

# GLOBAL THREADS

## A VIRTUAL FACULTY FOR ART AND SCIENCE

### A Project of the STArt Group

#### MISSION STATEMENT:

Contemporary civilisation is experiencing a period of profound social, political, economic, cultural, intellectual, philosophical and psychological transformation. Divisions of distance, time, race, gender, and nationality, are being challenged. Much of this is driven by the new global networks that are penetrating into every corner of the globe. New technology and new visions demand a comprehensive re-examination of who we are and what we are about.

Global Threads seeks to create distributed, physical-digital environments that bring artists, scientists, and other creative thinkers together for creative explorations of alternative ways of knowing the world -- models of actuality. These environments will be platforms for evolving prototypes for those concerned with problems of knowledge and learning in the contemporary world.

Global Threads will initiate worldwide interaction through a series of events based on global networks. Global Threads is dedicated to developing the technology that permits human participation that transcends time, space and culture, and will provide examples of the integrative powers of the new technology that can bring about the development of new models of learning and understanding.

Global Threads embraces multiple cultures and will welcome the participation of as many people as possible in both structured and non-structured ways. **Our collective human experience is our collective human knowledge.**

#### ART AND SCIENCE

While art and science can be seen as two ways of understanding our world, they are actually departure points along a fluid multi-dimensional continuum of knowledge. This includes not only art and science, but also connections to culture more broadly, including religion, politics and economics.

Initially, Global Threads will focus on the blurring of the boundary between art and science by presenting events over the course of a year that will feature artists and scientists grappling with the same theme. Each event will be choreographed by a distinguished thinker who will bring a team of colleagues to assist in launching a particular thread. As the threads are revealed, we expect participants to weave these threads into fabrics that will enable them to understand actuality.

Central to these events is the classic dichotomy between art and science that has long informed our thinking about the world and the universe, and our place in them. Global Threads not only seeks to explore the potential connections and synergy between art and science, but also to catalyse dialogue between artists and scientists and other creative individuals, and to innovate new and alternative models of knowing more relevant to contemporary intellectual and creative activity.

The connections between art and science over the past 30 years have been central to the development of digital technology. These relationships between art and science have been changed by the very same technologies that fostered them, and the convergence of previously disparate media. There is a compelling need to create new environments to support the development of deeper connections between art and science.

## EVENTS

Global Threads will use global events designed by an "event choreographer". This is a respected individual who has demonstrated an ability to think creatively and independently. It will be the responsibility of the event choreographer to create a stimulating and significant event that addresses a particular theme or thread.

Events are meant as launching points and ideally will be organic and unpredictable. The goal is to engage participants in non-trivial ways in the development of themes. Each event will be supported by a threaded discussion that will be started by the event choreographer. To increase global participation, Global Threads will promote new discussion technologies and systems that will permit mixing of languages, images, sounds and text.

The event choreographer will provide pre-event and post-event suggestions to participants to expand opportunities for involvement. These might take the form of simple exercises, experiments, suggested readings, and similar activities. Global Threads events are expected to stimulate the development of additional events that will continue the development of each thread or theme.

Events are meant to be dynamic and spontaneous, much like a good group conversation. Global Threads intends to bring back the voices of the past through the magnificent archives that are now available and produce seamless works that transcend time, space and culture.

Each event will be an expression of the choreographer's mode of actuality, i.e., the understanding of how the world is known. To support this activity, Global Threads plans to use physical-digital network communications both as a vehicle and a medium. Each choreographer will have the vast resources of a high bandwidth network, the Internet, and distributed, dynamic real-time computing resources. In some cases, a choreographer may choose to make a traditional lecture, but the possibilities are much more varied.

Choreographers could involve interactive simulations with feedback from global participants, or an improvisational multi-modal (music, images, dance, etc.) performance with connections to physical sensing/monitoring devices. In all cases the presentation would in some way involve interaction between the choreographer, his/her team and the event participants. The communication models explored and innovated through these events would exist as examples of the connections between disciplines.

## THEMES AND THREADS

We hope to present an experimental year of several initial events organised by members of the Global Threads Co-ordinating Committee. This will be followed by much more ambitious second and third years. By the end of the first year, we hope to produce a series of documents that help event choreographers assemble their events. The journal *Leonardo* is a possible partner in producing such a volume.

We hope that by the second year we will be able to present paired events on a monthly basis. The events will start at different times and have no fixed duration. Among the themes and threads that we hope to see are:

Models of Actuality	Language
The Universe	Perception
Mathematics and Visualization	Creativity

Structures of Reality  
The Earth  
Evolution and Emergent Systems  
Natural and Artificial Life  
Art and Science in the 21<sup>st</sup> Century

Consciousness  
Structures of the Mind  
Invented Reality  
Structures of Society

## **PARTICIPANTS**

People will be able to participate on different levels. Those having a bare minimum of a connection to the Internet, will be able to watch the spectacle. Those having robust two way communications will be able to more actively participate in the event. The event choreographer will determine the extent and the nature of the interactive participation.

## **INSTITUTIONS**

A number of institutions have expressed an interest in the project.

Center for Art and Media Technology (ZKM), Karlsruhe, Germany  
Columbia University, New York, N.Y.  
Royal College of Art, London, UK  
Studio National des Arts Contemporains, Le Fresnoy, Tourcoing, France  
University of California at San Diego, San Diego, California  
University of Maine, Orono, Maine  
University of Southern California, Los Angeles, California  
Research Centre, Wimbledon School of Art, London, UK

## **Timetable**

Year 1, Preparatory Year, 2001-02  
    Prototype construction  
    Building interface  
    Developing partnerships  
Year 2, Pilot Programme, 2001-02  
    Experiment reduced version of programme  
    Debugging  
Year 3, Full programme, 2002-03

## GLOBAL THREADS – Pilot Program, Year 2

Global Threads begins with a pilot program, a smaller number of talks and topics as a real-time experiment putting the virtual faculty in motion. Only some of the people presented have been notified and their mention here should be considered as an illustration of the principals of the faculty until confirmation is final.

*The following chart presents an illustrative pairing around a particular theme or thread.*

<b>THREAD</b>	<b>ARTIST</b>	<b>ARTIST'S FIELD</b>	<b>SCIENTIST</b>	<b>SCIENTIST'S FIELD</b>
New Paradigms in Art & Science	Linda Dalrymple Henderson	Art Historian	Isabelle Stengers	Science Historian, Université Libre of Brussels
The Nature of Life	George Lewis	Musician, Installations UC San Diego	François Jacob	Biologist, Nobel Prize for Medicine
Artificial Life/Artificial Intelligence	Richard Brown	Computer Installations Royal College of Art, London	Tom Ray	Computer Scientist, Oklahoma
The Mind/Body Problem	David Rokeby	Computer Installations, Toronto	John Searle	Philosopher of the Mind UC Berkeley
The Geometry of Nature	Andy Goldsworthy	Environmental Installations	Benoit Mandelbrot	Fractal Geometry, Yale University
Direction of Evolution	Karl Sims	Algorithmic Computer Animation	Stephen Jay Gould	Evolutionary Science, Harvard University
The Universe	Gunter Grass	Writer, Nobel Prize, Literature	Michio Kaku	Physicist, City College, City University of New York

<b>THREAD</b>	<b>ARTIST</b>	<b>ARTIST'S FIELD</b>	<b>SCIENTIST</b>	<b>SCIENTIST'S FIELD</b>
Mechanics of Perception	James Turrell	Earth & Light Installations	Igor Aleksander	Neural Systems Laboratory, Imperial College
Perception of Space	Merce Cunningham	Choreographer	Vilayanur Ramachandran	Psychology of Perception UC San Diego
Invented Reality	Ingmar Bergman	Cinematography	Paul Watzlawick	Psychologist Stanford University

Structures of Reality	Jean-Claude Risset	Composer	Roger Penrose	Mathematician, Oxford University
Structure of the Earth	Maya Lin	Architect & Landscape artist	George Denton	Geologist University of Maine
Structure of the Mind	Laurie Anderson	Performance artist	Tor Norretranders	Science writer
Structure of Society	Anna Deavere Smith	Actress, Head of America Repertory Theater, Havard	Edward Wilson	Biologist
The Implied Values of 20th Century Art & Science	Vaclav Havel	Playwright & President, Czech Republic	Philip Kitcher	Philosopher of Science, Columbia University

## **The Methodology**

### **What is different about Global Threads?**

This project involves recognised leaders in Science and Art. The broadband network provides the first opportunity to interconnect them from their home sites to universities and research organisations around the world. It goes beyond the extension of a single institution's classroom curriculum and becomes a trans-institutional programme and part of the curricula of several universities and research centres at the same time.

### **Global Threads operates on two levels**

#### *The Member Network:*

The Member Network will be a virtual private network connecting Global Thread members with universities and research institutions that will permit member institutions to interact with the Global Thread members during and after their events.

#### *The Public Network:*

Global Threads will provide a live webcast of each event for the general public. Global Threads will also provide an archive of all materials produced.

### **The Participants**

The choreographers provide an opportunity for contact with related research and innovative ideas at the source, usually from the pioneering scientist or artist. Participants can interact with the choreographer during the session through a variety of media.

### **Event**

As indicated earlier, each event will be an expression of each individual choreographer's mode of actuality, i.e., his or her understanding of how the world is known. In some cases, the choreographer may choose to present a traditional lecture, but possibilities are much more varied. Global Threads intends to use physical-digital network communications as both a vehicle and a medium. Each choreographer will have the vast resources of a high bandwidth network, the Internet, and distributed, dynamic real-time computing resources.

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### **Archive – Resource of material and documentation of events.**

Events will be archived both to preserve an historical record for the benefit of future choreographers and to allow for future dissemination to the global community who may not have been able to participate in an event. To this end, we are currently in discussion with *Leonardo* magazine regarding this. We also intend to use the interactive website, MARCEL, which is currently under construction and nearing completion.

## **Transmission**

Global Threads will be targeted to the new high bandwidth initiatives that will eventually create a high bandwidth network loop around the globe. These efforts include: DFN, (Germany), Renater 2 (France), SuperJANET4, (UK), StarTap (U.S.), CANARIE, (Canada), Nordunet, (Scandinavia), SURFnet (Netherlands), TEN 155 (Europe), Q-MED (Israel, Cyprus) and the Asia-Pacific Advanced Network (Singapore) among others.

Some aspects of Global Threads will be available over the Internet, however the richest experience will be obtained by those participants having broadband access.

## **Who is responsible for Global Threads?**

The STArt Group (Science, Technology, and Art Group), an independent, international non-profit organisation, a registered 501.3 in the State of Maine, dedicated to providing opportunities for collaborations between artists and scientists organised to launch Global Threads. STArt is located at Ayers Island, Orono, Maine as its first North American site.

## **STArt Group Coordinating Committee:**

Gudrun Bielz, G.I.F.T., London, UK  
Richard D. Brown, Research Fellow, Royal College of Art, London, UK  
Don Foresta, Director, Laboratoire de Langage Electronique, Paris, France  
Gerald O'Grady, formerly Director, Center for Media Study, SUNY at Buffalo and Fellow at W.E.B. Du Bois Institute for Afro-American Research and Department of Afro-American Studies, Harvard University  
Roger Malina, Editor-in-chief, Leonardo Magazine, San Francisco, California  
George Markowsky, Chair, Dept. of Computer Science, Univ. of Maine, Orono, Maine  
Vibeke Sorensen, Chair, Div. of Animation & Digital Arts, School of Cinema-Television, University of Southern California, Los Angeles, California

## **Project coordination:**

### North America

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## Budget

<b>GLOBAL THREADS</b>			
YEAR 1, PREPARATORY YEAR			
	Items	Subtotals	Total
<b>GT Staff Expenses</b>			
Director	\$65 000		
Chief Technologist (half-year)	\$32 500		
Chief Designer (half-year)	\$32 500		
Secretary/Assistant	\$30 000		
Fringe Benefits (33%)	\$52 800		
<i>Salaries</i>		\$212 800	
<b>GT Office Expenses</b>			
Rent and Utilities	\$18 000		
Telephone	\$5 000		
Postage	\$2 000		
Travel	\$24 000		
Furniture and Equipment	\$6 000		
Publicity	\$24 000		
Miscellaneous	\$12 000		
Computer Connectivity	\$26 000		
GT Website Maintenance	\$6 000		
<i>Total Office</i>		\$123 000	
<b>GT Board Expenses (8 members)</b>			
Travel (2 trips)	\$32 000		
Telephone	\$2 000		
<i>Total Board</i>		\$34 000	
<b>GT Lecturer Expenses Per EVENT (x 48)</b>			
Honorarium	\$0	\$0	
Travel	\$0	\$0	
Video Production	\$0	\$0	
Publishing	\$0	\$0	
<i>Total</i>		\$0	
<b>GRAND TOTAL</b>			<b>\$369 800</b>



<b>GLOBAL THREADS</b>			
YEAR 2, PILOT PROGRAM			
	Items	Subtotals	Total
<b>GT Staff Expenses</b>			
Director	\$66 000		
Chief Technologist	\$66 000		
Chief Designer	\$66 000		
Secretary/Assistant	\$31 000		
Fringe Benefits (33%)	\$75 570		
<i>Salaries</i>		\$304 570	
<b>GT Office Expenses</b>			
Rent and Utilities	\$18 000		
Telephone	\$6 000		
Postage	\$3 000		
Travel	\$24 000		
Furniture and Equipment	\$6 000		
Publicity	\$24 000		
Miscellaneous	\$12 000		
Computer Connectivity	\$42 000		
GT Website Maintenance	\$6 000		
<i>Total Office</i>		\$141 000	
<b>GT Board Expenses (8 members)</b>			
Travel (2 trips)	\$32 000		
Telephone	\$2 000		
<i>Total Board</i>		\$34 000	
<b>GT Lecturer Expenses Per Event (x 20)</b>			
Honorarium	\$2 000	\$60 000	
Travel	\$1 000	\$30 000	
Video Production	\$1 500	\$45 000	
Publishing	\$1 000	\$30 000	
<i>Total</i>		\$165 000	
<b>GRAND TOTAL</b>			\$644 570

<b>GLOBAL THREADS</b>			
YEAR 3, FULL PROGRAM			
	Items	Subtotals	Total
<b>GT Staff Expenses</b>			
Director	\$67 000		
Chief Technologist	\$67 000		
Chief Designer	\$67 000		
Secretary/Assistant	\$32 000		
Fringe Benefits (33%)	\$76 890		
<i>Salaries</i>		\$309 890	
<b>GT Office Expenses</b>			
Rent and Utilities	\$18 000		
Telephone	\$7 000		
Postage	\$4 000		
Travel	\$24 000		
Furniture and Equipment	\$6 000		
Publicity	\$24 000		
Miscellaneous	\$12 000		
Computer Connectivity	\$45 000		
GT Website Maintenance	\$15 000		
<i>Total Office</i>		\$155 000	
<b>GT Board Expenses (8 members)</b>			
Travel (2 trips)	\$32 000		
Telephone	\$2 000		
<i>Total Board</i>		\$34 000	
<b>GT Lecturer Expense Event (x 48)</b>			
Honorarium	\$2 000	\$104 000	
Travel	\$1 000	\$52 000	
Video Production	\$1 500	\$78 000	
Publishing	\$1 000	\$52 000	
<i>Total</i>		\$286 000	
<b>GRAND TOTAL</b>			\$784 890
<b>GRAND TOTAL FOR 3 YEARS</b>			\$1 799 260

v. 10/02/00