Making Technology Work: Students, Industry, Research

FALL 2012
The Industrial Technology Area has a brand new LinkedIn group! Use this QR code to find and join us.
Welcome to the second edition of the IndTec Newsletter. As I reflect on the 2011-2012 year, numerous events come to mind. I have highlighted many of these events in this newsletter to demonstrate achievements and contributions. Perhaps the most encouraging one is the success of a large majority of our graduating seniors who obtained at least one job offer before graduation. These are high paying technical positions at prominent companies such as Apple, Amazon and Siemens.

As well, the new academic year is showing increased enrollment after many years of slowed growth. We now have 184 full time Industrial Technology (IndTec) students compared to 159 a year ago, a near 16% increase. Coupled with about 70 full time equivalent students from other majors who are taking IndTec classes, we are now serving more than 250 students.

With the retirement of one of our faculty members this past year, we are working to fill the vacant position in response to our current teaching load and student enrollment.

As another indicator of our commitment to student success, we are focusing on increasing early student engagement. This joint effort by our faculty and students will facilitate the connection between our seasoned seniors and newly admitted freshmen and transfers. Along with in-class orientations in introductory IndTec courses, this effort should enhance the success of our new students in their college experience.

As always, we look forward to hearing from you as an alum or friend of Cal Poly’s Industrial Technology program.

Manocher Djassemi  Area Chair
djassemi@calpoly.edu
The Industrial Technology curriculum is designed to prepare students for technical management or entrepreneurial leadership in key industry disciplines such as supply chain/manufacturing operations and packaging technology. Currently our curriculum is transitioning into two clear tracks: Operation Technology (OT) and Packaging Technology (PT). The new curriculum has been approved by our college’s Undergraduate Programs committee and is under review by the university’s curriculum committee. As the diagram shows, our area offers a degree program in Industrial Technology and two business concentrations: Entrepreneurship and a newly proposed Consumer Packaging Solutions. This year brings many transitions as we prepare to implement a revised curriculum in fall 2013.

New Consumer Packaging Solutions Concentration
After an intensive end-of-year effort by the IndTec and Marketing faculty, a unique specialization concentration for undergrad business students was drafted. This is a new interdisciplinary business concentration titled “Consumer Packaging Solutions” that provides prospective business students with a holistic specialization based around the Packaging Science discipline. After final approval, new students will be accepted for fall 2013.

Graduate Program Reinstated
At the request of our faculty last spring, Dean Dave Christy reinstated the Master’s program in Business and Technology after a four-year suspension. The program will accept a limited number of students beginning fall 2013 based on the research needs of participating faculty who oversee student coursework voluntarily.
World Packaging Conference at Cal Poly

The 18th IAPRI World Packaging Conference, a collaboration between the International Association of Packaging Research Institutes (IAPRI) and the Packaging Program at Cal Poly, has been declared a huge success. Held June 17 – 21 on Cal Poly’s beautiful campus, the event was attended by 170 delegates from a record 24 countries.

There were 93 presentations for the oral and poster categories by some of the leading national and international packaging researchers from industry and academia on 11 topic areas ranging from packaging for food and agriculture to packaging for hazardous and dangerous goods. The Packaging Program at Cal Poly has developed an international reputation as a significant source of packaging research and education.

Poly Pack’s Design Village Competition Entry

Congratulations to the Poly Pack’s Design Village team on their dedication and hard work in creating a structure out of packaging materials for the 2012 Design Village Architectural Competition. The hands-on practical approach and teamwork that is taught in our Industrial Technology curriculum paid off. We are proud of our students who competed against 51 architectural schools to win the People’s Choice Award.

China Supply Chain Experience

In March 2012 IndTec student Thane Atkinson traveled to China as part of the BUS 304 Global Supply Chain course. Among the many things that Thane learned were several “best business practices” Westerners can adopt from Chinese business people.
Senior Project Highlights

Last year, our IndTec students completed more than 20 senior projects. The following two are fine examples of student innovation:

**A Self-Sustaining Drinking System**  
*Grant Lenk*

This project involved the design, fabrication and testing of a safe and sustainable drinking water system. It is powered by utilizing the latest in photovoltaic and battery technology, and it operates on the principle of extracting water vapor from ambient air. What makes this system unique is the fact that it is the only system available that combines all of these simple technologies into one compact unit.

**Alternatives to Wax Coated Corrugated Fiberboard in Pharmaceutical Cold Chain Distribution**  
*Tom Dowell - Robert Hoffer - Philip Salibi*

This group of IndTec students worked on a project sponsored by Promega Corporation, a pharmaceutical company based in Madison, WI. The company’s need entailed developing functional alternatives to wax coated packaging materials to facilitate a lower carbon footprint through recyclability and reducing waste sent to landfills. Three new materials were found and tested for compression strength. The group developed a rough cut prototype to provide a feasible solution.

**ENTREPRENEURSHIP NEWS**

**A long, hot summer:** The HotHouse is the Cal Poly Center for Innovation & Entrepreneurship’s capstone program that lends a hand to student entrepreneurs with business ideas by providing them with an innovation incubator. This summer, out of 24 applicants, seven student-founded teams were selected to complete the 12-week program. Teams learned nearly every aspect of entrepreneurship through more than 30 informational sessions taught by subject experts and successful entrepreneurs. Feedback from participants was overwhelmingly positive. As the companies move forward, we anticipate five product launches, six companies incorporated, three prototypes developed, and angel investment in at least one company.

**Innovation Sandbox:** This year, in cooperation with the College of Engineering, our Entrepreneurship concentration will be starting the Innovation Sandbox program. The goal is to inspire innovation among students across all colleges throughout their Cal Poly experience and as a foundation for their career.
Safety Practices Continue in IndTec Labs

This summer, our lab coordinator, Ray Kisch received “Train the Trainer” certification for operating our lift truck. To comply with safety regulations, only an individual who has a current certification to operate a lift truck is allowed to operate the lift truck. Safety signs for pedestrians around the labs are posted.

IndTec Provides Process Improvement Service

Last year a Kaizen (process improvement) event lead by Professor Eric Olsen was applied to the hiring process of temporary faculty at Cal Poly. According to the Academic Personnel office, the new process has received 100% positive response and has been implemented for fall 2012 appointments. Effective process improvement and collaboration by people who execute the projects are skills that we value in Industrial Technology. Professor Olsen is working on building IndTec capability in this area by putting together a suite of classes that will support a Cal Poly Lean Six Sigma Green and Black Belt certification program for our students.

Hot Jobs for IndTec Students

Here are samples of jobs taken by recent Industrial Technology graduates:

**Samantha Grosz**  
Sale Engineer, Siemens Industry

**Paul Marchetti**  
Packaging Engineer, Amazon Kindle

**Kevin DeArmond**  
Integration Consultant, Deloitte

**Aaron Osgood**  
Sale Engineer, Rockwell Automation

**Daniel Doud**  
Manufacturing Engineer, Parker Hannifin

**Solomon Reda**  
Project Manager for Global Supply Chain Systems, Apple

Based on June 2012 data from graduating IndTec seniors who reported to us:
- 70% secured a job before graduation
- 15% entered the graduate program
- 15% secured a job within 3 months

The average salary of our graduating seniors was **$68,000**
Student Highlights

Two student clubs, ITS and PolyPack recently held officer elections. The following officers were selected for the 2012-2013 year:

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<tr>
<th>Club</th>
<th>President</th>
<th>Vice President</th>
<th>Secretary</th>
<th>Treasurer</th>
<th>Operations / Web</th>
<th>Events</th>
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<tr>
<td>ITS</td>
<td>Erik Peterson</td>
<td>Thane Atkinson</td>
<td>Heather Wilson</td>
<td>Scott Santore</td>
<td>Callum Rowland</td>
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<td>PolyPack</td>
<td>Lorraine Tang</td>
<td>Katie Worland</td>
<td>Sarah Marchetti</td>
<td>Nick Bonich</td>
<td>Derek Pincus &amp; Ali Torati</td>
<td>Lauren Church</td>
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IndTec Students Visit WESTEC Expo

In March 2012, members of ITS club, faculty and staff visited WESTEC industrial expo in Los Angeles. The exposition brings visitors the very latest technologies including cutting tools; multi-tasking machine tools; and emerging technology applications for micro, nano, and additive manufacturing.

Industrial Technology Major Among Six Cal Poly ‘Great Grads’

Of the more than 3,800 students eligible to graduate at Cal Poly’s spring 2012 commencement ceremonies, six were singled out for their hard work, diligence and dedication. Our Industrial Technology major Paul Marchetti was among them.

New Graduate Assistants

Tyler Blumer received his B.S. degree in Industrial Technology in 2011 and is now part of the MS-BT program. His experiences in the Industrial Technology program helped him win numerous awards, scholarships and publications. Most notably, Tyler won the Italian Packaging and Technology award and spent two weeks in Italy’s finest manufacturing facilities, which provided an international perspective on the industry. With internships at Ernie Ball, Westpak, and Festo, Tyler developed a wide range of industry skills and experience in live audio engineering, packaging testing, metal working and industrial automation. He is a teaching assistance for Manufacturing Processes and Applied Business Operations labs, and he enjoys the challenge of teaching and building custom machines for the IndTec and Packaging disciplines.

Francesca Delle Cese grew up in Alameda, CA, received her B.S. degree in Industrial Technology with a packaging minor in fall 2011 and began the MSBT program in spring 2012. In addition to her Master’s program, she is a teaching assistant for undergraduate packaging labs, a position she hopes will encourage students to pursue a career in packaging. This summer, she gained industry experience working as an intern at Safeway, Inc.
Remembering Nelson Smith

This summer we lost one of the founding fathers of Cal Poly’s Industrial Technology Area, Nelson “Smitty” Smith, an IndTec professor from 1962 to 1994. While many were inspired by him during his tenure, the new generation of IndTec faculty and students will continue Smitty’s vision for Industrial Technology—a program with a solid reputation for graduating students who can earn good jobs. Based on the reports from faculty and former students, in the early 70’s, Smitty conducted research for several aerospace companies, and in lieu of personal compensation, he asked the companies to consider employing IndTec students. What a remarkable individual!

Professor Cliff Barber Retires

After 25 years of teaching generations of Industrial Technology students, including a few children of students, Cliff Barber is retiring. Despite a health set back a few years ago, Cliff continues to regain strength, mobility and his comedic timing. Cliff will continue to teach classes and work with students occasionally from retirement. This fall, Cliff volunteered to work on an Quality of Life Plus (QLP) project as part of a general engineering course. The QLP projects intend to foster and generate innovations to aid and improve the quality of life of those injured in the line of duty.

Lou Tornatzky Takes a Sabbatical Research Project

During fall quarter, Professor Lou Tornatzky is working on a sabbatical project in North Carolina with colleagues in Research Triangle Park (RTP). He is also writing a new version of a book entitled Innovation U: New University Roles in a Knowledge Economy, consisting of 12 case studies of universities at the forefront of technological innovation, industry partnerships and community impact.

Faculty Research

Three faculty members are actively involved with funded research projects. Professors Jay Singh and Koushik Saha’s work includes beverage packaging supply chain auditing, development of corrugated trays/boxes for fresh produce, RFID hazard assessment, and lithium battery packaging performance. Professor Keith Vorst’s work includes a new medical food to aid dysphagia patients jointly with Cal Poly Tech Park and the Food Science Pilot Plant.

Five faculty members made presentations at 13 national conferences, published 17 peer-reviewed articles in journals and 21 proceedings. Several undergrad and graduate students have participated in data collection and analysis in a number of the above mentioned research projects.

INDTEC SENIORS SCORE ABOVE NATIONAL AVERAGE

All senior IndTec students are required to take an online national ATMAE* exam as part of a senior project course. The test covers many of the basic principles explored throughout the IndTec curriculum including production, management, safety and quality control. The results from the March 2012 exam indicate that the average national pass rate for the exam is 58.49%. Our IndTec students earned a 92.31% pass rate.

(*ATMAE: Association of Technology, Management and Applied Engineering)
The IndTec and Packaging Advisory Boards provide the department with valued guidance and direction from the business and industry perspectives. Over the years the boards have aided us in curriculum improvement, student recruiting and marketing initiatives. The boards gather twice yearly for full-day meetings.

**IndTec Board Member: Joan Passovoy**

Joan Passovoy earned her B.S. in Industrial Technology from Cal Poly in 1976. She began her career at General Dynamics in San Diego working on the Space Shuttle, Cruise Missile, DC-10, and Atlas/Centaur programs. She completed her MBA from Chapman University in 1979, which boosted her technical/managerial career path in both engineering and operations.

Joan spent the next 30 years in a variety of industries from Square-D, General Atomics, Welch Allyn, and JNI/Applied Micro (AMCC) -- all in San Diego. She is currently the Visiting Professor of Operations Management at the University of San Diego School of Business Administration. “My education from Cal Poly has been invaluable to my success. The topics taught were cutting edge then, continue to be today, and will be for the next generation.”

**Alumni Highlights**

Jim Erickson graduated with a B.S. in Industrial Technology in June 2005 and earned his M.S. in Industrial and Technical Studies in June 2006. After graduation, Jim went to work for a start-up energy services company that retrofitted existing buildings for energy efficiency. As Operations Manager, Jim was responsible for all project management functions in construction projects throughout California. Some of the major projects that he completed included large installations at military bases as well as a retrofit of more than 500 coffee shops for a major retailer. In March 2012, Jim took on his present role as Field Sales Developer for General Electric in their Lighting business.

Jim credits the success of his career to skills learned in the Industrial Technology department. Jim believes in the holistic understanding of technology and business that IndTec provides, as well as the challenges of group-based, project-based learning that is so prevalent in the program. Jim appreciates the IndTec program for enabling him to present sales, forming his own business, manufacturing a product, and managing human and technological challenges in the business environment, well before graduation.
We would like to thank all donors for their contributions. Their gifts help the Industrial Technology Area provide a quality education for its students.

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Matching Gifts Program

If your company has a matching gift plan, every dime you give to Cal Poly could be doubled. To find out if your employer is one of 1,700 companies that makes matching gifts go to:

http://www.giving.calpoly.edu/matching

- Some companies also match gifts made by a spouse or retiree.
- Some employers will match your gift 2:1 or even 3:1.

Looking for easy ways to support Cal Poly students?
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- Make monthly or quarterly recurring credit card gifts.
- Pay your pledge online at:  http://www.giving.calpoly.edu

For more information contact:
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