



GROUND WORKS

IMPROVING AND SUPPORTING
PRACTICE IN THE THIRD SPACE

2015 a2ru NATIONAL CONFERENCE
VIRGINIA TECH | BLACKSBURG, VA
NOVEMBER 8-11

CENTER
FOR THE
ARTS
AT VIRGINIA TECH

a²ru
ALLIANCE FOR THE ARTS
IN RESEARCH UNIVERSITIES

 **VirginiaTech**
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WELCOME

Dear Colleagues,

Welcome to GroundWorks! There is much to celebrate at a2ru as we look back on what has been accomplished against what is now on the horizon. This conference is a milestone. It marks our third annual national conference; the completion of our three-year Mellon Foundation-funded review examining the integration of the arts on research university campuses; and the beginning of three more years of Mellon Foundation support allowing us to apply and deliver the best of our findings. Out of this new round of support, we will see the development of new tools for faculty and administrators, seed funding for projects positioned within emerging and evolving integrative fields, and seminal workshops to bring us all together more often.

This working conference will reflect all of these areas across three themed days of panels, keynotes, roundtables, and breakouts. On Monday we'll focus on support for the practitioner; Tuesday is about "the work;" and on Wednesday, we'll explore means of broadening impact through regional partnerships. We are focusing topics and sessions for this conference around transdisciplinary arts integrative activity, in part to highlight Virginia Tech's Institute for Creativity, Arts, and Technology (ICAT) and fantastic spaces at Virginia Tech, such as the Cube. We ask that you come ready to share your own expertise and ideas, especially in our critique sessions focused on six third-space exemplars, which will help form the groundwork for new peer review methods tailored for transdisciplinary work.

I invite all attendees to join us at 1:00 p.m. on Monday for an a2ru All Members Meeting, where we will report out on the past year's initiatives. This will include a first peek at some developing highlights for a new strategic plan to anchor a2ru into its future work. a2ru is building momentum during a pivotal time as the national dialogue both on our campuses and in the workforce swirls around leveraging curiosity, creativity, multi-disciplinary collaborations, and empathy. The arts, especially how they manifest on our campuses, are in a sea change with emerging opportunities and challenges. a2ru has been in this national conversation since the organization's inception—spearheaded by you, the many thought leaders trail blazing at your home institutions. a2ru is here to help you navigate these waters, and I am honored to be a part of forwarding these efforts together.

Enjoy the beauty of the Blue Ridge Mountains serving as our backdrop and the cultural after hours activities planned for the conference. We would like to thank the Virginia Tech conference planning team for their far-reaching ideas and amazing efforts on the ground. Special thanks go to Ben Knapp and Ruth Waalkes, our conference visionaries; Willie Caldwell, who has worked tirelessly and in tandem with our a2ru conference maven Lauren Fretz Thompson; and Shelly Jobst and her entire event planning team here at Virginia Tech. This smaller working conference is, by design, your conference. Let's make the most of it!

Laurie Baefsky

Executive Director, Alliance for the Arts in Research Universities

OVERVIEW

The Alliance for the Arts in Research Universities (a2ru) is a partnership of 33 institutions committed to transforming research universities in order to ensure the greatest possible institutional support for interdisciplinary research, curricula, programs, and creative practice between the arts, sciences, and other disciplines.

The 2015 a2ru National Conference aims to be an intimate working conference designed to convene partners and allies to address the next generation of opportunities and challenges facing arts transdisciplinary practice, peer review, infrastructures, and partnerships in research universities.

CONFERENCE INFORMATION

Moss Arts Center
190 Alumni Mall

Squires Student Center
290 College Avenue

Inn at Virginia Tech
901 Prices Fork Road

TRANSPORTATION

Looping shuttles will be available each day to take attendees from the Inn at Virginia Tech to the conference sites on campus. Please see agenda for time frames.

A complimentary shuttle will run from the Squires Student Center to the Roanoke Airport on Wednesday, November 11 ONLY at 10:30 a.m. and 1:30 p.m. No reservations necessary.

Other transportation options for getting around Blacksburg and to the airport:

Uber Roanoke-Blacksburg

Blacksburg Text-A-Cab (540-239-9724)

Smart Way Bus (smartwaybus.com, \$4 to airport)

Inn at Virginia Tech shuttle (local trips only, when available, 540-231-8000)

WI-FI ACCESS

Guests may access wireless using the eduroam network. Guest access is also available using the VT-Guest network with the log-in and password provided to you during check-in and registration.

BREAKFAST

All guests staying at the Inn at Virginia Tech receive a complimentary breakfast each morning, as part of the room fee.

ENHANCE YOUR EXPERIENCE

Download our mobile conference app for more detailed information on sessions, panelists, speakers, interactive maps, and more.

- Download the Eventbase app using your mobile device.
- Launch app.
- Search for a2ru by name, date, or location.
- Launch Event Guide.
- Connect with us via Facebook and Twitter to share your experience.

#a2ruWorks

#a2ruExemplars (during critique sessions)



SCHEDULE

Sunday, November 8

All day **Arrivals**

Shuttle transportation is provided from the Inn at Virginia Tech to the welcome reception from 5:00–6:00 p.m. (on loop)

5:30 PM **Welcome Reception and Registration**

Moss Arts Center Grand Lobby

Hors d'oeuvres and cash bar

- Preview of three days of activity and highlighted exemplars
- Explore FutureHAUS in the Cube
FutureHaus is an applied research project to design and build a prototype residence that incorporates responsive design, prefabrication, and integrated technology.

7:00 PM– **Welcome Remarks**

7:25 PM **Moss Arts Center Grand Lobby**

- *Ruth Waalkes*, Associate Provost for the Arts, and Executive Director, Center for the Arts at Virginia Tech
- *Thanassis Rikakis*, Executive Vice President and Provost, Virginia Tech
- *Ben Knapp*, Director of the Institute of Creativity, Arts, and Technology (ICAT), Virginia Tech
- *Laurie Baefsky*, Executive Director, Alliance for the Arts in Research Universities (a2ru)

7:30 PM– *Shuttles back to the Inn at Virginia Tech (on loop)*
8:30 PM

SCHEDULE

Monday, November 9

8:00 AM– **Arrivals to campus**
 9:00 AM *Shuttle transportation from the Inn at Virginia Tech to campus (on loop)*

9:00 AM **Opening Keynote Address**
Charles Lindsay, Artist, and Director, SETI Artist-in-Residence Program
The Third Space: A Field Report
Old Dominion Ballroom, Squires Student Center

Charles Lindsay is a multi-disciplinary artist interested in technology, eco-systems, semiotics, and esoteric forms of humor. He creates immersive environments, sound installations, and sculptures built from salvaged aerospace and bio-tech equipment, videos, and photographs. He was recently named Director of the SETI Institute's AIR Program.

Lindsay will discuss his work at SETI, from the vantage point of directing the AIR program to his personal experience collaborating with astrophysicist Laurance Doyle, who employed information theory and algorithms to prove that humpback whale communications exhibit syntax. Lindsay's installation "CODE Humpback" references this research through sculptural audio/visual works, combining ideas about encrypted signals and inter-species communications. "CODE Humpback" will be exhibited at MassMoca in spring 2016.

10:15 AM **Break**

10:30 AM– **Breakout Sessions: Institutional Catalysts**
 11:25 AM *How do institutions try to spark third-space work?*
 Please come prepared to share what's happening on your own campus.

• **Survey/Data-Driven Catalysts**
Sally Gaskill, Director, Strategic National Arts Alumni Project (SNAAP)
Old Dominion Ballroom, Squires Student Center

How is data used on your campus to solve problems and tell stories to administrators, donors, faculty, students, and parents? SNAAP at Indiana University-Bloomington has collected and analyzed data on the educational experiences and careers of arts graduates of over 250 institutions nationwide. This session will include a brief overview of SNAAP data, an interactive discussion of what other national datasets can be used to tell your story, and a facilitated discussion on what to include in a new a2ru annual survey.

SCHEDULE

10:30 AM– **Breakout Sessions: Institutional Catalysts** (continued)
 11:30 AM

• **Student-Driven Catalysts**
Susan Cahan, Associate Dean for the Arts, Yale College
Erich Bolton, Assistant Professor, Yale School of Drama
Louisa de Cossy, Technical Specialist, Digital Media Center for the Arts,
Yale University
Undergraduate students: Eli Block, Emily Bosisio, Laurel Lehman,
Doug Streat, and Asher Young
Cube, Moss Arts Center

LUX: Ideas Through Light was an interdisciplinary collaboration, conceived by five undergraduates, which projected 20 original art works reflecting a variety of research onto the façade of Yale's historic Beinecke Library in spring 2015. In this session, the LUX Team will give participants a closer look at the development, installation, and responses to this project. An open Q-and-A discussion of resources and support that universities can provide to stimulate and support similar student-initiated projects will follow.

• **Faculty-Driven Catalysts**
Nadlini Nadkarni, Professor, Department of Biology, University of Utah
Glenn Prestwich, Presidential Professor of Medicinal Chemistry, and Director,
Entrepreneurial Faculty Scholars, University of Utah
Sarah Hinners, Acting Director, Ecological Planning Center, City and Metropolitan
Planning, University of Utah
Perform Studio, Moss Arts Center

This session explores how a team at the University of Utah created an innovative and low-cost faculty-driven model to foster transdisciplinary research by engaging individual researchers from widely different disciplines around a common theme in ways that will move their own and others' fields forward. They will discuss how to enable other faculty groups to reproduce this model in their own institutions.

11:30 AM **Lunch On Your Own/Explore Exemplars in Moss Arts Center**

11:40 AM– Performance by the **Linux Laptop Orchestra**
 12:00 PM **Cube, Moss Arts Center**

1:00 PM **State of the Network: a2ru General Membership Meeting**
Cube, Moss Arts Center
 All are welcome

SCHEDULE

- 1:30 PM **Conversation I**
*Fostering a Culture of Transdisciplinarity in the Research University:
 A Foundation for Supporting Practitioners*
Old Dominion Ballroom, Squires Student Center
 75-minute panel, 15-30-minute Q&A
- Shannon Jackson, Associate Vice Chancellor for Arts and Design, and Director, Arts Research Center, University of California, Berkeley (moderator)
 - Raymond Tymas-Jones, Associate Vice President for the Arts, and Dean, College of Fine Arts, University of Utah
 - Deborah D. Stine, Professor of the Practice, Engineering and Public Policy, Carnegie Mellon University
 - Ruth West, Director, xREZ Art and Science Lab, University of North Texas
 - Bruce Mackh, Director, Arts and Cultural Management, Michigan State University
- 3:15 PM **Break**
- 3:30 PM **Dialogues: Key Challenges Now and on the Horizon**
 Roundtables on current hot-button issues identified by the a2ru network
(Please sign up for sessions at registration table. Locations will be assigned.)
 Round 1 (3:30 PM–4:00 PM)
 Round 2 (4:10 PM–4:40 PM)
 Round 3 (4:50 PM–5:20 PM)
- 5:30 PM **Reception/CENAS Exemplar Demonstration**
 Heavy hors d'oeuvres, cash bar
Old Dominion Ballroom, Squires Student Center
 Strategic Planning Group Meeting
- 6:00 PM–
 7:00 PM Shuttle will pick up attendees at Squires for the Inn at Virginia Tech (on loop)
- 7:30 PM–
 9:30 PM **Performance: Sankai Juku, UMUSUNA (Memories Before History)**
Anne and Ellen Fife Theatre, Moss Arts Center
 An exquisite new work from Japan's renowned choreographer Ushio Amagatsu. Known worldwide for its elegance, refinement, technical precision, and emotional depth, his contemporary Butoh creations are sublime visual spectacles and deeply moving theatrical experiences.
- 9:30 PM–
 10:30 PM Shuttle will pick up attendees at the Moss Arts Center for the Inn at Virginia Tech (on loop)

SCHEDULE

Tuesday, November 10

- 8:00 AM–
 9:00 AM Arrivals to campus
 Shuttle transportation from the Inn at Virginia Tech to campus (on loop)
- 9:00 AM **Conversation II**
Strengthening the Groundwork for Transdisciplinary Practice
Old Dominion Ballroom, Squires Student Center
- Carol Strohecker, Vice Provost, Rhode Island School of Design (moderator)
 - Marc Hebert, Board Chair, Leonardo, and Chief Operating Officer, Estuate
 - Bill O'Brien, Senior Innovation Advisor to the Chairman, National Endowment for the Arts
 - Rieko Yajima, Visiting Research Scholar, Center for Design Research, Stanford University
 - Patty Raun, Director, School of Performing Arts, Virginia Tech
- 10:45 AM **Break**
- 11:00 AM **Parallel Critique Sessions: Exploring Peer Review for Transdisciplinary Work**
- Cultural Engagements in Nutrition, Arts, and Sciences (CENAS)
Old Dominion Ballroom
 - Linux Laptop Orchestra (L2Ork)
Learning Studio
 - Metaverses/Secular
the Cube
- 12:30 PM **Lunch**
 Box lunches delivered
Old Dominion Ballroom
- 1:30 PM **Parallel Critique Sessions: Exploring Peer Review for Transdisciplinary Work**
- Ars Robotica
Learning Studio
 - Dream Vortex
Cube
 - Drifting
Old Dominion Ballroom

SCHEDULE

- 3:00 PM **ReSound/Critique Reports**
Old Dominion Ballroom, Squires Student Center
 Plenary conversation about critique session discussions and emerging themes
- Ben Knapp, Director, Institute of Creativity, Arts, and Technology (ICAT), Virginia Tech (moderator)
 - Steve Grant, Gibraltar Ventures (moderator)

3:45 PM **Break**

- 4:00 PM **Shared Practices Guides Development Workshops**
- Arts and Health/Wellness, **Old Dominion Ballroom, Squires Student Center**
 - Creative Ventures/Creative Entrepreneurship, **Cube, Moss Arts Center**

a2ru recently received a second grant from The Andrew W. Mellon Foundation to support the SPARC Project—Supporting Practice in the Arts, Research, and Curricula, a three-year initiative to apply and disseminate models, methods, and exemplars to deliver foundational support for the integration of arts practice within research universities. a2ru universities are involved in a growing range of significant arts integrated interdisciplinary initiatives, transforming fields outside of the academy; yet there is a dearth of codified methods and approaches for scalability. Through the SPARC Project, a2ru is hoping to convene practitioners across the country to collaboratively develop Shared Practice Modules to support training and program development within these high-impact emergent fields. Join us in these sessions to explore what kinds of resources/modules would be most beneficial, give input on the RFP process, and find out how you can be involved.

5:00 PM **Adjourn**

4:00 PM–5:30 PM Shuttle will pick up attendees at Squires for the Inn at Virginia Tech on loop.

- 7:30 PM **Performance: Virginia Tech School of Performing Arts, Department of Theatre, Trojan Women**
Haymarket Theatre, Squires Student Center
 This definitive anti-war drama is an evocative denunciation of human cruelty. Projections and soundscapes help to create an all-encompassing theatrical experience, directed by Bob McGrath.
- Guests staying at the Inn at Virginia Tech will need to contact 540-231-8000 to arrange for complimentary shuttle pick up after the performance.

SCHEDULE

Wednesday, November 11

- 9:00 AM **Closing Keynote Address**
Beyond Cool Projects and Passing Partnerships
Ballroom, Inn at Virginia Tech
 Steven Tepper, Dean, Herberger Institute for Design and the Arts, Arizona State University

10:00 AM **Break**

- 10:30 AM **Conversation III**
High-Impact Regional Partnerships: Broadening Transdisciplinary Collaboration Between Universities and the Public and Private Sectors
Ballroom, Inn at Virginia Tech

- James Agutter, Design Director, Center for Medical Education; Director, Spark Design Initiative; Director, Design Program; Assistant Professor, College of Architecture + Planning, University of Utah (Moderator)
- Ann Markusen, Director, Project on Regional and Industrial Economics, University of Minnesota
- Greg Esser, Desert Initiative Director, Arizona State University Art Museum
- David Ehrenpreis, Professor, School of Art, Design, and Art History, and Director, Institute of Visual Studies, James Madison University
- Joseph Yost, Member, Virginia House of Delegates

- 12:00 PM **Wrap Up and Call to Action**
 Laurie Baefsky, Executive Director, a2ru

- 12:30 PM **Conference Ends**
 Continued conversations are welcome and encouraged at local establishments for members not immediately departing.

TRANSDISCIPLINARY EXEMPLARS

a2ru issued a call for proposals for transdisciplinary exemplars that integrate arts and/or design practices with work and research across other disciplines. These exemplars will be explored during the conference as part of an ongoing conversation centered on developing new peer review methods and practice for transdisciplinary work. A wide range of research and projects was sought, with a special emphasis on projects at the intersection of science, engineering, arts, and design (S.E.A.D.). These works extend beyond the boundaries and limitations of traditional peer review methods and represent new and innovative synergies that foster creativity, collaboration, integrative problem solving strategies, and exploration.

Six projects were selected to be highlighted at the conference. Prior to the conference, a cohort of outside reviewers responded to these projects with certain criteria in mind: *Does this project aim and succeed in advancing knowledge in multiple fields? Does it contribute to understanding about interdisciplinary collaboration? Does it require expertise both inside and outside of individual disciplines to achieve?* These reviews, available in part to conference attendees, will help seed discussions in critique sessions during the conference where project team members, reviewers, a moderator and attendees will engage in a meta-review with the goal of developing suggestions for peer review and project development. These working sessions will help build an understanding for evaluating rigorous transdisciplinary research, curriculum development, collaborative projects, and tenure and promotion practices in higher education. Selected works and the resulting documentation will also be featured in multiple a2ru platforms and will be highlighted and presented through a partnership with Leonardo and MIT Press in spring of 2016.

The six selected projects are listed below. We encourage you to engage with the projects and team members prior to the critique sessions on Tuesday.

Ars Robotica

Lance Gharavi, Associate Professor, Theatre, and Assistant Director/Artistic Director of Theatre, Arizona State University

Srikanth Saripalli, Associate Professor, School of Earth and Space Exploration, Arizona State University

Matthew Ragan, Interactive Engineer, Obscura Digital

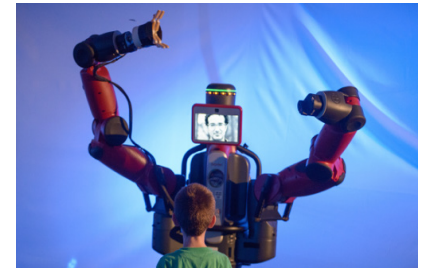
Sai Vempala, Ph.D. Student, Exploration Systems Design, and Graduate Research Associate, Arizona State University

Stephen Christensen, Sound Design Mentor/Staff Sound Technician, School of Film, Dance, and Theatre, Arizona State University

Ian Shelanskey, Theatre Designer and Technologist

Ars Robotica is a multi-year, ongoing project that brings together scientists, artists, designers, and engineers for collaborative research at the intersection of robotics and performance. Broadly speaking, Ars Robotica seeks to advance research in robotics and human-robot interaction, and produce creative and compelling public outreach performances that design imaginative and challenging futures for human/robot relations. The project aims to produce a robot that acts human, with a more natural and fluid movement, enhanced expressive capabilities, and greater responsiveness to human interaction.

The research is aimed at achieving a set of specific technical goals with regard to the robot's capabilities, but the research is animated by important questions: What characterizes "human" performance as distinct from "robotic" performance? What place do context and relationships have with regard to our ability to read qualities as "natural" or "human?" How are trust and empathy linked to these qualities? For this project, the research goals and efforts drive the creative process and shape the nature of the performances.



Cultural Engagements in Nutrition, Arts, and Sciences (CENAS)

Tamara Underiner, Associate Dean for Research, Arizona State University

Seline Szkupinski Quiroga, Director, Conexiones Migrant Student Education Program, Arizona State University

Robert Farid Karimi, Experience Designer and Producer, Kaotic Good/ThePeoplesCook Project

Stephani Etheridge Woodson, Associate Professor, School of Film, Dance, and Theatre, Arizona State University

Raya left the doctor's office in tears. Struggling with type-2 diabetes, she had just been told to give up things like enchiladas, rice and beans—the go-to comfort foods from her childhood. After learning about a new plate method that would allow her to better manage her diabetes without giving up those foods entirely, she asked: "Why couldn't my doctor have made it this easy? Why did he have to tell me, 'Your culture is killing you.'?"

Raya's experience suggests that the challenges of obesity-related chronic diseases are as much sociocultural as medical, and therefore interventions would benefit from radically interdisciplinary approaches that take culture into consideration. Since 2012, the CENAS research team at Arizona State University, representing the fields of theatre, humanities, and health sciences, has collaborated with performance artist/cook Robert Farid Karimi and his



"The Peoples Cook" project in such an undertaking.

CENAS (also the word for "suppers" in Spanish) explores whether culturally sensitive cooking classes based on this plate method, when combined with theatre workshops, can do for diabetes education and prevention what other programs of health education so far have not—namely, to lay the groundwork for long-term dietary change—in a measurably significant way. CENAS also explores the opportunities for, and limits of, truly transdisciplinary research related to matters of health.

Dream Vortex

Meredith Tromble, Associate Professor, Interdisciplinary Studies, San Francisco Art Institute

Dawn Sumner, Professor of Geology, University of California, Davis

Jim Crutchfield, Professor of Physics, University of California, Davis

Joe Dumit, Professor, Anthropology and Science in Technology Studies, University of California, Davis

Donna Sternberg, Choreographer

Dream Vortex is a virtual, interactive environment and a work-in-progress, an ongoing, long-term collaboration among a visual artist, a choreographer, and researchers at the Complexity Sciences Center, KeckCAVES Center for Active Visualization in the Earth Sciences, and ModLab, all at the University of California, Davis. The Dream Vortex mingles our oldest and newest art-making technologies by transforming charcoal drawings into interactive projected objects. A vortex of image fragments appears in the air before the user; with a game controller they can be "touched" and handled, although, like dreams, they may suddenly change, following a hidden network of associations built into the programming. Work on the original Dream Vortex, conceived as an installation based on the dreams of researchers, is ongoing. The environment also has a developing daughter work, Dream Vortex: Creative Differences, a performance created with Donna Sternberg Dancers that will use the vortex methodology with new content based on the stories of researchers who bring diversity in gender, ethnicity, class, or age to the scientific community. The impact of the Dream Vortex is varied and nonlinear: it serves as an artwork, as a stimulus to add new forms of interactivity to existing programming, and as a reminder that play is an important source of scientific inspiration.



Drifting

William J. Doan, Professor of Theatre, Pennsylvania State University

Elisha Clark Halpin, Associate Professor and Head of Dance, Pennsylvania State University

Andrew Belser, Professor of Movement, Voice, and Acting, and Director of the Arts and Design Research Incubator, Pennsylvania State University

Michael Green, Professor, Department of Medicine and Department of Humanities, College of Medicine, Pennsylvania State University

Benjamin Levi, Professor, Department of Pediatrics and Department of Humanities, College of Medicine, Pennsylvania State University

Joseph Julian, M.D., Artist in Residence

When your sister says, "I saw what you used to do in the barn," you listen. When she says it from deep inside a coma, you really listen. A play about siblings who find a way to connect across the great divide of altered consciousness, this piece is about how they communicate beyond the mind and the senses; making it possible to dance, laugh, and say goodbye.

Drifting began as part of an interdisciplinary arts-based project to investigate traumatic brain injury, consciousness, awareness, and artistic expression. Initial collaborators included a director, a movement specialist, a sound designer and sonification specialist, and a neurologist-turned-sculptor. As the project progressed, the collaborators expanded to include physicians at the Hershey Medical School of Penn State. This latest expansion was the result of an invitation to join their ongoing research efforts related to end-of-life decision-making and Advanced Care Planning. The project is currently expanding through the creation of video projections. We believe the video work has the capacity to unfold the piece toward visualizing the memories of the central character, who lies trapped in a coma. The video is about manifesting the life that was so altered, and giving her consciousness some sort of material presence in the theatrical space. This play focuses on the spaces where art, science, and ethics intersect in complex end-of-life situations.



Linux Laptop Orchestra (L2Ork)

Ico Bukvic, Associate Professor, Computer Music, Virginia Tech

Tom Martin, Professor, Department of Electrical and Computer Engineering, Virginia Tech

Liesl Baum Walker, Research Assistant Professor, K-12, ICAT, Virginia Tech

Matthew Komelski, Instructor, Human Development, Virginia Tech

Eric Standley, Associate Professor, Studio Art, Virginia Tech

Named as one of the top eight research projects at Virginia Tech (DCist, 2014), The contemporary intermedia ensemble Linux Laptop Orchestra (L2Ork) thrives upon the quintessential form of collaboration of the western classical orchestra and its cross-pollination with increasingly accessible human-computer interaction technologies for the purpose of exploring expressive power of gesture, communal interaction, discipline-agnostic environment, and the multidimensionality of arts. L2Ork, founded by Ivica Ico Bukvic, Ph.D., in May 2009, is part of the interdisciplinary initiative by the Virginia Tech Digital Interactive Sound & Intermedia Studio (DISIS) and the Institute for Creativity, Arts, and Technology (ICAT). As the world's first Linux-based laptop orchestra incorporating extensive study of gesture and Taiji choreography, L2Ork offers optimal infrastructure for creative research at minimal cost. By integrating of arts and sciences using IDEAS approach it is in part designed to bridge the gap between STEM and the arts, with particular focus on K-12 education. Since its inception, L2Ork has helped start seven laptop orchestras in North and South America. L2Ork's infrastructural backbone, pd-l2ork, a Pure-Data variant with its unique K-12 learning module, has been utilized in more than half a dozen k-12 maker workshops, including a Raspberry Pi Orchestra summer gifted program introduced in 2014.



Metaverses/Seecular

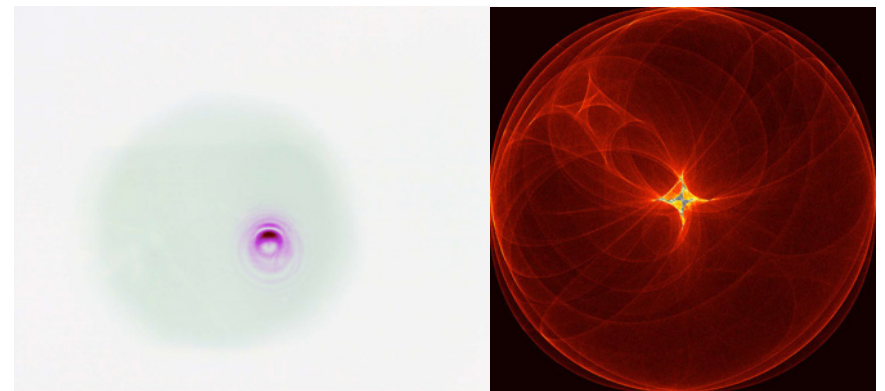
Hannes Bend, Visiting Scholar, and Artist in Residence, Quantum and Nanoscale Physics Benjamín Alemán Laboratory, University of Oregon

Michael Posner, Professor Emeritus, Psychology, Institute of Cognitive and Decision Sciences, University of Oregon

Matt Larsen, Ph.D. Student, and Graduate Research Fellow, Computer Science

The art/science project "Metaverses/Seecular" at the Institute of Neuroscience and Materials Science Institute (University of Oregon / UO) emerged from the "Third Culture Conversations" between artists and scientists in early 2014, initiated by the Oregon Arts Commission and University of Oregon. "Metaverses" includes collaborations between the fields of physics, psychology, neuroscience, computer science, and philosophy.

The goals are to: 1) develop a screen-based human-machine interfaced public art work, based on artistic practices, collaborative research and new computational creations; 2) contribute to research in the field of neuroscience (mindfulness research and neuroaesthetics); 3) create visualization program "Seecular," influenced by research, subsequently accessible to screen-users to potentially support "calmer" interactions with technological devices; 4) seek novel ways for artistic/scientific collaborations to contribute insights unrealizable in the specific fields alone; and 5) to explore ethical concerns for applied scientific/artistic processes, especially considering current developments in artificial intelligence. The first phase, also conducted by Hannes Bend, includes the EEG study "Correlation between Visual Stimuli and Brain States" (lab of Edward Vogel) and the fMRI study "Neural Mechanisms of Multiple Meditation Techniques within Practitioners" at the Lewis Center for Neuroimaging (with Michael Posner).



Draft images for "Seecular" 2014/2015 In collaboration with David Miller (left), Cooper Boydston (right), Ben McMorran, both Department of Physics at the University of Oregon

KEYNOTE AND PANELIST BIOS

David Ehrenpreis

Director of the Institute for Visual Studies, Professor of Art History, James Madison University

David Ehrenpreis is Director of the Institute for Visual Studies and Professor of Art History at James Madison University, a center which promotes interdisciplinary research in the visual realm, enabling members of the university community from across all disciplines to collaborate on classes and innovative projects. He received his Ph.D. from Boston University, worked as a teaching fellow at Harvard University, and has published widely on German art. He has also curated numerous exhibitions, including one on the work of the contemporary Chinese artist Xu Bing. Ehrenpreis is currently directing "Picturing Harrisonburg," a multidisciplinary book and exhibition project examining the shifting visions of place and community in his Shenandoah Valley town.

Greg Esser

Desert Initiative Director, Herberger Institute for Design and Arts, Arizona State University

Greg Esser is currently Desert Initiative Director for Arizona State University (ASU), a program that seeks to link desert communities regionally and globally through interdisciplinary arts-based research and projects. He is co-founder and co-editor of ARID, a new on-line journal exploring desert art, design, and ecology. He has directed three of the largest municipal public art programs in the United States: the City and County of Denver (1991-1996), the City of Phoenix (1996-2004) and Los Angeles County (2009-2011). He also worked at the national level as Public Art Manager for Americans for the Arts in Washington, D.C. (2004-2006). He is the founder and former Executive Director of the Roosevelt Row Community Development Corporation, a nonprofit organization focused on community revitalization through the arts and culture in downtown Phoenix. Esser received his BA from Oberlin College and his MFA degree from ASU.

Marc Hebert

Board Chair, Leonardo, and Chief Operating Officer, Estuate

Marc Hebert is the Chief Operating Officer at Estuate, a global information technology (IT) services company. From 2006-2008 he was the first Chief Marketing Officer for Virtusa Corporation, a publicly-traded IT services firm. From 1999-2006, he was Executive Vice President, Marketing and Alliances for Sierra Atlantic, where he was responsible for corporate positioning, lead generation, public relations, and partner development. Previously, Hebert was Vice President for Oracle Corporation, where he held several ground-breaking positions: Chief Information Officer, Internal Audit, Oracle Manufacturing development, and Worldwide Alliances Technical Services. Hebert is a recognized expert on offshore outsourcing. He has appeared on CNN's *Lou Dobbs Tonight*, was interviewed in

Investors Business Daily, and has been widely quoted in major media publications, including the *Wall Street Journal*, *Forbes*, *Fortune*, *Financial Times*, *New York Times*, and *Boston Globe* about offshore outsourcing. Herbert received a BS in experimental psychology from Harvard University, and an MBA from Stanford University. He has served on numerous non-profit boards, including La Mamelle/ArtCom and the Santa Clara Vanguard.

Shannon Jackson

Associate Vice Chancellor of Arts and Design; Director of the Arts Research Center; and Cyrus and Michelle Hadidi Professor of the Humanities, University of California, Berkeley

Jackson has recently been appointed University of California, Berkeley's first Associate Vice Chancellor for the Arts and Design, a role that will be pivotal in revitalizing the campus' commitment to the arts. Her most recent book is *Social Works: Performing Art, Supporting Publics* (Routledge 2011), while previous work has explored the relation between performance and Progressive Era social reform (*Lines of Activity*, 2000) and between performance and the disciplines of higher education (*Professing Performance*, 2004). Jackson has received numerous awards, including a 2015 John Simon Guggenheim Fellowship, the Lilla Heston Award for Outstanding Scholarship in Performance Studies (NCA), the ATHE Best Book Award, Honorable Mention for the John Hope Franklin Prize, the Kahan Scholar's Prize in Theatre History (ASTR), and the Arts and Humanities Outstanding Service Award. She has received fellowships from the Spencer Foundation and the National Endowment for the Humanities, as well as several collaborative project grants from the Walter and Elise Haas Fund, UCIRA, the Creative Work Fund, the San Francisco Foundation, and the LEF Foundation. Jackson has a BA in modern thought and literature from Stanford University, and a PhD in performance studies from Northwestern University.

Ben Knapp

Director, Institute for Creativity, Arts, and Technology (ICAT), and Professor, Computer Science, Virginia Tech

Ben Knapp is the Director of Virginia Tech's ICAT, which seeks to promote research and education at the boundaries between art, design, engineering, and science. Knapp also leads the Music, Sensors, and Emotion research group, with researchers in the UK and the US. For more than 20 years, Knapp has been working to create meaningful links between human-computer interaction, universal design, and various forms of creativity. As the former director of technology at MOTO Development Group in San Francisco, California, he managed teams of engineers and designers developing human-computer interaction systems for companies such as Sony, Microsoft, and Logitech. He co-founded BioControl Systems, a company that develops mobile bioelectric measurement devices for artistic interaction. He earned doctorate and master's degrees in electrical engineering from Stanford University and a bachelor's degree in electrical engineering from North Carolina State University.

Charles Lindsay

Director, Artist-in-Residence Program, SETI Institute

Charles Lindsay is a multi-disciplinary artist interested in technology, eco-systems, semiotics, and esoteric forms of humor. He creates immersive environments, sound installations, and sculptures built from salvaged aerospace and bio-tech equipment, videos, and photographs. Lindsay balances his studio and city time with extended periods exploring remote natural environments. Educated as a geologist, Lindsay is the SETI Institute's first Artist in Residence, a Guggenheim Fellow, recipient of the Robert Rauschenberg Residency, Artist in Residence at Imagine Science Films and the innovator behind OSA EARS—a project designed to deliver real-time sound from one of the world's most bio-diverse eco-systems to anyone anywhere with internet. Lindsay's work has been profiled by WIRED, Motherboard, ARTonAIR.org, Viralnet, NPR and CNN International. At SETI, Lindsay is collaborating with astrophysicist Laurance Doyle, who employed information theory and algorithms to prove that humpback whale communications exhibit syntax. "CODE Humpback" references this research through sculptural audio/visual works, combining ideas about encrypted signals and inter-species communications. "CODE Humpback" debuted at the Bolinas Museum (2014.) Lindsay is developing several new works including "The Sound of a Quantum Computer Thinking" from his recordings at NASA Ames's Quantum Artificial Intelligence Lab and "Hope Island" from his oceanic work north of Vancouver Island.

Bruce M. Mackh

Director, Arts and Cultural Management, Michigan State University

Bruce Mackh has a strong interest in curriculum development, pedagogy, and faculty development, all of which informed his work as the former Mellon Research Project Director at the University of Michigan, ArtsEngine. In this role, Mackh wrote the first comprehensive guide to best practices in the integration of the arts into the research university (Mellon Best Practices Review), central to which was a focus on the idea of arts practice as research. At the conclusion of the Mellon Research Project, Mackh joined the faculty at Michigan State University, where he presently serves as the founding Director of the Arts and Cultural Management graduate program. Mackh is also an accomplished photographer, and his largest collection of images is part of the permanent collection of the Louisiana State Museum, illustrating the lasting impact of Hurricane Katrina on the city of New Orleans. Bruce Mackh earned a BFA from the School of the Art Institute of Chicago, an MFA from Tulane University, and a PhD in Critical Studies and Fine Art from Texas Tech University. While at Texas Tech, he was awarded a TEACH Fellowship, and was the only Fellow from the School of Art to earn this distinction.

Ann Markusen

Director, Arts Economy Initiative, and Project on Regional and Industrial Economics, Humphrey School of Public Affairs, University of Minnesota

Ann Markusen is a researcher, frequent public speaker, and advisor to public agencies,

policymakers, businesses, economic developers, and nonprofit organizations across the US, Europe, Japan, Korea, Australia, and Brazil. In recent years, Markusen's research and consulting has focused on artists, arts organizations, and creative placemaking. She has been an Economic Policy Fellow with the Brookings Institution and a Research Economist with the office of the Michigan Speaker of the House. She was a Fulbright Lecturer in regional development economics in Brazil and has written on European, Korean, and Japanese regional economies, as well as on North American cities and regions. In 2010-11, she occupied the prestigious UK Fulbright Distinguished Chair at the Glasgow School of Art, working out of its Urban Lab. She also serves on the Advisory Board of the Strategic National Arts Alumni Project. Markusen served six years on the Committee on Science, Engineering, and Public Policy and as chair from 1998-2000, and in 2001-02, Markusen served as a member of the President's Commission on Offsets in International Trade. She won the McCoy Award from the American Collegiate Schools of Planning in 2005 and the Prestigious Alonso Prize in regional science in 2006. She holds doctorate and master degrees in economics from Michigan State University and an undergraduate degree from Georgetown University School of Foreign Service.

Bill O'Brien

Senior Innovation Advisor to the Chairman, National Endowment for the Arts

Bill O'Brien joined the National Endowment for the Arts (NEA) in 2006 as Director of Theater. Since then, he has served as a Deputy Chairman of Grants and Awards and currently serves as the Senior Innovation Advisor to the Chairman. In this role, O'Brien is responsible for exploring, examining, and identifying innovative and/or emerging practices, programs, and endeavors in the arts. During his tenure with the endowment, O'Brien has fostered partnerships with other federal agencies, including the Department of Defense, investigating the use of expressive writing as a formal medical protocol to help heal service members at military hospitals, and the National Science Foundation, exploring the impacts of creativity and critical interpretation theories on research and innovation in numerous disciplines where art and science intersect. O'Brien has performed on professional stages in 48 states and has appeared in numerous television productions, including *Law and Order: Criminal Intent* and in an ensemble role on all seven seasons of *The West Wing*.

Patricia Raun

Director, School of Performing Arts, Virginia Tech

Patricia Raun is a fellow of the Virginia Tech Center for Leadership in Global Sustainability (CLiGS) and serves as faculty for the Executive Master of Natural Resources program. Her goal is to promote transformation by developing healthy and varied voices—both literal and figurative—in individuals, institutions, and communities. She carries out her goal in her position as founding Director of the School of Performing Arts (Music, Theatre, Cinema) at Virginia Tech. Raun, a professional actor and voice-over artist, is a designated site visitor for the accrediting arm of the National Association of Schools of Theatre (NAST) and chair of their Committee on Ethics. Raun has earned many honors for her artistic work, leadership,

and teaching, including a 2010 Virginia Tech Excellence in Administration Award, and a 2011 College of Arts and Architecture Alumni Award from Pennsylvania State University, and a 2012 Service and Leadership Award from the Voice and Speech Trainers Association. In recent years, her research and teaching interests have been focused on supporting those in scientific and technical fields communicate about their work in more effective ways. Her applied work in this area is influenced by her affiliation with the Alan Alda Center for Communicating Science at Stony Brook University.

Deborah D. Stine

Professor of the Practice, Engineering and Public Policy, and Associate Director for Policy Outreach, Scott Institute for Energy Innovation, Carnegie Mellon University

Before coming to Carnegie Mellon University, Stine was Executive Director of the President's Council of Advisors on Science and Technology at the White House from 2009-2012. From 2007-2009, she was a science and technology policy specialist with the Congressional Research Service, where she wrote reports and advised members of Congress on science and technology policy issues. From 1989-2007, she was at the National Academies (the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine), where she was Associate Director of the Committee on Science, Engineering, and Public Policy, among other positions. While there, she was study director of the landmark National Academies reports *Facilitating Interdisciplinary Research* and *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, for which she received the Presidents Award. She holds a BS in mechanical and environmental engineering from the University of California, Irvine, an MBA from what is now Texas A&M at Corpus Christi, and a PhD in public administration with a focus on science and technology policy analysis from American University.

Carol Strohecker

Vice Provost, Rhode Island School of Design

Along with her Vice Provost position at Rhode Island School of Design (RISD), Strohecker was a founding Co-Principal Investigator of the SEAD network for Sciences, Engineering, Arts, and Design, spawned in 2011 through grants from the US National Science Foundation. From 2006 until 2013, she was inaugural Director of the Center for Design Innovation, a multi-campus research center of the University of North Carolina system. Previously she was Principal Investigator of the Everyday Learning research group at Media Lab Europe (MLE), the European research partner of the MIT Media Lab. Prior to joining MLE, Strohecker worked in the United States at Mitsubishi Electric Research Laboratories and in the Human Interface Group of Sun Microsystems. Strohecker worked with Japan's Advanced Technology Research Consortium in the 1990s and subsequently advised the European Commission's Directorates-General for Education and Culture, and for Information Society and Media. Her collaborative work in interactive media tools and methods has resulted in four US patents. Strohecker's awards also include Fellowships with the Artists Foundation of the Massachusetts Council for the Arts and Humanities, the US National Endowment for the

Arts, and the Harvard University Graduate School of Design. She earned the PhD of Media Arts and Sciences from the Massachusetts Institute of Technology in 1991 and the Master of Science in Visual Studies from MIT in 1986.

Steven J. Tepper

Dean, Herberger Institute for Design and the Arts, Arizona State University

Steven J. Tepper is the dean of the Herberger Institute for Design and the Arts at Arizona State University (ASU), the nation's largest, comprehensive design and arts school at a research university. Tepper is a leading writer and speaker on U.S. cultural policy and his work has fostered national discussions around topics of cultural engagement, everyday creativity, and the transformative possibilities of a 21st-century creative campus. Prior to ASU, Tepper was on the faculty at Vanderbilt University, where he was a chief architect of the Curb Center for Art, Enterprise and Public Policy, a national think tank for cultural policy and creativity. He has also served as Deputy Director of the Princeton University Center for Arts and Cultural Policy Studies. Tepper's research and teaching focuses on creativity in education and work; conflict over art and culture; and cultural participation. He is author of *Not Here, Not Now, Not That! Protest Over Art and Media in America* (University of Chicago, 2011) and co-editor and contributing author of the book *Engaging Art: The Next Great Transformation of America's Cultural Life* (Routledge 2007). Tepper holds a bachelor's degree from the University of North Carolina at Chapel Hill; a master's in public policy from Harvard University's John F. Kennedy School of Government; and a Ph.D. in sociology from Princeton University.

Raymond Tymas-Jones

Associate Vice President for the Arts, and Dean, College of Fine Arts, University of Utah

Raymond Tymas-Jones serves as the Dean of the College of Fine Arts, the Associate Vice President for the Arts at the University, and holds a faculty appointment as a full Professor in the School of Music. As Dean of the College of Fine Arts, he provides academic and administrative leadership for six units in the College of Fine Arts: Departments of Art & Art History, Ballet, Modern Dance, and Theater; the School of Music; and the Division of Film Studies. In addition to his responsibilities in the College of Fine Arts, Tymas-Jones also serves as Associate Vice President for the Arts and is the Chief Administrative Officer for the Utah Museum of Fine Arts, Pioneer Theatre Company, Tanner Dance, and Kingsbury Hall. Prior to his current administrative appointment, Tymas-Jones served as the Associate Dean of the Faculty of Humanities and Fine Arts at Buffalo State College (1990-93), Director of the School of Music at the University of Northern Iowa in Cedar Falls (1993-98), and the Dean of the College of Fine Arts at Ohio University (1998-2005). Tymas-Jones' creative activities include two areas of concentration: solo performances as a singer (tenor) and choral conducting. He has performed as a featured soloist with outstanding orchestras, such as the Buffalo Philharmonic Orchestra, the St. Louis Orchestra, the K  mmerngild Orchestra of St. Louis, the Dortmund, Germany Youth Orchestra, the Erie (Pennsylvania) Chamber Orchestra and the Waterloo/Cedar Falls Orchestra. He received a Ph.D. in performance

practice: voice and a Master of Music degree in conducting and voice from Washington University (St. Louis), and a Bachelor of Music degree from Howard University.

Ruth Waalkes

Associate Provost for the Arts, and Executive Director, Center for the Arts at Virginia Tech

As Executive Director of the Center for the Arts and Associate Provost for the Arts at Virginia Tech, Ruth Waalkes is responsible for setting strategic direction and creating programmatic priorities for university level arts initiatives; and for leading the overall development, artistic programming, and operations of the Center for the Arts at Virginia Tech. She has more than twenty five years' experience as a leader in arts administration and community-based nonprofit management and previously served as Director of Artistic Initiatives for the University of Maryland's Clarice Smith Performing Arts Center in College Park, MD. At the Clarice Smith Center she was responsible for all artistic programming encompassing presented performances, residencies, campus and community engagement, and commissioning of new works. Waalkes received her bachelor's degree in theatre and drama from the University of Michigan.

Ruth West

Director, xREZ Art and Science Lab, and Associate Professor, iARTA Research Cluster, University of North Texas

Ruth West's work envisions a future in which art-science integration opens new portals of imagination, invention, knowledge, and communication across cultures to create solutions for our most pressing global problems. Bridging high-dimensional data and metadata, information visualization and sonification, virtual reality, augmented and/or mixed reality, 3D fabrication, and social and mobile participatory media with domains such as urban ecology, neuroscience, genomics, astronomy, fiber arts, and digital remix culture, West explores avenues for achieving works with multiple entry points that can exist concurrently as aesthetic experiences, artistic practice or cultural interventions, and serve as the basis for artistically impelled scientific inquiry and tools. This work results in new knowledge and insight, technology R&D, novel artworks, large-scale public engagement and entertainment experiences, cross-disciplinary educational and research opportunities, and industry-academic-community partnerships. She has authored more than 70 peer-reviewed exhibitions, publications, conference presentations, and public talks, and has received several million dollars in grants and corporate sponsorship. Her work has been presented in venues including: Los Angeles Municipal Art Gallery, FILE 09 Sao Paulo, SIGGRAPH, WIRED Magazine's NextFest, Perot Museum of Nature and Science, IEEE Visualization, SPIE/IS&T ERVR, Leonardo, and the Proceedings of the National Academy of Sciences. West holds a BA in studio art from Bard College and an MFA from the University of Massachusetts, Amherst.

Rieko Yajima

Visiting Research Scholar, Center for Design Research, Stanford University

Rieko Yajima was most recently a Project Director with the American Associate for the Advancement of Science (AAAS) Research Competitiveness Program. While there, she recruited and directed panels of senior research and policy professionals, providing universities and state governments technical assistance for improved research, development, and innovation strategies. She has co-authored technical reports covering topics including improving institutional research capacity and development, integrating two- and four-year colleges into statewide research consortia and collaboration, and strategic planning for academic departments. In addition, she has managed the competitive, peer-reviewed funding for state-supported research and economic development, including the Washington Life Sciences Discovery Fund and the South Carolina Centers of Economic Excellence.

Yajima received awards for her Ph.D. research on RNA catalysts and has published more than a dozen research and review articles on the molecular structure and function of protein and RNA enzymes. She earned a Ph.D. in chemical biology from The Pennsylvania State University and an Honours B.Sc. from the University of Waterloo.

Joseph Yost

Virginia House of Delegates, District 12, Republican

Joseph Yost is a graduate of Radford University, earning both a Bachelors of Science and a Masters of Arts in criminal justice. He is also a 2011 graduate of The Sorensen Institute for Political Leadership at the University of Virginia and a 2013 graduate of The Buckley School for Public Speaking. He is the youngest member of the General Assembly and was first elected in November 2011. He currently serves on four committees: Education; General Laws; Health, Welfare, & Institutions; and Privileges & Elections. He also serves as Vice-Chair of the Privileges and Elections subcommittee on Campaign Finance.

Yost serves on a variety of authorities, boards, and commissions, including the Substance Abuse Services Council, the Board of Trustees for the Center for Rural Virginia, the Dr. Martin Luther King Jr. Memorial Commission, the Board of Trustees for the Southwest Virginia Higher Education Center, the Board of Trustees for the Southwest Virginia Cultural Heritage Foundation, the Southwest Virginia Health Facilities Authority, the Western Virginia Public Education Consortium, and is Chair of the Virginia Health Workforce Development Authority.

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