



UNIVERSITY OF MIAMI  
COLLEGE of  
ENGINEERING

# Welcome

Engineering Graduate  
Student Orientation



Connect with us!

@umiamiengineering



# Jan Macko



**Director of Admissions  
College of Engineering**

**[jmacko@miami.edu](mailto:jmacko@miami.edu)**



# Additional Orientation Sessions

## International Students

International Student Orientation by ISSS  
Friday, 9:00 AM – 12:00 PM  
@Lakeside Village, Expo Center Hall

## All Graduate Students

Graduate Students Orientation  
Friday, 12:00 PM – 2:30 PM  
@Shalala Student Center, 3<sup>rd</sup> floor



# Welcome New Graduate Engineering Students

## New 2024-25 Graduate Class

- 123 Students
  - 54 PhD Students
  - 69 MS Students
- 53% International
- 23 Countries Represented
- 16 U.S. States Represented

## Top Foreign Countries

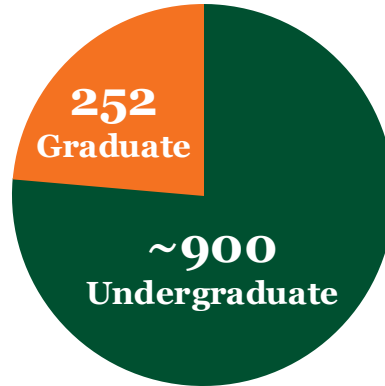
- China
- Iran
- Kuwait
- India
- Egypt



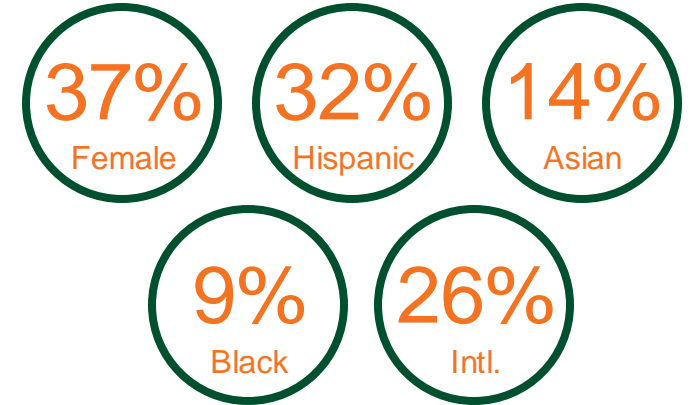


# THIS is Miami Engineering

## SIZE



## DIVERSITY



## STUDENT AWARDS



...and more!

## FACULTY



# Pratim Biswas



[pbiswas@miami.edu](mailto:pbiswas@miami.edu)

**Dean, College of Engineering**  
**Professor, Chemical, Env. And Materials**  
**Engineering**  
**Aerosol and Air Quality Research Lab**  
**(AAQRL, <https://aaqrl.miami.edu/>)**

# Congratulations and Welcome to the



# Tech Initiatives @ UMiami Engineering

## Health Tech

Engineering Cancer Cures  
Informatics & Health Data  
Sci.  
Neural Engineering  
Ophthalmic Engineering  
Nanomedicine  
Musco-skeletal and  
Orthopedics  
Translational Urology

## Nano Tech

Aerosol Science and  
Technology  
Energy and Environmental  
Nanotechnology  
Agricultural Nanotechnology:  
Smart, Precision  
Agriculture  
Nanoparticle Synthesis and  
Technology  
Nanomedicine  
Advanced Quantum Sensing

## Digital Tech

High Performance Computing  
Augmented Intelligence &  
Machine Learning  
Big Data Systems  
Energy Analytics  
Informatics & Health Data  
Sci.

## Clean Tech

Center for Clean Energy  
Battery Technology  
Carbon Reduction &  
Conversion  
Consortium  
Renewable Energy Production  
Advanced Autonomous  
Mobility  
(MEAMI)  
Supply Chain

## Fin Tech

Management of Technology  
Financial Engineering

RESEARCH

EDUCATION

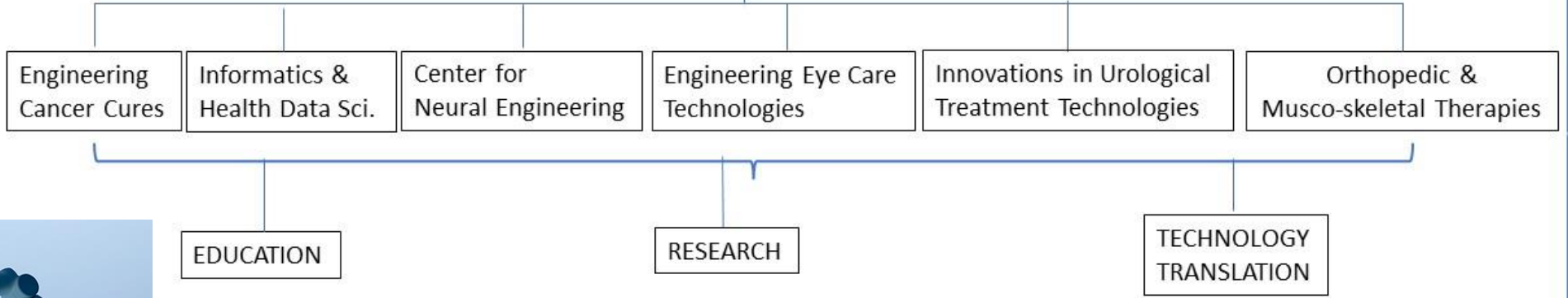
INNOVATION  
&  
ENTREPRENEURSHIP

PARTNERSHIPS

OUTREACH

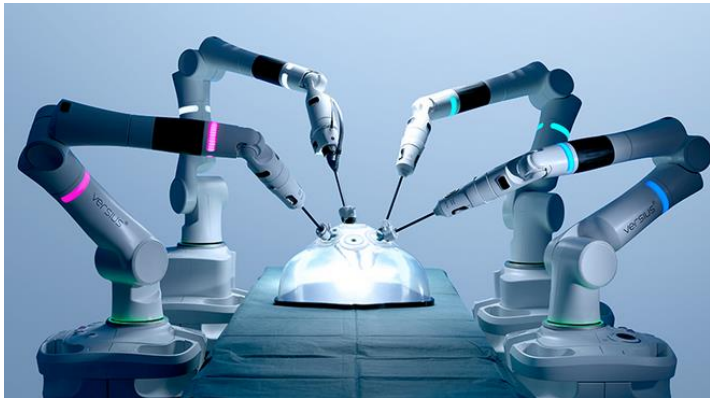


**Institute for Health Engineering & Medicine**  
University of Miami  
*Selected Research Areas of Excellence*

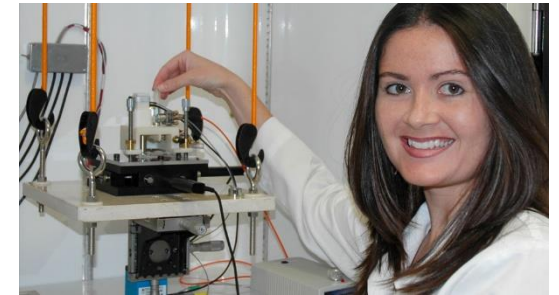


Industry Partners

Intl. Univ. Partners



Wearable Sensors  
Personalized Medicine



Preserving and Improving  
Eye Sight

<p>NOVEL MATERIALS <i>for</i> DETECTION AND TARGETED DELIVERY</p>	<p>INNOVATIVE "AI" SOLUTIONS <i>for</i> IMAGING AND BIG DATA</p>	<p>ADVANCING ENGINEERING TECHNOLOGIES <i>for</i> DRUG DISCOVERY AND DELIVERY</p>
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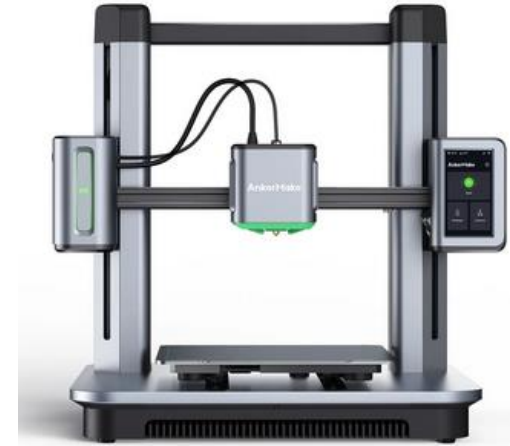
# AI Innovation at UMiami Engineering

## RESEARCH

- Advancing Fundamentals:
  - Federated Learning
  - Physics Based Machine Learning
  - Edge Computing
- Application Areas
  - Medical Devices and Robotics
  - Advanced Materials Design and Synthesis
  - Autonomous Mobility
  - Aerosol Science & Technology
  - Energy Systems and Analytics
  - Medical Imaging and Computer Vision
  - Financial Engineering
  - Societal Responsibility and Ethics

## EDUCATION

## ENTREPRENEURSHIP



AI and Additive Manufacturing



### 1<sup>st</sup> Miami AI Summit

~ February 2024 ~

- Student Hackathon
- Panel Discussions
  - Fundamentals
  - Applications
  - Ethics and Society

# Miami Institute for Clean Energy (MInCE)

**Env Benign Energy Production**

Coordinator: P. Biswas

**Climate Engineering:**

**Minimizing Carbon Footprint & CO2 Conversion**

Coordinator: P. Suraneni

**Energy Storage**

Coordinator: X. Zhou

**Energy Analytics**

Coordinator: R. Maghaddass

**Autonomous Mobility Initiative**

Coordinator: G. Zha

**Supply Chain Initiative**

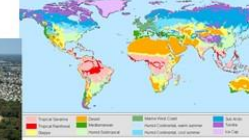
Coordinator: M. Erkoc

**Energy-Environment Nexus**

Coordinator: J. Englehardt

## Solar Energy and Energy Storage (SEES)

Large Solar Parks

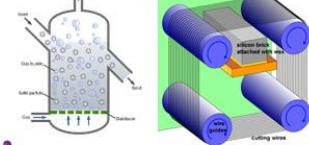


Global PV Performance

Flexible PV Solar Cells

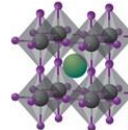


Si FBR Production / Kerf Reduction



Solar Energy – Energy Storage Coupling  
V2G Concepts

**Multiscalar Solar Energy Research**  
(Enabled by groups such as EFRC PARC, SERIUS, ARPA-E and other DOE / Industry Support)



Next Generation Solar Cells



Partnership with  
Companies  
Selected List  
*FPL*  
*NextEra*  
*Titan*  
*Eve Air Mobility*  
*AeroAuto LLC*  
*Wisk*  
*Siemens Energy*

Miami Engineering Autonomous Mobility Initiative  
(MEAMI)

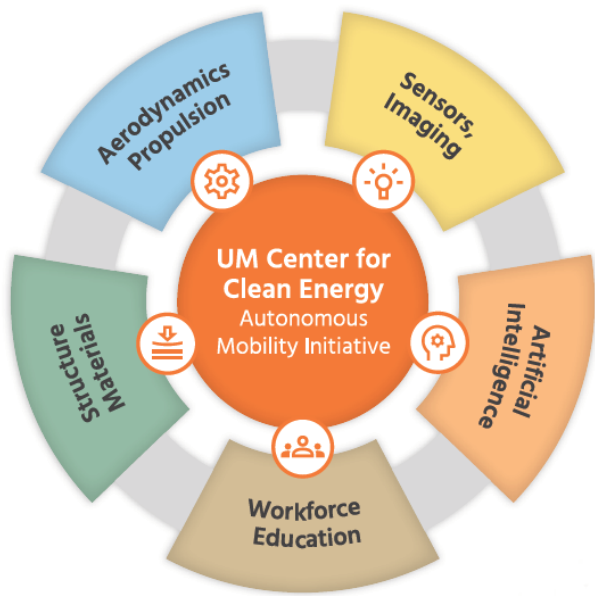


Direct Air Capture  
(Conversion to Products of Value)  
Circular Economy

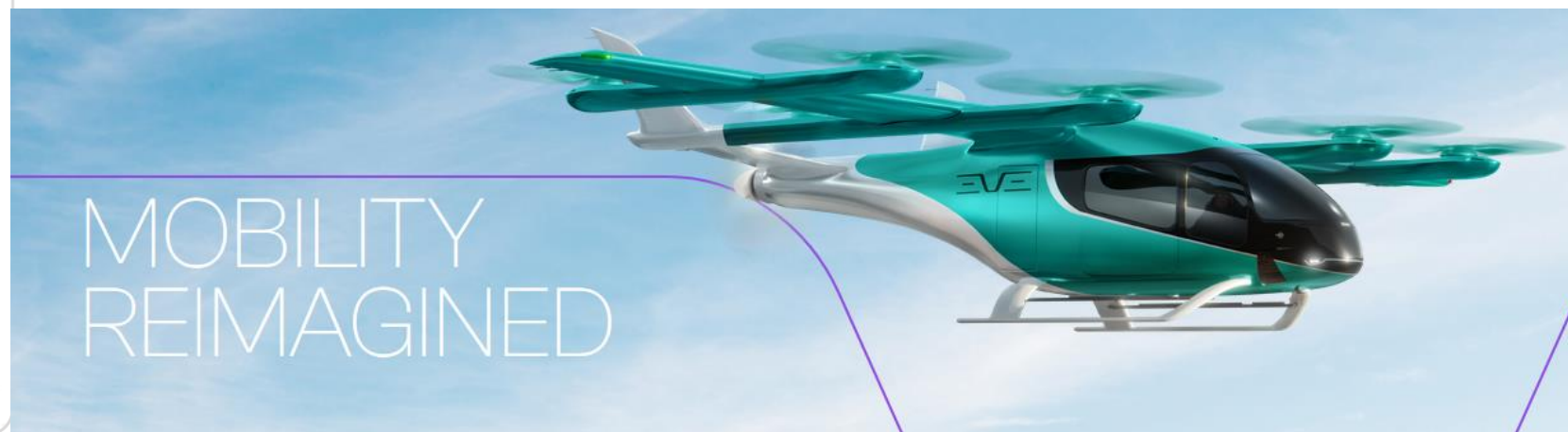




A multidisciplinary initiative from  
**UM CENTER FOR CLEAN ENERGY**

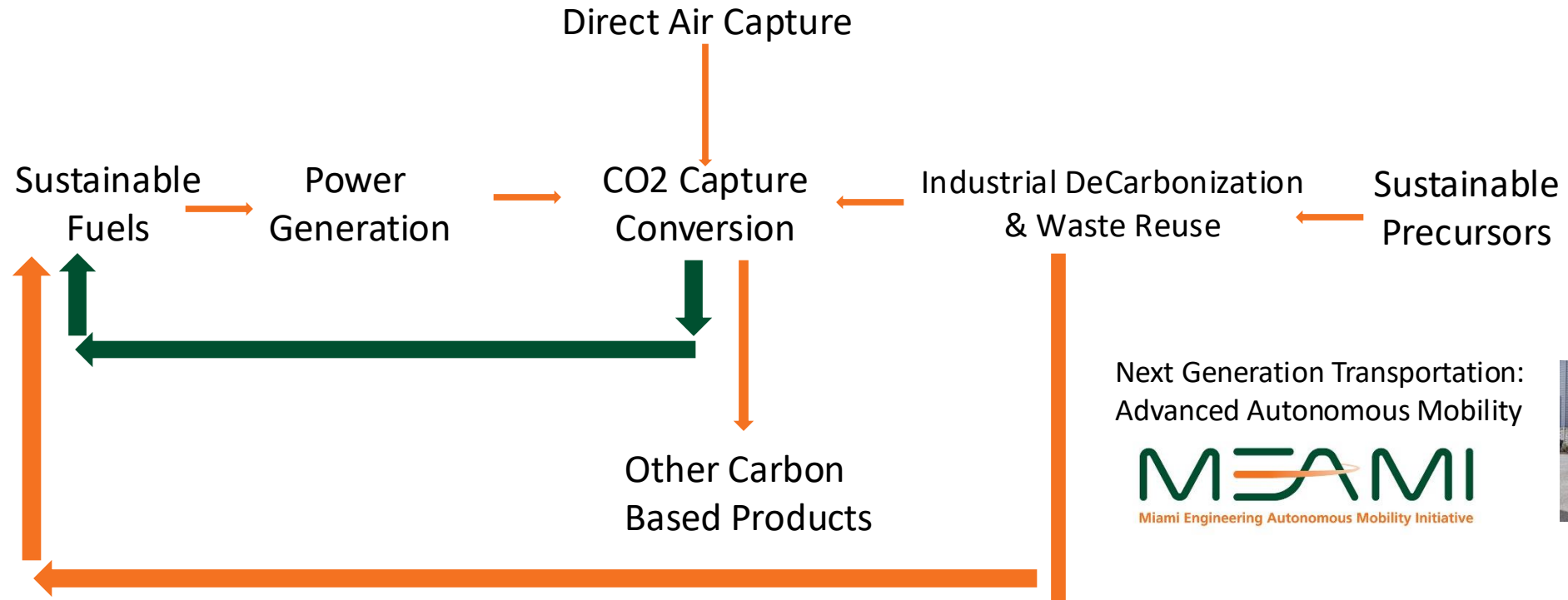


EVTOL Technology



# Minimizing and Eliminating Carbon Emissions: Circular Economy

*Systems Analysis – the Miami Engineering Approach in Partnership with Industry*



Next Generation Transportation:  
Advanced Autonomous Mobility



- Minimizing and Mitigating Carbon Footprint**
- Product Design
  - Source Control – Process Modification
  - Capture and Conversion at Source
  - Direct Air Capture

**Carbon Capture and Conversion Consortium**  
*A partnership of Academia and Industry*

Education

Research

Innovation

Partnership

Translation



CAST International Network  
HQ: Miami

## CAST

- Create “Global Aerosol Exchange (GALE)” in Miami
- Innovative Research and Education Programs: Nanoparticle Technology, Energy, Environment, Medicine, Space Sciences
- Graduate Leading Aerosol Researchers and place them to become global leaders
- Recognized as a Top 5 Aerosol Sci Tech Program Nationally

### FACULTY PARTICIPANTS

#### Co-Directors:

**Chang Yu Wu**, Professor and Chair, Chemical, Environmental and Materials Engineering (CEMaT)

**Joseph Prospero**, Prof Emeritus, Rosenstiel School of Marine, Atmospheric and Earth Science (RSMAS)

#### Core Faculty:

**Samiul Amin**, Professor of Practice (CEMaT)

**Pratim Biswas**, Professor, CEMaT and Dean, Engineering

**Cassandra Gaston**, Associate professor, Atmos Sci, RSMAS)

**Naresh Kumar**, Associate professor, Public Health, Medicine)

**Jiayu Li**, Assistant professor, Mechanical and Aerospace Engineering

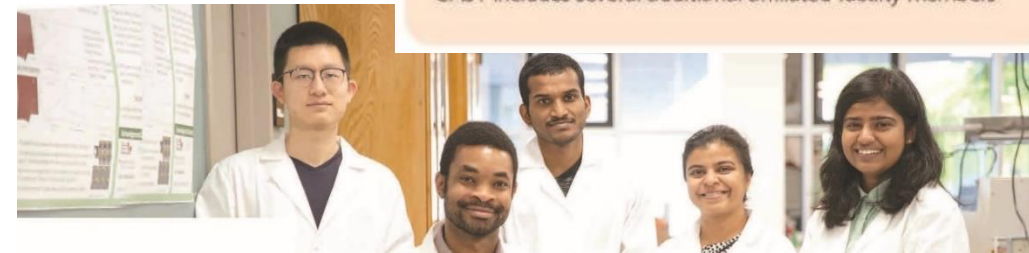
**Yang Wang**, Assistant professor (CEMaT)

**Paquita Zuidema**, Professor and Chair (RSMAS)

CAST includes several additional affiliated faculty members

## Selected Members of GALE

- Regional and Internationally Leading Universities  
[Latin and South America, Asia (India, China, Taiwan, S Korea); Middle East]
- Innovative research funded by NSF, NIH, NOAA, DOE, USEPA, NASA, Industry
- Translation of research results to Industry



## CAST FAST FACTS

**9** core faculty members

**21** doctoral students, with an active student chapter

**60+** publications in 2022

# Innovation & Entrepreneurship in the DNA of CoE

- Partnership with School of Business, Medicine, Start Ups, Venture Capital firms
- Training of students: UG to Graduate (business plans, pitches, etc.)
- Mainstream through advanced research efforts & partnership with industry
- Play a role in the local Miami community – promote startup culture, support the tech book
- 12 faculty initiated start up compnaies
- 87 Disclosures, 30 Patents, 6 Licenses, 48 Technologies available
- An Engineering Corporate Affiliates Program (E-CAP) – partnership with Industry on Projects
- 12 Startup Companies

## STARTUP COMPANIES FROM CoE

Bio-Vitro LLC  
Co-Flow Jet  
Converge Biotech (*acq by Sernova*)  
Jorvec Corp  
Restor-Ear Devices LLC  
InfotechSoft  
Circulogix Inc  
Cellular Nanomed Inc  
Corvita Corp (*acq by Pfizer*)  
Innovia LLC (*acq by Santen*)  
Voyance Technologies  
SmArT LLC



## State of the Art Shared Facilities

- Chemical & Materials Characterization (*Shimadzu*)
- Additive Manufacturing (3D Printing Center)
- Innovation and Design Lab
- Molecular Imaging (TEM, SEM)
- Aerosol Instrumentation Facility (node in Barbados)

## Educational Innovations

- Exploring AI Based Innovation in Education
- TALIS Day
- First Year Sequence of General Engr Classes
- Outreach: Short Courses & Certificates
- Innovative Online Degree Programs  
(Mgmt of Tech, Software Engr, Neural Engr)

# ECAP (Engineering Corporate Affiliates Partnership)

- Impactful Partnership Group with about ~ 25 corporate partners
- Engineering Career Day – September every year
- Sponsor students work on projects (Sr Design Projects, others)
- Collaborations with International Partners (markets in Asia, Latin America)
- Partnership on cutting edge projects – attract federal funding
- Innovative and customized educational programs
  - Certificates, Short Courses, Degree Programs, Online
  - E.g. MS in Product Design; Mgmt of Tech., *Planning*: Nanomedicine, AI/ML
- State of the art Workshops/Summits with world leading experts from UM and elsewhere
- Access to state of the art shared facilities
- Networking with other corporations



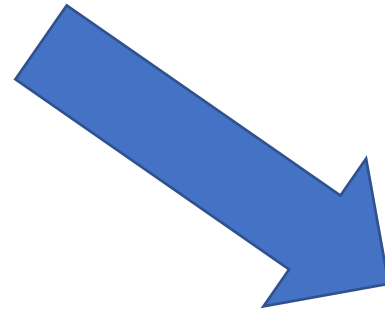


# Few Final Thoughts

- Prepare yourself for “life-long learning” – develop fundamental skill sets
- Participate in discovery & innovation – through research. Explore...try new things.
- Peer recognition through refereed journal publications
- Broaden horizons – learn what colleagues are working on. Seminars, other events. Take initiative.
- Work hard – no short cuts to success!
- Think of what you want to do after you graduate.....
- Have fun – all the above could/should be fun, and a lot more!!! Make “life long friends”



2022



### Some Important Dates

- Engineering Career Fair (Sept 27, 2024)
- Burgers with Biswas (Oct 16, 2024)
- RESEARCH DAY (Nov 15, 2024)
- Several Short Courses/Workshops:
  - CAST (Jan 8-10, 2025)
  - AI Summit (Feb, 2025)
  - E-Week (week of Feb 22, 2025)
  - Clean Energy (Apr, 2025)



We just celebrated our semi-sesquicentennial  
Get Ready to Celebrate  
Our University's Centennial!

**Get involved**

**Look forward to seeing you around**

2025

Centennial



College Seminars  
&  
Town Halls  
2 every month



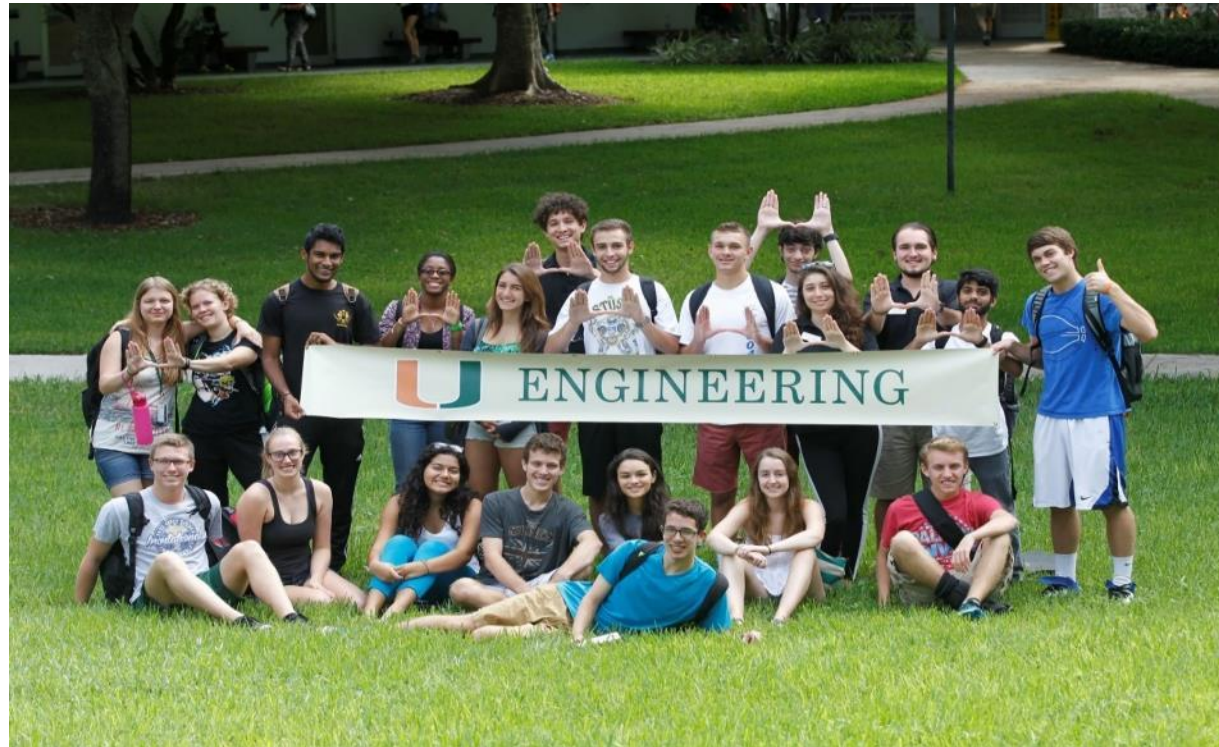
# Noël Ziebarth, Ph.D.



**Associate Professor of Biomedical Engineering  
Associate Dean for Graduate Studies**

[nziebarth@miami.edu](mailto:nziebarth@miami.edu)

# Congratulations and welcome to the University of Miami College of Engineering!



# Your support team in CoE

**Associate Dean for Graduate Studies**



**Noël Ziebarth, Ph.D.**  
[nziebarth@miami.edu](mailto:nziebarth@miami.edu)

**Graduate Program Coordinator**



**Syed Asad Ali Shah, M.S.**  
[sas4093@miami.edu](mailto:sas4093@miami.edu)

# Department Leadership

## Biomedical Engineering



Fabrice Manns,  
Chair



Alicia Jackson,  
GPD



Weizhao Zhao,  
Medical Physics



Abhishek Prasad,  
Neural Engineering

## Civil and Architectural Engineering



Xianming Shi,  
Chair



Landolf Rhode-Barbarigos,  
GPD



Esber Andiroglu,  
Construction Management

## Chemical, Environmental, and Materials Engineering



Chang-Yu Wu,  
Chair



Chang-Yu Wu,  
GPD



Prannoy Suraneni,  
Materials Engineering



Samiul Amin,  
Product Design

## Electrical and Computer Engineering



Pratim Biswas,  
Acting Chair



Sakhrat Khizroev,  
GPD



Kamal Premaratne,  
MS Advising

## Industrial and Systems Engineering



Vincent Omachonu,  
Chair



Murat Erkoç,  
GPD

## Mechanical and Aerospace Engineering



Qingda Yang,  
Chair



Emrah Celik,  
GPD



Landolf Rhode-Barbarigos,  
Ocean Eng.



# Department Staff

## Biomedical Engineering



Elena Louit (interim)

## Civil and Architectural Engineering



Ony Dunnam



Marcia Martinez,  
Construction Mgt.

## Chemical, Environmental, and Materials Engineering



Meylin Kovac

## Electrical and Computer Engineering



Sarah Xart (interim)

## Industrial and Systems Engineering



Lizett Bowen

## Mechanical and Aerospace Engineering

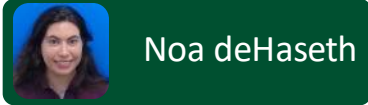


Diana Espinoza

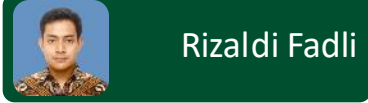


# PhD Peer Mentors

## Biomedical Engineering



Noa deHaseth



Rizaldi Fadli



Jordan Grant



Kayla Minesinger



Leo Teles



Jorge Vega



Zihan Yan

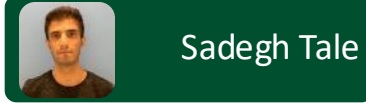
## Civil and Architectural Engineering



Claudia Deveaux Garrido



Drew Rich



Sadegh Tale



Kyrah Williams

## Chemical, Environmental, and Materials Engineering



Marcus Batista



Cristina Fayad Martinez



Shruti Choudhary



Fabrice Kapiamba



Maxwell Tsipoaka

## Electrical and Computer Engineering



Praga Vipulanandan



Hanzhi Yu

## Industrial and Systems Engineering



Michael Caballero



Salih Salihoglu

## Mechanical and Aerospace Engineering



Matthew Maron



Shahar Tsameret



# Who do you contact?

Research Mentor	Graduate Program Director	Office Staff	CoE Graduate Program Coordinator
Suggested coursework	Course registration	Salary*	Submission of official documents
Requested time off	Degree requirements	Health insurance*	Visa renewal
Research questions	TA assignment*	Tuition waivers	Events to be advertised to all graduate students
Conflict with students in lab	Qualifying exam*	Reimbursements	
	Graduate School required documents*		
	Conflict with mentor		
	Concern about professor and/or grade in course		

\* Relevant to PhD students only



# Getting Started

- See the CoE checklist
- Attend departmental orientation (right after this meeting)
- Register for courses (see Graduate Program Director)
- Check-in with your research advisor
- Find your way around campus
- Get your parking pass and/or Metrorail pass
- Attend tomorrow's International Student and Graduate School orientations
- Apply for a social security number and insurance (if employed by Department)
- Talk to fellow students – don't miss our reception right after the departmental orientation!
- Complete the required Responsible Conduct of Research training



# Health Insurance

- All PhD students are eligible for a 100% health insurance subsidy
- You must complete some steps on Canelink prior to October 15<sup>th</sup>
- NOTE: your job assignment must be completed before you will become eligible

## Health Insurance Subsidy

### Eligibility

For the upcoming academic year, the Graduate School in collaboration with the Office of the Provost, will provide a 100% subsidy for the University's student health insurance for graduate students who 1) have an active assignment for Fall 2024 as a Research Assistant (RA), Teaching Assistant (TA), Graduate Assistant (GA), Fellow or Trainee within a University of Miami academic school/college AND 2) who are enrolled in a terminal and eligible degree program on the Coral Gables Campus (this includes Ph.D., D.M.A. and M.F.A. programs only). Both domestic and international students in such programs are eligible for the subsidy. NOTE: The 100% subsidy described herein does not apply to graduate students enrolled in School of Nursing and Health Studies programs, Rosenstiel programs, or Medical School programs each of which may offer their own insurance subsidy. Students enrolled in online programs also are not eligible for this subsidy. Students in graduate programs not eligible to enroll in the University-sponsored student insurance plan are also not eligible for the health insurance subsidy.

### Signing up for the Health Insurance Subsidy

Coral Gables graduate student RA/TA/GAs who meet the eligibility requirements for the 100% subsidy are required to sign up for the subsidy in [CaneLink](#) using the Student tab – Other Important Links section. [Click here](#) for instructions. If the subsidy option does not appear on your [CaneLink](#) screen, please contact your academic department immediately to verify the status of your assignment and/or course enrollment. Once you sign up for the subsidy this is an irrevocable election.

Coral Gables graduate student **Fellows and Trainees** must email Mr. Luis Iturrey, at [lia20@miami.edu](mailto:lia20@miami.edu) as soon as possible, but no later than August 1, 2024, with their request to sign up for the subsidy.



# Responsible Conduct of Research Training

Responsible conduct of research is an important part of the foundation of the research enterprise at the University of Miami. UM has an obligation to maintain and promote a culture of research integrity and train researchers to conduct research responsibly.

All students must complete the mandatory training via Elevate:  
<https://elevate.miami.edu/redeem/rcr>



# WhatsApp Community

- Important announcements and events
- Student Run
- Various groups
  - PhD Departmental Groups
  - Housing
  - Academic events
  - Social events
  - International students
  - Create your own
- Open to all COE Grad Students



## UM COE Grad Students

WhatsApp community



# Important Dates

- August 19<sup>th</sup>: Classes begin
- August 28<sup>th</sup>: Last day to add an additional course
- September 4<sup>th</sup>: Last day to withdraw from a course without a “W” on your transcript
  - 100% of tuition charge refunded
- November 8<sup>th</sup>: Last day to withdraw from a course
  - course will show on transcript with “W”
  - course will not impact GPA
  - no refund of tuition charge

[registrar.miami.edu](https://registrar.miami.edu)



# Sources of Information

- Graduate School website: [www.grad.miami.edu](http://www.grad.miami.edu)
- ISSS website: [www.issm.miami.edu](http://www.issm.miami.edu)
- College of Engineering and departmental websites: [www.miami.edu/coe](http://www.miami.edu/coe)
- Departmental graduate handbook
- University of Miami Bulletin: [www.miami.edu/bulletin](http://www.miami.edu/bulletin)
- Your offer letter (for PhD students)

**Become familiar with your curriculum and your graduation requirements**

*When in doubt, reach out to your departmental graduate program director*





# Questions?



# Departmental Break Out Session

*Reconvene in MEA 202  
for reception at 4:30*

