"Collaborate FloRDA: Space" - Presenter Profiles

Order of Presentation	First	Last	Email	Title	Insititute	Department	Discipline	Keywords
1	Redwan	Alqasemi	alqasemi@usf.edu	Research Professor	University of South Florida	Mechanical Engineering	Robotics	Robotics, assistive technologies, disabilities, virtual reality, controls
2	Brandon	Krick	Bkrick@eng.famu.fsu.edu	Associate Professor	FAMU-FSU College of Engineering	Mechanical Engineering	Materials tribology	Friction, wear, materials, erosion, tribology
3	Rebekah	Sweat	r.sweat@eng.famu.fsu.edu	Assistant Professor	FAMU-FSU College of Engineering	Industrial and Manufacturing Engineering	Engineering	Materials, composites, extreme environments, simulations
4	Parks	Easter	parks.easter@ucf.edu	Lead Geotechnical Engineer	University of Central Florida	Florida Space Institute, Exolith Lab	Geotechnical Engineering	Lunar, Regolith, Geotech, Engineering, Moon
5	Arvind	Agarwal	agarwala@fiu.edu	Distinguished University Professor and Chair	Florida International University	Mechanical and Materials Engineering	Materials Engineering	Wear resistant coatings, radiation shielding
6	Berrin	Tansel	tanselb@fiu.edu	Professor	Florida International University	Civil and Environmental Engineering	Environmental engineering	water use and recycling, space life sciences, environmental conditions for life support
7	Benedict	Albensi	balbensi@nova.edu	Chair and Professor	Nova Southeastern University	Pharmaceutical Sciences	Pharmacology	aging; cognitive; mitochondria; inflammation; microgravity
8	Kerri	Donaldson Hanna	Kerri.DonaldsonHanna@ucf.edu	Assistant Professor	University of Central Florida	Physics	Planetary Science	Airless bodies, spectroscopy, instruments
9	Kawai	Kwok	kawai.kwok@ucf.edu	Assistant Professor	University of Central Florida	Mechanical and Aerospace Engineering	Aerospace Engineering	Deployable Spacecraft Structures; In-Space Manufacturing; Composite Materials
10	Hancheol	Cho	choh15@erau.edu	Assistant Professor	Embry-Riddle Aeronautical University	Aerospace Engineering	Dynamics and Control	Spacecraft formation flight, robust control, constrained optimal control, space robotics
11	Sherri	Emer	semer@fgcu.edu	Asst. Professor	Florida Gulf Coast University	Biological Sciences	Neurophysiology	neuroplasticity, sensory, vision, mechanoreception
12	Nezih	Pala	npala@fiu.edu	Professor	Florida International University	ECE	Electrical Engineering	Nanomaterilas, Nanophotonics, plasmonics, THz, biosensors,
13	Alicia	Boymelgreen	aboymelg@fiu.edu	Assistant Professor	Florida International University	Mechanical and Materials Engineering	Soft Matter	Active matter, colloids, electrokinetics, microfluidics, soft matter
14	Dharmalingam	Selvaraj	selvankl@ymail.com	Junior Scientist	University of Central Florida	Arecibo Observatory, Space and Atmospheric Science	Atmospheric Physics	Atmospheric Dynamics, Radar, Turbulence, waves, winds
15	Richard	Liang	zliang@fsu.edu	professor and director	Florida State University	High-Performance Materials Institute	Materials science and engineering	aerospace composites and manufacturing; ultra-high strength materials, NASA STRI US-COMP
16	Arjuna	Madanayake	amadanay@fiu.edu	Associate Professor	Florida International University	ECE	ELECTRONICS AND SIGNAL PROCESSING	Antenna arrays, DSP, chips, electronics
17	Rachael	Seidler	rachaelseidler@ufl.edu	Professor	University of Florida	Applied Physiology & Kinesiology	brain & behavior	spaceflight, analogs, brain, behavior, human
18	Dawei	Li	lid@health.fau.edu	Associate Professor	Florida Atlantic University	Biomedical Science	Genomics and Bioinformatics	Genomics, microbiome, bioinformatics, sequencing
19	Alex	Krasnok	akrasnok@fiu.edu	Assistant Professor	Florida International University	ECE	Quantum	Quantum, photonics, materials, light-matter interaction

Redwan Alqasemi

University of South Florida
College of Engineering
alqasemi@usf.edu
http://www.eng.usf.edu/~alqasemi/

My Interest in Florida and Space

- Identifying and building collaborative research teams to work together on projects of common interests and seek external funding to support these research projects.
- Connecting with individuals and teams working on similar technologies and focusing their applications towards using automated systems in space exploration.
- Exploring ways to translate research into practical use.
- Networking with other individuals and groups belonging to academia, corporations, organizations, societies, policy makers, and end users.

Research and Projects

Virtual reality for Vocational Rehabilitation (VR4VR)

From Teleoperation to Autonomy through Machine Learning

Brain-Machine Interface to Control Robots and Drones

Funding through: NSF, DoD, FL-DoE, FL-DoT

Expertise/Interests

- Robotics Research
- Assistive Technologies
- Virtual/Augmented Reality (AR/VR)
- User Interfaces

How I Can Help You

- Exploration of use-inspired solutions to problems.
- Collaboration on grant writing.
- Providing expertise in tech solutions involving robotics and assistive technologies.
- Partnering with collaborators during events for wider dissemination and awareness.

How You Can Help Me

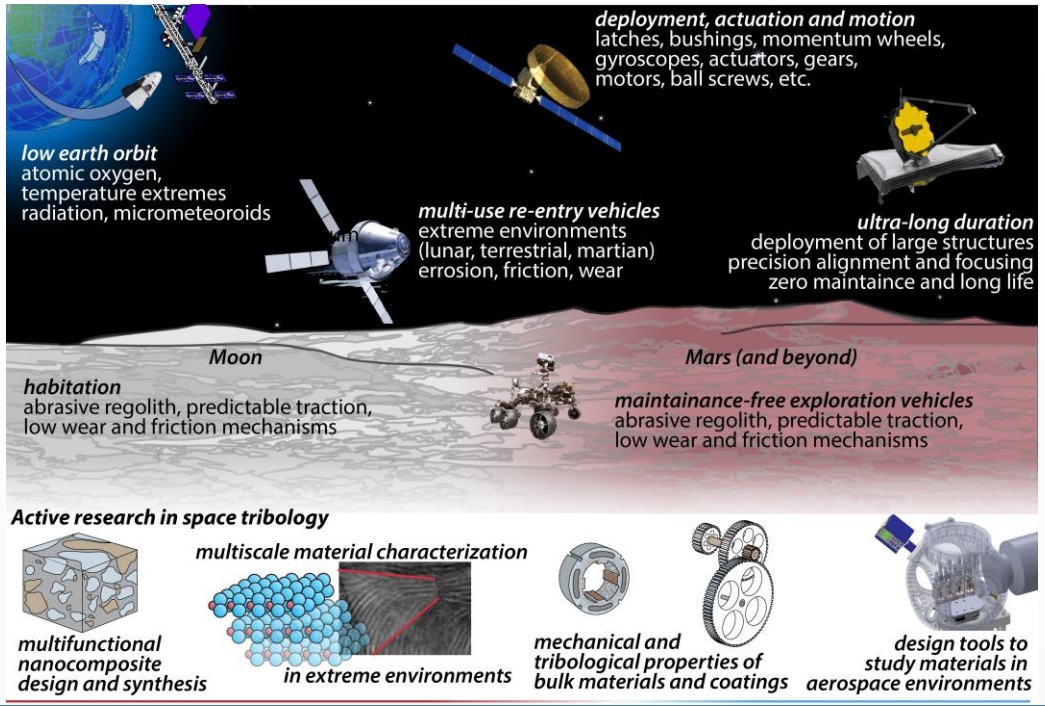
- Collaborate on creating new technologies for automation and robot-assisted operations.
- Assist with grant writing.
- Provide resources and expertise for research projects related to space exploration.
- Participate in events and broader impact activities.

Brandon A Krick

FAMU-FSU College of Engineering

Mechanical Engineering

bkrick@eng.famu.fsu.edu



Expertise/Interests

- Materials Tribology: Fundamental and applied studies on friction and wear of materials
- Simulated space experiments
- In space (Low earth orbit) experiments
- Composites, coatings and advanced materials
- In Situ experiments

How I Can Help You

- Expertise in materials tribology
- Have several vacuum and UHV tribometers for simulated space environment
- Micro/Nanoindentation
- Experience with designing hardware for materials experiments in space
- Experience with other surface science techniques

How You Can Help Me

Materials synthesis
- Coatings
- Composites

Materials Characterization
- Environmental XPS
- Auger spectroscopy
- Advanced Surface Science
- RBS

Microcontroller/circuit integration
- Integrating hardware and electronics for in-space experiments

Research and Projects

Recent Related Funded Projects:
- NSF Career- MoS2 for space applications
- DuPont/Vespel- tribological properties of polymers in cryogenic vacuum conditions
- Sandia National Laboratories – Friction and wear of MoS2 films
- NASA – DLC and MoS2 on Nitinol

Recent Related Submitted Proposals:
- DOE RENEW on Hydrogen materials

Recent Related Publications (past 5 years)
- "Quality Control Metrics to Assess MoS2 Sputtered Films for Tribological Applications", *Tribology Letters* 70 (4), 1-10
- "Role of Environment on the Shear-Induced Structural Evolution of MoS2 and Impact on Oxidation and Tribological Properties for Space Applications", *ACS Applied Materials & Interfaces* 14 (11), 13914-13924
- "Structurally driven environmental degradation of friction in MoS2 films" *Tribology Letters* 69 (3), 1-10
- "Atomistic Origins of Temperature-Dependent Shear Strength in 2D Materials" *ACS Applied Nano Materials* 1 (10), 5401-5407
- "Effect of silicon and oxygen dopants on the stability of hydrogenated amorphous carbon under harsh environmental conditions", *Carbon* 130, 127-136
- "Impact of Microstructure on MoS2 Oxidation and Friction". *ACS applied materials* & interfaces 9 (33), 28019-28026

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All Research Profiles Available at:
florda.org/Space

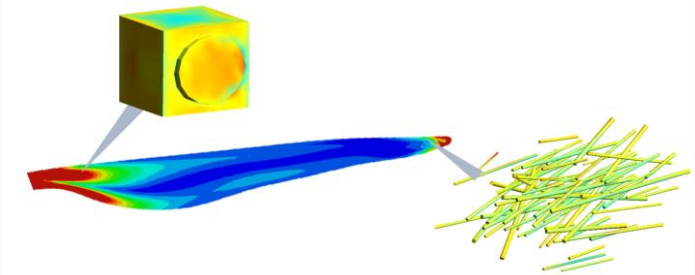
Up Next:

Rebekah Sweat

Assistant Professor
Florida State University
Industrial and Manufacturing Engineering
r.sweat@eng.famu.fsu.edu

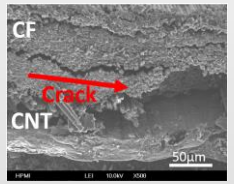
My Interest in Florida and Space

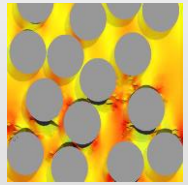
- Connecting with researchers with a diverse background and abilities for space applications
- Discovery of new challenges in space-related research
- Developing research teams for external funding
- Advancing Florida as a place for excellence in space technologies

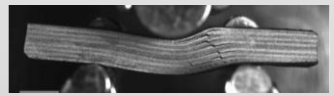


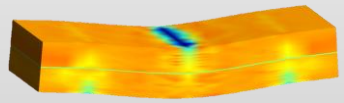
Research and Projects

- Physical Data-Driven Characterization for Material Science Discovery & Design
- Nitrogen Enhanced Super Refractory Carbides (SRC) for Thermal Protection Systems
- Design and Scaled-up Manufacturing of Aerospace Composites for Enhanced Electromagnetic and Thermal Protection Multifunctional Performance
- Understanding Impact of Defects and Process Variability on Fault-tolerant Barrier Material Performance









Expertise/Interests

- Extreme condition materials
- Micromechanics
- Nanomaterials
- Composites
- Digital twin technology
- Predictive simulations
- Multifunctional materials

How I Can Help You

- Multi-scale modeling of composite structures
- Manufacturing and characterization of high-performance composite materials

How You Can Help Me

- Unique applications and target challenges for applications of composites and modeling needs
- Molecular-scale simulations for input into meso-scale models

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Up Next:

Parks Easter

University of Central Florida
The Exolith Lab
Parks.easter@ucf.edu
https://www.linkedin.com/in/parks-easter

My Interest in Florida and Space

- Collaborating with researchers on new space science projects using lunar regolith
- Supporting current projects going to the Moon
- Exploring new applications of Lunar regolith simulants
- Educational outreach and expansion of knowledge on the Artemis Missions
- Connecting with more of Florida's space industry professionals and educators

Research and Projects

I research the geotechnical characteristics of lunar regolith and lunar regolith simulants at the Exolith Lab, near the University of Central Florida. This consists of running experiments such as angle of repose and flow rate.

This research is used for the testing of rovers and other mechanisms in our lunar regolith simulants.

I also help with product development and outreach at the Exolith lab, making sure that we stay connected to the space industry.

Expertise/Interests

- Lunar Regolith Simulants
- In Situ Resource Utilization
- Geotechnical Properties of the Moon

How I Can Help You

- Knowledge on regolith simulant availability and processing
- Applications of lunar simulant for educational outreach
- Understanding of geotechnical engineering in a lunar environment

How You Can Help Me

- Connections to new science collaborators and organizations
- Opportunities to provide outreach and expand customer base
- Interest in using Lunar simulants

Arvind Agarwal

Florida International University

Chair and Distinguished University Professor
Mechanical and Materials Engineering

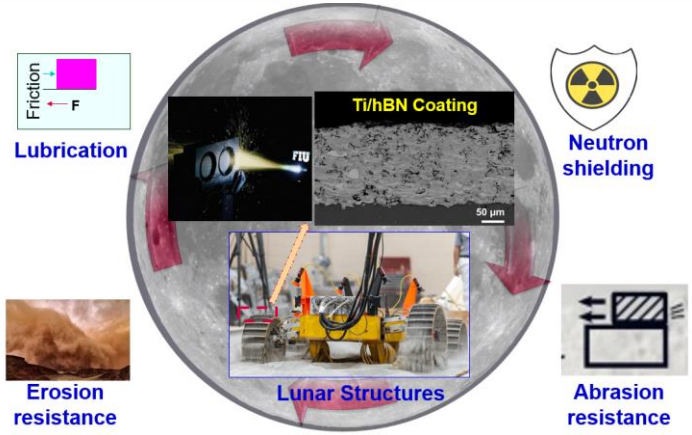
agarwala@fiu.edu
http://pfl.fiu.edu

My Interest in Florida and Space

- Collaboration in research activities contributing to in-situ resource utilization, dust mitigation and durable structural components in space
- Connect with research teams in Florida interested in advanced materials for wear resistance and radiation shielding
- Build a collaboration with other researchers in Florida working on advanced manufacturing of lightweight materials with enhanced mechanical and thermal properties

Research and Projects

Metal and Polymer Composite Coatings for Synergistic Enhancement in Wear and Radiation



Expertise/Interests

- Nanocomposites and Coatings for Wear Resistance, Radiation Shielding, and Thermal Management
- 3D Printing of Metals by Cold Spray and Wire Arc Additive Manufacturing (WAAM)
- AM of Lunar Regolith for in-situ resource utilization

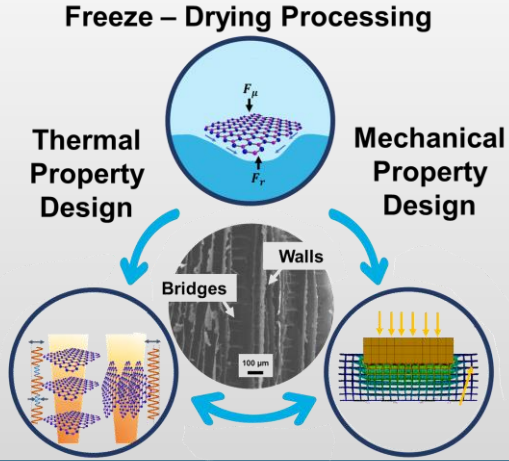
How I Can Help You

- Expertise in advanced materials research for aerospace applications
- Research experience in processing polymer, metal and ceramic nanocomposites
- Large scale additive manufacturing using Cold Spray and WAAM

How You Can Help Me

- Connect with other teams with similar research interests
- Establish a connection with Florida Kennedy Space Center researchers
- Connect with radiation shielding facilities in Florida
- Access Lunar and Mars regolith for wear tests

Thermal and Mechanical Properties of 2D Material Foam for Polymer Nanocomposites



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Up Next:

Berrin Tansel

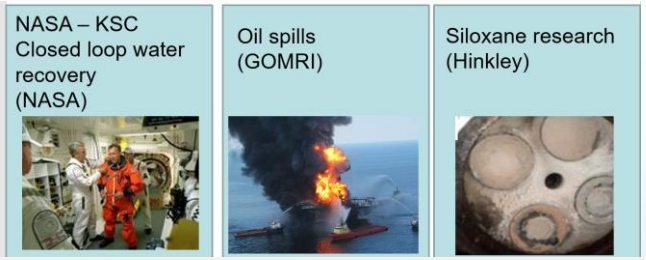
Florida International University
Professor, Civil and Environmental Engineering
e-mail: tanselb@ fiu.edu
linkedin.com/in/berrin-tansel

My Interest in Florida and Space

- Developing collaborative research proposals in my areas of research interest.
- Establishing a formalized process for regular meetings to develop ideas on space applications related to environmental engineering.
- Developing an idea exchange forum for sharing our research activities and results on earth and space related topics..
- Connecting with other researchers for developing focused research consortiums in areas that are important for Florida.
- Expanding my technical research capabilities for applications to include other perspectives related to space life sciences
- Meeting other researchers in FL to develop a collaborative process for exchanging ideas and sharing resources,

Research and Projects

- Infrastructure for space habitat (water and wastewater)
- Sustainable materials use
- Recovery of materials from waste
- Solid and hazardous waste management in space
- Modular systems for water treatment for space applications (recovery, recycling, and reuse)



Recent Proposals/Publications:

- NASA - KSC Technology Development and Transfer for Water treatment
- Closed loop water recovery for log space missions
- Technology development (SBIR) for water treatment

Expertise/Interests

- Environmental engineering applications for space travel and sustaining life in extreme conditions
- Space life sciences
- Materials recovery and recycling
- Materials recovery from regolith for use in space habitats
- Water recovery and reuse for space applications

How I Can Help You

- Identify emerging areas in environmental engineering for space applications
- Initiating research collaborations for space applications
- Develop focus groups for discussions that can be applied to space travel and life in space
- Initiating FL-wide research forums

How You Can Help Me

- Collaborate in forming focused discussion/research group.
- Identify resources that can be shared.
- Expand research scopes and capabilities for developing collaborative initiatives.

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Up Next:

Benedict C. Albensi, PhD, BCMAS, CRQM

Professor & Chair
Co-director B.R.A.I.N. Ctr.
Editor-in-Chief *Molecular Neurobiology*
Nova Southeastern University
balbensi@nova.edu

My Interest in Florida and Space

- Development of space medicines and therapeutic interventions for long-duration space travel.
- Lessons from space flight for what accelerates the aging process.
- What happens to mitochondria in space.
- Nutrition and brain function during space travel.
- Effects of space travel on memory and other cognitive performance.
- Sex differences in mitochondrial function.
- Development of methods for mitochondrial transfusion for long duration space travel.

Research and Projects

- Active funded labs in both the USA and Canada using animal models of aging and dementia.
- Active funded clinical trial on Alzheimer's disease.
- My methods have included cell/molecular, behavioral testing for memory, computational modeling, bioenergetic assays, (mitochondria), PET/MRI scanning, gene chip assessments, and electrophysiological recordings.
- Human memory testing using tools such as CDR, MoCA, CANTAB, etc.
- Former tenured full professor and 2 past funded dementia/Alzheimer's disease research chairs.
- Over 300 presentations & publications to date - NIH bio link: My Bibliography - NCBI (nih.gov)

Expertise/Interests

- Brain Metabolism
- Aging
- Cognitive Impairment
- Inflammation
- Clinical Trials
- Animal Models
- Neuroscientist (>25 years)
- www.linkedin.com/in/benedict-albensi

How I Can Help You

- NASA, DOD, and NIH grant reviewer.
- Animal models of aging and dementia.
- Human clinical trials experience.
- My network/contacts in the dementia and mitochondrial scientific communities.

How You Can Help Me

- Modeling microgravity, radiation, and/or other space stressors.
- Collaboration on experimental studies.

Dr. Kerri Donaldson Hanna

University of Central Florida

Department of Physics

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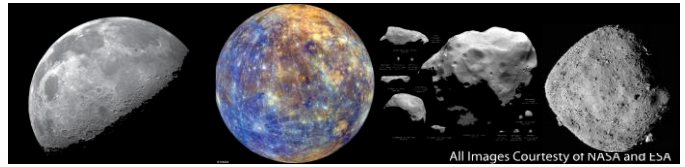
https://planets.ucf.edu/dr-kerri-donaldson-hanna

My Interest in Florida and Space

- Connecting with individuals and teams working on space instrumentation, laboratory spectroscopy, and remote sensing – particularly in relation to studying Solar System airless bodies.
- Identifying others with similar research interests to build collaborative research teams in an effort to compete for external funding opportunities.
- Connecting with research groups at other institutions to give UCF undergraduate and graduate students opportunities for building their network and research possibilities.

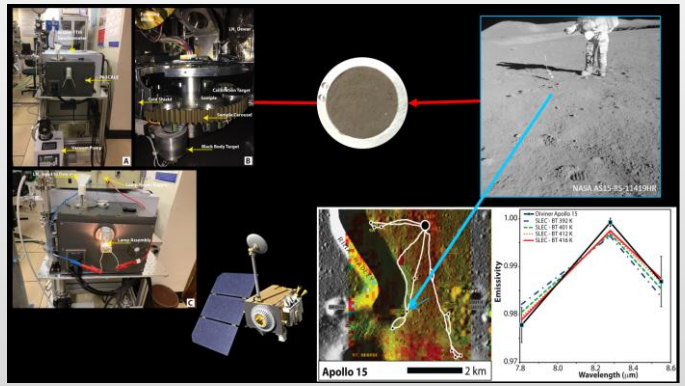
Research and Projects



- I am interested in understanding the formation and evolution of airless bodies by combining spacecraft observations and lab measurements, particularly at thermal IR wavelengths.
- Lab measurements of well-characterized samples under the appropriate environmental conditions are necessary for the interpretation of current and future data sets and for the development of future TIR instruments to airless bodies.
- Powerful combination for constraining surface properties including composition, particle size, porosity, and thermal inertia.

Recent Grant Selections as PI:

- NASA PRISM2 – Lunar-VISE
- NASA SSO – New telescopic observations of the Moon and Mercury



Expertise/Interests

- Remote sensing
- Solar System airless bodies
- Laboratory spectroscopy
- Space instrumentation development

How I Can Help You

- Working with remote sensing datasets of planetary bodies, particularly of the Moon
- Making reflectance and emissivity spectral measurements of lunar and asteroid analog materials
- Developing space instruments to study the composition of planetary surfaces

How You Can Help Me

- Identification and characterization of planetary analog materials
- Collaborate to develop new space instruments for remote sensing purposes
- Collaborate to develop new techniques for studying the composition of planetary bodies

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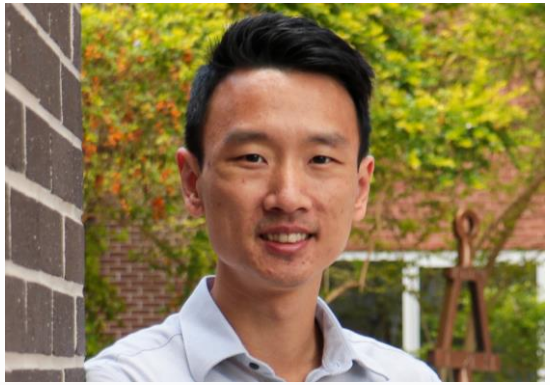


Kawai Kwok

Assistant Professor
University of Central Florida
Mechanical and Aerospace Engineering
kawai.kwok@ucf.edu
http://mae.ucf.edu/kawaikwok/

My Interest in Florida and Space

- Expanding satellite capabilities with multifunctional deployable structures technology
- Developing functional mechanical structures using in-situ resources and methods

Research and Projects

- Scalable manufacturing of composite architectures in space
- Solar sail propulsion technology
- Lightweight high-temperature radiator structures

Expertise/Interests

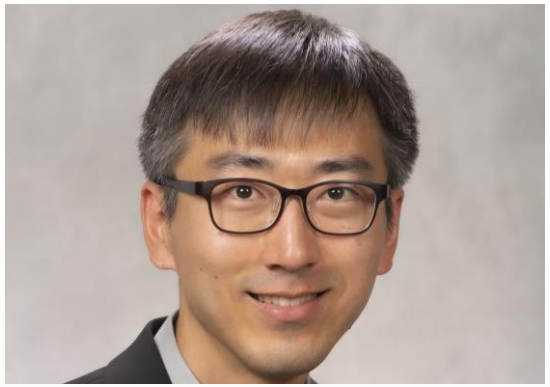
- Deployable Structures
- In-Space Manufacturing
- Lightweight multifunctional materials

How I Can Help You

- Concept development
- Design and analysis
- Engineering prototypes

How You Can Help Me

- Space environment testing
- Robotics and control of structural assembly



Hancheol Cho

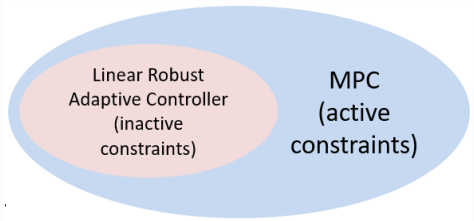
Embry-Riddle Aeronautical University
Department of Aerospace Engineering
choh15@erau.edu
linkedin.com/in/hancheol-cho-a030b797

My Interest in Florida and Space

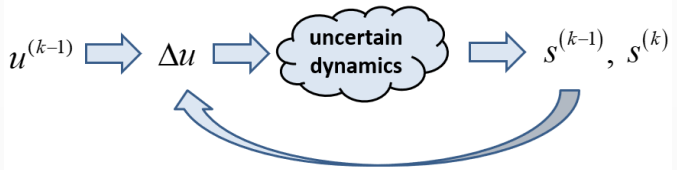
- Searching for potential research teams to publish research articles and to secure external funding.
- Learning what other faculty/researchers are doing and seeking innovative ideas through collaboration.
- Expanding network to enhance opportunities in research, teaching, knowledge and technology transfer, etc.
- Holding periodical workshop meetings between the Florida universities, colleges, and other institutions.

Research and Projects

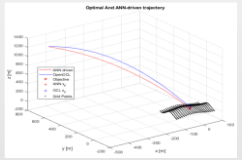
- Autonomous G&C of constrained relative motion maneuvers in the presence of uncertainties
  - Matching-based Robust MPC



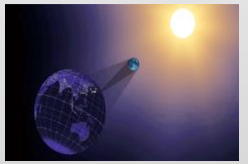
  - Self-tuning control



- Active debris removal using space garbage truck



- ML-based optimal control of landers
- Optimal trajectory design for solar corona observation in space



Expertise/Interests

- Astrodynamics
- Satellite Formation Flight
- Constrained Robust Optimal Control
- Space Robotics

How I Can Help You

- Research experience in constrained robust optimal control
- State-of-the-art technology for space debris removal, on-orbit servicing, etc.
- International collaboration with universities and institutions in East Asia (Korea and Japan)

How You Can Help Me

- Effective grant writing/editing skills
- Creating a good rapport with program managers from sponsoring agencies
- Connection to local industry and government organizations

FloRDA

All Research Profiles Available at:
florda.org/Space

Up Next:

Sherri Emer

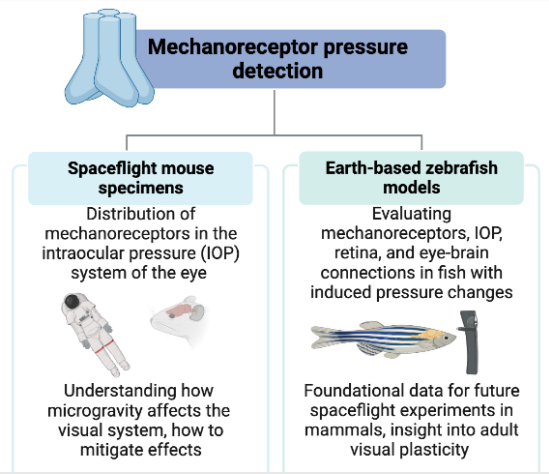
Assistant Professor, IACUC Chair
Florida Gulf Coast University
Department of Biological Sciences
semer@fgcu.edu

My Interest in Florida and Space

- Establishing collaborative research projects related to physiological effects of space exploration
- Promoting space life sciences as a career option for aspiring scientists through student training activities
- Maximizing animal health and welfare on orbit and developing innovative Earth-based models
- Establishing relationships with private space organizations
- Promoting positive public opinion and an appreciation for space exploration and space research

Research and Projects

I mentor Biology undergraduate and graduate student researchers completing degree requirements while promoting research integrity among students and colleagues.



Recent Activities:

- Posters at ASGSR (mechanoreception, visual system/student training)
- Zebrafish research colony establishment
- Mentoring/teaching first MS Biology student cohort
- Thermal imaging publications

Expertise/Interests

- Sensory Neuroscience
- Neuroplasticity
- Immunohistochemistry
- Fluorescence microscopy
- Research integrity

How I Can Help You

- Preparation of proposals to NASA LSDA for spaceflight tissue acquisition
- Tissue processing including IHC and imaging
- Animal models and methods for simulating effects of microgravity
- Navigating animal health and welfare requirements (IACUC)

How You Can Help Me

- Collaborate to develop proposals for funding and/or ISS payloads
- Contribute to components of broad projects (e.g., gene expression, pharmacology)
- Collaborate to develop innovative methods for Earth-based simulation studies
- Instrumentation

Nezih Pala

Florida International University

Electrical & Computer Engineering

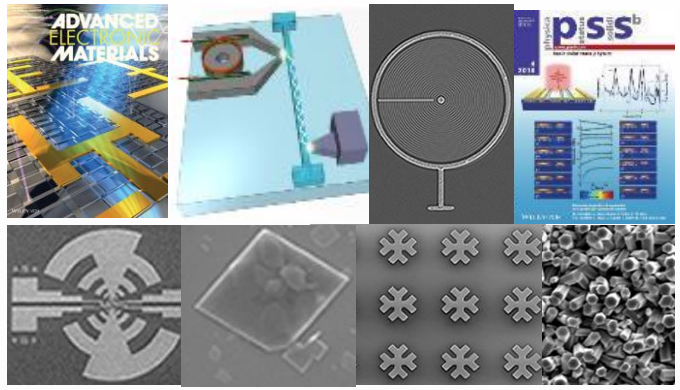
npala@fiu.edu

https://insyst.fiu.edu/

My Interest in Florida and Space

- Developing collaborative research projects, particularly in:
  - Bio/chemical sensing, health/environmental monitoring
  - Energy harvesting
  - High frequency (RF - THz) devices and components
  - Novel micro-/nano- fabrication techniques
- Arranging experiential learning opportunities for our students
- Building capacity and infrastructure in South Florida for research and training in emerging technologies
- Support entrepreneurship activities by our technical capabilities and expertise

Research and Projects



Capabilities

- Backward Wave Oscillator (BWO) THz spectrometer (0.2 -1.1THz)
- THz Time Domain Spectroscopy (TDS) system (0.1 – 3 THz)
- Integrated Atomic Force Microscopy (AFM) inbuilt with RAMAN
- HORIBA Scientific (Jobin-Yvon) iHR320 Imaging Spectrometer (UV-IR)
- Internal Quantum Efficiency (IQE) measurement system
- Solar simulator
- Electronic and photonic simulations (Lumerical, COMSOL, Silvaco, Synopsys, Ansys)
- Micro/nano-fabrication with minimum feature size of 30 nm

Expertise/Interests

- Nanoscale materials and devices for photonic and electronic applications
- Nanofabrication
- THz devices and applications
- Reconfigurable RF surfaces
- Bio/chemical, wearable sensors
- Free space optical communication

How I Can Help You

- Develop collaborative research proposals
- Electronic and photonic device design, modelling and simulations
- Nanofabrication
- Electrical (DC – THz), optical and electrochemical testing
- Developing training programs and courses

How You Can Help Me

- Develop collaborative research/education proposals
- Share challenges and opportunities in your field of work
- Provide internship to our students

Alicia Boymelgreen

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My Interest in Florida and Space

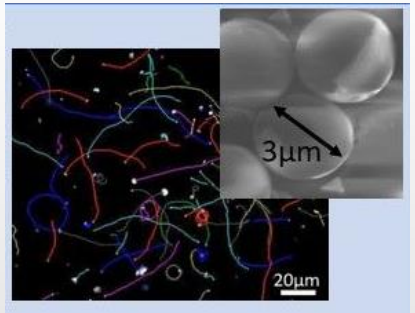
- Identifying new partners for collaborative research in microgravity
- Driving the next generation of research on the International Space Station
- Leveraging access to in-state Space research facilities and researchers
- Learning about research groups focusing on fluids related space tech and microgravity at other Florida Institutions
- Utilizing space research to inspire the next generation of scientists, engineers and the broader community

Research and Projects

I lead the ***Interdisciplinary Microfluidic Laboratory*** in the Dept of Mech. And Materials Eng. at FIU.

Our research traverses Mechanical, Materials, Chemical Engineering and Physics.

Currently we are building a platform to sending synthetic, electrokinetically driven active colloids into space in order to understand their fundamental behaviors on an individual and collective level in three dimensions (NSF-CASIS #2126479).



I also work on environmental impact studies. We have another key project exploring the impact of nanoplastics on early stage development of marine species using real time in situ sensing (NSF #2038484)

Expertise/Interests

- Fluid dynamics
- Active Matter
- Soft Matter
- Complex fluids
- Micro/nanofluidics
- Electrokinetics
- Micro/nano heat transfer
- Rheology
- Microgravity experiments
- Multiscale environmental impact analysis

How I Can Help You

- Insight on obtaining NSF-CASIS funding
- Tips on working with implementation partners to deliver space ready technology
- Insight into the process of the BPS decadal survey and the next generation of Space Tech and research focus

How You Can Help Me

- Collaborate on terrestrial and microgravity experiments in colloidal science and fluid dynamics
- Connect physical models on synthetic matter to biological or bio-synthetic hybrid systems
- Find applications for emerging research in active matter

Arecibo Observatory / University of Central Florida
Space & Atmospheric Sciences
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My Interest in Florida and Space

- Identifying and building collaborative research teams to compete for external funding and research.
- Connecting with other individuals in Florida who are interested in the social and economic impacts of MST/ST radar development and deployment.
- Connecting with individuals and teams working on lower- and middle-atmospheric dynamics to explore ways in utilizing of MST/ST radar system.

Research and Projects

I am working on middle- and upper-atmospheric dynamics and am interested in building a team centered on Lower- and middle-atmosphere dynamics, precipitation and hurricane related studies.

I am a early-career researcher

Expertise/Interests

- Atmospheric dynamics especially, turbulence
- Atmospheric Radar Studies
- WRF model
- Long-term trends
- UTLS dynamics

How I Can Help You

- Research experience in atmospheric turbulence
- Experience in running the MST radar and WRF model
- Experience in analyzing the forecast trajectories in the UTLS
- Research experience in the long-term trends study

How You Can Help Me

- Collaborate to develop new MST/ST radar in the USA for atmospheric studies
- Tropical UTLS dynamics
- Boundary layer dynamics
- Precipitation studies
- Wave activity by extreme weather events

Zhiyong (Richard) Liang

Sprint Eminent Scholar Chair and Director

Industrial and Manufacturing Engineering
FAMU-FSU College of Engineering
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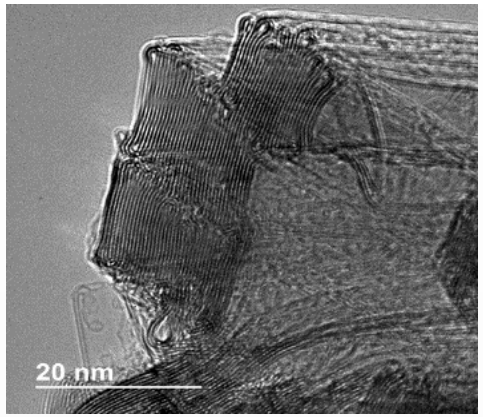
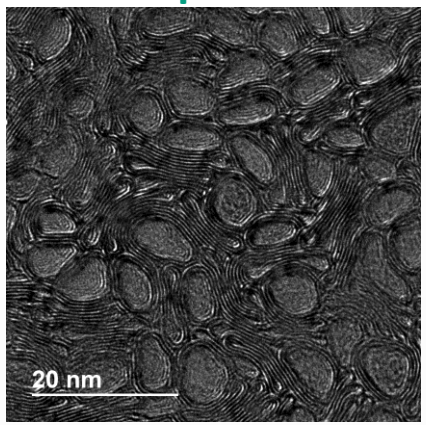
My Interest in Florida and Space





- Self-assembling CNTs and 2D materials for ultra-high mechanical and multifunctional performance for space exploration (see CNT self-assembling TEM Images above)
- Comprehensive manufacturing and characterization of multifunctional thermal protection materials and carbon conductors

Expertise/Interests

- Aerospace Composites: life cycle monitoring of composite; manufacturing process development and interface study
- Nanomaterials: CNT and 2D materials for structural and printing applications
- Multiscale Characterization: Advanced EM and 3D tomography study

How I Can Help You

- Expertise in aerospace composite manufacturing, characterization and product prototyping
- New concepts of integrated life cycle monitoring of composite structures
- Multifunctional C/C composites and carbon conductors

How You Can Help Me

Collaborations in major composites, nanomaterials and additive manufacturing programs

High-temperature tests of composites

Joint hosting major composite conferences/workshops

Research and Projects

Recent Related Funded Projects:

- AFRL: Scale-up Demonstration of Multifunctional Composites
- NASA STRI (US-COMP):Institute for Ultra-High Strength Composites
- AFOSR: Scale-up CNT Self-Assembly for High Structural Performance
- NSF SNM: Roll-to-Roll Manufacturing of High Quality Bucky-tape with Aligned and Crosslinked Carbon Nanotubes Through In-line Sensing and Control

Recent Related Publications and Patents

- 36 granted US Patents
- "Computational Investigation of Large-Diameter Carbon Nanotubes in Bundles for High-Strength Materials," ACS Appl. Nano Mater. 3, 6, 5014-5018, 2020
- "Tensile Performance and Failure Modes of Continuous Carbon Nanotube Yarns for Composite Applications," Mater. Sci. Eng. A 792, 139824, 2020
- "Lightweight Carbon Nanotube Surface Thermal Shielding for Carbon Fiber/Bismaleimide Composites," Carbon, 153, 320-329, 2019
- “Carbon Nanotube Based Electrical Conductors: Fabrication, Optimization, and Applications.,” Advanced Electronic Materials, 1800811,2019
- "Microstructure evolution and self-assembling of CNT networks during mechanical stretching and mechanical properties of highly aligned CNT composites,” Composite Sci. & Tech., 166, 125-130, 2018

Arjuna Madanayake

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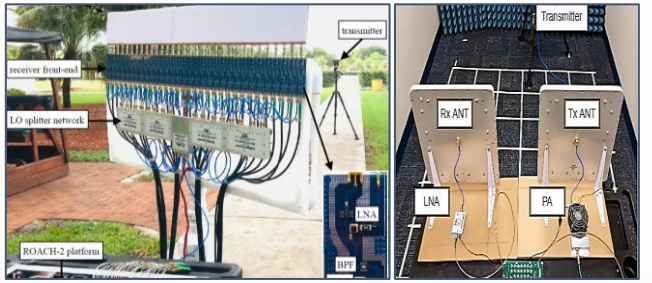
My Interest in Florida and Space

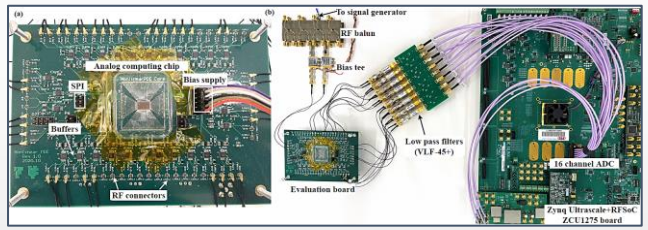
- Teaming with like minded researchers.
- Going after grant funding.
- Community infrastructure.
- Outreach
- Education

Research and Projects

- Wireless communications in full duplex mode for efficient spectrum usage.



- Analog computing for space-based systems



- Advanced AI/ML enhanced radio spectrum sensing for space communications.
- Space based joint communications and sensing.
- RF and digital systems for space internet technologies.

Expertise/Interests

- Digital and Microwave System
- Electronics, Wireless Communications
- Space Networks, Sensing
- Collaborative Team Building

How I Can Help You

- Lead as a PI or co-PI
- Help brainstorm projects
- Conduct teaming meetings
- Engage local community

How You Can Help Me

- Introductions to Space Community
- Teaming with Companies
- Teaming with Government
- Workshop and Events

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My Interest in Florida and Space

Enhancing diversity of those who receive space health research grants (TRISH diversity partnership)

Connecting with others who conduct space health research

Research and Projects

PI of several NASA grants to study brain & behavioral changes with human spaceflight, spaceflight analog environments

PI of TRISH diversity partnership grant BSURE: Boosting Spaceflight Underrepresented Researcher Equity

Expertise/Interests

Neuroimaging & neurostimulation techniques
Sensorimotor & cognitive function
Neuroplasticity

How I Can Help You

Potential collaborations / community building
Reaching underrepresented communities
Identifying sources of support for diversity outreach

How You Can Help Me

Potential collaborations / community building

Dawei Li, Ph.D.

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My Interest in Florida and Space

Sequencing and/or analyzing high-throughput genomic sequencing data from bio-samples related to health, disease, discovery of species, etc.

Participating in team projects and open to new collaborative research topics

Research and Projects

Multi-omics analysis of long COVID and chronic fatigue syndrome

Sequencing data analytic pipeline development

Analysis of substance use to identify early-stage risk factors

Expertise/Interests

Genetics and genomics

Bioinformatics

Multi-omics analysis

How I Can Help You

Bioinformatics analytic software development

Genomic sequencing data analysis

Analysis of COVID, long COVID, fatigue, mental disorder

How You Can Help Me

Existing biospecimens for sequencing, or genomic sequencing data

Alex Krasnok

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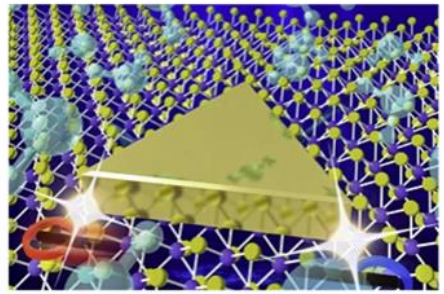
https://krasnok.com

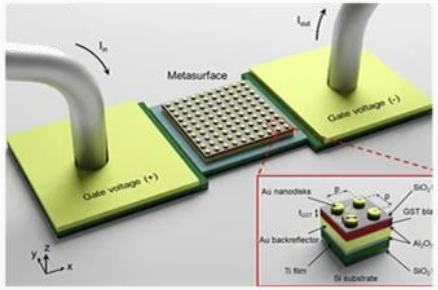
My Interest in Florida and Space

- Top-tire multidisciplinary research in quantum technology, materials, sensors and devices
- Identifying and building collaborative research teams and positioning them to complete for external funding.
- Connecting with individuals and teams working on tech and society research to explore ways to further their interests.
- Exploring ways to translate research into societal impact
- Connecting with other individuals in Florida who are interested in the social, political, and economic impacts of technology development and deployment .

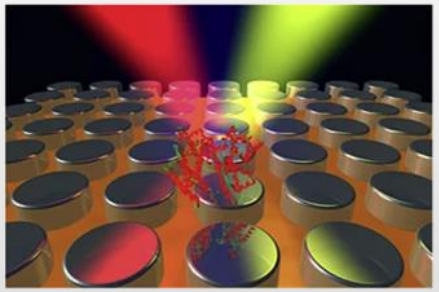
Research and Projects



Quantum materials



Functional Metadevices



Quantum and optical sensors

Expertise/Interests

Research
Technology
Academia-Industry collaboration
High-tech industry

How I Can Help You

- Grant proposal management and editing
- Grant writing presentations for faculty and/or classes.
- Research experience in photonics, quantum, wireless

How You Can Help Me

FloRDA

All Research Profiles Available at:
florda.org/Space

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