


# ENABLING IP ENVIRONMENT IN UNIVERSITIES: USC EXPERIENCE

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UNIVERSITY  
of SAN CARLOS  
SCIENTIA • VIRTUS • DEVOTIO

The background is a dark blue gradient with faint, light blue circular patterns. In the corners, there are stylized white line art elements resembling circuit boards or neural network connections, with small circles at the end of the lines.

USC promotes the development of  
technology – disruptive or otherwise, by  
way of Intellectual Property creation and  
protection

# Intellectual Property (IP)



- Any creation of the human mind in various fields of endeavor – literary, artistic, scientific, and engineering
- Includes knowledge, creative works, technology, and know-how that can be used as a tool to gain competitive edge esp. in a business enterprise.
- IPs are mainly generated from research which is one of the mandates of every university.



# As generators of knowledge, Universities:

- Breed experts thru Faculty Development
- Attract talents from other institutions through collaborations and partnerships
- Have R&D centers that create innovative technologies, products and processes that have societal value
- Have programs that require thesis and dissertation that can be sources of inventions, products and services

# USC enables an environment that promotes the culture of research thru:

- **Research policies that:**
  - Provide dedicated time and seed funding for faculty to do research
  - Support research publications, conference presentations and grants and commissioned works as merits in ranking and promotion
  - Incentivize publications in refereed journals
- **Intellectual Property policy that:**
  - governs the creation, protection, ownership, management and commercialization of IP, with royalty sharing to IP generators

# USC enables an environment that promotes the culture of research thru:

- Adoption of a extension-oriented Research Agenda: “Food, Water, Waste, and Energy”
- Provision of state-of-the-art facilities for research
- Pool of experts (resident professors, visiting scientists) that offer opportunities for students to participate in funded research
- Linkages and partnerships with research institutions, government and industry



# Enabling mechanisms that promote innovation at USC

1. Hosting a 'Patent Library' or Innovation and Technology Support Office (ITSO)
2. Establishment of a Knowledge and Technology Transfer Office (KTTO)
3. Creation of Research Centers and Techno Hubs

# THE ITSO PROJECT

- Established in 2010 with initial 20 universities but officially launched only in March 22, 2012 in the presence of WIPO DG Francis Gurry.
- Currently, ITSO is hosted in more than 80 private HEIs and SUCs; Cebu has 6: CIT-U, UC, UP Cebu, USC, USJR, and UV.





# PATLIB/TISC/ITSO

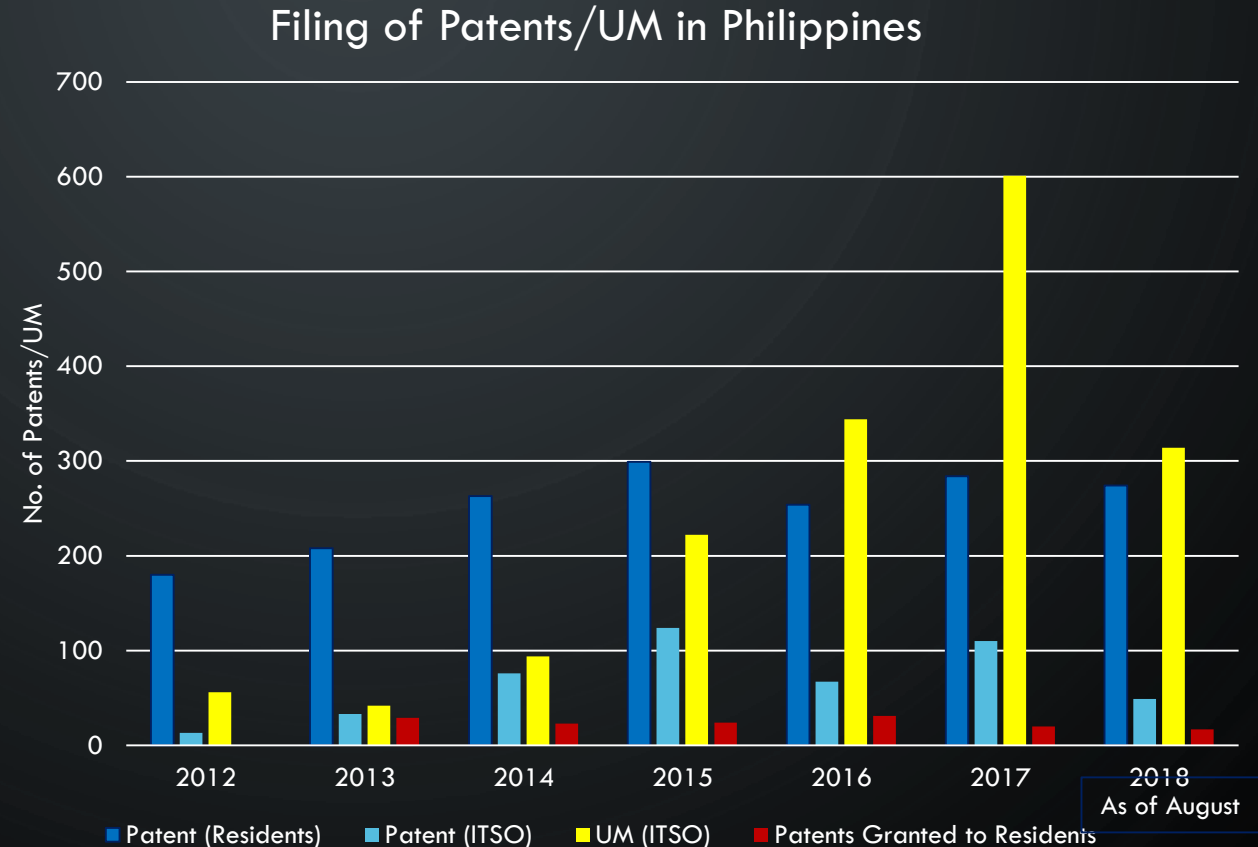


**Technology and Innovation  
Support Centers (TISCs) Report  
2017**



ITSO made a positive turnaround in patent filings by local residents and has changed the mindset of the academe

From zero in 2005-2007, patent filings by residents through the ITSO rose to 145 in 2016.



Source: IPOPHL

# List of patent applications filed by USC since 2011

	Filing Date	Invention	Applicant and Inventor(s)	Application Number
1	July 8, 2011	Preparation of Fatty Acid Alkyl Esters from Moringa oleifera Seed Oil	Dr. Evelyn B. Taboada and Engr. Francis Dave C. Siacor	1-2011-000244
2	September 16, 2011	Apparatus and Methods for the Recovery of Super Absorbent Polymers and Plastics from Waste Absorbent Hygiene Products	Ms. Mary Chris Bazarte and Ms. Hanna Marie Abenio	1-2011-000311
3	March 22, 2012	Integrated Processes for the Treatment of Mango Wastes of Fruit Processing and the Preparation of Compositions Derived Thereof	Dr. Evelyn B. Taboada and Engr. Francis Dave C. Siacor	1-2012-000061
4	March 22, 2012	Preparation of Pectin and Polyphenolic Compositions from Mango Peels	Dr. Evelyn B. Taboada and Engr. Francis Dave C. Siacor	1-2012-000062
5	June 9, 2014	Method of preparation of immobilized enzyme using the sol-gel method	Dr. Evelyn B. Taboada, Ms. Lorraine I. Ybañez, Dr. Camila Flor J. Yagonia and Mr. Young Je Yoo	1-2014-000167
6	June 9, 2014	Method of preparation of enzyme immobilized in carbon nanoparticles (CNP)	Dr. Evelyn B. Taboada, Ms. Lorraine I. Ybañez, Dr. Camila Flor J. Yagonia and Mr. Young Je Yoo	1-2014-000168
7	June 9, 2014	Preparation of fatty acid alkyl esters from Moringa oleifera seed oil using Candida antarctica lipase	Dr. Evelyn B. Taboada, Ms. Lorraine I. Ybañez, Dr. Camila Flor J. Yagonia and Mr. Young Je Yoo	1-2014-000169
8	December 5, 2016	Integrated processes for the treatment of mango wastes of fruit processing and the preparation of mango oil compositions from mango peels	Dr. Evelyn B. Taboada and Engr. Francis Dave Siacor	1/2016/000456
9	December 5, 2016	Integrated processes for the treatment of mango wastes of fruit processing and the preparation of mango oil compositions from mango seed husks	Dr. Evelyn B. Taboada and Engr. Francis Dave Siacor	1/2016/000457
10	December 5, 2016	Integrated processes for the treatment of mango wastes of fruit processing and the preparation of mango oil compositions from mango seed kernels	Dr. Evelyn B. Taboada and Engr. Francis Dave Siacor	1/2016/000458
	July 1, 2017	Preparation of Pectin from Mango Peels	Dr. Evelyn B. Taboada and Engr. Francis Dave Siacor	1/2017/000213
	July 1, 2017	Process for the Manufacture of Spent Mango Peel Powder	Dr. Evelyn B. Taboada and Engr. Francis Dave Siacor	1/2017/000214

The first two patents to be filed under the 'Juan Thousands' Patents program of IPOPHL.



# USC'S TECH TRANSFER EXPERIENCE



University of San Carlos - Main Campus in downtown Cebu City

## USC at a crossroad: IP as a way to spur innovation

University of San Carlos is the oldest school in the Philippines founded by the Jesuits in 1595 as a primary school for boys, teaching Christian doctrine and grammar. Today it is a private university administered by the Society of the Divine Word (SVD) offering academic programs in eight colleges, namely: Arts and Sciences, Education, Law, Commerce, Nursing, Pharmacy, Engineering and Architecture and Fine Arts. Currently, USC caters to a population of around 18,000 students mostly from the Visayas and Mindanao.

As an institution of higher learning, the pressure of globalization makes it imperative for the university to respond to this challenge by preparing its graduates to be more relevant not only to the demands of business and industry but also to

societal needs amidst the changing socio-political-economic landscape. This challenge is embodied in its mission statement, to cite in part:

...to develop competent and socially responsible professionals and lifelong learners in an environment that fosters excellence in the academic core processes of teaching-learning, research, and community extension service; to provide timely, relevant, and transformable academic programs responsive to the needs of the local, national, and global communities in a rapidly changing world.

This challenge requires a rethinking of the university's portfolio as an academic institution, from a mere provider of general education to one that offers sound programs that

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Before 2010 : main IP was copyright (books, literature, arts)

From 2010 to present : main IP were still copyright (now includes software) + Industrial Property (patents, trademarks)

Strengthening of Research led to creation of more Research Centers:

- BioPERC
- CenGES
- CAPES
- CSRE

Creation of Startups and TechHubs

Success in innovation is not measured in the number of filings for patents and other IP's (trademarks, copyrights, design). It can be measured in the number of actually commercialized IPs, either as:

- Startups/spinoffs
- Licensing agreements
- Business licenses
- and Revenues generated



# Knowledge and Technology Transfer Office (KTTO)

- serves as a conduit between the research centers and creative communities of USC and industry - bringing inventions/products/works to the market.

# USC participates in KTTO development initiatives

- 3-Yr USAID STRIDE KTTO Development Program
- WIPO's Hub-and-Spoke Program on Tech Transfer Office development in Philippine Universities



# GEMS, Inc. – USC's first startup



- a company that exclusively licensed the process technology developed by the Bioprocess Engineering Research Center (BioPERC) under the Chemical Engg. Dept.

*Turning waste  
into Gold!*





# SOME OF GEM'S PRODUCTS



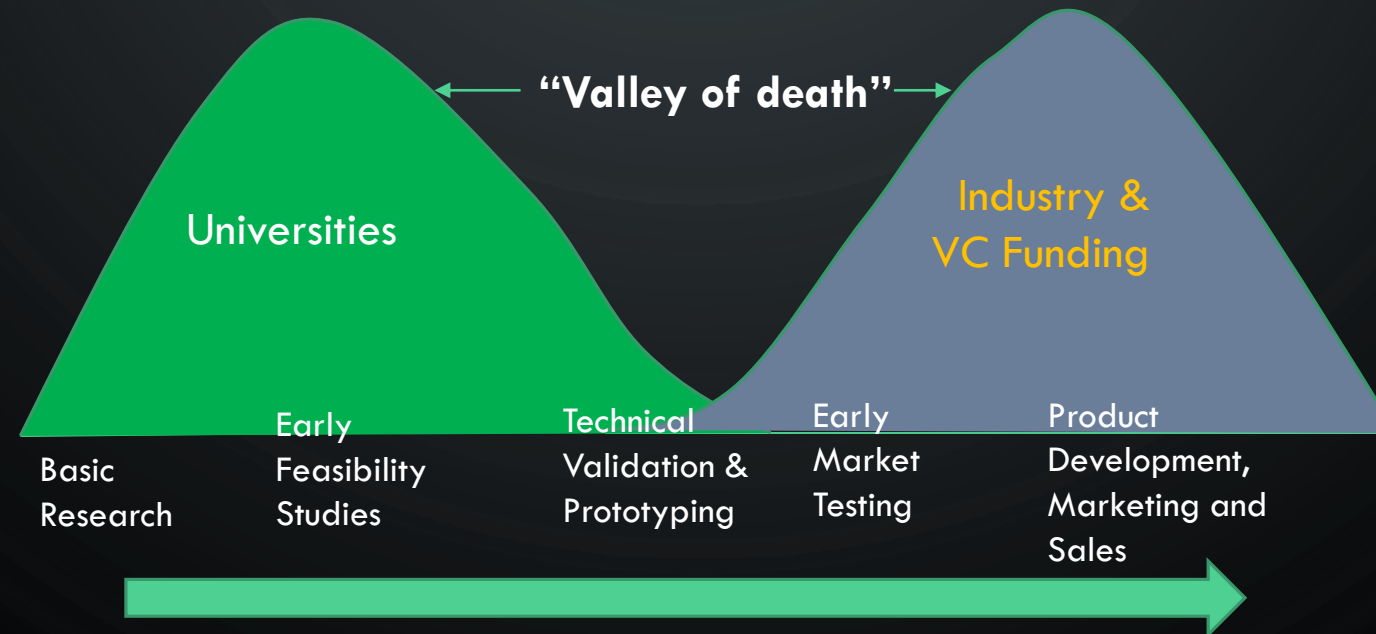
**GEMS** products out of mango peels and seeds processed using USC's patented technology: A) **Mango flour** – naturally rich in vitamins, minerals, dietary fibers, polyphenols (anti-oxidants) and digestive enzymes. It is a healthier option for baking and cooking needs; B) **Mango pectin** – used as thickener in many products, gelling agent and binder, emulsion stabilizer, encapsulating agent, beneficial dietary fiber and good dietary supplement; C) **Mango polyphenol** – the mango fruit, its peels and kernels are naturally rich in polyphenols and antimicrobial agents; D) **Mango tea** – rich in vitamins, minerals, dietary fibers, polyphenols and digestive enzymes; E) **Seed husks and briquettes** – excellent alternative solid fuels with high heating values; F) **Mango butter** – is an ingredient for food stuff, nutraceuticals, cosmetics and pharmaceuticals; and G) **Feed mix** – rich in vitamins, minerals, polyphenols and digestive enzymes. It is a nutritious and organic feed supplement and additive to livestock and pets.

# APEC delegates visited GEMS plant during the APEC Summit in Cebu on Aug. 22, 2015.





# Getting innovation from the lab to the market to avoid the “Valley of Death”



# A strong IP/innovation ecosystem is for the University to build:

- ❑ a strong research culture
- ❑ to have more enabling policies that encourage research and innovation
- ❑ an entrepreneurial mindset
- ❑ a strong relationship with industry

USC's ultimate goal is to be a  
**TEACHING, RESEARCH AND  
ENTREPRENEURIAL UNIVERSITY  
(TREU) by 2030.**

THANK YOU.