Welcome

College Meeting
May 21, 2013

Reza Abbaschian
Campus and College of Choice

- UCR applications for 2013-14 academic year
  - 42,178 applications: 12.2% increase (UC system – 8.6% increase)
  - 33,809 freshmen: 13.2% increase
  - 8,369 transfers: 8.3% increase
- BCOE applications for 2013-14 academic year
  - 6,794 applications for 650 seats
  - 5,582 freshman: 21.0% increase
  - 1,211 transfers: 25.0% increase
  - More than double the growth of other UCR colleges and schools
  - Graduate applications (rolling) currently 1,942 for 158 seats (17% increase – also a new record)
Engineering and Natural Sciences Ranked Top Ten in World

The annual rankings by Leiden University in the Netherlands ranked UC Riverside's programs in engineering and natural sciences 10th in the world, ahead of institutions such as Princeton, Yale, and Caltech. The Leiden rankings objectively measure scientific impact based on research citations and collaboration worldwide.

U.S. News & World Report ranked BCOE 67th in the nation (38th among public universities)
Distinguished Faculty

- Number of faculty: 89
- Searches underway: 5
- Goal for 2020: 140
- Professional society fellows: 69
- NSF CAREER, BRIGE and other Young Investigator Awards: 42
- Members of NAE: 1
- New faculty 2012-13: 7
Young Investigator Awards 2012-13

Anastasios Mourikis (EE)
National Science Foundation CAREER Award

Masaru Rao (ME)
National Science Foundation CAREER Award

Ian Wheeldon (CEE)
Air Force Office of Scientific Research Young Investigator Award
Faculty Recognition

- Matt Barth (CEE, CE-CERT) – Innovation Honoree, City of Riverside
- Phillip Christopher (CEE) – Young Scientist Award 15th International Congress on Catalysis
- Huinan Liu (BIEN) – Hellman Fellow 2012-13
- Elisa Franco (ME) – Hellman Fellow 2013-14
- Eamonn Keogh (CSE) – Dissertation Mentor Award 2012-13
- Zizhong Chen (CSE) – NSF CAREER Award 2012
- Hideaki Tsutsui (ME) – Gates Foundation Grand Challenges Exploration Prize, 2012
- Hamed Mohsenian-Rad (EE) – NSF CAREER Award 2012
- Wei Ren (EE) – Most cited Systems & Control Letters article published in the last five years, 2012
- Alexander Balandin (EE) – Fellow of IEEE and IOM3
  - Featured on podcast at Applied Physics Letters: http://apl.aip.org/
Faculty Even the Homecoming Series
With 46-44 Win Over Alumni

The faculty prevailed and evened the series at one game apiece at the Second Annual BCOE Homecoming "Hoop It Up" basketball game on Saturday, March 2. In another highly competitive game, it came down to the wire as the faculty won 46-44.

Professors Ozkan and Barth in action against alumni
Thanks to an army of participants, we earned outstanding reviews of our undergraduate programs and anticipate full accreditation in July 2013.
More than 150 educators from the Pacific Southwest Section of the American Society for Engineering Education gathered at the Bourns College of Engineering at UC Riverside April 18-20, to share innovative approaches to recruiting, retaining and educating students in engineering. The theme for the annual conference was “Engineering Education in a Global Context.”
Online Master’s in Engineering Degree Launched

First cohort of students will begin in fall 2013 with a concentration in bioengineering. Additional specializations will be added in fall 2014 in materials at the nanoscale and environmental engineering systems (water).
BCOE Students Earn NSF Fellowship Recognition

Five bioengineering students from BCOE were honored by the National Science Foundation Graduate Research Fellowship Program.

Front row: Thanh Yen Nguyen and Maricela Maldorado
Back row: Tyler Backman (honorable mention) Elbert Mai and Leopold Green
Student Professional Development

- 23 student professional organizations
  - Very active, with 952 members (48% of BCOE students)
Community Outreach Highlights

- 177 professional development events last year
  - 6,145 students participated

- Bourns Engineering Day – 600+ local students on campus

- MESA Days – serves 24 schools in San Bernardino and Riverside Counties

- Wind Turbine Competition for region’s community colleges

- IEEE Boy Scout Merit Badge Days

- Long Night of Arts and Innovation

- Design by Nature Demonstrations at Riverside Metropolitan Museum May 18

Students of Davis Kisailus at the Riverside Metropolitan Museum, 2012
BCOE Students Win Startup Competition

Three BCOE computer science majors and two local community college students who will transfer to BCOE next fall teamed up to win the Riverside Startup Weekend competition for their smartphone application Fetchit. The event was held at the Culver Center in downtown Riverside May 3-5, 2013.

From left, UCR students Daniel Langridge and Chris Manghane, incoming UCR students Darrell and Daniel Peeden, Riverside Mayor Rusty Bailey, Inland Empire Tech Coast Angels President Molly Schmid, and Rajan Kasetty, CEO of Terrafore, Inc.
BCOE Students Earn Awards at NSBE National Convention

A delegation of students from the Bourns College of Engineering earned honors and awards for service and leadership at the national convention of the National Society for Black Engineers (NSBE) in Indianapolis, Ind., March 27-31. Roslyn Womble '13, president of the UCR chapter of NSBE, was named Region 6 Chapter President of the Year and Demetri Wilright '14 was elected NSBE Region 6 chair.
Major Research Initiatives

- Alexander Balandin, Alexander Khitun, Roger Lake, and Jianlin Liu are part of a team that will receive a total of $5 million as part of a $35-million research center called the Center for Function Accelerated nanoMaterial Engineering (FAME).

- A CE-CERT team led by Charles Wyman will receive more than $3 million in DOE funding for biofuels research in collaboration with the Bio Energy Science Center led by Oak Ridge National Laboratory.

- Cengiz Ozkan is participating in the Center for Spintronic Materials, Interfaces, and Novel Architectures (C-SPIN) supported by a five-year, $28-million grant. $3 million is allocated to UCR.
AQMD Sustainable Transportation
“New Grid” Project

• $2-million grant from South Coast Air Quality Management District

• 500-kilowatt photovoltaic solar installation at CE-CERT and Bourns, Inc.

• 1.1-megawatt battery storage facility from Winston Chung

• Electric vehicle charging stations at CE-CERT and in Riverside

• Conversion of trolley from diesel to electric power

• Groundbreaking in spring 2013
College Mourns Passing of Rosemary Bourns

Rosemary Bourns, who co-founded Bourns, Inc. with her husband Marlan and for whom the Bourns College of Engineering is named, passed away September 26, 2012. She was 87 years old.

In 1994, The Marlan and Rosemary Bourns College of Engineering was named in honor of a generous gift from the Bourns family's foundation. In addition, the west engineering building was named Bourns Hall in honor of their support.
The Suresh Kumar Memorial Fund in Electrical Engineering was established to honor the late Ph.D. student Suresh Kumar Ramachandran Nair, who died June 27, 2012. The memorial fund provides opportunities for international graduate students who share his passion for research in intelligent systems.
Research & Graduate Education

BCOE Faculty Meeting
May 21, 2012
Research Activity

Expenditures vs Awards

Fiscal Year

Millions

- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2008-09
- 2009-10
- 2010-11
- 2011-12
Research Activity (3-Yr Averages)
Research Activity – 13AY

PIs with >$500K in Awards

- Alex Balandin (EE, MSE)
- Matt Barth (EE, CE-CERT)
- Laxmi Bhuyan (CSE)
- Zizhong Chen (CSE)
- Javier Garay (ME, MSE)
- Heejung Jung (ME, CE-CERT)
- George Karavalakis (CE-CERT)
- Eamonn Keogh (CSE)
- Srikanth Krishnamurthy (CSE)
- Nosang Myung (CEE, MSE)
- Chinya Ravishankar (CSE, Dean’s Office)
- Charles Wyman (CEE, CE-CERT)
Research Activity – 13AY

PIs with $300K-$500K in Awards

- Tom Durbin (CE-CERT)
- Elisa Franco (ME)
- Yingbo Hua (EE)
- Alex Korotkov (EE)
- Lorenzo Mangolini (ME)
- Wayne Miller (CE-CERT)
- Hamed Mohsenian-Rad (EE)
- Walid Najjar (CSE)
- Masaru Rao (ME)
- Amit Roy Chowdhury (EE)
- Daniel Xu (EE)
Expenditures per Faculty FTE

![Bar chart showing expenditures per faculty FTE from 1995 to 2012.](chart.png)
Graduate Student Enrollment

BCOE Graduate Student Enrollment - Fall

- Total Enrollment
- Incoming Cohort

Fall - Year

Graduate Degrees Awarded

BCOE Graduate Degrees Awarded

- Doctoral
- Master's

Academic Year

BCOE Graduate Degrees Awarded

Total Graduate Students* by Department

![Graph showing Graduate Student Enrollment by Department from 1998 to 2012. The graph includes data for BCOE Graduate Student Enrollment - Fall, with separate lines for CSE, EE, CEE, BIEN, ME, and MSE. The y-axis represents the number of students, ranging from 0 to 180, and the x-axis represents the years from 1998 to 2012.]
Trends in Recruitment

- Admissions
- SIRs
- Applications

Application, Fall - Year
Trends in Recruitment

Admissions/Applications
SIRs/Admissions
Undergraduate Education

C. V. Ravishankar
## Graduating Undergraduate Numbers

<table>
<thead>
<tr>
<th>Major</th>
<th>2012 Graduates</th>
<th>2013 Graduates (estimated)</th>
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<tbody>
<tr>
<td>Bioengineering</td>
<td>43</td>
<td>58</td>
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<tr>
<td>Business Informatics</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Chemical Engineering</td>
<td>29</td>
<td>42</td>
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<tr>
<td>Computer Engineering</td>
<td>22</td>
<td>23</td>
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<tr>
<td>Computer Science</td>
<td>44</td>
<td>35</td>
</tr>
<tr>
<td>Electrical Engineering</td>
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<tr>
<td>Environmental Engineering</td>
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<td>29</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>64</td>
<td>95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>257</strong></td>
<td><strong>329</strong></td>
</tr>
</tbody>
</table>
Number Of Graduates Is Up 28%

- Congratulations to our excellent students
- To our outstanding Academic Advising Staff
  - The Magnificent Seven
THE MAGNIFICENT SEVEN
They fought like seven hundred

LUKE HOEPFNER
ARA BROWN
“BRITT”

TERRI PHONHARATH
“CHICO”

THOMAS MCGRAW
“HARRY LUCK”

NIKKI MEASOR
“LEE”

ALISE CLOUSER
“BERNARDO O’REILLY”

ROD SMITH
“CHRIS ADAMS”
2013 Undergraduate Admissions

- More selective admissions process this year

Campus Academic Index Score (AIS)

Accept if AIS ≥ 4300

Selectively admit to achieve targets. Two-tier process, with wait list.

Reject if AIS < 3900

<table>
<thead>
<tr>
<th>COLLEGE</th>
<th>Avg. AIS</th>
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<tr>
<td>BCOE</td>
<td>4352</td>
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<tr>
<td>CNAS</td>
<td>4232</td>
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<tr>
<td>CHASS</td>
<td>4061</td>
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<tr>
<td>UCR</td>
<td>4158</td>
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## Continuing and Incoming Numbers

<table>
<thead>
<tr>
<th>MAJOR</th>
<th>CONTINUING IN F’13</th>
<th>INCOMING FRESHMEN</th>
<th>INCOMING TRANSFERS</th>
<th>TOTAL IN FALL’13</th>
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<tbody>
<tr>
<td>Bioengineering</td>
<td>263</td>
<td>66</td>
<td>17</td>
<td>349</td>
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<tr>
<td>Business Informatics</td>
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<td>15</td>
<td></td>
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<tr>
<td>Chemical Engineering</td>
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<td>60</td>
<td>28</td>
<td>264</td>
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<tr>
<td>Computer Engineering</td>
<td>163</td>
<td>73</td>
<td>8</td>
<td>242</td>
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<tr>
<td>Computer Science</td>
<td>238</td>
<td>73</td>
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<td>Electrical Engineering</td>
<td>216</td>
<td>85</td>
<td>16</td>
<td>310</td>
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<td>Engineering Prep</td>
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<td></td>
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<td>Engineering Undeclared</td>
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<tr>
<td>Env. Engineering</td>
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<td>61</td>
<td>6</td>
<td>193</td>
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<td>MSE</td>
<td>35</td>
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<tr>
<td>Mechanical Engineering</td>
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<td>101</td>
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<td>545</td>
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<tr>
<td>Pre-Engineering</td>
<td>28</td>
<td>0</td>
<td></td>
<td>8</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1696</strong></td>
<td><strong>552</strong></td>
<td><strong>120</strong></td>
<td><strong>2368</strong></td>
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</table>
Fall 2013 Enrollments by Department

- BIEN: 349
- CEE: 458
- CSE: 485
- EE: 431
- MSE: 64
- ME: 545
Historical BCoE Freshman Numbers

Incoming Freshmen

<table>
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<tr>
<th>Year</th>
<th>Number</th>
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<td>2006</td>
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<td>2007</td>
<td>401</td>
</tr>
<tr>
<td>2008</td>
<td>566</td>
</tr>
<tr>
<td>2009</td>
<td>577</td>
</tr>
<tr>
<td>2010</td>
<td>842</td>
</tr>
<tr>
<td>2011</td>
<td>590</td>
</tr>
<tr>
<td>2012</td>
<td>603</td>
</tr>
<tr>
<td>2013</td>
<td>552</td>
</tr>
</tbody>
</table>
Support Grants & Scholarships

- NSF S-STEM
  - Scholarships for improving STEM retention
  - $120K/year for 5 years

- Hispanic Serving Institution (HSI) award
  - $4M over 5 years
    - UG success, recruitment & outreach
    - UG research stipends

- Other endowed scholarships (donations)
$210,922 Awarded in Scholarships

<table>
<thead>
<tr>
<th>NAME</th>
<th>AWARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neri Lemus</td>
<td>$10,000</td>
</tr>
<tr>
<td>Adam Block</td>
<td>$10,000</td>
</tr>
<tr>
<td>Tom Tran</td>
<td>$10,000</td>
</tr>
<tr>
<td>Tim Kwok</td>
<td>$10,000</td>
</tr>
<tr>
<td>Rex Lu</td>
<td>$10,000</td>
</tr>
<tr>
<td>Richard Copca</td>
<td>$10,000</td>
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<tr>
<td>Crown Chen</td>
<td>$10,000</td>
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<tr>
<td>Jonathan Wong</td>
<td>$9,810</td>
</tr>
<tr>
<td>Edward Huang</td>
<td>$9,761</td>
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<tr>
<td>Al Flores</td>
<td>$9,720</td>
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<tr>
<td>Tyler Winn</td>
<td>$9,662</td>
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<tr>
<td>Jason Ramirez</td>
<td>$9,570</td>
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<tr>
<td>Sojin Ahn</td>
<td>$9,472</td>
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<td>Zachary Sells</td>
<td>$9,295</td>
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<tr>
<td>Skye Johnson</td>
<td>$8,769</td>
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<td>Jahangir Ashraf</td>
<td>$8,195</td>
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<td>Shalin Patel</td>
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<td>Kimberly Huynh</td>
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<td>Dingli Qin</td>
<td>$7,380</td>
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<td>Andrew Hollist</td>
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<td>Natalie Berner</td>
<td>$7,071</td>
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<tr>
<td>Andrew Bernabe</td>
<td>$6,836</td>
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</table>

**NSF S-STEM Scholarships** ($198,949 awarded)

**Endowed Scholarships** ($11,973 awarded)

<table>
<thead>
<tr>
<th></th>
<th>Hamza Atcha</th>
<th>Luis Lopez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilderback</td>
<td>$1,478</td>
<td>$1,478</td>
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<tr>
<td>Bourns &amp; Various Donors</td>
<td>Adam Block</td>
<td>$1,850</td>
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<td>Julianne Rolf</td>
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<td>Albert Chen</td>
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</tr>
<tr>
<td>Gartzke</td>
<td>Andrew Hollist</td>
<td>$1,961</td>
</tr>
</tbody>
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Professional Development Activities

- A total of 23 Student Professional Organizations
  - Very active, with 984 members
    - 48.5% of BCoE students!
- 246 Professional Development events in ‘12-’13
  - Attendance to date is 7839 (3 × enrollment)
- 6436 Outreach hours
  - High School, Community College, etc.
- Congratulations to our students
  - To Jun Wang, Marc Donnhauser, Rosie Zhang
  - The Three Musketeers
Whatever happened to those muskets we were to get? All we’ve been doing is building Wind Turbines!
Undergraduate Research

- 486 UG researchers
  - 23.94% of BCoE Spring’13 enrollment
  - 86 funded by college-level HSI grant
  - 46 funded under other research-oriented programs
    - MYBEST: 5, UCLEADS: 5, MSRIP: 3, CAMP: 15, NSF Career: 6, IRES-CHINA: 7, CaSGC: 5
  - 354 using other funds, course credit, or volunteering
- 72 Faculty research mentors (80% of college!)
- Outstanding job by our faculty!
Commencement 2013

- Monday, June 17, 2013
- 6 p.m.
- Pierce Lawn
- William R. “Bill” Johnson will be named Fellow of the Bourns College of Engineering
- Reception after the ceremony:
  Winston Chung Hall
  2nd floor patio and room 205/206
  Reception will attract ~1,200 guests

Photos from reception, Commencement 2012
UCR’s Newest Building

Engineering Building Unit 3 (EBU3)
Exploring Public-Private Partnerships
BCOE Students Score Two Wins at Environmental Design Competition

The team of BCOE students recently won two first-place awards at the WERC: A Consortium for Environmental Education and Technology Development competition in Las Cruces, N.M. They developed a device that replaces a lawnmower's muffler and reduces carbon monoxide by 87 percent, nitrogen oxides by 67 percent, and particulate matter by 44 percent.

Press Enterprise story
YouTube video

Team NOx-Out, from left: Kawai Tam, their advisor, and students Rosalva Chavez, Holly Clarke, Jonya Blahut, Risa Guysi and Joshua Callihan.
Thank you