Ibero-American Science & Technology Education Consortium

XX ASSEMBLEIA GERAL DO ISTEC
ISTEC GENERAL ASSEMBLY
ASAMBLEA GENERAL DE ISTEC
26-28 a Marzo, 2014 - Puebla, México

# R&D Initiative

## R&D Committee:

Luis Fernando Cruz
Carlos Callegari
Jorge Luis Jaramillo
Wilfrido Moreno

# ISTEC Vision

Be a leading force in fostering socio-economic and educational change in Ibero-America, by **creating prosperity** and **improving the quality of life** in the region

- Building installed capacity
- Creating communities of knowledge & practice

**Navigate**

Home
About
Membership
Events Calendar
Initiatives
About ISTEC Initiatives
Research and Development (R&D)
NAO
Xilinx
Education Portal
Library Linkages (LibLink) | Enlace de Bibliotecas
Salud
ISTEC-Innovate™
Newsletters
Resources
XX ISTEC General Assembly
Accreditation
Posts
Contact

**Newsletters**

2012
Archives

**Archives**

▼2013 (23)
▶November (2)
▶October (2)
▶September (3)
▶August (4)
▶July (2)
▶June (1)
▶May (1)
▶April (8)
▶2012 (3)
▶2011 (1)
▶2010 (15)

# Research and Development (R&D)

Introducing state-of-the-art technology and educational curriculum in academic institutions is pivotal for the social, cultural and economic development of nations. The ISTEC R&D initiative provides a vehicle for performing cutting edge research and development in a variety of disciplines. To achieve excellence, ISTEC, in collaboration with its partners, supports the transfer of technology to develop R&D labs to enhance interaction between industry and academia in order to foster innovation, creativity and collaboration. Therefore, this initiative improves the ability for the latest technology to be applied to the resolution of problems in a variety of areas and encourages the development of solutions that have regional and local social and economic impact.

## NAO Robot from Aldebaran Robotics

ALDEBARAN Robotics

NAO is a programmable, 58cm tall humanoid robot from Aldebaran Robotics. Learn more here.

## ISTEC-XILINX Academic Training Centers

XILINX ALL PROGRAMMABLE™

Through the Professional Development Series under the R&D initiative, ISTEC has created Academic Training Centers in Latin America between 2010 and 2013. The training centers receive donations of Xilinx development boards with the purpose of creating or updating FPGA laboratories, and will work with ISTEC to build important training workshops for the use of this technology. Read more here.

Search for:
Search

**Language**

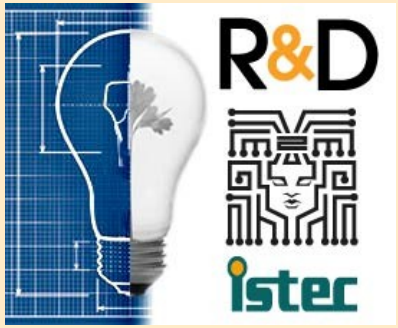
English
Español

**News**

FIU FLORIDA INTERNATIONAL UNIVERSITY

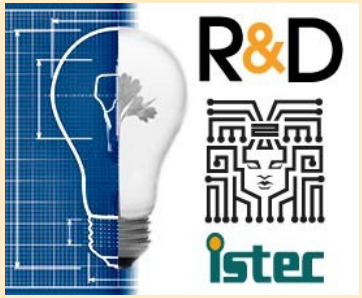
ISTEC announces the move of its headquarters to Florida International University, ECE Dept. as of March 2013

**GA 2014**




- Introducción de tecnología de estado-del-arte y currículo educativo en instituciones académicas que es fundamental para el desarrollo social, cultural y económico de las Naciones.

- Proporciona un vehículo para realizar investigación y desarrollo de vanguardia en variedad de disciplinas.




- En colaboración con sus socios industriales, ISTEC, apoya la transferencia de tecnología para el desarrollo de los laboratorios I+D para mejorar la interacción entre la industria y la academia con el fin de fomentar la innovación, la creatividad y la colaboración.

- Por lo tanto, esta iniciativa facilita el acceso a las ultimas tecnologías que se requerirán en la resolución de problemas en una variedad de áreas y fomenta el desarrollo de soluciones de impacto social y económico a nivel regional y local.

# Engineering Grand Challenges

Make solar energy economical

Provide energy from fusion

Develop carbon sequestration methods

Manage the nitrogen cycle

Provide access to clean water

Restore and improve urban infrastructure

Advance health informatics

Engineer better medicines

Reverse-engineer the brain

Prevent nuclear terror

Secure cyberspace

Enhance virtual reality

Advance personalized learning

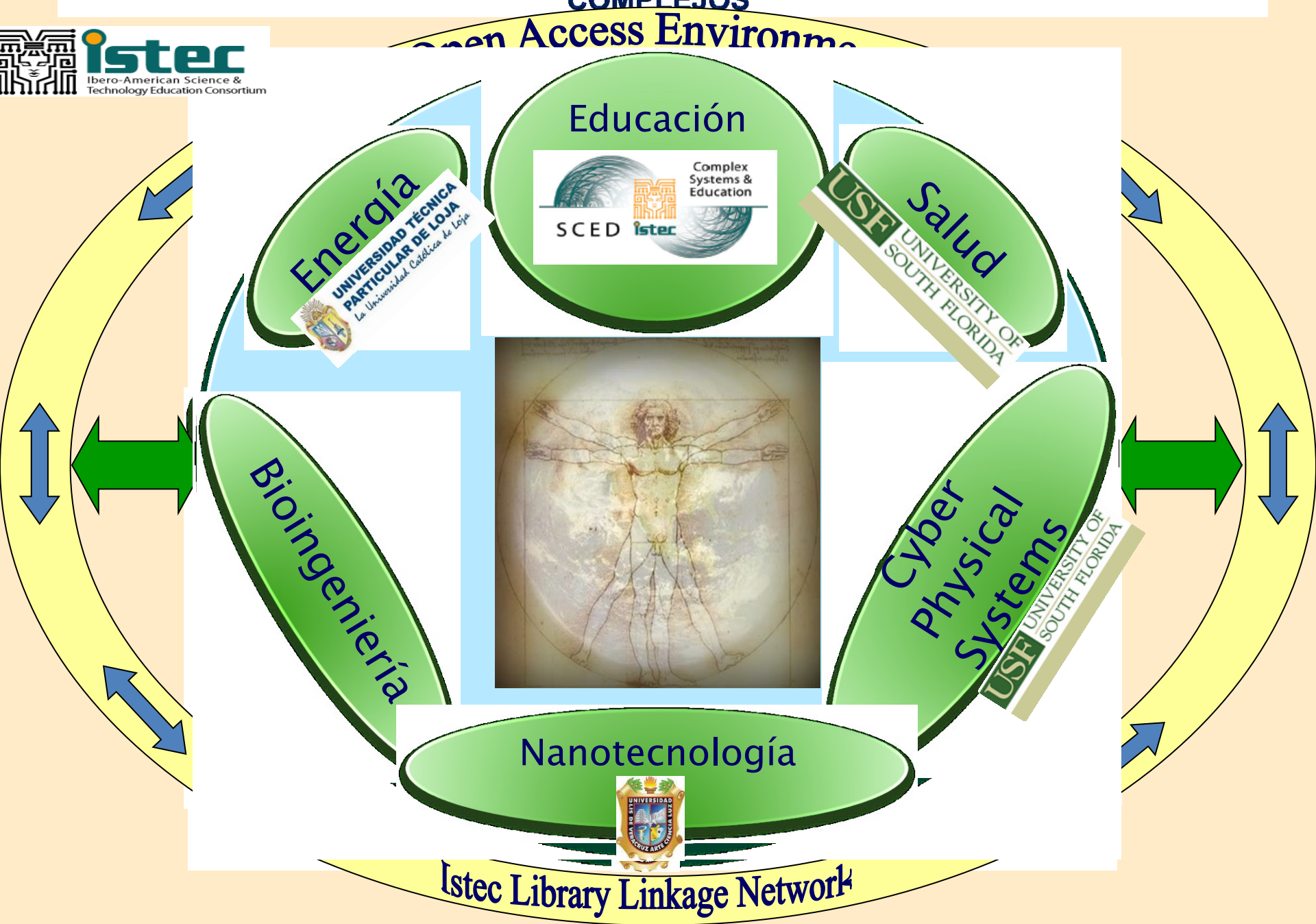
Engineer the tools of scientific discovery

Source:

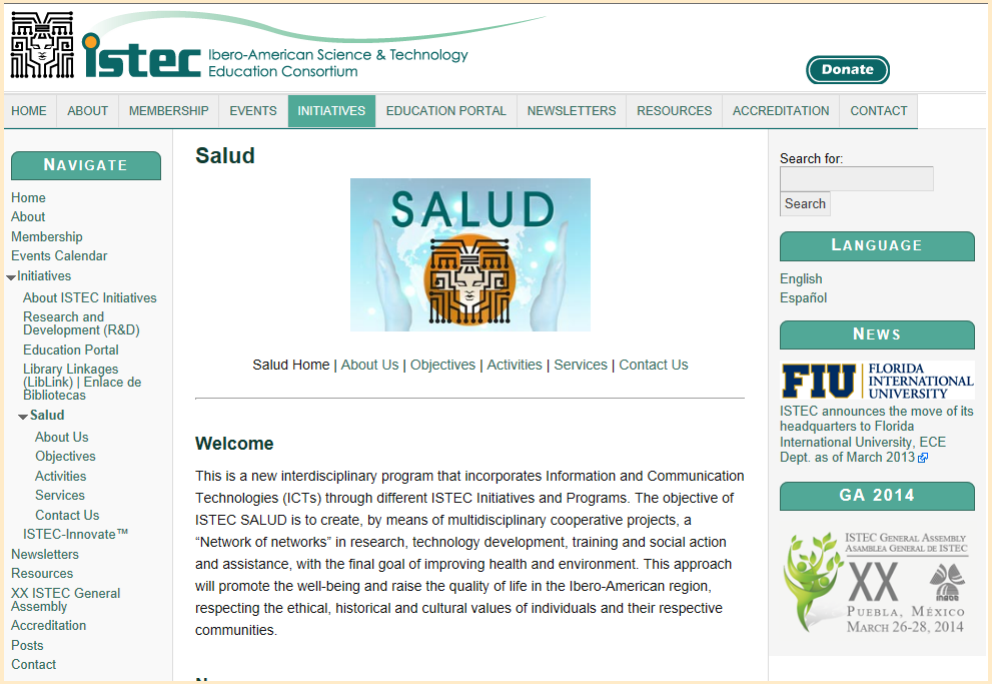
NATIONAL ACADEMY OF ENGINEERING
OF THE NATIONAL ACADEMIES

http://www.engineeringchallenges.org

# RED IBEROAMERICANA TRANSDISCIPLINARIA DE INVESTIGACIÓN EN SISTEMAS COMPLEJOS



# ISTEC-SALUD




Dr. Carlos Callegari

## Aerospace

USF UNIVERSITY OF SOUTH FLORIDA

## Robotics

# THE UBIQUITOUS CONTROL SYSTEMS

"Trans/Multi/Inter-disciplinary by it's Own Nature"

## Medical Simulators

Communications

Cyber

CPS

Physical

Computers

Systems

*Instrumentation & Controls*

# Cyber-Physical Systems

**Embedded Systems**

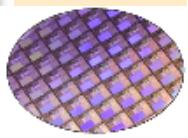
**Automation & Control/Robotics**

XILINX®

SILTERRA

QUANSER
INNOVATE EDUCATE

NATIONAL INSTRUMENTS™



# Embedded Systems

## "A Knowledge Community"

Istec
Ibero American Science & Technology Education Consortium

XILINX®

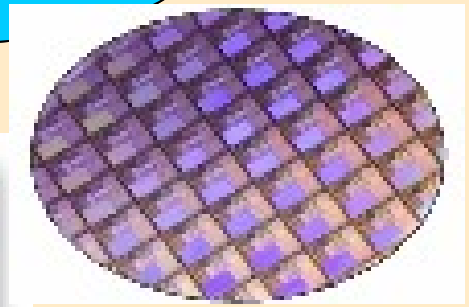
# Embedded Systems

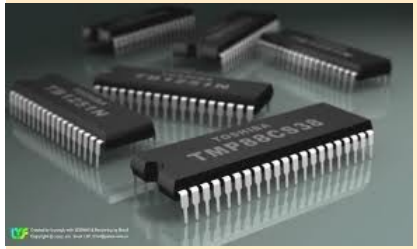
## "A Knowledge Community"

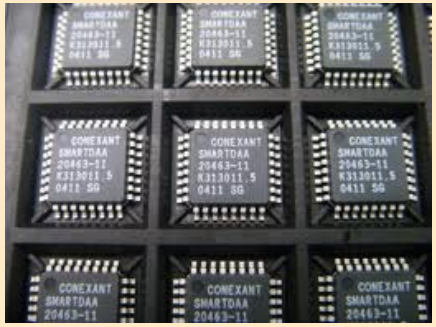
istec
Ibero American Science & Technology Education Consortium

chipus

" Winners of 1st Student Contest has been announced "







# Automation & Control/Robotics

istec
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# NAO and Its Social Impact Conference

Ibero-American Science & Technology Education Consortium

## NAO Partnership Program

- INAOE
- U. Veracruzana
- CEDIACCTEC
- Universidad de Ingeniería y Tecnología

ALDEBARAN Robotics

# NAO Applications - Health

"It's the first robot to help children manage painful medical procedures"

Study, which was conducted at Alberta Children's Hospital. Research suggests that children who experience distress in a medical setting at a young age are less likely to access health care in adulthood,

# ASK Nao (Autism Solution for Kids)

Studies have shown that some children with autism achieved a 30 percent increase in social interactions and better verbal communication when a robot is in the same room.

USF UNIVERSITY OF SOUTH FLORIDA
ELECTRICAL ENGINEERING | College of Engineering

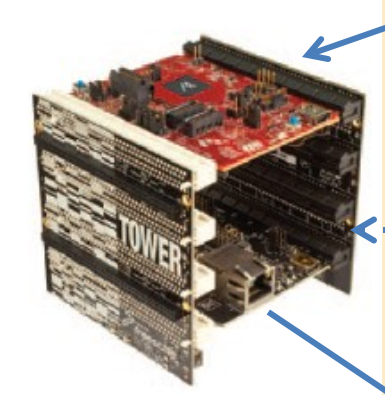
# THE NEW LAB COURSE PROPOSAL
# SOFTWARE IMPLEMENTATION

freescale semiconductor

The TWR-K60D100M is a development tool which is enabled by Kinetis 60 MCU family built on ARM® Cortex™-M4 core

CodeWarrior Development Studio

mbed

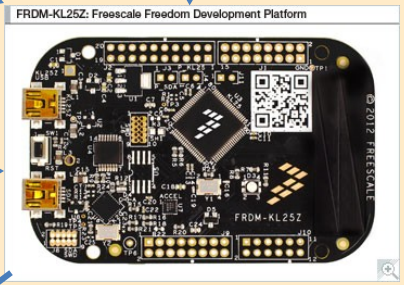



**Lab Kits**

***Programmable through – Phase II***

NATIONAL INSTRUMENTS LabVIEW

***Programmable through – Phase I***




**Student Portable Lab Kits**

The FRDM-KL25Z is an ultra-low-cost development platform enabled by Kinetis 10/20 MCUs families built on ARM® Cortex™-M0+ processor.

The Freescale Cup

# Ibero-American Nanotechnology Centers Network (IBANCN)

NREC Nanotechnology Research & Education Center

USF University of South Florida

Instituto Nacional de Astrofísica, Óptica y Electrónica

www.inaoe.gob.mx

Ister Ibero-American Science & Technology Education Consortium

The University of New Mexico

acst Advanced Creative Solutions Technology

Universidad Politécnica de Madrid

POLITÉCNICA

ingeniamos el futuro

Universidad Veracruzana

Pontifícia Universidade Católica do Rio Grande do Sul

UNIVERSIDAD DISTRITAL FRANCISCO JOSE DE CALDAS

UNICAMP

Universidad de los Andes

UNIVERSIDAD DEL NORTE

Research Centers / Industry / Funding Agencies / Non-profit Organizations / Universities

**Made in Florida**

Visit FLATE's dedicated outreach page: MIF

Want to know more about Florida Manufacturing Career Pathways with embedded industry credentials?

**Celebrating 9 Years**

FLATE's Impact

**FLATE Awards**

Visit Awards Page >>

# PROYECTO: EL INGENIERO JOVEN
# Basado en el Programa de Altos Estudios Escolares en Robótica Cidiacctec-ISTEC

Ibero-American Science & Technology Education Consortium

CIDIACCTEC .COM

Centro de Investigación Desarrollo Innovación
Asesoría y Capacitación en Ciencia y Tecnología

# CIDIACCTEC EN LA EDUCACION

- El centro de investigación desarrollo innovación asesoría y capacitación en ciencia y tecnología (CIDIACCTEC) con mas 8 años  en temas de investigación en  Electrónica Informática y Mecatrónica
- Educación de Pregrado a nivel de I+D+I

# CIDIACCTEC EN LA EDUCACION

- Educación básica escolar a los niños, futuros ingenieros, licenciados, del Perú (Ibero-america)
  - Introduce nuevos conceptos de tecnología
  - Con el fin de introducirlo en el mundo de la Investigación y Desarrollo
  - Presenta el programa de altos estudios escolares en robótica como complemento a las ciencias básicas aplicadas en el colegio y como preparación para futuros investigadores y desarrolladores que dominen herramientas tecnológicas modernas.

# YA NO USAMOS LOS PARQUES

CIDIACCTEC .COM

# SOBRE LA EDUCACIÓN

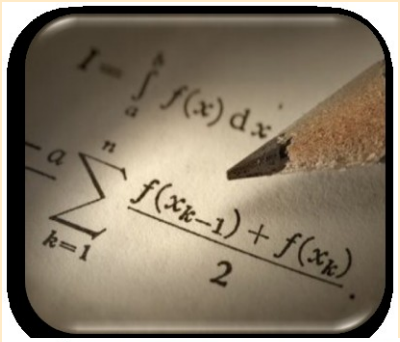
- ✓ PROGRAMA DE ESTIMULACION TEMPRANA
- ✓ PROGRAMA DE ROBOTICA EDUCATIVA PARA ESTUDIANTES DE PRIMARIA
- ✓ PROGRAMA DE ROBOTICA EDUCATIVA PARA ESTUDIANTES DE SECUNDARIA

# Nuestra Metodología

- Todo experiencia es importante
- Nada es seguro, todo cambia con el paso del tiempo
- El futuro esta en el cambio de nosotros mismos
- Hagamos cultura, fortalecemos nuestro pasado
- Equilibrio vital: cuerpo, mente y alma

## PROYECTO INGENIERO JOVEN

- Aplicar los conocimientos en matemática y ciencias naturales aprendidos en el colegio diseñando proyectos de automatización
- Preparación para concursos nacionales e internacionales en ciencia y tecnología
- Tener conocimientos previos de herramientas que usaran en futuras carreras universitarias



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## PROYECTO INGENIERO JOVEN

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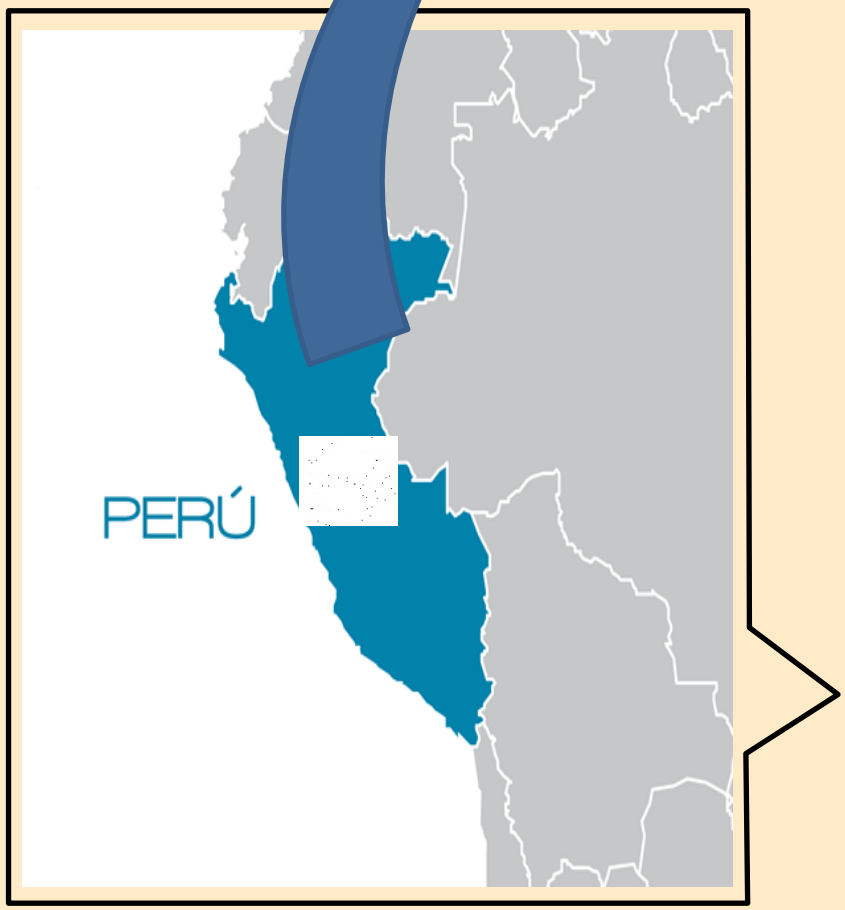
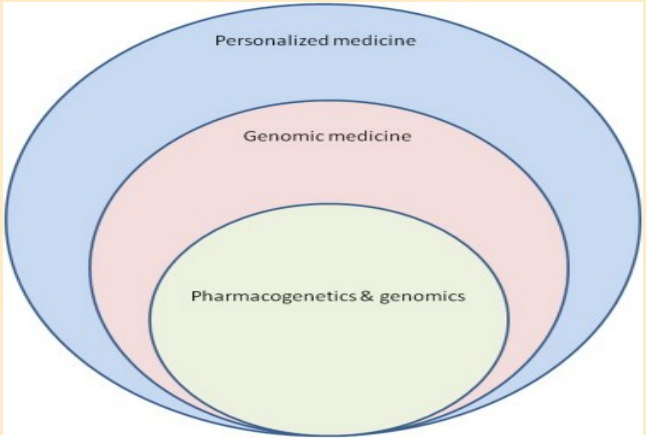
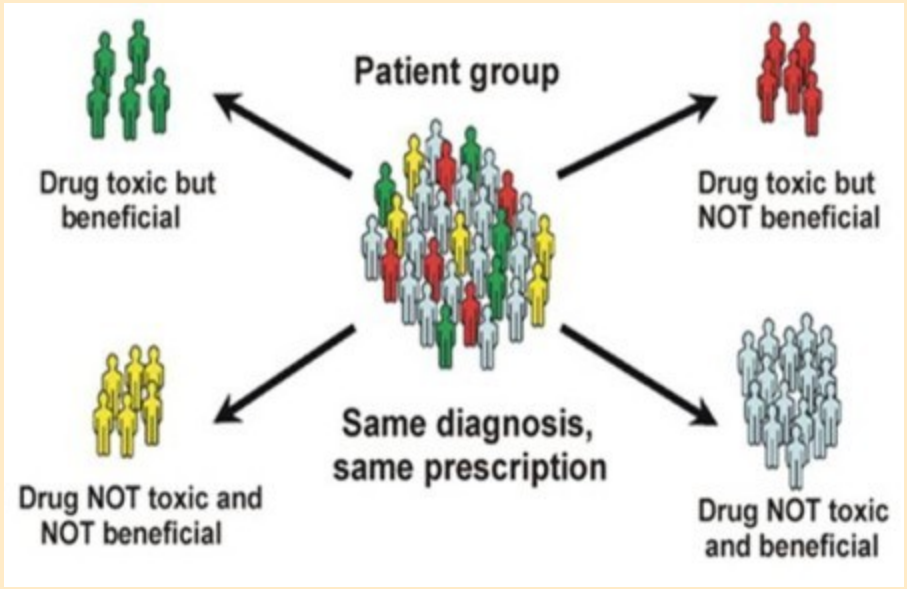
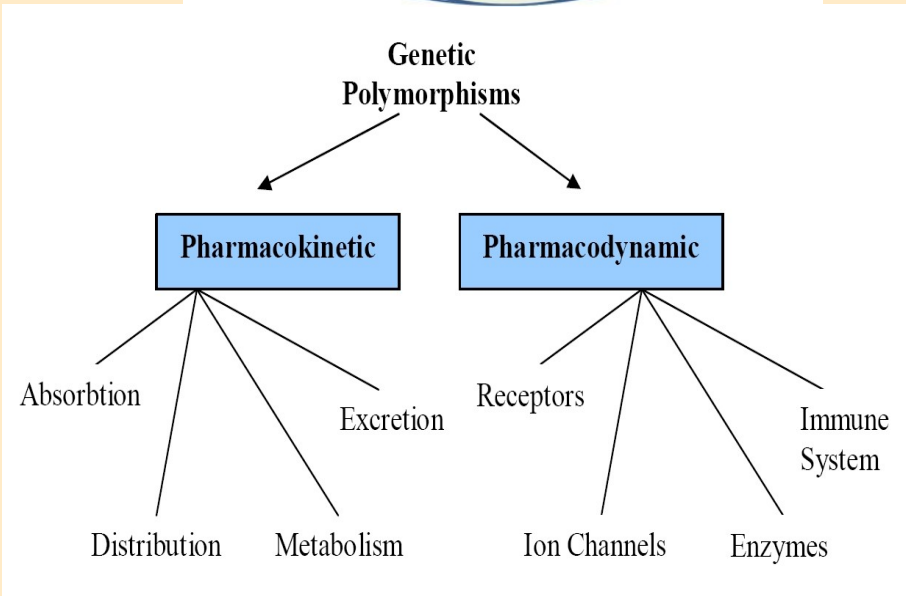


# Pharmacogenomics : leading to personalized medicines

In pharmacogenomics, genomic information is used to study individual responses to drugs




Genetic variability leading to susceptibility to adverse drug reactions can affect both pharmacokinetic and pharmacodynamic pathways.

# FITBIT Tracker

Digital Health: **Mobile**

**Fitbit Tracker, wireless-enabled wearable data measuring device**

fitbit

Ibero-American Science & Technology Education Consortium

SALUD

Complex Systems & Education

SCED

Computation

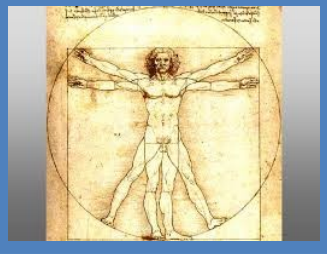
CPS

Cyber

Physical

Communications

Complex Systems



# Innovación ….

# “En realidad la mayoría de innovaciones son creadas a través de REDES – grupos de personas trabajando en “concordancia”

Dr. Andrew B. Hargadon
Professor of Management
Director, Technology Management Programs
Faculty Director, UC Davis Center for Entrepreneurship

# Muchas Gracias …….

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www.usf.edu