**Applied Industry Research for Process Engineers/Chemical Engineers**

The Chemical and Biological Engineering department provides opportunities for student teams to investigate topics of special interest in collaboration with faculty and industry, while earning credits\*. A final written report and/or presentation is the key deliverable.

**Industry focus**

* Student teams can investigate an engineering problem, redesign an existing product or process or explore a new technology. Examples include:
	+ Process technology to influence productivity, new capability, and quality
	+ Planning and executing work that will lead to predictable scale-up of processes from bench-top to manufacturing scale, and down-scaling existing processes to understand and improve current operations.
	+ Baseline material and energy unit operation assessment
	+ Troubleshooting
	+ Understanding raw material impact on processing
	+ Technology landscapes:  Characterizing activity, developments and trends in specific areas of science and technology and to derive new platforms for innovation
	+ Technology options: Identifying and evaluating technology solutions to overcome key technical obstacles for product & process innovation

**Intellectual Property**

* Clear and simplified NDAs and IP rights assignment
* Recognition of inventor(s)

**Student Capability (see link below)**

<http://catalog.iastate.edu/collegeofengineering/chemicalengineering/#fouryearplantext>

**Research Capability**

**Process Technology Lab (info. available upon request)**

**World Class Library resources** <http://www.lib.iastate.edu/>

**Material property characterization resources (**SEM, TGA, DMA, DSC, particle size, rheology and much more) via Material Science and Engr., CBE and Chemistry departments.

**Pilot Facilities (fees apply and subject to availability)**

**Food Science Pilot Plant** <https://www.ccur.iastate.edu/equipment>

**Biocentury Farm** <http://www.biocenturyresearchfarm.iastate.edu/facilities.html>

Professional Industry Mentor

* Kaiser ISU CBE profile  <https://www.cbe.iastate.edu/the-department/facultystaff/profile/jkaiser>. Linkedin <https://www.linkedin.com/in/john-kaiser-b7b33721/> and resume upon request.

**Companies Role:**

* Problem statement and allocation of staff time for student engagement
* Aligned deliverables with timing created by students, mentor and sponsor
* Upfront $1.5k project fee. Additional costs as agreed with sponsor.

\*Election of course and topic must be approved in advance by Department with completion of Study Proposal. Course credits from 1 to 6 credits = 3 hr/wk/credit.