#### **FIELD BUILDING**

#### Pamela L. Jennings, Ph.D., Director

The Earl and Brenda Shapiro Center for Research and Collaboration

37 S. Wabash Ave.

Chicago, Il 60603

pjennings@saic.edu

http://www.pamelajennings.org

#### Journey

Photographer -> Vocal Arts-> Oberlin -> Psychology -> New York -> M.A. -> New York -> Banff **Centre** -> MacDowell-> New York -> Banff Centre ->M.F.A. -> .Com Bubble -> Time Warner ->NBC Interactive -> Banff Centre -> Silicon Valley -> IBM Almaden **Research->** SRI International-> Ph.D. Planetary Collegium->a lot of international travel -> Carnegie Mellon University-> Banff Centre -> National Science Foundation -> School of the Art Institute of Chicago->...

# Policy Initiatives 2000

New Media Arts | New Funding Models

Sponsored by the Rockefeller Foundation, Creativity and Culture Division

investigated the current state of funding for new media artists. The emphasis is on the support structures for innovative creative work that utilizes advances technologies as the main vehicle for artistic practice. Twenty-two individual artists/innovators, organizers, directors, and foundation program officers involved in the international new media arts community were interviewed. Participants were asked a number of questions regarding how they frame new media art, concerns from the field, funding histories, and concepts for funding models. Several participants are involved in new initiatives that bridge the for-profit and nonprofit funding sectors including artists' research centers, innovative business models, new approaches for traditional funding sources, incubators, venture funding, and leveraging community.

# Policy Initiatives 2004

Helsinki Agenda

Sponsored by Finish Minister of Culture and IFFACA (International Federation of Arts Councils and Cultures) The manifesto recognizes the broad spectrum of innovations and creative strategies, with artists working both as individual practitioners as well as in highly collaborative professional contexts.

#### Art practice and research in new media

- is a key generator of new knowledge in arts, science, technology, communication and education.
- inform the dialogue between practitioners, researchers, creative industries and the public.
- have developed forms and protocols of knowledge sharing and access based on principles of openness, collaboration and creative freedom.
- can revitalize museums, archives and other heritage contents by allowing for greater public access, public renditions and imaginative readings.
- can create transformative cultural experiences that inspire communities and individuals and expand the scope of creative industries and technology development.
- informs larger social policies.

## **Policy Initiatives: 2007**

Speculative Data and the Creative Imaginary Exhibition National Academy of Sciences, Washington DC





National Science Foundation National Academy of Sciences Association for Computer Machinery

### Advance Research Technology Lab

Banff New Media Institute, Banff Alberta



**Virtual Reality Cave** 



**Disc Platform** David Antonio Castro (Colombia) Eva Schindling (Austria)



**Text Draw** Travis Kirton (Canada)

## **CONSTRUCTS**

802.15.4 wireless construction kit

**Additional funding:** Rockefeller Foundation 1999

Alberta, Informatics Circle of Excellence (iCORE)

CMU Berkman Faculty Development Grant

Pennsylvania Council on the Arts







http:/www,vimeo.com/channels/constructs

# Diversity















#### ZIGBEE WIRELESS **NETWORKING**



 Includes ZigBee Pro specifications · Contains several coding examples Alliance . Details how to plan and develop ZigBee networks

Drew Gislason

# Speculation









# Implementation









# 2008 ACM CHI Interactive Demo Program Firenza, Italy



# http://www.vimeo.com/channels/constructs

Field Building a Digital Sandbox

Learning Engagement Discovery Innovation ... a place where Artists, Designers, Engineers, Humanists, and Educators can examine, explore, deconstruct, reconstruct, and invent new cultural relationships to technology.

# Field Building a Digital Sandbox

Data becomes the object of introspection, speculation and dynamic learning.



**Scalable City (2008):** Sheldon Brown and the Experimental Game Lab Center for Hybrid Multicore Productivity Research & Center for Research in Computing and the Arts, University of California, San Diego.

# Field Building a Digital Sandbox

Open research and inquiry are encouraged in a constantly evolving workbench of tools, processes and concepts.



**Augmented Reality Dinosaur Hunting:** Canon Technology demonstration at the 2010 ACM SIGGRAPH Conference.

# Field Building a Digital Sandbox

Dialogue across disciplines is a prerequisite; play and discovery are the vehicles for innovation and change.



**Paper Folding and Rapid Prototyping Participatory Demo** 2010 ACM SIGGRAPH Conference.

# Field Building a Digital Sandbox

This confluence of activity results in new paradigms for understanding local and global social ecologies.



#### Can You See Me Know (2005): Blast Theory

A game that happens simultaneously online and on the streets. Players from anywhere in the world can play online in a virtual city against members of Blast Theory.

# Field Building a Digital Sandbox

It can generate new models for understanding creativity as a cognitive process and critical component for innovation.



**Beautiful Modeler:** Karl D.D. Willis Student Computational Design Lab, Carnegie Mellon University

# Field Building a Digital Sandbox

It can be an incubator for generating transdisciplinary research that stimulates breakthroughs in science, engineering and art while addressing new perspectives on the world in which we live.



#### Eon (2003): Shawn Brixey

This high-frequency sound source modulates a small vessel of ultrapure water creating a series of pressure nodes where sound creates a miniature "starlike" sonoluminescent light source at the center of a small glass cylinder.



New theoretical models for understanding creative cognition and computation.

Research in this area developed or applied cognitive models as inspiration for computational models of creativity, support for human creativity, or approaches for educating people harness their creative potentials.

#### Interactive Cognition Lab

Students at the University of California, San Diego study creative collaboration and distributed cognition with choreographer Wayne McGregor and the Random Dance Company.





#### CreativeIT AWARD 1002736 Distributed Creative Cognition in Choreography

PIs: David Kirsch with choreographer Wayne McGregor University of California – San Diego



New modes of research integrating creativitybased methods, practices and theories to stimulate breakthroughs in science and engineering.

This area considered the role and performance of creative professionals in developing new technologies, discovering new patterns in information, and in finding new ways of seeing, knowing, and doing computing, science and engineering.

#### **Communication Acoustics & Aural Architecture Research Lab** CAIRA - a Creative Artificially-Intuitive and Reasoning Agent in the Context of Ensemble Music Improvisation



#### CreativeIT Award 1002851 : CAIRA - a Creative Artificially-Intuitive and Reasoning Agent in the context of ensemble music improvisation

PIs: Jonas Braasch, Selmer C. Bringsjord & Pauline Oliveros Rensselaer Polytechnic Institute



Innovative Educational Approaches that Encourage Creativity.

This area considered a broad range of approaches to learning that encouraged creativity: multi-disciplinary teaching and learning, design studio environments, skills development through making and doing, serious games, and open-ended problem-based learning.

#### Lifelong Kindergarten, MIT Media Lab

Young people create interactive stories, games, animations, and simulations -- and share their creations with one another online. In the process, they learn to think creatively, reason systematically, and work collaboratively.



#### **CreativeIT Award 1002713: Scratch 2.0: Cultivating Creativity and Collaboration in the Cloud**

PI: Mitch Resnick, Massachusetts Institute of Technology



Software engineering to support creative solution finding processes.

This area focused on the design and evaluation of creativity enhancing tools leading to the development of new software and interaction design methods to support people in being more creative. Natural Language and Dialogue Systems Lab SpyFeet explores how techniques for language generation and dialog management in natural language processing can be incorporated into the narrative structures of games, providing novel approaches for game authoring that will lead to more compelling and engaging games, appealing to a much wider segment of the population.







**CreativeIT Award 1002921 : Expressing Dramatic Character in Dialogue: A Toolkit for Creative Exploration of Linguistic Style** 

PIs: Marilyn Walker & Noah Wardrip-Fruin, University of California-Santa Cruz



#### NSF CreativeIT Workshops

To continue the dialogue among and between the research community and the National Science Foundation. Arts + Science + Technology RE/search Strategies: a Joint Meeting of the National Science Foundation and the National Endowment for the Arts

NSF Headquarters, September 15-16, 2010.

#### Bridging STEM to STEAM: Developing New Frameworks for Art-Science-Design Pedagogy

Rhode Island School of Design, January 19-20, 2011.

#### Establishing a Network of Excellence for Art + Science + Technology Research: Infrastructural and Intellectual Foundations

Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC) Rensselaer Polytechnic Institute, March 15-16, 2011.



#### NSF CreativeIT Workshops

To continue the dialogue among and between the research community and the National Science Foundation.

#### Science, Engineering, Art and Design (SEAD): Building a Network ongoing Center for Design Innovation, UNC Greensboro September, 2011

Maryland Institute College of Art, Baltimore, MD. November 2011

#### **XSEAD: Virtual Exchange Project**

ongoing Arizona State University University of Illinois Urbana-Champaign Rensseller Polytechnic Institute et. al.

#### **Media Systems**

University of California, Santa Cruz, August 2012



## 2010-2011 NSF CreativeIT Workshops

Establishing a Network of Excellence for Art + Science + Technology Research: Infrastructural and Intellectual Foundations

The Experimental Media and Performing Arts Center (EMPAC), Rensselaer Polytechnic Institute Troy, New York March 16-18, 2011



#### Workshop Objectives:

1) **Identify key issues in infrastructure needs** to support creativity-based technology research;

2) **Develop concrete plans** toward the development, management and constituent involvement in a distributed network infrastructure for the sustained support of the field;

3) **Identify leading institutions** that will move forward on proposals for the development of a research network.



## 2010-2011 NSF CreativeIT Workshops

Bridging STEM to STEAM: Developing New Frameworks for Art-Science-Design Pedagogy

Rhode Island School of Design, Providence, RI January 20-21, 2011

**Developing New Frameworks for Art/Science Pedagogy** 

BRIDGING

Workshop Objectives:

1) **Develop strategies for enhancing STEM education** through the integration of art and design thinking (STEM + ART = STEAM);

2) **Invent and share techniques that take advantage of simple, freely available IT systems and applications** to support enhanced observation, analysis and understanding of pictorial and numerical data;

3) **Build new connections** between art and design disciplines and scientific fields to advance understanding of complex systems, e.g., through improved strategies and techniques for the shared perception and visualization of scientific data.



## 2010-2011 NSF CreativeIT Workshops

WORKSHOP: Strategies for Arts + Science + Technology Research:

a Joint Meeting of the National Science Foundation and the National Endowment for the Arts

NSF Headquarters Arlington, VA September 15-16, 2010











Pedagogy Research / Practice Faculty/Student Relationship Classroom Management Resources



- How can we tap into the passions of today's youth to provide them with 21<sup>st</sup> century skills and employment?
- What is the role of the arts in complex issues like climate change?
- How can the arts and humanities work in service of solving larger problems?
- How can the structures of organizations and educational institutions enable art/science learning?
- How can we break down silos in university curriculums to foster these kinds of art/science collaborations?
- How does computing come together with culture?







#### 2011 NSF

Science, Engineering, Art and Design Network Building Workshops



# http://sead.viz.tamu.edu/about/about.html

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