Network for Sciences, Engineering, Arts and Design

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Top 75 words in meetings about a network, from Alexandria to Baltimore (2010-2011), via wordle.com

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, hardware designed for aesthetic elegance, or the plethora of scientific 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[A]M 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 a centralized view of this emergent field; fast dissemination of 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.

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