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Office of Economic Research and Development, Florida International University

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CARTA-SCIS Collaboration leads to FIU I-CAVE

Through a joint collaboration, FIU’s College of Communication, Architecture and the Arts (CARTA) and the School of Computing and Information Sciences (SCIS) in the College of Engineering and Computing (CEC) established a timely new resource that is available to all FIU faculty and students, the Integrated – Computer Augmented Virtual Environment Lab (I-CAVE). By enabling creation of dynamic and interactive 2-D and 3-D visual environments with high-resolution graphics, the I-CAVE laboratory presents exciting new opportunities for FIU research projects, training initiatives, and data visualization.

Extensive research was conducted to ensure that the technical capabilities of the I-CAVE are comparable to virtual reality facilities at other major research universities across the nation and overseas. FIU’s I-CAVE is only the second Virtual Reality Environment laboratory in the State University System of Florida; the University of Central Florida’s Institute for Training & Simulation is home to the first.

Located in a large (15’ x 11’) room in the Engineering and Computer Science (ECS) building on the MMC campus, the I-CAVE laboratory comprises five integrated LED flex screens, five digital video projectors, and a surround-sound system integrated to generate virtual reality experiences. High-end workstations generate multidimensional virtual worlds in images and sound. Hardware and software track movement in the space and coordinate with displayed images so that users, wearing 3D glasses, are immersed in the simulated environment, reacting and responding to computer-generated sensory stimuli with user-controlled feedback devices.

The I-CAVE introduces new research possibilities to FIU. With its state-of-the-art imagery and user-friendly technology, the I-CAVE will enable FIU faculty and students to create simulations and models to test hypotheses, train researchers and project staff on research procedures and methodologies, conduct studies of virtual reality environments, and visualize project data. Among the many areas in which virtual research laboratories are integrated into studies at other research institutions are engineering (e.g., prototype design and manufacturing, building and construction), medicine/biomedical engineering (e.g., robotics), chemistry/biochemistry/material sciences (e.g., molecular modeling), and economics/social sciences (data simulation and visualization).

To expand capabilities to its full potential, the I-CAVE will be joined with a new digital fabrication facility in spring of 2017. This will create one of the few innovative facilities of its kind in the country as it will enable seamless transition between digital and analog information. The combined facilities will support diverse and innovative ways of using high end visualization equipment for digital fabrication as well as advancing fabrication technologies and tools through visualization. The lab will create numerous possibilities by presenting a myriad of the latest and newest technologies. These include Robotic Arms, 3D Scanning Devices, Laser Cutter, CNC Milling Machine, and 3D Printers for printing hard and flexible material as well as biological matter.

More information on the I-CAVE website is available at http://icave.fiu.edu. Information about the I-CAVE’s workstation specifications, tracking system, capacity, and availability for research or training may be obtained by contacting Shahin Vassigh, PhD, Professor of Architecture and Associate Dean of Faculty Development, CARTA, by email (svassigh@fiu.edu) or telephone (305-348-3032) or Shu-Ching Chen, PhD, Eminent Scholar and Professor, SCIS, at Shu.Chen@fiu.edu or 305-348-3480.
Upcoming Events

September 2016

- **September 6, 3:30 to 4:30 pm, AHC4 #402**, Adventures in Academic Drug Discovery, presented by Philip Arlen
- **September 7, 2:30 to 3:30 pm, AHC1 #110 (CCF)**, Brain Development and Public Policy, Translating What We Discover Into What They Do, presented by Pat Levitt
- **September 7, 10 am to 12 noon, AHC4 #402**, IRB Part 1 (Obtaining IRB Approval), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **September 9, 2 to 4 pm, AHC4 #402**, IACUC (Obtaining and Managing IACUC Approval), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **September 13, 12 to 1 pm, AHC3 #101**, Behavioral and Pharmacological Interventions for Childhood ADHD: Studies of Dosing, Combining and Sequencing Treatments, presented by William E. Pelham, please RSVP by 9/12
- **September 13, 3:30 to 4:45 pm, GC 243**, Faculty Mentor Program Orientations for tenured/tenure track faculty at FIU. If you would like to be a faculty mentor or mentee, please rsvp at Mentor Program RSVP
- **September 14, 3:30 to 4:45 pm, AHC4 #402**, Faculty Mentor Program Orientations for tenured/tenure track faculty at FIU. If you would like to be a faculty mentor or mentee, please rsvp at Mentor Program RSVP
- **September 16, GC 150, 1:30 to 3:15 pm, GC 150** Faculty Mentor Program Orientations for tenured/tenure track faculty at FIU. If you would like to be a faculty mentor or mentee, please rsvp at Mentor Program RSVP
- **September 30, 11 am to 12 pm, AHC4 #101**, Convergence of Emerging Technologies to Address the Challenges of the 21st Century, presented by Asad Madni

October 2016

- **October 3 to October 5, 8 am to 5 pm**, DoubleTree Orlando Airport, 4th International Conference on HIV/AIDS, STDs and STIs, registration required
- **October 3, 2 to 4 pm, AHC4 #402**, IRB Part 2 (Managing your Approved Study), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **October 4, 12 to 1:30 pm, Faculty Club**, Faculty Mentor Program Lunch
- **October 5, 10 am to 12 noon, AHC4 #402**, IRB Ethics (fulfills RCR Continuing Education hours), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **October 7, 2 to 3 pm, ECS 241**, Intelligent Video Systems, presented by Bir Banu
- **October 11, AHC3 #101**, “TSPO: A Molecular Biomarker of Neuroinflammation and Neurodegeneration in Preclinical and Clinical Studies, presented by Tomas R. Guilarte, please RSVP by 10/12
- **October 24, 3 to 4 pm, WC-130**, Specificity of specialized damage-bypass DNA polymerases for different types of DNA damage, presented by Penny Beuning
- **October 28, 1:30 to 2:30 pm, TBA**, Cell Mechanics in 3D, presented by Robert Ross

November 2016

- **November 2, 3 to 4:30 pm, AHC4 #402**, IACUC Ethics (fulfills RCR Continuing Education hours), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **November 4, 10 am to 12 noon, AHC4 #402**, Informed Consent (fulfills RCR Continuing Education hours), kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register
- **November 4, 2 to 3 pm, ECS 241**, SmartGeo: Toward the Development of Intelligent Geosystems, presented by Tracy Camp
- **November 8, 12 to 1 pm, AHC 3 #101**, Bayesian Big Data Analytics in Biomedical Research: Understanding Gene-Gene and Gene-Environment Interactions in Brain Tumor, presented by Changwon Yoo, please RSVP by 11/7
- **November 9, 3 to 4:30 pm, AHC4 #402**, Biosafety Protection and Research with rDNA/SNA (IBC)—fulfills RCR Continuing Education hours—kindly contact Elvia (Eva) Molina at molinae@fiu.edu to register

For updates, corrections, suggestions, and/or general comments, please email Mercedes.rodriguez@fiu.edu
Awards Received—July 2016

FIU researchers were awarded $7,875,332 in July 2016. Below is a listing of awards received.

Agoulnik, Alexander  
College of Medicine  
**National Institutes of Health**  
Initial  
Small molecule agonists of insulin-like3 receptor for osteoporosis treatment $255,200

Arnowitz, Joann  
Steven J. Green School of International & Public Affairs  
**Funding Arts Network**  
Initial  
Stitching History from the Holocaust $14,000

Attong, Nicole  
Academic Affairs - Other Units  
**Dan Marino Foundation**  
Increase  
The Dan Marino Foundation - Summer Living Program $573

Cheng, Michael  
Hospitality and Tourism Management  
**U.S. Department of Agriculture**  
Initial  
Cochran Fellowship Program Post Harvest Loss & Food Systems $8,000

Cheng, Michael  
Hospitality and Tourism Management  
**U.S. Department of Agriculture**  
Initial  
Cochran Fellowship Program Post Harvest Loss & Food Systems $70,318

Clarke, Peter J  
College of Engineering and Computing  
**National Science Foundation**  
Continuation  
Collaborative Project: Engaged Student Learning $207,315

Cramer, Elizabeth  
College of Arts, Sciences & Education  
**U.S. Department of Education**  
Continuation  
Project PREPARE: Preparing Rigorous and Effective Professionals as Autism Researchers $249,998

De La Rosa, Mario R  
College of Public Health Social Work  
**National Institutes of Health**  
Increase  
Influence of Adult Latina Daughters on Older Latina Mothers HIV Risk and Protective Behaviors $18,588
Degennaro, Matthew J  
College of Arts, Sciences & Education  
**National Institutes of Health**  
Increase  
Regulation of juvenile hormone titers in mosquitoes  
$11,600

Donnelly, Maureen  
College of Arts, Sciences & Education  
**Fairchild Tropical Botanic Garden**  
Increase  
The Fairchild Challenge for Middle and High Schools at Fairchild Tropical Botanic Garden  
$49

Donnelly, Maureen  
College of Arts, Sciences & Education  
**Fairchild Tropical Botanic Garden**  
Increase  
The Fairchild Challenge for Middle and High Schools at Fairchild Tropical Botanic Garden  
$6,000

El-Hage, Nazira  
College of Medicine  
**National Institutes of Health**  
Initial  
Impact of opioid receptor (MOR) splice variant interactions with the chemokine receptor CCR  
$181,250

Espinal Tejada, Carlos Arturo  
Academic Affairs - Other Units  
**Sanofi Pasteur SA**  
Initial  
Dengue Vaccine Guidelines Development  
$18,000

Fernandez Lima, Francisco Alberto  
College of Arts, Sciences & Education  
**National Institutes of Health**  
Increase  
Regulation of juvenile hormone titers in mosquitoes  
$145,000

Fourqurean, James  
College of Arts, Sciences & Education  
**Environmental Protection Agency**  
Increase  
Seagrass monitoring in the Florida Keys National marine Sanctuary  
$200,000

Fourqurean, James  
College of Arts, Sciences & Education  
**National Park Service**  
Initial  
Dry Tortugas National Park Seagrass Communities Assessment Project  
$35,000

Fourqurean, James  
College of Arts, Sciences & Education  
**National Park Service**  
Initial  
Florida Bay mudbank vulnerability assessment  
$25,000

For updates, corrections, suggestions, and/or general comments, please email Mercedes.rodriguez@fiu.edu
Francisco Ortega, F Javier  
College of Arts, Sciences & Education  
**Fairchild Tropical Botanic Garden**  
Increase  
The Fairchild Challenge for Middle and High Schools at Fairchild Tropical Botanic Garden $49

Francisco Ortega, F Javier  
College of Arts, Sciences & Education  
**Fairchild Tropical Botanic Garden**  
Increase  
The Fairchild Challenge for Middle and High Schools at Fairchild Tropical Botanic Garden $6,000

Guo, Hai  
Steven J. Green School of International & Public Affairs  
**Volcker Alliance**  
Initial  
Volcker Alliance, Inc. - information from potential university partners $83,063

Ham, Youngjib  
College of Engineering and Computing  
**National Science Foundation**  
Initial  
Uncovering Potential Risks of Wind-induced Cascading Damages $379,143

Hart, Katie  
College of Arts, Sciences & Education  
**Children's Trust**  
Pre-Award  
Reading Explorers Program $132,745

Hernandez, Pedro Pablo  
Academic Affairs - Other Units  
**University of Central Florida**  
Increase  
FIU I-Corps Teams Funding $3,050

Ibrahim Mohamed, Ahmed Salah  
College of Engineering and Computing  
**National Science Foundation**  
Initial  
NeTs: Small: Collaborative Research $199,980

Ilcheva, Maria  
Steven J. Green School of International & Public Affairs  
**City of Miami Beach**  
Initial  
City of Miami Beach - Convention Center Hotel Survey $21,000

Kadko, David  
Academic Affairs - Other Units  
**National Science Foundation**  
Continuation  
GEOTRACES Arctic Section $108,934
Laird, Angela Marie Richmond  
College of Arts, Sciences & Education  
National Science Foundation  
Increase  
Exploring the Neural Mechanisms of Physics Learning  $184,758

Lisetti, Christine  
College of Engineering and Computing  
National Science Foundation  
Increase  
CHS: Small: Advanced Design Principles for Computer Simulated Agents  $194,024

Liu, Hong  
College of Arts, Sciences & Education  
Fairchild Tropical Botanic Garden  
Supplemental  
GA for the Fairchild Challenge educational program  $92

Maziak, Wasim  
College of Public Health Social Work  
National Institute on Drug Abuse  
Initial  
Tobacco Control Research and Capacity Building  $303,044

Mora, Francisco  
Steven J. Green School of International & Public Affairs  
U.S. Department of Education  
Increase  
LACC National Resource Centers (NRC) and Foreign Language and Area Studies  $225,000

Munroe, Norman D  
College of Engineering and Computing  
Children’s Trust  
Initial  
FIU-ENLACE  $512,493

Nair, Madhavan P  
College of Medicine  
National Institutes of Health  
Continuation  
Nano-delivery of methanandamide across BBB to block cannabinoid  $529,498

Nair, Madhavan P  
College of Medicine  
National Institutes of Health  
Initial  
Nanotechnology Based Gene Editing to Eradicate HIV Brain Reservoir in Drug Abusers  $680,840

Padilla, Mark  
Steven J. Green School of International & Public Affairs  
National Institutes of Health  
Initial  
Migration, Tourism and the HIV-drug use Syndemic in the Dominican Republic  $382,658
Paul Ward, Amy  
College of Nursing and Health Sciences  
U.S. Department of Education  
Continuation  
Preparing Occupational Therapists to Practice in Schools (POPS)  
$249,927

Pomeroy, Jordana  
Academic Affairs - Other Units  
Florida Division of Cultural Affairs  
Initial  
General Program Support Culture Creates Community  
$90,711

Prospect, Sean Antonio  
College of Arts, Sciences & Education  
After-School All Stars  
Continuation  
Project SUPPORT (FIU After-School All-Stars) 2015-2017  
$18,465

Prospect, Sean Antonio  
College of Arts, Sciences & Education  
Florida Department of Education  
Initial  
Project HOPE (FIU After School All Stars) 2016-2017  
$258,876

Prospect, Sean Antonio  
College of Arts, Sciences & Education  
Florida Department of Education  
Initial  
Project PANTHER (FIU After School All Stars) 2016-2017  
$302,940

Prospect, Sean Antonio  
College of Arts, Sciences & Education  
Florida Department of Education  
Initial  
Project SILVER (FIU After School All-Stars) 2016-2017  
$400,581

Ramaswamy, Sharan  
College of Engineering and Computing  
American Heart Association  
Initial  
Bioscaffold mitral valve replacement permitting somatic growth and remodeling  
$77,000

Ramaswamy, Sharan  
College of Engineering and Computing  
National Science Foundation  
Initial  
Mechanically Conditioned 3-Dimensional Cell Culture System  
$30,000

Richards, Jennifer  
College of Arts, Sciences & Education  
Fairchild Tropical Botanic Garden  
Increase  
Fairchild Tropical Botanic Garden supports research and education in tropical botany  
$1,159
Riera Diaz, Jorge Javier  
College of Engineering and Computing  
National Institutes of Health  
Increase  
Novel method for classifying BOLD response mechanisms in focal epilepsy  
$315,503

Rishe, Naphtali  
College of Engineering and Computing  
National Science Foundation  
Increase  
I/UCRC Phase II: Center for Advanced Knowledge Enablement  
$20,000

Simon, Sharon R  
College of Nursing and Health Sciences  
Health Resources & Services Administration  
Continuation  
Veterans to BSN Program  
$385,962

Teutonico, Rita A  
College of Arts, Sciences & Education  
National Science Foundation  
Initial  
Workshop: Enhancing Resilience of Coastal Caribbean Communities  
$41,281

Troxler, Tiffany  
College of Arts, Sciences & Education  
National Park Service  
Initial  
Monitoring for Potential Water Quality Impacts  
$130,000

Uluagac, Arif Selcuk  
College of Engineering and Computing  
National Science Foundation  
Increase  
CAREER: Securing Sensory Side-Channels in Cyber-Physical Systems  
$118,018

Wnuk, Stanislaw  
College of Arts, Sciences & Education  
FIU Division of Research  
Initial  
Bridge funding for Dr. Stanislaw Wnuk  
$8,500

Zhang, Yuying  
College of Arts, Sciences & Education  
University of Miami  
Initial  
Estimating effective sample size for head-boat-caught length  
$34,147
**Funding Opportunities**
ORED has a new, improved and interactive webpage for funding opportunities. Please visit [http://research.fiu.edu/funding/#current](http://research.fiu.edu/funding/#current).

**Limited Submissions**
Current limited submission opportunities are available at [http://research.fiu.edu/funding/limited-submissions/](http://research.fiu.edu/funding/limited-submissions/).

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