1 Minute Madness Introductions

Tell us:

-Your Name

-Your institution

-Are you from a new site or playing a new role in a continuing site?

-How many applicants do you have? *(Have you started recruiting?)*

-What aspect of the REU are you most excited for?

-One interesting hobby or interest of your own

Kenneth M. Merz Jr. and Brian W. O'Shea

iCER ACRES (Adv. Comp Research)

Michigan State University

http://icer-acres.msu.edu

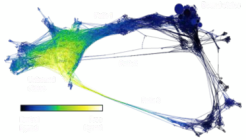
East Lansing, MI

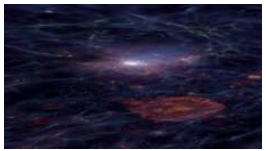
merzjrke@msu.edu and oshea@msu.edu

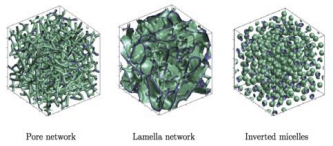
Research Areas: Computational and data science; parallel architectures; algorithms, models, software for high performance computing

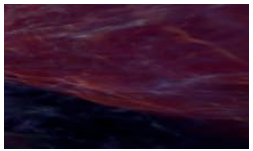
Site active since: 2017

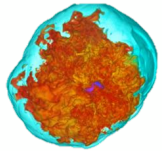
Unique Features of the Site: Student teams work with faculty mentors experienced in computational and data science and HPC research consultants experienced in enabling science on supercomputers, resulting a broad understanding of the research computing environment.











Sanjeev Baskiyar

Parallel and Distributed Computing

Computer Science and Software Engineering
Auburn University
http://www.eng.auburn.edu/users/baskiyar
Auburn, AL
baskiyar@eng.auburn.edu

Research Areas: Computer Science, Electrical Engineering, Physics, and Neuro-informatics

Site active since: Summer 2017

Unique Features of the Site: Multidisciplinary, Energy Aware Computing
Topics:
--Thermal & energy aware computer systems
--GPS data correction
--Ion velocity ring instabilities in plasmas
--Low power location detection via deep learning & channel state finger-printing
--Brain science using machine learning in neuro-informatics

Prasad Calyam

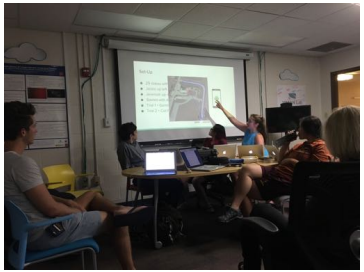
Consumer Networking Technologies

University of Missouri-Columbia
http://reu.rnet.missouri.edu
Columbia, MO
calyamp@missouri.edu

Research Areas: Software-Defined Networking, Visual Computing at the Network Edge, Social Health Networking for Eldercare, Body-Area Sensing and Emotion Recognition.

Site active since: 2007

Unique Features of the Site: Interns work in groups of 2 or 3; Faculty and Graduate Students serve as Mentors; MU Data Center Tour; Local School Visit



D. Eric Chan-Tin

Big Data Analytics at OSU

Oklahoma State University
https://www.cs.okstate.edu/reu
Stillwater, OK
chantin@okstate.edu

Research Areas: Big Data Analytics, Data Visualization

Site active since: 2017 (new)

Unique Features of the Site: Participants will work in groups of two and rotate among the five phases of big data analytics: data collection, data cleansing, data analytics, data interpretation, and data visualization

Bistra Dilkina

Civic Data Science

Georgia Institute of Technology

http://dssg-atl.io/

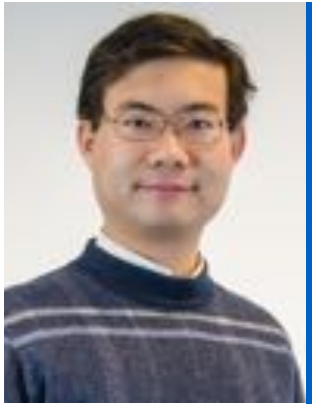
Atlanta, GA

bdilkina@cc.gatech.edu

Research Areas: Data Analytics, Machine Learning, Information Visualization

Site active since: 2017 (Data Science for Social Good program active since 2014)

Unique Features of the Site: All teams are co-located in the “Computing for Good” Lab. Each team of 3 students gets to work with a nonprofit, local or government agency on a data science project with social good impact.



Songhua Xu and Lian Duan

Computational Data Analytics for Advancing Human Services

New Jersey Institute of Technology, Newark, NJ
Hofstra University, Hempstead, NY
http://reu.njit.edu
songhua.xu@njit.edu & lian.duan@Hofstra.edu

Research Areas: Computational data analytics, smart health, smart education, smart transportation

Site active since: 2018

Unique Features of the Site:

- It seeks to encourage students aiming toward careers in computer science, health care, education and business to become knowledgeable and excited about the immense potential of computational data analytics to impact societal outcomes.

- Each mentor breaks his/her research into small-scale research projects suitable for investigation by REU project teams.

Jason O. Hallstrom

I-SENSE (NSF REU Site in Sensing and Smart Systems

Florida Atlantic University

http://isense.fau.edu/reu/reu-home-2017.php

Boca Raton, FL

jhallstrom@fau.edu

Research Areas: The Institute for Sensing and Embedded Network Systems Engineering (I-SENSE) hosts an intensive summer research program in sensing and smart systems for talented undergraduates from across the country.

Unique Features of the Site: Interdisciplinary projects: Battery-free leak monitoring, Adaptive traffic control, Vision-based violence detection, Smart grid control, Ocean current analysis, Robotic prosthetics, IoT security, Ambulatory monitoring, Compressive sensing, Motion tracking

FAU

I-SENSE

Division of Research

Florida Atlantic University

Clem Izurieta

Research and Development of Algorithms in a Software Factory

Montana State University (Bozeman, MT)
http://www.bobcatsoftwarefactory.com/nsf-reu-2017/
Bozeman, MT
clemente.izurieta@montana.edu

Research Areas: We focus in four areas: genomics, quality of systems, topological data analysis, and social network trustworthiness

Site active since: 2017 (prior REU Site: 2012-2014)

Unique Features of the Site: Various projects related to algorithm research in a Software Factory environment that requires students to work towards a working prototype.

softwarefactory
learn.share.grow.

Daniel S. Katz & Olena Kindratenko

INCLUSION

University of Illinois Urbana-Champaign
http://reu.ncsa.illinois.edu
Urbana, IL
dskatz@illinois.edu & kindrat2@illinois.edu

INCLUSION: Incubating a New Community of Leaders Using Software, Inclusion, Innovation, Interdisciplinary and OpeN-Science

Research Areas: Developing open source software and applying it across all areas of research

Site active since: 2017

Unique Features of the Site: Pairs of students from underrepresented communities and Minority Serving Institutions learn about software development and work on socially-impactful research centered around open source software, guided by multidisciplinary pairs of mentors

Henry Kautz

Computational Methods for Understanding Music, Media, and Minds

University of Rochester
http://www.sas.rochester.edu/dsc/undergraduate/reu.html
Rochester, New York
gids-reu@rochester.edu

Research Areas: Machine Learning, Audio Engineering, Cognitive Science, Digital Humanities, Music Theory

Site active since: Summer 2017

Unique Features of the Site:

- Highly interdisciplinary research combining science, engineering, and humanities
- Every project is mentored by two faculty drawn from Computer Science, ECE, Brain & Cognitive Science, English, and the Eastman School of Music
- Examples: Using wide-spectrum imaging and computer vision to recover “lost” musical scores from ancient manuscripts; Automated music transcription; and more
- Goal: encourage students to pursue careers combining engineering and humanities

Ernst L. Leiss

Data-Centric Computing

University of Houston
Department of Computer Science
www.cs.uh.edu/reu
coscel@cs.uh.edu

Research Areas: Security, integrity, and privacy; Image analytics; Computational physiology

Site active since: 2005

Unique Features of the Site:

Women 31%
African American 15%
Hispanic 15%
Asian 14%
Home college with limited research exposure 52%
GRE training

Alicia Lyman-Holt

Robots in the Real World

Program Coordinator

http://robotics.oregonstate.edu/reu

Corvallis,Oregon

Alicia.lyman-holt@oregonstate.edu

Research Areas: Robotics

Site active since: 2014

Unique Features of the Site: Multidisciplinary program matching students from fields such as computer science, mechanical engineering, electrical engineering, mathematics, physics, social science with researchers working in similar fields. Students have the opportunity to learn broadly about the field of robotics with delving deeply into their specific project.

New this year: Targeting students with little (or no) research experience and/or students who have big outreach potential

George Mohler

Data Science of Risk & Human Activity

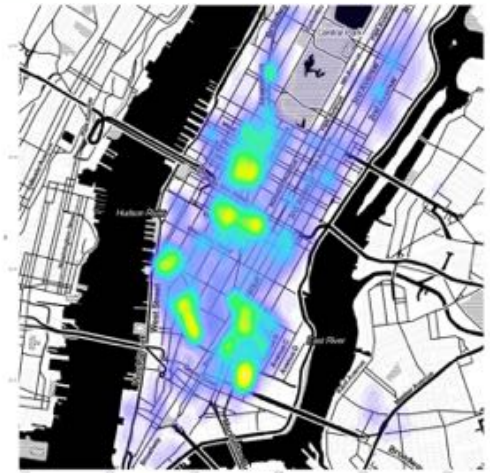
IUPUI
https://www.datareu.com/
Indianapolis, IN
gmohler@iupui.edu

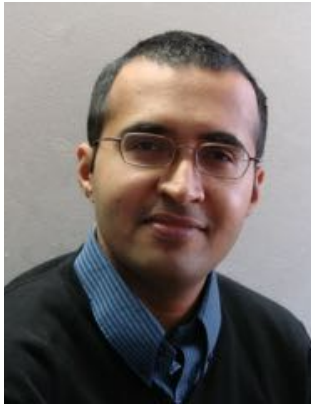
Research Areas: Learning to rank crime hotspots, point process modeling of conflict, deep learning for activity detection.

Unique Features of the Site:
-Week 1 data science bootcamp.

-Interdisciplinary project groups (CS/MATH/SCI/ENG).

-Several speakers from industry





Vinod Namboodiri

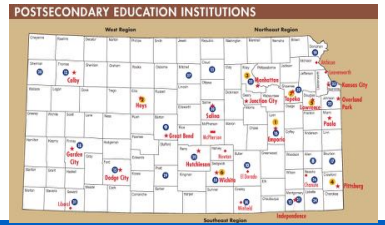
Networked Cyber-Physical Systems

Wichita State University
http://www.wichita.edu/NetCPSREU
Wichita, KS
Vinod.Namboodiri@wichita.edu

Research Areas: Indoor Localization and Mapping, Security and Privacy of Wearable Devices, Networking of UAVs, Cloud Computing, Cognitive Radios

Site active since: 2017

Unique Features of the Site: Only REU at Wichita State, only CISE-related REU in Kansas, feeds to Master's program in Computer Networking, Experiential Focus



Jason O'Kane

REU in Applied Computational Robotics

University of South Carolina
http://reu.cse.sc.edu
Columbia, South Carolina
jokane@cse.sc.edu

Research Areas: Robot Perception and Planning, Human-Robot Interaction, Robots in the Field

Site active since: 2017

Unique Features of the Site: Trainees are required to identify a faculty mentor at their home institution who will assist them in completing their research and writing a final paper.

Alfredo J. Perez

Security for Mobile Sensing

TSYS School of Computer Science
Columbus State University
http://www.reucsu.org
Columbus, GA
perez_alfredo@columbusstate.edu

Research Areas: Security, Privacy, Mobile Sensing, Sensor Networks

Site active since: 2017

Unique Features of the Site: Students will be co-located in a new cybersecurity lab, REU experience includes visits to datacenters from major financial sector companies such as TSYS/AFLAC

COLUMBUS STATE UNIVERSITY

Fernando Rodríguez

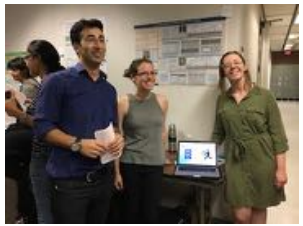
Intelligent Multimodal Human-Computer Interaction

University of Florida, Gainesville, Florida
www.cise.ufl.edu/research/imhci/
Fernando Rodríguez (fjrodriguez@ufl.edu)
PI: Kristy Elizabeth Boyer (keboyer@ufl.edu)

Research Areas • Mobile touch and gesture interaction for kids • Natural language dialogue to support teaching and learning • Embodied computer science education and affective computing • Brain-computer interfaces and culturally relevant computing • Virtual reality for training and learning

Site active since • Summer 2017

Unique Features of the Site • Located at one of the few universities in the US with a Human-Centered Computing Ph.D. program • Students join a thriving multidisciplinary research environment and work on real-world problems.



Burton Rosenberg

Scientific Computing for Structure in Big or Complex Datasets

University of Miami
www.cs.miami.edu/reu-scs
Miami, Florida
burt@cs.miami.edu

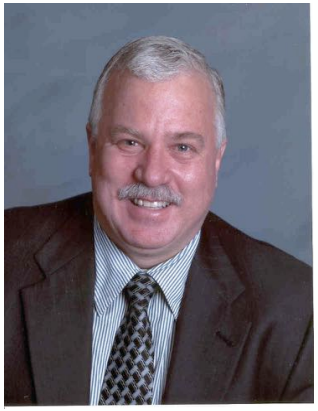
Research Areas: Scientific computing, bio-computing, computational chemistry, high performance computing, scientific visualization; neural nets, GPU, specialized computing models.

Site active since: 2017

Unique Features of the Site:
-Interdisciplinary across computer science, chemistry, and neurology departments

-Collaboration with medical school

-A research partnership with the Center for Computational Science – the University of Miami supercomputing center.



Andreas Spanias and Jennifer Blain-Christen

Sensor Signal and Information Processing (SenSIP) Devices and Algorithms

SenSIP Center, ECEE, Arizona State University
https://engineering.asu.edu/sensip/reu-index-html/
Tempe, AZ85287-5706
spanias@asu.edu

Research Areas: Integrated Sensor Devices and Algorithms

Site active since: January 2017

Unique Features of the Site: This three year REU site will recruit and train nine undergraduate students each summer and engage them in research endeavors on the design of sensors including student training in mathematical methods for extracting information from sensor systems. The investigators, along with a team of faculty advisors, will supervise a series of multidisciplinary projects in the design of integrated sensor systems. In addition to the planned projects, the faculty leaders of this program will organize a series of industry collaborative training activities for the students.

The program engages minority colleges to broaden participation and enhance recruitment. The REU will address STEM problems associated with sensor applications in internet of things, health monitoring and security. During the same period, projects will train REU students to interpret data from sensors by studying and programming machine learning algorithms, sensor fusion methods, and techniques to interpret big data sets.

Nalini Venkatasubramanian

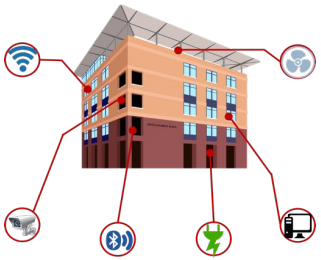
REU Site: IOT-SITY

Cultivating the IOT-Enabled Smart Community

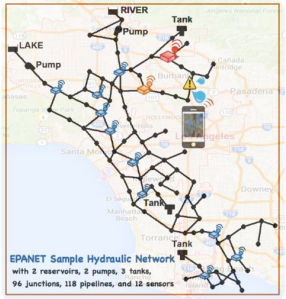
University of California, Irvine
https://sites.uci.edu/iotsity
Irvine, CA
nalini@ics.uci.edu

Research Areas:

Safe Awareness and Alerting
Smart Communities



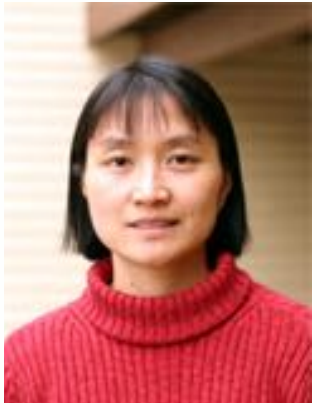
Privacy Preserving
Smart Spaces



Resilient
Smart Infrastructures

Site active since: 2017

Unique Features of the Site: Interns work in teams of 2, 1-week boot camp introducing IOT and research protocols, emphasis on outreach to underrepresented minorities.



Bing Wang

Trustable Embedded Systems Security Research

University of Connecticut
ccc.engr.uconn.edu/reu
Storrs, CT
bing@uconn.edu

Research Areas: Hardware security, trustable computing, Secure Processor Architectures, Secure Voting Systems, Secure Mobile Computing/Networking

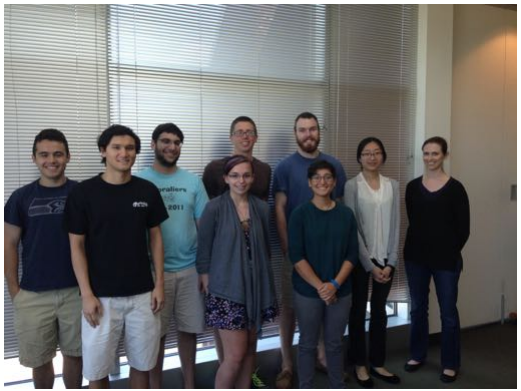
Unique Features of the Site:

-Ten students, ten faculty, CSE and ECE departments.

-Features trip to security conference.

-Weekly research seminars.

-Workshops on graduate school and career development coordinated with other School of Engineering REUs.



Chunsheng Xin

Cybersecurity Research in a Multidisciplinary Environment

Old Dominion University

www.odureu.org

Norfolk, VA

cxin@odu.edu

Research Areas: Risk management, privacy, malware analysis, human behavior, intrusion detection, network security, cybersecurity ethics, cybersecurity applications.

Site active since: New site to start from summer 2017

Unique Features of the Site:

- Multidisciplinary research projects across computer science/engineering, IT, criminal justice, and philosophy.
- Students are mentored by a multidisciplinary mentor committee

Guowei Yang

Software Systems and Analysis

Texas State University
http://reussa.cs.txstate.edu
San Marcos, TX
gyang@txstate.edu

Research Areas: Analysis of software qualities such as reliability, performance, safety, and energy efficiency for software systems including mobile software, internet of things, green computing, big data, and parallel systems.

Site active since: 2011

Unique Features of the Site: Field trips to industrial laboratories including IBM, SWRI, and Emerson; entrepreneurship forum; a poster day with competition for the best poster and participation of the dean as well as industry advisory member.