

New Media Fellowships  
2004 Project Cover Form

**Josephine Anstey and Dave Pape**

**Title** The Trial The Trail

**Genre** virtual reality drama

**Applicants' Role in Production** writer, director, producer, software architect

**Production Format** projection-based, interactive virtual reality; software running on Linux PCs

**Brief Project Description** (do not exceed space given below)

This project is a virtual reality drama, *The Trial The Trail*, to be presented in an immersive virtual reality system. Imagine Tarkovsky's *Stalker*, crossed with *Alice Through the Looking Glass*, crossed with *Monty Python and the Holy Grail*. Now imagine embarking on a guided journey through this warped yet familiar landscape. As you proceed your actions and interactions are logged, interpreted psychologically, and used to determine the outcome of your quest.

The underlying question for this project is: Can virtual reality be as powerful a medium for fiction as novels, plays, film? VR immerses the user in a 3D audio/visual environment which she navigates and interacts with in real time. In fiction, the reader/viewer identifies with a protagonist who is dealing with a challenging situation. It has proven very difficult to bring the two together and make the user the protagonist, navigating a dramatic situation that is rich emotionally, psychologically, sociologically, politically. This project builds on the lessons we learnt creating a previous virtual fiction, *The Thing Growing*, and continues our explorations and experimentations in the field of virtual fiction.

	<b>New Media Fellowships</b>	Check One: <input checked="" type="checkbox"/> Sample
	<b>2004 Sample Work Form</b>	Supplemental _____

## Josephine Anstey and Dave Pape

If you are sending more than one sample, please copy this page. Sample(s) must be cued: indicate how long each sample should be viewed for a COMBINED viewing time of no more than 15 minutes. If slides are included in this application, please list the title and year of the work on this form.

**Title** The Thing Growing

**Year** 2000

### Technical Information

**Original Format**

**Format Submitted for Viewing**

**Preferred OS**

	Software		Software		Windows
	Web		Web		Mac
	Installation	x	VHS		Unix
x	Other _virtual reality_		Other _____		Other

**Web Information** (answer only if sample work is in Web format)

URL _____	(if more than one please list them below)
Browser requirement(s) _____	
Plug-in requirement(s) _____	
This sample requires broadband connection (fast Internet connection)	
A local copy of the sample work has been included with the application	

### **Special Information for Screening:**

The documentation of all three sample works is on a single VHS tape. They are in the order: 1. *The Thing Growing*, 2. *PAAPAB*, 3. *Falling Over You*. The total length of the samples is 15.5 minutes. A teaser of the proposed project - *The Trial The Trail* - is also included at the end of the tape (30 seconds).

### **Description of Work** (use an additional sheet if necessary)

The impetus for *The Thing Growing* was a short story Anstey had been writing. In the story she wanted to explore a relationship that was cloying and claustrophobic but emotionally hard to escape. An immersive, interactive VR environment seemed an ideal medium to recreate the tensions and emotions of such a relationship.

*The Thing Growing* is designed to allow the user to take part in a model of a dysfunctional relationship. Much of the *Thing*'s behavior models childish power plays. It is designed to engage at a level beneath that of polite adult intercourse. It pouts, whines and threatens when it doesn't get its own way. It flatters outrageously and insults viciously. It gloats when the user is in its power. To express its love it copies the user or demands to be copied. All of these behaviors are designed to conflate self and other. Jessica Benjamin suggests that during the process of differentiation from the mother, the child's task is not merely to establish that it is separate, but that it must also recognize the other as a subject. She suggests that this "mutual recognition is perhaps the most vulnerable point in the process ..." She discusses the positions that the evolving self may become stuck if unable to negotiate this point: "If I completely control the other, then the other ceases to exist, and if the other completely controls me, then I cease to exist." It is this emotional territory that the *The Thing Growing* is designed to explore.

The CAVE is a projection-based system that allows groups of people to become immersed in 3D graphics and sound. The CAVE, a room-sized, virtual reality theater, was developed in 1992. Seamless computer generated images are rear-projected onto the walls and front-projected onto the floor. In a CAVE or CAVE-like system, the position of the interactor relative to the VR world is tracked by a number of sensors. A sensor on the head allows the system to correctly render real-time graphics from a correct, first-person 3D perspective as the user looks about and moves through the virtual environment. To see the stereoscopic effect the user wears 3D glasses and the graphics system projects an image for each eye. The user carries a wand with a joystick for navigation and buttons which can be programmed for interaction. This wand is also tracked so that the system knows where the user's hand is.

**Artists' role:** writer, director, producer, all programming, some 3D modelling

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### Josephine Anstey and Dave Pape

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**Title** PAAPAB

**Year** 2001

#### Technical Information

**Original Format**

**Format Submitted for Viewing**

**Preferred OS**

	Software		Software		Windows
	Web		Web		Mac
	Installation	x	VHS		Unix
x	Other _virtual reality_		Other _____		Other _____

#### Web Information (answer only if sample work is in Web format)

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**Description of Work** (use an additional sheet if necessary)

Virtual Reality experiences can be shared over high speed networks. This means that participants in different cities or countries can enter the same virtual environments. The different participants will see "avatars" of each other. An avatar is a graphic representation of the person in the virtual environment. The avatars move as the users navigate through the virtual environment. The position and orientation from the tracking sensors attached to the user's head and hands is fed to her avatar, so when the user moves her head, the avatar's head moves, etc. Avatars can come in all shapes and sizes, the avatar on the left is a skeleton with a photographic image for its face.

PAAPAB (Pick An Avatar, Pick A Beat) is a networked dance floor application for CAVE or other projected VR display systems, built in 2001-2 at the University at Buffalo. In the video documentation users in CAVEs and CAVE-like systems in Amsterdam, Chicago, Champaign-Urbana, Buffalo, and Bloomington, are all on the virtual dance-floor. In addition life-size puppets dance around - indistinguishable at first from the avatars. The puppets can be animated by the users. Users from the different remote locations can watch each other record motion for the puppets. They can also dance with each other and their puppet recordings on the dance floor.

The video also documents a non-networked version of this application that we installed as part of a real dance floor at a fundraiser for the Hallwalls Contemporary Arts Center in Buffalo. For this installation, we used some parts of our low-cost VR system, but sacrificed stereo imagery for size - we used our two projectors to project the virtual environments onto a large, plastic screen that was roughly ten feet high by 20 feet long. Recording a puppet on the virtual dance-floor became part of the evening's entertainment along with watching break dancers, drag queens, fashion shows and live bands.

**Artists' role:** writer, director, producer, all programming, some 3D modelling

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**Title** Falling Over You

**Year** 2003

### Technical Information

**Original Format**

**Format Submitted for Viewing**

**Preferred OS**

	Software		Software		Windows
	Web		Web		Mac
x	Installation	x	VHS		Unix
	Other _____		Other _____		Other

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**Description of Work** (use an additional sheet if necessary)

The "Falling Over You" Interactive Wall is a large scale, interactive video environment. It was set up at the Albright Knox Art Gallery in conjunction with an exhibition of paintings "Frank Moore: Green Thumb in a Dark Eden" (Feb-April 2003). The exhibition included paintings from Moore's "Niagara Falls" series. Since these are of particular local interest, the Gallery wanted the interactive space to be based on the Falls. The interactive wall is a meditation, an interpretation, and a point of access to Frank Moore's paintings, which deal with environmental and healthcare activism. Moore's "Niagara Falls" series was the initial inspiration for the wall's design; the graphic elements are taken from his paintings, and the painting behind the virtual Falls is "Niagara".

Looking through the door, the Interactive Wall is merely a large screen in an empty room showing video footage of Niagara Falls. If you enter the room and move about in front of the screen, scientists in white coats, buffalo, and eye-balls tumble over the falls; mixed swarms of butterflies, snowflakes and chemical symbols drift across with the spray; hybrid telephone/cornstalks and flower pistil/hypodermic needles grow up against the current. If you get closer, the video images part around you and reveal a painting beneath. The visuals are accompanied by a sound recording of Niagara Falls.

**Artists' role:** storyboard, all programming

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**Title** Additional documentation for "The Thing Growing", "PAAPAB" and "Falling Over You" samples, and "The Trial The Trail" proposal

**Year**

### Technical Information

**Original Format**

**Format Submitted for Viewing**

**Preferred OS**

Software		Software	Windows
Web	x	Web	Mac
Installation		VHS	Unix
Other _____		Other _____	Other

**Web Information** (answer only if sample work is in Web format)

	URL _____ (if more than
	Browser requirement(s)
	Plug-in requirement(s)
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**Description of Work** (use an additional sheet if necessary)

Because it is difficult to fully document interactive immersive environments on tape, we are including a set of web pages (on CD) with further text and images describing the environments and the technology involved.



## Artists' Statement - Anstey/Pape

We believe that immersive virtual reality (VR) is a tremendously powerful medium for artistic expression. Immersive VR means the user is in a 3D scene, sees the graphics in stereo, and can interact directly with virtual objects. We are interested in seeing VR reach its potential by producing strong content, pioneering VR authoring tools for artists, and promoting low-cost, projection-based, VR solutions so that this exciting medium can become as ubiquitous as other media.

Our primary focus for content creation is the construction of virtual drama. When we read a novel or watch a film, we may identify with the protagonist. In virtual reality (VR) the relationship is more direct; the user is the protagonist. We build a dramatic environment in which the user, as the main protagonist, interacts with virtual characters. The fiction that results is something that happens to the user; the application does not simply tell her a story, it actively involves her in a chain of events with emotional implications. We believe that the drama is heightened in immersive VR environments, because the user is a peer, in terms of size, with the virtual characters. The characters have a physical presence. They can get close to the user. They can use their size to intimidate, get in the way, indicate affection.

Josephine Anstey has been working with experimental narrative since 1983. She collaborated with Julie Zando on a series of video-tapes, including *Lets Play Prisoners* (1988), and *The Bus Stops Here* (1990). The tapes explore sexuality, power relationships and desire. These themes resurface in our virtual drama. *The Thing Growing* (2000), recreates a relationship that is cloying and claustrophobic but emotionally hard to escape. The user is enticed into experiencing the ups and downs of the relationship by the *Thing*, an intelligent agent who simulates emotions in order to stimulate her emotional and psychological responses. The themes to be explored in our proposed project, *The Trial The Trail*, include the dyads of bullying/being bullied; humiliating/being humiliated; trust/betrayal and the nature of our hearts' desire. An interactive dramatic environment allows the user to directly explore these issues, her own emotions drive the narrative, but at the same time it is a safe space, an unreal space, a place of play, introspection, risk-taking and discovery. These works are intimate explorations for the user, not just of a virtual landscape but of her own psyche.

Producing work for VR is technically challenging, artists must either be programmers or work with programmers. Software toolkits that exist are expensive and limited. Since 1996, Pape has been designing

an open source VR authoring framework, Ygdrasil, for the swift construction of virtual environments. A wide variety of art and cultural heritage projects have been created with this framework. Projects include: The Multi Mega Book in the CAVE (Fischnaller et al.) winner of the Foreign Title Award in the Theatre and Exhibition Section of the Multimedia Grand Prix '97, Multimedia Content Association of Japan; Mitologies (Roussos & Bizri) ; Alive on the Grid (Sandin et al.) which premiered as the first networked VR art show at the Ars Electronica Festival in 2001; and the VR exhibits at the Foundation of the Hellenic World in Athens. We believe that it becomes important to recognize software development as an integral part of the art making process for computer-based art. The Ygdrasil toolkit handles a number of activities common to VR environments, such as assembling a world from 3D models, collision detection, navigation, and dynamic event-handling. It provides a framework for extension; application-specific plugins may be added to define behaviors for objects or characters. The Ygdrasil system is designed to be accessible on a variety of levels - non-programmers can construct environments using existing modules; programmers can add new modules. Anstey and Pape's projects use, beta-test and refine Pape's software tools.

A projection-based VR system is a core element of our proposed project, facilitating the kind of psychological and cathartic fictional experiences we are interested in producing. However, the cost, size, fragility, and high maintenance aspects of such systems have made them relatively rare. Systems such as the CAVE(r) Virtual Reality Theater cost on the order of \$1,000,000, have a very large architectural footprint, and are usually only found in research laboratories in academia and industry. In the last few years, pressure from the games industry has resulted in PCs with fast video cards capable of creating real-time, highly resolved, 3D graphics of a quality that was once only obtainable from Silicon Graphics workstations and reality engines. Using PCs and the new range of DLP projectors it has become feasible to prototype projected VR systems that, if not within the range of the home entertainment industry, are within the economic range of museums, galleries, university department, games arcades etc. Since 2000 Anstey and Pape have been researching low-cost VR solutions and have developed low-cost VR systems for the Department of Media Study 2000-1 and for Vassar College's Media Cloisters (ongoing).

Our ideal exhibition set up is that the user should be alone with the virtual world, uninhibited in her interactions with the virtual characters. We look forward to the day when VR systems are so common we will routinely exhibit work to an audience of one - the user who is the protagonist of our virtual drama.

## Project Narrative - Anstey/Pape

### Description

This project is a virtual reality drama, *The Trial The Trail*, to be presented in an immersive virtual reality system. Imagine Tarkovsky's *Stalker*, crossed with *Alice Through the Looking Glass*, crossed with *Monty Python and the Holy Grail*. Now imagine embarking on a guided journey through this warped yet familiar landscape. As you proceed your actions and interactions are logged, interpreted psychologically, and used to determine the outcome of your quest.

The underlying question for this project is: Can virtual reality be as powerful a medium for fiction as novels, plays, film? VR immerses the user in a 3D audio/visual environment which she navigates and interacts with in real time. In fiction, the reader/viewer identifies with a protagonist who is dealing with a challenging situation. It has proven very difficult to bring the two together and make the user the protagonist, navigating a dramatic situation that is rich emotionally, psychologically, sociologically, politically. This project builds on the lessons we learnt creating a previous virtual fiction, *The Thing Growing*, and continues our explorations and experimentations in the field of virtual fiction. We hold that the following are necessary for success:

1. The deft and appropriate adaptation of dramatic techniques from existing narrative media and of interactive strategies from the games industry and art community. [1]
2. The use of artificial intelligence. In order for the virtual world to be responsive, and the virtual characters to react believably, a sophisticated intelligence engine is needed to drive their behavior. [2]
3. Tools for the creation of virtual environments. [3]
4. A compelling VR display device. We have been researching lower-cost VR solutions. [4]
5. A safe space in which a user can become privately involved in the virtual world.

Our basic approach dramatically is to start with a simple, "ideal", narrative arc that we wish the user to traverse. The basic conceit of *The Trial The Trail* is a quest narrative: on a journey through the virtual landscape users will encounter challenges and distractions as they attempt to reach the grail, their heart's desire. These include creatures to fight or rescue, rivers to cross or splash in, reed beds to get lost in. The experience is designed to be a psychological encounter. The scenarios put users in situations where they may be aggressive and bullying, or have to cope with aggression; they may mock others or find that they are

mocked. Their reactions are tabulated and an analysis of their personality is made - admittedly an analysis that serves the ends of this drama. If they choose to go forward to get their heart's desire, they may get Life: which is correlated with domination and the inability recognize the existence of anyone else; or Death: correlated with submission, and the desire to let some powerful other take care of everything. The quest scenarios are comedic and fantastic, but the ending is serious.

We rely on the intelligent agents to establish, populate, and maintain that narrative, engage the user, and, by simulating emotion, stimulate her emotional and psychological responses. The agents are the engine that drives the user through the experience in such a way that the dramatic impact is maximized. An iterative design process with much user testing tells us how to refine the narrative; where to add material to facilitate alternate routes through the story space; and how to build and augment the agents' behavior. The responsiveness of the agents to the user is of primary importance. One of the main challenges Anstey and Pape faced in creating their previous virtual drama was to devise ways of divining the user's feelings and motivations so that the agent could respond appropriately on the basis of fairly minimal input from tracking sensors and a 3D joystick. Our primary solution was to set up a series of scenes with a tight narrative context which enabled the agents to make intelligent guesses about the user's state of mind from the simple actions that resulted in input data. Using a sophisticated AI system would significantly increase the agents' capacity to interpret the user's state of mind and to respond appropriately. For *The Trial The Trail* we have started a collaboration with the SNePS AI group to build agents that can: interact with the users in natural language; have a model of the user's beliefs and emotional state; and know what they, themselves, are doing and have done. SNePS AI software is being married with Pape's VR authoring toolkit, Ygdrasil. [5]

#### **Feasibility, Exhibition of Work, Use of Fellowship Budget**

The work is viewed on a stereoscopic, projection-based VR system. The user's head and hands are tracked, so that the virtual world knows where the user is, and so that the user can interact with objects in the virtual world. We have built such a system for the Department of Media Study at Buffalo. Specific upgrades need to be made to this system to minimally support the addition of sophisticated intelligent agents, but we will be able to use it for development purposes. We have been working with the SNePS AI group since last January, have built a very simple agent prototype, and have written a research grant proposal in order to get additional funding for graduate assistants. The task we have set ourselves is

difficult, however, we believe that we will have a first prototype of the environment ready by summer 2004, and then anticipate a further year of user-testing and refinement.

The work can only be exhibited on the specialized equipment. We have shown our previous VR projects widely at festivals, conferences and museums, by using the equipment of universities we have been connected with or the CAVE VR systems at centers such as the Ars Electronica Center (Linz, Austria), the NTT InterCommunication Center (Tokyo), and the Foundation of the Hellenic World (Athens). Public CAVEs are few and far between, and it is limiting to rely on university equipment which is needed during the semester for the teaching of classes. We would therefore use the Rockefeller Media Fellowship funding primarily to buy a projection-based virtual reality system, constructed from commodity parts, and supporting software, which we could then deploy freely to display the project in any location.

We would also reserve some funds for travel to the Electronic Visualization Laboratory in Chicago or Indiana University where we could also test our application in a CAVE environment to maximise the places that it could be shown. Since the production of a virtual reality environment is labor intensive, we would use the remaining money for artists fees in order to buy some time for project creation. The budget for the whole project is approximately \$150,000 including two years of research funding for graduate students, and equipment for them. We anticipate the project could go forward, rather more slowly, without funding for graduate students as we and our AI collaborators are on the faculty at the University of Buffalo, and interested students could work for credit.

1. Anstey, Josephine, Dave Pape, "Scripting the Interactor: An Approach to VR Drama" in proceedings of the Fourth Creativity and Cognition Conference, ACM SIGCHI, Loughborough University, UK, Oct 13-17, 2002
2. Anstey, Josephine, Dave Pape, "The Provoking Thing: A VR Relationship" in the Technical Report of Emotional and Intelligent II: The Tangled Knot of Social Cognition. Papers from the 2001 AAAI Fall Symposium, North Falmouth, MA, 2-4 Nov 2001
3. Pape, Dave, Josephine Anstey, Margaret Dolinsky, Edward J. Dambik. "Ygdrasil - a framework for composing shared virtual worlds", to be published in Future Generation Computing Systems, Elsevier Press
4. Pape, Dave, Josephine Anstey, Greg Dawe "A Low-Cost Projection Based Virtual Reality Display" The Engineering Reality of Virtual Reality. 2002, San Jose, CA, 24 Jan 2002
5. Anstey Josephine, Dave Pape, Stuart C. Shapiro, and Vikranth Rao, Virtual Drama with Intelligent Agents. Proceedings of the Ninth International Conference on Virtual Systems and MultiMedia (VSMM), Montreal, Quebec, Canada, October 15-17, 2003.

# New Media Fellowship

## Josephine Anstey, Dave Pape

### Budget

#### Hardware

graphics PC	\$ 2,500
large polarization-preserving screen	4,000
2 DLP projectors	6,000
polarization filters & glasses	900
3D tracking system & wand	5,000
sound system & audio PC	3,600
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Total	\$ 22,000

#### Software

OpenGL Performer license	\$ 500
speech recognition software	200
speech synthesis software	300
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Total	\$ 1,000

#### Travel

Visit to Chicago or Indiana CAVE	\$ 2,000
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#### Artists' fees

Artists' fees	\$ 10,000
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#### Grand total

\$ 35,000

Josephine Anstey  
Department of Media Study,  
University at Buffalo

<http://www.ccr.buffalo.edu/anstey>

## Professional Experience

**Assistant Professor**, Department of Media Study (DMS), University at Buffalo, 2000 - present

- Courses: virtual reality (VR) production, computer graphics programming, interactive media analysis.
- Curriculum development: "digital" component of Media Studies BA, MAH and MFA degrees
- Facilities development: immersive VR studio & linux lab for students studying realtime, interactive computer graphics.
- Other activities: VR & collaborative VR projects with UB's Center for Computational Research (CCR) & New York State Center for Engineering Design and Industrial Innovation (NYSCEDII).

**Research Assistant**, Electronic Visualization Laboratory (EVL), UIC, 1996-2000

- Participant and/or organizer of EVL's VR demonstrations and exhibitions for international conferences including SIGGRAPH, SuperComputing, Ars Electronica Festival, MediaArtech, ISEA, iGrid
- Webmistress for EVL website. Responsible for site content and administration. Documented VR research in scientific visualization and art. 1995-2000

## Professional Activities

**Virtual Reality Art and Research**, 1995 - present

- Since 1995 I have been building virtual reality projects, my major interest is interactive drama in VR, "The Trial The Trail" (current), "The Thing Growing" (1997-2001). I am currently working on the development of intelligent agents to serve as actors for these dramas with the SNePS AI group. I also work on networked VR projects, "PAAPAB" (2001-2003), "Shared Miletus" (2000). Other art collaborations include an interactive wall installation, "Falling Over You" (2003), a virtual reality experience "The Multi Mega Book in the CAVE." (1996-7). These VR projects have shown world wide.
- VR projects involving scientific visualization and industrial application include, "Enhancing Crystal Structure Determination through Data Mining, Collaborative Environments, and Grid Computing" (2002-3), "Interactive welding application" for Fronius, an Austrian welding company (1997)
- I am involved in research on low-cost VR solutions, have developed a Low Cost VR System for the Department of Media Study, UB, and use the system to direct the creation of VR art projects by UB Students.
- Artist in Residence, Ars Electronica Center (AEC), Linz, Austria, May- Aug 1997.

**Video Art**, 1983 - present

- Since 1983 I have worked with Julie Zando as a writer, performer and producer on a series of award winning, experimental video tapes. "The Apparent Trap" (performer, 1999); "Uh-Oh" (producer, 1994); "The Bus Stops Here" (writer/producer/performer, 1990); "Let's Play Prisoners" (writer/performer, 1988); "Hey Bud" (performer, 1987); "I Like Girls for Friends" (performer, 1986); "Fru-Fru Le Bon Weston Goes to the Soft Seas" (performer 1983). These videos have shown world wide, and many are in the permanent collection at MOMA.

**Fiction**, 1984- present

- Since 1985 I have been writing a series of short stories. Two have been published, one is a self-published hyper-text, one is a video tape. "The House of Nishime", 1996; "Les Girls", 1996; "Dwayne Loves Johnny Coggio", 1995; "Let's Play Prisoners", 1988.

## **Radio Documentary, 1994**

- I produced a 30 minute documentary on BlackFeet Women Forest Fire Fighters which aired on NPR's Horizons, "Battling the Heat: BlackFeet Women Fire-Fighters." Produced a five minute report of the same material which aired on the BBC's Woman's Hour, "BlackFeet Firewomen".

## **Conference Activities**

- Juror, Medi@terra 2002, award for Best Project in the Artificial Entities Category
- Panel Chair, SIGGRAPH 2001, The CAVE and Beyond: VR Art in Museums and Galleries
- Panel Chair, SIGGRAPH 1998, Chair of the Interactive Installations Panel, Gallery Talks

## **Education**

- **Master of Fine Arts** in Electronic Visualization, University of Illinois at Chicago (UIC), 2000
- **Master of Arts** in American Studies/Women's Studies, University at Buffalo, State University of New York, 1986
- **Bachelor of Arts (hons)** in English Studies, University of East Anglia, Norwich, England, 1977

## **Grants & Awards**

- **Young Investigator Award**, Exceptional Scholars Program, University at Buffalo, 2003
- **NSF Award 0204918, C0-Pi: ITR: Enhancing Crystal Structure Determination through Data Mining, Collaborative Environments, and Grid Computing**, 2002-3
- **Faculty Development Grant**: Awarded Education Technology Grant, by the Faculty Development Committee of the University at Buffalo, 2001
- **Foreign Title Award**: "The Multi Mega Book in the CAVE," in the Theatre and Exhibition Section of Multimedia Grand Prix '97, Multimedia Content Association of Japan, 1997
- **University Fellowship**: University of Illinois at Chicago, 1995-1997
- **Second Prize**: "Uh-Oh", 6th International Video Festival, Cultural Council of the City of Vigo, Spain, 1995
- **Chelsea Award for Short Fiction**: "Dwayne Loves Johnny Coggio", 1994
- **Best Dramatic Video**: "The Bus Stops Here", 15th Annual Atlanta Film & Video Festival, 1991
- **Best Experimental Video**: "Let's Play Prisoners", 13th Annual Atlanta Film & Video Festival, 1989
- **Grand Prize**: "Let's Play Prisoners", Black Maria Thomas Edison Film & Video Festival 1989

## **Publications & Reviews (see addendum)**

## **Exhibitions (see addendum)**

## **Presentations (see addendum)**

## **Personal**

- Have lived and worked on three continents.
- Speak Spanish, French and a little German.
- Practice tai chi and garden.



**Josephine Anstey**

Department of Media Study,  
University at Buffalo

<http://www.ccr.buffalo.edu/anstey>

**Publications**

Pape, Dave, Josephine Anstey, "Falling Over You: Interactive Wall", in SIGGRAPH 03, Sketches & Applications, San Diego, CA, July 27-31 2003

Pape, Dave, Josephine Anstey, Margaret Dolinsky, Edward J. Dambik. "Ygdrasil - a framework for composing shared virtual worlds", to be published in Future Generation Computing Systems, Elsevier Press

Anstey, Josephine, Dave Pape, "The Trial The Trail: Building a VR Drama" in the proceedings of TIDSE 2003, 1st International Conference on Technologies for Interactive Digital Storytelling and Entertainment, Darmstadt, Germany, March 24 - 26, 2003 (long version)

Anstey, Josephine, Dave Pape, "Scripting the Interactor: An Approach to VR Drama" in the proceedings of the Fourth Creativity and Cognition Conference an ACM SIGCHI Conference, Loughborough University, UK, Oct 13-17, 2002

Pape, Dave, Josephine Anstey, Greg Dawe "A Low-Cost Projection Based Virtual Reality Display" The Engineering Reality of Virtual Reality, 2002, San Jose, CA, 24 Jan 2002

Anstey, Josephine, Dave Pape, "The Provoking Thing: A VR Relationship" in the Technical Report of Emotional and Intelligent II: The Tangled Knot of Social Cognition, Papers from the 2001 AAAI Fall Symposium, North Falmouth, MA, 2-4 Nov 2001 (ps)

Pape, Dave, Josephine Anstey, Bryan Carter, Maria Roussou, Tim Portlock, "Virtual Heritage at iGrid 2000" in the Proceedings of INET 01 The Internet Global Summit, Stockholm, Sweden, 5-8 June 2001

Pape, Dave, Sarita D'Souza, Josephine Anstey, Tom DeFanti, Maria Roussou, Athanasios Gaitatzes "Shared Miletus: Towards a Networked Virtual History Museum" in the Proceedings of the International Conference on Augmented, Virtual Environments and Three-Dimensional Imaging, Mykonos, Greece, 30 May - 1 June 2001.

Anstey, Josephine, "The User Knows Best: refining a VR Interactive Fiction Project" in the Proceedings of ISEA 2000, 10th International Symposium on Electronic Art, Paris, France, 7-10 December, 2000

Anstey, Josephine, Dave Pape, "Being There: Interactive Fiction in Virtual Reality," in the Proceedings of Consciousness Reframed 3, Newport, Wales, UK, 24-26 August 2000

Anstey, Josephine, Dave Pape, Dan Sandin, "The Thing Growing: Autonomous Characters in Virtual Reality Interactive Fiction," in the Proceedings of IEEE Virtual Reality 2000, New Brunswick, NJ, March 18 - 22, 2000

Anstey, Josephine, Dave Pape, Dan Sandin, "Building a VR Narrative," in the Proceedings of SPIE Vol 3957 Stereoscopic Displays and Virtual Reality Systems VII (The Engineering Reality of Virtual Reality 2000), San Jose, CA, 28 January 2000. (pdf)

Anstey, Josephine, Dave Pape, "The Thing Growing," Ylem Newsletter, July/August 1999, pp. 5-6

Anstey Josephine, Dave Pape. "The Thing Growing," Virtuality and Interactivity Catalog, MediaArtech 99, Florence, Italy, May 1999, pp. 68-71

Pape, Dave, Josephine Anstey, Mike Bogucki, Greg Dawe, Tom DeFanti, Andy Johnson, Dan Sandin, "The ImmersaDesk3 - Experiences With A Flat Panel Display for Virtual Reality," In the Proceedings of the 3<sup>rd</sup> International Immersive Projection Technology Workshop, Stuttgart, Germany, May 10 - 11, 1999.

Anstey, Josephine, "Are you Waving or Drowning? Art, Interaction, Manipulation and Complexity," Feature Article in Leonardo Electronic Almanac, Vol. 6 # 11, Dec 17, 1998

Pape, Dave, Tomoko Imai, Josephine Anstey, Maria Roussou, Tom DeFanti, "XP: An Authoring System for Immersive Art Exhibitions," In the Proceedings of the Fourth International Conference on Virtual Systems and Multimedia, Gifu, Japan, Nov 18-20, 1998.

Anstey, Josephine, Dave Pape, "The Thing Growing." Info War Catalog, Ars Electronica Festival '98 Linz, September 1998.

Anstey, Josephine, "We Sing the Body Electric: Imagining the Body in Electronic Art," Feature Article in Leonardo Electronic Almanac, Vol. 6 # 4, May 15, 1998

Anstey, Josephine, Dave Pape, "Animation in the CAVE." Animation World Magazine. Vol 3, No1. April 1998.

Anstey, Josephine, Alan Cruz, Soyon Park, Joeffrey Trimmingham, "De Minderheid Voorbij?," Ruimte Kunstmagazine, jaargang 13, Amsterdam, April 1996

Anstey, Josephine, "The House of Nishime", The Southern Anthology, Lafayette, LA 1996, pp. 111-125

Anstey, Josephine, "Dwayne Loves Johnny Coggio", Chelsea 59, Chelsea Associates Inc., New York, NY 1995, pp. 71-97

Anstey, Josephine, "Interview with Claudine Booth: Black Cable TV," The Squealer, Buffalo NY March 1987, and FX: Women's Film and Video Bulletin, London, Spring 86,

Anstey, Josephine, "Review of "True Love and perfect Union: The Feminist Reform of Sex and Society," by William Leach, " Studies in History 1982-83, SUNY, Buffalo NY, 1983

## Selected Reviews

Sherman, Bill, "Narrative: Immobile Versus Interactive," Understanding Virtual Reality, Morgan Kaufman, San Francisco, 2003

Donovan, Patricia, "Avatars, EVL and ghosts," The Reporter, University at Buffalo Vol 33, No. 3, November 2001

Robertson, Barbara, "Immersed in Art," Computer Graphics World, Vol 24, No. 11, November 2001

Chris, Cynthia, "Girls on the Re-make," AfterImage, Vol 28, No. 5, March/April 2001

Mahoney, Diana, "Interactive Fiction," Computer Graphics World, Vol 24, No. 2, February 2001

Neuhaus, Wolfgang, "Die Vernetzung der Fiktionen," Telepolis: Magazin der Netzkultur, 23 Nov 2000

Sacristan, Alejandro, "MediaArtech 1999," PCMania, No 83, September 1999, Madrid,

Sacristan, Alejandro, "EVL, La Meca de la Realidad Virtual en Estados Unidos," PCMania, Segunda Epoca, Ano IX, No 6, Madrid, pp 92-94

Scanlon, Joe, "Let's Play Prisoners," freize, Issue 30, Sept/Oct 1998 pp. 60-76

Straayer, Chris, Deviant Eyes, Deviant Bodies, Columbus University Press, New York, 1996, pp. 121-124

Horrigan, Bill, "Sadie Benning or the Secret Annex," Art Journal, College Art Association, Winter 1995, p. 27

Taubin, Amy, "Voice Choice," *The Village Voice*, February 1, 1994

Liz Kotz, "Anything But Idyllic: Lesbian filmmaking in the 1980s and 1990s." *Sisters, Sexperts, Queers: Beyond the Lesbian nation*, Arlene Stein, editor, Penguin Books, New York, NY 1993

Badley, Jessica, "Doubling Narratives: Dereliction and Desire in Julie Zando's *Let's Play Prisoners*." *CineAction*, No 30, Winter 1992

Dargis, Manohla. "Avant-Guarde Camp," *The Village Voice*, Sept 8, 1992

Tamblyn, Christine, "Monitoring the Vital Signs: The American Film Institute Video festival." *Visions Art Quarterly*, Vol. 5, # 2, Spring 1991

Taubin, Amy, "Body Electric: Video Art at the Whitney Biennial," *The Village Voice*, April 30, 1991

Taubin, Amy, "The Deep: Lures and No Exits," *The Village Voice*, Nov 13, 1990

Tamblyn, Christine, "The River of Swill: Feminist Art, Sexual Codes and Censorship," *AfterImage*, Oct 1990

Dargis, Manohla, "The Prisoners of Zando," *The Village Voice*, Nov 7, 1989

Chris, Cynthia, "Girlfriend," *AfterImage*, April 1989

anstey      vdrama      vr      projects      teaching      resume

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## Exhibitions

### Permanent Collections

- "PAAPAB" & "The Multi Mega Book in the CAVE," Ars Electronica Center, Linz, Austria
- "The Bus Stops Here," "The Ah-Ha Experience," & "Let's Play Prisoners," The Museum of Modern Art, New York
- "The Bus Stops Here," & "Let's Play Prisoners," Centro d'Arte Reina Sofia, Madrid, Spain
- "Let's Play Prisoners," The Long Beach Museum, Long Beach, California

### Selected Exhibitions/Broadcasts

- "The Thing Growing" and "The Trial The Trail", VR Presentation and User Test, Hallwalls Contemporary Arts Center, Buffalo NY, June 7-21, 2003
- "The Apparent Trap," Video, *About a Girl*, I Found it at the Movies Series, Berkeley Art Museum & Pacific Film Archives, UC Berkeley, CA, June 18, 2003
- "Depth Cues" Produced VR presentation of student artwork, Squeaky Wheel, Buffalo, NY, 19 April 2003
- "Falling Over You" Interactive Installation, Albright Knox Art Gallery, Buffalo, NY, 1 February - 20 April 2003
- "PAAPAB" Networked VR Presentation, Stockholm ArtFair, Stockholm, Sweden, 6-9 March 2003 (networked between Stockholm, Buffalo, and Chicago)
- "PAAPAB" Networked VR Presentation. en.red.ando's III One Day Conference, Barcelona, Spain, 31 January 2003 (networked between Barcelona, Buffalo, Chicago, and Umea, Sweden)
- "The Thing Growing", "PAAPAB" VR Presentation. Medi@terra 2002 conference, Athens, Greece, 9 December 2002
- "The Apparent Trap," Video, Consolidated Works, Seattle, November. 8-9 2002
- "PAAPAB," Networked VR Presentation, *IGrid 2002*, Amsterdam Science & Technology Centre, Amsterdam, September 2002 (networked between Amsterdam, Buffalo, Chicago, Urbana IL, and Bloomington IN)
- "PAAPAB," VR presentation, *Pier Pleasure*, Hallwalls Contemporary Arts Center Fundraiser @ The Pier, Buffalo, NY July 2002
- "The Trial, The Trail" & "Virtual Tales" VR presentations, *The Virtual and the Concrete*, Hallwalls Contemporary Arts Center, Buffalo NY, May 2002
- "PAAPAB," VR presentation, *immedia 2002*: U of M, Media Union, Ann Arbor, MI, Feb 2002
- "PAAPAB," VR Presentation, *EVL: Alive on the Grid*, Digital Frontier's Summit, Buffalo, NY, Nov. 2001
- "PAAPAB," Networked VR Presentation, *Alive on the Grid*, Alternate Currents, Chicago Artists'

Month, Oct 2001

"PAAPAB," Networked VR presentation, *EVL: Alive on the Grid*, Ars Electronica Festival , Austria, Sept. 2001

"The Thing Growing," VR presentation, *The Adventure of CAVE: Seven Programs from EVL*, University of Illinois at Chicago, NTT InterCommunication Center , Tokyo, June 2001

"The Thing Growing," VR presentation, *EVE5 - Virtual Reality Art Environments in the CAVE®*, Electronic Visualization Laboratory, UIC, Chicago, March 2001

"The Thing Growing," VR presentation, *immedia 1901*: U of M, Media Union, Ann Arbor, MI, Feb 2001

"The Apparent Trap," Video, *Fancy Pants*, Mix Festival, NYC, Nov 19, 2000

"Shared Miletus," networked VR presentation, *iGRID 2000*, INET 2000, The 10th Annual Internet Society Conference, Yokohama, Japan, 18-21 July 2000

"The Thing Growing," VR presentation for the *Special Guests of Robert Ebert's Overlooked Film Festival*, National Center for Supercomputing, Champaign-Urbana, April 2000

"The Apparent Trap," Video, *Camp Fire*, Pratt Institute Film Series, Brooklyn, NY, April 26, 2000

"The Thing Growing," VR presentation at *Dan Sandin Visiting Artist Lectures*, Santa Fe Art Institute, Santa Fe, April 2000

"The Thing Growing," VR presentation, Electronic Visualization Laboratory, UIC, Chicago, March 2000

"The Thing Growing," VR presentation, *immedia 2000*: U of M, Media Union, Ann Arbor, MI, Feb 2000

"The Apparent Trap," Video, *Shifting Positions: New Video Part One*, Chicago Filmmakers, Chicago, Jan 21, 2000

"The Thing Growing" VR presentation, *EVL@ARS*, Ars Electronica Festival '99: Life Science, Linz, Sept. 1999

"The Thing Growing" VR presentation, *VR Story-telling*, Electronic Schoolhouse, SIGGRAPH 99, Los Angeles, Aug 1999

"The Thing Growing," VR presentation, *Virtuality and Interactivity*, MediArtech 99, Florence, May 1999

"The Thing Growing" VR presentation, *Second Nature*, Ukrainian Institute of Modern Art, Chicago, May 1999

"The Thing Growing," VR presentation, *After Hours*, Walker Art Center, Minneapolis, April 1998

"The Thing Growing," Video documentation, *Digital Salon*, School of the Visual Arts, New York, Nov. 1998

"The Multi Mega Book in the CAVE," VR presentation, Art Futura 98: La Segunda Piel, Teatro Central de Sevilla, Sevilla, Oct. 1998

"The Thing Growing," VR presentation, Ars Electronica Festival 98: Info War, Linz, Sept. 1998

"Guerilla VR," VR presentation, *Digital Pavilions*, SIGGRAPH 98, Orlando, Aug 1998

"The Thing Growing," Video documentation, *Electronic Fields*, Illinois Art Gallery, Chicago, April/May 1998

"The Multi Mega Book in the CAVE," VR presentation, *Digital Renaissance*, MediArtech 98, Florence, March 1998

"The Multi Mega Book in the CAVE," VR presentation, Art Futura 97: El Futuro del Futuro, Circulo de Bellas Artes, Madrid, Oct. 1997

"The Multi Mega Book in the CAVE," VR presentation, *Virtual Spaces*, ISEA 97 Allied Event, Gallery 400/Electronic Visualization Laboratory, University of Illinois at Chicago, Chicago, Sept. 1997

"The Multi Mega Book in the CAVE," VR presentation, Ars Electronica Festival 97: Flesh Factor, Linz, Sept. 1997

"The Multi Mega Book in the CAVE," VR presentation, *Electric Garden*, SIGGRAPH 97, Los Angeles, July 1997

"New American Film and Video Series," Video, Whitney Museum of Art, New York, April 1996

"Recent Experimental Feminist Video," Video, 911 Media Arts Center, Seattle, April 1995

"Festival International de Video Cidade de Vigo," Video, Vigo, Jan/Feb 1995

"Battling the Heat: Blackfeet Women Firefighters," Radio, *Horizons*, National Public Radio, Nov. 1994

"Uh-Oh," Video, The New York Film Festival, Lincoln Center, New York, Oct 1994

"Blackfeet Fire-women," Radio, *Woman's Hour*, BBC's, radio 4, Aug 1994

"Retrospective," Video, American Film Institute, Washington, Feb 1994

"Uh-Oh," Video, *Video Premieres*, Museum of Modern Art, New York, Jan 1994

"Retrospective," Video, *Lookout Festival*, Downtown Community Television, New York, Nov. 1993

"The Bus Stops Here," Video, N.A.M.E. Gallery Chicago, Dec 1992

"Videos on the Self," Finnish National Gallery, Helsinki, Finland Sept. 1992

"The Bus Stops Here," Video, *Independent Focus*, Thirteen/WNET, New York, July 1991

"The Feminist I," Video, The Brooklyn Museum, New York, March 1990

"Child," Video, The Kitchen, New York, Jan 1990

"The Essayistic in Film and Video," Los Angeles Contemporary Exhibitions, Los Angeles March/April 1989

"The Kitchen Screen," Channel L cablecast, New York, April 1988

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## Presentations

"The Role of Computers in Media, Art and Entertainment," Speaker, Erie 1 Boces Challenge Seminar, UB, Buffalo, NY, March 18, 2003

"Cheap New Worlds: Immersive VR - an emerging platform for Artists," Panel Member,  
"Virtual Reality, Questioning the "Real" in Today's Virtual World," Medi@terra 02: New Platforms, Athens, Greece, Dec 6-9 2002

"Lecture and Demonstration on Immersive Virtual Reality," with Dave Pape, Vassar College, Poughkeepsie, NY, November 23rd 2002  
(first version of "Cheap New Worlds" presentation)

"Building an Affordable Projective, Immersive Display," with Dave Pape, Educators Workshop at SIGGRAPH 02, San Antonio, TX, July 21-26

"VR Seminar/Workshop" with Dave Pape, The Interactive Institute, Umeo, Sweden, June 12, 2002

"Virtual Tales: Building VR Art Projects," Crossing Digital Boundaries, A Digital Media Symposium, University at Buffalo, Buffalo, NY, April 19 - 20, 2002

"The Provoking Thing: A VR Relationship" Paper presented at Emotional and Intelligent II: The Tangled Knot of Social Cognition, 2001 AAAI Fall Symposium, North Falmouth, MA, 2-4 Nov 2001 (ps)

"Building Immersive Environments", with Dave Pape & Maria Roussou, Workshop at MCN/CIMI, Los Angeles, CA, 24-27 October, 2001

"The CAVE and Beyond: VR Art in Museums and Galleries," with Donna Cox, Horst Hortner, Dan Sandin, Paul Sermon, Jeffrey Shaw, Panel at SIGGRAPH 2001, Los Angeles, CA, 12-17 August, 2001

"The User Knows Best: refining a VR Interactive Fiction Project" Paper presented at ISEA2000, 10th International Symposium on Electronic Art, Paris, France, 7-10 December, 2000

"Being There: Interactive Fiction in Virtual Reality," Paper presented at Consciousness Reframed 3, Newport, Wales, UK, 24-26 August, 2000

"Dan Sandin Visiting Artist," Co-presenter at Sandin's VR lectures and Workshop, The Santa Fe Art Institute, Santa Fe, NM, April 5-7, 2000

"The Thing Growing: Autonomous Characters in VR Interactive Fiction," Paper presented at the IEEE Virtual Reality 2000 Conference, New Brunswick, NJ, March 18 - 22, 2000

"Building A VR Narrative," with Dave Pape, Paper presented at the SPIE: The Engineering Reality of Virtual Reality Conference, San Jose, CA, January 23-26, 2000

"The Thing (La Cosa): Applicazione per il cave," VR Workshop, Virtuality and Interactivity, MediArtech '99, Florence, May 1999

"ImmersaDesk VR," Presentations to student groups of VR hardware and applications at the Walker Art Center, Minneapolis, April 1999

"The Thing Growing," Artist's Presentation, Ars Electronica Festival 98: Info Wars, Linz, Sept 98

"VR Workshop," Presenter at VR workshop organized by Dan Sandin and the Museum of Contemporary Art, at the Electronic Visualization Laboratory, UIC, Fall 1997

"Queer Collaboration," Panelist at the Society for Photographic Education Conference, Chicago, IL 1994

"Visiting Artist," Presentation of video work for the Tucson Visiting Artist Consortium, The Gallagher Fund, and The University of Arizona, Tucson, AZ, 1994

"Teaching Collectively," Presentation at the 1984 Women's Studies Conference, CUNY Graduate Center, NYC, 1984



## David E. Pape

### Education

- 2001 Ph.D. Electrical Engineering & Computer Science, University of Illinois at Chicago  
Dissertation: "Composing Networked Virtual Environments"
- 1990 M.S. Computer Science, Rensselaer Polytechnic Institute  
M.S. Project: "XGP Graph Drawing Tool"
- 1988 B.S. Computer Science, Rensselaer Polytechnic Institute (summa cum laude)

### Employment

- 8/03-present Department of Media Study, University at Buffalo. Assistant Professor
- 8/02-8/03 Department of Media Study, University at Buffalo. Research Professor  
Creating commodity-PC-based virtual reality studio. Lecturing on computer graphics and virtual reality.
- 1/01-present Freelance consultant  
Virtual reality software development for artists and museums, and custom visualization production.
- 8/94-7/01 Electronic Visualization Laboratory, UIC. Research Assistant  
Developed and maintained software for CAVE application programming. Created various technical and artistic CAVE applications. Assisted in development of projection-based virtual reality displays. Taught seminars in VR programming.
- 8/97-9/97 Ars Electronica Center, Linz, Austria. Artist in Residence  
Production work for Franz Fischmaller's *Multi-Mega Book in the CAVE*.
- 8/93-5/94 EECS Department, UIC. Teaching Assistant  
Taught recitation classes for Introduction to Programming Languages.
- 9/86-8/96 NASA/Goddard Space Flight Center. Computer Engineer  
Worked in Scientific Visualization Studio, creating visualizations for earth and space scientists at Goddard. Also worked in high performance computing branch, on support software for MPP and MasPar supercomputers.
- 9/88-5/90 Computer Science Department, RPI. Teaching Assistant  
Grader for Compiler Design, & Fundamental Structures of Computer Science.

### Professional Activities

Association for Computing Machinery member

SIGGRAPH member

IEEE Computer Society member

iGrid 2000 Organizing Committee, iGrid 2000 Research Exhibit, INET 2000

Information Architecture Committee (GII Testbed), Supercomputing '95

VROOM Committee, SIGGRAPH '94

### Honors & Awards

- |           |   |
|-----------|---|
| 1997      | Foreign Title Award in Theater and Exhibition, Multimedia Grand Prix '97 (Tokyo) for <i>Multi-Mega Book in the CAVE</i> |
| 1993-1995 | UIC University Fellowship   |
| 1993      | NASA/GSFC Exceptional Achievement Award   |
| 1993      | NASA/GSFC Space Data and Computing Division Peer Award  |
| 1989      | 2nd place team, ACM National Scholastic Programming Contest   |
| 1987      | Member Pi Mu Epsilon honorary society.  |

### VR and Installation Works

#### Crayoland

Virtual reality environment; 1995

Role: entire production

Exhibitions:

- Electronic Visualization Event 4 [EVE4] (Chicago, IL, May 1995)
- SGI booth, South African Computer Faire & Bexa (Johannesburg, South Africa, May 1996)
- NLANR booth, EDUCAUSE National Meeting (Long Beach, CA, 26-29 Oct 1999)
- Tech Town, Illinois State Fair (Springfield, IL, Aug 2000)
- Brain: The World Inside Your Head  
(Washington, DC, 1 July 2001 - 6 January 2002)  
(Portland, OR, 26 January - 5 May 2002)  
(Atlanta, GA, 1 June - 15 September 2002)  
(Cleveland, OH, 5 October 2002 - 5 January 2003)  
(Indianapolis, IN, 25 January 2003 - 4 May 2003)  
(Queens, NY, 24 May 2003 - 7 September 2003)  
(Detroit, MI, 27 September 2003 - 4 January 2004)
- ArsBox, SIGGRAPH 2002 Emerging Technologies (San Antonio, TX, 21-26 July 2002)

In the permanent collection of Ars Electronica Center, Linz, Austria

#### Vandalism

Virtual reality environment; 1996

Role: entire production

Exhibitions:

- Digital Bayou & The Bridge, SIGGRAPH '96 (New Orleans, LA, Aug

1996)

- Ars Electronica Festival '96 (Linz, Austria, Sep 1996)
- Total Museum Conference '96 (Chicago, IL, Oct 1996)
- 

In the permanent collection of Ars Electronica Center, Linz, Austria

### **Mitologies**

by Maria Roussou and Hisham Bizri

Virtual reality environment; 1997

Role: lead software architect

Exhibitions:

- Maria Roussou MFA show (Chicago, IL, 1997)
- Virtual Spaces, ISEA '97 (Chicago, IL, Sep 1997)
- ThinkQuest '97 (Washington, DC, 20-24 Nov 1997)
- Mediatech '98 Virtuality & Interactivity (Florence, Italy, 26-29 Mar 1998)
- Digital Pavilions, SIGGRAPH '98 (Orlando, FL, 19-24 Jul 1998)
- Ars Electronica Festival '98 (Linz, Austria, Sep 1998)
- Art Futura '98 (Seville, Spain, 8-11 Oct 1998)
- Mediaterra '99 (Athens, Greece, 10-12 Dec 1999)
- Mediaterra 2002 (Athens, Greece, 9 December 2002)

In the permanent collection of Ars Electronica Center, Linz, Austria

### **Multi-Mega Book in the CAVE**

by Franz Fischnaller

Virtual reality environment; 1997

Role: lead software architect

Exhibitions:

- Electric Garden, SIGGRAPH '97 (Los Angeles, CA, Aug 1997)
- Ars Electronica Festival '97 (Linz, Austria, Sep 1997)
- Virtual Spaces, ISEA '97 (Chicago, IL, Sep 1997)
- Art Futura '97 (Madrid, Spain, 15-19 Oct 1997)
- Imagina '98 (Monte Carlo, Mar 1998)
- Mediatech '98 Virtuality & Interactivity (Florence, Italy, 26-29 Mar 1998)
- Art Futura '98 (Seville, Spain, 8-11 Oct 1998)
- Mediatech '99 Virtuality & Interactivity II (Florence, Italy, 26-30 May 1999)
- Mediaterra '99 (Athens, Greece, 10-12 Dec 1999)

In the permanent collection of Ars Electronica Center, Linz, Austria

### **The Thing Growing**

by Josephine Anstey & Dave Pape

Virtual reality environment; 1998-2000

Role: co-designer, software architect

Exhibitions:

- After Hours, Walker Art Center, (Minneapolis, MN, Apr 1998)
- Digital Pavilions, SIGGRAPH '98 (Orlando, FL, 19-24 Jul 1998)
- Second Nature, Ukrainian Institute of Modern Art (Chicago, IL, 13 May 1999)

- MediarTech '99 Virtuality & Interactivity II (Florence, Italy, 26-30 May 1999)
- Electronic Schoolhouse, SIGGRAPH '99 (Los Angeles, CA, 8-13 Aug 1999)
- Ars Electronica Festival '99 (Linz, Austria, 9 Sep 1999)
- immedia 2000 (Ann Arbor, MI, 18-25 Feb 2000)
- Josephine Anstey MFA show (Chicago, IL, 9-10 Mar 2000)
- Dan Sandin - Visiting Artist Lectures, Santa Fe Art Institute (Santa Fe, NM, 6-11 Apr 2000)
- immedia 1901 (Ann Arbor, MI, 8-18 Feb 2001)
- Electronic Visualization Event 5 [EVE 5] (Chicago, IL, 1-3 Mar 2001)
- The Adventure of CAVE, NTT InterCommunication Center (Tokyo, Japan, 22 Jun - 29 Jul 2001)
- Mediaterra 2002 (Athens, Greece, 9 December 2002)

#### Historiae Naturalis

Virtual reality environment; 1999

Role: entire production

Exhibitions:

- Second Nature, Ukrainian Institute of Modern Art (Chicago, IL, 13 May 1999)
- Electronic Schoolhouse, SIGGRAPH '99 (Los Angeles, CA, 8-13 Aug 1999)
- Ars Electronica Festival '99 (Linz, Austria, 9 Sep 1999)

#### PAAPAB

by Josephine Anstey & Dave Pape

Virtual reality environment; 2001

Role: co-designer, software architect

Exhibitions:

- Ars Electronica Festival 2001 (Linz, Austria, 1-6 Sep 2001)
- Chicago Artists' Month - Alternate Currents (Chicago, IL, 27 October 2001)
- Digital Frontier: The Buffalo Summit (Buffalo, NY, 2-3 November 2001)
- Immedia 2002 (Ann Arbor, MI, 8-18 February 2002)
- Pier Pleasure (Buffalo, NY, 19 July 2002)
- iGrid 2002 (Amsterdam, The Netherlands, 23-26 September 2002)
- en.red.ando's III One Day Conference (Barcelona, Spain, 31 January 2003)
- Stockholm Art Fair (Stockholm, Sweden, 6-9 March 2003)

#### Falling Over You

by Dave Pape, Josephine Anstey

Interactive computer installation; 2003

Role: co-storyboard, all programming

Exhibited at Albright Knox Art Gallery, Buffalo NY, 1 February - 20 April 2003

#### Theatrum Orbis Terrarum

Computer graphics installation; 2003

Role: entire production

Exhibited in "Depth Cues", Squeaky Wheel, Buffalo NY, 19 April 2003

#### Videos

- Pape, Dave. "Crayoland." SIGGRAPH Video Review, Issue 127 / SIGGRAPH '98 Electronic Art and Animation Catalog CD-ROM.
- Pape, Dave. "Ocean Planet Flythrough". part of Ocean Planet exhibition at Smithsonian Museum of Natural History, April 1995 - April 1996.
- Pape, Dave. "JASON IV Real-Time Visualization." SIGGRAPH Video Review, Issue 93.
- Pape, D., M. Hollis, J. Dorband. "Hubble Space Telescope: Image Deblurring With a Parallel Computer." SIGGRAPH Video Review, Issue 82.
- Pape, D. "Massively Parallel Computation at NASA Goddard." Video Theater, Supercomputing '92
- NASA/GSFC. "Images of Earth and Space: The Role of Visualization in NASA Science", [*various animations*]
- NASA EOS Project. "Earth: A New Perspective", [*Earth visualizations*]
- United States Geological Survey. "National Spatial Data Infrastructure." [*various animations*]

#### Publications

- Anstey, Josephine, Dave Pape, Stuart Shapiro, Vikranth Rao. "Virtual Drama with Intelligent Agents", Ninth International Conference on Virtual Systems and MultiMedia, Montreal, Quebec, Canada, October 15-17, 2003.
- Pape, Dave, Josephine Anstey, Margaret Dolinsky, Edward J. Dambik. "Ygdrasil - a framework for composing shared virtual worlds", Future Generation Computing Systems, Volume 19, Number 6, August 2003, Elsevier Press.
- Fineberg, David A., T. Kesavadas, Dave Pape. "Development of an Interactive Teaching System Based on Motion Synchrony Between Physical and Virtual Models", Medicine Meets Virtual Reality 11, Newport Beach, CA, 22-25 January 2003.
- Anstey, Josephine, Dave Pape. "Scripting the Interactor: An Approach to VR Drama", Creativity and Cognition 4, Loughborough, UK, 13-16 October 2002.
- Pape, Dave, Dan Sandin. "Alive on the Grid", SCI 2002 - 6th World Multiconference on Systemics, Cybernetics and Informatics, Orlando, FL, 14-18 July 2002.
- Pape, Dave, Josephine Anstey, Greg Dawe. "A Low-Cost Projection Based Virtual Reality Display", The Engineering Reality of Virtual Reality, SPIE Stereoscopic Displays and Applications 2002, San Jose, CA, 24 January 2002.
- Anstey, Josephine, Dave Pape. "The Provoking Thing: A VR Relationship", Emotional and Intelligent II, AAAI 2001 Fall Symposium, North Falmouth, Massachusetts, 2-4 November 2001.
- Pape, Dave, Josephine Anstey, Bryan Carter, Jason Leigh, Maria Roussou, Tim Portlock. "Virtual Heritage at iGrid 2000", Proceedings of INET 2001, Stockholm, Sweden, 5-8 June 2001.
- Pape, Dave, Josephine Anstey, Sarita D'Souza, Tom DeFanti, Maria Roussou, Athanasios Gaitatzes. "Shared Miletus: Towards a Networked Virtual History Museum", Proceedings of the International Conference on Augmented, Virtual Environments and Three-Dimensional Imaging (ICAV3D), Mykonos, Greece, 30 May - 1 June 2001.

- Anstey, Josephine, Dave Pape. "Being There: Interactive Fiction in Virtual Reality", *Consciousness Reframed 3*. Newport, Wales, UK, 24-26 August 2000.
- Pape, Dave, Dan Sandin. "Quality Evaluation of Projection-Based VR Displays", 4th International Immersive Projection Technology Workshop. Ames, Iowa, 19-20 June 2000.
- He, Ding, Fuhu Liu, Dave Pape, Greg Dawe, Dan Sandin. "Video-Based Measurement of Tracker Latency", 4th International Immersive Projection Technology Workshop. Ames, Iowa, 19-20 June 2000.
- Johnson, Andrew, Dan Sandin, Greg Dawe, Dave Pape, Zhongwei Qiu, Samroeng Thongrong, Dana Plepys. "Developing the PARIS: Using the CAVE to Prototype a New VR Display", 4th International Immersive Projection Technology Workshop. Ames, Iowa, 19-20 June 2000.
- Anstey, Josephine, Dave Pape, Dan Sandin. "The Thing Growing: Autonomous Characters in Virtual Reality Interactive Fiction", *Proceedings of IEEE Virtual Reality 2000*, New Brunswick, NJ, 18-22 March 2000.
- Anstey, Josephine, Dave Pape, Dan Sandin. "Building a VR Narrative", *Proceedings of SPIE Vol 3957 Stereoscopic Displays and Virtual Reality Systems VII (The Engineering Reality of Virtual Reality 2000)*, San Jose, CA, 28 January 2000.
- Imai, Tomoko, Andrew E. Johnson, Jason Leigh, David E. Pape, Thomas A. DeFanti. "Supporting Transoceanic Collaborations in Virtual Environment", *Asia-Pacific Conference on Communications / OptoElectronics and Communications Conference (APCC/OECC) '99*, Beijing, China, 18-22 October 1999, pp 1059-1062.
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#### **Presentations**

- "Virtual Reality at Work & Play", Vassar College, Poughkeepsie, NY, 12 September 2003.
- "Falling Over You", Artists' Sketches, SIGGRAPH 2003, San Diego, CA, 29 July 2003.
- "Careers for the Millenium - Computer Animation", Ben Franklin Middle School Career Day, Kenmore, NY, 9 April 2003.
- "Immersive Virtual Reality", Vassar College, Poughkeepsie, NY, 22 November 2002.
- "Building an Affordable Projective, Immersive Display", Educators' Program workshop, SIGGRAPH 2002, San Antonio, Texas, 22 July 2002.
- "Building Immersive Environments", MCN/CIMI 2001 Conference workshop, Cincinnati, Ohio, 24 October 2001.
- "EVL: Alive on the Grid", Ars Electronica Festival - Pixel Spaces: Behind the Scenes symposium, Linz, Austria, 3 September 2001.
- "The Future of CAVE" Symposium, NTT InterCommunication Center, Tokyo, Japan, 24 June 2001.
- "Adapting the CAVElib", NCSA Advanced CAVE Workshop, Norfolk, Virginia, 17-19 October 2000.
- "Adapting the CAVElib", NCSA Advanced CAVE Workshop, Ann Arbor, Michigan, 15-17 August 2000.
- "Art in the CAVE", Mediartech '99 Virtuality & Interactivity II, Florence, Italy, 29 May 1999.
- "The Future of Virtual Reality Technology" panel, PDC Annual Conference 1998, Stockholm, Sweden, 17 December 1998.
- "VR for Interactive Art and Narrative", PDC Annual Conference 1998, Stockholm, Sweden, 18 December 1998.
- "CAVE @ ARS: Special Interest Group on HighEnd VR Systems" workshop, Linz, Austria, 16 September 1998.

- "Working in the CAVE Environment" panel, Immersive Projection Technology Workshop, Ames, Iowa, 11-12 May 1998.
- "Programming the CAVE", NCSA Visual Supercomputing Institute, Urbana, Illinois, July 21-24 1997.
- "Walking in Cyberspace", Ars Electronica Festival workshop, Linz, Austria, September 1996.
- "Programming the CAVE", NCSA/SGI Visual Supercomputing Institute, Urbana, Illinois, June 1996.
- "Virtual Reality", Exposim '94, Torreon, Mexico, Oct. 1994.
- "The CAVE Library", CAVE Virtual Reality Theater Developer's Workshop, NCSA, Urbana, Illinois, March 1994.
- "Scientific Visualization", NASA/GSFC Visiting Student Enrichment Program seminar, July 1993.