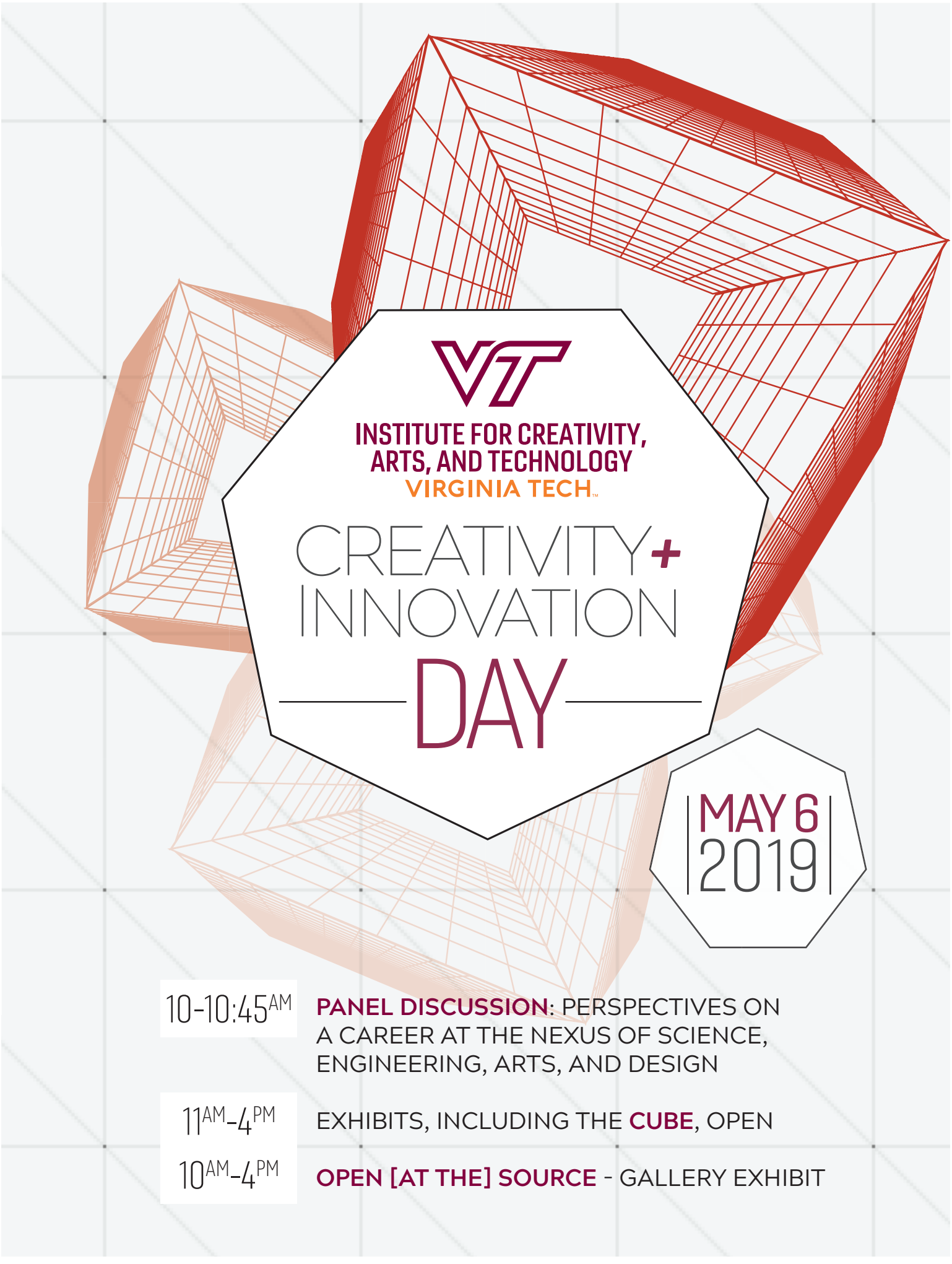

INSTITUTE FOR CREATIVITY,
ARTS, AND TECHNOLOGY
VIRGINIA TECH™
CREATIVITY+
INNOVATION
DAY
MAY 6
2019
10-10:45AM
PANEL DISCUSSION: PERSPECTIVES ON
A CAREER AT THE NEXUS OF SCIENCE,
ENGINEERING, ARTS, AND DESIGN
11AM-4PM
EXHIBITS, INCLUDING THE CUBE, OPEN
10AM-4PM
OPEN [AT THE] SOURCE - GALLERY EXHIBIT

FOREWORD

Welcome to another exciting ICAT Creativity + Innovation Day! This is our seventh annual celebration of the incredible transdisciplinary work of high school students from across the Commonwealth as well as undergraduate students, graduate students, and faculty from across seven of the colleges and six of the university level research institutes of Virginia Tech.

This year's theme is *Perspective*, as we explore the intersection of science, engineering, arts, and design from many perspectives shaped by academic discipline, social history, unique life experiences, and technological advances. The theme is embodied in over 60 experiences, including a panel discussion, performances, and expo-style exhibits involving over 200 presenters. Experience the day at both the Moss Arts Center (190 Alumni Mall) and at the Media Building (104 Draper Road NW) in the university's Creativity + Innovation District.

We will be giving out awards for projects that best exemplify values espoused by the Institute:

- The Innovation award will go to the project that shows exemplary innovative output and potential for external impact.
- The Process award will go to the project that best communicates its creative process with the ICAT Creativity + Innovation Day audience.
- The Museum Director's Choice award will go to the project that shows the best promise for being an engaging museum exhibit.
- The People's Choice award, will go to the project that ICAT Creativity + Innovation Day visitors choose based on their audience experience.

Award winners take home a beautiful 3D printed trophy to celebrate their achievements.

I hope you will join me and meet the faculty and students who are crossing traditional boundaries to develop new possibilities for exploration, expression, and creativity. It is my sincere hope that you learn from what you see, make connections with other people, and dream bigger than you did before. #ICATDay2019

R. Benjamin Knapp
Founding Executive Director
Institute for Creativity, Arts, and Technology
Virginia Tech

TABLE OF CONTENTS

PANEL DISCUSSION 10 AM

Perspectives on Careers in Creativity and Innovation

Anne and Ellen Fife Theatre, Moss Arts Center

Four professionals in creativity and innovation discuss careers in creativity and innovation from multiple perspectives in the lifetime of a career. The discussion is moderated by Dr. Lisa McNair, director of the Center for Research in SEAD Education, and a special guest high school student.


Kaelum Hasler


Setor Zilevu


Aki Ishida


Brandy Salmon

Kaelum Hasler is the Founder and lead designer of Rendyr Desktop Robotics, a Blacksburg based startup aimed at making rapid prototyping and digital fabrication accessible for everyone, especially professional designers and students. Their first product is Optic, the first portable all in one desktop laser cutter. The machine can cut and engrave a large volume of hundreds of materials and folds up and stows away when not in use. The Optic will launch this summer.

Kaelum Hasler is a researcher working at the intersection of sustainability and advanced manufacturing. He has designed and built a 3D printer that prints with recycled water bottles, a custom 3D printed sink for the 2018 Virginia Tech Solar House, and sustainable lighting tiles for the Virginia Tech Drillfield. He has also worked with 3D printing mycelium, a plant-based alternative to styrofoam, as well as a CNC machine aimed at making bamboo construction more accessible. He has worked on projects at the Virginia Tech DREAMS (Design Research and Education for Additive Manufacturing Systems) Lab, The Assistive Robotics Lab, Terrestrial Robotics and Engineering Controls Lab, Center for Design Research, and the Institute for Creativity, Arts, and Technology. Kaelum, Class of 2021, studies industrial Design at Virginia Tech.

Setor Zilevu is a PhD student in the Department of Computer Science at Virginia Tech. His research focuses on human computer interaction, user experience design, and user interface design. He is a GEM

fellow and a member of the Intel Artificial Intelligence Student Ambassador program. He received his bachelors from Virginia Tech in Computer Engineering and will be receiving his Masters of Science degree this spring. Currently, he is an Adobe fellow and will be spending his summer interning at Adobe as a User Interface Researcher.

Aki Ishida is Associate Professor of Architecture at Virginia Tech and a Registered Architect. Her work, spanning design projects and writing, is a synthesis of spatial uses of light and her interest in active public engagement of space, and aims to increase the public and student awareness about the artistic and technical potentials of light and sensory environments through transdisciplinary collaborations. Prior to forming her firm Aki Ishida Architect PLLC in New York, Aki was an associate for over four years at James Carpenter Design Associates, a studio focused on artistic and technical use of glass. She also worked at Rafael Vinoly Architects and I.M. Pei Architect. Aki has successfully run award-winning collaborative design projects in partnership with corporations and nonprofit organizations, including Memorial Sloan-Kettering Cancer Center, Japan Society, Starwood Hotels, and desigNYC. Her work has been supported by the Japan Foundation New York, The Smithsonian, Philips Color Kinetics, The MacDowell Colony, Baer Art Center in Iceland, American Institute of Architects New York Chapter, and the Columbia University. In 2016, she was recognized nationally as one of 25 Most Admired Educators by DesignIntelligence.

Brandy Salmon, Ph.D., is Associate Vice President for Innovation and Partnerships and Managing Director of the Virginia Tech Innovation Campus. With over 20 years of experience at the intersection of research and business, Salmon is serving as the managing director of Virginia Tech's Innovation Campus, leading a cross-functional delivery team to set the vision for the campus and launch key efforts. Salmon came to Virginia Tech to oversee a discovery-to-market approach to strengthen industry partnerships and innovation: LINK, the Center for Advancing Industry Partnerships, and LAUNCH, the Center for New Ventures.

Prior to coming to Virginia Tech, Brandy served as director for RTI's Innovation Advisors, where she led consulting engagements for federal, corporate, and foundation clients to implement best practices in innovation, identify and evaluate new technologies and products, and develop commercialization strategies and partnerships.

Brandy joined RTI in 2011 from the Duke University, Fuqua School of Business and Office of Licensing and Ventures, where she led a full spectrum of commercialization and technology transfer activities. She is often asked to lecture on topics of innovation and holds five issued patents. She has a B.A. from the University of Virginia, a Ph.D. from Cornell University, and an M.B.A. from Duke University, Fuqua School of Business.

EXPO 11 AM - 4 PM

In the Media Building

The Media Building, at 104 Draper Road NW, is home to ICAT studios and classrooms. Its history as a building for learning is honored in the projects highlighted here. On ICAT Creativity + Innovation Day, the building offers a glimpse into its future with a process presentation of proposed exhibitions. Engage with projects from Dr. Scott McCrickard's Computer Science capstone experience exploring *Technology on the Trail*, as well as virtual worlds in Dr. Denis Gracanin's Virtual Environments course projects.

Media Building Exhibition Space - Ceramic Living Lab

Dorotea Ottaviani, College of Architecture and Urban Studies, School of Architecture + Design Living Lab - Big Sticky Projects
Ellen Braaten, College of Architecture and Urban Studies
Martha Sullivan, College of Architecture and Urban Studies
Enric Ruiz-Geli, College of Architecture and Urban Studies

The Media Building will be hosting the first iteration of the Living Lab concept on campus. A group of faculty and students are designing and building the new exhibition space in the hallways of the Media Building. The space will be transformed into a morphing environment where ceramic tiles and lights will create an environment in conversation both with the ceramic presence in the building, a legacy of its previous life as elementary school and with the innovative and creative research that ICAT supports.

Picturing Trails: Telling Stories from your Pictures

John Kook, College of Engineering, Computer Science
Nicholaus Clark, College of Engineering, Computer Science
Dylan Finch, College of Engineering, Computer Science
Emily Maher, College of Engineering, Computer Science
Derek Haqq, College of Engineering, Computer Science
Michael Horning, College of Liberal Arts and Human Sciences, Communication
Scott McCrickard, College of Engineering, Computer Science

This web-based application helps users create well-organized stories from photos, with a focus on photos from hikes. Photo stories are compatible with Facebook and Instagram, providing an easy and intuitive way to connect with friends.

Trail Tweets

Max Adler, College of Engineering, Computer Science
Anthony Medovar, College of Engineering, Computer Science
Aarjab Goudel, College of Engineering, Computer Science
Shuo Niu, College of Engineering, Computer Science
Edward Fox, College of Engineering, Computer Science
Scott McCrickard, College of Engineering, Computer Science

View tweet content from the Appalachian Trail using an interactive tool to help users plan their trips, find new areas to explore, and reflect on their own hikes.

BirdFeed: Bird Watching for Novices

Chandler Manns, College of Engineering, Computer Science
Stephen Tewes, College of Engineering, Computer Science
Timothy Stelter, College of Engineering, Computer Science
Garrett Rhyne, College of Natural Resources and the Environment, Fish and Wildlife Conservation
Michael Rosenzweig, College of Science, Biological Sciences
Scott McCrickard, College of Engineering, Computer Science

BirdFeed is a youth bird watching mobile application designed for novice birders in Southwest Virginia who want to learn and collect data about common birds in the area.

BarkLight - Ubiquitous Computing in Naturalistic Environments

Connor Smedley, College of Engineering, Computer Science
Ryan Jackiel, College of Engineering, Computer Science
Puriwat Lahpong, College of Engineering, Computer Science
Matt Wagner, College of Architecture and Urban Studies, Interior Design
Tianyu Ge, Institute for Creativity, Arts, and Technology, School of Visual Arts
Shuo Niu, College of Engineering, Computer Science
Scott McCrickard, College of Engineering, Computer Science

BarkLight takes a piece of nature - the bark from a tree - into work environments, with an attempt to seamlessly merge computing into an unconventional medium. BarkLight displays outdoor data streams (e.g., weather, trail use) in an interactive medium.

HEART: Healthy Lifestyles for Pregnant Women

Juan Segura, College of Engineering, Computer Science
Phillip Hrinko, College of Engineering, Computer Science
Keller Han, College of Engineering, Computer Science
Vanessa Lomeli, College of Engineering, Computer Science
Abby Steketee, College of Agriculture and Life Sciences, Human Nutrition, Foods, and Exercise
Samantha Harden, College of Agriculture and Life Sciences, Human Nutrition, Foods, and Exercise
Scott McCrickard, College of Engineering, Computer Science

This recruitment site developed for the HEART (Healthy Eating and Activity Readiness for Two) Program augments the main form of recruitment for HEART through flyers with a link for interested women to learn more and sign up for the program through this interactive web site.

Accessibility at Virginia Tech

Josh Wenger, College of Engineering, Mechanical Engineering
Yasmine Belghith, College of Engineering, Computer Science
Mahira Sheikh, College of Engineering, Computer Science
Jack Danisewicz, College of Engineering, Computer Science
Hani Awni, College of Engineering, Mechanical Engineering
Alan Asbeck, College of Engineering, Mechanical Engineering
Scott McCrickard, College of Engineering, Computer Science

This exhibit will preview a mobile website to aid students and visitors with physical disabilities--and their allies--to identify ways to navigate the Virginia Tech campus safely and efficiently.

Appalachian Trail Maintenance System

Parker Irving, College of Engineering, Computer Science
Daniel Ocheltree, College of Engineering, Computer Science
Campbell Johnson, College of Engineering, Computer Science
Christina McIntyre, Honors College
Scott McCrickard, College of Engineering, Computer Science

Visitors to the Appalachian Trail often encounter maintenance issues, and our mobile-friendly web system will help with the reporting and addressing of issues.

Explorations in Mixed Reality

Denis Gracanin, College of Engineering, Computer Science

Five examples of the use of mixed reality to promote collaborations, learning and interactions (nurse training, drone flying, architectural portfolio exhibition, touring a remote site, weather data analysis).

Immersive Space Weather Analytics

Sampanna Kahu, College of Engineering, Electrical and Computer Engineering
Disha Sardana, College of Engineering, College of Liberal Arts and Human Sciences, Graduate Programs Human Centered Design

Traditionally, data analysis and decision making are done by visualizing data on a 2D screen. However, with new technologies, it is now possible to visualize data in 3D using mixed reality devices. In this exhibit, we will let people experience the data in a 3D immersive mixed reality environment using the Microsoft HoloLens device and allow them to manipulate the data using gestures and voice commands.

Mixed reality based virtual group tour

Md Islam, College of Engineering, Computer Science
Tiancheng Ying, College of Engineering, Computer Science
Derek Haqq, College of Engineering, Computer Science

Members of the audience will be invited to participate in a virtual group tour experience of a remote real-world location. Participants will explore a virtual environment replica of the real-world location, engage with tour group members in a series of fun activities, and be led through the tour experience by a tour guide physically present at the remote location.

Augmented Reality in Mind-Body Research

Brittany Nackley, College of Science, Psychology
Reza Tasooji, College of Engineering, Computer Science
Jimmy Jaffee, College of Liberal Arts and Human Sciences, Cinema
Justin Perkinson, College of Liberal Arts and Human Sciences, Cinema
Denis Gracanin, College of Engineering, Computer Science
Bruce Friedman, College of Science, Psychology

Experience the power of Augmented Reality (AR) to enhance your world with imagery. AR, aka Mixed Reality (MR) projects animation onto the AR glasses making them appear to be part your real world. The Mind-Body Lab uses AR to study behavior, emotions and the body using an ICAT-funded mobile device.

Structural Steel Detailing with 3D Models & Holograms

Exhibit viewers will experience Tekla/Trimble design software to create 3D models and immersive holographic imagery on the Microsoft HoloLens. Sequencing from initial structural steel design phase to holographic imagery and physical product will be displayed. Overlay of Holograms, utilizing the Microsoft HoloLens, on a physical structural design will allow viewers to fully immerse in a scaled model.

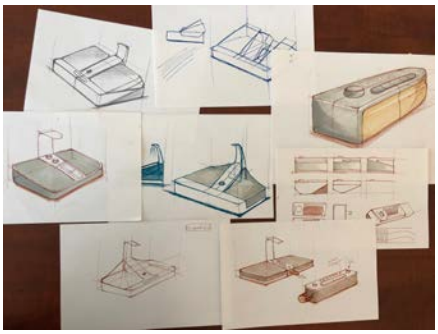
Interactive Neurorehabilitation Lab

Aisling Kelliher, College of Engineering, Institute for Creativity, Arts, and Technology, Computer Science

At the Interactive Neurorehabilitation Lab, we design, develop, and evaluate interactive systems for home-based rehabilitation. On ICAT day, we will showcase SARAH, our system for Semi Automated Rehabilitation at Home. SARAH currently comprises a home simulation lab, an interactive training system for home-based stroke rehabilitation, and an online system for annotating videos of human movement performance.

TheraWaves: Biometric and Demographic Music Selection

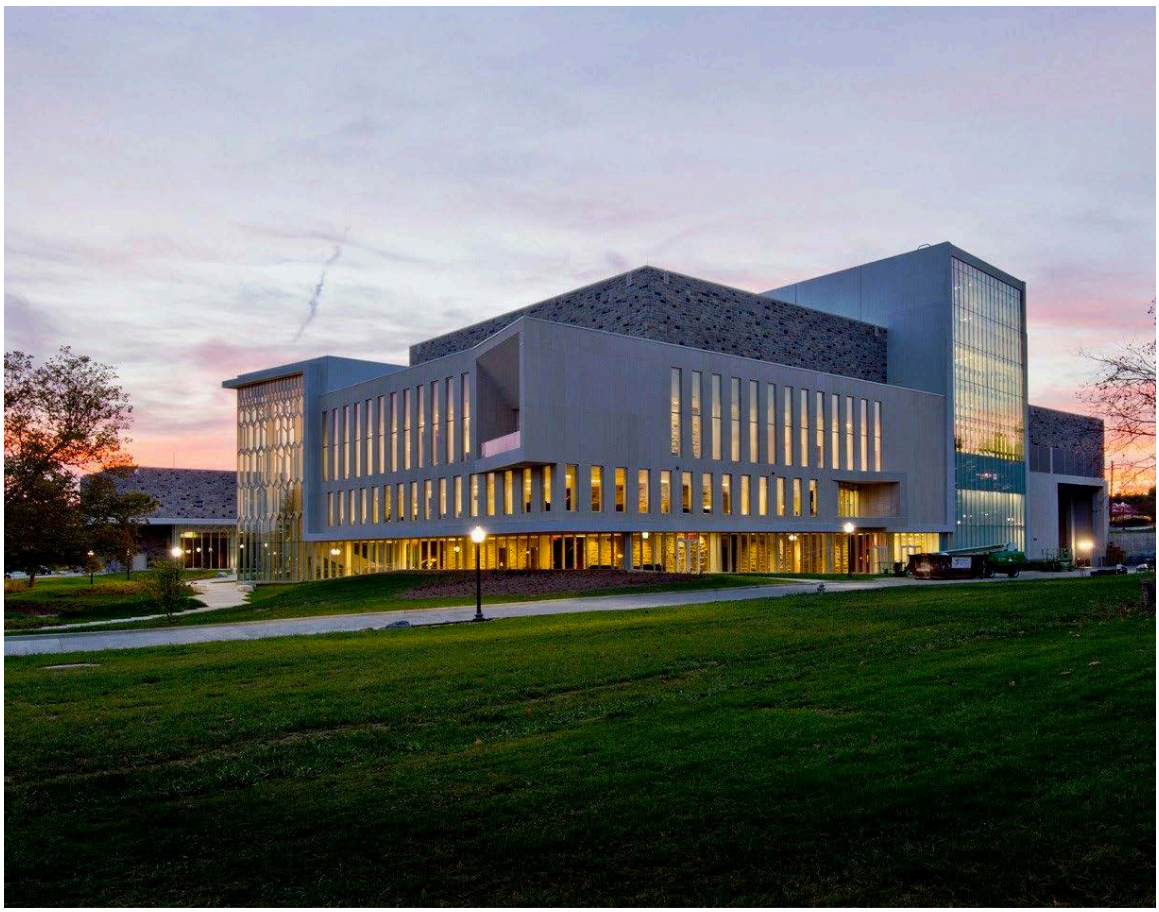
Matthew Fishman, College of Engineering, Computer Science
Christopher Goodkind, College of Engineering, Computer Science
Neil Slinde, College of Architecture and Urban Studies, Industrial Design



You will see the foundations of a music library builder that uses bio-metric feedback from the Apple Watch series 4 and personal demographics to intelligently present music you would enjoy but may have forgotten about, or haven't heard yet.

At the Moss Arts Center

The Moss Arts Center at 190 Alumni Mall houses a performance hall, beautiful lobbies, the experimental research and performance environment knows as the Cube, research studios for immersive sound and virtual/augmented reality research, galleries, and high-tech classrooms.



Merryman Family Learning Studio

Student projects from Dr. Steve Harrison's capstone Computer Science course, Creative Computing, are featured in the Merryman Family Learning Studio. The classroom is Room 253, near the Turner Street entrance to the building.

Sondor

Tara Laughlin, College of Engineering, Computer Science
Brady Engleman, College of Engineering, Computer Science
Tucker Crull, College of Engineering, Computer Science
Pablo Castillo, College of Engineering, Computer Science

Experience different cultures through AR with Sondor. Using an Ipad, you will get to scan real life paintings and hear them speak to you explaining their culture and background.

Beauty Through Noise

Christopher Barranco, College of Engineering, Computer Science
Huanbo Fu, College of Engineering, Computer Science
Matthew Stapleton, College of Engineering, Computer Science

An interactive audiovisual display that allow users to control both visual and audio fx of a electronic music composition through their movements in 3D space.

Digital Fretboard

William Hamilton, College of Engineering, Computer Science
Omar Jastaniah, College of Engineering, Computer Science

The goal of this project is to create a synthesizer that will have pitches laid out as they appear on a guitar fretboard, represented by buttons. We will have a working synthesizer available for the public to walk up and play. We will be encouraging people to make noise, and explaining how the synthesizer works.

Cybernatural

Victoria Todd, College of Engineering, Computer Science
Afiq Yusof, College of Engineering, Computer Science
Joseph Thompson, College of Engineering, Computer Science

Cybernatural (working title) is a video game that lets people face off against their deleted files in a top-down game where the enemies are generated from the contents of the player's recycling bin.

Arduinho FC

Sukrith Akula, College of Engineering, Computer Science
Justin Rhee, College of Engineering, Computer Science
Christopher Beemsterboer, College of Engineering, Computer Science

The project is a combination of two technologies. The first piece of the project is a soccer pass tracking map. This will be generated by the group members, tracked through a GPS application, and converted into lines representing passes on a vector image.

This pass map will then be drawn by an Arduino XY plotter drawing robot (arduino suspended by two motors, attached to a marker against the paper) on a large canvas in front of the audience. This will create the drawing in live with perfect accuracy.

Street Art: an immersive VR experience

Carlisle Hughes, College of Engineering, Computer Science
Jooyoung Whang, College of Engineering, Computer Science
Yasmine Belghith, College of Engineering, Computer Science

Street Art is a multiplayer VR experience that allows users to create a town and the paint the town. It allows the addition to buildings in new or pre-set cities and the beautification of the town through street art.

Tweetsburg

Kyle Long, College of Engineering, Computer Science
Christopher Olsen, College of Engineering, Computer Science
Daniel Zhang, College of Engineering, Computer Science

An interactive website to visualize tweets in real-time as they are posted from people at Virginia Tech's Blacksburg campus. Tweets are represented by markers that appear at the building or otherwise notable location the tweet is posted, given users have set for their location to be shared.

Francis T. Eck Exhibition Corridor

The Francis T. Eck Exhibition Corridor hosts the day's evaluation project, as well as ongoing exhibits highlighting ICAT projects in Open [at the] Source. This corridor is near the Turner Street entrance to the Moss Arts Center.

Open (at the) Source provides a glimpse into the highly dynamic research created by students and faculty through the support the Institute for Creativity, Arts, and Technology and Moss Arts Center facilities, staff, and grant funding. Each work takes place between the observer and the observed, enabling a view of the space we take when we perceive the world.

Science in Real-Time

Bryanne Peterson, Institute for Creativity, Arts, and Technology, Center for Research in SEAD Education
David Kniola, College of Liberal Arts and Human Sciences, School of Education
Jade Kline, College of Liberal Arts and Human Sciences, School of Education, Education Research

ICAT Creativity + Innovation Day visitors participate in fun data collection about the event. Make memes, build with legos, and try out wearable tech - all for the purpose of science.

Sea Ice Saga

Daniel Pillis, Institute for Creativity, Arts, and Technology
Rachel Lin Weaver, College of Architecture and Urban Studies, School of Visual Arts
Lesley Duffield, College of Architecture and Urban Studies, School of Visual Arts
Johanna Palmadottir
Katharina Schneider
Halldor Gunnar Olafsson

Cultural memory, marine science, textiles, and sea ice in Iceland and Greenland. In the summer of 2017, Lesley Duffield and Rachel Lin Weaver conducted research in Iceland on a project set at the intersection of cultural memory, marine ecology and Nordic craft traditions. This ongoing multimedia research project visually explores the traditions of the otherworldly fjords of Iceland and Greenland, examining how the shape of culture is formed, both in harmony and discord, with the ever-changing cycles of the life of sea ice.

Visual Language of Chromatin Architecture

Daniel Pillis, Institute for Creativity, Arts, and Technology
Alexey Onufriev, College of Engineering, Computer Science, Physics
Eric Standley, College of Liberal Arts and Human Sciences, School of Visual Arts
Igor Sharakhov, College of Agriculture and Life Sciences, Entomology
Igor Tolokh, College of Engineering, Computer Science
Raju Nadimpalli, College of Engineering, Computer Science

A collaboration spanning a spectrum of disciplines across entomology, computer science, visual art, and biophysics, this project is a multifaceted view into the fascinating design of the 3D architecture of the genome.

The BUILD Project: Boosting University Infrastructure for Learning + Discovery

Daniel Pillis, Institute for Creativity, Arts, and Technology
Tim Baird, College of Natural Resources and the Environment, Geography
David Kniola, College of Liberal Arts and Human Sciences, School of Education
Timothy Baird, College of Natural Resources and the Environment, Geography
Pablo Tarazaga, College of Engineering, Mechanical Engineering
R. Benjamin Knapp, College of Engineering, Electrical and Computer Engineering
Valerie Thomas, College of Natural Resources and the Environment,
Forest Resources and Environmental Conservation
Randy Wynne, College of Natural Resources and the Environment,
Forest Resources and Environmental Conservation
Leslie Fuller, College of Natural Resources and the Environment
Lon Weber, College of Natural Resources and the Environment
Murat Ambarkutuk, College of Engineering, Mechanical Engineering

In order to explore how multiple users experience computing environments, the team has embarked on a conversion of a Virginia Tech classroom. By embedding over a dozen cameras in the lab environment, researchers are creating a dataset of human/environment interactions that lend insight into the relationship between the body, pedagogy, and dynamics of human-computer interaction environments.

Cube

Unique in the world, the Cube is a four-story high, state-of-the-art theatre and high tech laboratory that serves multiple platforms of creative practice by faculty, students, and national and international guest artists and researchers.

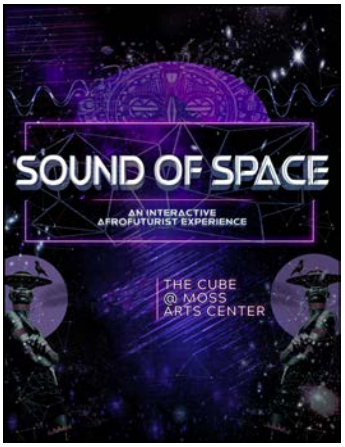
Sound of Space: An Interactive Afrofuturist Experience

11:00-12:00

Tyechia Thompson, English

Devair Jeffries, College of Liberal Arts and Human Sciences, Theatre

Al Evangelista, College of Liberal Arts and Human Sciences, School of Performing Arts



"Sound of Space: An Interactive Afrofuturist Experience" was the midterm event of Tyechia Thompson's course "Afrofuturism to Vibranium and Beyond. "Sound of Space" was a created in collaboration with Al Evangelista and Devair Jeffries's course *Improvised and Devised Performance*. Students designed the space, presented their Afrofuturist intellectual mixtapes, and performed improvised sketches in the Cube. "Sound of Space: An Experiment in Interactive Afrofuturism" featured the themes of transport, funk, flow, and testimony to give guests a sonic, visual, olfactory, and tactile environment to catch the Afrofuturistic vibes.

Bird's-Eye View

12:20-1:20

Jasmine Edison, College of Architecture and Urban Studies, School of Visual Arts

Tanner Upthegrove, Institute for Creativity, Arts, and Technology, College of Liberal Arts and Human Sciences, School of Performing Arts, Music

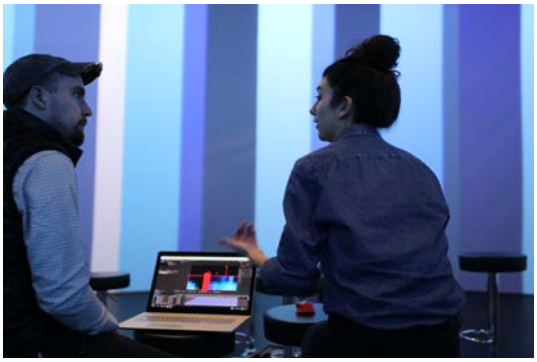
Enter the swarm, move with the herd, and follow the flock in this immersive experience of collective animal behavior. Move through the mass and see it in action as it projects onto the walls or stand still and listen to each sound individually: there's more to them than meets the ear.

Memory Bank

1:40-2:40

Vasia Ampatzi, School of Visual Arts

Memory Bank is a transdisciplinary research project merging creative technologies, socially-engaged art, neuroscience, computer science, and education. Memory recall is multisensory and requires pulling from data stored in various parts of the brain, fitting together like a layered puzzle tied by associations and neural pathways. With this in mind, the Memory Bank installation is presented as a collage of memories and brain activity visuals.



DNA Visualization: The Visual Language of Chromatin Architecture

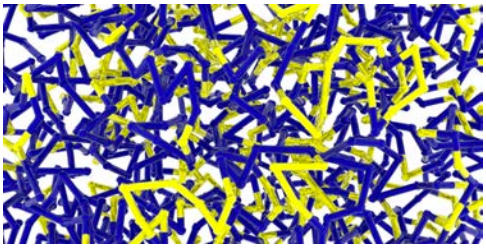
3:00-4:00

Igor Sharakhov, College of Agriculture and Life Sciences, Entomology

Alexey Onufriev, College of Engineering, Computer Science

Eric Standley, College of Liberal Arts and Human Sciences, School of Visual Arts

Come experience a scientific visualization of a 3D view of a very long strand of DNA. Chromatins are the building blocks of chromosomes. Our project combines visual art and science to help scientists learn complex information. Try out this immersive virtual reality exploration of DNA in the Cube!



Experience Studio

The Experience Studio is designed as a flexible space for ICAT researchers to work in a variety of still and immersive environments, including video games, augmented reality, motion tracked virtual collaboration, and mixed reality performance.

Live Action VR - Integrating Live Actors into Virtual Reality Experiences in Real Time

Wallace Lages, College of Architecture and Urban Studies, School of Visual Arts Virginia Tech
Tianyu Ge, College of Architecture and Urban Studies, School of Visual Arts
Justin Perkinson, College of Liberal Arts and Human Sciences, Cinema
Mary Mutter, College of Liberal Arts and Human Sciences, English
Phat Nguyen, College of Architecture and Urban Studies, Creative Technologies
Christian Schroeder, College of Architecture and Urban Studies, College of Natural Resources and the Environment, School of Visual Arts, Geography

Participants will be able to take a look behind-the-scenes of our project. We would show: 1- a VR preview of the cockpit of the spaceship where the majority of our first experience unfolds. 2- a video to help explain how we integrate live-action characters into a VR scene, from the construction of the 3D models, to camera segmentation algorithms. We could possibly also show the system in operation, depending on room availability and project progress.

Body, Full of Time

Zach Duer, College of Architecture and Urban Studies, School of Visual Arts
Scotty Hardwig, College of Liberal Arts and Human Sciences, School of Performing Arts
Nathan King, College of Architecture and Urban Studies, School of Visual Arts
Estefanía Perez-Vera, College of Liberal Arts and Human Sciences, School of Performing Arts
Caleb Flood, College of Architecture and Urban Studies, School of Visual Arts

Play with freezing a virtual dancer's limbs as its body continues moving! This exhibit demonstrates one of the technologies used in the interdisciplinary collaborative project and solo choreographic performance Body, Full of Time. Using an inertial motion capture suit, we recorded the movements of the performer, Scotty Hardwig, as performed in the work. These movements are re-enacted by a virtual avatar that you can interact with by freezing and retracting its limbs with the press of a button, forming a distorted and impossible body. In this way, you create a collaborative performance with the avatar in real time, just as we do during the performance.

Perform Studio

Perform Studio is where arts, technology, and creativity meet human mind and body. Using the state-of-the-art acoustic space with multichannel audio, motion capture system and dynamic lighting, here ICAT researchers study human gesture, emotion, spatialization of audio-visual stimuli, and embodied interaction over great distances, as well as performance in its broadest context.

What's on the inside? Exploring materials' microstructure in immersive environments

Zhenyu Kong, College of Engineering, Industrial and Systems Engineering
Joseph Kubalak, College of Engineering, Mechanical Engineering
Daniel Pillis, Institute for Critical Technology and Applied Science
Zach Duer, Institute for Creativity, Arts, and Technology, College of Liberal Arts and Human Sciences, School of Visual Arts
Christopher Williams, College of Engineering, Institute for Creativity, Arts, and Technology, Institute for Critical Technology and Applied Science, Mechanical Engineering Virginia Tech

Almost all of the advances seen in our greatest technological achievements have been made thanks to innovations in materials and manufacturing technologies. But before a new technology can be used in the final product, scientists must first ensure its quality for safety and reliability. Researchers across Virginia Tech striving to advance the state of the art in materials and new manufacturing technologies use computational tomography (referred to commonly as "CT scanning") to inspect their newest creations, as even microscale defects within the structure can cause catastrophic failure in application. While CT scanning reveals hidden microscale defects, it is often challenging for researchers to truly capture the spatial location and meaning behind them.

To address this, our team has created a workflow for reconstructing 3D imaging into three-dimensional models for visualization in immersive environments. Thanks to the virtual environment, the 3D model of a very small sample can be virtually enlarged to human-scale. Using tetherless VR and motion tracking in the Cube, researchers can visually inspect their microscale creations as one would an assembled aircraft. In this demo, the audience will be invited to explore a variety of source data including 3D printed tissue scaffolds and micro lattices, porous high temperature ceramics, 3D printed copper, metal lattice castings, sea urchine spines, and human hearts!

Sandbox

The Sandbox is a flexible workspace designed around the metaphor of a place to the popular play space. Researchers work collaboratively and constructively with materials in the space and learn from each other. The Sandbox features projects from the Center for Human-Computer Interaction.

VR Escape Room: Save the Space Elevator

Doug Bowman, College of Engineering, Institute for Creativity, Arts, and Technology, Computer Science Center for Human-Computer Interaction
Shakiba Davari, College of Engineering, Computer Science
Feiyu Lu
Yuan Li
Lei Zhang
Lee Lisle
Marc Kwiatkowski
Leslie Blustein
Brianna Gabaldon
Xue Ting Feng

Attendees will experience a compelling interactive virtual reality escape room scenario where they manipulate physical objects to solve VR puzzles. Solve four puzzles in two time periods in less than five minutes to save the plans for the space elevator!

3D Experiences Capstone Projects

Doug Bowman, College of Engineering, Institute for Creativity, Arts, and Technology, Computer Science Center for Human-Computer Interaction

Attendees can try multiple virtual reality and augmented reality projects from the Computer Science capstone class on *Designing 3D Experiences*.

Connected Smart Environments

Denis Gracanin, College of Engineering, Computer Science

Smart environments instrumented by sensors and actuators provide new opportunities for communication and remote interactions. A demonstration of a mixed-reality based remote communication between Lexington and Blacksburg will illustrate the opportunities provided by smart environments.

Grand Lobby

The Grand Lobby of the Moss Arts Center faces Alumni Mall. Projects here include those funded by ICAT SEAD (Science, Engineering, Arts, and Design) grants and others that cross the disciplines.

Photogrammetry for Entomology

Maureen Saverot, University Libraries, Digital Imaging and Preservation Services
Nathan Hall, University Libraries, Digital Imaging and Preservation Services
Steve Tatum, University Libraries, Digital Imaging and Preservation Services
Paul Marek, College of Science, Entomology

Using insects from Virginia Tech's Entomology Department Insect Collection (https://collection.ento.vt.edu/), we are showcasing specimens that have undergone the process of photogrammetry for archiving and educational display. We will provide iPads to interactively showcase these insects for guests to rotate and inspect the intricacies of the models. Additionally we have a small experimental augmented reality (AR) experience using these insects with a scannable image that will allow the insect's 3D model to pop up on the iPad provided along with an interface for guests to answer a question about the insect specimen.

Hands-On Volcano Deformation Demonstration and Active Data Streaming

Roberto Gorjon-Andujar, College of Science, Geosciences
Ryan Roane, College of Science, Geosciences
Hannah Matney, College of Science, Geosciences
ThaoVy Nguyen, College of Science, Mathematics
Emmanuel Njinju, College of Science, Geosciences
Tahiry Rajaonarison, College of Science, Geosciences
Josh Jones, College of Science, Geosciences
D. Sarah Stamps, College of Science, Geosciences Geodesy and Tectonophysics Laboratory (GTL)

Virginia Tech's Geodesy and Tectonophysics Lab of the Department of Geosciences addresses volcanic and tectonic processes with a hands-on model. Students will be able to see how GNSS/GPS can be used to study volcanoes, and other ways scientists incorporate geodesy within their own research.

3D Printing with the DREAMS Lab

Joseph Kubalak, College of Engineering, Mechanical Engineering

Have you ever wanted to recycle your water bottle into something more? Come find out how with the DREAMS Lab! We print water bottles into chess pieces, print heart models to help doctors, use robots to print in new ways, and more!

ICAT Tours

Have you ever wondered where exactly ICAT's magic happens? Join the ICAT Ambassadors for a tour of ICAT maker spaces, including the CREATE Studio, the Perform Studio, and the Cube, to see 3D printers, spatial sound speakers, motion capture systems, laser cutters, and more!

How to Dress like a Self-driving Car

Andy Schaudt, Virginia Tech Transportation Institute
Matt Moeller, Converge (former VTTI)
Josh Skole, Virginia Tech Transportation Institute
Zack Crane, Virginia Tech Transportation Institute

Experience firsthand sitting in the infamous car "seat suit" that Virginia Tech and Ford Motor Company unleashed on the public roadways in northern Virginia. This self-driving car story went viral all over the world! Meet the artists, designers, and engineers behind this novel research study.

Textiles Space wearable technology projects with NASA Johnson Space Center

The audience will get to see the prototypes and process for the student projects with NASA Johnson Space Center from Spring of 2019. The projects involve wearable technology and smart fabrics for space applications, as well as related projects with clothing companies.

The Innovator's Toolkit: A Design Thinking hands-on workshop on creativity, collaboration, innovation and solve problems

Leigh Lally, Office of University Planning
Bradley de Wet, iScholars
Shafe Ahmed, Pamplin College of Business
Sydney Grace Miller, College of Architecture and Urban Studies, Interior Design
Kai Mulligan, College of Architecture and Urban Studies, Industrial Design
T.J. Cosby, Pamplin College of Business

The Virginia Tech Innovation Fellows are students trained in human-centered design by the Stanford d.school. They join an international community of students leading a movement to ensure that all students gain the necessary attitudes, skills and knowledge required to compete in the economy of the future. The fellows are holding hands on workshops toward helping their peers and university stakeholders to develop an entrepreneurial mindset, build creative confidence, seize opportunities, define problems and address global challenges.

2019 Virginia Tech NASA S.U.I.T.S. Challenge Team

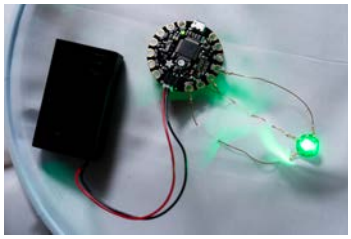
Meaghan Dee, College of Architecture and Urban Studies, School of Visual Arts
Wallace Lages, College of Architecture and Urban Studies, School of Visual Arts

A showcase of the NASA Spacesuit User Interface Technologies for Students Design Challenge solution. The display and audio environments are designed to aid astronauts in performing spacewalk tasks. We'll have an AR or VR demo available, process work, and some fun HokieNauts swag.

Tailor Made Tech: An Exploration of Wearable Technology

Taylor Carroll, College of Architecture and Urban Studies, Institute for Creativity, Arts, and Technology, School of Visual Arts

This exhibit explores combining textiles and technology to respond to food intolerances and allergens. By using wearable coded sensors, the garment alerts the wearer of allergens present to make it easier for the wearer to identify triggers, as well as let others around them know of the threat.



#VT150

Sarah Tucker, College of Architecture and Urban Studies, Material Culture and Public Humanities
Elizabeth Berg, College of Architecture and Urban Studies, Art History
David Hicks, College of Liberal Arts and Human Sciences, History and Social Science Education
Shawn de Lopez, College of Architecture and Urban Studies, Creative Technologies

If this place could talk, what would it tell us? Virginia Tech's sesquicentennial offers the opportunity to see and hear 150 years of history in twenty-first-century ways. Harnessing new technologies, we can uncover Virginia Tech's history in its many dimensions—from the familiar to the hidden, from the triumphant to the painful. Innovative digital techniques allow us to see what is normally unseen, bringing to the surface the full diversity of our shared past. They also allow audiences with varying interests to explore customized stories, places, themes, and populations over time. Not only will our work produce new ways of understanding and presenting VT's history; the process of getting there will display the amazing potential of faculty-student teams working across disciplines. Employing the "beyond boundaries" model of transdisciplinary collaboration, we will use the university's future-minded education approaches to rethink its past. An augmented reality campus tour allowing visitors to "see" the changing people, places, and events that have combined to make VT what it is today. A 3D model of the Blacksburg campus, enhanced by projection mapping and/or an AR app that allows visitors to explore the changing terrain, buildings, and peoples of Virginia Tech.

#VTDITC: Hip Hop Studies at Virginia Tech

Craig Arthur, University Libraries

Digging in the Crates: Hip Hop Studies at Virginia Tech, or #VTDITC, exists to foster a sense of community among artists, fans, and scholars. We hope to model that students' personal interests are worthy of academic study and further institutionalize Hip Hop Studies' presence at VT.

Orchestra Lobby (Level 1)

The Orchestra Lobby is on the ground floor, around the corner near the Grand Staircase. This area features projects from Newman Libraries studios. The library studios provide free access to advanced hardware and software, and encourage an atmosphere of play and discovery. ICAT and the library studios partner on many projects.

Fusion Studio

Sara Sweeney, University Libraries, Fusion Studio

The Fusion Studio, part of the Newman Library Studios Network, supports undergraduate groups working on long term, collaborative projects. Come meet some of the project teams and learn about their work!

FundRise

Shivani Patel, College of Science, Computational Modeling and Data Analytics
Asmita Shah, College of Engineering, Computer Science
Akhilesh Thokala, Pamplin College of Business, Business Information Technology
Adarsh Parbadia, Pamplin College of Business,
Pratik Shah, College of Engineering, Aerospace and Ocean Engineering

We will be presenting our app idea including special features, calendar views, and personalization options. We will feature a walkthrough of our application that demonstrates how a user would interact with it.

Measure your Core Body Temperature with Non-Invasive AccuTemp Technology

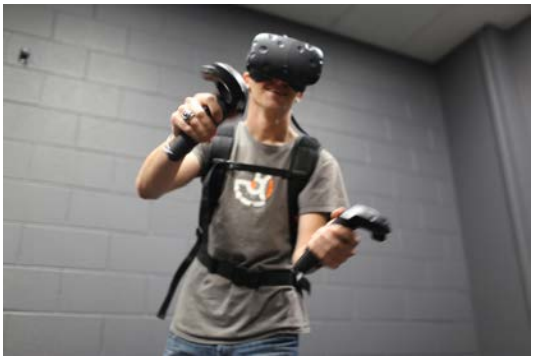
Ali Roghani

At our exhibit, you will witness our non-invasive AccuTemp sensor being used to measure the internal (core) temperature of volunteers. AccuTemp technology is capable of measuring human core temperature at the same accuracy of invasive probes.

Virtual Reality and Augmented Reality Development at the Virtual Environments Studio

Jonathan Bradley, University Libraries

Attendees will have the opportunity to try out some virtual reality work and learn about the development projects going on in the space, which span various disciplines from around the university, and how to get started on your own project.



Audio and Video Production with Media Design Studio B

Kayla McNabb, University Libraries

In Media Design Studio B, visitors will be able to see and try out hardware and software for video and audio production. Anyone can book Studio B to create media for academic or personal projects with help from a student assistant. This might include a video explaining a complex research finding or a podcast about a passion project.

Mezzanine Lobby (Level 2)

Up one level from the Orchestra Lobby is the Mezzanine Lobby. The Mezzanine features projects from community partners as well as projects from courses in Instructional Design, Computer Science, and Cinema.

The Chromilluminator

Liz Shukwit, The Color Project TM
Darcy Meeker, The Color Project TM
Jim Pease
Cameron Stallings, The Color Project TM
Chris Angileri

The Chromilluminator is enclosed in a custom built structure that reduces outside sensory and perceptual stimuli. Software was developed by our design team to cycle through fifteen color combinations. The process uses the participant's skin as the reflective surface for the projected light. The Color Project TM uses TV colors (R-G-B) and printing colors (C-M-Y). The color pairs mix in unexpected ways especially when reflection and projection are added. The light technology allows participants to explore a surprising and compelling environment, and what they find may be unexpected and delightful.

The booth captures three photos of each participant that can be uploaded to social media and printed for the participant to remember the experience and share it with others. There is a monitor on the outside of the Chromilluminator for public viewing.

We research how color influences emotions and actions. This research is applied to our public art installations. We are curious and gathering data from inside The Chromilluminator.

Understanding a simple Pd-L2Ork Patch

Aline Souza, College of Architecture and Urban Studies, College of Liberal Arts and Human Sciences, Creative Technologies

We will look at a simple Pd-L2Ork patch and see how it creates sound and connects to a wiimote controller. We will go step-by-step through the process of building a simple synthesizer, with an overview of how digital audio works, including the following topics: waveforms, amplitude, frequency, sine waves sampling rate, and the usage of audio and control objects in Pd-L2Ork. The software is a free, available for any operating system. Pd-L2Ork was developed by Ico Bukvic, and is a branch of Pure Data, which was created by Miller Puckette. Pd-L2Ork is the software used by the Linux Laptop Orchestra in Virginia Tech.

Garbage Collection

The audience will be able to see, touch, and interact with pressure and brightness sensors of a table equipped with controllable light patterns.

Chem Websites Enhancement

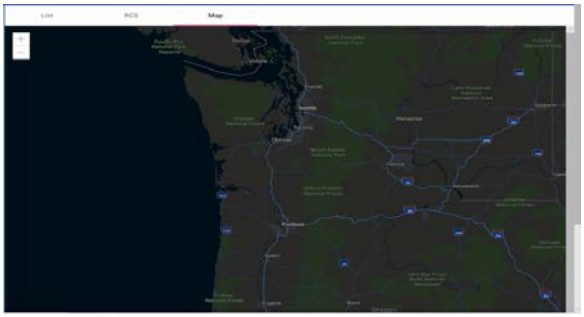
James Kirk, College of Engineering, Computer Science

I will showcase the website technical support that I have provided for the Drug Discovery department.

Interactive Vertebrate Map

Christian Garcia-Neal, College of Engineering, Computer Science
Andre Urcia, College of Engineering

A website featuring an interactive map containing the data for vertebrate species in the north-western United States. People that are interested in biology, ecology, or uncommon fish species could learn more about it at our exhibit.



Tourism Destination Websites

Matt Crawford, College of Engineering, Computer Science
Viet Doan, College of Engineering, Computer Science
Aki Nicholakos, College of Engineering, Computer Science
Jackson Salopek, Pamplin College of Business, Business Information Technology

Our exhibit will consist of a digital visual representation of the growth of tourism websites and the effect the growth of these websites have on their regional tourism.

TreeViz

Conner Caprio, College of Engineering, Computer Science
Austin Zensen, College of Engineering, Computer Science
Moira Pelton, College of Engineering, Computer Science

The audience will see how a tree data structure goes through processes like adding and traversing through the tree on a step-by-step basis

Adult Day Services Memory Masterclass Promotional Video

Maddie Kulik, College of Engineering, Pamplin College of Business, Computer Science
Finance, Insurance, and Business Law
Jose Zurita, College of Engineering, Computer Science

Adult Day Services approached our group to request a promotional video for one of their main programs, Memory Masterclass. This video will be featured on their recently updated website, and is mainly meant to promote the services of Adult Day Services and increase website traffic and participant recruitment. At our exhibit, you will have a chance to view the promotional video, as well as learn about the How and Why behind the Memory Masterclass program.

Interactive Designs for Everyday People

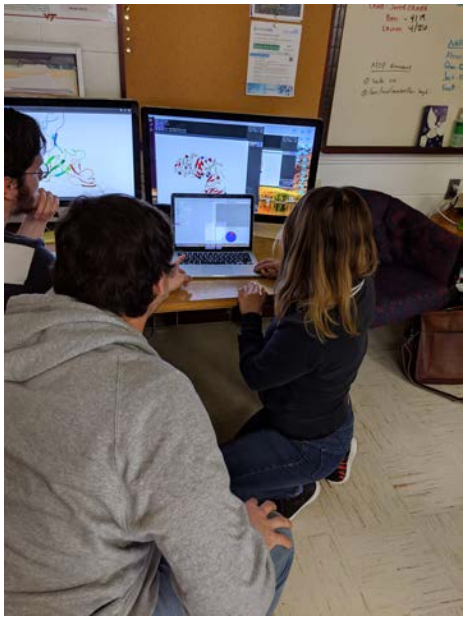
Alicia Johnson, College of Liberal Arts and Human Sciences, Instructional Design and Technology
EDIT 5624 Interactive Learning Media Design

ICAT Participants will interact with student prototypes of the following interactive designs:

1) VT Online Lost, Found, Give, Receive System- An App designed to bridge two groups of people: Those who have lost or found items on campus and those who want to give items away. The purpose is to not only to help build connections, but also builds a sense of community.
2) SchoolKit: Your Success, Your Terms-This toolkit in the form of an app is designed to assist women returning to school for graduate studies in an effort to redefine themselves both professionally and personally. It is designed to help users adjust to new activities regarding schedules, priorities, homework, sleep, and self-care.
3) Veg App-This "yelp-like" app will assist vegetarians, vegans or people with dietary restrictions in quickly and succinctly discovering user-rated menu items of local restaurants that will meet their needs. This will give users more dining freedom and less feelings of alienation from peers who don't understand or feel comfortable with their diet.
4) CareGiver-This app is for individuals providing care for another individual, whether that be an infant, senior citizen, or anyone else they may be caring for. Users can connect accounts with one another and experience real-time updates on Dr. appts., dietary needs, bedtimes, behavior changes, etc. all in real-time.
5) Women's Outreach-This website will represent a Catholic women's group in Africa. The women's group will use this site to reach out to other women who may not be able to get to church or Bible study.
6) Go Creative–This website is for individuals of varying skill-levels who want to learn more about Adobe editing software such as Premiere, After Effects, and Photoshop through the use of tutorials. It is designed to give users a singular source of relevant just-in-time instruction.

Visualizing Acid-Base Chemistry for Environmental Scientists and Engineers

Conor Kelly, College of Engineering, College of Science, Computer Science, Chemistry
Conor Gallagher, College of Engineering, Civil and Environmental Engineering
Jonathan Briganti, University Libraries, Virginia Tech
Andrea Dietrich, College of Engineering, Civil and Environmental Engineering
Anne Brown, University Libraries, Data Services, DataBridge,
Michael Stamper, University Libraries, Data Services, DataBridge
Anita Walz, University Libraries, Open Education
Adil Godrej, College of Engineering, Civil and Environmental Engineering
Madeline Schreiber, College of Science, Geosciences
Bryanne Peterson, Institute for Creativity, Arts, and Technology

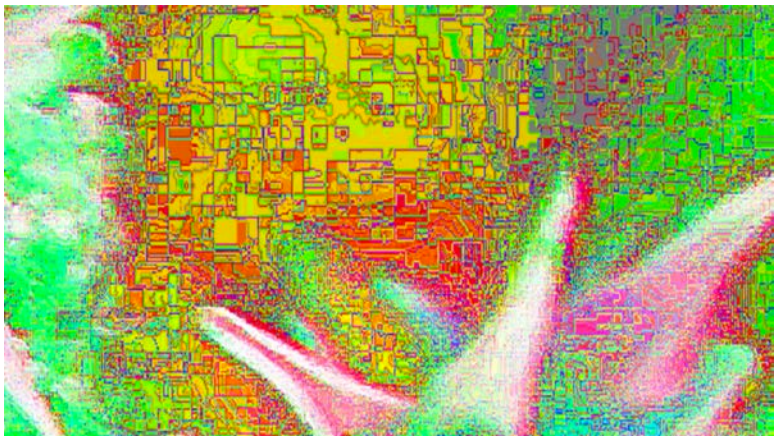


Our exhibit highlights pKanalyzer, a visualization tool to be used by environmental scientists, engineers, and biochemists. PKanalyzer aids in teaching and research applications of pH, pKa, and ionization fractions as related to environmental and physiological processes.

Enigmatic Episode

Kat Vivaldi, College of Liberal Arts and Human Sciences, College of Architecture and Urban Studies, School of Performing Arts, School of Visual Arts, Cinema
Karl Precoda, College of Liberal Arts and Human Sciences, School of Performing Arts Virginia Tech

Experimental cinema shorts from School of Performing Arts and School of Visual Arts students.



Balcony Lobby (Level 3)

The third level up the Grand Staircase is the Balcony Lobby. This area hosts proejcts from the Virginia High School Creativity + Innovation Summit. High school students from across the state were invited to propose innovative projects that cross the disciplines of science, engineering, arts, and design. Top teams were selected to present their projects at ICAT Creativity + Innovation Day. Summit participants also gave oral presentations of their work and attended a design workshop as part of the event. These exhibits are open to the public from 11:00 to 12:00 to give the high school students time to explore the rest of the event.

GENEYES: Glasses to Ease Narcolepsy

Elena Novak, Governor's School at Innovation Park
Rosa Bouchery, Governor's School at Innovation Park
Shekinah Edwards, Governor's School at Innovation Park

GENEYES are glasses with an EGG component for individuals with narcolepsy. The glasses are able to detect a narcoleptic (cataplexy) attack and ameliorate the symptoms by flashing blue light to activate orexin neurons and induce wakefulness.

MIDICAL

Juan Rivas, Governor's School at Innovation Park
Daniel Gigi, Governor's School at Innovation Park
Alen Jomon, Governor's School at Innovation Park

A MIDI keyboard is a communication device that translates musical notes into an 8-bit code. A user will use software designed to translate the 8-bit code into characters and numbers, which will be entered as the password. The user will be able to log into their website by playing a jingle.

Classroom Hologram Image Projectors (C.H.I.P.)

Areli Arellano, Governor's School at Innovation Park
George French, Governor's School at Innovation Park
Kaliah Moulton, Governor's School at Innovation Park

Our classroom hologram will give people a 3D experience by placing an object into a scanning box and watching as it appears as a 3D hologram in a transparent pyramid. This hologram will alleviate the struggle the students face when they cannot see an object that the teacher is displaying.

Why I Cry

Jessica Truong, Governor's School at Innovation Park
Abigail Seputro, Governor's School at Innovation Park
Srinitya Allam, Governor's School at Innovation Park

This baby rocker offers the ability to process newborn cries and determine a child's needs via AI technology. Once detecting the cry, the device will instant message the guardian and inform them of possible solutions. The performance will automatically rock the child if it detects child sleepiness.

Personal Automated Trainer (PAT)

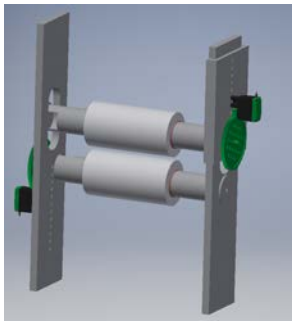
Ben Simons, Governor's School at Innovation Park
Zachary Nowak, Governor's School at Innovation Park
Matthew Nowak, Governor's School at Innovation Park

Most beginner weightlifters do not know the correct form and will end up with injuries. PAT can provide feedback to the lifting form of various users. It can produce a skeletal image of the body to show the imperfections in the lift. It will eventually be able to analyze all lifts.

SGR: Surgical Glove Remover

Weesam Semaan, Governor's School at Innovation Park
Rohan Vij, Governor's School at Innovation Park
Max Hwang, Governor's School at Innovation Park

SGR is a machine able to take off contaminated surgical gloves in a way that the machine and the subject's hands will stay clean. This was built for a hospital setting, mainly for surgeons or other hospital personnel.



Music in Motion: An Immersive Synesthesia Experience

Mia Wright, Governor's School for Science and Technology
Abigail Castro, Governor's School for Science and Technology
Madelyn Cohn, Governor's School for Science and Technology

At the conference, we will provide a demonstration of a prepared music piece visualized as abstract art in a virtual simulation. The user will be equipped with a set of virtual reality goggles and headphones for an immersive experience. For further interaction with the audience, we would like to talk to the users and record their experience. We will use a poster to display our design process and future directions, which will include the live interfacing of music to art.

Hydro-Harmony: Creating Music with Water

Emery Shelley, Governor's School for Science and Technology
Hong Ji Liu, Governor's School for Science and Technology
Alex Kwong, Governor's School for Science and Technology
Nathanial Doggett, Governor's School for Science and Technology
Boheng Mu, Governor's School for Science and Technology

Hydro-Harmony will be demonstrated by playing various familiar songs. Summit attendees will interact with the Hydro-Harmony by picking a song and then listening to and observing the automated system perform. The interaction will create a friendly environment between the visitor and Hydro-Harmony.

CarWind: Harnessing the Wind from Passing Cars to Produce Electricity

Ishan Lamba, Governor's School at Innovation Park
Tim Cha, Governor's School at Innovation Park

Lately, the amount of natural fuels such as oil is dwindling and humanity has been striving to find new, creative ways to produce green energy. CarWind is a miniature wind turbine that uses wind energy from car speed to generate electricity. By placing CarWind on highway medians, we can use passing cars as a wind source to produce electricity which will charge a battery. Once the battery is charged, humans can use it in whatever way they wish.

The Bunmeister 3000

Conor Sokolowsky, Governor's School for Science and Technology
Finn Hulse, Governor's School for Science and Technology

We will present a prototype of the Bunmeister 3000 and demonstrate its variety of rolling and acupressure massage features. The prototype will be a portable chair attachment, and visitors will be allowed to sample the Bunmeister 3000. We will display our design process and results of trial users.

The Automated Bed Sheet Changer

Lilly Schroer, Governor's School at Innovation Park
Anoli Mehta, Governor's School at Innovation Park

The Automated Bed Sheet Changer was designed to promote better hygiene practices in health care facilities and homes. With a push of a button, our project models an automated system that changes bed sheets regularly. This can minimize disease due to the accumulation of contaminants on sheet surfaces.

CREDITS

ICAT

Benjamin Knapp, founding executive director
Tom Martin, director of strategic and creative iniatives
Lisa McNair, director of Center for Research in SEAD Education
Doug Bowman, director of Center for Human-Computer Interaction
Ico Bukvic, director of the Creativity + Innovation Community
Lisa Jansen, grant specialist
Phyllis Newbill, outreach and engagement coordinator
Dylan Parker, web developer
Daniel Pillis, research assistant professor for immersive environments
Tanner Upthegrove, media engineer
Holly Williams, assistant director for administrative operations
Melissa Wyers, administrative assistant
Michelle Farber, special assistant

Moss Arts Center

Artistic/Programming

Ruth Waalkes, executive director, Moss Arts Center, and associate provost for the arts
Jon Catherwood-Ginn, associate director of programming
Margo Crutchfield, curator at large
Kari Evans, executive assistant
Meggin Hicklin, exhibitions program manager
Sarah M. Johnson, program manager
Alice Rogers, manager, active learning curation program
Sage Wayrynen, artist services assistant

Development

Jacob Paul, annual giving officer

Finance and Administration

Liz Scharman, director of administration
Kevin Ayoub, facilities and rentals manager
Josh Bowman, housekeeping worker
Toni Cartee, business manager
Matt Hudson, IT specialist
Austin Elliot, assistant facility manager
Jamie McReynolds, fiscal, hr, and grants technician
Shirley Rose, housekeeping worker

Outreach

David Ehrlich, outreach fellow for the fine arts
Anne Elise Thomas, Building Bridges Research Fellow and Itraab Ensemble music director
Marketing and Communications
Reneé Alarid, associate director of creative services
Susan Bland, associate director of communication
Jonathan Boulter, associate director of patron services
Carly DuPont, house manager
Avery Eliades, digital content specialist
Tracie Hughes, marketing coordinator
Kacy McAllister, box office and student engagement manager

Production

Doug Witney, director of production
Gustavo Araoz, lighting supervisor
Nick Corrigan, senior technician
Robert Gainer, audio supervisor
Laine Goerner, production coordinator
Ryan Hasler, stage and rigging supervisor
Joe Ingram, staff technician

More Creativity + Innovation events

Center for Human-Computer Interaction student symposium
Friday, May 3, 2019
3:30-5:00 PM
Moss Arts Center, Merryman Family Learning Studio (Room 253)

DISIS Faculty and Guests Concert Spring 2019
Tuesday, May 7, 2019
7:00 PM
Cube, Moss Arts Center
free and open to the public
Digital, Interactive, Sound & Intermedia Studio

Technology Commercialization Course - Team Demonstration Event
Wednesday, May 8, 2019
5:45-6:45 PM
Lavery Hall, Room 320
Students in the *ENGE/IDS/MGT 4094: Technology Commercialization* will present innovative technologies of interest and a commercialization opportunity from two perspectives: a startup and an existing established client company.

DISIS Student Concert Spring 2019
Wednesday, May 8, 2019
7:30 PM
Cube, Moss Arts Center
free and open to the public
Digital, Interactive, Sound & Intermedia Studio

Debating the Innovation Campus
Wednesday, May 15, 2019
1:05-3:05 PM
Moss Arts Center, Merryman Family Learning Studio (Room 253)
Student teams from *STS 2254: Innovation in Context* argue for and against proposed positions about Virginia Tech's Innovation Campus, based on research and community engagement.