Art Exhibition

Resonance & Relay: Community of Creative Exchange, an art exhibition and collaborative event by Daren Kendall (Assistant Professor, Art) will be presented in the Lightwell Gallery of the School of Visual Arts from January 17 through February 3. Kendall reconstructs his office as an inverted cage to reimagine the personal workspace as an instrument, apparatus and stage.

Challenging the notion of traditional studio art practice, Kendall draws inspiration from relationships and conversations developed with colleagues and professionals across a diverse range of interests. Resonance and Relay demonstrates this process with colleagues Konstantinos Karathanasis (Associate Professor, Music), Tamaki Yuri (Curator, Ornithology), Jeff Kelly (Professor, Aeroecology), and Xiaowei Chen (Assistant Professor, Geology), as each converge for one evening to work together in the Lightwell Gallery. A bird, a building, an instrument, and conversations of sound invite the viewer to imagine the meaning of relationships as players work and the scene unfolds. A public performance and reception of Resonance and Relay will take place Tuesday, January 24, from 5-7pm, followed by a panel discussion in reflection on Tuesday, January 31, 5-7pm.

OU Research Scientist Recipient of Presidential Award

University of Oklahoma research scientist, Corey Potvin, is the recipient of the Presidential Early Career Award for Scientists and Engineers, the highest honor bestowed by the United States government on science and engineering professionals in the early stages of independent research careers. Potvin, a research scientist with OU’s Cooperative Institute for Mesoscale Meteorological Studies at the National Oceanic and Atmospheric Administration’s National Severe Storms Laboratory, was the only PECASE recipient from Oklahoma. He was nominated by the U.S. Department of Commerce.

“This award for Dr. Potvin could not be more well deserved. His high level of achievement is a source of great pride for the university,” said OU President David L. Boren.

Since joining CIMMS and NSSL as a research scientist, Potvin’s work has been largely devoted to helping develop a prototype Warn-on-Forecast ensemble of analysis and forecasting systems. High-resolution probabilistic guidance from such systems will hopefully permit longer tornado warning lead time and fewer false alarms. His research has been divided almost equally between (1) adapting and testing techniques for application to convective-scale radar data assimilation, and (2) using numerical simulations to explore supercell predictability.

“Potvin has made a tremendous imprint on our stormscale research enterprise in his relatively short time here as scientist and student. He joins a team of elite scientists at CIMMS and NSSL who have previously been given this prestigious award. We are privileged to have him at CIMMS and look forward to great things ahead,” said Randy Peppler, CIMMS interim director.

“I’m thrilled and honored to have my work recognized at such a high level. Having the opportunity to conduct meaningful, exciting research with the top-notch scientists at CIMMS, NSSL and OU is a great privilege, and I would not have received this award without their mentorship and collaboration,” Potvin said.

During Potvin’s graduate studies at OU, he developed a multiple-Doppler technique for detecting and characterizing intense convective vortices and investigated the capabilities of vertical vorticity constraint and spatially variable advection correction to improve variational dual-Doppler retrievals of vertical velocity in convection. As a
President's Monthly Research and Development Highlights

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“Creating Tomorrow”

President's Monthly Research and Development Highlights

President's Monthly Research and Development Highlights

“Creating Tomorrow”

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New Publications

- Peter Lang Inc. published *Shaping International Public Opinion: A Model for Nation Branding and Public Diplomacy* by J.A. Fullerton and A. Kendrick (November 2016). Imran Hasnat (Graduate Student, Journalism) and Elanie Steyn (Associate Professor, Journalism) authored the chapter, “‘Bottomless Basket’ to ‘Beautiful Bangladesh’: Nation branding through tourism and public diplomacy.”

- University of Nebraska Press published *Upward, Not Sunwise: Resonant Rupture in Navajo Neo-Pentecostalism* by Kimberly Marshall (Assistant Professor, Anthropology) (October 2016).

- University of California Press published *A Geography of Digestion: Biotechnology and the Kellogg Cereal Enterprise* (California Studies in Food and Culture) by Nicholas Bauch (Assistant Professor, Geography and Environmental Sustainability) (October 2016).

- Springer published *Creative Ways of Knowing in Engineering* (1st ed. 2017 Edition) by Diana Bairaktarova and Michele Eodice (Associate Provost for Academic Engagement and Director of the OU Writing Center) (December 2016).

- Palgrave Macmillan published *Geographies, Genders and Geopolitics of James Bond* (1st ed. 2017 Edition) by Lisa Funnell (Assistant Professor, Women’s and Gender Studies) and K. Dodds (January 2017).


- Journal of Natural Products published “Opportunistic Sampling of Roadkill as an Entry Point to Accessing Natural Products Assembled by Bacteria Associated with Non-anthropoidal Mammalian Microbiomes” by Bradley Stevenson (Associate Professor, Microbiology) and Robert Cichewicz (Professor, Chemistry and Biochemistry) (November 2016). It is currently the second most downloaded paper for the *Journal of Natural Products*. *Scientific American* also picked up the paper and *The Royal Society of Chemistry* did a news piece on this paper. You can access the paper at [http://pubs.acs.org/doi/abs/10.1021/acs.jnatprod.6b00772](http://pubs.acs.org/doi/abs/10.1021/acs.jnatprod.6b00772).

Presidential Award (cont’d)

National Research Council postdoctoral associate at NSSL, Potvin examined and compared errors in close-range supercell wind retrievals from traditional and variational dual-Doppler analysis and ensemble Kalman data radar data assimilation.

Recent PECASE award winners include Amy Cerato, School of Civil Engineering and Environmental Science, and Michael C. Coniglio and Pamela Heinselman, both of the NOAA National Severe Storms Laboratory.
Documentary

A NOVA documentary, “Secrets of the Sky Tombs,” on the ancient peoples of the Himalayans and the clues they left behind aired on Public Broadcasting Service (PBS), January 4, 2017. The documentary is based on a collaborative OU study and the first ancient DNA investigation of prehistoric peoples in the Himalayas. Christina Warinner (Assistant Professor, Anthropology) was the senior author on the paper published June 20, 2016, in the Proceedings of the National Academy of Sciences.

The NOVA documentary features OU graduate students Richard Hagan and Nisha Patel and OU faculty Christina Warinner and Courtney Hofman analyzing the prehistoric Himalayan remains at OU’s state-of-the-art Ancient DNA Laboratories in the Stephenson Research and Technology Center on the OU Research Campus. Watch “Secrets of the Sky Tombs” at http://www.pbs.org/wgbh/nova/ancient/secrets-sky-tombs.html.

Faculty Recognition

• Five of the six Honor Awards recently presented at the 2016 American Institute of Architects State Convention went to College of Architecture faculty, students and alumni. Professor Deborah Richards won the Young Professional Achievement Award. Professors Dave Boeck and John Harris won the International Community Service Award for their work with students and collaborators in Zambia. OU alumni Farooq Karim won the Community Service Award for his decades of work on behalf of communities across Oklahoma including his service to OU. Interim Dean Hans E. Butzer won the Educational Contributions Award for his outstanding leadership in education. The late Dean Charles Graham was awarded the Lifetime Achievement Award for his decades of service to the profession.

• Daniel Mains (Assistant Professor, Honors and Anthropology) has received a Humboldt Research Fellowship for Experienced Researchers to support a one-year residence at Zentrum Moderner Orient (ZMO) in Berlin, Germany. At ZMO, Mains plans to finalize his book manuscript, Technologies of Development: Infrastructure and Governance in Urban Ethiopia. Technologies of Development examines how specific forms of urban infrastructure including roads and public transportation networks mediate relationships between citizens and the Ethiopian state.

Publication Awards

• Assistant Professor Nicholas Bauch’s (Geography and Environmental Sustainability) project Enchanting the Desert, published in 2016 by Stanford University Press, made Slate’s Top Five Digital History Projects in 2016. You can see more about this project at http://www.slate.com/blogs/the_vault/2016/12/30/five_great_digital_history_projects_from_2016.html.

• Associate Professor Qihong Liu’s (Economics) paper titled Behavior-Based Price Discrimination in a Multi-Dimensional Preferences Market won the Best Paper Award at the International Workshop on Innovation and Industrial Economics in 2016, at Nanjing University, China. The paper was co-authored with R. Esteves and J. Shuai. Liu was also elected to the Chinese Economists Society Board of Directors for the 2016–2017 term.
**Student Recognition**

- A team of Landscape Architecture graduate students that included Garrett Slezak, Dan Quakenbush, Amanda Hall, and Rachel Ware were awarded first place in the 2016 Come Alive Outside Design Challenge. They were accompanied by students from Kansas State University and BYU-Idaho, where they conducted a design charrette with students, faculty, and community members to better understand the vision they held for their school and community in Denver, Colorado. After returning from Denver, the OU team spent four weeks finalizing their design to be presented in the format of a presentation board, a project narrative, and a video describing their design and process. The faculty advisor on this project was Tom Woodfin (Professor, Landscape Architecture). To learn more about Come Alive Outside, visit [https://comealiveoutside.com/](https://comealiveoutside.com/). To view the OU Design Team’s project, visit [https://comealiveoutside.com/denver-2016/](https://comealiveoutside.com/denver-2016/).

- Angela Person’s (Ph.D., Geography) doctoral dissertation *Locating the Agency of Architecture: A Geographic Analysis of the Smithsonian Institutions Hirshhorn Museum and Sculpture Garden in Washington, D.C., U.S.A.* was selected for an Honorable Mention for the 2016–2017 Architectural Research Centers Consortium Dissertation Award. The award is intended to honor significant new research in architecture and environmental design and to recognize the achievement of an emerging scholar. Person completed her Ph.D. in May 2016.

- Salomon Rodrigue Mbouombo (Undergraduate Research Assistant, Engineering) was awarded the Region V 2016 Vanguard Awards: Academic Excellence Outreach Award. This award is given to students that show great academic achievement, academic profile and community.

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**SHAREOK**

University of Central Oklahoma Max Chambers Library joins OU and OSU Libraries’ participation in SHAREOK, a shared repository website that hosts the intellectual output of Oklahoma’s higher education communities. Founded in 2014, SHAREOK aims to support research and scholarship in Oklahoma, allowing faculty, students, staff and other individuals associated with the three contributing organization to submit content to the website and access its resources. The site includes digital dissertations, faculty publications, research, digital special collections, open access publications, open educational resources and more.

Damin Spritzer (Assistant Professor, Music) published the first volume critical edition with extended preface of a multi-volume set of the music of Rene Louis Becker (1882-1956), and American Alsatian composer in the French Romantic Style. He will also record a third disc of his music later this spring. His work can be found at [http://www.wayneleupold.com/new-releases/organ-works-vol-1-sonatas-rene-becker.html](http://www.wayneleupold.com/new-releases/organ-works-vol-1-sonatas-rene-becker.html).
University of Oklahoma, Boston University and Smithsonian Researchers Investigate The Colonization of Ancient Species in the Gulf of Alaska

Invasive species have shaped island ecosystems and landscapes in the Gulf of Alaska, but their histories are unknown. In a study by the University of Oklahoma, Boston University and the Smithsonian Conservation Biology Institute, researchers investigated the archaeological and genetic history of the Arctic ground squirrel on Chirikof Island, Alaska. This small mammal has the ability to affect vegetation and seabirds on these islands and was introduced across much of this region as part of the historic fox farming industry.

Courtney Hofman, professor in the Department of Anthropology, OU College of Arts and Sciences, collaborated with Catherine West, professor in the Department of Archaeology, Boston University, to find that the current population of squirrels has been on Chirikof Island longer than previously assumed. Hofman and West used archaeological squirrel remains recovered from middens to directly radiocarbon date the squirrels; to look for evidence of prehistoric human use of squirrels; and to perform ancient DNA analysis of the dated squirrel remains.

This study challenged the assumption that ground squirrels were introduced to the islands by historic settlers, and the researchers argued instead that these squirrels arrived on the island much earlier than previously thought. Data from these three lines of evidence were used to assess the antiquity and genetic stability of Chirikof’s ground squirrel population and to reconsider the role of long-term data in the determination of native and indigenous species. Analysis confirmed that the squirrels were already present on Chirikof Island at least 2,000 years ago, and the current population is closely related to the historical ancient population.

The Alaska Maritime National Wildlife Refuge manages many Gulf of Alaska Islands, including Chirikof, and must determine whether a species is native or introduced before choosing how to appropriately maintain its population. The longevity of the Chirikof squirrel population complicates its classification as an “invasive” or “native” species. The data gathered from OU and Boston University researchers has implications for maintaining the squirrel’s local population and the island’s restoration.

“Utilizing interdisciplinary methods, such as ancient DNA, accelerator mass spectrometry radiocarbon dating and zooarchaeology, allows us to address complex but really important questions about the history of invasive species,” said Hofman. “If a species arrives in a new environment or is introduced by ancient people, how long is enough time for a species to be considered “native” or part of the ecosystem—1,000 or 10,000 years ago?”

The work was funded by the National Geographic Society Committee for Research and Exploration, the University of Maine, the Smithsonian Conservation Biology Institute and Boston University. “Integrating Archaeology and Ancient DNA to Address Invasive Species Colonization in the Gulf of Alaska,” will be published in an upcoming issue of Conservation Biology. For more information about this research, please contact Hofman at courtney.hofman@ou.edu or West at cfwest@bu.edu.
## December New Awards

<table>
<thead>
<tr>
<th>Name</th>
<th>Dept./Center</th>
<th>Funding Agency</th>
<th>Project Title</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibbon Walters</td>
<td>Aerospace &amp; Mechanical Engineering</td>
<td>ATA Engineering, Inc.</td>
<td>Multiphysics Simulations of Multi-Component, Off-Design Aircraft Engine Operation Using Dynamic Hybrid RANS/LES</td>
<td>$37,363.00</td>
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<tr>
<td>Michael Crespin</td>
<td>Carl Albert Center</td>
<td>Social Science Research Council</td>
<td>Beyond the Roll Call: Multidimensional Negotiation during the Great Society</td>
<td>$10,000.00</td>
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<tr>
<td>Chuanbin Mao</td>
<td>Chemistry &amp; Biochemistry</td>
<td>Oklahoma Center for Adult Stem Cell Research</td>
<td>Efficiently reprogramming human fibroblasts into iPSCs by non-viral nanoparticles</td>
<td>$168,000.00</td>
</tr>
<tr>
<td>Christian Grant &amp; Dean Hougen</td>
<td>Computer Science</td>
<td>U.S. Dept. of Transportation, Federal Aviation Administration</td>
<td>Learner Data Integration and Transformation</td>
<td>$146,000.00</td>
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<tr>
<td>Zhisheng Shi</td>
<td>Electrical &amp; Computer Engineering</td>
<td>Northrop Grumman Corporation</td>
<td>Wafer Scale Infrared Detectors (WIRED) (A Novel Heterojunction PbSe/CdS detector and FPA fabrication)</td>
<td>$92,310.00</td>
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<tr>
<td>Hazem Refai</td>
<td>Electrical &amp; Computer Engineering</td>
<td>State of Oklahoma, Department of Transportation</td>
<td>Traffic Analyzer for Continuous Count System</td>
<td>$55,148.00</td>
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<tr>
<td>Hazem Refai</td>
<td>Electrical &amp; Computer Engineering</td>
<td>State of Oklahoma, Dept. of Transportation</td>
<td>Development of Speed Data for Performance Measurements</td>
<td>$170,437.00</td>
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<tr>
<td>Dominique Pittenger &amp; Md Zaman</td>
<td>Engineering Dean/ Civil Engineering &amp; Environmental Science/ Petroleum &amp; Geological Engineering</td>
<td>Oklahoma State University</td>
<td>Development of Aggregate Characteristics-Based Preventative Maintenance Treatments using 3D Laser Imaging and Aggregate Imaging Technology for Optimized Skid</td>
<td>$42,817.00</td>
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<tr>
<td>Kash Barker</td>
<td>Industrial &amp; Systems Engineering</td>
<td>U.S. Dept. of Defense–Naval Postgraduate School</td>
<td>Improved Acquisition for System Sustainment: Resilient Supplier Evaluation and Selection with Bayesian Networks</td>
<td>$119,963.00</td>
</tr>
<tr>
<td>Kash Barker &amp; S Lakshmivarahan</td>
<td>Industrial &amp; Systems Engineering/Computer Science</td>
<td>U.S. Dept. of Transportation, Federal Aviation Administration</td>
<td>Applied Game Theory to Enhance ATC Training</td>
<td>$119,500.00</td>
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<td>Tomasz Przebinda</td>
<td>Mathematics</td>
<td>National Science Foundation</td>
<td>(CIRM) Support for US Participants at CIRM, March 13-17, 2017 Conference: Scattering, Resonances and Dynamics</td>
<td>$14,393.00</td>
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<td>Xingru Wu</td>
<td>Petroleum &amp; Geological Engineering</td>
<td>Ballard Petroleum</td>
<td>Phase I of Gaither Draw Units Well Spacing Optimization Study</td>
<td>$45,000.00</td>
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<tr>
<td>Name</td>
<td>Dept./Center</td>
<td>Funding Agency</td>
<td>Project Title</td>
<td>Amount</td>
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<tr>
<td>Xingru Wu</td>
<td>Petroleum &amp; Geological Engineering</td>
<td>Yangtze University</td>
<td>Using Molecular Dynamics Simulation to Study Gas Phase and Flow Behaviors in Shale Formations</td>
<td>$40,000.00</td>
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<td>Saeed Salehi, Ramadan Ahmed, &amp; Catalin Teodoriu</td>
<td>Petroleum &amp; Geological Engineering</td>
<td>U.S. DOI, Bureau of Safety and Environmental Enforcement</td>
<td>Studying “fitness for service” of the sealing assemblies and cement systems in shallow well designs by conducting scaled laboratory testing, leakage modelling and risk assessment</td>
<td>$325,281.00</td>
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<td>Hank Jenkins Smith &amp; Carol Silva</td>
<td>Political Science</td>
<td>Sandia Laboratories</td>
<td>National Security Data Archival and White Paper</td>
<td>$60,000.00</td>
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<td>Carol Silva, Hank Jenkins Smith, Joseph Ripberger, &amp; Kuhika Ripberger</td>
<td>Political Science/Center for Risk and Crisis Management</td>
<td>National Science Foundation</td>
<td>Institutional Design, Policy Conflict, and Sustainable Governance: Measuring Public Support for Consent-Based Nuclear Waste Facility Siting in the U.S.</td>
<td>$193,614.00</td>
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<td>James Martin</td>
<td>Zarrow Center For Learning Enrichment</td>
<td>State of Oklahoma, Dept. of Education</td>
<td>Transition Assessment Workshop and TAGG Training</td>
<td>$21,600.00</td>
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</tbody>
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Number of new awards for the month: 17
Dollar amount of proposals funded: $1,661,926.00