1. Introduction
Innovations emerging from the intersection of the sciences, engineering, arts and design are transforming our economy, culture, and learning contexts. This transformation is emerging through development of products, methods, and questions that are fundamentally hybrid, such as software developed for human play, and cultural information requiring new means of interpretation and expression in order to enable greater understanding of complex dynamics.

As our world undergoes rapid change, we need new ways to create and engage knowledge, drawing from multiple disciplines as we seek to understand the ever-increasing complexity. By working together, interdisciplinary collaborators can provide insights into dilemmas that elude understanding through any singular inquiry. Global economic interests are at stake: we anticipate that most types of employment that will come to dominate our economies in twenty years are being spawned now. New forms of partnership among political, academic and civil sectors of society are required if we are to bring about the needed changes intelligently and humanely. Innovation stemming from interdisciplinary creativity is a major contributor to the development of new, sustainable economies and harmonious, cooperating societies.

2. Impact
The National Science Foundation Computer and Information Science and Engineering (CISE) Information & Intelligent Systems (IIS) program sponsored five workshops in 2010-2011, bringing together artists and scientists from across the United States, to address needs of the burgeoning community of groups and individuals engaged in transdisciplinary practice. This effort resulted in the genesis of a new network focusing on advocacy and dissemination of innovative methods for connecting and supporting a distributed community across academia, non-profit organizations, civil society, industry, and funding entities. The network facilitates research community development; collaboration and project matchmaking; expertise referrals; large-scale collaborative teaching; forums to share best practices in STE[AM] learning; and philanthropic opportunities for funding organizations. The growing interdisciplinary community continues to face challenges in its efforts to self-organize among constraints imposed by academic systems and historical biases; the community continues to seek a dynamic and synergizing research and outreach exchange. We recognize an urgent need for a paradigm shift that can overcome such biases and fully address, in an integrated manner, the documentation needs of the science-art community. Therefore, the SEAD network is undertaking the development of a dissemination portal (XSEAD) that will provide multimodal research outcomes; extensive databases of prior and current research, an informed record of science-art curricula; support structures for science-art careers; and evidence of societal impact of interdisciplinary integration.

The network addresses fundamental challenges including the need to align academic pedagogies with 21st-century thinking skills; to promote diversity of perspectives, approaches, and people in the creative economy; and to benchmark best practices that create critical thinkers and leaders for the ever-changing job market. We are providing a platform to generate and disseminate public dialogue about the intellectual, cultural, and economic potential of creative intersections of art, science and technology.

For more information: sead.viz.tamu.edu

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Top 75 words in meetings about a network, from Alexandria to Baltimore (2010-2011), via wordle.com
Vision
We will become the leading advocate for collaboration among the sciences, engineering, arts and design, fostering innovation and learning that impact community sustainability and economic growth.

Mission
We operate in entrepreneurial, sustainable ways to identify and promote broader impacts for communities and individuals in new areas of practice, research and critical discourse achieving creative excellence and intellectual merit.

Goals
Advocacy for research and creative work
The network facilitates experimentation with new methods, materials, and modes of creative inquiry and understanding in order to spawn groundbreaking discoveries and inventions.

Advocacy for learning and education
The network promotes life-long learning by supporting topics, pedagogies, and evaluation methods that integrate the sciences, engineering, arts and design.

Advocacy for partnership
The network is a nexus for strategic partnerships among individuals and organizations including government, industry, civic and academic institutions fostering initiatives that bring together diverse disciplines and domains.

Advocacy for culture and economic development
The network champions partnerships that value sustainability, community development and social entrepreneurship, in order to spur economic growth.

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Network for Sciences, Engineering, Arts and Design
Demographics

This chart shows the demographic makeup of all those attending meetings from Alexandria, 2010, to Baltimore, 2012.
Total attending: 151

Highest degrees earned:

**Science**
- Biology
- Cognitive Science
- Ecology
- Immunology
- Integrative Biology
- Maritime Systems
- Marine Science
- Mathematics
- Medicine
- Medical Illustration
- Physics
- Zoology

**Engineering**
- Aerospace Engineering
- Applied Mathematics
- Computational Design and Interactive systems
- Computer Applications
- Computer Science
- Computer Science and Engineering
- Computer and Information Science
- Cybernetic Systems
- Electrical Engineering
- Engineering
- Engineering Physics
- Human Centered Systems
- Design

**Arts**
- Advanced Visual Studies
- Art and Technology
- Art History
- Cinema-Television Production
- Computer Art
- Computer-Based Music
- Electronic Arts
- Experimental Media
- Film and Art History
- Film/Animation/Video
- Fine Arts
- Music
- Liberal Arts
- Media
- Media Arts and Sciences
- Music Composition
- Music Composition for Screen
- Music and Technology
- Musicology
- New Forms and Concepts
- Performance, and Musicology
- Philosophy of Art
- Psychoacoustics
- Radio, Television, and Film
- Sculpture
- Studio Art
- Theater Arts
- Visual Studies
- Visual Studies and Environmental Art

**Design**
- Apparel Design
- Architecture
- Architecture, Art, and Planning
- Computer Graphics Arts
- Industrial Design
- Interior Architecture
- Interventions and Adaptive Reuse
- Landscape Design
- Design Science
- Graphic Design
- Industrial Design

**Education**
- Computing and Education
- Communications
- Education in Mathematics, Science and Technology
- Learning Sciences
- Museum Education
- Music Education
- Teaching in Science
- Teaching in Biology
- Special Education

**Other**
- Communications
- Cultural Studies
- Developmental Psychology
- Human factors
- Information Science
- International Politics
- Library science
- Linguistics
- Literature and Technology
- Philosophy
- Psycholinguistics
- Political Science
- Science Journalism
- Sociology
- Urban Studies and Planning