

The founding legislation for the National Endowment for the Arts and the National Endowment for the Humanities stressed that an advanced civilization is fed by all great branches of learning, and that in order to thrive, the Arts and Humanities must be supported alongside Science and Technology.

At an Arizona State University convening last fall called “Are We Losing Our Humanity”, Deputy Director of the National Science Foundation, Dr. Cora Marrett echoed this theme when she pointed out that activities supported by NSF, NEH and the NEA are all concerned with the acquisition of knowledge, and that matters involving the human condition involve branches of learning that transcend disciplines.

A few months earlier at the “Transcending Borders” event hosted by the Austrian Embassy, The National Endowment for the Art’s then Senior Deputy and current Acting Chair Joan Shigekawa said we live in an age where the divide between art and science is narrowing, and suggested that perhaps they are simply reconvening. Throughout history, humankind’s best and brightest minds, from Aristotle through Leonardo, Einstein and Jobs have gazed across the disciplines to

create new forms of art, invent new technologies and establish groundbreaking new scientific theories.

In the last few years, we've witnessed a growing trend of vibrant activity taking place at the intersection of these fields. In a number of workshops and summits convened since 2010, the NEA, NSF and NEH, have gathered together leaders across from cultural, scientific, and technological fields to examine issues of shared concern. The opportunity to create an engine of innovation by establishing more effective networks for people working at the intersection of these fields, and by infusing the arts and creativity into STEM learning, have been among the key issues raised most frequently throughout these discussions.

The first convening was hosted by the NEA and NSF in 2010 at a summit called **Strategies for Arts + Science + Technology Research**. The meeting brought together fifty-five thought leaders and stakeholders from the arts, engineering and computer science to explore challenges and opportunities facing cross-disciplinary efforts to address the biggest challenges of our day.

The convening was the first federally sponsored art and science summit of its kind, and it spawned a series of at least 5 subsequent convenings funded by NSF that continued these investigations. Additional **cross** agency art and science convenings have also taken place during this time, such as “SymBIOtic Art” supported by the NEA and NSF and “New Media Systems” at UC Santa Cruz supported by the NEA, NSF and NEH. This May, the Network for Science, Education Arts and Design, or SEAD, which developed directly out of the initial Research summit of 2010, will be presenting an overview of over 150 white papers that focus on these trans-disciplinary themes at a public event hosted by the National Academies of Science.

The rationale for bringing interdisciplinary approaches to learning and workforce development received a boost from the National Research Council in a 2012 report, *Education for Life and Work--Developing Transferable Knowledge and Skills for the 21st Century*” as well as in the Conference Board report called “Ready to Innovate”. These publications have demonstrated that the fields of science and industry have recognized the need to foster creativity and innovation

in education and in the workplace to secure a strong, vibrant 21st century economy.

Internally, the NEA has aggressively supported the expansion of new art forms since its inception in 1965. In the last few years, the agency has beefed up its efforts to promote discourse and targeted support around vibrant activity taking place at the intersection of art and science. The Agency has recently enhanced its art and science outreach efforts, resulting in increased numbers of projects applying for agency support that embrace these themes throughout all core funding mechanisms. Within disciplines, we've made significant guideline adjustments in media, presenting, arts education and in other disciplines to better embrace and encourage arts creation, expression and engagement practices spurred on by new technologies and shifting cultural practice.

In the last 2 years, a number of new federal partnerships have also been established to advance research and understanding of how the arts can impact health and wellbeing throughout all walks of life. In 2011, then-Chairman Rocco Landesman from the NEA and Secretary Kathleen Sebelius from the U.S.

Department of Health and Human Services spearheaded the NEA Interagency Task Force on the Arts and Human Development, an alliance of 14 federal agencies and departments that periodically hosts workshops and public webinars to share compelling research, practices, and funding opportunities for research in the arts and human development.

A formal partnership between the NEA and the Department of Defense was established in 2011 to support therapeutic writing, music therapy interventions, and other arts engagement opportunities at the National Intrepid Center of Excellence and the Walter Reed National Military Medical Center in Bethesda. The project includes an assessment component and a research working group charged with developing an evaluation plan and research protocols to measure the efficacy of these arts interventions to help heal wounded service members addressing issues related to traumatic brain injury and Psychological Health issues.

The great American scientist E.O. Wilson wrote that neither science nor the arts can be complete without combining their separate strengths. Science needs the

intuition and metaphorical power of the arts, and the arts need the fresh blood of science. In today's world, when technologies, economies and cultural behavior are being disrupted and replaced, the need to combine these strengths has intensified, to equip us with a deeper contextual understanding of how emerging capabilities from across the arts and sciences can enhance our efforts to advance culture, knowledge and prosperity.

By convening trans-disciplinary conversations , establishing interagency partnerships and targeting support for art and science projects in its own core funding, the NEA has been active in supporting creativity and imagination across multiple branches of learning. The goals of these efforts are to promote the development of skills necessary for success in the future; to promote new cultural practice; and to invest in ways that the arts can improve health and wellbeing across the lifespan for all our citizens.