INSTITUTE FOR
COMPUTING AND
INFORMATICS
STUDIES

Report on the Evolution of the Institute for Computing and Informatics Studies (ICIS)

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Computer Science and Engineering Advisory Council

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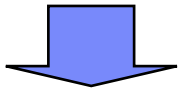
Agenda

- ICIS Overview
  - Background
  - Research Groups
  - Current Funding and Projects
- Proposal
  - CSE Research Division
    - Improve administrative and logistical support to research
    - Enhance faculty research emphasis
    - Enhance student research opportunities
    - Consolidate research and tech transfer mechanisms

Restructuring CSE Research Infrastructure

- Conclusion of the programmatic activities of the PRECISE Project (June 2004)
- Improved research activities in Computing and Information Sciences and Engineering (CISE) at UPRM
- Need for continuing an steadfast work towards a sustained mainstream position in research thrusts activities
- Need for developing well thought out strategies to seek and manage, retain, and properly manage competitive grants
- Necessity to provide CSE faculty an identity.



- ICIS is a formulation for a new restructuring of our CSE research infrastructure activities and administrative organization

ICIS Research Groups

- Advanced Data Management
- Automated Information Processing
- Parallel and Distributed Computing
- Network Systems
- Human Computer Interaction

Advanced Data Management Lab

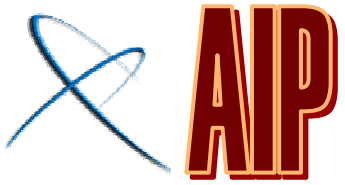
- Faculty
  - Manuel Rodriguez-Martinez
  - Bienvenido Velez-Rivera
  - Pedro I. Rivera-Rivera
- Students
  - 2 Ph.D. Students in CISE Ph.D. Program
  - 8 M.S. Students in Computer Engineering (3 Female)
  - 12 B.S. Students in Computer Engineering (4 Female)
- Research Areas
  - Distributed Database Systems
  - Database Middleware System
  - Fault-tolerant Storage Systems
  - Information Retrieval

Parallel and Distributed Computing Lab

- Faculty
  - Wilson Rivera
  - Nayda Santiago
  - Jaime Seguel
  - Fernando Vega
- Students
  - 2 Ph.D. Students in CISE Ph.D. Program
  - 5 M.S. Students in Computer Engineering
  - 4 B.S. Students in Computer Engineering (3 Female)
- Research Areas
  - Grid Computing
  - Workflow Management
  - Distributed Algorithms
  - Performance Modeling and Evaluation

Automated Information Processing Lab

- Faculty
  - Domingo Rodriguez
- Students
  - 6 M.S. Students in Computer Engineering (4 female)
- Research Areas
  - Computational Signal processing
  - Sensor Array Design
  - Information Rendering



Network Systems Group

- Faculty
  - Yi Qian
  - Seok Y. Tang (postdoc)
- Students
  - 1 Ph.D. Students in CISE Ph.D. Program
  - 3 M.S. Students in Computer Engineering (1 female)
  - 3 B.S. Students in Computer Engineering
- Research Areas
  - Resource Management and QoS Control
  - Network Security

Human Computer Interaction Group

- Faculty
  - Nestor Rodriguez
  - Jose Borges
- Students
  - 5 M.S. Students in Computer Engineering
  - 1 B.S. Students in Computer Engineering (female)
- Research Areas
  - PDA-Based Medical Informatics
  - Usability Studies

Current Funding

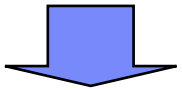
- **PRIDCO**: Center of Excellence for Industrial Sotware Development (Indusoft); **$2.0M**; Yr. 2004-2007.
- **NSF**: Wide Area Large Scale Automated Information Processing; **$2.7M**; Yr. 2004-2009.
- **NSF**: Multidisciplinary E-Government Research and Education as a Catalyst for Effective Information Technology Transfer to Regional Governments; **$750K**; Yr. 2003-2006.
- **NSF-ESPCOR**: Security for Hybrid Wireless Networks; **$178K**; Yr. 2004-2006
- **HP**: A Digital Publishing Research Program; **$900K**; Yr. 2004-2006.
- **IBM**: SUR Grant; **$150K**; Yr. 2004-2005.

Research Projects

- WALS-AIP (NSF: 2004-2009, $2.7M)
  - Developing a new conceptual framework for the automated processing of signal-based information
- Digital Government (NSF: 2003-2005, $750K)
  - Transfer of information technology into government practices
- Digital Publishing (HP: 2004-2006, $900K)
  - Enabling automated digital publishing workflow and variable data printing
- Wireless Network Information Assurance (NSF: $178K)
  - Developing QoS control schemes, protocols, and security mechanisms for wireless networks

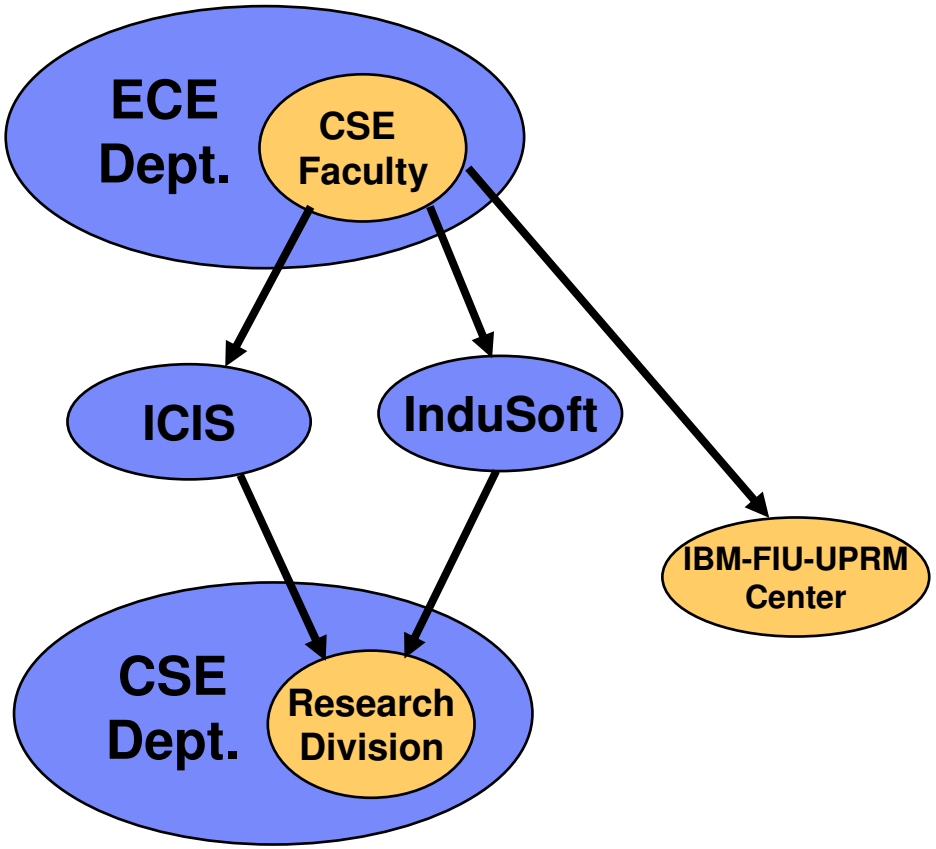
New Events

- B.S programs in CS&E and SwE approved by Senate
- Creation of a Department of CS&E approved by Senate
- Academic programs and the CS&E Department should be in place by 2006-2007.



- ICIS should be adopted by the CS&E Department as a Research Division

CSE Organization



CSE Research Division Goals

- Improve administrative and logistical support to research
- Enhance faculty research emphasis
- Enhance student research opportunities
- Consolidate research and tech transfer mechanisms

Specific Objectives

- **Improve administrative and logistical support to research**
  - Hire staff (institutional) trained in proposal writing, report generation to funding agencies, and budget generation.
  - Provide an operational budget with some institutional support to budget the reserves needed for capital equipment, service, and maintenance
  - Create a “Research Information System” to support reports
    - institutional reports, funding agency reports, web pages updating, and others
    - e.g. documentum e-Rooms, IBM Tools.

Specific Objectives

- **Enhance faculty research emphasis**
  - Create mechanisms to negotiate release times
    - A ad-hoc committee to negotiate with dean of administration
    - Maintain 6 credits of release time for the first 3 years
    - Create a bonus ‘productivity” program
  - Create external funding training program (NSF, NIH, DoE, etc)
    - Faculty travel to workshop organized by funding Agencies
    - Disseminate information gathered in workshops (Local workshops)
    - Invite program managers from funding agencies
    - Create strategic partnerships (e.g. FIU, UT)
  - Create a Corporate Affiliates Program
    - A CS&E faculty member will be designated as contact for each affiliate
    - Affiliates are invited to visit the campus during the year to discuss topics of mutual interest and to learn about the latest CS&E research findings
    - faculty members visit the company's facility to discuss current research projects or to present a seminar of interest to company employees
    - Promote an industry seed grant program

Specific Objectives

- **Enhance student research opportunities**
  - Create an internship program with industry partners
    - Research projects funded by industry partners
    - Internships be part of project budgets
    - Allow non US citizens students to participate
  - Participate actively in REU programs around the country
  - Create a REG program with strategic partners

Specific Objectives

- **Consolidate research and tech transfer mechanisms**
  - Leverage over Indusoft activities (PRIDCO)
  - Coordinate activities with PRTech, Vitec, Potential Technology Parks
    - SBIR Programs and incubators.
  - Create Industry/University Research Centers (e.g. IBM-FIU-UPRM Center)
  - Create a Technology Transfer Training Program
    - Learn from other institutions' experiences (e.g. FIU, FAU, Purdue, MState)