COUNCIL OF PRINCIPAL INVESTIGATORS

October 12, 2016

Professor Christodoulos A. Floudas

Recognitions and Honors

- National Academy of Inventors, 2015
- Academy of Athens, Corresponding Member, 2015
- P.V. Danckwerts Memorial Lecture, 2015
- Thomson Reuters Highly Cited Researcher, 2015 (for 2003-2013)
- Constantin Caratheodory Prize, 2015
- Thomson Reuters Highly Cited Researcher, 2014 (for 2002-2012)
- TIAS Fellow and Eminent Scholar, 2013-14
- National Award and HELORS Gold Medal, 2013
- AIChE Fellow, 2013
- National Academy of Engineering, 2011
- Graduate Mentoring Award, Princeton University, 2007
- AIChE Computing in Chemical Engineering Award, 2006
- AIChE Andreas Acrivos Award for Professional Progress in Chemical Engineering, 2001

Final Appointments

Director, *Texas A&M Energy Institute*
Erle Nye '59 Chair Professor for Engineering Excellence
Artie McFerrin Department of Chemical Engineering
Texas A&M University
Stephen C. Macaleer '63 Professor in Engineering and Applied Science, Emeritus
Professor of Chemical and Biological Engineering, Emeritus
Princeton University

h-index	
Google Scholar	84
Web of Science	62
Citations	12,324
Journal Articles	>335

Professor Christodoulos A. Floudas

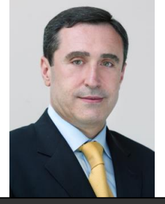
Research Activities:

- Product and Process Design, Synthesis, and Discovery
- Product and Process Operations: Planning and Scheduling under Uncertainty
- Discrete-Continuous Nonlinear Optimization
- Deterministic Global Optimization
- Bioinformatics and Computational Biology

Key Contributions in:

- Theory and algorithms in deterministic global optimization, derivative-free optimization
- Optimization under uncertainty
- Planning and scheduling of complex systems
- Process synthesis and global optimization for hybrid energy systems for fuels and chemicals
- Protein structure prediction, refinement, and *de novo* protein design via deterministic global optimization

Academic Tree of Professor Christodoulos A. Floudas



Carnegie Mellon, PhD, 1986
Princeton University, 1986-2014
Texas A&M University, 2015-2016

- Granville Paules IV
- ***Amy Ciric***
- Avanish Aggarwal
- ***Antonis Kokossis***
- Polycarpos Psarris
- Michael Luyben
- V. Visweswaran
- Conor McDonald
- ***Costas Maranas***
- ***Claire Adjiman***
- Carl Schweiger
- Stephen Harding
- William Esposito
- John Klepeis
- Heather Schafroth
- ***Xiaoxia Lin***
- ***Zeynep Gumus***
- ***Clifford Meyer***
- Stacy Janak
- Scott McAllister
- Ho Ki Fung
- ***Chrysanthos Gounaris***
- Meng Piao Tan
- Rohit Rajgaria
- ***Peter DiMaggio***
- Peter Verderame
- Meghan Bellows
- Ashwin Subramani
- Richard Baliban
- ***Ruth Misener***
- Josephine Elia
- Eric First
- James Smadbeck
- George Khoury
- Yannis Guzman
- Alex Niziolek
- Onur Onel
- Logan Matthews
- Melis Onel
- Burcu Beykal
- Joseph Costandy
- Cosar Doga Demirhan
- William Tso

- K. Sahin
- F. Penteado
- P. Miao
- D. Gu
- T. Jia
- S. Huchette

- Stylianos Mavromatis
- Victor Briones-Vallejo
- Vipul Mehta
- Eftychia Marcoulaki
- Piyush Shah
- Sameer Mokashi
- Alberto Alva Argaez
- ***Lalita Tantimuratha***
- Alexandros Strouvalis
- Zhighang Shang
- ***Patrick Linke***
- ***Ramgopal Uppaluri***
- Elaine Gao
- Alexandros Kourakis
- Richard Barnes
- Claudia Labrador-Darder
- ***Siyu Yang***
- Du Du
- Marilena Tsakalova
- Katerina Mountraki
- Costas Pyrgakis
- Antonis Korkofygas
- Paraskevi Karka
- George Lignos
- Melina Psycha
- Mirela Tsagkari
- George Panayiotou

- Victoria Ashley
- ***Athanasios I. Papadopoulos***
- Daniel Montolio-Rodriguez
- Mirko Stijepovic
- Selma Attilhan
- Kerron Gabriel
- Sabla Alnouri
- Sumit Bishnu

- Rohit Kumar Singla
- Kulijeet Singh

- ***Barun K. Nandi***
- ***Ranjan Das***
- ***Vijaya K. Bulasara***
- Sanjay K. Chattopadhyay
- Mulari Pujari
- Amrita Agarwal
- China Kaniganti
- B. Chandrasekhar
- D. Vasanth
- Y. Ramesh
- E. Sriharsha

- Harjot Kaur

- Yi Man

- Shankar Vaidyaraman
- Gregory Moore
- Andreas Lehmann
- Anthony Burgard
- Priti Pharkya
- Manish Saraf
- Anshuman Gupta
- Madhukar Dasika
- Hossein Fazelinia
- Jonathan Chin
- Vinay Kumar
- Francisco Vital-Lopez
- Sridhar Ranganathan
- Alireza Zorommodi
- Robert Pantazes
- Ragib Saha
- Akhil Kumar
- Matthew Grisewood
- Anupam Chowdhury
- Ali Khodayari
- Chiam Ng
- Maggie Simons
- Thomas Mueller
- Sarat Gopalakrishnan
- Fatul Chowdhury
- Mohammad Islam
- Lin Wang

- Georgia Kouyialis
- Radu Baltean-Lugojan
- Miten Mistry

- S. Marjan Varedi
- Jiyhang Park
- Yu Chen
- Alissa Kerner
- Jeremy Minty
- Michael Nelson
- Sida Wang
- Tatyana Saleski
- Scott Scholz
- Corine Jackman

- Sezen Vatansever

- Anirudh Subramanyam
- Nikolaos Lappas
- Christopher Hanselman
- Akang Wang

- Aaron Borg
- Ziran Da
- Thomas Chavas
- Diego Alonso Martinez
- Ben Foster

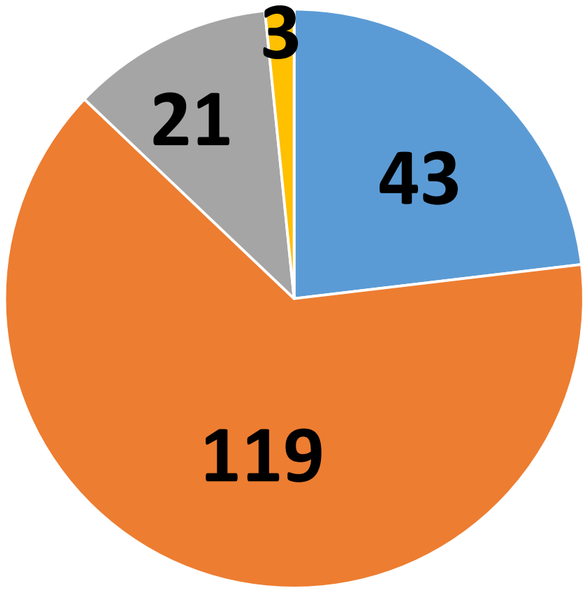
- ***Ioannis Papamichail***
- Haitao Huang
- Aileen Cheung
- Timothy Sheldon
- Bernardino Pereira-Lo
- Milica Folic
- Apostolos Giovanoglou
- Rodrigo Blanco-Guttierez
- Emmanuel Keskes
- Anastasia Apostolakou
- Alexandros Lymperiadis
- Michaela Pollock
- Alexander Dunnett
- Javier Rodriguez-Perez
- ***Niall Mac Dowell***
- Frances Pereira
- Jens Schreckenberg
- Andrei Kazantsev
- Heiko Strubing
- Vassileios Papaioannou
- Charles Brand
- Manolis Vasileiadis
- Khalil Rhazaoui
- Eirini Siougkrou
- Zara Ganase
- Abidhakim Hassan
- Christina-Anna Gatsiou
- Nikolaos Kazazakis
- Dimitris Nerantzis
- Aikaterini Diamanti
- Rallia-Iliana Velliou
- Panatpong Hutacharoen
- Suela Jonuzaj
- Smitha Gorinath
- Georgia Lazarou
- Edward Graham
- Siti Hajar Khalit

- Georgia-Roumpini Iordanidou

October 2016

Academic Impact in Numbers

4 Generations of Floudas Academic Tree



- **Number of Graduate Students: 186**
- **Number of Academics: 20**

2014-2016

- ❑ 20 post-doctoral associates
- ❑ 13 books, and monographs
- ❑ 32 book chapters
- ❑ More than 40 patents
- ❑ More than 335 journal articles

Faculty Engagement Opportunities in the Office of Graduate and Professional Development

Dr. Leonard Bright
Assistant Provost for Professional Development
Office of Graduate and Professional Studies

Goal of Presentation

1. Describe our Professional Development Initiatives
2. Demonstrate ways that you can help
3. Ask for your assistance

What is Professional Development (PD)?

1. Provides training outside traditional, discipline-based graduate coursework.

2. Helps bridge the gap between graduate education and the workforce (i.e., academy or non-academic positions)

OGAPS PD Initiative

- OGAPS emphasis on Professional Development originated from a recommendation from Graduate Experience Task Force (2011)
  - Recommend ways of providing a wide menu of professional development opportunities for all graduate students beyond traditional course and research opportunities.

OGAPS PD Initiative

- To improve and expand professional development (PD) opportunities for TAMU graduate students by:

  1. Promoting existing offerings (including those by your units)

  2. Identifying gaps and develop new offerings

OGAPS PD Initiative

1. Versatile Ph.D. Portal
2. Professional Development Portal
3. Aggies Commit Mini Grants
4. Research and Presentation (RAP) Grants
5. 3 Minute Thesis Competition
6. Graduate Resources and Development for Aggies (G.R.A.D. Aggies)
7. CIRTL@TAMU

VERSATILE PHD PORTAL

Versatile PhD

- Online resource for all grad students and faculty
- Access through the Career Center website for Premium Content
- Career panels, job listings, real-world career bios for non academic jobs

Versatile PhD

- "We want doctoral students to be informed about academic employment realities, educated about their non-academic career options, and supported in preparing for a wide range of careers, so that in the end, they have choices. The key concept here is *versatility*: the ability to apply skills, abilities and interests in a wide variety of positions and fields."

PROFESSIONAL DEVELOPMENT PORTAL

PD Portal

- A search tool that connects students with professional development activities and resources at Texas A&M by department, college, or university level.
  - http://ogaps.tamu.edu/profdev-portal

AGGIES COMMIT GRANTS

Aggies Commit Mini-Grants

- Up to $2,000 available to encourage student organizations to:
  - Develop new or enhance existing activities or events that provide high-impact learning experiences (HILE) for graduate student participants.
  - Applications Due Oct 17th

RESEARCH AND PRESENTATION GRANTS

RAP Grants

- Research and Presentation Awards (Nov 1st)

Presentation Award (travel within U.S. lower 48 states)	$500
Presentation Award (international travel +travel to Alaska and Hawaii)	$750
Research Award	$750

G.R.A.D. AGGIES


Academic Development
Degree Completion
Financial Management
Stress Management & Support Networks
Publications & Conferences
Research & Grants Proposals
Leadership & Communication
Mentoring
Collaboration
Self-awareness
Diversity & the Global Workforce
Oral & Written Communication
G.R.A.D. AGGIES
TEXAS A&M UNIVERSITY
Instruction & Assessment
Teaching & Delivery Methods
Reflecting On Practice
Assess Learning
Designing Courses
Hands-on Teaching Opportunities
Career Development
Career Path Knowledge:
1) Academic
2) Non-academic
Entrepreneurial Skills
Job Searching Skills
Marketability
Networking

G.R.A.D. Aggies

Collaboration of 8 campus units to provide professional development opportunities for graduate students to better prepare them for professional life after graduate school. organized into four areas: ***Academic Development, Leadership and Communication Development, Instruction and Assessment and Career Development****.*

Collaborators:

- OGAPS
- Career Center
- Center for Teaching Excellence
- Graduate & Professional Student Council
- International Student Services
- Student Counseling Center
- University Libraries
- University Writing Center

Certificate Program:

- Workshops
- Seminars
- Online Resources
- For more information visit http://grad-aggies.tamu.edu

3 MINUTE THESES COMPETITION

3 Minute Thesis (3MT)

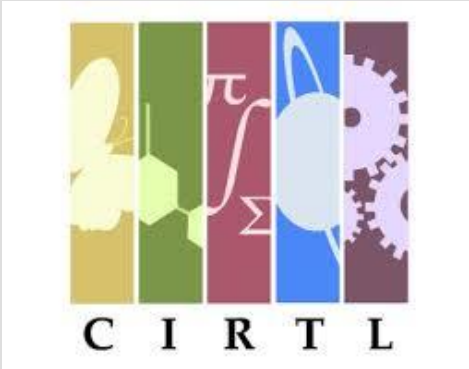
3 Minute Thesis (3MT)

You can help by:

1. Helping students prepare during DEVELOPMENT SESSIONS

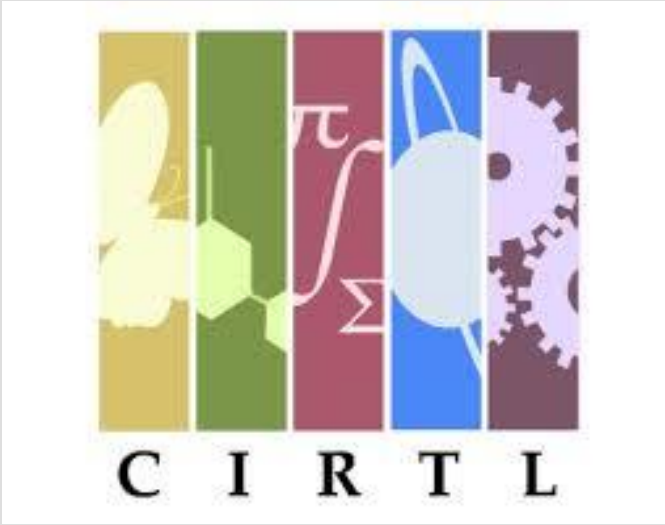
2. Serving as COMPETITION JUDGES

CENTER FOR THE INTEGRATION OF RESEARCH, TEACHING AND LEARNING (CIRTL)



CIRTL@TAMU

- Original member of NSF-funded network of 22 Tier 1 research universities
- Preparing future faculty through learning through diversity, learning communities, and teaching as research.
- Local and national Courses/webinars for all disciplines (with emphasis on STEM)



The CIRTL Network - 2016

Auburn University
Boston University
Columbia University
Cornell University
Drexel University
Emory University
Florida International University
Georgia Institute of Technology
Howard University
Indiana University
Iowa State University
Johns Hopkins University
Louisiana State University
Michigan State University
North Carolina State University
Northwestern University
Oregon State University
Rice University
Texas A&M University
Tufts University
University of Buffalo, State University of New York
University of Alabama at Birmingham
University of British Columbia
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of Colorado at Boulder
University of Delaware
University of Georgia
University of Houston
University of Iowa
University of Maryland, College Park
University of Maryland, Baltimore County
University of Massachusetts Amherst
University of Missouri
University of Nebraska-Lincoln
University of North Carolina at Chapel Hill
University of Pittsburgh
University of Rochester
University of Texas at Arlington
University of Texas at El Paso
University of Tennessee, Knoxville
University of Wisconsin-Madison
Vanderbilt University
Washington University in St. Louis
Yale University

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Drexel University
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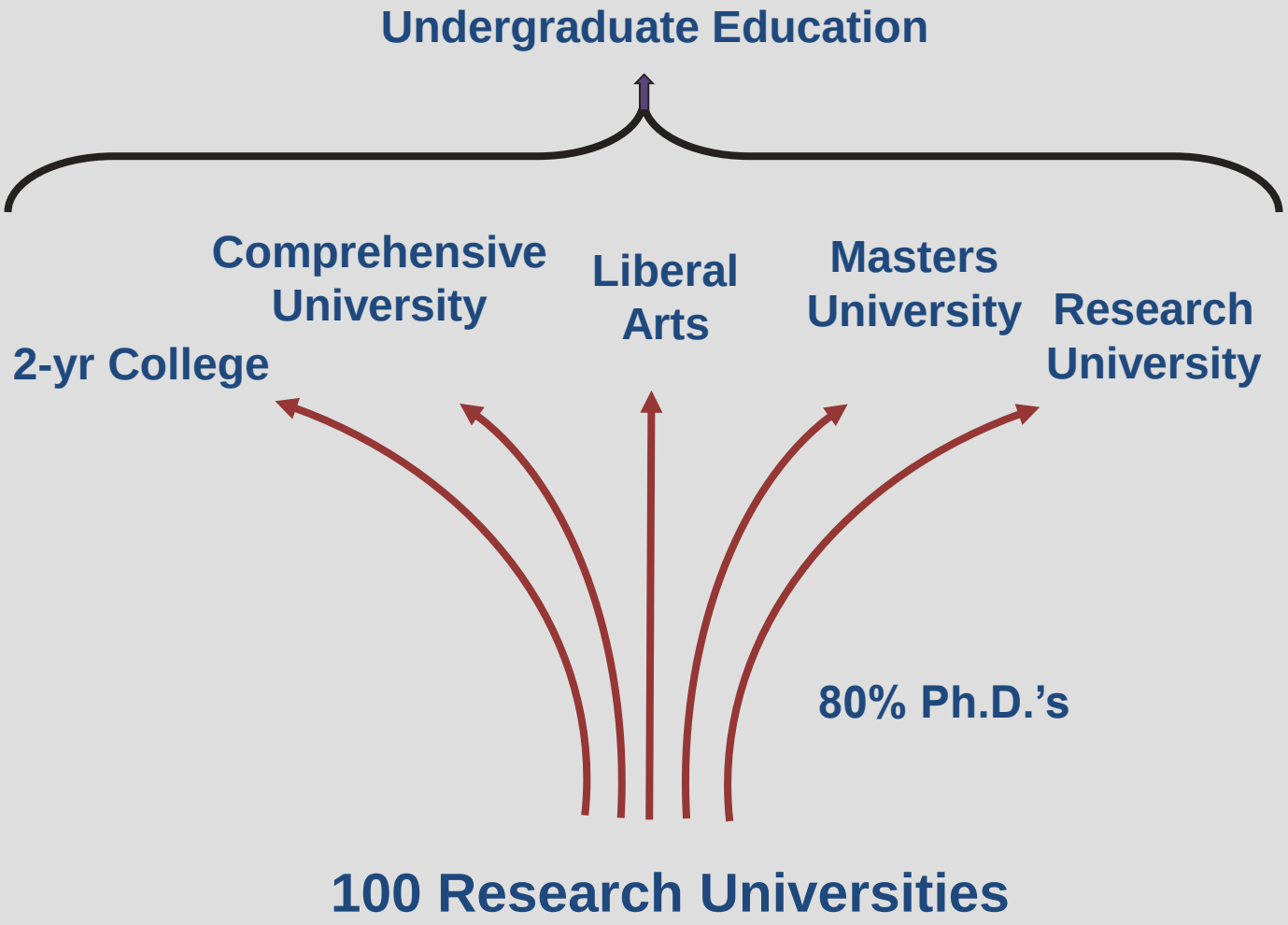
Indiana University
Iowa State University
Johns Hopkins University
Louisiana State University
Michigan State University
North Carolina State University
Northwestern University
Oregon State University
Rice University
Texas A&M University
Tufts University
University of Buffalo, State University of New York
University of Alabama at Birmingham
University of British Columbia
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of Colorado at Boulder
University of Delaware
University of Georgia
University of Houston
University of Iowa
University of Maryland, College Park
University of Maryland, Baltimore County
University of Massachusetts Amherst
University of Missouri
University of Nebraska-Lincoln
University of North Carolina at Chapel Hill
University of Pittsburgh
University of Rochester
University of Texas at Arlington
University of Texas at El Paso
University of Tennessee, Knoxville
University of Wisconsin-Madison
Vanderbilt University
Washington University in St. Louis
Yale University

CIRTL@TAMU


Undergraduate Education
2-yr College
Comprehensive University
Liberal Arts
Masters University
Research University
80% Ph.D.'s
100 Research Universities

Mission

To enhance excellence in undergraduate education through the development of a national STEM faculty committed to implementing and advancing effective teaching and learning practices for diverse student audiences as part of their professional careers.

The Core Ideas of CIRTL

Teaching-as-Research

- The deliberate and systematic use of research methods to advance teaching and learning practices

Learning Community

- Participants collaboratively construct knowledge and achieve learning goals

Learning-through-Diversity

- Learning of all students is enhanced if all engaged

CIRTL@TAMU

- CIRTL Associate: recognize the role of the CIRTL pillars in effective teaching and learning.
- CIRTL Practitioner: scholarly teaching that builds on the CIRTL pillars to demonstrably improve learning and make the results public.
- CIRTL Scholar: scholarship that advances teaching and learning under peer review.

CIRTL@TAMU

- The benefits of student and postdoc involvement include:
  - Access to various local and national courses, workshops, MOOCs, and groups on research and teaching.
  - Increased effectiveness as teachers throughout their careers.
  - Competitive advantage for faculty positions, and a head start as junior faculty members.
  - Increased success in obtaining NSF Graduate Fellowships, CAREER awards, and research funding.

CIRTL@TAMU

- You can help by:
  - Becoming a faculty mentor for graduate and post docs
    - Academy for Future Faculty
    - Teaching-as-Research (TAR) Fellowship
  - Facilitate a MOOC Learning Community of grad students and/or postdocs
  - Facilitate an online course for CIRTL Network of 22 universities
  - Participate on CIRTL@TAMU Steering Committee
  - Apply to our upcoming Faculty Scholar position

Questions?

ogaps.tamu.edu

lbright@tamu.edu

Council of Principal Investigators

CPI Graduate Education Special Topics Committee

- Charge

  Provide recommendations to the President on ways in which **new investments** in graduate student education and training could have a significant, transformative impact on the research enterprise at Texas A&M University.

- Membership

  Teresa Wilcox (Liberal Arts, Chair)

  Hubert Amrein (Medicine)

  George Cunningham (Education and Human Development),

  Victor Ugaz (Engineering)

  Heather Wilkinson (Agriculture & Life Sciences)

  Mark Zoran (Science).

Four areas of priority

1. Competitive, Sustainable Multi-year Funding Offers

As part of an increased commitment to graduate student funding, the committee encourages conversations about the following:

1. Ways in which colleges and departments (units) could be incentivized to offer guaranteed, multiyear packages to prospective students.
2. Implementation of minimum stipend levels, recognizing that stipend levels vary (sometimes dramatically) across colleges and fields of study.
3. University commitment to payment of graduate student tuition and fees.
4. Funding models that would allow students to focus on research, without teaching responsibilities, during critical stages in their graduate training.
5. Mechanisms by which graduate students could obtain funds to directly support their research.

2. Coordinated Recruitment Efforts

Recruitment efforts at local levels could be significantly enhanced by the implementation of university supported efforts. At the same time, the most effective method for doing this may vary by field of study. For example, umbrella admittance programs, like that shared by Dr. John La Pres with the CPI and guests on August 11, 2016 works well for science-related fields. Other models, might work better for Engineering, Social and Behavioral Sciences, and other fields.

The committee recommends exploration of several coordinated recruitment models that include, as a central component, ***shared financial and administrative support***.

3. Professional Development Opportunities

Some areas of professional development would benefit significantly from additional resources. The committee recommends discussion about:

- Enhancement of graduate student writing competencies, both scientific writing and writing to translate scientific ideas to the lay community
- The extent to which our graduate training efforts map onto the changing landscape of potential career paths of our students and current measures of student success

4. Interdisciplinary Programs

The committee recommends:

- Exploration of IDP models that have been effective at other institutions, identification of institutional barriers that hinder the creation of IDPs, and creation of incentives for generating institutional structures that facilitate their implementation and sustainability.
- Generation of IDPs should be faculty driven, with clear expectations and goals, and with university support to accomplish these goals.