

University Research Centers
 Type of Agreement: Cooperative Agreements
 Project Manager: Katrina Emery
 Dryden Flight Research Center
 661-276-5807

PROJECT DESCRIPTION

The University Research Centers (URC) are multi-disciplinary scientific, engineering and/or commercial research centers at host universities from Minority Institutions (MI). URCs provide a broad-based, competitive NASA-related research capability among the Nation’s MIs that foster new aerospace science and technology concepts. Designed to expand the Nation’s base for aerospace research and development, URCs provide mechanisms for expanded participation by faculty and students of MIs in mainstream research, and increase the number of underrepresented and underserved U.S. students obtaining advanced degrees in NASA-related fields. URCs are collaborative Centers conducted in cooperation with NASA’s Mission Directorates and NASA Centers, substantially contributing to NASA’s space and aeronautics goals and objectives.

The first competition for URC was held in Fiscal Year (FY) 1991 open only to HBCUs. It resulted in five-year awards to seven universities designated as NASA HBCU Research Centers. A second competition for new awards, open to both HBCUs and Other Minority Universities (OMU), was held in FY 1995, resulting in five-year awards to four HBCUs and three OMUs designated as Minority URCs. Shortly thereafter, the HBCU Research Centers and the Minority URCs were formally combined into a single program, with the two sets of awardees designated as Group 1 and Group 2, respectively. In FY 1996, Group 1 URCs were invited to propose for a second five-year period. After extensive reviews, all seven Group 1 URCs were awarded a second five-year term. In FY 2000, the Group 2 Centers were renewed for a second five-year period after extensive reviews. In FY 2002, eleven awards were made to Group 3 URCs (four HBCUs, four OMUs and three Group 1 URCs were renewed for four years). By the end of FY 08, seven new awards were made as Group 4 URCs.

Group 1	Group 2
Clark Atlanta University Fisk University Florida A&M University Hampton University Howard University North Carolina A&T University Tuskegee University	Alabama A&M University Morehouse School of Medicine Prairie View A&M University Tennessee State University University of New Mexico University of Puerto Rico, Mayaguez University of Texas at El Paso
Cohort 3	Group 4
California State University, Los Angeles City College of New York Clark Atlanta University Hampton University Morgan State University Norfolk State University Southern University Texas Southern University Tuskegee University University of Puerto Rico, Rio Piedras University of Texas at Brownsville	California State University, Los Angeles Florida International University Howard University Morgan State University Prairie View A&M University Texas Southern University University of Puerto Rico, Rio Piedras

PROJECT GOALS

The overall goal of the URC project is to continue NASA's commitment to achieving a broad-based, competitive aerospace research and technology development capability at MIs that will:

- Expand the nation's base for aerospace research and development by fostering new aerospace research and technology development concepts;
- Develop mechanisms for increased participation by faculty and students at MIs in the research programs of NASA's Mission Directorates; and
- Increase the numbers of undergraduate and graduate degrees awarded to U.S. citizens from MIs in NASA-related fields.

The specific objectives for URCs are to:

- Establish significant, multi-disciplinary scientific, engineering, and/or commercial research centers at the host university that contribute substantially to the programs of one or more of the four NASA Mission Directorates described in the NASA Strategic Plan;
- Move increasingly towards gaining support from sources outside the URC project by aggressively pursuing additional funding opportunities offered by the NASA Mission Directorates, industry, and other funding agencies; and
- Improve the rates at which U.S. citizens, who historically have been underrepresented in NASA-related fields, are awarded undergraduate and graduate degrees at their respective universities in NASA-related fields.

PROJECT BENEFIT TO OUTCOME

Outcome 1: Contribute to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goal through a portfolio of investment.

Although the URC supports all of Outcome 1, the project is specifically designed to contribute to Objectives 1.1, 1.2, and 1.5 and addresses the associated measures of output.

Objective 1.1 Faculty and Research Support Objective: **(Employ)** Provide NASA competency-building education and research opportunities for faculty, researchers, and post-doctoral fellows.

Objective 1.2 - Student Support

Objective: **(Educate)** Provide NASA competency-building education and research opportunities to individuals to develop qualified undergraduate & graduate students who are prepared for employment in STEM disciplines at NASA, industry, & higher education.

Objective 1.5 – Targeted Institution Research and Academic Infrastructure

Objective: **(Employ)** Improve the ability of targeted institutions to compete for NASA research and development work.

PROJECT ACCOMPLISHMENTS

- Eleven (11) University Research Centers received final funding as Group 3 URCs completed the award period.
- Partnered with Marshall Space Flight Center's Small Business Office to conduct a technical assistance workshop to strengthen the Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs), in the grant and contracting arena. A matchmaking session was held to provide an opportunity to identify potential partnerships in NASA-related areas of interest with NASA's current prime contractors.
- Developed and released NASA Group 4 URC Solicitation in April 2008.
- Seven (7) universities were competitively selected and funded as NASA Group 4 University Research Centers.

PROJECT CONTRIBUTIONS TO PART MEASURES

Outcome 1.1 Faculty and Research Support- Minority institutions can compete more successfully for the best and brightest faculty and students and as a result position themselves to supply NASA with a cadre of qualified researchers to address the needs of human resources at NASA and at other scientific organizations currently and in the future. Faculties at MIs are better able to participate in advanced research opportunities that enhance their teaching capability in STEM related areas and support the teaching-learning process.

Outcome 1.2 Student Support- Research opportunities at the MIs allows the institutions to recruit more aggressively talented students from high schools and undergraduate universities to matriculate at MIs to pursue and complete undergraduate and graduate degrees in STEM disciplines.

Outcome 1.5 Targeted Institution Research and Academic Infrastructure- Increased support from sources outside of the URC project assist with the sustaining of research activity at the host institution with NASA, other federal agencies and industry.

The University Research Centers made major contributions to the workforce. With 11 institutions reporting, there were:

282 Participants in the URCs, 216 of which were underrepresented students

115 students were seeking Advanced Degree in STEM-related fields

81 students were eligible for the workforce

5 students were employed at NASA

15 students were employed in the Aerospace Industry

11 students were employed in STEM fields in various educational institutions

24 students were employed in other STEM education

17 students were employed in STEM fields in other STEM-related industries

5 students were still seeking employment

23 new and revised courses were implemented in STEM related disciplines

IMPROVEMENTS MADE IN THE PAST YEAR

Substantial improvements were made to the University Research Centers project over the FY 08 timeframe relative to mission and project alignment, evaluation and partnership development.

- NASA Group 4 solicitation incorporated NASA's current organizational structure and mission priorities. The solicitation also emphasized sustainability, innovative partnerships and strong alignment to NASA's Research Mission as a critical element for integration of URC's into mainstream NASA research.
- NASA Centers were encouraged to host URC supported students in Center based internships to attract and retain students in STEM disciplines and to establish a stronger connection to the NASA Center workforce.
- URCs were encouraged to ensure that pipeline issues be addressed through the participation of numerous pre-and in-service teachers initiatives. In addition, the project encourages participating institutions to develop opportunities to bridge the gap between high school and college through initiatives that focus on College Application Assistance, College Enrollment Assistance, College Preparedness, Learning and Critical Thinking Skills, and Life Skills. Implementing such initiatives helps to ensure that an increased number of underrepresented students will be admitted to college and be able to successfully complete degrees in STEM-related disciplines.

PROJECT PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

A myriad of partnerships including NASA, Aerospace Industry, Other Colleges and Universities, and Non-Profit Organizations were developed with the awardee institutions listed below during FY 2008 to implement the respective University Research Center:

Norfolk State University
Hampton University
Clark Atlanta University
Morgan State University
Tuskegee University
Texas Southern University
Southern University and Agricultural and Mechanical College at Baton Rouge
University of Texas at Brownsville
City University of New York City College
University of Puerto Rio-Piedras Campus
California State University-Los Angeles