# **Aerospace Engineering & Engineering Mechanics**

# **Aerospace Engineering & Engineering Mechanics**

Name:	Tan Bui
Title:	Assistant Professor
Email:	tanbui@ices.utexas.edu
Will accept these majors:	ASE
Website:	http://users.ices.utexas.edu/~tanbui/



#### Research areas and interests:

Parallel Computing, Numerical Analysis, Scientific Computing, Reduced- order modelling

#### Minimum or preferred skills you seek in a student:

Well-trained in matlab and mathematics. Love programming to solve mathematical problems.

# List preferred classes the students should have taken:

All undergrad math classes, programming classes, and engineering computation

Description of 'sample' projects for prospective participants.

"See me for details."

# **Aerospace Engineering & Engineering Mechanics**

<u>edu</u>
du/faculty/faculty-directory/huang



#### Research areas and interests:

Mechanics of materials, theoretical and numerical analysis

# Minimum or preferred skills you seek in a student:

Calculus, numerical methods, Matlab

List preferred classes the students should have taken:

EM 319

#### Description of 'sample' projects for prospective participants.

Bucking of thin films, adhesive and frictional interactions of 2D materials, mechanics of soft materials

# Aerospace Engineering & Engineering Mechanics

Name:	Moriba Jah
Title:	Associate Professor
Email:	moriba@utexas.edu
Will accept these majors:	ASE
Website:	http://www.ae.utexas.edu/faculty/faculty-directory/rodin



#### Research areas and interests:

Astrodynamics, Orbit Determination, Spacecraft Navigation, Space Traffic Management, Space Situational Awareness, Space Surveillance and Tracking, Orbital Debris, Space Objecttification

# Minimum or preferred skills you seek in a student:

Matlab, Python, Data Analysis

# List preferred classes the students should have taken:

Physics, Calculus, Classical Mechanics, Differential Equations, Linear Algebra

#### Description of 'sample' projects for prospective participants.

Space Traffic Management, Space Object Characterization and Identification, Multi-Object Tracking, Multi-Source Information Fusion

# **Aerospace Engineering & Engineering Mechanics**

Name:	Gregory Rodin
Title:	Professor
Email:	gjr@ices.utexas.edu
Will accept these majors:	ASE,BME,CE,CHE,ME,PEN/PGE
Website:	http://www.ae.utexas.edu/faculty/faculty-directory/rodin



#### Research areas and interests:

Simulations of solids fluids and structures

Minimum or preferred skills you seek in a student:

Matlab or Mathematica

List preferred classes the students should have taken:

Completed em306 and em319

Description of 'sample' projects for prospective participants.

Simulations of random networks

# **Biomedical Engineering**

# **Biomedical Engineering**

Name:	Thomas Milner
Title:	Professor
Email:	terra.laser@gmail.com
Will accept these majors:	BME,CHE,ECE,ME,PEN/PGE
Website:	ttps://www.bme.utexas.edu/about-us/faculty-directory/milne



### Research areas and interests:

Biomedical Optics for imaging and surgery

Minimum or preferred skills you seek in a student:

programming experience and interest in optics

List preferred classes the students should have taken:

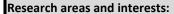
Basic programming, physics

Description of 'sample' projects for prospective participants.

development of an image guided surgical device, build and test instrumentation for pre-clinical and clinical studies

# **Biomedical Engineering**

Name:	Mia K Markey
Title:	Professor
Email:	mia.markey@utexas.edu
Will accept these majors:	ARE, ASE, BME, CE, CHE, ECE, ME, PEN/PGE
Website:	http://www.bme.utexas.edu/about-us/faculty-directory/mar



Develop decision support systems for clinical decision making and scientific discovery.

Minimum or preferred skills you seek in a student:



Programming experience (any language) and enthusiasm to learn new languages/tools	
List preferred classes the students should have taken:	
N/A	
Description of 'sample' projects for prospective participants.	
Computation; signal processing, machine learning, and/or statistical methods, and data collection.	

# **Chemical Engineering**

#### **Chemical Engineering**

Name:	Roger Bonnecaze
Title:	Professor
Email:	rtb@che.utexas.edu
Will accept these majors:	CHE,ME,PEN/PGE
Website:	http://che.utexas.edu/faculty-staff/faculty-directory/bonneca



#### Research areas and interests:

Modeling and simulation of complex fluids and nanomanufacturing processes.

# Minimum or preferred skills you seek in a student:

Basic understanding of MATLAB and Excel.

#### List preferred classes the students should have taken:

Completed M 427J (or K); fluid mechanics or transport (ChE 353 or 319);

# Description of 'sample' projects for prospective participants.

Surface energies for surfactant-driven wettability alteration; Simulation of Marangoni-driven lithography, and dry-transfer of grapheme.

# Civil, Architectural & Environmental Engineering

# Civil, Architectural & Environmental Engineering

Name:	Richard Corsi
Title:	Professor & Department Chair
Email:	corsi@mail.utexas.edu
Will accept these majors:	ARE, CE
Website:	http://www.caee.utexas.edu/faculty/directory/corsi



### Research areas and interests:

Indoor air quality

# Minimum or preferred skills you seek in a student:

Ability to use a spreadsheet for data analysis

### List preferred classes the students should have taken:

CE311k; CE341 or ARE346N would be good, but not required.

# Description of 'sample' projects for prospective participants.

Design/testing of portable air purifiers; Analysis of indoor air quality in campus or K-12 classrooms; ozone reactions with indoor materials.

# Civil, Architectural & Environmental Engineering

Name:	Trevor Hrynynk
Title:	Assistant Professor
Email:	thrynynk@utexas.edu
Will accept these majors:	ARE, CE
Website:	http://www.caee.utexas.edu/faculty/directory/hrynyk



#### Research areas and interests:

Development of innovative and practical techniques for assessing reinforced concrete structures.

# Minimum or preferred skills you seek in a student:

Experience in MS-Word, MS-Powerpoint, and MS-Excel

List preferred classes the students should have taken:

EM 306

Description of 'sample' projects for prospective participants.

Reinforced concrete slab finite element modeling validation studies.

# Civil, Architectural & Environmental Engineering

Maria Juenger
Professor
mjuenger@mail.utexas.edu
ARE, CE
http://www.caee.utexas.edu/faculty/directory/juenger



# Research areas and interests:

Materials science of cement and concrete.

#### Minimum or preferred skills you seek in a student:

Ability to have time to commute to the Pickle campus. Not afraid to get dirty in the lab.

# List preferred classes the students should have taken:

Intro to chemistry and lab. Also useful to have had materials course (but not required).

# Description of 'sample' projects for prospective participants.

Developing new test methods and qualifying new materials for use.

# Civil, Architectural & Environmental Engineering

Name:	Fernanda Leite
Title:	Associate Professor
Email:	fernanda.leite@utexas.edu
Will accept these majors:	ARE,CE
Website:	http://www.caee.utexas.edu/faculty/directory/leite



# Research areas and interests:

Project Management; Building Information Technology; Construction Safety

Minimum or preferred skills you seek in a student:

**Revit Modeling** 

List preferred classes the students should have taken:

ARE320K and ARE 323k

Description of 'sample' projects for prospective participants.

Living BIM- Automating building information model upkeep

# Civil, Architectural & Environmental Engineering

Name:	Lance Manuel
Title:	Professor
Email:	<u>Imanuel@mail.utexas.edu</u>
Will accept these majors:	ARE,ASE,CE,ME
Website:	http://www.caee.utexas.edu/faculty/directory/manuel



# Research areas and interests:

wind energy, wave energy, structural dynamics, uncertainty quantification

Minimum or preferred skills you seek in a student:

Programming; probability and statistics; prefer knowledge of Matlab, Python, R.

List preferred classes the students should have taken:

Applied probability/statistics

Description of 'sample' projects for prospective participants.

Extreme/fatigue loads on wind turbines, wave energy devices

# **Electrical & Computer Engineering**

# **Electrical & Computer Engineering**

Name:	Seth Bank
Title:	Associate Professor
Email:	sbank@ece.utexas.edu
Will accept these majors:	CHE, ECE, ME
Website:	as.edu/people/faculty/seth-bank



#### Research areas and interests:

Semiconductors, nanostructures, lasers, photodetectors, transistors.

# Minimum or preferred skills you seek in a student:

None, project will be consistent with student background.

#### List preferred classes the students should have taken:

Not necessary, but beneficial depending on student standing: Electromagnetics, EE339, EE440.

#### Description of 'sample' projects for prospective participants.

Build a laser testing setup; characterize the optical properties of nanomaterials; fabrication of nanomembranes.

# **Electrical & Computer Engineering**

Name:	Robert Heath
Title:	Cullen Trust Endowed Professor
Email:	rheath@utexas.edu
Will accept these majors:	ASE,CE,ECE
Website:	http://www.ece.utexas.edu/people/faculty/robert-heath



#### Research areas and interests:

Wireless communication, communication and sensing in cars, aerial vehicles, radar

#### Minimum or preferred skills you seek in a student:

Knowledge of LabVIEW or Matlab is useful Good mathematical skills and programming ability is required

# List preferred classes the students should have taken:

EE 313 (or equivalent course on signal processing), EE 35K (or equivalent course on probability)

# Description of 'sample' projects for prospective participants.

CAR-STOP; data collection using communication and radar, and estabilising high performance communication links

# Electrical & Computer Engineering

Name:	Emanuel Tuctuc
Title:	Associate Professor
Email:	etuctuc@mer.utexas.edu
Will accept these majors:	ECE
Website:	http://www.ece.utexas.edu/people/faculty/emanuel-tutuc



#### Research areas and interests:

Nanoelectronics, solid-state devices

Minimum or preferred skills you seek in a student:

Enthusiams, passion, patience

List preferred classes the students should have taken:

Modern Physics

Description of 'sample' projects for prospective participants.

Characterization of novel materials and devices

# **Electrical & Computer Engineering**

Name:	Edward Yu
Title:	Professor
Email:	ety@ece.utexas.edu
Will accept these majors:	CHE, ECE, ME
Website:	http://www.ece.utexas.edu/people/faculty/edward-yu



#### Research areas and interests:

solar energy, solar cells, solar fuel generation, nanoscale imaging techniques

Minimum or preferred skills you seek in a student:

familiarity with LabView and/or Matlab would be very helpful.

List preferred classes the students should have taken:

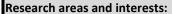
EE 302, EE 306, EE 319K; introductory math and physics courses

Description of 'sample' projects for prospective participants.

Computational modeling, Analysis of large data sets, Design and fabrication of nanostructured, Materials processing.

# **Mechanical Engineering**

# Mechanical Engineering Name: Michael Cullinan Title: Assistant Professor Email: Michael.Cullinan@austin.utexas.edu Will accept these majors: CHE,ECE,ME Website: http://www.me.utexas.edu/faculty/faculty-directory/cullinan



Nanomanufacturing, Precision Machine Design

Minimum or preferred skills you seek in a student:

Solidworks, Labview

List preferred classes the students should have taken:

Machine Elements, Mechatronics

Description of 'sample' projects for prospective participants.

Microscale Additive Manufacturing, Graphene Manufacturing, MEMS Design



# Mechanical Engineering Name: Sheldon Landsberger Title: Professor

s.landsberger@mail.utexas.edu

Will accept these majors: CE, ME, PEN/PGE

Website: <a href="http://www.me.utexas.edu/faculty/faculty-directory/landsbeta">http://www.me.utexas.edu/faculty/faculty-directory/landsbeta</a>

#### Research areas and interests:

Environmental analysis; materials damage using neutrons.

Minimum or preferred skills you seek in a student:

Entering 3rd year student, min. 3.2 GPA in ME, PEN/PGE, CE. Must have 3-4 hour blocks to work.

List preferred classes the students should have taken:

N/A

Email:

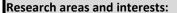
Description of 'sample' projects for prospective participants.

Oil separation from water; trace elements in Lake Austin; material characterization



# **Mechanical Engineering**

Name:	James Sulzer
Title:	Assistant Professor
Email:	james.sulzer@austin.utexas.edu
Will accept these majors:	ARE,ASE,BME,CE,CHE,ECE,ME,PEN/PGE
Website:	http://www.me.utexas.edu/faculty/faculty-directory/sulzer



Rehabilitation Engineering, Biomechanics, Neuroscience, Robotics

#### Minimum or preferred skills you seek in a student:

matlab preferred, depending on project, willingness to conduct experiments and work together with others

#### List preferred classes the students should have taken:

No classes specifically required, but may depend on project.

Description of 'sample' projects for prospective participants.

Recording stroke therapy using inertial measurement units



#### **Mechanical Engineering**

Name:	Eric Taleff
Title:	Professor
Email:	taleff@utexas.edu
Will accept these majors:	ME
Website:	http://www.me.utexas.edu/faculty/faculty-directory/taleff

# Research areas and interests:

Metals and alloys for structural applications.

Minimum or preferred skills you seek in a student:

Basic computer skills.

List preferred classes the students should have taken:

ME 334 and ME 134L lecture and lab courses.

Description of 'sample' projects for prospective participants.

Mechanical testing and microstructural characterization of metals and alloys.



Mechanical Engineering	
Name:	Michael Webber
Title:	Professor
Email:	webber@mail.utexas.edu
Will accept these majors:	ARE, ASE, BME, CE, CHE, ECE, ME, PEN/PGE
Website:	http://www.me.utexas.edu/faculty/faculty-directory/webber

#### Research areas and interests:

Energy Technology and Policy, Energy water nexus, energy food nexus.

Minimum or preferred skills you seek in a student:

Leadership and organizational skills desired, programming with Python and Matlab

List preferred classes the students should have taken:

Thermodynamics, and Energy Technology & Policy

Description of 'sample' projects for prospective participants.

Go to webberenergygroup.com



# **Other Potential Faculty Members**

These professors also participate in working with the TREX program

# **Department of Aerospace Engineering and Engineering Mechanics**

Name	Email
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Dr. Nanshu Lu	nanshulu@utexas.edu
Dr. Wallace Fowler	fowler@csr.utexas.edu
Dr. Srinivas Bettadpur	srinivas@csr.utexas.edu

# **Department of Biomedical Engineering**

Name	Email
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# **Department of Chemical Engineering**

Name	Email
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Dr. Lydia Contreras	lcontrer@che.utexas.edu
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Dr. John Ekerdt	ekerdt@che.utexas.edu
Dr. Delia Milliron	milliron@che.utexas.edu

# **Department of Civil, Architectural and Environmental Engineering**

Name	Email
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Dr. Desmond Lawler	dlawler@mail.utexas.edu
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Dr. Richard Neptune	rneptune@mail.utexas.edu	