RICE Engineering: The Vision

• **World-class research**
  – Address 21\textsuperscript{st} century challenges in engineering for the benefit of society

• **Unsurpassed education**
  – Innovate in education, both on-campus, on-line, off-campus

• **Global impact**
  – Amplify our impact through internal and external collaborations in research and education
Engineering at Rice: Boundary Conditions Matter

- Training professional engineering leaders
- Right topics, right equipment, right processes, right plan
- Mental attitude/culture of the place/set the right environment
- Be prepared to work hard, to work in teams, to lead
- Students are clients: need to advise them so they can excel
- Invest in research, smart people, smart ideas, be first, be competitive, punch above your weight class
- Add VALUE to Rice experience
Rice Engineering
## School of Engineering

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenured &amp; Tenure Track Faculty</td>
<td>117</td>
</tr>
<tr>
<td>Undergraduate Students</td>
<td>1364</td>
</tr>
<tr>
<td>Graduate Students (Phd + PMEng)</td>
<td>867</td>
</tr>
<tr>
<td>Postdoctoral Researchers</td>
<td>93</td>
</tr>
<tr>
<td>Research Expenditures (FY 2014)</td>
<td>$54M</td>
</tr>
</tbody>
</table>
UG Engineering Admissions: 2006 - 2014

- **Applicants**
- **Admits**
- **Matriculants**

2014 Rice Global E&C Forum XVII
How are we doing?

**Leiden World’s Top Universities (2013)**
- No. 1 in natural sciences and engineering
- No. 6 for all sciences

- Rice is among top 20 national universities since 1988
- No. 19 in 2015 ranking, down from No. 17 tie in 2013, No. 18 tie in 2014
- George R. Brown School of Engineering is tied for 18 (UCLA, Duke, Penn State)
- Bioengineering is 5 (ahead of Stanford) [2014 ranking was 8]
- Electrical and Computer Engineering is 17 [2014 ranking was >20]

**Max Planck Society in Germany (2013)**
- No. 1 for material sciences and chemistry
- No. 2 for engineering
- No. 4 physics and astronomy
- No. 8 in computer science
### Rice Engineering: Traditional & Computational Fields

<table>
<thead>
<tr>
<th>Traditional Departments</th>
<th>Computational Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioengineering</td>
<td>Computational &amp; Applied Mathematics</td>
</tr>
<tr>
<td>Chemical &amp; Biomolecular</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Civil &amp; Environmental</td>
<td>Statistics</td>
</tr>
<tr>
<td>Materials Science &amp; NanoEngineering</td>
<td>Electrical &amp; Computer Engineering</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td></td>
</tr>
</tbody>
</table>

**2014 Rice Global E&C Forum XVII**
Professional Masters Students in Engineering

AY09/10  AY10/11  AY11/12  AY12/13  AY13/14

STAT  MEMS  ECE  CSE  CS  ChBE  CEE  CAAM  BIOE

2014 Rice Global E&C Forum XVII
FEEDBACK FROM INDUSTRY LEADERS:

=> Rice: Big, Big Brains…smart, energetic…BUT …

Success not so much determined by technical abilities as what you do with them

Effectiveness depends on character, motivation, determination, communication, teamwork, strategizing, taking responsibility, commitment to: “get it done no matter what”
Just Finished:  
**OEDK II: “The Kitchen Sink”**

- $1.8 million, ~6,000 square feet addition  
  Increased project tables from 34 to 60  
  Status: **COMPLETELY FULL**

**ENGI 120: Intro to Engineering Design**

- 2X expansion # freshmen enrolled: 160/year  
- Class of 2014 first class that had design as freshmen  
- => Awesome improvements in their capstone projects!

**NEXT: OEDK III:**

Garage Space for **BIG** Projects!

---

2014 Rice Global E&C Forum XVII
What is ENGI 120?

ENGI 120 is Introduction to Engineering Design

• Began spring 2011
• One semester course
  – Fall & spring
• Just first year students
• Target all ENG majors
• ~50% ENG students

ELECT to take this course!

project sketches by Allison Garza
What Do Students Do?

- Work on AUTHENTIC, CLIENT-BASED projects.
- Learn and execute the engineering design to solve ONE problem.
- Work in MULTIDISCIPLINARY teams.
- COMMUNICATE constantly.
Who are Clients in ENGI 120?

40+ Different Clients

• GE
• Shell Oil Company
• Houston Zoo
• Shriners Hospital
• Cameron
• Rice Facilities Engineering & Planning
• Beyond Traditional Borders
• NASA
• Schlumberger
The Three Ships: Leadership, Entrepreneurship, Internship

Helps us attract the best students and faculty and produce superior graduates
Rice Center for Engineering L-Ship:

Executive Director: Kaz Karwowski

- 150 freshman and 50 upper class mentors - Saturday Sept 6 practicing leadership skills at the Engineering Liftoff
- About 200 undergraduates attended Internship (I-ship) workshop
- Capacity number of students signed up for new Leadership Certificate program
- 4-year curriculum including weekly Leadership Labs, Leading Teams and Innovation course, Internships
- Highly successful COMPLETE Conference March 21/22, 2014 14 Schools; NAE President; Chairman Rice BOT, NASA-JSC, Boeing…
2014 RICE GLOBAL E&C ANNUAL FORUM
The Impact of the North American Energy Boom on the Global E&C Industry

CROSSFIRE: Competing Views of the Future

MODERATORS:
• Jerry Kavalieratos: Alvarez & Marsal Business Consulting
• Dick Westney: Westney Consulting Group, Inc.

PANELISTS:
• Chuck McConnell: Leader - Rice University Energy & Environment Initiative
• Greg Sills: Chief Development Officer and EVP – Cobalt Energy
• Bob Tippee: Editor, Oil & Gas Journal
• Curt Watson: President, Process Plants & Industrial, Wood Group Mustang

2:15pm Today
2014 Rice Global E&C Forum XVII
Questions?

Internships!
elt@rice.edu

Thank you!