Charter of the Puerto Rico Resource Center for Science and Engineering

Historical Background

During the 1970's, Puerto Rico was in the throes of an economic transition to highly technical capital intensive industry, mainly pharmaceutical, petrochemical, and electronics, which demanded drastic and rapid changes in the preparation of its human capital, particularly in the fields of science and engineering. At the national level, the Federal Government, on the other hand, was strongly promoting the participation of minorities and low-income students in science and engineering fields through programs sponsored by the National Science Foundation. As a result of these two converging forces, the University of Puerto Rico System, together with the three largest private institutions, Inter American University, Catholic University, and the Ana G. Méndez Foundation, pooled their resources and submitted a proposal to the National Science Foundation to create and operate the Puerto Rico Resource Center for Science and Engineering (PR-RCSE). On June 16, 1980, after a highly competitive process, the National Science Foundation awarded the University of Puerto Rico a $2.7 million grant to establish NSF's third national Resource Center for Science and Engineering on the Island. The UPR contributed $2.4 in matching funds. The first national Center was established in 1978 at Atlanta University, a cooperative effort of 38 institutions; and the second national Center was established at the University of New Mexico, an alliance of 16 higher education institutions in the southwest.

Although physically located at the UPR Río Piedras Campus, the multi-institutional, multi-disciplinary nature of the Center called for the organizational structure of the PR-RCSE to be ascribed to the UPR Central Administration, responding to the President of the University through the then Director of the Academic Affairs Systemwide Office. Dr. Manuel Gómez, who at that time was Dean of Natural Sciences at UPR-Río Piedras and led the multi-institutional task force that conceptualized the Center, was appointed by the UPR President Director of the PR-RCSE, a position that he successfully holds two decades later. At the time of the creation of the PR-RCSE, the then Council of Higher Education approved the plan of action and mission of the Center and approved the proposal and committed itself to institutionalize the Center upon completion of the NSF grant.

Two major achievements in the first years of the PR-RCSE was the creation of the first truly multi-campus PhD program in biology at UPR-Rio Piedras and Medical Sciences Campus and the first multidisciplinary PhD program in chemical physics including the Physics and Chemistry departments of UPR-Rio Piedras and UPR Mayagüez. The other was the development of a K-16^{+} continuum of innovative systemic education projects to develop S&T education and increase the number of Puerto Rican students who complete careers in these disciplines.

Twenty-three Years Later

In the past two decades, the 1980 goal of increasing the number of minority and low-income students in science and engineering careers has evolved into an entrepreneurial organization with the mission of *"Fostering and nurturing a community of present and future scientists, mathematicians, engineers, technologists, innovators and entrepreneurs to provide Puerto Rico the human resources infrastructure and research base required for the Island's economic development and global competitiveness."* Since that time, the RCSE has grown steadily, diversifying its programs, services, and funding sources in a coherent and strategic manner. The RCSE has a $21 million budget with a portfolio of 42 projects from 12 different agencies (federal, state and private) interwoven into a unified global strategy. The RCSE's funds are obtained through competitive grantsmanship processes and the formation of strategic alliances to optimize UPR system resources and to foster industrial and private institutional partnerships.

Since its inception in 1980, the leaders of the UPR and the PR-RCSE envisioned the need to create and maintain at the System level an agile and flexible structure that had sufficient freedom from the constraints of the traditional institutional culture to lead, respond to, and support innovation as well as the capacity to establish effective working relationships among diverse organizations to forge alliances that pool the best resources across institutional boundaries in order to achieve the following common goals: the island wide reform of the science, mathematics, engineering and technology educational system and the development of the research infrastructure required to make Puerto Rico competitive in R&D. Intrinsically these goals are broader than those of the individual institutions. Partners over the years have included the major universities in Puerto Rico, the Puerto Rico Department of Education, the Puerto Rico Chamber of Commerce, the Puerto Rico Manufacturers Association, private industries, and professional associations such as the American Chemical Society and the Puerto Rico Associations of Science and Mathematics Teachers as well as internationally recognized societies such as the National Science Teachers Association, the American Association for the Advancement of Science (AAAS), and the Smithsonian Institute.

In the last two decades, the steady growth in human and fiscal resources led the PR-RCSE to re-conceptualize its operation along crucial development pathways. As a result, a Charter for the PR-RCSE was developed and a pre and post award management system was created and implemented to: identify windows of opportunity for securing funds to meet the educational and R&D needs of PR and the UPR System; design and organize projects and Centers that respond to these needs; optimize the use of resources while complying with the processes and regulations established by UPR and the funding agencies, and to foster an entrepreneurial environment for obtaining funds for S&T education and research. Since the primary role of the PR-RCSE is to serve as a catalytic agent for innovation, 90% of the funds obtained by the PR-RCSE are distributed to the UPR institutional units and to the private institutions for the implementation of jointly planned education and research projects. Only ten percent

of the funds are retained by the PR-RCSE to support its administrative structure and to secure the services of consultants during the strategic planning process to develop new projects, thus evidencing the cost-effectiveness of its operation.

The accumulated experience of the first 20 years, together with a steady growth in human and fiscal resources have led the PR-RCSE to re-conceptualize itself several times during this period of time to effectively meet its mission and goals. As a result, in 2001 a Charter was developed for the PR-RCSE.

On February 22, 2003, the Board of Directors of the University of Puerto Rico System approved the reorganization of the UPR President's Office, together with the Institutional Chart and Organizational Plan. Certification No. 90 2002-03 of the Board of Directors continues to recognize the system wide scope of the PR-RCSE; clearly states the Center's main function as one to promote the development of the natural sciences, engineering and technology in the university system, and ascribes it to the recently created Vice Presidency for Research and Technology.

Charter of the Puerto Resource Center for Science and Engineering

Mission

"To foster and nurture a community of present and future scientists, mathematicians, engineers, technologists, innovators and entrepreneurs to provide Puerto Rico with the human resources infrastructure and research base required for the Island's economic development and global competitiveness."

Objectives

1. To serve as a catalyst of and support the transformation of teaching and learning at all educational levels (K-Graduate) in order to increase and retain an increasing number of students who obtain degrees and pursue careers in science, mathematics, engineering and technology fields.
2. To foster, support, and enhance a competitive R&D infrastructure by building research capability, developing industry-university collaborations, and strengthening the quality of graduate education programs in science, engineering, mathematics and technology fields.
3. To identify the developmental needs of Puerto Rico and the University of Puerto Rico for education and research in S&T, as well as to identify windows of opportunities to secure funds to meet those needs.
4. To carry on analyses of strengths, weaknesses, opportunities, and threats (SWOT) of the S&T research enterprise and human resource development capacity of UPR and Puerto Rico and to define new and innovative projects to respond to emerging challenges.

5. To follow an entrepreneurial approach in the development of programs, processes, and the acquisition of external resources to support and enhance their operation.
6. To develop a collaborative network and serve as a broker among the consortium institutions and partners, bringing them together to identify the major educational and research needs in Puerto Rico in science, engineering, mathematics and technology areas and to jointly develop strategic alliances to provide the programs and services to address them, and to foster innovation.
7. To sustain and develop a systemwide infrastructure for research and education development and provide the information technology infrastructure needed to support it.
8. Catalyze, foster, and design Centers and Institutes to meet the educational and R&D needs of PR and the UPR System.

Organizational Strategies to Achieve Objectives

1. Creation of strategic alliances among diverse organizations that share goals related to science, engineering, mathematics, and technology education and research enterprise.
2. Adoption of a virtual organization structure to serve as a catalyst of systemic change and capable of crossing traditional institutional boundaries and using human resources distributed among the diverse institutional settings.
3. Development of a “systems” thinking perspective to approach educational and R&D reform, envisioning the educational system as a seamless continuum from K to Graduate, and forge Institutes and Centers to spearhead research in strategic areas.
4. Assist in the creation of Research Centers, Multicampus/ Multidisciplinary Institutes, and instrumentation facilities to serve as systemwide resources, and as sites of expertise and technology transfer units.
5. Engage in a constant search for windows of opportunities to improve science, engineering, mathematics, and technology education and research on the Island, and then match those opportunities with Puerto Rico’s and institutional S&T needs.
6. Development and implementation of a pre- and post-award management system to ensure the cost-effectiveness of its operation; the optimization of resources; compliance with the regulations of different funding agencies, and to retain the flexibility and entrepreneurial qualities needed to meet existing and emerging challenges and opportunities.
7. Establish multiple indicators or metrics to measure the value added of the educational and research initiatives developed and implemented and to provide continuous feedback for the development of the initiatives.
8. Build a research and education Infrastructure to support and enhance research initiatives and to facilitate educational reform projects
9. Provide informatics technologies infrastructure for educational and research initiatives.
10. Development of a database on human resources and R&D infrastructure in

S&T for the UPR System.

Organizational Scheme and Chart

During the first 20 years, the steady growth of the PR-RCSE in the number of projects, fiscal and human resources, and the number of funding agencies called for a re-conceptualization of its operation at several crucial developmental stages to: ensure the cost-effectiveness of its operation, the optimization of the resources required to meet the diverse requirements of the funded projects, and to retain the flexibility and entrepreneurial qualities needed to meet emerging challenges and opportunities. As a result, a Charter was developed for the PR-RCSE, including a unique and most effective pre- and post-award management system.

The PR-RCSE has a core facility at the UPR-Río Piedras Campus and a second office at the UPR-Mayagüez Campus where the UPR School of Engineering is located. Since the main role of the PR-RCSE is to serve as a catalytic agent for innovation, its main facility at UPR-Río Piedras houses only a "skeleton crew" of experts who serve as advisors, coordinators, and administrative personnel to run the daily operation of the Center. Only 10% of the PR-RCSE budget is assigned for this purpose, with ninety percent of the funds obtained by the PR-RCSE being assigned to the different UPR institutional units and private universities to implement educational and research projects.

Five offices form the administrative structure of the PR-RCSE: The Office of the Director, the Finance Office, the Human Resources Office, the Information Systems and Technology Office, and the Support Services Office. In addition, project management teams perform the post-award tasks required for educational and R&D projects managed by the PR-RCSE.

An Advisory Board, whose national and local members represent the R&D and educational community, assists the PR-RCSE in establishing its organizational policies, designing new solutions for identified local educational and research needs, and sharing knowledge of best R&D and educational practices available nationally and internationally, and it makes recommendations to strengthen and enhance PR-RCSE research and educational initiatives. Also, the PR-RCSE has in place the PR EPSCoR State Committee that specifically assists the EPSCoR and EPSCoR like programs in identifying and making recommendations on research thrust areas, areas in which scientific research and infrastructure can be developed for the benefit of PR. It proposes policies for reducing or eliminating barriers to the development of competitive research in PR, promotes private sector involvement in university research and expedites technology transfer, and fosters the creation of strategic alliances to enhance competitive research initiatives. The members of the EPSCoR State Committee include entrepreneurs, university, government and private sector representatives.

<u>The Office of the Director</u>

This office includes a Director, an Associate Director, an Assistant Director, and an External Research Coordinator who assists in the identification of funding sources, the development of proposals, and the development of technical reports.

In addition to establishing the Center's programmatic and administrative policies, the Office of the Director is responsible for: needs identification and strategic planning; creation of strategic alliances among diverse public and private organizations; identification of sources of funds; conceptualization, organization, preparation and submission of proposals, the development of a multi-channel network that links all stakeholders and promotes shared organizational knowledge; integration of new projects with existing ones for synergy of efforts; identification and recruitment of the best human resources --local, national, and international-- to implement the projects; meetings with Presidents, Chancellors and CEOs to foster the expansion and institutionalization of successful initiatives, and providing visibility to the PR-RCSE initiatives through presentations in local, national, and international forums.

Project Management

Every educational and R&D project in the PR-RCSE is assigned a Project Manager to ensure appropriate implementation of the post-award management system established by the PR-RCSE. Due to the increase in the number and complexity of the projects in the PR-RCSE, two Management Coordinators, one for R&D projects and one for educational projects, have been added to the organizational structure to supervise and coordinate the work of individual project managers assigned to each area. The Management Coordinators are also responsible for: knowing the regulations of each of the funding agencies for the projects under their supervision and ensuring compliance with those regulations; the proper implementation by the Project Managers of the post-award management system as it relates to the grants and contracts they administer; ensuring synergy of efforts among the projects and optimal use of resources; maintaining constant and effective communication with the Center's administrative offices to ensure an efficient operation and compliance with established procedures, and playing a key role in the PR-RCSE strategic planning and fund seeking processes and in the sharing of organizational knowledge among participating entities.

The Finance Office

This Office is responsible for: ensuring that all projects are in compliance with applicable federal, state, and/or institutional regulations; coordinating and responding to external and internal audit procedures; providing orientation to project personnel on fiscal and administrative procedures; managing all financial aspects of each of the PR-RCSE projects, including matching funds, when applicable; managing of contracts and subcontracts, indirect costs, and conflict of interests; evaluating and monitoring time and effort reports; managing intellectual property and entrepreneurial activity derived from grants, contracts or subcontracts; preparing and submitting financial reports to the different funding agencies; providing Projects PIs and Coordinators with assistance on

electronic reporting; completion or termination procedures for all projects, including reports and closing of accounts.

The Human Resources Office

This Office is responsible for: ensuring that all PR-RCSE projects comply with applicable federal, state and/or institutional regulations for recruitment and hiring of personnel and compensations for researchers, students and graduate and postdoctoral fellows; providing guidance and assistance to PIs, Coordinators, and researchers on regulations; preparing all personnel actions related to projects, contracts and subcontracts; evaluating and monitoring time and effort reports for all personnel to ensure that they comply with funded projects or contract commitments, and ensuring compliance with the Government's Ethics Office policies, when applicable.

The Information Systems and Technology Office

This Office provides and maintains the networking technology infrastructure of projects and administrative offices of the PR-RCSE for project management; trains PR-RCSE personnel in the use of software; makes evaluations and recommendations for the acquisition of electronic equipment; develops and maintains the database for projects; develops and maintains education and research web sites, and develops and maintains the PR-RCSE teleconference facilities for use by research and educational conferences, including linkage with national conferences.

The Support Services Office

This Office prepares, evaluates, and processes all immigration documents that result from the recruitment of non-US citizens to work in PR-RCSE research or educational projects; coordinates the multiple activities and conferences conducted by the PR-RCSE projects, including site-visits from federal, state or private organizations; coordinates all administrative support services for all projects and administrative staff, such as document reproduction, transportation, office equipment and materials, assignment of facilities for meetings and events; telephone, maintenance of the physical facilities, loaning of audiovisual equipment for project's activities, and insurance policies.

The PR-RCSE's organizational chart is included in Appendix A, both as it relates to the UPR Central Administration (the 2003 reorganization of the President's Office), and its internal organizational structure.

Pre-award and Post-award Management System

Pre-Award Management System

Goals:

Goal 1: Identify developmental needs of Puerto Rico and the University of Puerto Rico (UPR) for education and research in S&T, and identify windows of opportunities for securing funds to address these needs.

Goal 2: Identify possible agencies and other sources of funding for implementing projects that meet the identified needs. Search for applicable Requests for Proposals (RFPs) or Broad Agency Announcements (BAAs) that can help address the identified needs and proactively alert potential proponents of projects, and foster the formation of competitive research teams.

Goal 3: Develop working relationships with federal agencies, foundations, and industrial and government partners that finance S&T educational and research projects.

Goal 4: Maintain working relationships and contact with program officers and their offices of grants and contracts at the pertinent funding agencies.

Goal 5: Create the environment for and facilitate the formation of strategic alliances required for complex multicampus/multidisciplinary projects and for the formation of Centers and Institutes.

Goal 6: Provide technical assistance and external consultant services for the conceptualization, design, organization, and preparation of competitive proposals that meet institutional needs and match the requirements of the appropriate RFP or BAA.

Goal 7: Submit high quality, appropriately budgeted proposals that comply with UPR and agency guidelines and regulations.

Management Activities

I. Keep a dynamic and active inventory of all possible and emerging funding sources for S&T educational and research initiatives

   a. Actively search the literature and the web for all existing, emerging or potential funding sources for S&T educational and research initiatives
   b. Develop a web based inventory of potential sources, broad agency announcement and relevant RFP's
   c. Train all RCSE Project Managers in the interpretation and use of the processes, procedures, and regulations of all foundations and the major funding agencies for S&T (NSF, NIH, DoE, DoEd, NASA, DoD, EPA, Sloan, and Carnegie Foundation)
   d. Actively cultivate working relationships with program officers of all the major funding sources

II. Assess, evaluate, and keep an inventory of existing and potential needs for the development of S&T research and educational initiatives in Puerto Rico

and UPR, and of the talent pool at UPR, as well as potential partners for the development of these initiatives

a. Manage a searchable web based inventory of targeted funding sources in the S&T fields for education and research from the major S&T agencies (NSF, NASA, NIH, DoEd, DoE, DoD, and EPA)
b. Develop a network and obtain information about the pool of talent at UPR and other potential partners for the development of research and educational initiatives
c. Develop an inventory of existing and potential needs for the development of S&T research and educational initiatives
d. Establish a matchmaking process for pairing education and research needs with the talent pool, and then search for funding and developmental windows of opportunity

III. Cultivate and develop working relationships with major S&T funding agencies and key program officers

a. Attend and participate in major S&T forums and agency sponsored activities to disseminate information about the S&T infrastructure, human talent, and potential of UPR to develop major S&T projects
b. Invite program officer personnel from key agencies to Puerto Rico to disseminate information about their agency or foundations for S&T programs and initiatives
c. Sponsor workshops for the development of skills and strategies needed for successful grantsmanship among UPR S&T faculty and administrators
d. Facilitate communication with agency personnel about UPR researchers and educators and their needs
e. Prepare an interactive web page and brochures to disseminate information about UPR achievements through the implementation of successful federally funded and foundation sponsored projects

IV. Create the environment and actively facilitate the formation of Strategic Alliances needed for the development of Complex Multicampus/Multidisciplinary Projects and the formation of Centers and Institutes

a. Sponsor and organize task forces of the relevant UPR human resources and potential government and/or industrial partners to conceptualize and design complex multidisciplinary/multicampus proposals and the formation of research centers or institutes
b. Broker, mediate, and facilitate the formation of strategic alliances within UPR and between UPR and other institutions of higher education, national labs, government, and industry required to forge centers, institutes or complex proposals that can successfully compete for external funds

c. Negotiate Memoranda of Understanding (MOUs) and other types of agreements and endorsements needed for the formation of Centers, Institutes and the development of complex proposals
d. Sponsor workshops, provide resources, and recruit and finance consultants needed for strategic planning and conceptualization of centers, institutes and complex proposals

V. Provide Technical Assistance and External Consultant Services for the conceptualization, design, organization, and preparation of competitive proposals to respond to broad agency announcements and specific RFPs of agencies and foundations

a. Identify, recruit and finance external consultants needed for the educational and/or scientific content of proposals and to shape proposals to agencies' or foundations' institutional culture and requirements
b. Provide S&T proposal faculty teams and individual researchers the necessary information and technical assistance about agency regulations and procedures and assist them in the interpretation of the broad agency announcement or specific RFP to which the proposal is responding
c. Assist individual researchers who request assistance in identifying funding sources for his/her ideas or projects and assist them in the preparation and submission of proposals
d. For complex multidisciplinary/multicampus proposals and for the formation of Centers and Institutes provide the extensive and proven expertise of the PR-RCSE in this type of proposal and assist in the conceptualization, design, organization, and development of management strategies needed for these type of proposals
e. Provide technical writers to assist with the writing of proposals

VI. Prepare and submit high-quality, appropriately budgeted proposals that comply with UPR and agency guidelines and regulations

a. For complex multicampus/multidisciplinary proposals and Center and Institute formation proposals provide and finance external and internal peer review processes to select the best components, improve components that deserve to be kept, and evaluate the management and implementation plan. Then assist proposal-writing teams in improving the proposal prior to submission.
b. When applicable, assist and mediate with participating partner institutions in obtaining match funds and commitments for space, release time, and infrastructure required for proposals.
c. Provide technical assistance in the preparation of budgets, salaries, fringe benefits, subcontractors, and the calculation of indirect costs. Revise budget justification and revise and correct budget for accuracy and compliance with agency and UPR regulations and norms

VII. Lead and/or assist educators and researchers in the submission of proposals, steering proposals through UPR administrative channels and following proposals through the peer review and approval process in agencies and foundations. Assist educators and researchers in the interpretation of peer reviewers' comments, and, if necessary, provide advice and design strategies for the re-conceptualization and re-submission of unsuccessful proposals.

a. Prepare final proposal for submission and provide the necessary submission logistics
b. Steer and facilitate obtaining all necessary approvals, signatures, and the match funds approvals from the nominating and fiscally responsible authorities
c. Assist and provide technical assistance in the electronic submission of proposals
d. Provide postal, private mail carrier, federal express, or other mechanisms to ensure that the proposal meets submission deadlines and is received by the agency or foundation on-time
e. Follow up with the appropriate program officer and monitor the progress of the proposal during the evaluation stage
f. Assist in the budget negotiation stage of successful proposals
g. If a proposal is not approved or requires amendments, assist and provide technical assistance to thoroughly interpret and follow peer review evaluations and recommendations, so as not to jeopardize ultimate proposal approval
h. Assist and provide technical assistance in the re-conceptualization of unsuccessful proposals, re-designing grantsmanship strategies, addressing reviewers' concerns, or in identifying alternative funding sources

Post-Award Management System

Goals:

Goal 1: Ensure compliance with all federal, foundation, and university processes and regulations applicable to grants, contracts, and subcontracts

Goal 2: Facilitate the management and institutional administrative support needed for a successful implementation of grant or contracts

Goal 3: Facilitate the achievement of the academic, innovation, and research goals proposed in the grant or contracts

Goal 4: Facilitate and manage grants, contracts, and subcontracts on issues of conflict of interest and intellectual property derived from grants and contracts.

Goal 5: Ensure the proper performance of strategic alliances and synergy of complex proposals and proposals that have the objective of forming research or educational Institutes and Centers.

Goal 6: Provide post-award management services and logistics to any individual researcher requesting such services.

Management Activities

I. Implementation of Approved Proposals or Contracts

a. Process and register grant awards or contracts
b. Review the Grant Award to determine terms and conditions
c. Provide the management and administrative infrastructure needed to ensure compliance with grant or contract terms and conditions
d. Assign each grant or contract to a specific PR-RCSE project manager who is cognizant of the regulations of the specific funding agency or foundation

II. Orientation and Briefing of Grants or Contract Teams

a. Discuss management and administrative procedures with each PI and his/her team
b. Review with each PI the agency and university regulations and the limitations that apply to the grant or contract
c. Design creative solutions to management or administrative constraints that hinder optimal implementation of the grant or contract
d. Advocate and propose change of procedures or amendments to regulations to provide for a more flexible and responsible proposal management.

III. Management of Financial and Purchasing Aspects

a. Account creation
b. Budget creation
c. Quarterly Reports to Agency
    i. Requests for Reimbursement
    ii. Federal Cash Transaction Report and request for reimbursement of expenses from the agency or foundation
d. Income and Disbursements
e. Monitor and ensure proper use of match funds, if required
f. Assist each PI with no-cost time extension requests in accordance with funding agency regulations and amend the accounts accordingly.
g. Manage purchase orders and corporate cards purchases for all projects and contracts administered by the PR-RCSE
h. Received all merchandise and materials ordered by the PR-RCSE and register all purchased property

IV. Management of Personnel

a. Provide guidance and assistance to PIs and researchers on all issues dealing with recruitment and hiring of personnel and compensation and stipends for researchers, undergraduate research students, and graduate and postdoctoral fellowships. Inform researchers of all agency and UPR personnel regulations.
b. Prepare and process all personnel actions related to projects, contracts, or subcontracts, ensuring that they comply with UPR and agency's regulations, and obtain the required endorsements from the nominating authority.
c. Evaluate and monitor all time and effort reports to ensure they comply with proposal or contract commitments of time and effort and their regulations
d. Prepare, evaluate, and process all immigration documents resulting from the recruitment and hiring of non-US citizens.
e. Prepare and process all research student stipends and fellowships and ensure that the stipends comply with university and agency regulations
f. Proactively analyze and resolve all problems arising from personnel issues related to project and contracts. Find creative solutions to all personnel issues that can hinder proper implementation of grants or contracts

V. Management of Contracts and Subcontracts

a. Provide orientation, guidance on procedures, and regulations for the preparation of contracts and subcontracts with other institutions and research centers
b. Process and guide contracts and subcontracts through the legal office and obtain final approval from the nominating authority
c. Obtain, evaluate, and monitor the necessary financial and research or educational outcome reports received from subcontractors
d. Audit and evaluate financial and project reports from subcontractors and contractors to ensure compliance with signed agreements and UPR and agency's regulations

VI. Management of Conflicts of Interest

a. Provide orientation and guidance to PIs and researchers on all issues concerning management of conflict of interests
b. Ensure that all grants and contracts comply with the management of conflict of interest regulations of federal agencies, foundations and UPR
c. Require and evaluate conflict of interest disclosures from subcontractors and researchers

d. Establish a committee that oversees, monitors, evaluates, and resolves all possible conflicts of interest resulting from grants, contracts or subcontracts

VII. Management and monitoring of all Intellectual Property and Entrepreneurial Activity deriving from grants, contracts, and subcontracts

a. Provide PIs and researchers orientation to and guidance in understanding and adhering to the university intellectual property and commercialization policy
b. Assist PIs and researchers in the registration of patents
c. Ensure that all grants and contracts comply with the intellectual property policies of UPR, granting agencies, and contractors or subcontractors
d. Negotiate with contractors and subcontractors all intellectual property and commercialization issues
e. Assist and collaborate with the intellectual property and commercialization office to ensure that registration of patents, technology transfer, and commercialization occurs
f. Assist PIs and researchers in developing entrepreneurial activities including the preparation of SBIR and STTR proposals and assist in negotiations with potential start-up or industrial partners

VIII. Evaluation and monitoring of all Center, Institute, or complex projects to ensure synergy and the positive development of alliances

a. Evaluate technical and financial reports to ensure that they are achieving the Center's or Institute's goals
b. Assist PIs and researchers in the resolution of problems between strategic alliance partners
c. Assist and provide technical assistance and logistics support for site visits and external advisory board visits, and assist in the preparation of responses to site visits findings and conditions

IX. Technical and Financial Reports

a. Assistance in preparation of technical and financial reports
b. Ensure compliance with reporting requirements
c. Data gathering
d. Assistance with electronic reporting

X. When applicable, assign funds derived from indirect costs in accordance with UPR Certification Number 130 (1988-1989) for the use of Indirect Costs

XI. Development of information and databases to provide information to sponsoring agencies or foundations, and organize local and national

conferences to disseminate achievements of grants and contracts at the local and national levels

XII. Evaluation Process

a. Assist with the evaluation of outcomes and achievements of projects' goals
b. Evaluate projects to assess their contribution to the overall goals of the UPR and the PR-RCSE

XIII. Completion or Termination Procedures for Projects

a. Final Report
b. Budget Evaluation
c. Carry-over of funds and no-cost extension requests
d. Closing of accounts
e. Assistance with electronic reporting and closing of accounts

Infrastructure Building for Research and Education and Information Technology Services

To achieve its catalytic and facilitator role in R&D and Educational innovation, the PR-RCSE finances, supports, and administers some systemic infrastructure facilities, and pioneers the building of infrastructure to develop specific thrusts in education and R&D. The following are the existing systemic infrastructure facilities and thrust development activities:

HPCf – Provides high-performance computing and technical services for state-of-the-art computational capabilities for S&T. and includes supercomputing facilities, imaging facilities, and software that are open to all researchers at UPR and Puerto Rico via the Internet2 wide-band connectivity. The PR-RCSE also sponsors, through the BRIN Project, a Bioinformatics facility to promote the development of this important field in the area of biotechnology and molecular sciences.

Internet2 – The GigaPoP and connections to the Internet2 through the ABELEN backbone were developed with grants from NSF and are currently managed by the HPCf staff, with support from the NSF-EPSCoR Project. The necessary network engineering support to sustain the network is provided by the HPCf staff, with EPSCoR funds.

Web of Science – Through a partnership with the Head Librarian of the UPR System and the Librarians of the graduate campuses, access to the Web of Science electronic abstract services has been provided to all researchers to assist them in

proposal preparation and the submission of R&D manuscripts. The NSF-EPSCoR and BRIN Projects provide financial support to sustain this service.

Internet Connectivity for Project Management and Web Sites – Because of the increased use of web based electronic transactions involving funding agencies, the PR-RCSE supports state-of-the-art Internet connectivity and provides the necessary software to search for information for proposal preparation, proposal submission, and post-award management. Web sites are also being managed by the PR-RCSE staff to assist in the dissemination of outcomes and results of the more than 40 projects simultaneously managed by the PR-RCSE and to provide information about S&T human resources and R&D infrastructure in the UPR System.

Data Base on Human Resources and R&D Infrastructure – To support pre- and post-award management of projects, basic data on S&T human resources, project outcomes, and R&D infrastructure is needed both for submission of competitive proposals and to comply with agency and foundation post-award management requirements. PR-RCSE staff manages and maintains this database.

Building Research Thrust Areas – The PR-EPSCoR State Committee with the advice of a team of experts of the AAAS developed a plan to promote research in four major S&T areas:

- Nanotechnology
- Environmental Sciences and Engineering
- Computational and Information Technology
- Molecular Sciences, including Biotechnology

The PR-NSF-EPSCoR, BRIN, NASA-EPSCoR, COBRE I, and COBRE II projects are developing the needed infrastructure to move forward these four thrusts.

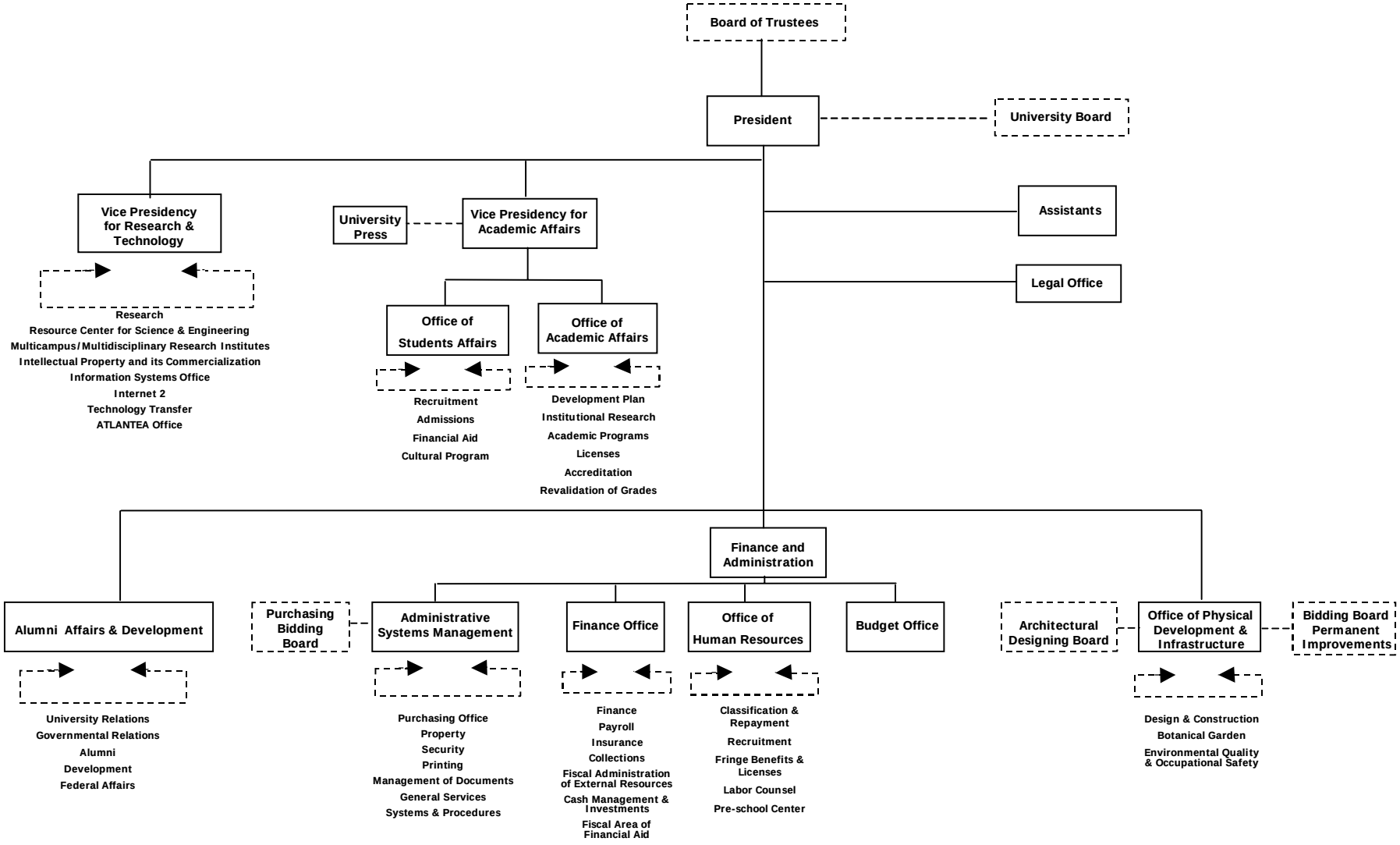
Building Infrastructure for Educational Reform – Through the PR-SSI project, the PR-RCSE implemented a Science & Math Educational Reform at 760 public schools during a ten-year period. Presently it is implementing a pioneering project to test distance learning as a medium for the continuing education of teachers in 100 public schools. To achieve this goal it supports a Blackboard platform.

Revised in 2001 for a presentation to the UPR Board of Directors, and in 2003 to include the latest reorganization of the UPR President's Office.

g:/crci-dir/Pinero/Charter of the RCSE 2003.doc

Appendix A

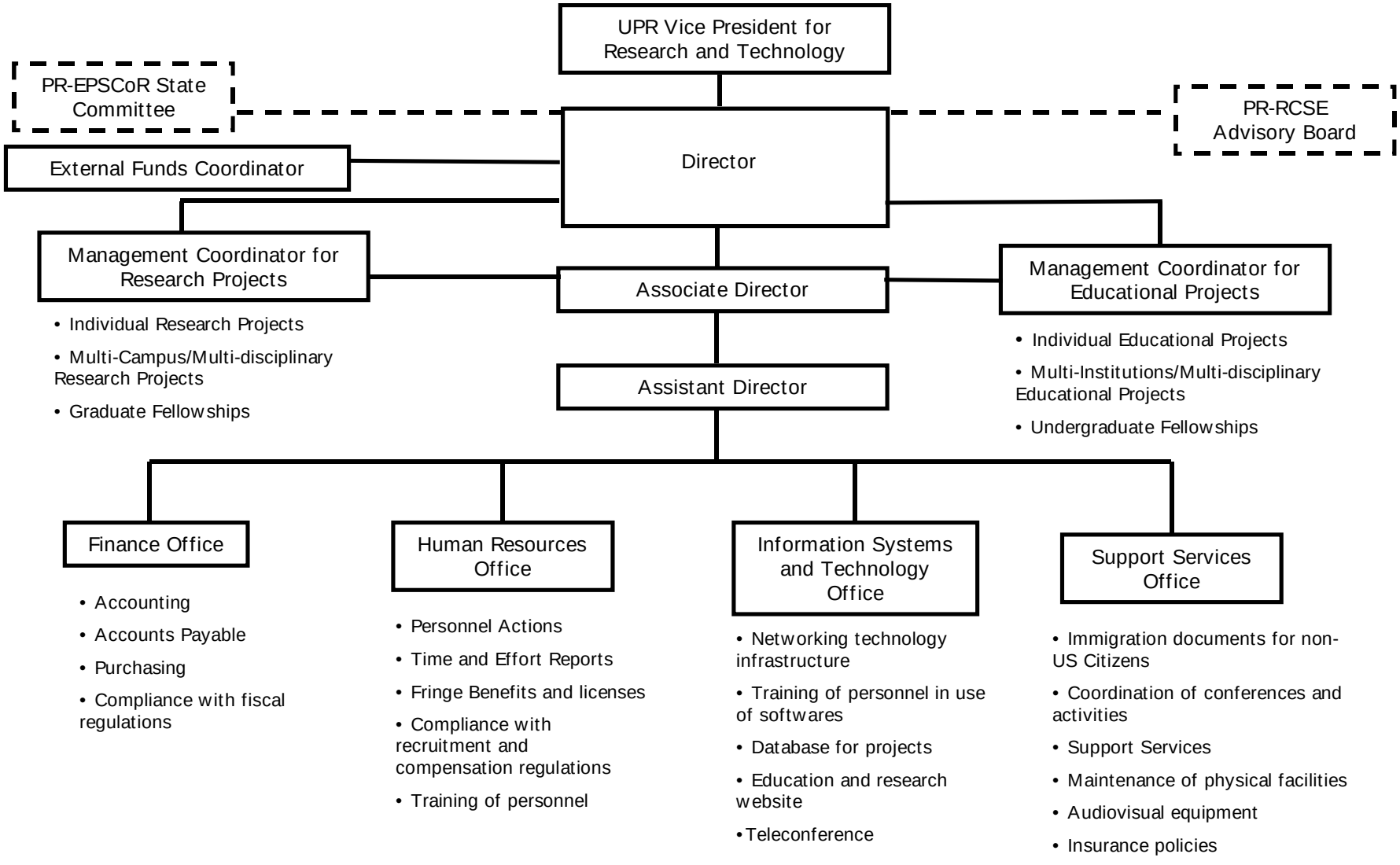
University of Puerto Rico
Office of The President
Institutional Organizational Chart



May 2003

Puerto Rico Resource Center for Science and Engineering

Organizational Chart



May 2003