

## Introduction to Chemical Engineering, the Student Side

AICHE: American Institute of Chemical Engineers

- Great for: Networking! Annual Regional and National Conferences where papers are presented, Chem Cars are raced, and recruiting takes place.
- Scholarships available for sophomore, junior, and senior members
- Free Student Registration @ <http://www.aiche.org/JoinNow/> Be sure to sign up as a student to avoid fees (Paper registration forms will be available in the Main Lab area 3<sup>rd</sup> floor BEL shortly)

TAPPI: Technical Association of the Pulp and Paper Industry

- Another source for networking, especially if you are interested in the Pulp and Paper industry

AICHE/TAPPI Officers:

President: Jeff Miller

President: Josh Hunt

Vice President: James Russell

Vice President: Brian Barenberg

Secretary: Dusty Berggren

Secretary: Kyle Hansen

Treasurer: Arthur Richardson

Treasurer: Trevor Palaniuk

What We Do As A Student Chapter:

- Website: <http://stuorgs.uidaho.edu/~aiche/> Keeps you up-to-date on the departmental activities (To be Revamped soon!)
- Meetings: Generally held about once a month to update the student chapter on upcoming activities, t-shirt design and sales, and get input on things that could be improved around the BEL. Comes with free food (usually pizza). **FIRST MEETING: Thursday, September 6, 2007 @ 6:00 pm**
- Fall/Spring Picnic: A time to get together with students from all years and professors, play some games (anyone for Ultimate or Volleyball?), and eat some food. **FALL PICNIC: Saturday, Sep 15, 2007 @ noon**
- We're working on getting some **intramurals** together. Details at the meeting and on the website soon
- **Student Store:** Cheap food conveniently located on the 3<sup>rd</sup> floor of BEL in the AIChE office. Suggestions welcome on the door. All profit goes directly back to the students (Pizza, computer paper, activity fees)
- **Field Trips:** A few options include Bluewater, Potlatch, Couer D'Alene Winery... all depends on student interests and availability
- Recruit: **Officer elections** will be held in November, so start thinking about running for an office. We give tours for Women in Engineering Day and Vandal Friday, and those who stick around here in the summer help out with JEMS. Outside the department, we occasionally do chemistry demos for grade-schoolers.
- **Have fun!** The student study lab (**Main area of 3<sup>rd</sup> floor BEL**) is available for working on homework, conveniently located near professor offices and in the midst of several juniors and seniors who can point you in the right direction. We're a friendly bunch and, while we work hard, we like to make it fun too. Also, lockers will be available at the first meeting, \$3/semester, \$5/year (priority given to people who work here frequently and live off campus)

Overview of the Chemical Engineering Program

- Sophomore Year: Getting your feet wet
  - Material and Energy Balances: in - out + generation = accumulation Chemical "bank accounts"
  - Start looking for summer internships!
- Junior Year: The theory behind it all
  - ChE Thermo: How molecules interact with each other and their surroundings, and how measure/calculate these interactions
  - Separations: How do we separate two chemical species once they've been mixed?

- Transport I & II: Momentum, Heat, and Mass Transfer
- Kinetics: How do we model and optimize reactor design?
- Summer Internships highly recommended!
- Senior Year: Application
  - Control: How do we make the changes we want to make in a process without messing everything up?
  - Design: 1<sup>st</sup> semester talks about economics and the design process, second semester you pick a project and design something
  - Senior Lab: Takes the unit operation theory taught junior year and applies it to an actual unit
  - Seminar: Preparation for interviews and networking opportunities
  - Get a job or sign up for Grad School!

#### Departmental Projects

- Chem-E-Car
  - **FRESHMEN CAN JOIN**- Talk to Josh Hunt to get involved (Jeff, James, or Dusty can point you in the right direction and tell you a little more about the project too)
  - Constructs a shoebox sized car powered and controlled solely by a chemical reaction. Must travel the given distance carrying the specified weight. Whoever gets closest to the line in 2 minutes wins.
  - UI team has won the regional competition four years in a row with variations on a hydrogen fuel cell car. Regional conference locations: U Washington, Oregon State University, U Idaho, Montana State... At nationals, have placed in the top 10 (except for the year a valve broke in shipping). National conferences locations: Houston, Cincinnati, San Francisco, Salt Lake City...
  - **Getting involved with departmental projects early gets your name out there- professors get to know your work early on and will come to you with internship, scholarship, and job opportunities. VERY beneficial (plus it gives you something "hands-on" to do)**
- Senior Design Projects
  - For seniors (and select Juniors) as part of their final class work. You pick a project or generate your own (as long as it is approved), design a solution, and write a report. Oral presentations may be given at Engineering Expo &/or an AIChE Conference
  - WERC: Each year, New Mexico State University hosts a week-long international environmental design competition on its Las Cruces campus. This competition consists of several entries in 8 tasks generated by industry. As a team, our goal is to pick a task, come up with an innovative solution, and present it in a report, a power-point presentation, and a 2-day booth presentation at the competition. 1<sup>st</sup> prize is around \$2500 and it goes straight into the students pockets, plus it is a great way to get design and presentation experience!
- Engineering Expo
  - All senior design project groups give an oral presentation at Expo, and a booth if they so choose. Other project groups may also present at Expo. Judges from the area come out to see the projects and presentations, rate them, and decide who gets the prize in each category. Several engineering disciplines participate and it is a fun way to see the creativity present in our College.
- Research Labs
  - Frequent summer and school year positions available- talk with the professors if you are interested in getting involved!
  - Dr. Aston: Microfluidics and nanosprings <http://www.webpages.uidaho.edu/~aston/>
  - Dr. Thomas: Separations using oscillatory flow <http://www.uidaho.edu/che/Thomas1.html>
  - Dr. Admassu: Membrane applications
  - Dr. Edwards: Pulp and Paper Industries
  - Dr. Drown: Consultant- Energy savings