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Annual Report

Center for Science and the Imagination Annual Report 2013/14



Two years ago, the Center for Science and the Imagination was just an idea: an argument for changing the way we think about the future.

Today, it is much more: our offices now house four full-time staff members as well as a number of students and other collaborators, and our portfolio of research projects, creative collaborations, and public events continues to grow at seemingly relativistic speeds.

This annual report covers the second full year of CSI operations, from July 2013 to July 2014. This was the year when many of our biggest initiatives took root and began sending out new shoots and tendrils of their own. We have formally defined four core research areas that shape all of our projects.

Science & Imagination remains the central pillar of our efforts: exploring the relationship between technical, creative, artistic, and public forms of imagination as a way of fostering human agency and long-term thinking. This has also led to our focus on **Tangible Futures**, the idea that to really grapple with different scenarios, we need to make them viscerally real: visions that you can walk up and touch. CSI continues to curate a collaborative, global ecosystem of big ideas, our **Networks of Imagination**. And finally, to

document these ambitious projects, we need engaging new platforms for storytelling and conversation, which informs our work on the **Future of the Book**.

This is a scope of work that reaches well beyond the typical university research center, and the outcomes of our projects reflect that diversity: we have created live performances, scholarly essays, innovative workshops, science fiction stories, and interactive installation art, all to further our broader goal of creative and ambitious thinking about the future.

Like all of our publications, the purpose of this annual report is not to commemorate things that are over, but rather to invite new engagements and ideas. If you find something of interest in the pages that follow, please come talk to us.



Ed Finn, Director
imagination@asu.edu



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Project Hieroglyph, founded by *New York Times* bestselling author Neal Stephenson, aims to rekindle our grand ambitions for the future through the power of storytelling. Hieroglyph brings together top science fiction authors with scientists, engineers, and other experts to collaborate on ambitious, optimistic visions of the near future grounded in real emerging science and technology.

“The vast and radical innovations of the mid-20th century took place in a world that, in retrospect, looks insanely dangerous and unstable.”

Neal Stephenson

a Better Future

PREFACE BY

Neal
Stephenson

UNCORRECTED
PROOF
NOT FOR SALE

Hieroglyph

In preparation for publication in Fall 2014, the proofs are in for the upcoming anthology.

Project Hieroglyph, founded by *New York Times* bestselling author Neal Stephenson, aims to rekindle our grand ambitions for the future through the power of storytelling. Hieroglyph brings together top science fiction authors with scientists, engineers, and other experts to collaborate on ambitious, optimistic visions of the near future grounded in real emerging science and technology.

In his 2011 article "Innovation Starvation," Neal Stephenson argued that we – the society whose earlier scientists and engineers witnessed the airplane, the automobile, nuclear energy, the computer, and space exploration – must reignite our ambitions to think boldly and Do Big Stuff. He also advanced the Hieroglyph Theory, which illuminates the power of science fiction to inspire the imagination: "Good SF supplies a plausible,

fully thought-out picture of an alternate reality in which some sort of compelling innovation has taken place."

CSI serves as the headquarters for Project Hieroglyph, uniting writers and artists with scientists, engineers, and other researchers to cultivate and expand on audacious moonshot ideas that inspire people and catalyze real-world innovation. We conduct research on the dynamics of radical collaboration and manage the project's digital community (hieroglyph.asu.edu), where hundreds of contributors participate in interdisciplinary collaborations, share resources, and create stories and projects that bridge science fiction and reality.

This year, we laid the groundwork for the publication of the project's first anthology, *Hieroglyph: Stories and Visions for a Better*

Future, which will be published by William Morrow / HarperCollins in September 2014.

In both 2013 and 2014, we hosted Hieroglyph panels at the fast-growing annual Phoenix Comicon. In May 2013, our panelists were editor and director Ed Finn, Hieroglyph editor Kathryn Cramer, ASU structural engineering professor Keith Hjelmstad, and local science fiction and fantasy author Michael Stackpole. The conversation and Q+A focused on how Hieroglyph builds a unique creative process for authors to collaborate with scientists, engineers, and other experts to generate plausible, hopeful, research-based visions of the future. In June 2014, our panelists were Hieroglyph author Elizabeth Bear, ASU engineering and ethics professor Braden R. Allenby, and Zach Berkson, a chemical engineering student and one of the early community leaders and advocates on the Hieroglyph digital platform. The panelists spoke as representatives of various communities served by the project: fiction writers and artists, experts in a broad range of subject areas, and students and community members using Hieroglyph as a platform to develop ambitious, creative new ideas.

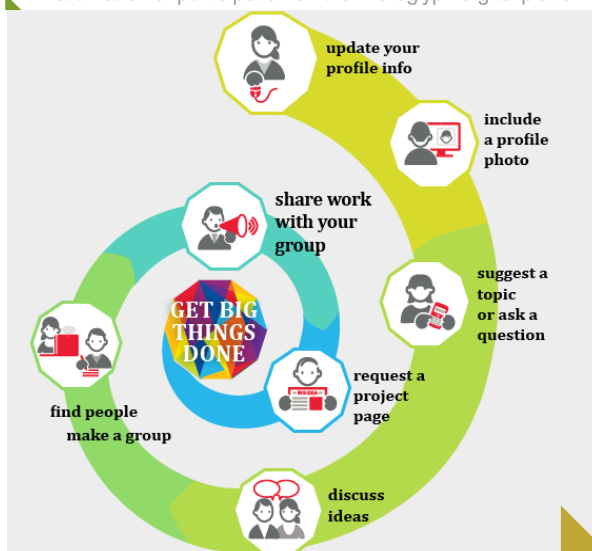
In May 2014, a Project Hieroglyph panel was featured at the Nebula Awards Weekend, a prestigious gathering of science fiction industry writers, editors, publishers, and aficionados in San Jose, California, hosted by the Science Fiction Writers of America. The panel featured Hieroglyph authors Lee Konstantinou and Gregory Benford, alongside science fiction author, critic, and technologist Eileen Gunn. The panel was attended by science fiction luminaries including Samuel R. Delaney and Larry Niven.

Also in May 2014, CSI editor and program manager Joey Eschrich gave a presentation, "Project Hieroglyph: Building a Network of Technological Imagination," at the

Second Annual Conference on Governance of Emerging Technologies: Law, Policy, and Ethics in Scottsdale, Arizona, hosted by ASU's Sandra Day O'Connor College of Law, the Center for Law, Science, and Innovation, the Center for Nanotechnology in Society, and the Lincoln Center for Applied Ethics. The presentation focused on how Project Hieroglyph serves as a hub for a new kind of community, bringing people from diverse backgrounds into collaboration to develop new stories, research questions, and projects that will shape our collective future.

Throughout this year, we rebuilt and upgraded our digital community platform (hieroglyph.asu.edu), using the open-source content management system WordPress and integrating the social networking plugin BuddyPress along with Commons In A Box, a set of tools for scholarly collaboration and sharing developed by researchers at the City University of New York. The new platform enables community members to upload and share multimedia content, form private groups for collaborative teamwork, and follow other users to keep up with the multitude of ongoing conversations and brainstorms unfolding on the site.

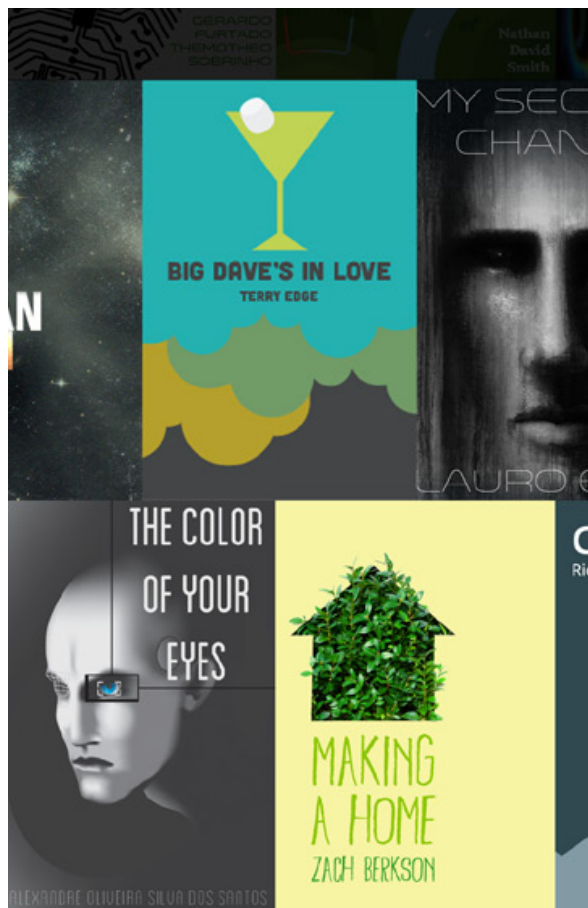
A visualization of participation on the Hieroglyph digital platform.



hieroglyph.asu.edu

Center for Science and the Imagination

Tomorrow Project USA

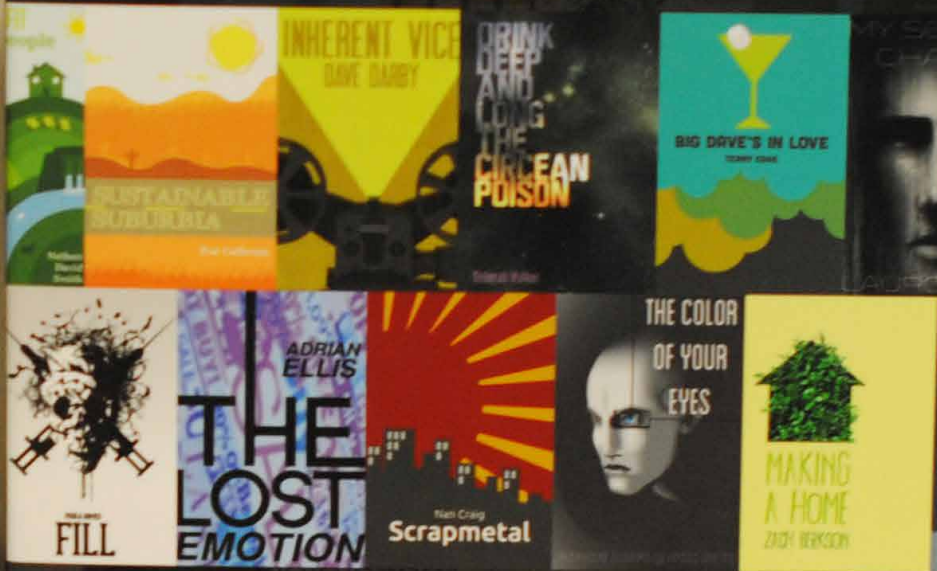


Tomorrow Project USA is a collaboration with Intel and the Society for Science & the Public that ignites creative, productive, science-based conversations about the future. The project publishes anthologies featuring original stories, essays, and artwork created by K-12 and college students, distributed for free online and in print. CSI coordinates an editorial board of leading researchers, journalists, and scholars, and each anthology is co-edited by director Ed Finn and Imaginary College member G. Pascal Zachary.

Cautions, Dreams & Curiosities was released in October 2013. It features “Green Dreams,” a series of written pieces and visual art proposing fact-based, imaginative, and beautiful sustainable visions of a future we can build together, along with “Grand Visions and Big Challenges,” a set of stories that prototype solutions to some of the most pressing issues facing humanity today.

tomorrow-projects.com

THE
TOMORROW
PROJECT ANTHOLOGY



CAUTIONS
DREAMS &
CURIOSITIES

More Science & Imagination Projects



Superheroes check out *American Pop!* at the Tempe Center for the Arts. Courtesy of Phoenix Comicon, CC License.

American Pop! Comic Books to Science Fiction...and Beyond

American Pop!, an exhibit on display at the Tempe Center for the Arts from January through June 2014, explored the transformative effects that science fiction and popular culture have on our everyday lives and the technology that surrounds us. The exhibit playfully investigated the complex relationships among popular culture, scientific inquiry, technological innovation, and cultural change.

Displays included objects and collections from local and national collectors as well as original art, high-tech models, and limited edition pieces from some of America's favorite pop culture icons. CSI's contribution to the exhibit was a series of video interviews with scientists and scholars reflecting on how pop culture, science fiction, and storytelling inspired them and shaped their careers and research.

Visit the digital video display at csi.asu.edu/tca-pop

Grand Challenges

CSI has a partnership with ASU's Grand Challenge Scholars program, an academy for high-achieving young engineers that provides curriculum content, mentorship, and research opportunities focused on using engineering to address global grand challenges: health, energy, sustainability, security, and education. We engage with the Grand Challenge Scholars through their Summer Institute and through science fiction writing workshops during both the Fall and Spring semesters. The workshops and summer sessions are designed to expand the students' imaginations and spur creative, ambitious thinking about the technical and social aspects of their final Grand Challenge project: a moonshot technological solution to a major global challenge.

Thoughtful Optimism and Science Fiction

Contemporary science fiction storytelling is dominated by dystopian narratives, and most of the genre's classic, foundational texts, from 1984 to *Snow Crash*, are pervaded with fear, cynicism, and paranoia. The Thoughtful Optimism and Science Fiction project was an attempt to uncover an alternative history of the genre that focuses on more hopeful and inspiring visions of the future that are still thoughtful, critical, and complex. A group of undergraduate students worked with program manager Joey Eschrich to begin cataloging examples of thoughtful optimism throughout the history of science fiction, across a variety of media (novels, short stories, films, video games, graphic novels, even music and poetry). The group also discussed and analyzed contemporary examples of thoughtfully optimistic storytelling by writers like Kim Stanley Robinson, Ursula K. LeGuin, Cory Doctorow, Octavia Butler, and Karl Schroeder.

ASTC Keynote

The Association of Science-Technology Centers, a global organization of science centers and museums dedicated to increasing public engagement with science, hosted their annual conference in October 2013 in Albuquerque, New Mexico. Neal Stephenson and Ed Finn participated in a keynote dialog about Project Hieroglyph. During the conversation, Neal and Ed discussed the history and mission of Project Hieroglyph and Neal's Tall Tower project, the power of storytelling to inspire people to think in new ways about science and technology, and the ongoing tension between dystopian thinking and Hieroglyph's quest to create thoughtfully optimistic visions of the future. The conversation was moderated by Alex Zwissler, Executive Director and CEO of the Chabot Space and Science Center in Oakland, California.



Grand Challenge Scholars write postcards to the future during a workshop. Nina Miller/ASU

Since its inception in 2012, Emerge has pushed the envelope of performance, technology, and critical thinking. Each year we explore this intersection by asking challenging questions about the future of our mediated lives by building, sharing, and experimenting with visceral experiences of the future.

**“The goal of Emerge
is to make the dry and
abstract ‘future’ into
something immediate,
personal, and tangible, that
you can get your hands on.”**
Bruce Sterling



An aerialist in the *You n.O* performance checks her messages during Emerge 2014.
Photo by Elite Henderson

Emerge 2014: The Carnival of the Future

On March 7, 2014, 7,000 people attended *Emerge 2014: Future of Me*, where engineers, artists, scientists, and designers were challenged to explore questions of individuality, autonomy, and freedom, as well as control, automation, and facelessness through a collection of visitations from the future. Our challenge was to take a combination of theatre and reflection to the streets – specifically the corner of 3rd Street and Garfield in central Phoenix. Over the course of four days, a series of activities transformed an empty gravel lot into a carnival of the future.

The visitations from the future included a number of performative and interactive engagements where visitors were inspired to

think about their future and critically evaluate their relationships with technology. The following were performed on stage:

Drone Confidential: A performance featuring quadcopters and *New Yorker*-magazine-immortalized experimental “interspecies” musician David Rothenberg.

The Still: A dance performance created by ASU’s Julie Akerly that explored the increasing centrality of texting and social media as tools for creating, nurturing, and sustaining relationships.

You n.0: This collaboration between ASU students and faculty in robotics as well as theatre and performance brought clowns and aerialists together with Baxter, a cutting-edge humanoid industrial robot.

In addition to the staged performances, *Emerge 2014* invited visitors to experience the Carnival of the Future through a series of interactive visitations:

myHealth Personalized Preventative Medicine: A working prototype of a future health clinic that challenged visitors to ponder the incredible ethical challenges we will face when we can precisely predict the time and cause of a person’s death, from ASU’s Virginia G. Piper Center for Personalized Diagnostics.

My Future Frontier / Mi Futura Frontera: An interactive installation designed by science fiction legend Bruce Sterling and collaborators from the Turin Maker Lab that considered the significance of national borders for individual identity.



A clown from the *You n.0* performance takes a break from dancing with the Baxter robot to interact with a fan.
Photo courtesy of Matthew Ragan

Sirens: An interactive wood sculpture created by ASU's Thad Trubakoff that presented a breathtaking collision of traditional craft with digital sensors, motors, and microcontrollers.

Future Face Lounge: Carnival-goers were challenged with the question, "How much do our visible identities – race, gender, ethnicity, social class – affect the way we are conceptualized and treated by others?"

Wearable Electronics: Students from ASU's Center for Cognitive Ubiquitous Computing demonstrated prototypes of wearable electronics that could assist people with disabilities, or people recovering from serious injuries.

Carnival Games of the Future: The STEAM Carnival team from California provided an experience of the future of play in their booth featuring face tracking, digital image distortion, and motion sensing technology. Does play become serious when computational logics observe and digitally transform the human body?

Architecture By Everyone: An experiment in crowdsourced architecture by ASU's John Ball provided a glimpse of a radically democratic urban future where citizens have the power to hack and remake their lived environment.

Digital Tabernacle: Digital media provocateur Marcel O'Gorman and environmental humanist Ron Broglio applied a religious epistemology to a seemingly secular question: When do our increasingly strange and intimate relationships with our smartphones and digital gadgets become excessive, unto sinfulness?



The Sand Mandala nears completion at ASU's Combine Studios. Nina Miller/ASU

Sand Mandala: A sacred Tibetan Buddhist sand painting was painstakingly created over the course of several days at the International Artist Residency Program Gallery at ASU's Combine Studios. Sand Mandala paintings function as symbolic archetypes of the Buddhist depiction of the intricacies of the mind and a vision of the ideal world, as well as an altar to confer blessings.

emerge.asu.edu



Emerge 2014's Carnival of the Future unfolded under a massive big top in the heart of Downtown Phoenix's arts district. Nina Miller/ASU

More Tangible Futures Projects

A demonstration of the Wonder Dome's immersive storytelling technology at ASU's Tempe campus. Andy DeLisle/ASU



The Wonder Dome: Embodied, Interactive Stories in an Immersive Environment

The Wonder Dome, created by CSI research fellow Daniel Fine, is performance platform that brings traditional storytelling into the 21st century by inviting audiences of all ages into an interactive, 360-degree immersive dome. In the Wonder Dome, stories are encountered, explored, and shared by mixing ancient forms of live performance with cinema, gaming, human-computer interaction, and cutting-edge motion tracking and projection technology. The Dome enables performers and audience members to engage with each other in ways that go far beyond the passive experience common in traditional theatre. The technology driving the Wonder Dome was featured as part of Emerge 2014, and the platform hosted a number of performances at the Spark! Festival of Creativity at the Mesa Arts Center in March 2014.

The Wonder Dome is a collaboration between a number of units at Arizona State University and The Ohio State University. Learn more at: wonderdome.co

Prototyping Dreams

How do you build your dreams? Ed Finn taught "Prototyping Dreams" in the Digital Culture curriculum at the School of Arts, Media and Engineering for the first time in Fall 2013, and



3D printed artifacts from students in Ed Finn's "Prototyping Dreams" class. Elizabeth Vegh/ASU

it was taught again by Joshua Gigantino in Fall 2014. The course draws inspiration directly from CSI by exploring the idea of inspirational prototyping across multiple media, including

physical fabrication, science fiction, virtual worlds, and film. Students create and iterate their own prototypes for visions of the future: new technologies, solutions to grand challenges, and tools or systems that expand the horizon of human potential. These prototypes do not have to be functional tools, but they must be functional stories, effectively sharing the creator's vision with others. Just as the *Star Trek* communicator inspired early cellphones, these prototypes help shape new conversations about the future we want to build. Over the course of the semester, the class surveys a series of creative paradigms for inspirational prototyping, including design fiction, rapid fabrication and 3D printing, science fiction prototyping, gaming, and virtual world-building. There are no prerequisites for this class and students at every level are encouraged to enroll.

The Imagination Project

The Imagination Project, CSI's affiliated student organization, brings together students from diverse intellectual backgrounds to work on collaborative projects and have challenging, thought-provoking conversations at the intersection of science, technology, society, art, and culture. Recent Imagination Project initiatives include:

CyberSenses

Imagine being able to hear color, see sound, or sense air pollution. CyberSenses is a



A CyberSenses prototype

series of workshops and conversations seeking to explore the technological, ethical, and aesthetic dimensions of human enhancement. Using low-cost electronics, multi-functional microcontrollers, and digital artwork, students collaborated to build devices that expand and enhance the human sensorium. Students exhibited prototype technologies at ASU's Digital Culture Gallery as part of the ASU Art Museum's Family Fun Day, and at the Emerge festival.

Biomimicry

What if sustainable solutions for designing our cities, homes, and infrastructure were inspired by models from nature? For the 2013 Biomimicry Student Design Challenge, the Imagination Project proposed a biomimetic redesign of Phoenix's Metro Light Rail system, inspired by ant colonies, seeking to increase the system's efficiency and reduce air pollution. The students' designs were also presented to the public at the Arizona Science Center as part of its monthly "Adults' Night Out" program.



Imagination Project students envisioned a better light rail system for Phoenix by looking to nature for inspiration. Photos courtesy of Bob James and Steve Jurvetson via flickr.com, used under CC License.

No work of literature has done more to shape the way people imagine science and its moral consequences than *Frankenstein; or, The Modern Prometheus*, Mary Shelley's enduring tale of creation and responsibility. The novel's themes and tropes – such as the complex dynamic between creator and creation – continue to resonate with contemporary audiences. *Frankenstein* continues to influence the way we confront emerging technologies, conceptualize the process of scientific research, imagine the motivations and ethical struggles of scientists, and weigh the benefits of innovation with its unforeseen pitfalls.

“Whether it’s from a scientific point of view, a philosophical one, or a psychological one, there are so many ways in. It’s the book about everything, all the big questions.”

Devi Snively



Celebrating Frankenstein

2016-2018

CSI, in collaboration with the Consortium for Science, Policy and Outcomes, serves as the network hub for a global celebration of the bicentennial of the writing and publication of *Frankenstein*, 2016-2018. The celebration will encompass a wide variety of public programs, physical and digital exhibits, research projects, scientific demonstrations, competitions, festivals, art projects, formal and informal learning opportunities, and publications exploring the novel's colossal scientific, technological, artistic, cultural, and social impacts.

The Frankenstein Bicentennial Project will infuse science and engineering endeavors with considerations of ethics. It will use the power of storytelling and art to shape processes of innovation and empower public appraisal of techno-scientific research and creation. It will offer humanists and artists a new set of concerns around research, public policy, and the ramifications of human creativity and invention. And it will bring forth new scientific and technological advances influenced by Shelley's exploration of our inspiring and terrifying ability to bring new life into the world.

Frankenstein represents a landmark fusion of science, ethics, and literary expression. The bicentennial provides an opportunity for vivid reflection on how science is culturally framed and understood by the public, as well as our ethical limitations and responsibility for nurturing the products of our creativity. It is also a moment to unveil new scientific and technological marvels, especially in the areas of synthetic biology and artificial intelligence. Engaging with *Frankenstein* allows scholars and educators, artists and writers, and the public at large to consider the history of scientific invention, reflect on contemporary

research, and question the future of our technological society. Acting as a network hub for the bicentennial celebration, ASU will encourage and coordinate collaboration across institutions and among diverse groups worldwide.

Workshop

In April 2014, CSI hosted a planning exercise funded by the National Science Foundation titled "Informal Learning and Scholarship in Science and Society: A Multi-Disciplinary Workshop on Scientific Creativity and Societal Responsibility." The workshop brought together scientists, engineers, informal learning researchers, and scholars of science and society to begin building a diverse community of collaboration. Over the course of three days we began exploring and laying the groundwork for public programs, intellectual endeavors, and tangible outcomes like journal special issues, books, and performances as part of the bicentennial celebration. The workshop was divided into a number of working groups exploring different aspects of the bicentennial:

- Exhibits and Installations: Frankenstein and the Creation of Life
- *Frankenstein*: A Critical Edition for Scientists and Engineers
- "It's Alive": Frankenstein on Film
- Monsters on Stage: Frankenstein in Theater and Performance
- "MOOCenstein": Frankenstein Goes Global
- Engineering Life: Distributed Demonstrations
- Reinventing the Dare: Frankenstein, Science Fiction, and the Culture of Science
- Bringing Nonfiction to Life: Frankenstein and Science Writing



frankenstein.asu.edu

▶ Brian Foley performs in "Frankenstein: A Metaprometheus Bound" at the ASU Art Museum. Photo courtesy of Chelsea Pace.

More Networks of Imagination Projects

Science Fiction TV Dinner Series

The Science Fiction TV Dinner series is a launch pad for imaginative, engaging conversations about science, technology, and society. Since 2012, the series has developed an enthusiastic following on and off campus, providing the opportunity for people of all ages and backgrounds to come together, learn, and explore visions of the future in an entertaining and informal setting.



The series uses science fiction as an inclusive meeting ground where people from diverse professional and intellectual backgrounds – from artists, writers, and historians to scientists, engineers, and fan scholars – can bring their expertise and knowledge to the conversation.

At each event, we serve dinner, screen an episode of a classic or contemporary science fiction television show, and have a conversation about key themes, debates, and ethical quandaries. Science Fiction TV Dinners bring science, art, and storytelling into dialog and provide a platform for collectively exploring a diverse array of future visions.

Our TV Dinner events this year:

August 2013: *The Walking Dead*

Featured Speaker: Legal scholar Adam Chodorow

September 2013: *Red Dwarf*

Featured Speakers: Astrophysicist Steve Desch and Scholars of language and humor Don and Alleen Nilsen

October 2013: *Interfaces and the Future of Design*

Featured Speaker: Interaction designer Nathan Shedroff

November 2013: *Star Trek: The Next Generation*

Featured Speakers: Synthetic biologist Karmella Haynes and Astrophysicist and *Slate* blogger Phil Plait

January 2014: *Quantum Leap*

Featured Speakers: Juan José Díaz Infante of the Mexican Space Collective and Engineer and designer Micah Lande

June 2014: *Farscape*

Featured Speakers: Science fiction author Elizabeth Bear and Engineer and ethicist Brad Allenby

5 Burning Questions

5 Burning Questions is a series of video interviews about the future with interesting people from a diverse range of professional and intellectual backgrounds, ranging from science, engineering, and sustainability to design, history, art, and music. Featuring deceptively simple questions with thought-provoking answers, the series helps us find unexpected resonances and commonalities in how members of our network approach the future.

Each interviewee is asked the same five questions:

1. What are you looking forward to in the future?
2. What are you dreading most about the future?
3. How can people in your field (literature, chemical engineering, music, etc.) help us prepare for the future?
4. How can we teach and learn for the future?
5. What story most inspires you?

Participants in 5 Burning Questions have included:

- Science fiction author Bruce Sterling
- Experimental musician David Rothenberg
- Media theorist Sha Xin Wei
- Documentary filmmaker Doug Wolens
- Science fiction anthologist Kathryn Cramer
- Interaction designer Nathan Shedroff
- Science writer David Quammen
- Young adult author Tom Leveen
- Sustainability researcher Tracey Grose
- Artist Juan José Diaz Infante

Future Tense

Future Tense is the citizen's guide to the future. A partnership of *Slate*, the New America Foundation, and Arizona State University, Future Tense explores emerging technologies and their transformative effects on public policy, culture, and society. Rather than obsessing over the tech specs of the hot new gadget (which will be obsolete in a few months), Future Tense looks at the technologies that will soon change the way we live our lives: robotics, information and communication technologies, synthetic biology, augmented reality, space exploration,

and more. Future Tense also examines the policy challenges presented by these breakthroughs: How can legislators properly regulate technologies they don't understand? How can we encourage innovation and research that will make a difference in society?

Future Tense asks these questions through live events with policymakers, scientists, journalists, and interested members of the public, held primarily in Washington, D.C. In addition, there is daily content published on *Slate*'s Future Tense channel, garnering millions of page views per month.

CSI's Joey Eschrich serves as ASU's coordinator for Future Tense, helping to connect the university's talented faculty and students and most exciting research initiatives to new audiences through events and articles.



Guest Starring

In June 2014, CSI and the Department of English hosted an event, "*Serenity*, *Softwire*, and the Science of Science Fiction," featuring actor Nathan Fillion, star of the television series *Firefly* and *Castle* and the film *Serenity*, alongside science fiction author PJ Haarsma and ASU professors Jim Bell, Sara Imari Walker, Peter Goggin, and Ed Finn. The conversation focused on the interchange of ideas between the worlds of science and science fiction, and the importance of reading and storytelling in the lives of young people.

Bookstores are disappearing, libraries are filling dumpsters with discarded volumes, and an author's best chance at popular success is to land a TV interview with comedians pretending to be journalists. Do books have a future? And what do we even mean by "book" anyway, when we're more likely to pinch, tap, and click our way through text than turn a page?



**“I believe that when we talk
about the future of reading,
we’re really talking about the
future of the imagination.”**

Kiyash Monsef

This project answered the question “what is the future of the book?” head-on through a series of practical, performative experiments.



Over the course of two or three days we asked authors, publishers, designers, and critics to write and publish a book “live.” Our experiments at the Frankfurt Book Fair, Arizona State University’s Downtown Phoenix campus, and Stanford University’s Department of English yielded a thought-provoking collection of over 250 contributions that we have published as a three-volume collection online. We called this effort, which was supported by a grant from Intel, Sprint Beyond the Book.

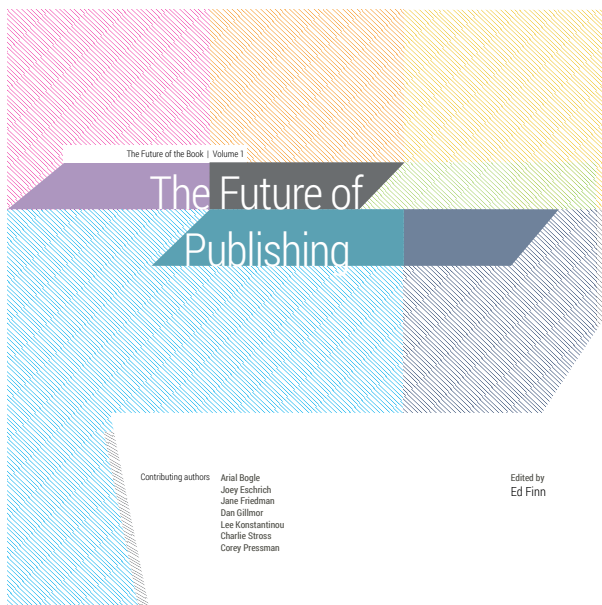
sprintbeyondthebook.com

Why do this? We’re tired of e-books as they exist now. They are, by and large, feeble emulations of printed books, and they could be so much more. We want to imagine the future of collaborative authorship and publishing by doing it.

In addition to writing, we took photos and recorded video and audio interviews throughout the experience. All of these are embedded inline along with the text. Our project website invited people all over the world to watch the books take shape and join in.

▶ Sprint Beyond the Book at the Frankfurt Book Fair: a brainstorming session with contributors and editors Jane Friedman, Lee Konstantinou, Ed Finn, Charlie Stross, Dan Gillmor, and Joey Eschrich





Frankfurt

October 2013

The first phase of this project took place in October 2013 at the Frankfurt Book Fair, where our writing team included science fiction authors Charlie Stross and Lee Konstantinou, tech journalist Dan Gillmor, and Jane Friedman, a veteran publisher and editor at the *Virginia Quarterly Review*. Our writers worked with an on-site team of videographers as well as collaborators around the world to collectively author essays on the following themes:

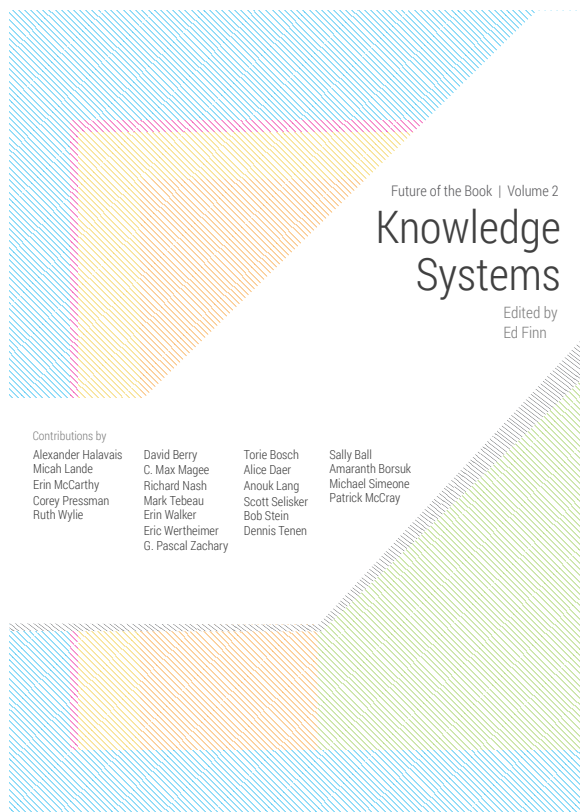
- What is the future of publishing?
- How will people find new books to read in the future?
- How will books be produced in the future?
- How will books be edited in the future?
- How will the concept of the book evolve in the future?
- In what new ways will authors engage with their readers?

Arizona State University

February 2014

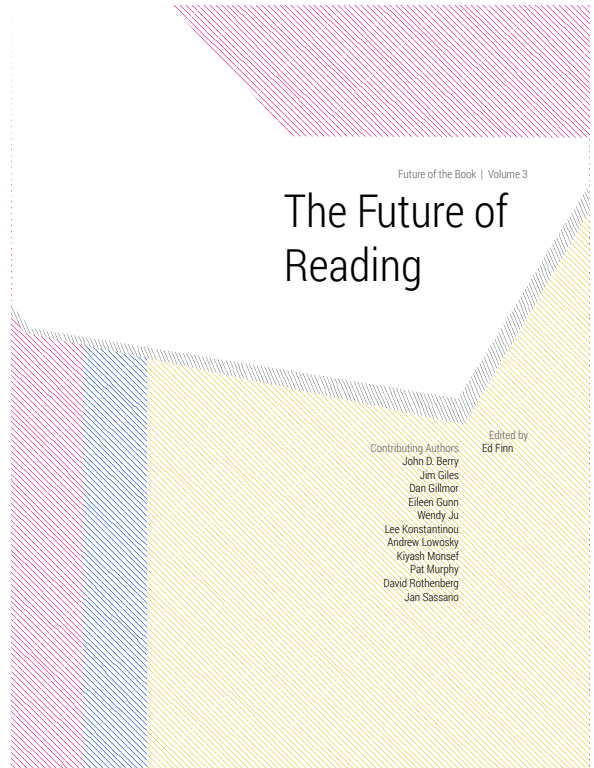
After our success with a small team in Frankfurt, we chose to focus our second book sprint on transforming a larger scholarly gathering. Inviting researchers and writers from the fields of literary criticism, history, creative writing, publishing, journalism, human-computer interaction, and design, we asked this group to consider how rapid, improvisational writing could transform the process and outcomes of traditional conferences and workshops. These groups addressed a number of questions on the theme of the future of the book as knowledge system:

- What is the future of the textbook as a social, living, interactive, adaptive learning technology?
- How will digital platforms for creating books and other types of knowledge systems



generate new forms of community, conversation, production and resource sharing among readers, and between readers and writers?

- How should we archive born-digital materials so they are stable and easily accessible?
- How will the shift to digital knowledge systems transform the publishing industry?
- What roles will individual authors and artists, as well as collectives and institutions, play in pioneering new modes of book design and production – and more broadly, the design and production of knowledge?



on the book as a material, designed artifact, whether that refers to a physical or a virtual text. Addressing the future of reading, our collaborators included science fiction novelist and critic Eileen Gunn, musician and author David Rothenberg, typographer and editor John Berry, and virtual participants from around the world. Their topics:

- Reading in the Network Era
- Future of Book Design
- Read, Play, Perform
- Ecosystem of Reception
- The Demise of Close Reading?
- Fragmentation, Reputation, Celebrity, and Literary Culture



Ruth Wylie, postdoc at the Learning Sciences Institute, and Erin McCarthy, Assistant Director of the Arizona Center for Medieval and Renaissance Studies, work on the interface of a new learning system. Nina Miller/ASU

Stanford University

May 2014

Our final book sprint took place at Stanford University's Department of English in conjunction with the Center for the Study of the Novel. The last book sprint focused



First day information for each participant in the Stanford Book Sprint. Nina Miller/ASU

Center for Science and the Imagination

SCIENCE

translate ^{stories} ideas
research
into practice

Thoughtful Optimism
Pave the
way for
new ideas/
practices

New
mediums
for
improving
scientific
literacy +
understanding

Visceral
experiences of
the future

Tangible
and
Visceral
Experiences

FUTURE

Education
+
Behavior
Change

we look
~~we face~~ the
uncertainty
of the future
in ~~the~~ face
the

Inspire
agency +
shape the future

... kind
of future
do we
want to
build
together

our ~~process~~ is
always in
the future
measurable
outcome

Social
justice

Future
Reality
vs.
Possibilities

Looking Ahead

We are excited about our own near future. Here is what's next for CSI...

Foresight

Arizona State University was selected for a competitive, five-year award of \$20 million by the National Geospatial-Intelligence Agency (NGA) to launch a research partnership, effective June 1, to explore approaches for anticipating and mitigating national security risks associated with climate change.

Known as the Foresight Initiative, the cooperative agreement venture will explore how the effects of climate change on resources, such as water, food and energy, could contribute to political unrest and instability, and gain insights to sustainability and resilience strategies for mitigating the effects.

This initiative will play a key role in collaborative research efforts to accelerate the evolution of Activity-Based Intelligence addressing system level activities, dynamics and interdependent network effects in the context of global climate risks to water security. This multi-year research partnership leverages ASU expertise and thought leadership in visual analytics, complex modeling and transdisciplinary decision-making evolving from years of internal and external investments at ASU.

Ars Robotica. Robin Kiyutelluk/ASU

CSI is developing geo-narratives about the intersection of water and energy that combine geospatial intelligence with sustainability research, storytelling expertise, and cutting-edge digital tools to create new interactive and immersive experiences. We aim to prototype an intuitive user interface not only for experiencing, but also authoring geo-narratives, by exploring how remote collaboration and decision-making can happen in a virtual or augmented reality environment.

Approved for public release under case number 15-407

Emerge 2015

Arizona State University's Emerge 2015 will showcase its radically new visions of the future on Friday, March 6, at the university's SkySong Innovation Center in Scottsdale. Our featured visionary – *Radiolab* host, creator and MacArthur “genius” Jad Abumrad – will join ten spellbinding visitations from the future, including theatrical performances, improvisation, games, dance, and hands-on opportunities to design and build the future.

The theme of Emerge 2015 is The Future of Choices and Values. “Humans today have



unprecedented power to harness and reshape matter, energy, and even life itself. Emerge asks what kinds of futures we should build together, at a moment in history when what we can do is almost unlimited,” says Joel Garreau, founding co-director of Emerge and Professor of Law, Culture and Values at ASU’s Sandra Day O’Connor College of Law.

Emerge dares brilliant creative and technical minds to bring these quandaries to life through performance, technology, and storytelling. The event gathers artists, designers, scientists, engineers, and audiences to imagine optimistic, thoughtful futures. Part performance, part hands-on interactive experience, Emerge explores the ways we are already creating the future, and asks us to think about how we ensure it is the future we hope for – rather than one we dread. Each of the ten visitations from the future, as well as the performance by Abumrad, are different ways of responding to the open question about what kind of futures we can envision, and what kind of futures we want.

emerge.asu.edu

**Center for Science
and the Imagination**
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