Title:	**Fostering and Increasing Participation in Geospatial Technology and STEM at Minority Serving Institutions**
Institution:	**Research Foundation of the City University of New York (Bronx Community College)**
City/State:	**Bronx, NY**
PI:	**Sunil Bhaskaran**

Summary: The proposed project, Fostering and Increasing Participation in Geospatial Technology and STEM at Minority-Serving Institutions, is submitted by Bronx Community College in partnership with Medgar Evers College of the City University of New York (BCC- CUNY & MEC-CUNY). These two Minority-Serving Institutions (MSI) have been catalytic forces in increasing participation of underserved and underrepresented population in geospatial technology and STEM since 2010. These colleges offer under-resourced middle and high schools unique access to the BCC Geospatial Center of the CREST Institute (BGCCCI), and the MEC Numerical-Modeling Lab. The partnering institutions will collaborate with CUNY K-16 (country's largest urban dual program) and the Bronx Collaborative Program - recruit and enroll minority and low-income school students to a series of hands-on and field-based workshops. The workshops will focus on inquiry-based geospatial technology and STEM activities developed by using NASA's rich online data repository, and state-of-the-art equipment that is available at both institutions. The participants will learn to analyse multi-resolution Earth observation (EO) data, develop automated feature extraction tools, perform image analysis and classification at BGCCCI's state-of-the-art Geospatial Computing Center. MEC-CUNY will deliver workshops focused on NASA satellite data reduction, visualization, and assimilation by using a wide range of numerical-modeling platforms. Participants will learn competitive industry relevant workforce skills that will inspire them in their formative years of education and empower them to join the STEM sector. The workshops also will feature guest lectures by experts from the industry who will showcase real-world geospatial and STEM applications. Family Cafés will engage parents and public and teach them skills to support their students in STEM career pursuits. Summer professional development workshops for school educators will help them integrate geospatial and numerical modeling technology at their respective schools. The project will be assessed by an external evaluator who is widely experienced in evaluating major grant projects. Work product stemming from this project will include innovative learning materials, new curricula designed with industry inputs, assessments based on federally-endorsed standards, and the development of articulation agreements between institutions. The project will be led by Dr. Sunil Bhaskaran (PI) based at BCC' and Dr. Christoper Box (Co-I) of MEC. They have extensive experience in recruiting, retaining, and engaging minority and low-income students in STEM studies, as do their colleges. Dr. Bhaskaran is the founding director of BGCCCI which is satellite institute under the multi-million dollar funded National Oceanic and Atmospheric Administrative-Center for Remote Sensing Technology (NOAA-CREST) institute. BGCCCI is currently funded by the National Science Foundation's Advanced technological Education (NSF- ATE) program to create geospatial pathways and careers. Dr. Boxe has substantial research experience at NASA and is a key faculty and driver of STEM education at MEC. MEC has a rich tradition and record of success in K-12 STEM engagement activities, serving, on average, 22,000 students, parents, and teachers every year. These activities have

been supported by the NYC Department of Education Summer Youth Employment Program, NSF Louis Stokes Alliance for Minority Participation (LSAMP), CUNY Women in Technology (WiTNY), and Con-Edison. NASA educational content is embedded in much of MEC's STEM coursework and K-12 participants have conducted field and laboratory analyses under the mentorship of college faculty and scientists. The project will be managed by the Research Foundation of CUNY a non-profit agency that has a successful track record in managing multi-million dollar grants for the University.