



HISTORICALLY BLACK COLLEGES AND UNIVERSITIES

**NASA TECHNOLOGY INFUSION**

**ROAD TOUR**



AND MINORITY-SERVING INSTITUTIONS

# University of California, Riverside

Reynal Guillen, PhD  
FIELDS program manager



Office of  
**Small Business**  
Mentor-Protégé Program

# University of California, Riverside

- Located 60 miles east of downtown Los Angeles
- One of the handful of “R1: Doctoral Universities – Highest Research Activity” and Hispanic Serving Institutions (HSIs) in the country
  - 21,005 students (2012): 18,583 undergrad, 2,422 grad
  - 51.9% female, 48.1% male
  - Student demographics: 38.5% Asian-Am., 34.1% Hispanic, 14.9 White, 7.1% African-Am., 2.3% International, 0.4 Native-Am.
- UCR is the most diverse campus in the prestigious 10 campus UC system and it is the eighth most diverse university in the nation.

# Academic Degrees & Engr. Research

## COLLEGE OF NATURAL AND AGRICULTURAL SCIENCES

### Physical Sciences & Mathematics:

Chemistry	BS, MS, PhD
Earth Sciences	BS, MS, PhD
Mathematics	BS, MS, PhD
Physics & Astronomy	BS, MS, PhD
Statistics	BS, MS, PhD

Life Sciences: Biochemistry	BS, MS, PhD
Biology	BS, MS, PhD
Cell Biology & Neuroscience	BS, MS, PhD

## BOURNE COLLEGE OF ENGINEERING

Bioengineering	BS, MS, PhD
Chemical & Environmental Engineering	BS, MS, PhD
Computer Science	BS, MS, PhD
Computer Engineering	BS, MS
Electrical Engineering	BS, MS, PhD
Mechanical Engineering	BS, MS, PhD
Materials Science and Engineering	BS, MS, PhD
Data Science	MS (online)

Many others

## ENGINEERING Research Area Clusters

### CHEMICAL AND ENVIRONMENTAL ENGINEERING

- Biotechnology
- Advanced Materials and Nanotechnology
- Air and Water Quality Systems Engineering
- Energy Systems
- Theory and Molecular Modeling

### COMPUTER SCIENCE AND ENGINEERING

- Algorithms, Bioinformatics Theory, and Logic
- Architecture, Embedded Systems
- Databases, Data Mining Software
- Systems and Networks
- Vision and Artificial Intelligence

### ELECTRICAL ENGINEERING

- Nano Materials, Circuits and Devices
- Controls and Robotics
- Intelligent Systems
- Communications and Signal Processing

### MECHANICAL ENGINEERING

- Energy Processing
- Nano- and Micro-Devices
- Information & Design Engineering
- Materials Properties & Processing
- Multiphase Flow and Combustion
- Air Quality and Fire Engineering

# Past Performance

- UCR Office of Technology Partnerships
  - Awarded nearly \$140M in contracts and grants in FY2016. \$101M from federal agencies and \$12.3M from industry.
  - 90 SBIR-STTR applications, 17 funded
  - Areas of researched licensing opportunities located at UC Research and Economic Development> Office o Technology Commercialization > Available Technologies web site, <https://research.ucr.edu/OTC.aspx>.
- FIELDS (Fellowships and Internships in Extremely Large Data Sets)
  - Over \$6M in funding
  - NASA MIRO grant, \$4.6M (2015-2020)
    - Partnership programs with JPL
  - UCR matching funds \$2.2M (2015-2020)
  - JPL Center for Academic Programs grant (2017)
  - <http://bigdata.ucr.edu>

# FIELDS

## (Fellowships and Internships in Extremely Large Data Sets)

- High School to Postdoc education paths to JPL in Data Science and Visualization
- Established Masters program in data science. Classes in systems engineering, machine learning, computer vision, statistical computing, data mining, information retrieval and web search, data visualization and big data tools.
- Developing student curriculum in data science and visualization
- Summer internships at JPL
- Year-long engagement with JPL to develop capacities to support data science projects.
- Faculty and postdocs in astronomy, statistics, computer science and engineering, electrical engineering and bioinformatics.

# University Points of Contact

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  - FIELDS program manager