, we published *Sickness, Systems, Solidarity*, a free ebook collecting more than 30 essays from the jam, along with an introduction by editors Zoyander Street and Joey Eschrich. The book also features a foreword by Yussef Cole, an animator, video artist, art director at Glow Up Games, and editor at the games criticism website Bullet Points Monthly.

We launched the book with an interactive virtual event hosted on Discord, reuniting contributors one year after the essay jam, along with members of the public. Attendees reflected on how living through the COVID-19 pandemic has continued to transform how games are made, played, and interpreted, and how they function as spaces for social interaction, building community, and making meaning.



Imagining Intelligence



Science fiction has long speculated about thinking machines and engineered beings. Now, with artificial intelligence becoming an increasingly ubiquitous presence in our daily lives, CSI launched a limited-series podcast that examines the stories we tell ourselves about AI, and how we might use them to shape the futures that we want.

In Sci-Fi House Presents: Imagining Intelligence, ASU futurist in residence Brian David Johnson convened a bevy of science fiction authors, researchers, technologists, and activists at a mid-century bungalow during the SXSW conference in Austin, Texas. Intentionally designed as a respite from conference fatigue and FOMO, the Sci-Fi House allowed guests a space for deep contemplation and late-night conversations at the intersection of technology, policy, and speculative futures.

Featuring extemporaneous and insightful interviews, storytelling, and reflections, this five-episode series provides an accessible exploration of the human dimensions of machine intelligence.

Sci-Fi House Presents: Imagining Intelligence is hosted by Brian David Johnson, with editing, original music, and sound design by Dani Pogue.



Listen on Stitcher, Spotify, Apple Podcasts, RadioPublic, or at <https://csi.asu.edu/podcast>.

Top: Host Brian David Johnson interviews Cory Doctorow for the Imagining Intelligence podcast.

Bottom: Podcast guests (from left) Andrew Dana Hudson, Mo Johnson-Leon, and Malka Older at the Sci-Fi House at SXSW.



Imagining Intelligence

with Brian David Johnson

Episode 1: Welcome to Sci-Fi House

Guests:

- Tiffany Li
- Saayeli Mukherji Bruni
- Natalie Vanatta

Episode 2: What We Think About When We Think About AI

Guests:

- Kade Crockford
- Eliot Peper
- Tim O'Reilly
- Malka Older

Episode 3: Dark Possibilities and Grim Realities

Guests:

- August Cole
- Chris Noessel
- Alida Draudt
- Laura Moy
- Cindy Cohn
- Mo Johnson-Leon
- Bruce Sterling

Episode 4: Not Your Typical AI

Guests:

- Laura Moy
- Rashida Richardson
- Tim Fernholz
- Alida Draudt
- Beau Woods
- Cindy Cohn
- Andrew Dana Hudson
- Douglas Rushkoff
- Malka Older

Episode 5: Stay in the Airplane

Guests:

- Cory Doctorow
- Kade Crockford
- August Cole
- Eliot Peper
- Cindy Cohn
- Douglas Rushkoff
- Chris Noessel



CSI Skill Tree

CSI Skill Tree is an event and video series that examines and celebrates how video games envision possible futures, build rich and thought-provoking worlds, and engage people as active participants in unfolding and interpreting stories. Our guests include game developers, scholars, critics and journalists, science fiction authors, and other interesting people working at the intersection of technological change and story craft.

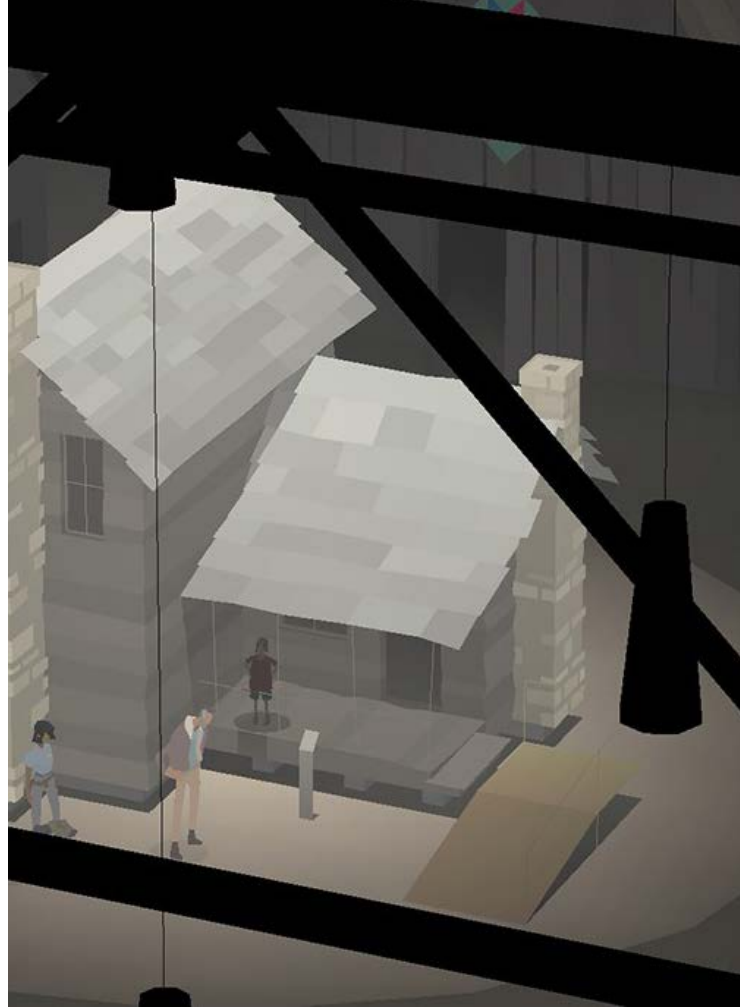
We hosted three CSI Skill Tree episodes this year:

Kentucky Route Zero, featuring U.K.-based artist, games researcher, critic, and ethnographer Zoyander Street and Rachel Carr, a scholar of Southern U.S. and Modernist literature at Lindsey Wilson College in Kentucky

Outer Wilds, featuring video game director and designer Randy Smith and space policy analyst Luc Riesbeck

Cloud Gardens, featuring video game designer Liz Fiacco and science fiction and fantasy author Ken Liu

The *Cloud Gardens* installment of the series, presented in February 2022, was presented in partnership with *Orion Magazine*, a quarterly print publication that has been working at the convergence of ecology, art, and social justice for more than 40 years. A partial transcript with highlights from the conversation will be featured in *Orion's* fall 2022 issue.



Top: Art from the game *Kentucky Route Zero*.
Bottom: Art from the game *Cloud Gardens*.



Imaginary Papers

Imaginary Papers is a quarterly newsletter from CSI focused on science fiction worldbuilding, futures thinking, and the unplumbed depths of the imagination. Each issue features brief, incisive pieces of writing from a diverse array of contributors, from scholars and journalists to cultural critics, designers, technologists, poets, and more.

The newsletter brings the simultaneously critical and whimsical thinking we do about popular culture in our events and public programming to a broader, more nationally and globally distributed audience.

Each issue features three sections:

- Science Fiction Frames, providing insights and analysis that jump off from a single frame of a film, TV show, video game, or graphic novel
- Forgotten Futures, highlighting a vision of the future that is unjustly forgotten, or deserves more attention
- Imagination Elsewhere, celebrating the work of our colleagues, friends, and fellow travelers in the fields of imagination, possible futures, and science fiction

This year, we published four issues:

Issue 7, July 2021

- Science Fiction Frames: Damien P. Williams on the television series *The Expanse* (2015-2021)
- Forgotten Futures: Nilanjana Bhattacharjya on the short story "Sultana's Dream" (1905)
- Imagination Elsewhere: Joey Eschrich on "Turn it Around! Flashcards for Education Futures" (2021), a learning tool created by the Artists' Literacies Institute, Adriene Jenik, Iveta Silova, and Ann Nielsen, with support from Open Society Foundations and UNESCO's Futures of Education initiative

Issue 8, October 2021

- Science Fiction Frames: Lena Nguyen on the video game *Detroit: Become Human* (2018)
- Forgotten Futures: Dagmar Van Engen on Romeo L. Dougherty's serial fiction "Punta, Revolutionist," published in *The Crusader* (1918-1919)
- Imagination Elsewhere: Joey Eschrich on *Grist* magazine's global competition Imagine 2200: Climate Fiction for Future Ancestors (2021)

Issue 9, February 2022

- Science Fiction Frames: Bob Beard on the film *A Scanner Darkly* (2006)
- Forgotten Futures: Bodhisattva Chattopadhyay on the docufiction films of George Haggerty (1975-1994)
- Imagination Elsewhere: Joey Eschrich on *Speculating the Future* (2021), a series of essays from the Olaf Stapledon Centre for Speculative Futures at the University of Liverpool

Issue 10, May 2022

- Science Fiction Frames: Pippa Goldschmidt on the short film *Afronauts* (2014)
- Forgotten Futures: Paul Cockburn on Ignatius Donnelly's novel *Caesar's Column* (1890)
- Imagination Elsewhere: Joey Eschrich on *Imagining Health Futures* (2021), a speculative fiction project from UNICEF, The Lancet, and Financial Times Commission



Our Future Life

ASU is working with collaborators from a number of leading institutions on Our Future Life, a global video storytelling challenge that will invite people from around the world to create and share visions of a brighter future shaped by human creativity, technological ingenuity, and a commitment to justice and equity.

CSI is coordinating the academic research effort within Our Future Life on behalf of ASU, using the project as an opportunity to explore global futures imaginaries, and to understand how individuals and groups around the world are conceptualizing, planning for, and acting on visions of possible futures. We will unite a global consortium of universities, foundations, policy groups, and civil-society organizations to study narratives created for Our Future Life, using quantitative, qualitative, and cultural data to identify and analyze trends and common themes in how people are interpreting the future, and how they are crafting stories that catalyze action and solidarity in the present.

Other institutions supporting Our Future Life include the XPRIZE Foundation, World Economic Forum, AI Commons, Conscious Good, GESDA, and Tomorrow.Life.

ourfuturelife.org



Science Fiction Sparkle Salon



Sparkle Salon convening with Malka Older, Karen Lord, Annalee Newitz, Amal El-Mohtar, and Arkady Martine.

What happens when six brilliant scientists and writers gather for a chill chat? A Science Fiction Sparkle Salon!

In this series, science fiction author and ASU School for the Future of Innovation in Society faculty associate Malka Older gathers authors, futurists, and scientists Annalee Newitz, Arkady Martine, Amal El-Mohtar, Karen Lord, and Katie Mack around a digital hearth for a casual, recorded conversation about life, the universe, and everything.

With graphics by the Pratt Institute's Meg Frank and inspired editing by CSI's Aravind Hari Nair, this virtual meetup sets Twitter abuzz with the release of each new episode.



Networks of Imagination



CSI's table at the Draw-A-Thon event at the Tempe Center for the Arts, in June 2022.

Vital Signs

Are there constructive, rousing stories to tell about life in a climate-altered future? Could new narratives, poems, and songs about adaptation, resilience, and cooperation in the coming century inspire better futures for all of us? These questions were at the center of CSI's collaboration with the Tempe Center for the Arts in the spring of 2022.

As part of "Vital Signs," an exhibition exploring climate change, health and wellness, natural resources, and wildlife conservation, CSI contributed materials from our Postcards from the Future activity in a variety of settings and mediums. Kicking off the exhibition, we installed three large panels of environmental art at the U.S. Post Office on Mill Avenue in Tempe. Featuring forward-looking visions of deserts,

cities, and skylines transformed by climate change, these pieces by Brazilian speculative artist João Queiroz sparked conversations about positive climate futures for communities around the world.

In June 2022, CSI's Bob Beard continued the conversation with guests at a Draw-A-Thon event at the Tempe Center for the Arts. Participants were invited to choose a Postcard from the Future, or illustrate their own, to share stories about human thriving amid the climate crisis. These postcards were collected and incorporated into an original sculpture by ASU student Bruce Ward, which was later installed alongside Queiroz's art in the Post Office gallery.

Student Success

For nearly ten years, we've been helping people imagine and build better futures, so it's especially rewarding when our former students return for a visit to share their personal and professional success. This year, we were fortunate to celebrate four such stories with these emerging thinkers and creators.



Former CSI research assistant Lena Nguyen discusses her debut novel *We Have Always Been There* with ASU English professor James Blasingame at Changing Hands Bookstore in Tempe.

Lena Nguyen was one of CSI's first student research assistants, reading copious amounts of science fiction and curating the center's early library. CSI's Joey Eschrich was an advisor, reader, and editor on her thesis for Barrett, the Honors College—a work of young-adult environmental fiction. Eight years and two degrees later, her debut novel *We Have Always Been Here* was published in the summer of 2021 by Penguin/Random House. The novel was praised by *Publisher's Weekly*, *Library Journal*, and *Kirkus Reviews*, which described the book as "claustrophobic and dark, full of twisting ship corridors and unreliable characters.... A promising, atmospheric debut."



Andrew Dana Hudson shows off his debut novel *Our Shared Storm*. Image courtesy of Andrew Dana Hudson.

From winning the center's first climate fiction contest to serving in multiple roles across a variety of projects, Andrew Dana Hudson has been a fixture around CSI for several years. After graduating with a master's degree from ASU's School of Sustainability in 2021, Andrew went on to publish his debut short story collection, *Our Shared Storm: A Novel of Five Climate Futures*, with Fordham University Press in the spring of 2022. Acclaimed science fiction author Kim Stanley Robinson described the stories in *Our Shared Storm* as "ingenious, energetic, provocative, and soulful," and has described Hudson as "the face of (a) new movement in science fiction."

Networks of Imagination



Areej in her new city of Haifa, Israel. Photo courtesy of Areej Mawasi.

Areej Mawasi first started collaborating with CSI when she was a Fulbright scholar earning her master's degree at ASU's Mary Lou Fulton Teachers College, and continued working with us while pursuing her PhD in the Learning, Literacies, and Technology program. Areej has contributed to a number of CSI projects, including Evoke, Frankenstein200, and Ubiquitous Collaboration Support (UbiCoS), and cowrote more than 20 peer-reviewed articles and presentations for scholarly conferences. Areej graduated in the spring of 2020, and worked as a postdoc at University of Colorado Boulder.

In the fall of 2022, she'll be starting as a Naubauer Assistant Professor at Technion's Faculty of Education in Science and Technology in Haifa, Israel.

We offer our congratulations and wishes for continued success to Lena, Andrew, Areej, Wesley, and all of our CSI alumni. Our futures are brighter because of them.



Credits for the Star Wars TV series *Obi-Wan Kenobi*, including former CSI student worker Wesley de la Rosa as 3D scanning artist.

Our first CSI student worker, Wesley de la Rosa, graduated from ASU with a bachelor's degree in digital culture in 2013. Since then, he has worked in the fields of 3D documentation of architecture and topology, video game development, and rapid 3D prototyping. In 2021, he joined Gentle Giant Studios, where he recently received his first film credit as a 3D scanning artist on the Star Wars TV series *Obi-Wan Kenobi*.

Events, Visits, and Visitors

2021

August

Bob Beard is interviewed on KJZZ 91.5 public radio program The Show about the Veterans Imagination Project.

CSI hosts “Unlocking Our Climate Imagination” virtual event with Future Tense.

September

CSI hosts virtual workshop on “Imagining Climate Futures” with the Journal of Science Policy & Governance and the UK Science & Innovation Network.

CSI hosts “The Days After Tomorrow: Climate Fiction for the Future” virtual event with the British Library.

October

CSI hosts entrepreneur, journalist, documentary producer, and angel investor Jenny 8. Lee for her talk “Emoji By The People, For The People” as part of the School of Arts, Media and Engineering’s Digital Culture Speaker Series.

CSI hosts launch of CSI student alumnus Lena Nguyen’s science fiction novel *We Have Always Been Here* at Changing Hands Bookstore in Phoenix.

Bob Beard runs science fiction prototyping activities in several Grand Challenges Engineering classes at ASU’s Ira A. Fulton Schools of Engineering.

CSI invites Hollywood transmedia producer John Heinsen to speak at the School of Arts, Media and Engineering about applying transmedia storytelling techniques to meet the UN Sustainable Development Goals.

Ruth Wylie, Climate Imagination Fellow Vandana Singh, and Climate Imagination senior advisor Kim Stanley Robinson attend the TED Countdown summit in Edinburgh, Scotland. The team runs a climate futures workshop session and Singh delivers a TED Talk, “A Sci-Fi Story of Earth’s Renewal.”

November

Ed Finn hosts “Imagining Our Climate Futures” virtual event, part of the Hay Festival Arequipa, Peru, featuring Climate Imagination Fellows Vandana Singh and Libia Brenda.

CSI hosts “Crafting Climate Futures: From Story to Policy” virtual event with the Olaf Stapledon Centre for Speculative Futures at the University of Liverpool.

Ruth Wylie and Smithsonian Institution curator Glenn Adamson host “Time Travel to 2071 with Smithsonian Researchers,” a virtual event building on CSI’s work on the “FUTURES” exhibition at the Smithsonian Arts and Industries Building, featuring CSI collaborators Madeline Ashby, Brian Miller, and Tochi Onyebuchi.

November (cont.)

CSI hosts “Cli-Mates: Climate Futures Conversations from Scotland” virtual event with the science fiction magazine *Shoreline of Infinity*.

Climate Imagination Fellow Vandana Singh and CSI collaborator Malka Older, a science fiction author and sociologist, participate in a Futures Lab virtual workshop as part of the UN COP26 climate summit.

CSI hosts “Flipping the Script on Climate” virtual event with SciRens and NYC Women Filmmakers, featuring readings from CSI climate fiction stories performed by film and television actors, as well as a panel with Climate Imagination Fellow Vandana Singh, climate scientist Kate Marvel, and climate policy researcher Manjana Milkoreit.

December

Ed Finn hosts a virtual Future Tense event with science fiction author Neal Stephenson about his latest novel, the climate change thriller *Termination Shock*.

Bob Beard moderates a panel at the Worldcon science fiction convention in Washington, D.C., “Science Fiction and Museum Futures,” building on CSI’s work on the Smithsonian “FUTURES” exhibition. The panel features CSI’s Ruth Wylie, artist Brian Miller, and Elizabeth Merritt, director of the Center for the Future of Museums.

Hollywood producer Walter Parkes visits the final presentations and demonstrations for Ed Finn and Robert LiKamWa’s “Designing for Dreamscape” class.

CSI hosts “Seeing the Future” virtual event on climate futures with the Woodwell Climate Research Center.



Far-flung collaborators from the Smithsonian Future Visions 2071 project unite in the lobby of the Arts and Industries Building in December 2021. From left to right: Jon Grinspan, Brian Miller, Allison Peck, and CSI’s Bob Beard, Ruth Wylie, and Joey Eschrich.

2022

February

Ruth Wylie delivers a lecture, "Imagination and Futures Thinking," as part of the colloquium series hosted by ASU's Mary Lou Fulton Teachers College.

Ed Finn and David H. Guston of ASU's School for the Future of Innovation in Society host the first of two virtual workshops to brainstorm ideas for Imagination, Annotated, a forthcoming book series they are editing for the MIT Press.

Joey Eschrich cohosts a "Science Fiction/Real Policy Book Club" event, presented by Future Tense and *Issues in Science and Technology*, featuring Malka Older's novel *Infomocracy*.

Peter Bishop, executive director of Teach the Future, and Lisa Kay Solomon, designer in residence at Stanford University's d.school, visit CSI to discuss K-12 learning futures.

Sarah Stein Greenberg, executive director of Stanford University's d.school, meets with CSI during her visit to ASU as part of the Frank Rhodes Lecture Series.

N. Katherine Hayles, literary theorist, delivers "Planetary Reversal: Kim Stanley Robinson's Utopian Plan to Save the Planet," a lecture cohosted by CSI and ASU's Center for the Study of Religion and Conflict.

Bob Beard presents the Veterans Imagination Project during the ASU Women and Philanthropy finalist grant presentations at the Musical Instrument Museum.

Student veterans Nick Davies, Brian Neal, and Erik Villegas present their research and future visions to a ASU faculty, staff, and donors as part of the Veterans Imagination Project.

March

Ed Finn delivers a virtual guest lecture in Shahzeen Z. Attari's "Human Behavior and Energy Consumption" course at Indiana University.

Middle school students from Phoenix Elementary School District #1 visit CSI to learn about futures thinking.

CSI hosts virtual launch event for *Sickness, Systems, Solidarity*, a book collecting submissions from 2021's Pandemics and Games Essay Jam, with the games criticism website and network Critical Distance.

CSI hosts STEM Teachers PHX to deliver professional development to middle school math teachers as part of the UbiCoS project.

April

Ed Finn and David H. Guston host the second of two virtual workshops to brainstorm ideas for Imagination, Annotated, a forthcoming book series they are editing for the MIT Press.

April (cont.)

Joey Eschrich and Clark A. Miller of ASU's School for the Future of Innovation in Society deliver a virtual guest lecture, "Imagining Solar Futures: Creativity and the Human Dimensions of Energy Transitions," to students at Southwest Louisiana Technical Community College.

Ed Finn delivers "Imagining the Future of Space," a lecture for the Lowell 42 series hosted by the Lowell Observatory in Flagstaff, Arizona.

CSI and Future Tense host "Imagining Transportation Futures," a virtual event featuring Pete Buttigieg, U.S. Secretary of Transportation, and Paul Butler, president of New America. Ed Finn moderates a discussion with science fiction authors Annalee Newitz, Linda Nagata, and Tochi Onyebuchi as part of the event.

Ruth Wylie speaks on the panel "The Future in 2052," along with Lauren Keeler, Danielle Kabella, and Lindsay Smith, as part of ASU's Earth Week celebration.

Ed Finn participates in a virtual symposium, "Ecologies and Infrastructures: Cultural Techniques of Environmental Management," hosted by ASU and King's College London, as part of ASU's Earth Week celebration.

Bob Beard accepts ASU Women & Philanthropy award for the Veterans Imagination Project.

CSI and ASU's Consortium for Science, Policy and Outcomes host "Imagining COP60: Scenarios, Sci-Fi, and Policy Tools in Post-Normal Fiction," a talk at ASU's Washington, D.C. office by CSI Imaginary College fellow Andrew Dana Hudson.

CSI hosts launch of CSI Imaginary College fellow Andrew Dana Hudson's science fiction novel *Our Shared Storm* at Changing Hands Bookstore in Phoenix.

May

CSI hosts "The Sci-Fi Feedback Loop: Mapping Fiction's Influence on Real-World Tech" virtual event, as part of the Applied Sci-Fi Project.

Ruth Wylie facilitates a worldbuilding exercise for Georgia Tech students visiting ASU's Tempe campus.

Ruth Wylie travels to meet faculty and staff at the University of Guyana who are enrolled in the Mary Lou Fulton Teachers College EdD program.

June

Joey Eschrich cohosts a "Science Fiction/Real Policy Book Club" event, presented by Future Tense and *Issues in Science and Technology*, featuring Martha Wells' novel *All Systems Red*.

Future Tense hosts "What is Coastal America's Future" virtual event with New America's Future of Land and Housing Program, featuring CSI Imaginary College fellow and Future Tense Fiction contributor Brenda Cooper.

Applied Imagination

How can we navigate complex challenges, adapt to new tools and practices, and imagine solutions to impossible problems?

U.S. Navy veteran and fourth-year ASU engineering management student Brian Neal presents his vision of the future as part of the Veterans Imagination Project.



Center for Science and Imagination



Applied Imagination Fellows

Since 2012, the Center for Science and the Imagination has led transdisciplinary projects to inspire collective imagination for better futures, including new ways of living and thriving amid pathbreaking technologies and new forms of governance.

Now, as our society contemplates a world profoundly changed by COVID-19, while continuing to face the looming challenges of global climate change and systemic inequality, imagination will be a crucial skill for cooperation, reinvention, and civic participation.

To explore how imagination is practiced by individuals and communities, we invited organizers, scholars, curators, scientists, and innovators of all stripes to apply for our new Applied Imagination Fellowship program. The call for applications drew responses from around the world, in fields ranging from art and design to community advocacy, environmental studies, international development, economics, literature, astronomy, film, engineering, journalism, and more.

Over the past year, we've been proud to support five fellows and their projects to motivate transformative change and advance visions of inclusive futures.



Ian Edwards is an environmental communications professional and events producer. He is the director of the Cape Cod Center for Sustainability and Broto: Art + Climate-Science, an annual conference and online community tackling climate change through co-creation and innovation. He also produces TEDx Provincetown and other events focused on the exchange of big ideas. He earned his MBA from Bard College. He is based in Provincetown, Massachusetts. His project, "Bank of Nature," involves creating an alternative financial structure that incorporates nature as a lender and encourages the flow of investment funds toward projects that create more sustainable communities and economies and support efforts to remediate environmental damage.



Panthea Lee is a strategist, organizer, designer, facilitator, and executive director of Reboot, a group that organizes communities in struggles for social justice. She has brought together and united coalitions in more than 30 countries, working to protect human-rights defenders, tackle public corruption, reform international agencies, and drive media innovation. She is based in Brooklyn, New York. Her project, "The People's Commission for Justice," draws on healing justice, participatory art, and deliberative democracy practices to engage Asian American and Pacific Islander communities in building nourishing visions of the future and creating both compelling public art projects and concrete plans for advocacy and social change.

Applied Imagination



Benjamin Ong is an ecologist, writer, and photographer. Between 2014 and 2019, he anchored volunteer engagement and environmental education at Universiti Malaya's Rimba Ilmu Botanic Garden. His book, *The Backyard Before You*, a narrative of photographs and vignettes about the wild beauty of urban residential spaces, was published in 2017. He is based in Kuala Lumpur, Malaysia. His project, "The Kampung City," considers how urban farming and micro-terraforming of city spaces brings the kampung—Malay for "village" or "hometown"—into rigidly planned, densely populated environments and creates an opportunity to reimagine cities of the future as lush, ecologically diverse, and with an emphasis on edible.



Sultan Sharrief is a transmedia artist, filmmaker, and designer. His directorial debut, *Bilal's Stand*, premiered at the Sundance Film Festival. His youth-media program, *Street Cred*, was sponsored by Allied Media Projects in Detroit. He is the founder of the Quasar Lab at MIT, an institutional-hacking group that uses community organizing as a strategy for decolonized futurist design, drawing on augmented-reality and virtual-reality tools. He is based in Los Angeles, California. His project, "Visions from a New Tribe," involves creating video, virtual-reality experiences, and augmented-reality technologies to share the stories of unhoused people in the Venice Beach area of Los Angeles, to celebrate their creative expression and to shift our larger understanding of homelessness.



Regina Kanyu Wang is a writer, researcher, and editor, currently pursuing her PhD through the CoFUTURES project at the University of Oslo. She writes science fiction stories, criticism, and analysis in both Chinese and English, and has published two collections in Chinese, a short novel in Italian, and a forthcoming collection in German. She is the coeditor of *The Way Spring Arrives and Other Stories*, an all-women-and-nonbinary anthology of Chinese speculative fiction. She is based in Oslo, Norway. Her project, "Her Imaginations," involves creating a series of video interviews with female science fiction authors, editors, and fans, as well as scientists and entrepreneurs, from across China, both to foreground the creative vitality of women imagining and creating the future and to explore how these creators promote nondualistic thinking in their work, as a way to reframe conflicts and imagine a more inclusive, harmonious future.





Veterans Imagination Project

In 1970, Alvin Toffler published the bestselling book *Future Shock*, describing the pervasive social anxiety brought on by “too much change in too short a period of time.” Five decades later, government agencies and Fortune 500 companies around the globe employ strategic foresight professionals to “future proof” their organizations, seeking greater resilience in the face of radical and accelerating change. However, for the 200,000 U.S. service members who separate from the military each year, radical change is not a distant challenge on the horizon. It’s a profound and immediate reality that begins as soon as they take off the uniform, and one that is further complicated by the need to secure employment in a rapidly shifting workforce.

Successfully navigating this period of personal growth, psychological transformation, and career-readiness requires new tools for anticipation, empathy, and resilience. The Veterans Imagination Project is a new effort designed to “future proof” service members in transition. In the spring of 2022, we piloted this work in partnership with ASU’s Office for Veteran and Military Academic Engagement, with three ASU student veterans from the Pat Tillman Veterans Center. Over the semester, our participants learned and practiced the tools of futures thinking, collaborative imagination, and narrative foresight to explore possible career futures, and worked with professional concept artist Ray Lopez to create visions of these possible worlds and their places in them.

In April 2022, the project was awarded a grant from ASU Women and Philanthropy to expand this work, reaching veterans throughout Arizona. We are currently working with veterans service organizations, municipal governments, and professional networks to refine our methods and formalize this research as an intervention to catalyze personal transformation and civic engagement in both veterans and the communities they serve.

“This class did a lot for me. It was instrumental in understanding how my future could look and how I can impact that.”

– Nick Davies, U.S. Marine Corps veteran and Business and Global Politics major at ASU’s W. P. Carey School of Business

CSI’s Bob Beard talks to KJZZ 91.5 public radio’s Steve Goldstein about the Veterans Imagination Project:



<https://kjzz.org/content/1712934/asu-veterans-imagination-project-helps-vets-transition-civilian-careers>

Student veterans share their experiences with the Veterans Imagination Project:



<https://news.asu.edu/20220301-creativity-imagination-project-helps-student-veterans-see-their-future-more-clearly>

Top, facing page: A piece of concept art by Ray Lopez for the Veterans Imagination Project, visualizing a future career setting based on the work of one of our veteran participants.

Right, this page: Bob Beard presents the outcomes of the Veterans Imagination Project pilot class to ASU faculty, staff, and representatives from Arizona-based veterans service organizations.





Applied Sci-Fi

In the spring of 2022, CSI launched a new collaboration with our external fellow Kevin Bankston and graduate research assistant Rizwan Virk. The Applied Sci-Fi Project explores the feedback loop between science fiction and technological innovation through a series of public dialogs and private workshops that explore how speculative visions of the future are driving real change. The first event, held in May 2022, brought together science fiction scholars Sherryl Vint and Michael G. Bennett, authors Cory Doctorow and Malka Older, and venture capital partner Tim Chang to discuss the rich history of science fiction's influence on our shared technological imaginaries, from early inspirations like Mary Shelley and H. G. Wells to the persistent influence of narrative universes like Star Trek. This virtual event was followed by an invitational workshop featuring many of the most highly regarded researchers, writers, and other experts working at the intersection of science fiction and innovation. These panel and workshop discussions provided key insights and references for a collaborative synthesis paper. The project team continues to revise this survey of science fiction's historical and ongoing influence on technological progress, which will become part of a collection of white papers.

We will host three more themed public events and invitational workshops in the coming academic year. In the fall of 2022, we will explore design fiction, speculative design, and the intersection of science fiction and prototypes of the future. The next event and workshop will focus on science fiction's intersection with the field of futures and foresight studies, considering the role of narrative in supporting or extending our capacity to anticipate and shape the future. Our final event and workshop will address the question of large-scale public imagination projects like Future of X contests, near-future anthologies, and related efforts to inspire “crowd futures.”

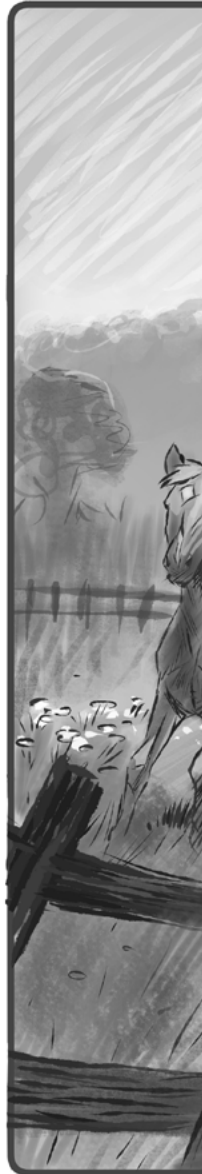
Each of the events will remain accessible through video recordings on the project website, where we will also post white papers as they are finalized, with the goal of providing a long-term resource for those in the academy, creative industries, and other fields who are interested in the topic.

The Applied Sci-Fi Project is made possible by a generous grant from the Technology Program of the Alfred P. Sloan Foundation.



Future of Learning

How can we light the spark of imagination to create new opportunities for collaborative, creative learning?



Character sketch by Anthony Diecidue for Evoke, a collaboration with the World Bank.





The ASAP team, from left to right: Mike Vargas, Shahla Naraghi, Rachna Mathur, and Amanda Whitehurst.

Arizona STEM Acceleration Project

We are excited to start work on the Arizona STEM Acceleration Project (ASAP), which aims to reimagine Arizona's STEM ecosystem and prepare teachers to deliver high-quality, hands-on STEM activities. This \$10 million grant, funded by the Arizona Department of Education, will provide support for 450 STEM teacher fellows during the 2022-2023 and 2023-2024 school years. Each fellow will receive professional development opportunities and compensation for time spent outside of the classroom modernizing and enriching lessons and materials for students. Fellows' schools will also receive support to purchase the necessary equipment to support hands-on STEM learning.

Amanda Whitehurst and Mike Vargas joined the CSI team as convergence leads to support these efforts, Shahla Naraghi joined as ASAP program coordinator, and Rachna Mathur is working as a graduate research assistant. They will be working with a consortium of STEM education organizations (including STEMTeachersPHX, The STEMAZing Project of Tucson, and the Arizona Technology in Education Association) to provide training opportunities throughout the state, especially in less populous areas that often lack access to high-quality professional development. Trainings will focus on STEM topics like modeling pedagogy and educational technology, as well as futures thinking and innovation. Our aim is to foster better STEM teaching to address learning gaps exacerbated by the COVID-19 pandemic, and to cultivate a STEM workforce and human capital pipeline that will spur innovation and advance Arizona priorities.



Designing for Dreamscape

In the fall of 2021, Ed Finn collaborated with Robert LiKamWa—an assistant professor jointly appointed in ASU's School of Arts, Media and Engineering and the School of Electrical, Computer and Energy Engineering—to create an exciting new experimental course, “Designing for Dreamscape.” Over the course of the fall semester, 35 graduate and undergraduate students came together with the ambitious goal of designing and creating an immersive virtual reality narrative experience. ASU has partnered with the VR company Dreamscape to create immersive learning experiences, and students in our class had the remarkable opportunity to develop their own project using these tools.

The course organized students into four teams, each focusing on a different aspect of the overall production: art and animation, story, sound, and pod integration—programming the experience using the 3D software platform Unity. Students worked in these smaller groups and in a larger collective to make key decisions about the theme, scope, and outcomes of the experience they developed together. Throughout the semester, they received feedback from Dreamscape founder and legendary Hollywood producer Walter Parkes (whose credits include *Minority Report*, *Men in Black*, and *A.I. Artificial Intelligence*), as well as science fiction author, physicist, and climate researcher Vandana Singh.

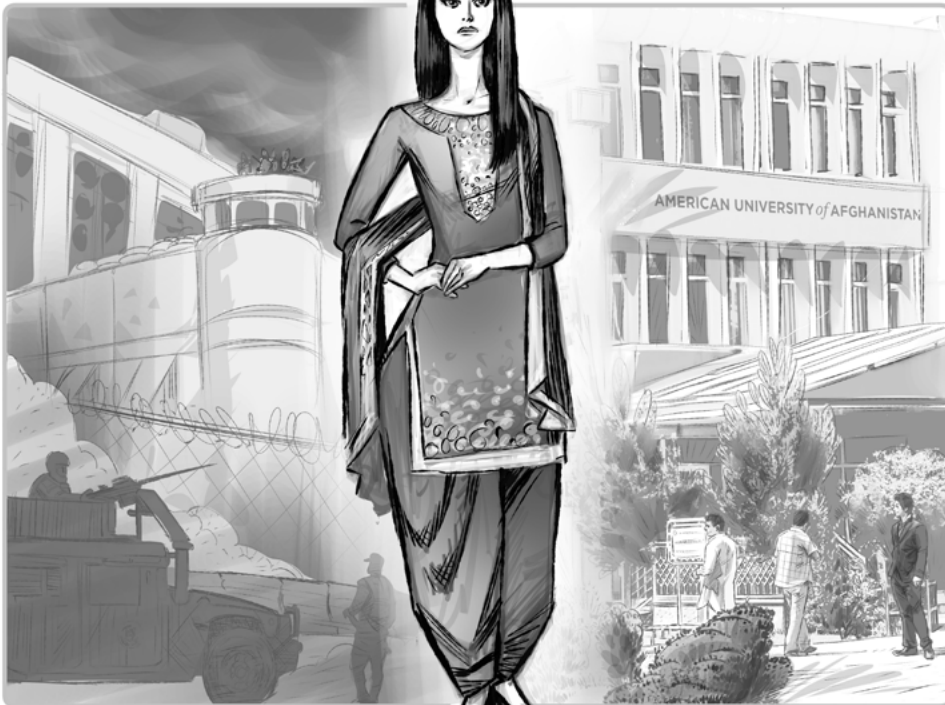
After collaborative brainstorming and discussion, the class created a climate futures story, “Theta Labs.” In the narrative, four players join the fictional Theta Labs as interns charged with testing the lab’s newly invented time machine. Traveling into the past, they learn about key historical decision points which have major impacts on the sustainability of our shared future. Students shared a demo of the experience with Parkes, ASU President Michael Crow, and others at a showcase event in December 2021 at the Learning Collaboratory on ASU’s Tempe campus.

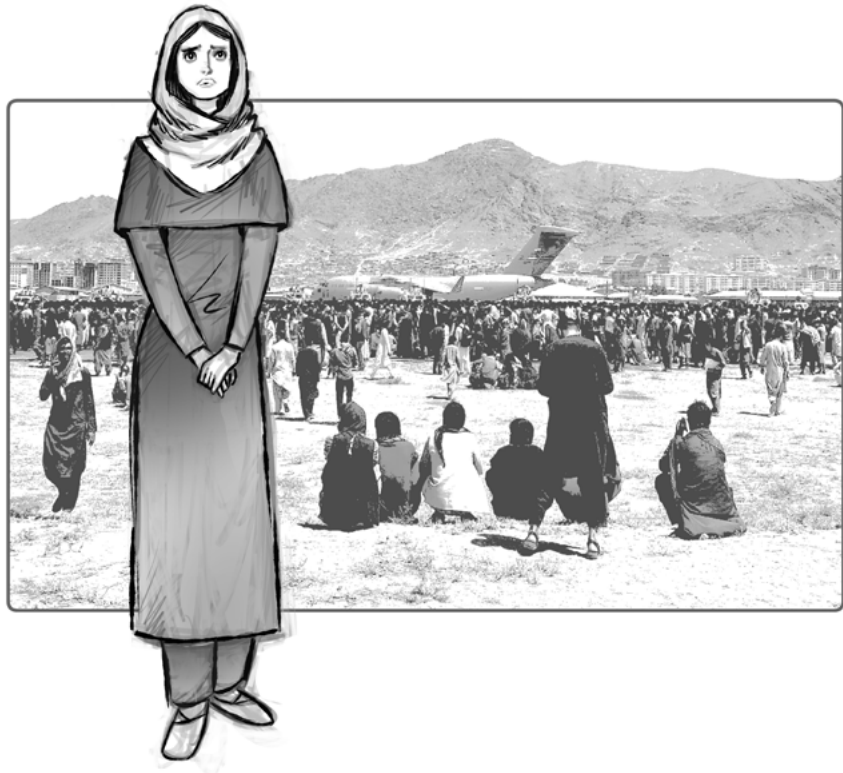


Future of Learning



"Designing for Dreamscape" students (from left) Adin Dorf, Mason Manetta, and Alireza Bahremand work on the "Theta Labs" climate futures story. Photo by Charlie Leight for ASU News.





EVOKE

Building on successful efforts in 2014 and 2017, we continued our collaboration with the World Bank to conduct two virtual narrative hackathons to create stories and art for the Evoke universe. Evoke is an online educational experience that uses comic book narratives to help young people learn 21st-century skills and tackle global challenges. “Agents” in the Evoke network engage virtually and in the real world to complete missions that will change their communities, their countries, and their future.

In the fall of 2021, we convened teams from four different countries: Honduras, Colombia, Qatar, and the United States. Teams worked to develop stories exploring themes of human migration and displacement, completing weekly collaborative assignments around character

development, setting, and plot. Science fiction author and futurist Madeline Ashby created story pitches based on materials developed by the teams, while artist Anthony Diecidue created character sketches. This work was shared at the 2021 WISE Summit, which took place virtually as well as in Doha, Qatar.

During the summer of 2022, we will continue these efforts, working with creative teams in each of the four countries. Ashby and Diecidue will serve as creative directors, working with local authors and artists embedded within each team. Through the six-week hackathon, teams will continue to refine and develop story ideas, creating complete stories aligned with specific learning objectives, which will be implemented into future iterations of Evoke.

Character sketches by Anthony Diecidue for Evoke, a collaboration with the World Bank.

Looking Ahead

The year ahead will be filled with new opportunities for research, collaboration, learning, and bringing people together, as we all navigate a world in flux. Here are a few projects on the horizon that we're especially excited about.





10th Anniversary of CSI

It's difficult for us to believe, but CSI is sneaking up on a complete decade of hope and imagination. Our team is planning a variety of celebratory events and publications for the coming year, and we hope that we can connect with you and other members of our community to mark the occasion. We're also taking this opportunity to reflect on the larger trajectory of our work and how we hope to pursue our mission in the decade to come. Stay tuned to the CSI newsletter for news and invitations related to this milestone, and please let us know before you send in cakes or cash, so we can be ready to receive them on our ceremonial anniversary salvers.

AI and New Media Certificate

Led by fellow Suren Jayasuriya, CSI is supporting the development of a new certificate program in ASU's School of Arts, Media and Engineering. The AI and New Media curriculum draws together computational research areas that underpin artificial intelligence—natural language processing, computer vision, signal processing, and machine learning—with humanistic approaches drawn from philosophy, literature, ethics, and cultural studies. It will provide students, especially those with interests in the arts, design, and humanities, with a critical understanding of the artificial intelligence embedded in or influencing contemporary cultural tools and practices. Ed Finn is working with Suren to develop new permanent courses for the certificate, including “Reading the Algorithm” and “Minds and Machines,” and developing materials to take the certificate program online. The work is supported by two Humanities Connections grants from the National Endowment of the Humanities, and will include public engagement activities as the certificate program takes shape. CSI will also support the project in making key curriculum resources available via an open-access repository for other universities and instructors interested in adapting this model.

Infusing Olfaction into Virtual Learning Environments

In this new NSF-funded Research on Emerging Technologies for Teaching and Learning (RETTL) grant, CSI's Ruth Wylie is collaborating with PI Robert LiKamWa and co-PIs Christy Spackman, Byron Lahey, and Richard Gerkin to investigate the role that sense of smell plays in how people navigate a variety of everyday situations. Despite the important role that tacit sensory skills play in the workplace and everyday life, contemporary educational approaches have only recently begun to explore using olfaction to improve student education. Even less attention has been paid to the role that smell plays in multimedia learning environments. This project will integrate engineering, computational neurosciences, neurobiology, teaching and learning science, and the social sciences to better understand the role that olfaction plays in learning in virtual environments, and to develop an immersive virtual-reality environment for procedural learning.

K-12 Futures

CSI is collaborating with ASU's Mary Lou Fulton Teachers College to build a community of scholars interested in developing and evaluating futures thinking and anticipatory pedagogy for use in K-12 classrooms. Ostensibly, the goal of education is to prepare students for the future; however, most school learning focuses on already established knowledge, information, and skills derived from the past. We propose that education demands a more forward-looking mindset, preparing students not only to react, but to anticipate, imagine, and be proactive in designing solutions and systems for better societal futures. To meet this challenge, we're convening a group of ASU students, faculty, and staff throughout the 2022-2023 academic year to develop a program of research that addresses the question: How can we best prepare youth to think critically about, and develop a sense of agency about, their futures?



Photo courtesy of Sian Proctor.

Sian Proctor: Artist + Explorer in Residence

In collaboration with ASU's Interplanetary Initiative, College of Liberal Arts and Sciences, and School of Earth and Space Exploration, CSI is hosting Sian Proctor, a commercial astronaut, geologist, sustainability educator, and science communicator, as artist and explorer in residence for the 2022-2023 academic year. During her fellowship, Sian will work on a volume of poetry, art, and fiction inspired by her work on sustainability and her travels in space, and participate in a number of activities to engage students and members of the public, including lectures, workshops, podcast interviews, and video series.

Sound Systems

In the coming year, CSI is excited to explore a new (to us) genre of futures thinking: sound and music. We will be working with Alex Laing, principal clarinet of the Phoenix Symphony and a nationally recognized writer and speaker on the future of the orchestra. The Sound Systems projects brings together Alex's deep expertise on the role of orchestras in the civic fabric of diversity, justice, equity, and inclusion with CSI's continued focus on climate futures and collaborative imagination. The project will convene science fiction writers, artists, musicians, and other experts to imagine hopeful futures for the orchestra, culminating in a digital publication presenting five inspiring and thought-provoking visions of positive orchestral futures. Laing was awarded an MPower grant by the Sphinx Organization to support this collaboration, and CSI will be hosting the gathering and facilitating the project and publication in the spring of 2023.



Art by João Queiroz

You can change the future!

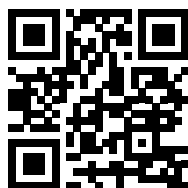
Your decisions today shape the world your children and grandchildren will be living in, so consider making an investment in their name for their future.

Become a futurist! We need your enthusiasm and your ideas. Join our mailing list, attend an event, or contact us directly and join a community dedicated to building a future that is for everyone.

Support the Center for Science and the Imagination and help us explore more ambitious and challenging questions. Your gift will help to:

- Create research opportunities for students
- Welcome new and underrepresented communities into our work
- Study and perform imaginative thinking
- Conduct research at the intersection of the sciences, humanities, and arts

Build a future that is for everyone!



csi.asu.edu/donate

All funds will be deposited with the ASU Foundation for A New American University, a nonprofit organization that exists to support Arizona State University (ASU). Gifts in support of ASU are subject to foundation policies and fees. Your gift may be considered a charitable contribution. Please consult your tax advisor regarding the deductibility of charitable contributions.

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