

Adopted: December 6, 2016

**ACADEMIC SENATE  
Of  
CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, CA**

**AS-822-16**

**RESOLUTION ON PROPOSAL TO ESTABLISH  
THE PACKAGING VALUE CHAIN CENTER**

- 1 RESOLVED: That the Academic Senate of Cal Poly endorse the attached proposal  
2 for the establishment of the Packaging Value Chain Center.

Proposed by: Jay Singh, Professor and Packaging  
Program Director

Date: August 2, 2016



**CAL POLY**  

---

**Packaging Program**

**Proposal to Establish the Packaging Value Chain Center**

**California Polytechnic State University  
San Luis Obispo, CA**

**Submitted by:** Jay Singh, Professor and Packaging Program Director  
Industrial Technology Area  
Orfalea College of Business

**Date:** April 13, 2016 (Revised August 17, 2016)

# INDEX

Item	Topic	Map to CP Requirements	Page
<b>1</b>	<b>BACKGROUND</b>	<i>Name</i>	3
A	The Discipline of Packaging Technology		3
B	Packaging Technology at Cal Poly	<i>Need</i>	3
C	Packaging Value Chain		3
D	Packaging Value Chain Center Background	<i>Support of Cal Poly</i>	4
<b>2</b>	<b>VISION &amp; MISSION</b>	<i>Mission</i>	5
<b>3</b>	<b>PURPOSE</b>		6
A	Objective	<i>Expertise</i>	6
B	Research Facilities		6
C	Current Packaging Research Venues		7
i	The Cooperative Research Consortium in Packaging Science & Technology		7
ii	Cal Pack Labs	<i>Need</i>	8
iii	Expanding Packaging Program		8
D	Environmental Factors Favoring Establishment of the Packaging Value Chain Center		9
<b>4</b>	<b>CENTER ACTIVITIES</b>		10
A	Research Consortia		10
B	Sponsored Research Projects	<i>Activity</i>	10
C	Unrestricted Research Grants (gifts for Research)		11
D	Short-Duration, Idea Development Research Projects		11
E	Outreach & Education		11
<b>5</b>	<b>FINANCIAL RESOURCES</b>		11
	Expenses & Revenues	<i>Resources &amp; Sustainability</i>	13
A	Expenses		14
B	Revenue		16
<b>6</b>	<b>PROPOSED ORGANIZATIONAL CHART</b>	<i>Management Structure</i>	18

This proposal is for the establishment of a Packaging Value Chain Center at Cal Poly. The primary intent of the proposed Center is to broaden the current fortes in packaging research at Cal Poly through a broader *process view* of the global packaging industry. The proposed *value chain* based approach will signify comprehensive research opportunities involving all activities performed by organizations in the packaging industry aimed at delivering a valuable product to the market.

## BACKGROUND

### A. *The Discipline of Packaging Technology*

*Packaging is the technology that includes the process of design, evaluation, production of packages and subsequently enclosing or protecting products for distribution, storage, sale, and use. It can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging contains, protects, preserves, transports, informs, and sells. In many countries it is fully integrated into government, business, institutional, industrial, and personal use<sup>1</sup>.*

In academia, *Packaging* as an interdisciplinary field involves business, design, technology, science, engineering, and the environmental disciplines. Packaging science and technology has become, more than ever, a key to business success because of dramatic economic and technological changes across a range of industrial sectors, particularly the globalization and outsourcing of some portion of nearly all value-added products. Additionally, the public policy environment, both domestic and international, is placing new demands on the packaging industry to improve its environmental footprint, reduce energy consumption, enhance recycling and contribute positively to global sustainability. Global packaging sales rose by 3% in real terms to \$797 billion in 2013 and are projected to grow at an annual rate of 4% to 2018 and reach \$975 billion.

### B. *Packaging Technology at Cal Poly*



The Cal Poly Packaging Program has developed a national reputation as a significant source of packaging research and education. An increasing number of companies support packaging related research and development projects at Cal Poly, resulting in a growing portfolio of larger research projects funded by government and other third-party organizations. The Cal Poly Packaging Program, by most assessments, is considered among the top five university-based programs in the United States in Packaging Science and Technology. Located at the Orfalea College of Business, the program is offered as a Major (Industrial Technology with Packaging emphasis), a Concentration (Consumer Packaging Solutions) and a Minor. The program is also currently developing a MS in Packaging Value Chain (PVC) degree (and certificates) aimed at professionals with a targeted launch date of Fall 2017.

---

<sup>1</sup> Soroka (2009) *Fundamentals of Packaging Technology*, Institute of Packaging Professionals

### C. Packaging Value Chain

The term packaging value chain refers to the network of interconnected businesses and their value creation processes, covering all stages of suppliers - from the point of origin of a packaging solution and all tiers of customers out to the point of consumption of the product and the ultimate end-of-life of the packaging. As the power of business customers grows with the increasing technology development, information ubiquity and globalization of markets, delivering customer *value* is becoming increasingly critical. From packaging being regarded merely as a logistical or materials issue, there has been a shift in the value-creating logic of the packaging industry.



*Packaging continues to grow beyond being a support function that puts products in some type of container to a strategic business function aimed at creating value.* As a business function, packaging spans the entire range of a packaged goods company's activities and brings the holistic agenda to the table. In doing so, it becomes the strategic enabler that helps other functions deliver benefits to the consumer. Strategically considered, packaging incorporates procurement, R&D, marketing, sales, sustainability and plays a role in defining margins and profitability. Following are some future trends and drivers for development of packaging supply chain models:

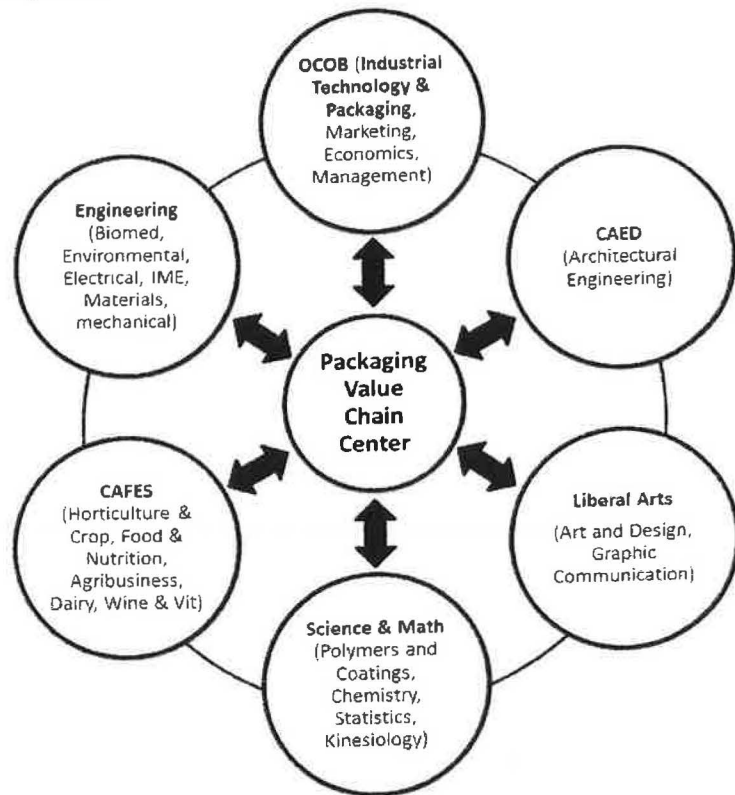
- Global growth of the middle class
- Network optimization
- Packaging Technologies – Materials and Design
- Modeling and simulation, product, package and supply chain
- Sustainability
- Transparency and risk mitigation

Shifting Production Systems	
Current	Future
■ Linear	■ Circular
■ Global	■ "Glocal"
■ Mass	■ Niche & Custom
■ Big Batch	■ Small Batch
■ Big box	■ E-tail
■ Regional Brands	■ Global Brands
■ Global Brands	■ Regional Brands
■ Extractive	■ Biological
■ Brown	■ Green

The implication of the above mentioned trends and drivers is big shifts in the production system that will demand 'more and different' from packaging across the value chain.

#### D. Packaging Value Chain Center Background

Considering the importance of packaging to the international economy and the enhanced reputation of the Cal Poly Packaging Program, the Orfalea College of Business seeks to form a *Cal Poly Packaging Value Chain Center* that will further enhance professional development opportunities for Cal Poly faculty, build links with industry and the community, provide an identifiable campus entity for practitioners, foster interdisciplinary work (figure on right), aid in obtaining external support and complement the instructional program. The Center will also provide a venue to interlink multiple departments, colleges, and centers within Cal Poly. Moreover, the Center will perform an important coordinating and clearinghouse role among students, faculty and staff who are involved in this interdisciplinary field and interested in practicing their academic disciplines.



Dr. Jay Singh, Director of the Packaging Program, developed this proposal through discussions with Dean Scott Dawson of the Orfalea College of Business, Dr. Eric Olsen, Chair of Industrial Technology Area, and Mary Kelting, Associate Dean of Advancement in the Orfalea College of Business. These discussions focused on the most effective utilization and expansion of Cal Poly's *learn-by-doing* philosophy in a business/technology-oriented education supported by faculty intellectual contributions in applied, discipline-based and pedagogical research.

*This proposal has the full support from the Packaging Advisory Board and the OCOB Dean's Advisory Council.*

#### VISION AND MISSION

The vision of the Cal Poly Packaging Value Chain Center is *to create a nationally recognized education and research Center in the realm of interdisciplinary packaging related themes.* Its mission will be *to enhance interdisciplinary research and development opportunities among Cal Poly faculty and students and the packaging industry through collaborative research-based projects addressing real-world issues.*

Both the vision and mission of the Packaging Value Chain Center comport with the Cal Poly Strategic Plan to integrate, connect and interlink Cal Poly disciplines, faculty, staff and students, all as partners in teaching, learning, scholarship and service to provide a comprehensive polytechnic educational experience and common polytechnic identity.

## **PURPOSE**

### **A. OBJECTIVE**

Drawing on the expertise of numerous Cal Poly faculty, representing nationally recognized programs across all six colleges, the Cal Poly Packaging Value Chain Center will advance packaging innovation and improve the prospects for successful outcomes. The Center will provide a forum that:

1. Attracts packaging related decision makers from across industries and across corporate functions
2. Promotes idea sharing and idea generation
3. Supports programmatic multi-disciplinary research efforts that draw on the combined expertise of Cal Poly faculty and provide value to industry partners.

Following is a representative list of researchers with *potential* of interdisciplinary packaging-focused research at Cal Poly.

- *Architecture*: Clare Olsen
- *Graphic Design*: Mary LaPorte and Enrica Lovaglio Costello
- *Economics*: Sanjiv Jaggia and Steve Hamilton
- *Electrical Engineering*: Dean Arakaki
- *Finance*: Pratish Patel and Cyrus Ramezani
- *Food Science & Nutrition*: Amy Lammert, Amanda Lathrop, Samir Amin and Gour Choudhury
- *Geotechnical & Geoenvironmental Engineering*: Jim Hanson and Nazli Yesiller
- *Graphic Communication & Printing*: Malcolm Keif and Colleen Twomey
- *Industrial & Manufacturing Engineering*: Tali Freed
- *Industrial Technology*: Jay Singh, Eric Olsen, Ahmed Deif, Koushik Saha, Javier de la Fuente and Ajay Kathuria
- *Management*: Kevin Lertwachara and Rami Shani
- *Marketing*: Jeff Hess, Lynn Metcalf and Joan Lindsey-Mullikin
- *Polymers & Coatings*: Philip Costanzo, Ray Fernando and Chad Immoos
- *Statistics*: Soma Roy and Gary Hughes

### **B. RESEARCH FACILITIES**

The currently existing teaching and research lab facilities in the Packaging Program include the following:

- i. *Distribution Testing*: This facility is well equipped to simulate the physical distribution environment packages typically experience in real life. It is International Safe Transit Association (ISTA) certified and is equipped with physical and ambient environmental simulation equipment.
- ii. *Package Design*: This facility is equipped for designing and prototyping paper-based packaging such as boxes, folding cartons, and displays.
- iii. *Rapid Prototyping*: This lab is equipped with a 3D printer
- iv. *Materials and Analytical Testing*: This lab is equipped with the most commonly used material testing equipment for paper, plastic and glass substrates towards application in packaging
- v. *Polymer Processing*: This facility has a majority of processing equipment at different scales for converting plastic resin into films and forms.

With the approval of this proposal, the facilities and related research capabilities that will be developed/expanded are:

- i. *Healthcare Packaging*: Expansion that will consist of most commonly used testing and measuring equipment for pharmaceutical and medical device packaging applications. (~144 sq. ft. expansion)
- ii. *Consumer Evaluation*: This facility will consist of a simulated retail environment to carry out consumer studies and a flexible area to be used for focus groups and usability studies. (~1100 sq. ft. expansion)
- iii. *Package Design*: The expansion will consist on new equipment for printing/plotting blanks for packages, laminating on corrugated and paperboard, and for prototyping packages from printed blanks. (~225 sq. ft. expansion)
- iv. *Rapid Prototyping*: New small 3D printers for student use and a 3D printer with capabilities to produce parts and tooling on a variety of materials (rubber-like, clear, flexible, etc.). (~225 sq. ft. expansion)
- v. *Analytical Testing*: This lab will be equipped with characterization instruments to evaluate mechanical, thermal, thermo-mechanical, permeability, chromatography and rheological studies of the polymeric materials. (~225 sq. ft. expansion)

### C. CURRENT PACKAGING RESEARCH VENUES

- i. *The Cooperative Research Consortium in Packaging Science and Technology*

The Cal Poly Cooperative Research Consortium in Packaging Science and Technology was established in 2008. The Consortium is in its eighth





year of successful operation with the consistent support of ten or more organizations annually and the Cal Poly Office of Research and Economic Development. This Consortium represents a partnership among Cal Poly Industrial Technology faculty and researchers from several other departments/colleges, and companies either producing or utilizing packaging to sell their products. Following is a selective list of research projects undertaken:

- Evaluation of Sustainable Recycled and Biodegradable Substrates in Packaging
- Characterization of Single and Multi-Layer Films for Modified Atmospheric Packaging
- Life Cycle Inventory (LCI) as a Tool for Packaging Sustainability
- Radio Frequency Identification (RFID) Tag Embedded-Distribution Packaging Solutions
- Global Database for Packaging Life Cycle Assessment (LCA) Studies
- “First Mile” Distribution Analysis for Fresh Produce Packaging Systems
- Validation of post-consumer recycled and bio-based, biodegradable substrate composition, American Society for Testing and Materials (ASTM) label claims for sustainability, food safety, performance and regulatory compliance
- Migration of low-molecular weight compounds from polymeric substrates

*ii. Cal Pack Labs*

Cal Pack Labs, a fee-for-service initiative the Packaging Program established in 2003, has been successfully assisting the industry through development/improvement of packages/package systems as related primarily to the distribution environment. Dozens of fee-for-service or contract-service projects are successfully undertaken each year. A central mission of Cal Pack Labs is to provide education, research and testing services to the packaging industry. This initiative puts into practice Cal Poly’s desire to engage faculty in research in their field of expertise. At Cal Pack Labs, faculty is engaged in research, testing and consulting services in a packaging environment to solve current industry issues. Faculty has the opportunity to obtain experience from these activities through the application of research methods and individual consultation, leading to future research opportunities, and ultimately apply the relevance of their results in classroom situations.



*iii. Expanding Packaging Program*

The Packaging Value Chain Center is a great opportunity for Cal Poly to position itself as a leading research institution in the ever-evolving field of packaging. The establishment of the proposed Packaging Value Chain Center will draw from the present success of the packaging research initiatives and help broaden the scope to:

- Provide cross-discipline/cross-campus opportunities for the professional development of faculty through basic and applied research and development activities through industry consultations and faculty exchanges in the area of packaging science.
- Foster and facilitate interdisciplinary efforts among departments and across colleges.

- Provide a clearinghouse for information of interest to practitioners in the packaging industry and to conduct executive training workshops and conferences for their continuing education.
- Enhance the packaging curriculum being covered in various Cal Poly units such as Food Science and Graphic Communication by facilitating and supplementing academic learning.
- Develop opportunities for undergraduate and graduate students to practice their academic disciplines by providing learn-by-doing research opportunities in the field of packaging science and technology.
- Provide supplementary educational support by acquiring gifts, general-purpose grants and equipment donations for all educational units across campus.

The Cal Poly Packaging Value Chain Center will have the capacity to pursue a range of research not typically possible at a single organization. It will provide a venue for cross-company collaboration and provide opportunities for learning and the exchange of ideas amongst the Cal Poly researchers and the industry.

#### *D. Environmental Factors Favoring Establishment of the of Packaging Value Chain Center*

The Packaging Value Chain Center will leverage by way of illustration rather than limitation, the following synergistic efforts and circumstances:

- Current interdisciplinary collaborations will provide a larger platform to promote interlinked cross-campus, faculty-student engagement, increased fundraising opportunities, as well as increased exposure for each college among industry leaders
- Packaging technology has undergone a fast and significant development in recent decades; however the smartest developments are yet to arrive. Today's modern society depends to a large extent on the availability and use of modern packaging technology, comprising a vast variety of modern materials, high tech applications and smart operations. Modern packaging technology aims to meet a vast range of requirements ranging from providing food safety, via low cost storage and distribution, self-selling marketing, convenient consumer use, and responsible waste management practices
- The existing efforts in the area of packaging-related research have been significant over the past decade. A small core team with assistance from several other Cal Poly units has championed these efforts and *brought in millions of dollars in external funding*.
- The core packaging team includes four tenured/tenure track faculty members from very diverse qualifications within the Industrial Technology area. Numerous other experts currently exist in various other departments/colleges such as Food Science and Graphic Communications
- This proposal represents several significant activities across Cal Poly and seeks to enhance the same by providing a venue to foster and facilitate interdisciplinary efforts and cooperation among departments and colleges
- The Packaging Program at Cal Poly presently enjoys the reputation of being the premier educational and research program west of the Mississippi river and as such provides a tremendous opportunity to invite trendsetting and leading research to the campus

- Preliminary discussions with several Cal Poly departments and colleges indicate a high level of interest and involvement in packaging-related interdisciplinary research
- OCOB has identified Packaging as an area of global distinction and is completely supportive of its near and long term undertakings including the proposed Center
- The MS PVC program, geared towards professionals and targeted to be launched in Fall 2016, will also accommodate increased collaboration opportunities with the industry
- The Packaging Advisory Board, consistent of 29 leaders from the industry, and the OCOB Dean's Advisory Council are fully supportive and willing to be the ambassadors of the Center in terms of participation, promotion and recruiting
- The Cal Poly Packaging Program enjoys a global reputation as a leading packaging education and research venue. This was demonstrated at the World Packaging Conference hosted at Cal Poly in 2012. Approximately 150 attendees from 23 countries participated in 90 plus presentations over the 4 day event

## **PACKAGING VALUE CHAIN CENTER ACTIVITIES**

The Packaging Value Chain Center proposes a multi-part structure which will offer flexibility to participating industry members and researchers from various colleges and departments to tailor their research initiatives and undertakings. This customizable approach will allow the sponsoring participants to meet the challenges of cutting edge science and technology in a diverse research environment.

Following are some of the key components of the proposed Packaging Value Chain Center. The design is modeled after the successful Center for UMass/Industry Research on Polymers at the University of Massachusetts.

### *A. Research Consortia*

The Packaging Value Chain Center will continue to use the NSF-I/UCRC format used by the existing Packaging Consortium, in which the research costs and results will be shared with other members in a focused, team-oriented approach. New research consortia targeted towards specific research areas, such as the current focus on fresh produce, will allow small team dynamics between industry sponsors and Cal Poly faculty and students. Benefits to the sponsoring organizations include exclusive reports that they can access one to two years prior to any publications by researchers; meetings, symposia and workshops on the topics of interest; a nonexclusive, royalty-free, nontransferable right and license to access and use materials (software, documentation, manuals, reports, papers and other information licensed or otherwise furnished or made accessible) during their term of membership provided they satisfy all responsibilities and obligations under the consortium agreement.

### *B. Sponsored Research Projects*

The Packaging Value Chain Center will also carry our traditional sponsored research projects through which individual organizations can support research on their topic of interest with individual or teams of faculty. The organization and research teams will collaboratively design the program to meet the sponsor's unique needs. The sponsors of this stream of research will be provided an option to join any of the research consortia in the Packaging Value Chain Center.

*C. Unrestricted Research Grants (Gifts for Research)*

Philanthropic donations will allow for creative and unrestricted use of funds by the Cal Poly researchers. Packaging Value Chain Center-based research professorships, internships and funding of industrial lectureships will be possible.

*D. Short-Duration, Idea-Development Research Projects*

This option will provide the participants a venue to scope out potential programs through idea development and concept feasibility in short-duration and focused research studies. The preliminary results will be useful to determine whether a longer-term research undertaking is warranted and will also assist in providing research direction for any future work. This program will be available on a limited basis with agreement of the individual (or a team of) faculty members(s) and the Packaging Value Chain Center Director. This will be accomplished through Cal Pack Lab Research, Testing and Consulting Services (Cal Pack Lab), an existing fee-for-service University mechanism.

*E. Outreach and Education*

Workshops, seminar series and summer workshops will also be organized resulting from research conducted at the Cal Poly Packaging Value Chain to provide an opportunity for students, faculty, and industry to contribute, learn and discuss the research topics undertaken. The Packaging program has been hosting a successful annual freshPACKmoves Seminar in Monterey for the past two years focusing on focus on packaging innovation; food safety and traceability; sustainable packaging solutions; and cold chain logistics for fresh perishables.

## **FINANCIAL RESOURCES**

The table below, provides an itemized budget with estimated revenues and expenses of the Center for an initial period of five years. Start-up funds raised through the *Center Founders' Circle* and *Corporate* memberships as well as the current momentum of research activities (external grants and consortium revenues) will initially support the hiring of a part time Administrative Director and a Technical Director who will coordinate Center activities and operations. *The OCOB will provide an amount of up to \$50,000 as backstop funding loan to the Center in case of need during the first two years of operation.* In the third year, a combination of additional personal and corporate memberships, consortium revenue, initial return of external funds from grant related activity, workshop/seminar/conference revenues and gifts will support the

Administrative Director full time, the Technical Director part time as well as the post doc and student assistants along with any external resources to organize the events affiliated with the Center.

*Start-up Funds:* These funds will be raised through a Center Founders' Circle and Corporate membership campaign. This will be done through the support of the OCOB Dean's office and the Cal Poly Packaging Alumni group.

*Private Gifts for Research:* These unrestricted research grants will be solicited from individuals and private foundations interested in supporting the packaging related research efforts of Cal Poly and the Orfalea College of Business

*External Funds:* The Cal Poly Packaging Value Chain Center will be a focal point for significant grant writing activity by affiliated faculty and staff. Grant proposals will be submitted to both private foundations with an interest in packaging related research as well as government funding sources.

*Earned Income – Conferences, Seminars and Executive Training programs:* The Center will present a series of events and conferences starting in year 1 or 2, including boot camps, executive sessions, and a major annual symposium - *freshPACKmoves* (focused on providing the fresh produce industry a critical edge in the competitive arenas of packaging innovation, food safety & traceability, sustainable packaging solutions, and cold chain logistics for fresh perishables).

*Endowment Income:* The Center will raise an endowment based upon naming and other support opportunities. The income from this endowment will support the mission of the Center.

*Intellectual Property:* It is assumed that the research activity of the Center will occasionally result in intellectual property. The Cal Poly Intellectual Property Policy as placed by the Research and Economic Development division at <http://www.research.calpoly.edu/policyip> will be consulted upon with regards to ownership and other interest, administrative procedures, income allocations and implementation. With regards to any IP arising from Consortium activities, a Cal Poly sanctioned agreement on intellectual property that includes both non-exclusive licenses for member companies, as well as exclusive agreements when in the interest of consortium members will be considered.

**Note:** *The Packaging research team from the OCOB has received over \$3,730,000 in external funding since 2003 through competitive grants for research from state and federal agencies as well as proprietary research for packaging organizations. These projects have been undertaken with investigators from several units at Cal Poly as well as other universities.*

1. The Cooperative Research consortium in Packaging Science and Technology, ~\$1,400,000
2. Cal Pack Lab, ~\$126,000

3. External Grants, \$2,200,000

## EXPENSES & REVENUES

The table below provides an overview of the estimated expenses and revenues for the first 5 years of the Cal Poly Packaging Value Chain Center.

Expenses	Year 1 <sup>a</sup>	Year 2 <sup>b</sup>	Year 3 <sup>b</sup>	Year 4 <sup>b</sup>	Year 5 <sup>b</sup>
Administrative Director*	\$162,000	\$170,100	\$178,605	\$187,535	\$196,912
Technical Director**	-	-	-	-	-
Interns	-	\$10,000	\$20,000	\$20,000	\$20,000
Consortium/Sponsored research	\$229,500	\$365,000	\$475,000	\$597,000	\$733,400
Fee-for-service	\$25,000	\$35,000	\$45,000	\$55,000	\$65,000
Scholarship for MS PVC students	-	\$20,000	\$30,000	\$40,000	\$50,000
Professional seminars/training	\$20,000	\$20,000	\$30,000	\$40,000	\$50,000
Rent	-	\$96,000	\$96,000	\$96,000	\$96,000
Center Operations	\$10,000	\$20,000	\$25,000	\$30,000	\$35,000
Travel Expense	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
<b>TOTAL EXPENSES</b>	<b>\$456,500</b>	<b>\$746,100</b>	<b>\$909,605</b>	<b>\$1,075,535</b>	<b>\$1,256,312</b>

Revenue	Year 1 <sup>**</sup>	Year 2 <sup>***</sup>	Year 3 <sup>***</sup>	Year 4 <sup>***</sup>	Year 5 <sup>***</sup>
Consortium	\$214,500	\$300,000	\$360,000	\$432,000	\$518,400
Sponsored research	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Fee-for-service	\$30,000	\$40,000	\$50,000	\$60,000	\$70,000
Center Founders' Circle Membership	\$150,000	\$200,000	\$200,000	\$200,000	\$200,000
Corporate contribution/donation	\$25,000	\$100,000	\$200,000	\$250,000	\$300,000
Professional seminars/training	\$20,000	\$50,000	\$60,000	\$70,000	\$80,000
<b>TOTAL REVENUE</b>	<b>\$489,500</b>	<b>\$790,000</b>	<b>\$1,020,000</b>	<b>\$1,212,000</b>	<b>\$1,418,400</b>

\*includes ~60% towards benefits package and 5% annual raises

\*\*OCOB will compensate the Packaging Program Director for undergraduate/graduate programs and the technical director roles

\*\*A majority of Year 1 expense and revenue numbers are accurate and any projections included are conservative

\*\*\*Year 2-5 projections are estimated

## A. EXPENSES

a. Administrative Director: It is proposed that a person from the packaging or related industry be brought in to serve as the Administrative Director. This person will report to the Dean of OCOB. Specific responsibilities of the Administrative Director include:

- Coordination of Center-supported research projects
- Coordinate the selection and launching of research projects based on recommendations of the Center's Executive Committee (EC) and Advisory Board (AB). The organizational Chart is provided later in this document.
- Interaction with industry participants through the EC and AB as well as other formal and informal mechanisms
- Interaction with college and university leadership
- Promotion of the research and technology transfer missions of the Center
- Seeking new members for the Center activities
- Making the necessary policy decisions with regard to operation of the Center and implementation of Center-related university policies
- Leading and managing the outreach and executive education activities
- Developing the annual reports and coordinating meetings supportive of the mission of the Center

*A salary, consisting ~60% benefit package, of \$162,000 and an annual salary increase of ~5% are planned in the budget.*

b. Technical Director: The Director of the Packaging Program in OCOB will be the Technical Director of the Consortium and will report to the Dean of OCOB. Specific responsibilities of the Technical Director include:

- Consult with the Administrative Director on Center supported research initiative selection and launch
- Assist the Administrative Director in preparation of research project budgets
- Assist with defining the strategy with the research teams of each project
- Assist the Administrative Director in tracking and measuring each project's progress
- Supervise the operation, maintenance and procurement of any Center based research related software, supplies and equipment in the Cal Poly Packaging Program labs

*OCOB will provide a compensation package to the Technical Director that will also include leadership roles in the undergraduate and graduate programs.*

c. Interns: Cal Poly students (undergraduates and graduates) will be provided paid internship opportunities towards assistance with the various administrative activities for the Center.

*No interns are planned to be hired during the first year of operation of the proposed Center.*



- d. Consortium/Sponsored Research: Cal Poly students (undergraduates and graduates) will be provided paid research assistant positions towards assistance with the various administrative activities for the Center. With the intent of building a reserve towards future promotion or research needs, a portion of the funding received via the research consortia and other sponsored research activities will be annually added into a related account.

*It is anticipated that approximately \$229,500 from such research activities will be expended towards salaries, materials/equipment and travel for participating researchers during the first year of operation of the Center. This is based on a revenue of \$214,500 received for the consortium as well as other projected sponsored research revenue of \$50,000 this year.*

- e. Fee-for-service: The Packaging Program, through its fee-for-service Cal Poly Corporation account, takes on testing/research projects from the industry. These are based on research capabilities and available equipment. Till-date, no internal or external promotion of such capabilities has been done. We anticipate that this venue will draw a significant amount of revenue through the promotion of the Center.

*The projected expenses (salaries, materials, equipment maintenance, etc.) for the first year of operation of the Center for the fee-for-service activities is \$25,000*

- f. Scholarships for MS PVC students: As previously mentioned, the Packaging Program is planning on launching an MS degree in Packaging Value Chain by Fall 2017. The on-campus students that enroll in this program will be financially assisted through scholarships towards their tuition and research.

*No scholarships are planned to be disseminated during the first year of operation of the proposed Center.*

- g. Professional Seminars/Training: The associated expenses represent the cost of marketing, organizing and hosting these events. The Packaging Program is hosting the third installment of freshPACKmoves Seminar in Monterey, California (May 16-18<sup>th</sup>, 2016). The seminar is designed to expand participants' knowledge base with access to first-hand intelligence, data-driven research, and top-notch speakers.

*It is anticipated that the freshPACKmoves Seminar related expenses will be approximately \$20,000*

- h. Rent: Upon the formal approval of the proposed Center, it is expected that on- or off-campus space will be sought towards administrative and meeting purposes.

*No expenses are anticipated towards the Center office during the first year.*

- i. Center Operations: These expenses will be primarily geared towards management of administrative and marketing undertakings.

*It is anticipated that the related expenses will be approximately \$10,000 during the first year of operation*

- j. Travel Expense: This expense is to reimburse primarily the Directors for travel related to the proposed Center activities.

*It is anticipated that the related expenses will be approximately \$10,000 each year of operation*

## **B. REVENUE**

- a. Consortium: As previously discussed, the Cal Poly Packaging Research Consortium is currently in its 8<sup>th</sup> year of operation. While increasing the enrollment for the current consortium, the Center would allow for several other Consortia to be launched on other industry segments and or the packaging industries' collective research needs.

*With 13 members this year, the membership dues amount to \$214,500*

- b. Sponsored research: The Packaging Program has a great track record of attracting sponsored research aside from the Consortium. It is close to securing its second funded grant of approximately \$30,000 from the USDA's National Mango Board.

*A conservative revenue of \$50,000 is anticipated for the first year of operation of the proposed Center*

- c. Fee-for-Service: The Packaging Program has been successful in providing contract packaging research and testing to the industry through the Cal Pack Labs (Sponsored Programs) since 2003.

*A conservative revenue of \$30,000 is anticipated for the first year of operation of the proposed Center*

- d. Center Founders' Circle Membership: This involves \$25,000 pledge over 5 years from individuals. We are currently actively cultivating more than 20 individuals to support the center as a founders' circle member.

*The solicitation for donations has started with the Packaging Advisory Board (PAB) members and \$40,000 has already been received. With an additional \$60,000 contribution to the Center by the OCOB Dean, we comfortably anticipate meeting the target of \$150,000 for the first year.*

- e. Corporate: Corporate sponsorship levels being proposed are \$10,000, \$25,000 and \$50,000 annually. We anticipate that we would have as many as 10 corporations that are currently involved in our packaging program that are ready to be asked for sponsorship.

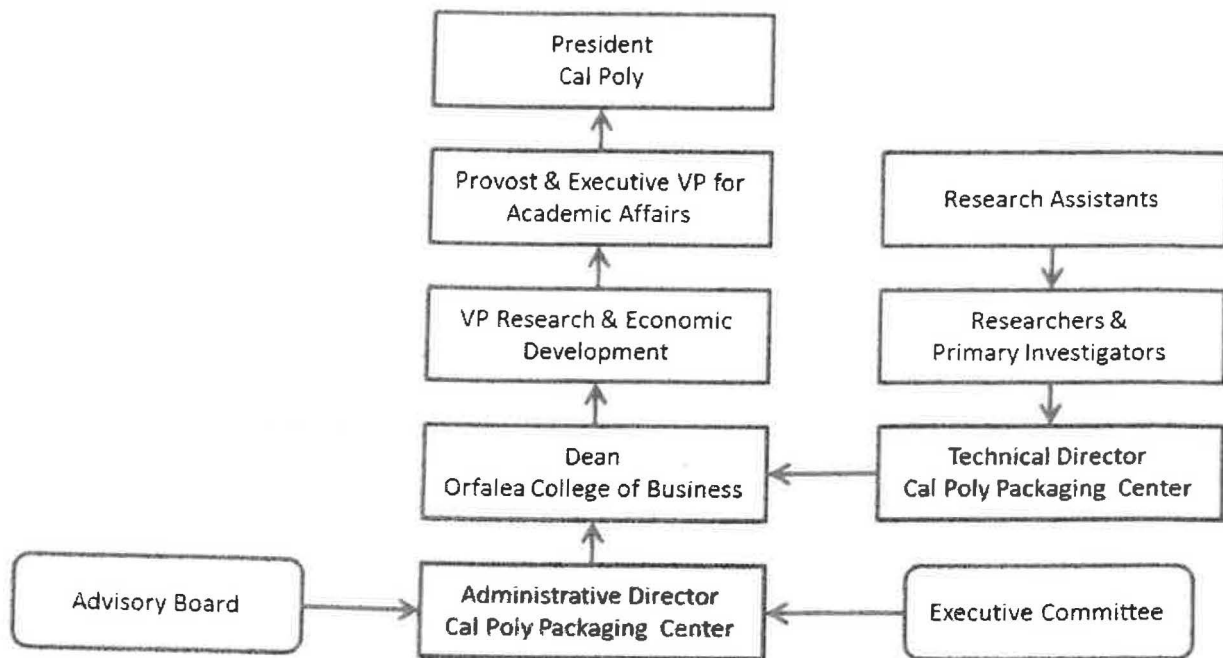
*The PAB members will be discussing strategies towards seeking corporate donations at the April 22<sup>nd</sup>, 2016 meeting. We are conservatively including a \$25,000 solicitation for the first year of operation of the proposed Center.*

- f. Professional Seminars/Training: This represents income from various outreach and education events hosted through the Center.

*We are anticipating a revenue of \$20,000 from the upcoming freshPACKmoves Seminar*

## PROPOSED ORGANIZATIONAL CHART

The organizational chart below shows the reporting structure proposed.



The *Executive Committee* shall consist of the Directors plus three to five active faculty participants in the Center. The Directors will make recommendations to the Dean of the Orfalea College of Business for the appointment of faculty members to the Executive Committee. The Executive Committee shall be responsible for a) recommending candidates for Center participation; b) recommending members of the External Advisory Board; c) recommending Center programs and activities; d) recommending operating guidelines to implement Center programs and activities. Members of the Executive Committee will be appointed for two-year terms on a rotating basis. At a minimum, three members of the Executive Committee will be from colleges other than the Orfalea College of Business.

The *External Advisory Board* shall be composed of a minimum of five and a maximum of twenty members representing a spectrum of expertise and background associated with packaging science and technology. Initial appointments of between one and three years may be used to stagger Board membership terms. Thereafter, terms will be three years. The Board shall provide advice and comment on Center programs, shall engage in public relations and support activities for Center programs, and shall provide overall guidance and direction to the Center, working in consort with the Directors

# MEMORANDUM

Cal Poly | Office of the President



**To:** Gary Laver  
Chair, Academic Senate

**Date:** December 12, 2016

**From:** Jeffrey D. Armstrong  
President

**Copies:** K. Enz Finken  
B. Anderson  
K. Lertwachara  
J. Singh

**Subject:** Response to Academic Senate Resolution AS-822-16  
Resolution on Proposal to Establish the Packaging Value Chain Center

---

Based upon Academic Senate Resolution AS-822-16, the endorsement of the Academic Deans' Council on May 23, 2016, and the recommendation from Provost Enz Finken, I am pleased to approve the establishment of the Packaging Value Chain Center.