

Regional Research Network: Puerto Rico's Model

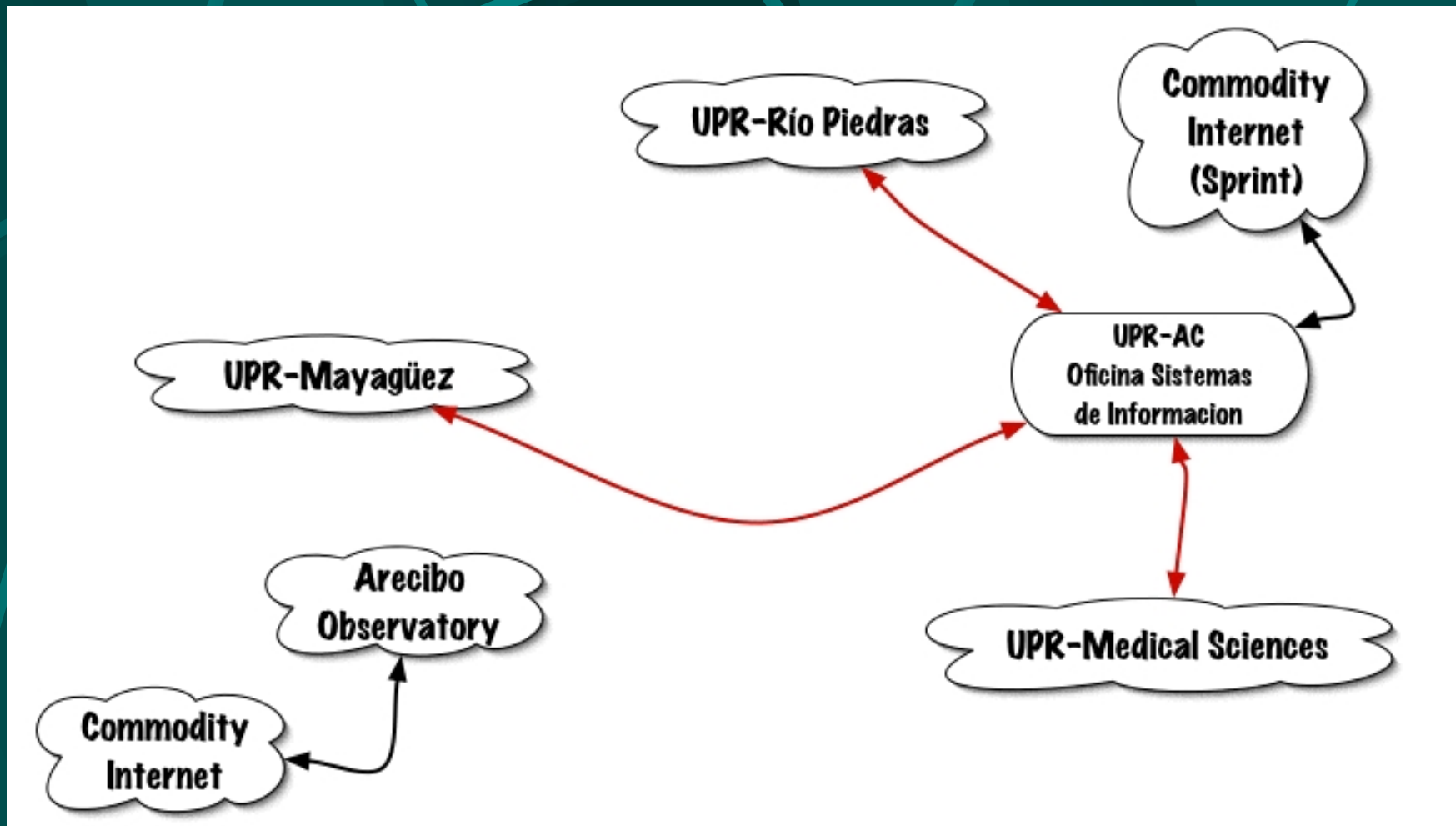
Dr. Guy Cormier

Director, UPR-High Performance Computing facility

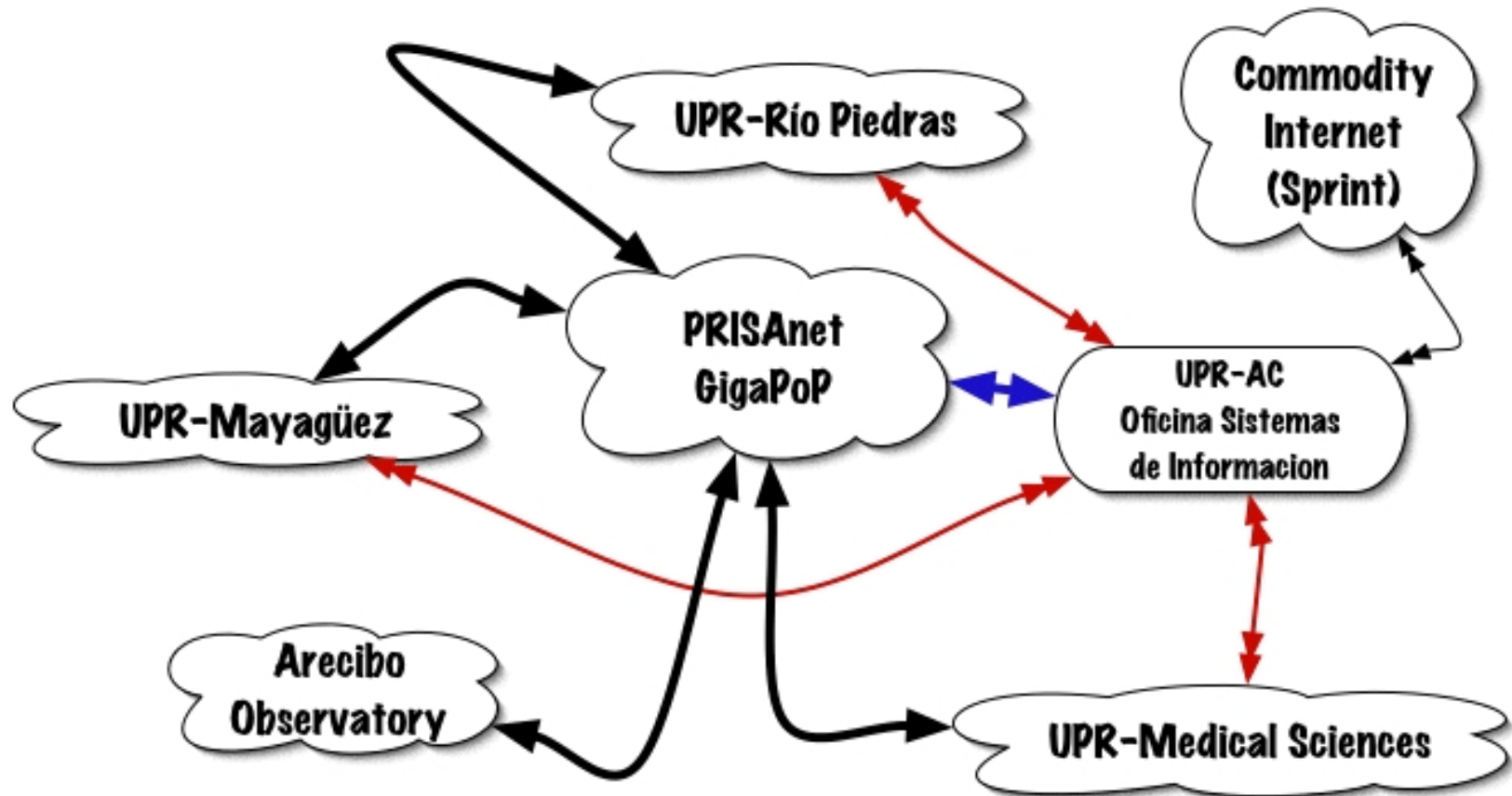
Institutional Overview

- UPR system : 11 campuses & 72,000 students
- 3 graduate schools
- UPR-Río Piedras
 - 18,000 undergraduate students - 4,000 graduate students
 - Arts & Sciences, Law, Architecture, Business School
- UPR-Mayagüez
 - 12,000 undergraduate students - 1,000 graduate students
 - Arts & Sciences, Engineering
- UPR- Medical Sciences Campus
 - 1,600 undergraduate students - 1,500 graduate students
 - Medical School, Dentistry, Nursing, Public Health, and Biomedical Sciences

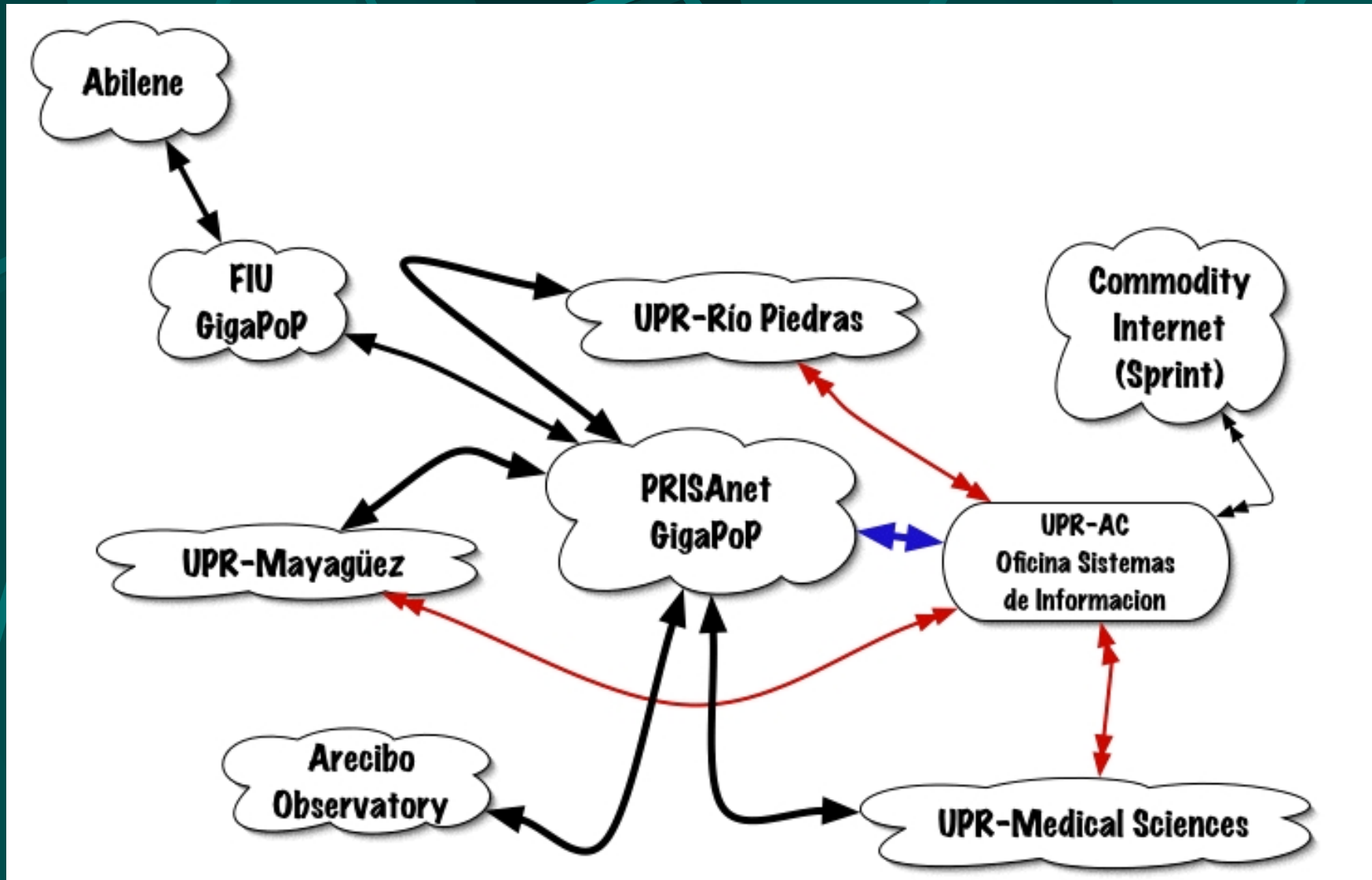
Pre-Internet2 networking



PRISAnet (phase 1)



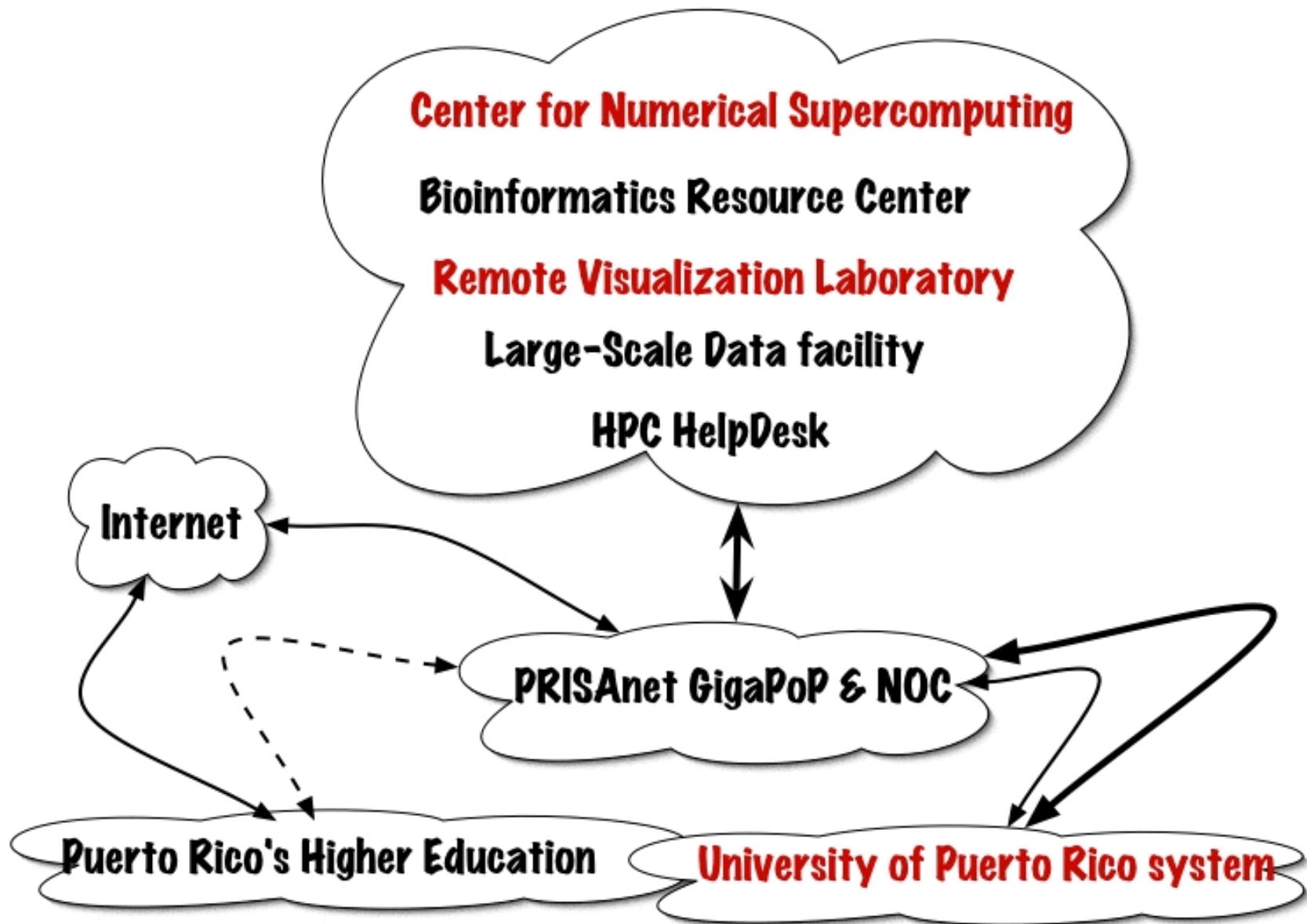
PRISAnet (phase 2)



Some Applications (mostly under development)

Title of Project	Field	Main Collaborating Institutions
High Performance Computing facility		UPR system, Puerto Rico Higher Education, University Kentucky, NCSA, NPACI
Remote operation of the Arecibo radio-telescope	Astronomy and Atmospheric Science	
Mayagüez High Energy Physics Cluster	High Energy Physics	Fermi National Accelerator Laboratory
Subsurface Sensing and Imaging Systems (NSF ERC)	Remote Sensing and Signal Processing	Northeastern University, Boston University, Rensselaer Polytechnic Institute
Tropical Center for Space and Earth Studies	Satellite Imagery	NASA, John Hopkins University
Geophysical Fluid Dynamics Facility	Geology and Oceanography	Florida State University, USC, Pacific Tsunami Warning Center, University of Alaska, USGS
Ionic Channels in Biological Membranes	Chemical Physics and Biochemistry	Sandia National Laboratories
Molecular Modeling Center	Chemistry	Mayo Clinic
Luquillo Long Term Ecological Research Project	Terrestrial Ecology	Scientists from over 40 research institutions nationwide
Laser confocal microscopy facility	Structural Biology	
BRIN-PR	Biomedical Sciences	23 other BRIN jurisdictions
Health Disparities in Latino Populations	Public Health	Harvard Medical, VA, USF
Caribbean Primate Research Center	Primatology, Genetics, Aids Research	National & International Collaborators
HPCf - Distributed Network Monitoring and Intrusion Detection System	Network Engineering	NLANR, PSC, OpenSource community

UPR-High Performance Computing facility



BRIN-PR project

(Biomedical Research Infrastructure Network)

- 10 Puerto Rican Universities, 2 more proposed
- 3 Mentoring Institutions (UPR-RRP, UPR-MSU, UPR-RUM)
- 3 major research themes
 - Neurosciences
 - Mental Health
 - Medical Biotechnology
- 4 Infrastructure Cores
 - Research Core
 - Bioinformatics Core
 - Bioinformatics Resource Center
 - Help with Internet2 networking
 - Administrative Core
 - Outreach and Training Core

UPR-CISE project

(Computing and Information Sciences and Engineering)

- Multicampus - Multidisciplinary PhD program in CISE
- 2 principal institutions (UPR-RRP, UPR-RUM)
- Major research themes
 - Computer Science and Applied Mathematics
 - Computational Sciences
 - Software Engineering
 - Bioinformatics
- Proposed development of a research institute joining the CISE PhD program with the High Performance Computing facility of the UPR
- Creation of a Virtual Machine Room for Puerto Rican CISE education and research

- Comments ?
- Questions ?
- Suggestions ?

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