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1. REPORT DATE (DD-MM-YYYY) 03-04-2015		2. REPORT TYPE Final Report		3. DATES COVERED (From - To) 26-Jan-2012 - 25-Jan-2015	
4. TITLE AND SUBTITLE Final Report: Full Dome Development for Interactive Immersive Training Capabilities			5a. CONTRACT NUMBER W911NF-12-1-0064		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER 206022		
6. AUTHORS Mats Reiniusson, Charles Veasey, David Beining			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAMES AND ADDRESSES Institute of American Indian Arts 83 Avan Nu Po Road  Santa Fe, NM 87508 -1300			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES) U.S. Army Research Office P.O. Box 12211 Research Triangle Park, NC 27709-2211			10. SPONSOR/MONITOR'S ACRONYM(S) ARO		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S) 60458-CS-REP.1		
12. DISTRIBUTION AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited					
13. SUPPLEMENTARY NOTES The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other documentation.					
14. ABSTRACT The Institute of American Indian Arts (IAIA), in collaboration with the University of New Mexico's (UNM) ArtsLab, has been creating research and education that works to improve the interactivity of emerging fulldome technology for educational applications and increased training capabilities. Specifically, we have developed real-time interactivity for the six projector digital dome with the use of external devices and gesture navigation, as well as developing innovative strategies for immersive education. This project directly feeds into a research base in support of national defense: Virtual Simulation and Immersive Environments, while also supporting STEM					
15. SUBJECT TERMS Full dome development Immersive education simulation interactivity STEM					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			Mats Reiniusson
					19b. TELEPHONE NUMBER 505-424-2349

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15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>SAR</b>	18. NUMBER OF PAGES <b>63</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



## Report Title

Final Report: Full Dome Development for Interactive Immersive Training Capabilities

### ABSTRACT

The Institute of American Indian Arts (IAIA), in collaboration with the University of New Mexico's (UNM) ArtsLab, has been creating research and education that works to improve the interactivity of emerging fulldome technology for educational applications and increased training capabilities. Specifically, we have developed real-time interactivity for the six projector digital dome with the use of external devices and gesture navigation, as well as developing innovative strategies for immersive education. This project directly feeds into a research base in support of national defense: Virtual Simulation and Immersive Environments - while also supporting STEM education needs of our Native American student body.

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**Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:**

**(a) Papers published in peer-reviewed journals (N/A for none)**

Received

Paper

**TOTAL:**

**Number of Papers published in peer-reviewed journals:**

---

**(b) Papers published in non-peer-reviewed journals (N/A for none)**

Received

Paper

**TOTAL:**

**Number of Papers published in non peer-reviewed journals:**

---

**(c) Presentations**

Number of Presentations: 0.00

---

**Non Peer-Reviewed Conference Proceeding publications (other than abstracts):**

Received      Paper

**TOTAL:**

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

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**Peer-Reviewed Conference Proceeding publications (other than abstracts):**

Received      Paper

**TOTAL:**

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

---

**(d) Manuscripts**

Received      Paper

**TOTAL:**

Number of Manuscripts:

Books

Received      Book

TOTAL:

Received      Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

NAME	PERCENT SUPPORTED	Discipline
Aguilar, Daniel	0.67	
Carbajal, Diego	0.67	
Vicuna, Grace	0.67	
Valdez, Isaac	0.67	
Cano, Ricardo	0.67	
Young, Sarah	0.67	
Olguin, Ruben	0.67	
Agryropoulos, Jason	0.10	
FTE Equivalent:	4.79	
Total Number:	8	

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### Names of Post Doctorates

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
<b>FTE Equivalent:</b>	
<b>Total Number:</b>	

---

### Names of Faculty Supported

<u>NAME</u>	<u>PERCENT SUPPORTED</u>	National Academy Member
Wilson, Will	0.00	
Tompkins, Joseph	0.00	
Reiniusson, Mats	0.75	
Beining, David	0.80	
Bach, Ethan	0.75	
Crayton, Jane	0.33	
Valdez, Claudia	0.00	
<b>FTE Equivalent:</b>	<b>2.63</b>	
<b>Total Number:</b>	<b>7</b>	

## Names of Under Graduate students supported

<u>NAME</u>	<u>PERCENT SUPPORTED</u>	<u>Discipline</u>
Benson, Jennifer	0.00	Bachelor of Fine Arts NMA
Boettger, Matthew	0.00	Bachelor of Fine Arts NMA
Casesa, Mia	0.67	Bachelor of Fine Arts IFDM
Castillo, Delfino	0.67	Bachelor of Fine Arts CINE
Clifford, Terrance	0.00	Bachelor of Fine Arts CINE
Davis, Adam	0.67	Bachelor of Fine Arts IFDM
Dunn, Joey	0.00	Bachelor of Fine Arts CINE
Edmonds, Julia	0.00	Bachelor of Fine Arts CINE
Joe, Dwayne	0.00	Bachelor of Fine Arts CINE
Leija-Elias, Quannah	0.00	Bachelor of Fine Arts CINE
Lopez, Kree	0.00	Bachelor of Fine Arts CINE
Lynch, Denise	0.00	Bachelor of Fine Arts
Means, Nataanii	0.00	Bachelor of Fine Arts CINE
Drummond, Robert	0.00	N/A
Mills, Angel	0.00	Bachelor of Fine Arts CINE
Moore, Erica Pretty Eagle	0.00	Bachelor of Fine Arts
Nez, Felicia	0.67	Bachelor of Fine Arts CINE
Osuna, Gabrielle	0.00	Bachelor of Fine Arts
Rencountre-Da Silva, Alicia	0.00	Bachelor of Fine Arts
Webb, George	0.00	Bachelor of Fine Arts CINE
Gonzalez, Socorro	0.00	Bachelor of Fine Arts NMA
Brian Shemayme	0.00	Bachelor of Fine Arts NMA
Montoya, Katrina	0.00	Bachelor of Fine Arts NMA
Hartwell, Louva	0.67	Bachelor of Fine Arts NMA
Redwing, Sadie	0.00	Bachelor of Fine Arts NMA
Maharjan, Deepak	0.67	Bachelor of Fine Arts NMA
Big Knife, Kaylene	0.00	Bachelor of Fine Arts NMA
Joe, Kyle	0.00	Bachelor of Fine Arts CINE
Schaefer, Erin	0.00	N/A
Colaquer, Tamara	0.67	Bachelor of Fine Arts CINE
Leslie, Colin	0.67	Bachelor of Fine Arts EA
Ortiz, Jorge	0.48	Bachelor of Fine Arts
Waruzewski, Luke	0.67	Bachelor of Fine Arts
Pecos, David	0.67	Bachelor of Fine Arts
Turnipseed, Joseph	0.67	Bachelor of Fine Arts NMA
Grignon, Daniel	0.67	Bachelor of Fine Arts
Cano, Caitlin	0.48	Bachelor of Arts IFDM
King, Vincent	0.48	Bachelor of Arts School of Architecture and Planning
Baumgardner, Kameron	0.00	Bachelor of Arts School of Architecture and Planning
Clavio, Chris	0.00	Bachelor of Fine Arts EA
Johnson, Brandon	0.00	Bachelor of Arts School of Architecture and Planning
McNeil, Mitchell	0.00	Bachelor of Fine Arts IFDM
Ramos, Myrna	0.00	Bachelor of Fine Arts IFDM
Syler, David	0.00	Bachelor of Fine Arts IFDM
Wilkinson, Joseph	0.00	Bachelor of Fine Arts IFDM
Wood, Jesse	0.00	Bachelor of Fine Arts IFDM
Lends His Horse, Madonna	0.00	Bachelor of Fine Arts NMA
Bach, Ethan	0.00	N/A
Metch, Feather	0.67	Bachelor of Fine Arts
Gailbraith, Sage	0.00	Bachelor of Fine Arts NMA
Other Bull, Shalena	0.00	Bachelor of Fine Arts NMA
Shaw, Justin	0.00	Bachelor of Fine Arts NMA
<b>FTE Equivalent:</b>	<b>10.15</b>	
<b>Total Number:</b>	<b>52</b>	



### Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: ..... 14.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 14.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense ..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields:..... 0.00

### Names of Personnel receiving masters degrees

NAME

**Total Number:**

### Names of personnel receiving PHDs

NAME

**Total Number:**

### Names of other research staff

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
Reiniusson, Mats	0.75
Beining, David	0.80
Bach, Ethan	0.75
Crayton, Jane	0.33
Veasey, Charles	0.50
Straw, Jonathan	0.33
<b>FTE Equivalent:</b>	<b>3.46</b>
<b>Total Number:</b>	<b>6</b>

### Sub Contractors (DD882)

### Inventions (DD882)

## Scientific Progress

The Institute of Indian American Arts (IAIA) focused its scientific and technological developments in the refinement of realtime infrastructures for fulldome environments and experimental applications including gaming, simulation, and telepresence. It also focused on technical documentation related to the hardware and software infrastructures that enable realtime dome applications. The vDome realtime slicing and calibration software continued in two main areas of development. The first refined the existing architecture through performance optimizations and the second extended the software's capabilities to support a variety of dome infrastructures and operating systems. Developments of vDome on Windows allow for the use of the more efficient Windows Media Foundation audiovisual libraries as well as the open source HAP video codec. Additionally on Windows, the Spout texture sharing library was investigated allowing interapplication texture sharing. On Linux a similar RAM memory technology, v4l2loopback, was enabled. On Mac OS X, the audiovisual libraries were updated to use the newer AV Foundation SDK in order to replace the now deprecated Quicktime SDK.

<https://github.com/charlesveasey/vDome>

A new companion application was developed for vDome called the vDome Player. This application serves as a familiar user interface for direct media playback. Modeled after the widely used VLC media player interface it allows users to create a media library and playlists. It also provides an interface to dynamically switch the input source. The application was developed in the cross platform QT / QML framework and communicates to vDome using a network socket interface.

<https://github.com/charlesveasey/vDomeplayer>

The vDome software manual was also written and made publicly available. One chapter which describes compiling a custom C++ application directly into vDome remains to be written.

<https://docs.google.com/document/d/1EHPpExjznFF6X0YTY5acLS0MNkEbtVFsLBCoJ2HHQIQ/edit>

The vDome software has become increasingly popular among the fulldome community with several sites testing and using the application suite. At request, vDome was presented at the IX Symposium in Montreal, May 2014.

Future vDome advancements will focus on refining the vDome hardware / software system over three targeted operating systems: Windows 8, OS X 10.9, and Linux Ubuntu 14. Further documentation will be created outlining hardware and operating system specifics in relation to realtime dome production. vDome will also add direct support for equirectangular panoramas as well as the standard HD 16:9 video format.

Several templates for fulldome interactivity were developed which facilitate interactive fulldome projects by students and the wider community. These templates include support for creative development environments such as openFrameworks, Processing, Touch Designer and the Unity game engine.

An application was developed to allow realtime viewing of panoramic photographs within the dome. The panoramas can be navigated using a keyboard or Microsoft Xbox controller.

Panoramas are commonly used in 3D games as skyboxes as well as in fulldome films. This tool allows one to easily view panoramic photography as part of educational review or as a way to previsualize images before incorporating them into a larger project.

<https://github.com/charlesveasey/Pano2Dome>

Several fulldome simulations and video games were developed using the Unity game engine.

Small custom games and environments were created as well as many larger preexisting Unity projects were converted to fulldome including Bootcamp, a third person army simulation, Robo Lab, a first person robotic laboratory environment and Space Shooter, a topdown asteroids shooter game. A series of GLSL fractal shaders were also developed for the dome in a student project that explored realtime ray tracing calculations within a fulldome environment.

One of the world's first fulldome telepresence performances was developed at IAIA in collaboration with the Society for Art and Technology (SAT), Montreal. It featured realtime 3D graphic and music production in Montreal and a live Native American student dancer Terran Kipp in Santa Fe. The video feed of the dancer was broadcast live to the video engineers in Montreal who composited the feed in realtime onto a 3D scene that was developed in the Unity game engine. A 1.6K domemaster video along with an 8 channel threedimensional soundtrack was transmitted back to IAIA and displayed in front of a live audience. The same domemaster and soundtrack was presented to a live audience in Montreal.

Future fulldome interactive developments include continued investigation into multimodal input sensing paradigms focusing on the interplay between the Kinect motion sensors and Xbox game controllers. Further exploration with threedimensional sonic environments and visual accompaniment will also continue. More fulldome games and simulations are planned including a collaboration with IAIA's 3D Animation for the Dome course which will convert student produced 3D scenes into gamelike



environments. Lastly an interactive dome event is planned at the Digital Dome @ IAIA to publicly showcase the interactive dome work developed through the grant.

### **Technology Transfer**

# Volunteers wanted for ISEA2012 at the Digital Dome



Posted on [September 4, 2012](#) by [digitaldomeiaia](#)


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Have you ever wanted to get your foot in the door at the Digital Dome @ IAIA and meet amazing artists? There is no better way then to volunteer! We could use your help during the ISEA2012 conference specifically Friday, September 21 all day; Saturday, September 22 in the afternoon/eve; and Tuesday, September 25 in the morning.

There are a variety of volunteer opportunities, each with different time requirements, experience requirements, and logistics. There are two requirements for all volunteers that you be reliable and friendly. We will need help with lectures, the sound walk, greeting visitors, video and still photo documentation and digital dome presentations.

Look over the [ISEA2012 at the Digital Dome](#) schedule to see if a specific event or artist strikes a cord. If you'd like to volunteer, email [digitaldome@iaia.edu](mailto:digitaldome@iaia.edu). Include your name, what task you would prefer, date and time you can assist, and your contact information.

 Like  11 people like this. Be the first of your friends.

Posted in [Dome News - General](#), [Institute of American Indian Arts - General](#) | Tagged [digital dome](#), [Digital Dome @ IAIA](#), [Institute of American Indian Arts](#), [ISEA](#), [Santa Fe](#), [volunteer](#) | [Leave a reply](#)

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# The Digital Dome @ IAIA Welcomes Artist in Resident Jason Baerg for ISEA2012



Posted on **September 6, 2012** by [digitaldomeiaia](#)

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The Digital Dome @ IAIA is very please to have artist in resident Jason Baerg at our facility. Jason will be working with myself and our software developer to create our first audience generated interactive art installation in the digital dome. We will be utilizing our custom [vDome](#) software to connect Jason's Max patch and external sensors. Jason comes to us with a world of experience in multi media installation work to present one of a kind interactive work for [ISEA2012](#).

The Digital Dome @ IAIA will be transformed into interactive space where the audience controls the artwork. Baerg's piece, There Was No End, will allow the audience to actively participate through gestures and movement. in creating a unique work of art like never before in the immersive digital dome.



Jason Baerg is a Contemporary Artist pushing digital interventions in drawing, painting and new media. As technology drives the aesthetics in his installational work, Baerg has an presented at such international art events as Art Basel Miami, Toronto International Art Fair, and the Fountain Art Fair NYC. 2012 continues to excite as he has been selected for residencies and exhibitions at the Royal Melbourne Institute of Technology (Australia), Waiariki Institute of Technology (New

Zealand) and the state of the art Digital Dome at the Institute of American Indian Arts in Santa Fe. Jason Baerg has given formal artist talks at such institutions as New York City's Parsons School of Design, the University of British Columbia, Canada and Whitecliffe College of Arts & Design in New Zealand. To view his work and for contact information, please visit: <http://www.jasonbaerg.com>



Saturday, September 22, 2pm to 3:30pm (Lecture)

Tuesday, September 25, 9am to noon

Thursdays and Fridays, September 27 thru November 16,  
1pm to 5pm

EXHIBITION:

**Jason Baerg: There Was No End**


presented by [Institute of American Indian Arts](#)

Cree Métis Artist Jason Baerg utilizes significant

symbolic Indigenous numeric values to inform narrative,

color and repetition. *There Was No End* is a unique interactive work that investigates global social metaphors with interest to activate collective observation and response. The 360° spherical display of abstracted symbols of the Sun the Moon and the Earth appear in sequences of 13 to reference many Indigenous communities' 13-moon calendar. *There Was No End* utilizes ground-breaking research and development in the integration sensors and interactivity presented in the world's first fully articulated digital dome.



 28 people like this. Be the first of your friends.

Posted in [Digital Dome @ IAIA Updates](#), [Dome Art](#), [Dome News - General](#), [Fulldome Research](#) | Tagged [Digital Dome @ IAIA](#), [fulldome](#), [Fulldome Research](#), [Fulldome VJ](#), [Institute of American Indian Arts](#), [Interactive Art](#), [ISEA](#), [ISEA2012](#), [Jason Baerg](#), [Native New Media Art](#), [vDome](#) | [Leave a reply](#)

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# Digital Dome @ IAIA in WIRED Magazine Online

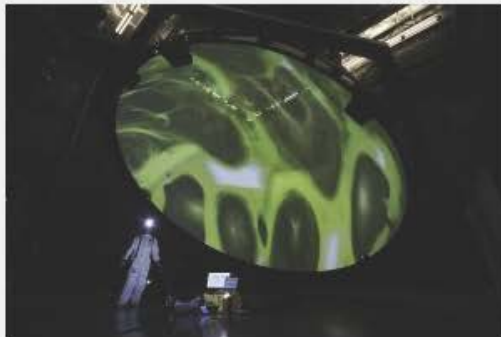


Posted on [September 13, 2012](#) by [digitaldomeiaia](#)



30 people like this. Be the first of your friends.

Congratulations goes out to artist Charles Lindsay for his recent article in WIRED magazine online that features an image of the Digital Dome. Charles was at the Institute of American Indian Arts in June doing his artist in residency with the support of SFAI (Santa Fe Art Institute) and Getting Off the Planet. Charles' recent work at the SETI Institute (Search for Extraterrestrial Intelligence) was driving the article. You can see Charles' work CARBON at [ISEA2012 at the Digital Dome](#).



— Charles Lindsay in the Digital Dome. This image was used in the WIRED online article.

From the article:

[Charles Lindsay's](#) gigantic, sometimes 60-foot-long, black-and-white and color prints from his *CARBON* photo series are enigmatically provocative. Are they high-resolution scans from an electron microscope? Manipulated images of far-off planets captured by the Hubble telescope?

The photos are actually created through a special process Lindsay invented that involves spreading a carbon-based emulsion onto plastic negatives. The resulting images are then digitally scanned and printed in several ways.

It's an approach that has yielded unusual results and struck a strong chord with audiences, earning him not only a Guggenheim fellowship, but also the first-ever spot as an [artist-in-residence at the SETI Institute](#).



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## Dome Presentation at The Next Big Idea in Los Alamos, NM



Posted on [October 27, 2012](#) by [digitaldomelala](#)

Like 4 people like this. Be the first of your friends.

On September 15, I joined several partners in demonstrating dome based content at The Next Big Idea Festival Day in Los Alamos, NM. The demonstrations took place in a 28' portable dome with a single projector. The dome seemed to be a highlight of the festival with lines that lasted throughout the day. An estimated 200+ people came through the dome to delight in this event.

The Next Big Idea Festival Day is a family-friendly event, highlighting Los Alamos' unique, creative and scientific heritage. It is designed to inspire, illuminate and educate through science, technology, arts, food and music.



The show content was a rotation from various people to include:



Los Alamos Virtual Experience  
Tours: 4Pi Productions: 180 degree  
content captured around the Los  
Alamos area and key locations  
around the world.

Spherical Stereoscopic Rendering:  
Micoy Inc

180 degree stereoscopic ray traced  
rendering, both canned and real-

time demonstrations.



Immersive Storytelling – IAIA (Institute  
of American Indian Arts). Dome  
movies and content produced by  
the staff and students at the IAIA  
digital dome in Santa Fe.



DanceDome: URRL (Urban  
Research Reaction Laboratory). 2  
Immersive Dome movies produced  
by Matt Wright and Janire Najera on  
Dance in Wales, UK.

Particle Systems and Interaction:  
DarklingX. An update of last years'  
demo of "the Elementals" using  
Kinect for real time tracking &  
particle systems for real time

rendering.



The demonstration was held in Micoy's 28' inflatable dome driven by Projection Design's F35 AS3D Projectors with a fisheye lens. LAVA, along with various partners are prepared to develop and deliver hemispherical solutions to Immersive Visualization and multimedia presentation.

 Like  4 people like this. Be the first of your friends.

Posted in [Dome Presentations](#), [Event Documentation](#) | Tagged [4pi](#), [digital dome](#), [inflatable dome](#), [Janire Najera](#), [LAVA](#), [Los Alamos](#), [Matt Wright](#), [Micoy dome](#), [Projection Design](#), [Steve Smith](#) | [Leave a reply](#)

# ISEA2012 at the Digital Dome

## Albuquerque Journal Article: “Art Meets Science at IAIA Event”

1

Posted on **October 27, 2012** by [digitaldomeiaia](#)



3 people like this. Be the first of your friends.

This article was run by the Albuquerque Journal on Saturday, September 22, 2012 by Kathaleen Roberts. The article can be found [here](#).

### ART MEETS SCIENCE AT IAIA EVENT



— Canadian artist Jason Baerg shows his piece “There Was No End” at the Institute of American Indian Arts’ Digital Dome. Photo Credit – Eddie Moore/Journal

Step into the dome with a friend, and its hollowed surface envelops you in goldenrod yellow. One peek, and you’re embraced in a blue field dancing with a melange of abstracted shapes.

Welcome to interactivity at the Digital Dome at the Institute of American Indian Arts.

The IAIA technology hub is hosting the northern branch of the Albuquerque-based 18th International Symposium On Electronic Art, through dome exhibitions and an outdoor sound walk at the south Santa Fe campus.



In the U.S. for the first time in six years, the conference is showcasing artwork, science and technology in a multisite exhibition with more than 500 international artists from 29 countries. Paris, Sydney, Helsinki, Singapore, Montreal and Istanbul have served as previous hosts of the 30-year event.

The Santa Fe events begin at 2 p.m. today when artists Jason Baerg and Charles Lindsay talk about their electronic exhibitions at the dome.

At 5 p.m., there's an opening reception for the Buffalo, N.Y. -based Teri Rueb and ceramist Larry Phan's soundscape "No Places With Names: A Critical Acoustic Archaeology."

IAIA will end its branch of the symposium with more artist talks from 9 a.m. until noon on Tuesday, although exhibits run through Oct. 26.

It's all about art-meets-science and technology within a spherical shape that creates its own world.

"This interactivity in a dome is absolutely new in the world," dome director Ethan Bach said.

"It opens up a lot for artists to be able to explore that. It includes the audience," he continued. "The difference (between the curved shape and a flat screen) is the inclusiveness of it."

Cree/Métis artist Baerg of Toronto has been working with randomization software for several years. Born and raised in Saskatchewan, Baerg turns specific Native numbers into stories, color and repetition in a 360-degree display of abstracted symbols, including the sun and moon. He never knows which symbol or shape will appear in a running ticker-tape around the Dome's concave screen. He calls his piece "There Was No End."

"I'm questioning the notion of linear time, which is supported by quantum physics," Baerg said. "Indigenous people have been questioning it for a long time."

"It's an early form of abstract intelligence," he added.

Visitors' physical bodies trigger responses from the piece.

"I'm an abstractionist," said the artist, who has been a painter for 20 years.

Flashing lights draw the curious into the black room, where the background colors inside the dome change according to the number of bodies beneath it. Much of the symbolism and 360 random shapes are mirrored in the indigenous calendar. The shapes create a circle.

The Plains Cree teepee features 16 poles, Baerg said, another number reflected in the program.

"Each represents a core value, such as honesty, truthfulness and respect," he said. "The work also incorporates the four directions and the 13 moons in the indigenous calendar.

"It was used as a governance model to teach children," he continued. "I was reading and contemplating the Ojibway relationship to the 13 moons. The strawberry moon is in June. It's a time when we get together and forgive. That's a redemption for all."

The Santa Fe event is the first time the artist has seen his work presented in an organic shape.

"This is my first experience and a career highlight," he said. "It's a real honor to be here."

#### Sound and GPS

Rueb's landscape piece uses surround sound and GPS to lure visitors on a walk around the IAIA campus. A custom mobile phone application weaves spoken words with sound waves around the campus "fire circle" ringed by buildings and the tendrils of trails. The app responds to the user's movement and location.

An artist in residence at the Santa Fe Art Institute, Rueb interviewed between 25 and 30 Santa Feans to produce "No Places With Names." The sample included artists, farmers, geologists and students to glean various perspectives on the land.

To take the sound walk, visitors download the free app to hear bellowing winds, trickling water and voices commenting on the meaning of landscape. A woman talks about her father's difficulty in maintaining a stable sleep cycle in the Arctic's constant daylight. Walk near IAIA's administration building, and a professor's voice talks about the campus' introduced, non-native plants. His Native students often ask him what they are for, since their fruit and seeds are nonedible.

"It's there because it's pretty," he tells them. "We talk about their leaf structure; we talk about their flowers."


The sounds emerge as if rising from the earth. The piece's title comes from the first passages of the Navajo creation story: "We hear of no places with names to the north."

Diné consulting anthropologist, archaeologist, weaver and potter Carmelita Topaha also contributed to the project.

"The whole point was to look at wilderness from cross-cultural perspectives," Rueb said.

"I consider my work a landscape practice," she added. "I like to get people out in the landscape."

Also as part of the symposium events, the Museum of Contemporary Native Arts, 108 Cathedral Place, will host a reception for ISEA participants from 1-5 p.m. Tuesday. The event incorporates one of its latest exhibitions, "50/50: Fifty Artists, Fifty Years," a sampling of art from IAIA students from the school's permanent collections.

 Like  3 people like this. Be the first of your friends.


Posted in [Dome News - General](#), [Event Documentation](#) | Tagged [Charles Lindsay](#), [digital dome](#), [Emerging Media](#), [Immersive art](#), [Interactive Digital Dome](#), [Interactive Fuldome](#), [Jason Baerg](#), [Teri Rueb](#) | [1 Reply](#)

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# ISEA2012 at the Digital Dome – event recap



Posted on [October 27, 2012](#) by [digitaldomeiaia](#)

 12 people like this. Be the first of your friends.

[ISEA2012 at the Digital Dome](#) was amazing. I want to thank the 300+ people who came out for this event. There was plenty to experience with artwork by accomplished artists Jason Baerg (Metis Cree), Charles Lindsay, Eric Hanson, Teri Rueb, Larry Phan, Simon Kaan (Maori), and Ron Bull (Maori). People came to campus throughout the day and we heard nothing but positive reviews of the work.

The artists chose IAIA for their project because the campus lies between the two major ISEA conference sites, as well as IAIA's integrated teaching of higher education and Native American cultural and values, with respect for cultural differences. Rueb says she was also drawn to the beauty of the landscape.



— Jason Baerg giving a talk about his work, "There Was No End"





— Color shifts as the audience walks across the room

With Jason Baerg's piece, *There Was No End*, we showcased interactivity in the Digital Dome, using the vDome software, for the first time! Jason, Charles, and myself worked feverishly to get this new technology up and running for this event. For the project we used Jason's 360 digital abstractions, two kinects, and three computers (one for each kinect then networked to our dome Mac). As people walked

across the open dome floor the background colors of the piece shifted dependent on how many people where in the space and their location. It was a subtle effect that you could feel in your core as the colors shifted.



— CarbonX by Charles Lindsay and Eric Hanson

Charles Lindsay and Eric Hanson's collaborative piece, *CarbonX*, captured the audiences full attention with the surround sound and enveloping imagery. Lindsay and Hanson used capture methods such as photography, photogrammetry, point cloud data, and carbon scanning of drawings to create this piece. The piece took the audience on a journey through landscapes of the unknown.



— Teri Rueb and Larry Phan, *No Places with Names: A Critical Acoustic Archeology*

The entire campus was buzzing with activity as people experience the GPS locative sound walk experience entitled "No Places with Names: A Critical Acoustic Archaeology" by Teri Rueb and Larry Phan (with contributions by Carmelita Topaha (Dine')). This app based tour allowed people to wander along the IAIA trail that weaves spoken word and sound into the trails. Teri also put together a surround sound dome composition.



Simon Kaan and Ron Bull, Maori artists from New Zealand had been spoiling us at IAIA for the week leading into ISEA with traditional Maori foods including whale. For ISEA, they put together a multimedia installation on indigenous knowledge about food utilizing multiple computers to create live interactive performance over the web.

Special Thanks for all of the organizers for ISEA and my student helpers Feather Metsch and Brian Bolman.

 Like  12 people like this. Be the first of your friends.

Posted in [Event Documentation](#), [Full dome Research](#) | Tagged [Charles Lindsay](#), [Charles Veasey](#), [Eric Hanson](#), [fulldome art](#), [fulldome interactivity](#), [IAIA](#), [Interactive Art](#), [Interactive dome](#), [ISEA](#), [ISEA2012](#), [Jason Baerg](#), [kinect](#), [Larry Phan](#), [max/msp](#), [Ron Bull](#), [Simon Kaan](#), [Teri Rueb](#) | [Leave a reply](#)



# Call for participation: 2013 IMERSA Summit & Fulldome workshops, February 2013



Posted on [November 29, 2012](#) by [digitaldomeiaia](#)

Like 3 people like this. Be the first of your friends.



The Denver Museum of Nature & Science will again be the main venue. The event will include 3 days of professional development workshops for producers (all levels of experience), 13-15 February (Wed-Fri) which will transition to the 3-day Summit, 15-17 February (Fri-Sun). The Summit promises to be a valuable conference, continuing the conversation between converging business sectors and taking the temperature of the industry with fulldome film showcases, technology sessions, the next phase of fulldome

standards, abundant opportunities for networking and much more. Some student scholarships will be available.

As the event takes place not long after the 'Imiloa Fulldome Film Festival (7-9 February 2013) and its content will complement the 'Imiloa gathering, we encourage you to plan to attend both. (There's just enough time in between to make a quick visit to California or Las Vegas.)


Please watch [IMERSA.org](http://IMERSA.org) for details on registration, schedule and program. If you would like to be a sponsor, suggest a session or other program component, volunteer to assist with organizing or implementing the event or share other suggestions or inquiries, please email [info@imersa.org](mailto:info@imersa.org).

**NMAD392J – Digital Dome Production I – Mondays and Wednesdays 9:30am to 12pm – Instructor: Joe Abraham Dean**

A great beginner's course!

**Course description:** Get in on the cutting-edge of this new technology while learning how to use the DigitalSky 2 software, create gigapixel images, and learn the history, present, and future of the digital dome. This course requires a willingness to experiment, research, take risk and break new ground. From the basics of how to place a still image on the dome to exploring and experimenting with storytelling, installation, and art. Students can work with the dome in various positions utilizing its unique ability to articulate. A public showing of work is required as part of the final project.

**Joe Dean** has been working and producing in the fulldome theater since 2007. He is the owner of Lumenscapes – a Santa Fe based lighting and digital media company with international projects in design and construction of immersive multimedia installations. His specialties are in domes, trade show booths, theatrical design for performance, motion picture production, content creation for multimedia installations, projection mapping, and immersive film making.

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Posted in [Fulldome Production](#), [Fulldome Research](#), [Fulldome Techniques](#), [Institute of American Indian Arts - General](#) | Tagged [3d](#), [craig tompkins](#), [digital dome](#), [fulldome](#), [fulldome how to](#), [fulldome instruction](#), [gigapixel](#), [HDR](#), [Jane Crayton](#), [Jane DaPain](#), [joe dean](#), [lumenscape](#), [maya](#), [photogrammetry](#) | [Leave a reply](#)

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# Spring 2013 Courses in the Digital Dome

## @ IAIA: Fulldome Production



Posted on [December 3, 2012](#) by [digitaldomeiaia](#)

Like 13 people like this. Be the first of your friends.

Like 13

This spring semester, the Institute of American Indian Arts is offering two courses that deal with digital dome production. The courses are Digital Dome Production I and Digital Imagery for the Dome. Digital Dome Production I is a great course for newbies to dome production and Digital Imagery for the Dome combines Spherical photography, photogrammetry and special effects in a virtual environment. New student and audit student registration will begin in January and class start January 14 and run for 16 weeks.

Note: Anyone can take a course at IAIA as long as you have a high school diploma or GED.



— Fun IAIA apocalypse image by instructor Craig Tompkins. This image was created through spherical gigapixel HDR photography, photogrammetry, using Maya to create grass and sky replacement.

**NMAD392J – Digital Imagery for the Dome – Tuesdays and Thursdays 9:30am to 12pm**  
**Lead Instructor: Craig Tompkins (with Jane Crayton from UNM)**

**Course description:** *Digital Imagery for the Dome* will provide advanced skills in high resolution photography and video. Students will learn capture and integration of real world locations and CGI effects for fulldome production. Focus will be on photographic techniques such as advanced skills in spherical panoramic background photography, HDRI capture, photogrammetry for set



reconstruction and 360° live action video. Site survey techniques will be demonstrated as well as new techniques for 3D point cloud data capture. (Prerequisite skills: spherical HDR photography and/or 3D modeling.)

\*This course is part of our Fulldome Development for Interactive Immersive Training research grant. Full-time degree seeking student who take this course will be eligible for the paid summer digital dome internship.

**J. Craig Tompkins** is an artist and designer living and working in Santa Fe, New Mexico where he serves as Animation Faculty at the Institute of American Indian Arts. He received an MFA in Electronic Arts at Rensselaer Polytechnic Institute in 2009.

Craig works primarily in the fields of 3D animation, previsualization, and scale modeling, branching out into video compositing and installation. As a collaborative artist, he designs and constructs scale models and sets for photography, film, and installation. Tompkins is also the Lead Faculty Advisor to IAIA students at NASA's Kennedy Space Center in the formation of the Creative Humanics Laboratory (CHL). CHL is an ongoing design, modeling, and simulation experiment in collaboration with IAIA, NASA, and the American Indian Higher Education Consortium (AIHEC).

**Jane Crayton** focuses on STEM-A (Science, Technology, Engineering and Mathematics through Art) utilizing experimental educational public outreach projects for STEM-A and New Media. Jane has worked in fulldome for the past few years and is one of the organizers of the [IMERSA | Immersive Media Entertainment, Research, Science & Arts](#) conference at Denver Museum of Nature and Science. Jane is currently working towards her masters degree in Education at the University of New Mexico where she works with ARTS Lab.

# Currents 2013 : Santa Fe International New Media Festival 2013 Call for Entries – Digital Dome @ IAIA



Posted on [December 5, 2012](#) by [digitaldomeiaia](#)

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**CURRENTS 2013 : The Santa Fe International New Media Festival**  
**June 14th – June 30, 2013**

<http://www.currentsnewmedia.org>

## Call for Entries

**All submission materials must be received online or postmarked no later than:  
February 1, 2013**

**CURRENTS 2013**, the 4th Annual **Santa Fe International New Media Festival** will be held in Santa Fe, New Mexico, USA – **June 14th – June 30, 2013**. **CURRENTS'** curators look for the unique ways artists use technology as a tool for expression and communication, and ways that scientists, programmers and developers are integrating the arts and aesthetics into their explorations and projects. The Festival will be held in several venues throughout Santa Fe: the Center for



The Festival will be held in several venues throughout Santa Fe: the Center for Contemporary Arts, El Museo Cultural de Santa Fe, and the digital dome facility at the Institute for American Indian Arts. In addition to exhibitions **CURRENTS 2013** offers panel discussions and workshops, and evenings of multimedia performances. Festival events are free to the public.

To view previous year's exhibitions visit <http://www.currentsnewmedia.org/index.html>

#### This Year's Categories

<http://www.currentsnewmedia.org/artistsubmission.html>

**Category A – New Media Installations** (video, sound, interactive, computer/software modulated or robotic sculpture or computer/software assisted fabrications)

**Category B – Single Channel Video and Animation**

**Category C – Multimedia Performance**

**Category D – Experimental or Interactive Documentary**

**Category E – Digital Dome Projection**



**Category F – Web-art, Art-gaming, Mobile Device Apps (phone, iPad, etc).**

**Category G – Youth New Media Makers**

#### General Guidelines

<http://www.currentsnewmedia.org/generalsubmission.html>

The **CURRENTS** Festivals are produced by Parallel Studios, a 501 (c)(3) nonprofit organization. [parallel-contact@earthlink.net](mailto:parallel-contact@earthlink.net)

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Posted in [Call for Work](#), [Digital Dome @ IAIA Updates](#), [Dome Art](#) | Tagged [call for entries](#), [Call for work](#), [currents new media arts festival](#), [digital dome](#), [fulldome call for work](#), [parallel studios](#) | [Leave a reply](#)

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# Fulldome / Digital Dome custom Adobe Action Pack for Spherical Production – FREE Fulldome Production Tools



Posted on [December 13, 2012](#) by [digitaldomeiaia](#)



Jessie Bennett and 3 others like this.

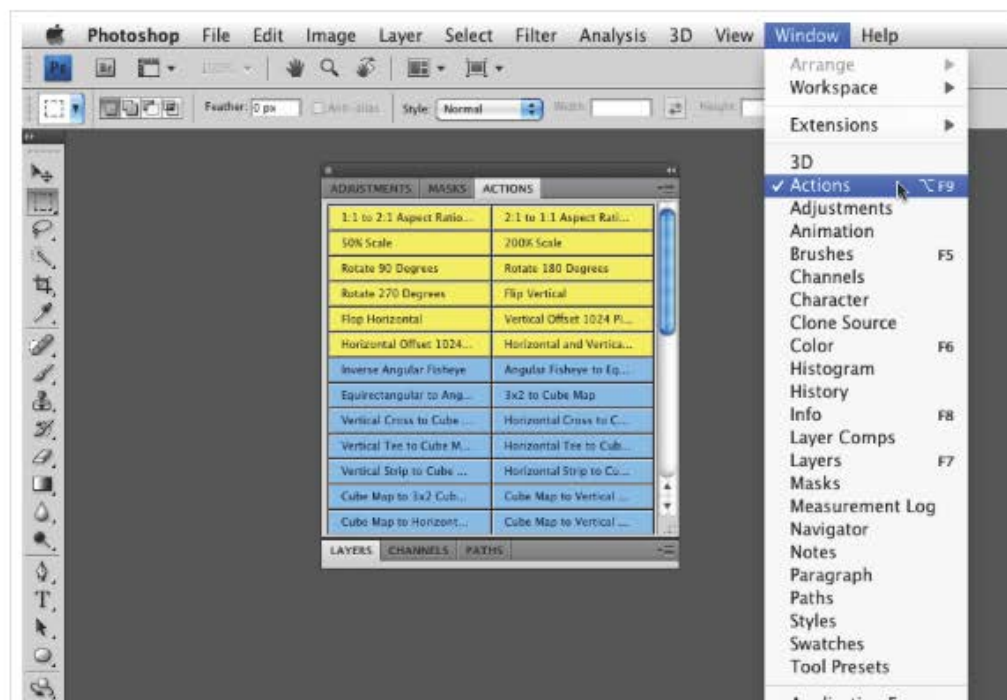


4

Free fulldome production tools for Photoshop. We just ran into this gem on the Fulldome Database. This free download combines Photoshop tools including grids, one click rotate, and fisheye effects into an easy to use set of actions.

The Domemaster Photoshop Actions Pack is a collection of custom Adobe Photoshop actions – written by Andrew Hazelden – designed to speed up the fulldome content creation workflow. The actions provide tools for converting images from several common panoramic formats such as angular fisheye, equirectangular, and cube map panoramas, and general utilities for fulldome production.

The Domemaster Photoshop Actions Pack is compatible with Photoshop CS3 to CS6 on both Mac and Windows.



# Registration for the IMERSA Summit 2013 is now Open! IMERSA (Immersive Media Entertainment, Research, Science & Arts)



Posted on [December 15, 2012](#) by [digitaldomeiaia](#)



6 people like this. Be the first of your friends.



6



## Registration is now open!

We are happy to announce the Digital Dome @ IAIA staff will be providing workshops in fulldome production at IMERSA and demonstrating vDome. More details to come.

## IMERSA Summit & Workshops, Feb 14-17 in Denver

### "Innovations in Immersive Storytelling"

Register now to get the best prices – discounts end January 15

Featured speakers: **Ivan Dryer** (Laserium) and **Barry Clark** (Telenova)

[Click here for a detailed overview of the event.](#)

## Call for participation

Openings still remain for Summit speakers, Workshop leaders, screenings, Fulldome Innovators and sponsors. Volunteers also needed. [Information about these opportunities is in the Summit overview at this link.](#)

## Michael Daut joins IMERSA Board

IMERSA welcomes **Michael Daut** of Evans & Sutherland to the Board. [Click here for story.](#)



# Introducing IAIA's Immersive Digital Dome Kiva for live gaming, interactive video installation and performance.



Posted on [January 26, 2013](#) by [digitaldomeiaia](#)

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Like 34



The Digital Dome at IAIA is excited to announce a preview to amazing things to come. After we have vDome, interactive fulldome software, running as smoothly as we feel comfortable, we will begin to add rear projection to the six panels of curved rear projection screens to create the Immersive Digital Dome Kiva. For now, we have tucked away the screens in order to continue our preparation of vDome for the IMERSA 2013 summit. Keep posted for developments at the Digital Dome @ IAIA.

Like 34 people like this. Be the first of your friends.

Posted in [Digital Dome @ IAIA Updates](#), [Dome News - General](#), [Fulldome Research](#) | Tagged [Charles Veasey](#), [Immersive media](#), [immersive media art](#), [Institute of American Indian Arts](#), [Interactive Digital Dome](#), [Interactive Fulldome](#), [unity game engine](#), [vjing digital dome](#), [vjing fulldome](#) | [Leave a reply](#)

# How to Shoot Spherical HDR Panoramic Photos using the GigaPan Epic Pro



Posted on [January 16, 2013](#) by [digitaldomeiaia](#)

 5 people like this. Be the first of your friends.

 5

Gearing up for tomorrow's class, *Digital Imagery for the Digital Dome*, and the workshop I will teach at the [IMERSA Full dome Summit](#), I have revised our instructions for shooting a spherical HDR panoramic photo using the GigaPan Epic Pro and thought I would share this with you.

I am using a Canon T31 Rebel with an 18mm – 55mm lens. These direction are specifically shooting exterior landscapes. Camera settings and Field of View settings in the GigaPan menu may need to be adjusted for other settings.





— IAIA students using the Gigapan Epic Pro at Chaco Canyon, Summer 2012.

You should end up with around 56 sets of bracketed photographs. I use Photomatix and PT GUI to process the HDR and stitch the photos. If you use these direction, put your photos on [360 cities](#) and share your link here. I would love to see what you create.

## vDome Real-Time Digital Dome (Full dome) Software at IMERSA2013

Posted on **March 2, 2013** by [digitaldomeiaia](#)

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 Like  0

The IMERSA Summit this year was amazing with workshops, speakers, technology shares, and live dome performances. We were proud to show off our vDome software. At IMERSA 2013, they showcased the soon to be released open source software highlighting its capabilities for plug and play, external sensor motion generated interactive art, and live VJ performance. The calibration between projectors was seamless without lag. vDome runs on a single Mac computer!



This clip was taken from the IMERSA highlights video created by Derek Osterlund and Jane Crayton. The full video can be seen here [vimeo.com/60871691](http://vimeo.com/60871691)

More information on vDome, and its open source release, coming soon!

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# Creating [for] Novel Displays

Explorations Into Projection Mapping and Interactivity

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## Final Projects: A Sampler

On a cold and windy night in early May, students screened their mapping projects on the Consortium for Environmental Research, Informatics & Art (CERIA) building. We didn't have the planned projector, so the projection was half the brightness we planned. But fun and learning was at hand. Here's a quick cut of works projected on the building and on the scaled model built to support production.

10  
05  
2013



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## Week 13 / Toward Final Projects Notes

A very good session of taking Tim's charrette challenge to task. Below are my notes on where everyone is in planning their final projects. Please let me know (comments or email) if I missed or mistaken anyone/anything. You'll also see a list of pre-production and presentation efforts required for the CERIA-building projects. We need all working on the building to get behind one or more of these efforts. Holla with your preferences and note we'd like to develop a bit more content to serve as branding (pre/post-show) and interstitials between presentations. We'll all brainstorm on that next week. Last, please plan to build credits into your projections/presentations. These can be simple or elaborate, but we'd like to see them integrated into your geometry. -d

12  
04  
2013

### CERIA-based

*Cubic Pointillism / Architectural Geometry*  
Sarah, Diego & Daniel

*Museum Critters*  
Manny, Adam, Isaac & Shane

*Los Conejito y Los Zanahoria*  
Grace & Ricardo

*Environmental Impacts*  
Colin & Jesse

### Other Models/Experiences

*Facebook Viz*  
Kam & Chris

*For Loved Ones*  
Myrna

*Cityscape*  
Joseph

*Cubic Structure*  
Mitchell

**To be determined**  
Brandon & David

### CERIA Preproduction & Presentation Efforts

*Model Building*  
Sarah, Diego & Daniel

*Model-based Projection Set-Up & Mapping* (in Lab, as soon as model is completed)

*Digital Modeling* (most teams want to reveal the interior/infrastructure, perhaps we can share assets here)

*Projection Tests on Site* (TBD nighttime, week of 15 April)

*Event Promotions* (develop and deploy)

*Presentation Hardware Configuration & Installation* (Lab-based testing, showtime installation)

*Presentation Branding & Interstitials Development*

## Midterm Video

A quick cut from the midterm videos.

3  
04  
2013



Comments : [Leave a Comment »](#)

Categories : [Uncategorized](#)

## Painting Campus: Site Selection

We had a great outing in search of a good mapping site Thursday night. We settled on the CERIA building (old bookstore) along Yale Mall for a variety of reasons. The building and location give us some interesting geometry and features on an ugly building that needs your talent. It also provides good projector positioning and power, safe viewing and some foot traffic. The mall also has decent lighting that can be easily modified. (Skilled eyes will catch Brandon blocking an odious sodium vapor light in a nonpublic space- and perpetuating a long-standing stereotype. That's right, architects are so arrogant they think building-related laws don't apply to them.)

30  
03  
2013

So we're going to paint this building. While there are more interesting buildings, selection gets us into preproduction starting now. Toward that, I've written to the University Architect in hopes of getting plans. Colin expressed interest in creating a digital model via photogrammetry. I'm drafting Adam into the project as well. With blueprints or point clouds, I hope we can start fabricating a scaled model of the building for mapping and content development.

**A really important decision will be how much of the building we can map.** I'm researching the projector we'll use and you should come with thoughts on this design element.

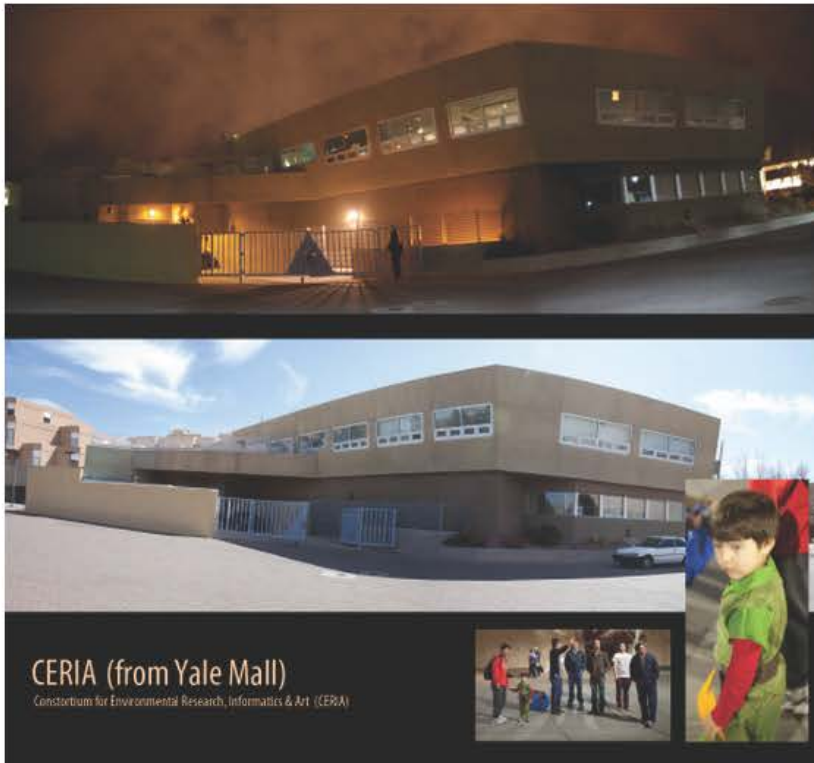
Have a look at the photos (click to expand) and stop by the site. We can get into creative quickly if everyone can come up with a scene card or two on what they envision for the final project.

**Creating [for] Novel Displays**

Blog at WordPress.com. The Freshy Theme.

Have a look at the photos (click to expand) and stop by the site. We can get into creative quickly if everyone can come up with a scene card or two on what they envision for the final project.

d



## CERIA (from Yale Mall)

Consortium for Environmental Research, Informatics & Art (CERIA)

Comments : [Leave a Comment »](#)

Categories : [assignments](#)

# Final Projects: First Notes on Painting Campus

Here's where we are with final projects:

28  
03  
2013



I've secured an almost free 12k lumen beamer, a Christie LX1200. Resolution is 1024x768 so render times (and playback/interactivity) should flow better. This comes to us from the support of **Steve Case at Adobe Productions**. Say thank you!

Premiere date: **Thursday, May 2**. It'll be a one night set-up, present and document. Sunset = 8pm; Nautical Twilight = 9pm.

We'll agree to one location and one mapping for the big beamer. Everyone – except those who choose to do smaller scale projects – will work on the one big show by contributing to at least one of these preproduction efforts: planning, previz, digital modeling, test mapping, map refinement, interactivity, etc. Everyone working on the big picture will also need to create their own unique pixels for the presentation.

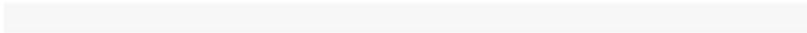
Those who choose to work on smaller projects, we have three Mitsubishi beamers (bright, HD) available. These projects will also be set up as part of the May 2nd presentation. Let's consider how these projects sum to greater than the sum of their parts.

More coming...

d

Comments : [Leave a Comment »](#)

Categories : [assignments](#)





## IFDM Showcase

A bit on your student showcase – Saturday, May 4. It's written for faculty, but it's your gig...

27  
03  
2013

**This is a reminder that the mandatory end-of-semester IFDM Student Showcase will take place at the IFDM facilities at Mesa del Sol on Saturday, May 4, 2013, from 10am-1:30pm.** IFDM students are required to be there early, and students and faculty should have everything set up and ready before the day of the showcase. Please remind your students, and ensure they're prepared. Only IFDM students are required to attend the showcase and present their work. Other students in your class can attend and showcase their work, but it's not required. Faculty should pick featured student work to be presented in the theatre, with a length of 5 minutes. An example is a 5 minute loop of featured student works in which faculty give a brief introduction of the course and the work that the students did in the class.

After the presentations in the theater, everyone will congregate on the 3rd floor for lunch and to mingle and see student's individual works throughout the building. All IFDM students must present their best work or their final project, as assigned by their faculty from each IFDM course. It is imperative that faculty meet with Greg at Mesa del Sol, before the day of the showcase, to test content that will be shown in the theater and to set up your area in the building. Examples of a set-up include: a table where students bring their laptops to show an animation they've done, a table with photos or poster board where students talk about the content of a paper they've written, or works looped on a plasma screen or computer with students present to talk about it. You can email me ([dgrill@unm.edu](mailto:dgrill@unm.edu)) or stop by my office, or call me (277-4722) for more details.

You can reach Greg on his cell phone (504-4010) or by email ([gblackwe@unm.edu](mailto:gblackwe@unm.edu)).

**I need each faculty to email me no later than April 5th, to let me know what type of content or projects will be presented by students for your course(s).** After I hear from you, we'll assign a list of available equipment to each class. If you have questions, let me know.

Comments : [Leave a Comment »](#)

Categories : [Uncategorized](#)

### ***New Media Arts internship in Dome Production in June/July 2013***

Dome internship at ARTS Lab at the University of New Mexico and the Digital Dome at The Institute of American Indian Arts. A six week fulltime 9 am – 6 pm paid internship program with four students from IAIA and four from UNM. Students will learn to create immersive media for the fulldome multi-projection and surround sound environment. This summer's internship will be focused on learning advanced production techniques and creating a unique environmental public service announcement (PSA) for the fulldome industry. Areas of study: Photography (spherical, panoramic and HDR); cinematography; editing; 3D modeling and animation (camera mapping and virtual set development); compositing and color grading; image manipulation; surround sound and motion graphics.

Students worked on two PSA's about Water Conservation. We divided students into two teams with two IAIA and two UNM ArtsLab students in each team. Each team went from project idea, brainstorming, idea development, storyboarding to production with; spherical and panoramic photo in HDR (students went to different locations in New Mexico fitting for their project); filming HD footage in the green screen space at ArtsLab (including setup of desert scene with actors and props and a Native American dance scene) ; 3D animation in Maya; 2D animation and compositing with Fulldome plugin in After Effects; recording voice over at IAIA sound studio adding sound effects and music to projects and mix in surround sound) finally editing together high rez 4k film renders from After Effects in Final Cut Pro and Adobe Premiere for fulldome distribution. Instructors are very impressed with the students ambition level, commitment to finishing



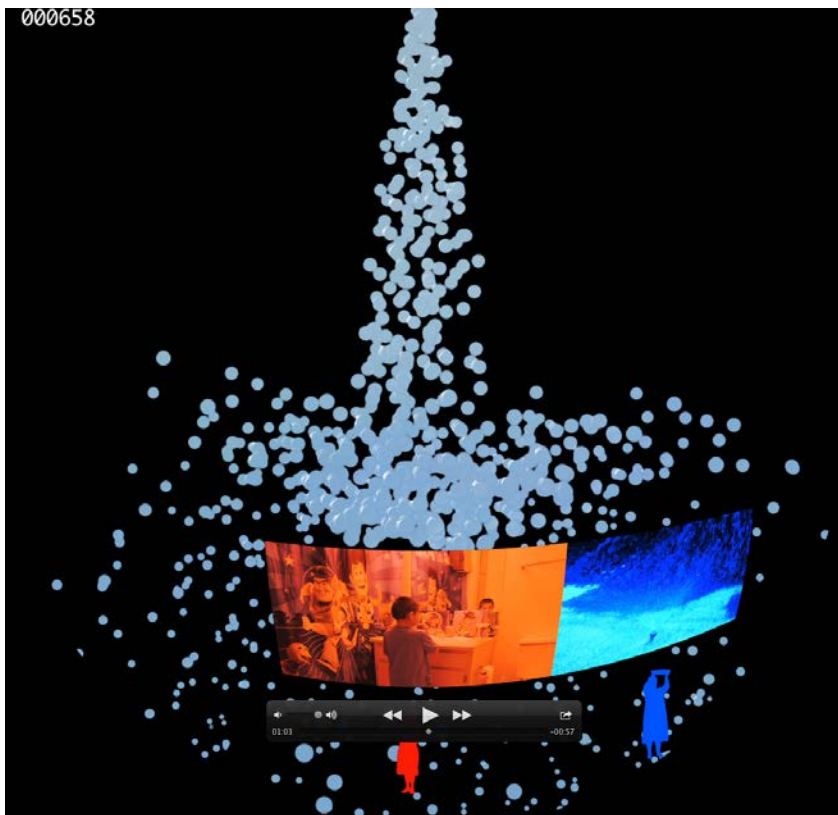
project and skills sets for different part of the productions. Fulldome films will be uploaded to IMERSA and the Fulldome database.

Students working at ArtsLab



Student project photos






# Senior Project Exhibition in the IAIA Digital Dome November 14th




Posted on [November 18, 2013](#) by [digitaldomeiaia](#)

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Images from Senior Project Exhibition fall 2013 in the IAIA Digital Dome opening November 14<sup>th</sup>. Exhibition curated by Patricia Trujillo "Powwow Tradition/Contemporary" with Dome projection (by Louva Hartwell), curved screen projection and surround sound.



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# Fall 2013 Digital Dome Student Interviews



Posted on **December 3, 2013** by **digitaldomeiaia**



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The Institute of American Indian Arts offers an Introduction to Dome Production class. We've asked three students currently taking the course to share some insight.

## **Denise Lynch**

What are you learning in the Digital Dome class here at IAIA?

I'm learning how to look at things holographically and think holistically. Also learning how to apply that with state of the art equipment and being in a dome environment. It's changing how I see things, when I have an impulse to an image, what that image says to me or what I like about it and helping me expand aesthetic of what would fit in the dome.

What is interesting about the dome?

I'm learning what the dome likes. Animals and landscape is predominantly what I do within my artwork. Able to take some of my own intimate artistic views with fisheye and how they interface with the dome, how artistically they would be presented in a dramatic way.

The dome is a very dramatic tool and dramatic space.

I start with sound and then go deeper with image, which the dome is very inviting for that territory.

The dome is kind of like being in utero; it is a space with a lot of sound and feeling.

What is challenging?

The challenge is how to get depth of field in the dome. Trying to gently allure people into the dome, which is conducive to planets and stars. The space can be intimate or too loud, so in between is where I'm trying to find my voice. It's going to take a while; it's such a leap of technology. It's not outer space. It's inner space.

### **Jennifer Benson**

What are you learning in the Digital Dome class here at IAIA?

Learning to use DLSR cameras, the Gigapan, the Nodal Ninja and the programs that process these panoramas such as PTGUI, Photoshop and Maya.

What is interesting about the dome?

I like to learn new technology. I like to work in the dome, which I want to learn more about how to use.

What is challenging?

The most challenging is learning new programs at a fast rate but it works out in the end. It's hard at first and then it gets easier, it makes sense when you finish.

### **Brian Bolman**

What are you learning in the Digital Dome class here at IAIA?

In the Digital Dome we're learning how to work with multiple panoramas. A panoramic image is mimicking the way that we can see everything, from the left periphery to the right periphery. Cameras see squares, so we are piecing all these squares together like a puzzle.



What is interesting about the dome?

You look at things differently. It's fun to look at still images that we're ultimately going to animate. We are learning these little bits along the way that we will then build off of those to do more things in the dome.

What is challenging?

The challenge is making the time to sit down, troubleshoot and work with different images. One needs to get comfortable with the software, such as figuring out any shortcuts, because these are the tools that we are going to make our art with. You want to know how to use them.

Interviews by Angel Mills



Dome Production I students and instructors


Left to right: Brian, Craig, Delfino, Julia, Denise, Dusty, Alicia, Jennifer, Angel, Alfred, Mats



# Institute of American Indian Arts upcoming Virtual Museum



Posted on **March 26, 2014** by **digitaldomeiaia**

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The Institute of American Indian Arts is working on a Virtual Museum for the Digital Dome to showcase student's artwork within the museums archives. Once the art is finished it will be able to be shown as 3D models of; painting, sculptures, pottery and other works. Delfino Castillo is an IAIA student, who has taken the CINE 392 A Interactivity for the Dome in Fall of 2013.



When asked what was he currently working on?

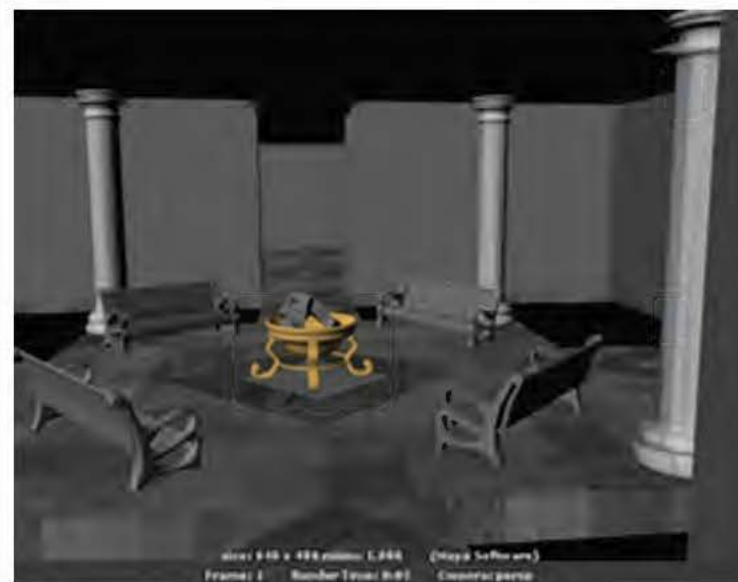
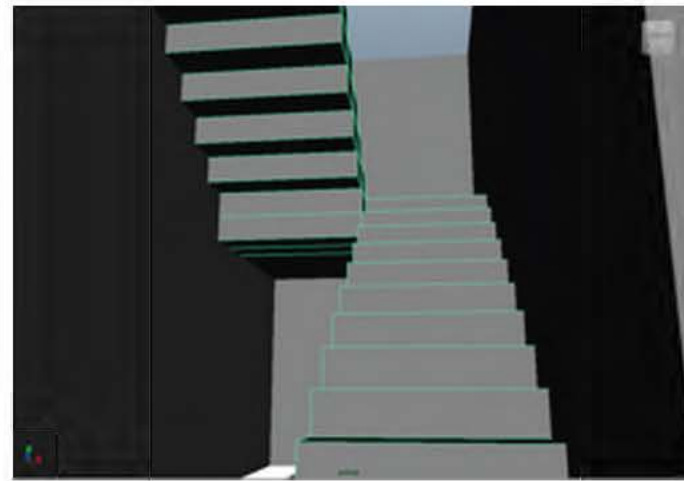
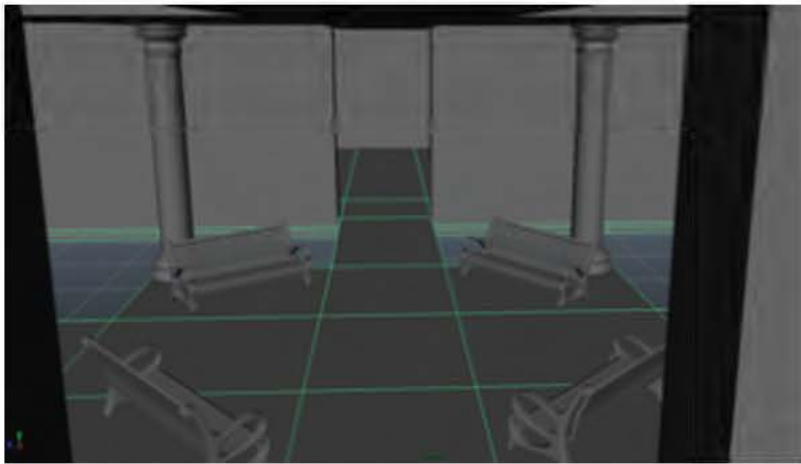
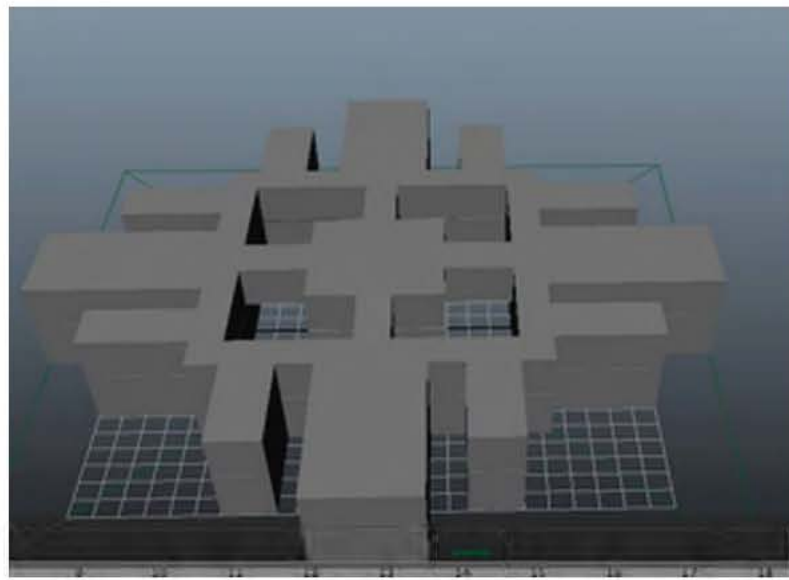
Delfino : *I'm working with a 3D program called Maya, creating a virtual museum in order to make the dome more interactive. When done, you'll be able to use game controllers within the dome to move around in the building.*


What are you making the virtual museum for?

*Delfino: We are making the dome more interactive and designing our own virtual museum for IAIA student artwork. The building is our own design that we put 3D models of all the work we have stored in the IAIA student archives. We will also put the 360 Panorama spheres and fisheye projects from the current Intro to Dome Production class in the virtual museum. So far I have designed the building, stairs, benches, a fire pit pillars and floor textures. The building resembles a Zia symbol. I'd also like to include spaces for sculptures, water, and plants to make the space more alive.*

How long does the modeling 3D process take?

*Delfino : I just began 3D modeling starting at the beginning of the semester when the class started. It's a time consuming process but once you get a hold of it, it's a lot faster. There are a lot of things you can copy and paste, or mirror images, so there are a lot of short cuts you can take.*



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Posted in [Cinematic Arts & Technology](#), [Digital Dome @ IAIA Updates](#), [Dome Art](#), [Dome Courses and Workshops](#), [Dome Presentations](#), [Institute of American Indian Arts - General](#) | Tagged [Defino Castillo](#) |



# Artist in Residency Zack Settel at the IAIA Digital Dome 2014



Posted on **March 31, 2014** by **digitaldomeiaia**

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## Zack Settel at the IAIA Digital Dome ~ March 31st – April 11th 2014



Zack Settel studied at the California Institute of the Arts (CalArts, Valencia, USA) and received a BFA in music composition. He has composed music for film, video, television, concert pieces, musical theater, studio works, opera and dance. Settel was interested in how music was used and the technical side of music production and performance. He moved to Paris with a Fulbright scholarship at IRCAM (the Institute for Research and the Coordination of Acoustics and Music) to further his music and composition skills. Settel's music uses live interactive electro-acoustic systems.

In recent years Settel has collaboration with students and other artists helping them to develop a set of 3D model bone-like components for the construction of a mobile made of bones and 3D models for background. The display is shown in an enclosed dome for audio-visual projection space. Audio is generated by models that simulate sounds of acoustic strings, skins, metals or wood. Musical interaction via this movement results in sonic recombination. This creates a record of the users interaction, in which the presence of each contributing visitor is reflected visually and sonically. Incorporating physical models for sound synthesis, 3D audio-visual, whose elements make sound when they collide.

Zack Settel founded and directed the research group sound immersion of the Society for Arts and Technology in Montreal (SAT), where he is still active as an artist in residence and consultant.

## Artist Residency Interactive Display

The work, "Bone Jam" will be developed in the context of an artistic residency in through ~ **March 31st – April 11th 2014**, at the INSTITUTE OF AMERICAN INDIAN ARTS Digital Dome, and subsequently completed at the SAT in May. It will then be presented at the Currents Festival in Santa Fe, NM, in June 2014. IAIA students will be invited to a lecture and demonstration of interactivity in the Digital Dome.

### Here is some links to Zack Settels work:

~ Music in Motion <http://vimeo.com/66696301>

~ The Making of le road opéra Alexandra par Zack Settel et Yan Muckle

[http://www.youtube.com/watch?feature=player\\_detailpage&v=G3w5u3pybRc#t=247](http://www.youtube.com/watch?feature=player_detailpage&v=G3w5u3pybRc#t=247)

~ Sound Wall

A study of live musical interaction using a 3D audiovisual scene graph framework.

<https://vimeo.com/66697042>

~ 4dMix3

A short documentation on an installation piece, where, visitor movement in the real space extends, and is is projected into, a surrounding audiovisual 3D space, where musical interaction occurs.

<https://vimeo.com/80653659>

~ Ball Train: Music of structured movement

An explanation of the artist's basic concept for spatial music


<https://vimeo.com/66697310>



# Telepresence at IAIA: interactive live performance with SAT Montreal



Posted on **May 13, 2014** by [digitaldomeiaia](#)

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IAIA Digital Dome is proud to present an international interactive collaboration with Society for Art and Technology (SAT) in Montreal on a telepresence project. This live performance including IAIA student dancer Terran Kipp will be done with a two-way exchange of live performance dance, video and music enabling real-time remote interactivity. This two-way interactive event is planned between IAIA in Santa Fe, USA and SAT in Montreal, Canada as part of SAT's International Symposium on Immersion and Experience.

Date and time: May 22nd at 5 pm and 5.30 pm in the IAIA Digital Dome.

Address: 83 Avan Nu Po Rd, Santa Fe NM

We have limited seating of max 30 people per performance so please rsvp latest Tuesday May 20th 11 pm to: [digitaldome@iaia.edu](mailto:digitaldome@iaia.edu). Seats will be available for reservation on a first come first serve basis.

Production Mats Reiniusson; Tech and application development Charles Veasey;  
Performance Terran Kipp



# CURRENTS 2014: SANTA FE INTERNATIONAL NEW MEDIA FESTIVAL at the IAIA Digital Dome



Posted on [June 7, 2014](#) by [digitaldomeiaia](#)



CURRENTS 2014 brings together the work of established, unrecognized and emerging New Media artists, from New Mexico, the US and the world, for events showcasing interactive and fine art video installations, multimedia performances and web based art forms. The Institute of American Indian Arts (IAIA) is the only four-year degree fine arts institution in the nation devoted to contemporary Native American and Alaska Native arts. It is devoted to the study of contemporary arts, as well as the art of education. IAIA also operates two centers, the Center for Lifelong Education and the Museum of Contemporary Native Arts.

The [Digital Dome](#) at the [Institute of American Indian Arts](#) is a unique space to learn new applications for creative expression, scientific and technical exploration, and the merging of art and technology. It is also unique in the world as the only articulating dome which can move 90 degrees and be positioned in multiple locations for different viewing experiences. IAIA has joined the international fulldome consortium to link our programming and knowledge formation with others across the country and the world experimenting in ways in this immersive environment.

The Digital Dome projection program will start off with a selection of Student Work. Included in screening will be work from the [Ringling College of Art and Design](#) and selected students from IAIA Digital Dome Production classes.

Ringling College of Art and Design Participating Students: Christina Chang / "Striare"; Millivette Gonzalez De Jesus / "The Dreamer"; Lynea Hagman / "aMaze"; Sooyun Kim / "Flights of Fancy"

IAIA Participating Students: Tamara Colaques and Deepak Maharjan “We are Water” Louva Hartwell “Numoon”; Kyle Joe “Dragon”; Brian Bolman “Facing East”; Denise Wells; Alicia Rencountre Da Silva; Angel Mills; Julia Edmonds; Jennifer Benson; Louva Hartwell Delfino Castillo “Rainwater station”; Deepak Maharjan “Oom mani padme hung”

The program will continue with immersive works by:

Ati Maier / “Event Horizon”

Claudia Cumbie-Jones and Lance Ford Jones, / “Turquoise Trails”

Rick Fisher and Eliot Gray Fisher / “Hejira 9”

Benjamin Ridgway / “Tribocycle”

Greg Schuter / “I Am Not Afraid”

Snow Yunxue Fu / “Or”

OUCHHH / “HOMEOMORPHISM”

Selections from SAT FEST 2013.

Festival at IAIA will conclude with interactive works:

Zack Settel / “Bone Jam”

Chris Clavio / “Mind Chimes”

<http://currentsnewmedia.org/events/dome-screenings-2/>

A shuttle van will be making hourly round trips between [El Museo Cultural](#) and [IAIA](#) beginning at 2:45.

**Program schedule: Saturday and Sunday June 14, 15, 21, 22 3.30 pm – 5.30 pm**

Production and contact: Digital Dome Manager Mats Reiniusson – [mreiniusson@iaia.edu](mailto:mreiniusson@iaia.edu)



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# Success! Telepresence performance IAIA SAT Montreal!

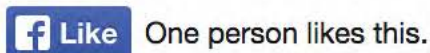
Posted on **June 7, 2014** by **digitaldomeiaia**

0:00 / 2:25




Been busy with the dome internship class collaboration with UNM that takes place half the time in Albuquerque the other half at IAIA, plus putting together the reel for Currents – that I haven't posted anything about the SAT live telepresence streaming performance. We had a full house at the IAIA event and the dancer Terran Kipp was remarkable and the evening was an enormous success. His dancing was wonderful and captivating and the event received really positive feedback from the audience in Santa Fe and from the team and the musicians and the audience in Montreal.

Thanks to all who helped to make this evening so special! – Mats



# Currents 2014 at IAIA Digital Dome June 14th and 15th

Posted on [June 16, 2014](#) by [digitaldomeiaia](#)

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The annual Currents International Media Festival 2014 event at IAIA digital Dome was very successful with a full house and an enthusiastic audience. We showed some amazing dome work. The first hour showcased Dome screenings of immersive works from IAIA students, Ringling College of Art and Design students, national and international artists and selections from SAT FEST 2013 Montreal. The second section premiered two interactive works, “Bone Jam” by Zack Settler and “Mind Chimes” by Chris Clavio. The audience participated in these works which generated a very positive and spontaneous response.

Production Mats Reiniusson; Dome technology Charles Veasey






CURRENT 2014 AT IAIA Dome main program



# Call for Submissions CURRENTS 2015 – Santa Fe's International New Media Festival

Posted on **November 10, 2014** by [digitaldomeiaia](#)

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CURRENTS is an annual, Sant Fe citywide event. The Festival brings together the work of established and emerging New Media artists, from New Mexico, the US and the world, for events showcasing interactive and fine art video installations, multimedia performances, single channel video, animation, digital dome projections, experimental documentary and web based/app art forms. This year we have added architectural mapping, the oculus rift, robotics and 3D printing to our call for entries.

Opening Night / June 12 / El Museo Cultural and the Railyard Plaza / 6pm – Midnight

Opening Weekend Events / June 12-14

New Media Art, Multimedia Performances, Digital Dome Programs, Artists Presentations, Panels and Workshops

All CURRENTS Exhibitions and Events are Free except performances at the Lensic Performing Arts Center

Participating Artists will be announced in February, 2015. Artists, performers & developers are now invited to submit their work.

## Call for Submissions


deadline: December 1, 2014

This year's categories include:

New Media Installations, Full dome Projection/Interactivity, Outdoor Architectural Mapping and Outdoor New Media Installations, Single Channel Video and Animation, Multimedia Performance, Experimental or Interactive Documentary, Web-Art/Art-Gaming/Mobile Device Art-Apps, Oculus Rift, Robotics and 3D Printing technology and the arts in collaboration

# Student Fulldome Screening @ the IAIA Digital Dome!

Posted on [December 5, 2014](#) by [digitaldomeiaia](#)

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Welcome to the IAIA Digital Dome in Santa Fe for the UNM/ArtsLab and the IAIA College of Contemporary Native Arts student Fulldome Screening!

We will screen a selection of student dome work from 2011 – 2014!

**Thursday December 11th 4 – 5 pm.**

**Student Dome Screening at the IAIA Digital Dome December 11th 4 – 5 pm!**



Works 2011 – 2014 by students from UNM ArtsLab and IAIA the College of Contemporary Native Arts



# Interactive Dome @ IAIA 2-6-15

Posted on **January 14, 2015** by [digitaldomeiaia](#)

 **Like** 8 people like this. [Sign Up](#) to see what your friends like.

## "Interactive Dome" @ IAIA Digital Dome Friday February 6th 7 – 9 pm.

An evening with presentations of 3 years of student work for the Interactive Dome environment. Featuring Woody and Steina Vasulka "Interactive Work" and 4th Movement of "Ursonate" by Dada/Intermedia artist Kurt Schwitters performed by Jack Ox, Kristen Loree.

[Link to online article in the New Mexican](#)

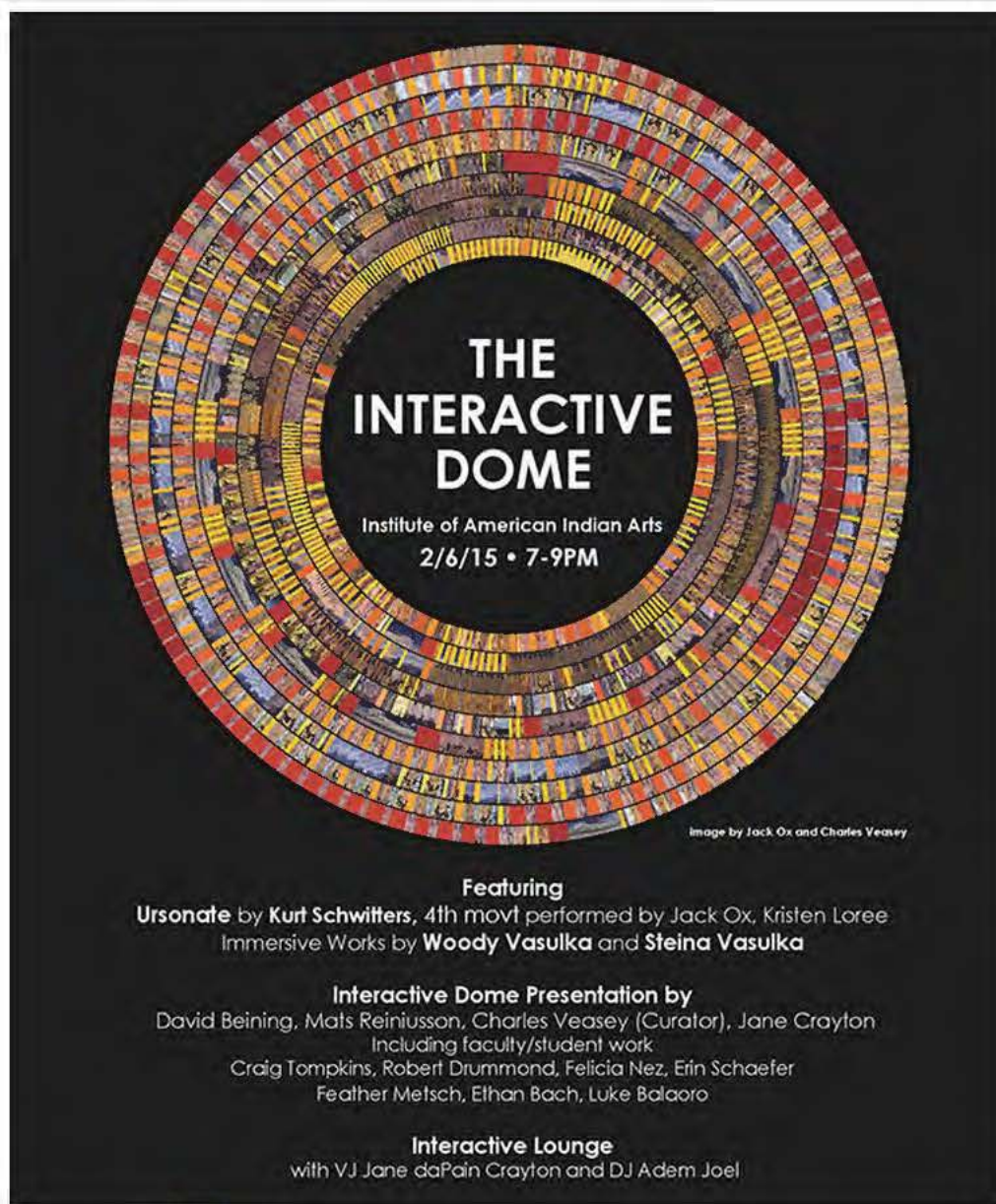
[http://www.santafenewmexican.com/pasatiempo/art/mixed-media-dome-doctors/article\\_a88c10bc-68b0-552d-96db-8c42fae61f1f.html](http://www.santafenewmexican.com/pasatiempo/art/mixed-media-dome-doctors/article_a88c10bc-68b0-552d-96db-8c42fae61f1f.html)

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- [Call for Work](#)
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