

**SCHOOL FOR THE
FUTURE OF INNOVATION
IN SOCIETY**





“SFIS ASPIRES TO BE PART OF A LARGER EFFORT AT WEAVING TOGETHER INNOVATION WITH HUMAN WANTS AND NEEDS INTO A DURABLE AND BEAUTIFUL SOCIAL FABRIC.”

— Dave Guston, SFIS Director

THE FUTURE IS FOR EVERYONE

THE SCHOOL FOR THE FUTURE OF INNOVATION IN SOCIETY

Our 21st-century world presents to us profound challenges. We face fundamental choices not just about what kind of world we want, but what kind of planet we can salvage and nurture. We must choose what kind of people we want to be, but also how humanity itself will thrive in the shadow of its own success as a species that lights the dark, writes new genetic codes, and creates artificial intelligences that we do not fully comprehend. Innovations in science and technology hold tremendous potential to confront and manage such complex challenges, but success requires more than novel science and technology. For innovations to be truly and helpfully transformative, we must take into account the full range of social actors and social conditions in which they occur so that their benefits are distributed fairly. As a New American University—one committed to advancing research and innovation for the good of

all humankind—Arizona State University asserts that the American public academy must accept a central role in driving meaningful responses to our most urgent challenges. To mobilize this effort, ASU has launched a revolutionary school and institute charged with building the academic and social infrastructure required to imagine and realize our common future.

A transdisciplinary academic unit, the School for the Future of Innovation in Society (SFIS) is the vanguard of ASU's effort to build a nimbler, more resilient, and more responsive institution capable of innovating faster and at scale. By breaking down disciplinary boundaries, and conducting research that examines the way we translate imagination into innovation – and the influence and effect those innovations have on society – SFIS seeks to build the intellectual framework that will empower us to build a future for everyone.

MANY PLAUSIBLE FUTURES

Today, the influence of science, technology and innovation in how we live our lives has never been greater. Tomorrow it will be greater still. Headlines that once seemed like science fiction trumpet new technical realities: editing human genes; autonomous robotic drones; the collection and interpretation of big data. These new capabilities contain both promise and challenge and have the power to transform our lives in ways good and bad.

Despite risks, we must continue to innovate if we hope to meet the challenges articulated in these headlines, as well as those that remain lurking. Moreover, our innovations must secure a future not just for a privileged few in our world, but for everyone. A future for some is a future for none. This ethos is central to ASU – a research university that measures itself not by whom it excludes but rather by whom it includes and how they succeed, one that advances research and discovery for public value, and one that assumes fundamental responsibility for the communities it serves. These claims are no platitudes. They reflect

a paradigm shift for the institution and the creation of knowledge, born of an urgent need to secure the future of our human endeavor. At its core, ASU is an engine for technological and social innovation that envisions a future for everyone.



BUILDING THE NEW PARADIGM

How do societies innovate? Technology and entrepreneurship are important, but ultimately insufficient. Traditional forms of innovation must integrate with social, organizational, economic, and political innovations. This concept—innovation-in-society—holds that human lives, identities and communities are intertwined with technologies. Understanding innovation-in-society means decoding these socio-technical relationships. To this end, the School for the Future of Innovation in Society seeks to learn how to best manage systems-level and society-wide transformations brought about by innovation.

Universities are at the forefront of innovation, aiming to improve lives by generating and applying knowledge. SFIS makes that innovation the object of systematic study and informed critique, helping people get what they truly want and need out of scientific and technological endeavors. As an academic unit, SFIS trains dynamic and creative people to address our most pressing challenges. SFIS unites two undergraduate and three graduate degrees with an ambitious agenda in research

and engagement to educate, create knowledge, and foster the deliberative foundations and critical capacities to connect human ingenuity to human well-being across the global community.

UNDERGRADUATE PROGRAMS

The School for the Future of Innovation in Society offers two undergraduate majors (Bachelor of Arts; Bachelor of Science), a minor, and an Innovation for Impact certificate. SFIS undergraduate programs teach students to think critically about the relationship between technology and society; to understand the influences, origins, histories, values, and risks of science and technology; to compare the local and global forces that shape innovation and better understand how they relate to concepts of justice; and to apply “futures thinking” to analyze emerging trends and anticipate plausible futures that may result from new and emergent technologies. This curriculum trains students to interpret innovations using a socio-technical lens through rigorous inquiry across the humanities, and social, natural, and applied sciences.

GRADUATE PROGRAMS

The *Master of Science and Technology Policy (MSTP)* program trains graduates in the formulation and implementation of science and technology policy in the United States, combining a high-level conceptual background in the field with a focus on a particular area like space policy or energy, as well as an emphasis on communication skills. The MSTP allows students to advance their careers locally and nationally in high-tech public and private organizations like NASA, the Federal Aviation Administration, and the Centers for Disease Control and Prevention. MSTP students also successfully compete for Presidential Management Fellowships, with placements including the Department of Energy and the US Army.

The *Master of Science in Global Technology and Development (GTD)* focuses on the international social, economic and political development of technology and innovation and analyzes change within the context of globalization. GTD's central concerns include global disparities in wealth and access to resources and basic needs. Students pursue unique research questions and engage

in research on issues related to technology and human, socioeconomic and political development. With a focus on improving the lives of vulnerable communities, GTD is especially attractive to those called to serve: a large share of GTD graduates and current GTD students are veterans or former Peace Corps volunteers.

The *PhD in Human and Social Dimensions of Science and Technology (HSD)* trains students to create knowledge, concepts and responses to the social and political aspects of science and technology, with specific topics ranging from the risks of emerging technologies to the complex transition from fossil fuels to sustainable energy systems. An interdisciplinary collaboration led by SFIS, HSD recruits diverse and talented students from elite institutions like Smith College and Yale; from tech firms like Intel; and from foreign nations including Canada, China, Japan, Korea, and Mexico. Placements of current and graduated students include the University of California, Berkeley, Michigan State University, and the University of Oxford (UK). With less than a decade of history, the HSD program is already among the world's leaders in the field.



Students of the 2016 summer study abroad program “Sustainable Development across Morocco” visited a village in the High Atlas Mountains to paint and renovate a classroom for local children.



These tarot cards, introduced at *Emerge 2017* (see p. 8), help engage the public and create discussions around the social and ethical aspects of new and future innovations.



TERRAFORMING THE NEW AMERICAN UNIVERSITY

A companion **Institute for the Future of Innovation in Society (IF/IS)** comprises a set of research centers that collectively serve to project a transdisciplinary agenda of responsible innovation across the university and to the outside world. IF/IS contributes to the realization of a future for everyone through an agenda emphasizing the role we all have in creating our common futures. This research continues the legacy of the Consortium for Science, Policy and Outcomes (CSPO), consistently ranked one of the top S&T think tanks in the world.

The Institute for the Future of Innovation in Society currently comprises 12 centers engaged in scholarly activity that work to build a future for everyone:

- **The Center for Responsible Innovation** anticipates the broader societal implications of emerging technologies like nanotechnology, synthetic biology, artificial intelligence, and robotics.
- **The Center for the Study of the Future** imagines a rich variety of plausible futures to help people and organizations to navigate global

challenges like climate change, energy transition, and demographic and political shifts.

- **The Center for Innovation, Development, and Society** amplifies the voices of poor and marginalized communities across the globe through grassroots innovative solutions to global development challenges.
- **The Center for Engagement and Training in Science and Society** invites broad public audiences into all stages of scientific and technological development to ensure outcomes that benefit society as a whole.
- **The Health Research and Policy Collaboratory** investigates the ethical, legal and policy aspects of contemporary biotechnology, particularly issues of equity, intellectual property and outcomes.
- **The Risk Innovation Laboratory** develops novel risk management and communication strategies in technology innovation, health and wellbeing, policy and governance, sustainable futures, and society and ethics.



- **The Center for Science and the Imagination** engages in research, outreach, and radical collaborations that explore the fundamental role imagination and creativity play in the innovative process.
- **The Center for Energy and Society** develops energy solutions that contribute to ensuring sustainability, increasing economic prosperity, reducing inequality and injustice, advancing human development and wellbeing, and fostering resilience and security.
- **D.C. Center for Science, Policy, and Outcomes** works in our nation's capital to create knowledge and methods, cultivate public discourse, and foster policies to help decision makers grapple with the immense power of science and technology to build a better future.
- **The Center for Games and Impact** couples research on the art and science of learning with game-enabled platforms to invite, enable, and release potential in a rapidly changing, digitally connected world.
- **The Center for Arizona Innovation Policy** will draw on scholarship and other resources across ASU to serve as a local, state and national resource for policymaking around science, technology and innovation policies.
- **The Center for Engineering, Policy and Society** will be a nexus of interdisciplinary inquiry and action between IF/IS and the Ira A. Fulton Schools of Engineering, fostering collaborative approaches in policy and education that require knowledge of social and technological systems.

EMERGE: A FESTIVAL OF FUTURES

A signature “town and gown” event that attracts thousands of visitors a year, Emerge unites artists, engineers, performers, scientists, storytellers, ethicists and the public to imagine futures in which we all can thrive. Emerge explores the consequences, disruptions and opportunities of technological, social and cultural transformation: We ask penetrating questions about our possible futures; and we focus deeply on how we can and will build the futures we desire. Emerge deploys a powerful new kind of storytelling that allows

participants to sample experiences of these futures. Partners from across the university work together to develop these experiences over the course of the year prior to the spring-time feature event. Since 2012, Emerge has captivated and astonished audiences with storytelling, performance, and imagery that inspire them to think deeply about the kinds of futures we want and how we can get there.

emerge.asu.edu



Artist: Sue Austin; Photographer: Norman Lomax © www.wearefreewheeling.org.uk

Screenshot from “Fixed: The Science/Fiction of Human Enhancement,” a documentary film by Regan Brashear partially supported by SFIS and screened at Emerge 2017.



FRANKENSTEIN BICENTENNIAL PROJECT

The Frankenstein Bicentennial Project is a hallmark project that spotlights Mary Shelley’s creation. No work of literature has done more to shape the way humans imagine science than Mary Shelley’s Frankenstein, or The Modern Prometheus. Through Frankenstein, Shelley produced in both the creature and its creator tropes that not only continue to resonate with contemporary audiences but also influence the way we confront emerging technologies. There is no greater cultural vehicle for discussion of the issues of creativity and responsibility.

The years 2016–2018 mark the two-hundredth anniversary of the events that led Mary Shelley

to conceive, write, and publish Frankenstein. In honor of Shelley’s great work, and funded in part with generous support from the National Science Foundation, the Institute for the Future of Innovation in Society has launched a global celebration of the novel and its cultural ramifications. The project includes events and exhibitions at universities, museums, and other cultural institutions worldwide and a new, annotated critical edition of the novel that engages young and aspiring scientists to contemplate Shelley’s Promethean vision and the relationship between creativity and responsibility.

frankenstein.asu.edu

TOTAL GOAL: \$20 MILLION

ENSURE STUDENT ACCESS AND EXCELLENCE \$7.5 MILLION

Scholarship and fellowship support will ensure that students with the ability and ambition will have the opportunity to attend the School for the Future of Innovation in Society, regardless of their financial circumstances.

- Undergraduate Scholarships
- Graduate Fellowships

CHAMPION STUDENT SUCCESS \$2 MILLION

The School for the Future of Innovation and Society seeks to foster a stimulating atmosphere for its students that encourages global involvement, community service, creative expression, and personal growth through study abroad, high-quality mentorship, and internships.

- Mentorship Programs
- Study Abroad Opportunities
- Internships

ELEVATE THE ACADEMIC ENTERPRISE \$6 MILLION

Philanthropic support for teaching fellowships, endowed chairs, visiting professorships, and faculty awards will enable SFIS to attract outstanding teachers, scholars, and researchers, and to raise its profile, achievements, and contributions to the university and our community.

- Endowed Professorships and Directorships
- Visiting Professorships
- Collaborative Teaching Fellowships
- Faculty Awards

FUEL DISCOVERY, CREATIVITY, AND INNOVATION \$2 MILLION

Support for the Institute for the Future of Innovation of Society's transdisciplinary research centers will create the innovative linkages and approaches that will yield a university that is more nimble, more creative, and ready to pioneer new frontiers.

- IF/IS Research Center Development
- Research Collaboration
- Cross-training Scientists and Engineers

ENRICH OUR COMMUNITIES \$2.5 MILLION

SFIS gains much of its strength and relevance from the health and growth of the communities that surround and shape it. With philanthropic support, SFIS will continue to inspire and engage our community with high-quality programming like Emerge and Frankenstein.

- Public Engagement
- Emerge
- Frankenstein Bicentennial Project



CONCLUSION

When Dr. Michael M. Crow became Arizona State University's 16th president, he brought with him a vision to transform ASU into a New American University. Predicated on a controversial proposition that our current systems for creating knowledge were insufficient to address our most complex problems, this new model would produce an institution that would be flexible, resilient, and responsive to the needs of society. SFIS is a

signature example of that endeavor, emblematic of the efforts required to create and organize the knowledge that will shape our future for the good of all humanity. We invite you to join us on this extraordinary journey, to reshape the New American University and, ultimately, our world. The future is for you and for us.

The future is for everyone.

With your generous support, Arizona State University has reinvented the public research university. We are both more inclusive and more accomplished than ever, with ASU students and faculty earning unprecedented levels of recognition for their achievements. Our graduates leave here as master learners who are capable of rising to meet any new and unfamiliar challenge. ASU students, faculty, and graduates also are firmly rooted in their communities and committed to advancing the common good. Together, we have created a model for other universities to follow. Your support during Campaign ASU 2020 will help us break more new ground by raising \$1.5 billion to propel our vision for higher education into the next decade and beyond.

ARIZONA STATE UNIVERSITY is a comprehensive public research university, measured not by whom we exclude, but rather by whom we include and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural, and overall health of the communities it serves.



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