Forging
UMKC’s Partnership With
Kansas City’s Engineering
Community

Dr. Jerry Richardson, Ph.D., PE
Associate Professor Civil Engineering
History of Engineering at UMKC

- Pre- 2001 CEP accredited at UMC
- 2001 Formation of School of Computing and Engineering UMKC
- Key Relationships to Engineering Community are Integral to Survival and Underpin our Program
From Obscurity to Success

- Engineering Industry is **Key** Constituency
  - More than advisory committees
  - Industry partnerships are viewed as essential
  - Guided by a Win-Win philosophy

- Examples
  - Adjunct Faculty
  - Capstone Design courses
  - Freshman Engineering ME 111
Adjunct Philosophy SCE

- Adjuncts are Members of Our Faculty
- Strategically Hired (*Not Hired to “Plug Holes”*)
- Adjuncts Provide Valuable Expertise
- Adjuncts Used as Co-instructors for Mission Critical Classes
- Adjunct Teams Support Individual Faculty
- Link SCE to the Engineering Community

UMKC
School of Computing & Engineering
Benefits To SCE of Adjunct-SCE Partnerships

- University Has Larger “Footprint”
- Teach More Students, More Topics With Less Overhead
- Recruit New Students and Return Former Students to Graduate Program
- Raze the Ivory Tower
- Ground the Faculty in “Real World”
Benefits To Industry of Adjunct-SCE

- Practitioners Opportunity to “Give Back”
- Stay Current (Life –long learning)
- Recruit and Employ New Interns
- Raise the Ivory Tower
- Build and Develop New Skill Sets
- Collaborate on Consulting and Research Projects
Capstone Class CE 411 & 412

- Managed By Dr. Deb O’Bannon
- Adjuncts Serve as Technical Mentors
  - Tom Kimes and Erich Schmitz
- Students work as design team for real world projects in collaboration with industry partners
  - City of Kansas City
  - Mo DOT (pending)
Students Acting as Pro Bono Design Engineers

Deb O’Bannon, Ph.D., P.E.
Tom Kimes, P.E.
Erich Schmitz, EI
<table>
<thead>
<tr>
<th>Project characteristics</th>
<th>Design</th>
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<tbody>
<tr>
<td>• Load-posted bridge</td>
<td>• Increased hydraulic capacity</td>
</tr>
<tr>
<td>• Guardrails</td>
<td>• Widened roadway (clear zone) to eliminate guardrails</td>
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<tr>
<td>• Flooding</td>
<td>• 404 permit application</td>
</tr>
<tr>
<td>Secondary road - rural setting</td>
<td>• Easement requests</td>
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Presentations to Public Works

- Location – Kansas City, MO City Hall
- Audience – senior engineering project managers
- Location study results with design alternatives
- Students prepared PowerPoint slides and board exhibits
Design presentation at City Hall
KCMO Public Works project managers at student presentation
ME 111 Essential Engineering

- Significantly revised 2 years ago
- Introduce students to profession and faculty
- Retention
- Professionalism & Ethics
- Teamwork and Communication skills
- Originally team taught by Dr’s O’Bannon and Richardson
- SP 2009 Faculty Industry Team
Outcomes

- No boundaries between Students Industry and faculty
- Students learn and graduate as young professionals with engineering experience
- Significant improvements in retention
- High percentage of students working in Engineering Industry
- Student population growth 15 to 20 %
- ACT Scores increasing
Advice for Industry Partners

- SCE is structurally and culturally different than “typical” engineering programs.
  - Urban, commuter school
  - Students already working in engineering related jobs
- School “appears bigger” than it really is
- This presents some unique challenges
Advice, Continued

- Help us build a unique program
  - That serves the metro area
  - That is demographically similar to the metro area
  - That is Kansas City’s Engineering School

- However
  - Be patient, flexible, adaptable, persistent
Looking Into the Crystal Ball

- We are building a seamless, symbiotic, mutually beneficial engineering program that serves our student, industry, and the community.
- The vision is dynamic and evolving rapidly
How Can Your Organization Partner with SCE?