Welcome to the third edition of IndTec Newsletter. As can be seen on the cover page, the acronym “IPT” overlays “IndTec” as a sign of transition from current program name to the new name of “Industrial & Packaging Technology”. More about this subject is given on the next page.

Classes are now in full swing, and again the campus is full of new students embarking on their college careers. We have a good-sized freshmen class, transfers and change of major of 73 students. We graduated 43 students last year. We now have 205 full time IndTec students compared to 177 a year ago. Overall, we are experiencing a near 28% enrollment growth since Fall 2011, thanks to our faculty, staff and students for their excellent representation of the program. Coupled with about 180 full time equivalent students from other majors who are taking our classes, we are now serving more than 385 students. While this is a great news, it brings new challenges to the department in terms of the workload on the faculty, size and space for classrooms and laboratories and other administrative duties. Fortunately, help is on the way. See the news about hiring 2 new faculty in the next page.

In this fall newsletter, we have a variety of articles about events in the IndTec department that I hope you find interesting. We have been successful in hiring a new faculty member this year, Javier de la Fuente, who recently received his Ph.D. from Michigan State University. He will strengthen the product development component of our curriculum with his 15 years of experience in industrial and graphic design applications. More information about him is given in this newsletter.

I hope you enjoy this issue and look forward to hearing from you as an alumni or friend of Cal Poly’s Industrial Technology program. We would love to feature your stories in upcoming issues.

Manocher Djassemi
Industrial Technology Area Chair
djassemi@calpoly.edu
NEW PROGRAM NAME

After an intensive year long discussion and interactions among faculty, college administration, and advisory board members, our faculty agreed to adopt the new program name “Industrial & Packaging Technology”. Considering the advisement from various constituencies on maintaining the current name of “Industrial Technology”, the faculty agreed upon a new name that maintains the elements of current name while adding the word “packaging” in recognition of the growth of packaging component of our curriculum within the last 10 years. We believe the new name best serves the interest of all parties who have stakes in our program success and its future progress.

In reaching such decision, a number of factors were taken into consideration including:

• Number of packaging-related courses in the major program have been increased from just one course in 2003 (IT330) to six courses in 2012 (IT330, 408, 409, 435, 457, and 475).
• The packaging faculty will be able to secure more interest and support from the industry and trade associations and enhance the marketability of our students beyond the west coast companies.
• The new name will help strengthening current packaging research record through increased visibility and hence participation by the industry.

The new name is expected to be approved by Cal Poly’s Academic Senate and will be effective for 2015-16 academic year.

STUDENT SUCCESS FEE BRINGS TWO NEW FACULTY

This past summer, Cal Poly’s Provost, Kathleen Enz Finken, solicited requests for faculty needs from all academic units to be funded from Student Success Fee. We responded by presenting data tables and charts as an evidence to our program growth and the service courses that we are providing to many Cal Poly students. As a result, the college and university administration recognized our needs and approved hiring a tenure-track faculty and a lab instructor. The new hires will help us staff impacted IndTec courses and associated laboratory sections. We also hope the new hires enable us to re-open our master program which is important for strengthening faculty research. The recruitment process is expected to start this Fall.
IndTec SENIORS’ SCORES ABOVE NATIONAL AVERAGE

IndTec students earned a 97% pass rate on national ATMAE* exam. The test covers many of the basic principles covered throughout the IndTec curriculum including production, management, safety and quality control. Results from the March 2013 exam indicate that the average national pass rate for the exam was 55.72%. A separate exit exam for packaging subject was given to the students with the score near 90%.

*ATMAE: Association of Technology, Management and Applied Engineering

LEAN MANUFACTURING NEW TRAINING GREEN BELTS

As we try to better define the skills that make our Industrial Technology students “armed to the teeth”, lean six sigma is now on the front burner. For the first time this fall we are offering IT303: Lean Six Sigma - Green Belt as a required course for all incoming freshman. This course includes 80 hours of online training. We have partnered with MoreSteam.com The training is the same as provided to over 45% of Fortune 500 companies, but at a deep student discount. From a student and faculty perspective, one important aspect of the class is the ability to run it as a “flipped” classroom experience. The students access the content online and are ready to come into the classroom and participate in experiential learning. This is true learn-by-doing in the IndTec tradition. Stay tuned for IndTec taking the lead in Cal Poly Lean Six Sigma Green Belt Certification. This will be a nice addition to the IndTec degree and adds credibility to our “armed to the teeth” vision.

2013 STUDENT SCHOLARSHIPS RECIPIENTS

Nearly $22,000 of scholarship money have been awarded to 15 IndTec students:

NELSON SMITH MEMORIAL
Derek Pincus

PRATT & WHITNEY ROCKETDYNE, Inc.
Katie Brennan Erik Peterson

ROY WHEELER II MEMORIAL
Justin Farr Francesca Delle Cese

INDUSTRIAL TECHNOLOGY SOCIETY
Caitlin Khamashita

PAPERBOARD PACKAGING ALLIANCE
Christopher Campbell

BERT W. MARTIN
Tyler Blummer Lena Haidar
Nicholas Boncich Alexis Kelsey
Jesica Chaidez Sarah Marchetti
Savas Comanescu Brianne Pluta
Francesca Delle Cese
IndTec LABS UPDATE

Last year a number of laboratory enhancements were implemented as part of the continuous improvement of IndTec laboratory education and research.

Major equipment added:
- Mezzanine floor in Packaging Dynamics Lab.
- Lansmont Horizontal Vibration table. This is the first in an educational packaging test facility. Donated by Lansmont Corporation.
- Medical pouch sealer. Donated by Wright Engineered Plastics.
- Cincinnati milling machine. Donated by RightPAQ.
- Six workstations for pneumatic system training. Matching fund provided by an individual donor.

Lab Safety:
Safety practices continue to be our primary focus area. We have worked closely with the director of risk management and environmental health and safety, in an effort to raise the physical level of safety in our labs, thus contributing to our ongoing safety awareness goal. This past year we have installed Safety Communication Centers in all our labs as well as safety barriers for certain testing machinery.

Forklift training is ongoing and we currently have 5 trained drivers, two of which are female students.

SENIOR PROJECT HIGHLIGHTS

Last year, our IndTec students completed more than 20 senior projects, two of them are described below:

Desalination/Water Purification Unit
Sean Goodison

This project utilizes Multistage Flash Distillation and Multiple-Effect Distillation to desalinate water on a modular level.

The project tasks include:
- Perform research investigating alternate mechanisms for zero-emission water distillation/desalination.
- Modularize and unitize a water purification system that uses parabolic mirrors and/or Fresnel lenses.
- Design and construct a prototype.
- Develop a manufacturing plan

Measurement and Analysis of the Distribution Environment for “Small” Packages
Lorraine Tang

This study evaluates the performance of “small” packages within the distribution environment using field data recorders.

The recorders are used to measure peak accelerations, changes in velocity, and the orientation of impact for each impact. The analyzed data can help Lab126 and Amazon validate the appropriateness of their current testing standard (ISTA 3A) and optimize their package designs to better protect the package and the product inside.
LOU TORNATZKY RETIRES
After several years of chairing the department and teaching IndTec and Entrepreneurship students, Lou Tornatzky retires. Lou joined IndTec program in Spring 2006 with 35 years of experience in academia and business. In transition to retirement, Lou has been busy with writing a new version of a book titled “Innovation U: New University Roles in a Knowledge Economy” consisting of 12 case studies of universities engaged in technological innovation and industry partnerships.
Congratulations!!

NEW FACULTY
As of September 2013, Dr. Javier de la Fuente has become the latest member of Cal Poly’s Industrial Technology program. Javier comes to us from Michigan State University, where he just finished his Ph.D. with a dissertation titled “Tab Usability in Semi-rigid Packaging”. This year, Javier will be teaching IT326 (Product Evaluation), IT233 (Product Design using CAD), and IT371 (Supply Chain Management). He is interested in industrial and packaging design and would like to start a new course in medical packaging design.

He has been a co-author of multiple refereed journal articles and book chapter including an article in Medical Devices Manufacturing & Technology. We are excited to welcome him to Cal Poly and hope you will have the opportunity to meet him soon.

KEITH VORST TAKES A SABBATICAL RESEARCH PROJECT
This Fall, Professor Vorst is working on a sabbatical project entailing the effect of post-consumer recycled plastic on migration of heavy metals to fresh produce during retail distribution and display. The project is supported by USDA and Cal Poly Packaging Research Consortium.

HOT JOBS FOR IndTec STUDENTS
Here are samples of jobs taken by recent IndTec graduates:

Geoff Doss  
Quality Engineer, Space Systems Loral

Megan Edward  
Product Planning and Operations Analyst, Audi of America

Audrey Egan  
Business Development Consultant, Oracle

Christopher Glasser  
Associate Packaging Engineer, Amgen

Derek Lee  
Supply Chain Manager, Cisco Systems

Jessica Riconscente  
Service Sales Representative, Western Allied

Lorraine Tang  
Packaging Engineer, Apple Inc.

Based on June 2013 survey from graduating IndTec seniors:

- 85% secured a job before graduation
- 15% secured a job within 3 months

The average salary of our graduating seniors was $65,000
Matt Ward earned his B.S. in Industrial Technology from Cal Poly in 2007. Right after graduation, he went to work for Northrop Grumman in Redondo Beach as a material procurement buyer. After 3 years, he was promoted into a project management role as a Program Material Manager, responsible for all general procurements supporting a program. After two years in that role, Matt was promoted to the position of Global Supply Chain Program Manager. In his current role, Matt is in charge of all supply chain functions required to deliver a cryocooler for the Mid Infrared Instrument (MIRI) used on NASA's James Webb Space Telescope (JWST). These supply chain functions include material estimators, price cost analysts, procurement buyers, major subcontract buyers, warehouse/kitting/distribution, shipping, manufacturing resource planning analysts, advanced planners, and parts integrators.

The position of supply chain program manager requires an understanding of the business and technical aspects of a program. The Industrial Technology degree provided the learn-by-doing atmosphere that encompassed all elements needed to be successful in his job.

Drs. Singh and Saha have been involved in the following funded research:
1. Europe Supply Chain Audit Project: This project is intended to validate existing European test protocols against field observed damage resulting from audits at retail locations and development of new protocols to fill any gaps in MeadWestvaco’s Test Protocol Framework. Funding: $85,000
2. FAA Packaging R&D: FAA is interested in conducting research on three highlighted topics of Air Packaging Environmental Conditions Study, RFID Hazard Assessment and Lithium Battery Packaging Performance. Funding: $179,000

Dr. Djassemi has submitted a research article titled “Lean Adoption in Small Manufacturing Shops: Attributes and Challenges” to the Journal of Technology, Management, and Applied Engineering.

Dr. Olsen is the co-author of a research article titled “An Examination of Great by Choice: Redux” entailing the examination of performance and practices of 14 companies and their financial performances with the last 11 years. The research investigates whether companies continued, discontinued, or started employing the Great by Choice practices.
During spring quarter, two student clubs, ITS and PolyPack had their officer elections. The following officers were selected for 2013-2014 academic year:

<table>
<thead>
<tr>
<th>Club</th>
<th>President</th>
<th>Vice President</th>
<th>Secretary</th>
<th>Treasurer</th>
<th>Operations / Events</th>
<th>Technology / Media</th>
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<tbody>
<tr>
<td>ITS</td>
<td>Scott Santore</td>
<td>Justin Farr</td>
<td>Catlin Khamashta</td>
<td>Gregory Wee</td>
<td>Nicole Hermann</td>
<td>Jordan Kepler</td>
</tr>
<tr>
<td>PolyPack</td>
<td>Derek Pincus</td>
<td>Lauren Church/Sarah Marchetti</td>
<td>Jessica Carter</td>
<td>Jack Mullen</td>
<td>Douglas Philpotts</td>
<td>Andrea Hernandez</td>
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**POLY PACK SYMPOSIUM**

The packaging student club Polypack successfully revived and hosted the Poly Pack Symposium on May 2nd, 2013 with the theme of Sustainable Packaging: Industry Experts’ Perspectives. The symposium hosted five industry and academic speakers from Dow Chemical Company, PepsiCo, US Marine Corp, ISTA and Univ. of Cal, Santa Barbara. Following the symposium activities the club organized the ever popular annual egg drop competition. This year there were industry participants giving the students an opportunity to interact with industry professionals. The event was concluded with an evening reception at a local restaurant where students and industry attendees had an opportunity to network and mingle.

**IndTec STUDENTS VISIT PACKEXPO**

Keeping with tradition once again Polypack organized a visit for 27 students to PackExpo, Las Vegas 2013. A team of students participated in the annual packaging line design competition and the Amazing Packaging Race hosted by PMMI at the Pack Expo show.

**IndTec STUDENTS VISIT WESTEC EXPO**

In February 2013, members of ITS club, faculty and staff visited WESTEC industrial expo in Anaheim California. The expo brings the visitors the very latest technologies including cutting tools, multi-tasking machine tools, emerging technology, applications for micro, nano, and additive manufacturing.
We would like to thank all donors for their contributions. Their gifts help the Industrial Technology Area provide a quality education for its students.

**Up to $499**
Over 100 individual donors

**$500-$999**
Northrop Grumman
WestPak Inc.
5 individual donors

**$1,000-$4,999**
Kern Steel Fabrication Inc.
Boeing Company
Lansmont Corp.

**$5,000-$10,000**
DOW Chemical Company
Pratt & Whitney Company
Mr. Barry Banducci

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**IndTec LABS**

**MATERIALS TESTING**

**GRAPHICS DESIGN**

**RAPID PROTOTYPING**

**PRODUCT FABRICATION**

**POLYMERS PROCESSING**

**PACKAGING DESIGN**

**PACKAGING DYNAMICS**

**POWER SYSTEMS**
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