

# Bronx Community College Geospatial Center of the CUNY Crest Institute [BGCCCI]

*Promoting Excellence in Education, Research, and Career Pathways in collaboration  
with an industry consortium*



Bronx Community College, Meister Hall  
2155, University Avenue, Bronx-NY 10453.



## Preface



**BCC-CUNY** students have the twin objectives of completing their studies with excellent grades and securing jobs in a competitive environment that demands cutting-edge skills. Geospatial Technology is an emerging field of study that includes Geographic Information System or GIS, Remote Sensing (RS) and Global Positioning System (GPS). Geospatial technology enables us to acquire data that is referenced to the earth and use it for analysis, modeling, simulations and visualization. Geospatial technology allows us to make informed decisions based on the importance and priority of resources most of which are limited in nature. Geospatial technology may be used to create intelligent maps and models that may be interactively queried to get the desired results in a STEM application or may be used to advocate social investigations and policy based research. It may be used to reveal spatial patterns that are embedded in large volumes of data that may not be accessed collectively or mapped otherwise.

Several BCC faculty and students participated in scholarly activities since 2010 which helped in the dissemination of geospatial technology on campus and enabled the college to form a central core that is essential to build a reputation of excellence in emerging technologies. I am delighted to announce that the BCC Geospatial Center was launched on the 3<sup>rd</sup> October, 2014. The center was formed as a satellite center under the already existing CUNY CREST Institute (<http://crest.cuny.edu/>). The center promotes education and research in geospatial technology and works collaboratively with the industry to create career pathways. It provides opportunities for BCC-CUNY students and faculty to learn and acquire hands-on skills at the state-of-the-art Geospatial Computing Center. The center has received numerous awards and grants from federal and private agencies apart from funding by the CUNY Workforce development initiatives.

Two new pathway courses (Introduction to Geographic Information System and Introduction to Remote Sensing) were offered by the University. These courses provide BCC students a rare opportunity to learn concepts and acquire hands-on training by using industry standard software for analyzing and modeling different types of data. Lab manuals written with a place-based and problem solving approach by the center's affiliated faculty are made available to students at subsidized prices. The learning materials developed at the center are designed to foster spatial thinking and cognition. Affiliated faculty at the center has been delivering seminars and information sessions to different departments at BCC-CUNY to provide an insight into geospatial applications and collaborations. BGCCCI works with the CUNY collaborative programs including the College Now program which enrolls over 25,000 students each year from New York Public Schools. A 14-week GIS course – Introduction to Geographic Information System (GIS 11; 3 credits) was offered to high school students who successfully completed the course requirements and earned 3 valuable college credits. A National Summer Transport Institute sponsored by the Federal Highway Administration and US Department of Transportation sponsored a 1-week intensive geospatial workshop for middle and high schools. The center has a history of working with school students particularly those from resource poor institutions in the NYC region.

The proposed Certificate program in Geospatial Technology [CPGT] will prepare students for entry level positions and provide students with the educational foundation necessary for a four-year degree. Internship programs with NASA (Climate Change), NOAA-CREST, Long Island Rail Road, MTA, EPA, DEP etc. will provide BCC students insight into geospatial applications in the real world and professional environment. International collaborations with the City of Townsville, Australia and the IBM – Smarter Cities project will provide much needed global exposure to students.

The Geospatial Computing Center (330, Meister Hall) is a state-of-the-art facility that will present students with a unique one-stop environment to perform a multitude of analyses, simulations and modelling. Students, Interns, faculty and collaborators will have access to large volumes of geospatial datasets including space borne imaging spectroscopy data sets for their projects and use a super computer to process them. A large repository of open source data and cloud based computing platforms at the center will present users endless possibilities to perform spatial analysis for a wide range of applications. The center has been attracting interns and collaborators from all parts of the world, which has provided BCC-CUNY students a unique opportunity to learn. Interns from Italy, Australia, University of Maryland, Stony Brook College, LaGuardia Community College, City College of New York, the United Nations, York College, Pratt Institute, and CUSP-NYU have participated in supervised multidisciplinary projects, which have facilitated the development of a unique learning environment for BCC-CUNY students.

Many have appreciated our accomplishments at BCC and CUNY. On the 3<sup>rd</sup> March 2017 CUNY hosted its first ever GIS summit at the CUNY Law School. The event highlighted the importance of geospatial technology and its wide range of applications for the university. It emphasized the critical role that CUNY has to play in reducing the skill gaps in the geospatial industry. On the 30<sup>th</sup> June, 2017 the National Science Foundation's Advanced Technological Education program awarded a grant funding of \$899,490 to Bronx Community College for a proposal titled '**Pathways to Geospatial Technology and Careers**' ([https://www.nsf.gov/awardsearch/showAward?AWD\\_ID=1700644](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1700644)). As we grow the center's spatial activities and sphere of influence in the region and beyond, we would like to take this opportunity to thank all our collaborators and partners for their continual support.



Dr. Sunil Bhaskaran  
Professor and Founding Director  
BCC Geospatial Center of the CUNY CREST Institute

## Foreword by CUNY University - Associate Vice-Chancellor for Research, Dr. Mark E. Hauber.

It is with great pleasure that I write this foreword expressing my enthusiastic support for the Bronx Community College Geospatial Center of the CUNY CREST Institute (BGCCCI). The information provided in these pages details the many impressive accomplishments of the Geospatial Center. The original vision, conceived in 2010, to establish a Geospatial Center at Bronx Community College (BCC) of the City University of New York (CUNY), and the subsequent steps taken by an inspired group of faculty and students to realize this vision, is a genuine CUNY success story. I commend the pioneering efforts of the founding director, Dr. Sunil Bhaskaran, who has spearheaded the promotion and development of geospatial research and technology at BCC.

The Center is already an established intellectual hub for geospatial research at CUNY, and has been involved in numerous scholarly activities that support CUNY's core values of igniting curiosity and promoting diversity. Affiliated faculty have received significant research funding from Federal Agencies and private organizations, and have mentored students in applications of geospatial technology in both STEM and non-STEM disciplines. Faculty members who work with the Geospatial Center have also developed teaching materials and textbooks using a place-based and problem solving approach. The hands-on exercises outlined in the textbooks utilize geospatial datasets that resulted from grant-funded research. Faculty affiliated with the center has designed new core courses that have shown an increasing enrollment since 2015. The newly proposed Certificate Program in Geospatial Technology [CPGT] is designed with input from an advisory board that includes leaders from the geospatial industry. Although, originally designed to be a terminal degree, three CUNY baccalaureate institutions—Lehman, Hunter and York Colleges—have already agreed to articulate their B.S/B.A courses with the CPGT, thereby facilitating expanded career opportunities for greater numbers of CUNY students. The *Pathways to Geospatial Technology and Careers* grant proposal that is currently being reviewed by the National Science Foundation Advanced Technological Education (ATE) program will enable the BCC Geospatial Center to grow into a regional hub for geospatial research, training, and workforce development.

The BGCCCI's Geospatial Computing Center located in Meister Hall at BCC provides a very special environment in which students can perform cutting-edge research on issues that are national and international in scope. The Center's affiliated faculty has conducted collaborative research with national and international institutes that often result in peer-reviewed publications co-authored by BCC students. The Center also hosts interns from numerous local-area four-year colleges both within and outside of CUNY including, New York University, Stony Brook University, York College, The City College of New York, and The New School.

The Geospatial Center is a satellite center of the CUNY CREST Institute founded in 2010 at The City College of New York. The Geospatial Center was formally established in 2014 by a memorandum of understanding between BCC and the CUNY CREST Institute. The BGCCCI is a wonderful example of the "CUNY American Dream Machine" and Chancellor J.B. Milliken's vision for a "Connected University" because it provides a unique, specialized, high quality, and affordable educational experience. The Center has received numerous accolades, is frequently visited by renowned experts from many fields, and is growing in reputation by the day. I expect the Center to do many great things in the future and I wish it my very best.



Memorandum of Understanding and Inauguration of the BCC Geospatial Center of the CUNY CREST Institute (BGCCCI) - 3<sup>rd</sup> October, 2014



(left) Dr. Claudia Schrader (BCC Provost and Senior Vice President ) and Dr. Reza Khanbilvardi (Director of NOAA-CREST Institute) signing the MOU to create CUNY’s only and unique Geospatial Center.



(Above) BGCCCI Ribbon-cutting event, 3<sup>rd</sup> October 2014.

All images are courtesy of Sunil Bhaskaran

**Dr. Sunil Bhaskaran**

Professor and Director

Geospatial course and program coordinator

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**Geospatial Center website:** [www.bcc.cuny.edu/geospatial/](http://www.bcc.cuny.edu/geospatial/)

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# Creating Pathways in Geospatial Technology Sponsored by NSF and NASA-EONS 2017-2021

*Bronx Community College Geospatial Center of the CUNY Crest Institute [BGCCCI]*

*Principal Investigators – Dr. Sunil Bhaskaran and Dr. Ratan Dhar*



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# Inquiry Based GIS Workshops

FALL, SPRING, AND SUMMER SEMESTERS



MIDDLE SCHOOL AND  
HIGH SCHOOL  
WORKSHOPS

**FALL**

Geospatial Technology and its applications for investigating 'Air Quality' are introduced. Interactions with experts from the Industry are used to expose participants to exciting careers within the Geospatial Industry. Students perform exercises such as Network Analysis and Modeling Spatial data.

MIDDLE SCHOOL AND  
HIGH SCHOOL  
WORKSHOPS

**SPRING**

Students are exposed to feature extraction techniques using industry standard software and hardware. Topics such as Unsupervised Classification of Multispectral Satellite Imagery and Image Analysis are introduced through hands-on learning and lectures.

MIDDLE SCHOOL, HIGH  
SCHOOL, AND  
UNDERGRADUATE  
WORKSHOPS

**SUMMER**

Students are introduced to spatial concepts and acquire hands-on training through exercises based on topics such as Digitization and Geoprocessing, as well as Spatial Analysis exercises on real-world topics including Environmental Health Science and Sociology.



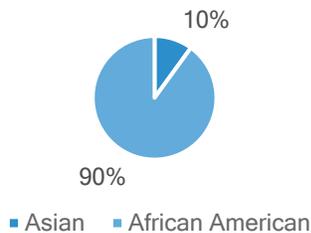
## PROFESSIONAL DEVELOPMENT PROGRAM FOR EDUCATORS

Educators discover usage of Geospatial tools such as Google Earth Pro, Social Explorer, and Spatial Storytelling, and identify how to infuse them into their own discipline and syllabi. Educators create course material using integrate spatial thinking and geospatial technologies to use in STEM and non-STEM teaching courses.

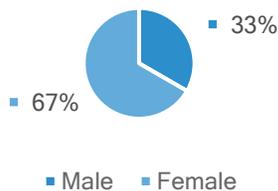
# Middle School Workshops

During Fall, Spring, and Summer sessions, Geospatial workshops are held for middle school students sponsored by NSF- ATE and NASA-EONS. These workshops are held on Saturdays throughout the semester, and for 16 consecutive days during the Summer. For middle school students, the workshops provide participants an opportunity to learn about Geospatial Technology and its applications for 'Emergency Management'. It gives them an opportunity to learn about spatial concepts and acquire hands-on skills at BCC Geospatial Center of the CUNY CREST Institute (BGCCCI). Interactions with experts from the Industry such as Jim Barry from ESRI informs students about exciting courses and careers in the Geospatial Industry. Participants present a Geospatial project at the end of the workshops.

Summer 2019 NSF-ATE  
Middle School Ethnicity  
Distribution



Summer 2019 NSF-ATE  
Middle School Gender  
Distribution

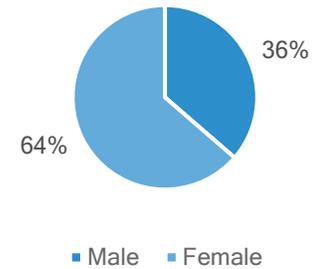


The charts above showcase an example of acceptance statistics and distribution in a typical workshop.

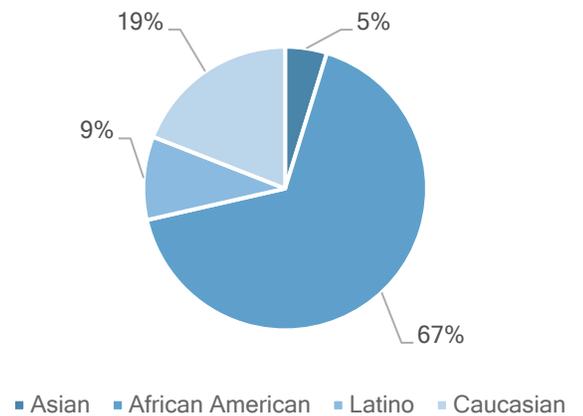
# High School Workshops

Participants from High schools across New York City are recruited for ten weekend workshops (during Fall and Spring) and 16-day workshops (during the Summer) led by expert faculty. The workshops consist of inquiry based hands-on learning materials and exercises that are aimed at exposing and training students in Geospatial Technology at the state of the BGCCCI's Geospatial Computing Center. Together with the National Science Foundation's Advanced Technological Education [NSF-ATE], National Aeronautical Space Administrations - EONS program, NASA-Funding, and BGCCCI, the workshops are a critical cog in the Geospatial career pathways wheel. No skilled geospatial technicians can be created overnight and without these contributions the national goal of addressing the gap in skilled labor in the booming Geospatial Industry will not be possible.

Summer 2019 NSF-ATE High School Students Gender Distribution



Summer 2019 NSF-ATE High School Students Ethnicity Distribution

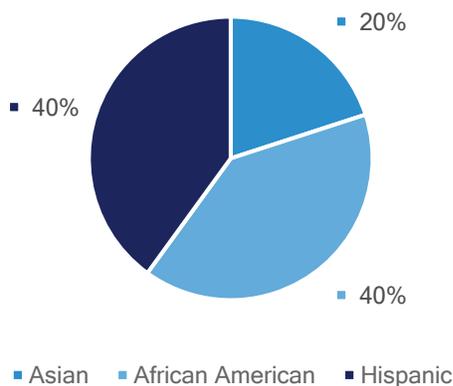


# Undergraduate Workshops

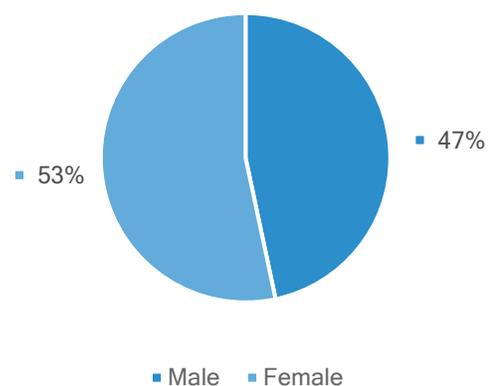


The Summer Geospatial workshops for undergraduates takes place in the month of June, for a 16-day period. Participants from colleges in New York City and neighboring states work their way through a series of inquiry-based hands-on workshops that expose them and train them to work with open source data, perform spatial analysis, change mapping and expose them to the best in the Industry. The participants come from a wide range of STEAM backgrounds to acquire spatial skills that will enable them to better understand the power of spatial data for making informed decisions. Orienting sessions are offered before and during the workshops for instructors, as graduate assistants help them in honing their skills. Since 2010, BGCCCI has been educating and promoting geospatial technology in the region and has grown into a major center of excellence consisting of a unique ecosystem of students, faculty, community, industry and several other important stake holders.

Summer 2019 Undergraduate Workshop Ethnicity Distribution

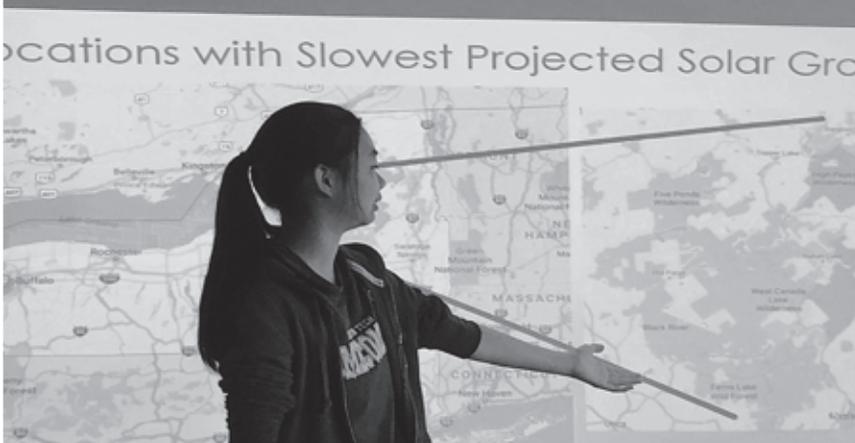


Summer 2019 Undergraduate Workshop Gender Distribution



# SWIP FOR HIGH SCHOOL

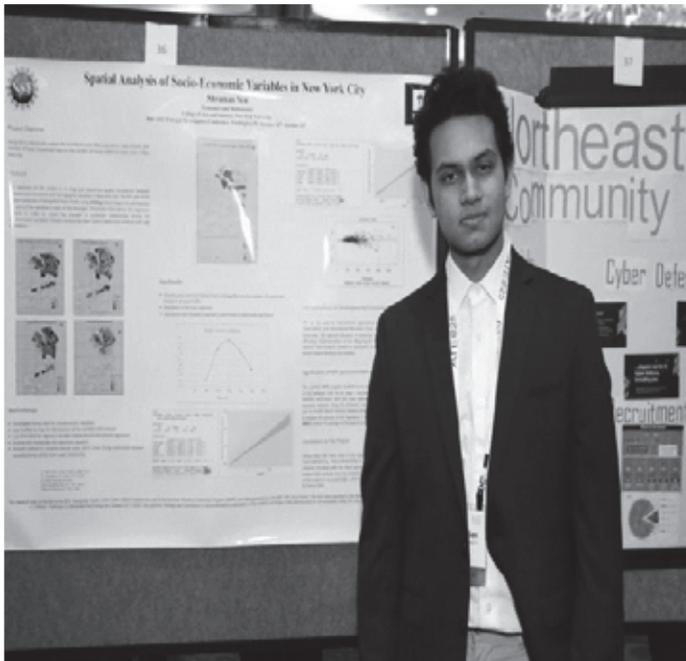
The Summer Workforce Internship Program [SWIP] for High School students offers the privilege of being part of a hands on and fully systematic research which enabling students to fully engage in activities surrounding the Geospatial professional work field. The participants have the chance to not only participate in research projects but also present and publish in proceedings of conference and learn to write journal articles. Students are encouraged to participate in a field and array of data entry principles which consists of various subjects such as elements of nature; freshwater soil and wetland soil, effects of dissolved nitrogen, animals, and inhalable particulate concentration. The research enables students to feel more aware of the benefits and multiple uses that Geospatial technology provides.



# INTERNSHIP PROGRAM FOR UNDERGRADUATES



Undergraduate students from the New York City region work at BGCCCI work on independent projects ranging from a wide range of studies in Urban Planning, Image Analyses, Feature Extraction, health and human services and may other interdisciplinary STEAM projects. They are mentored by affiliated faculty at BGCCCI and skilled technicians. The internship is an ongoing rolling basis program sponsored by NSF-ATE. Participants are mentored and oriented in research methodology, data analyses and ethics. Participants design presentations and submit a technical report by the end of the program. Most of the participants begin with limited background knowledge in spatial analytics and are trained in specific types of analyses which enables them to conduct research. Careful guidance and mentoring have the potential to impart geospatial skill sets, research and workforce training that will form the foundations of a talented pool of skilled technicians in the country.



# Family Cafes

The goal of 'Family Cafes' is to encourage parents/guardians/counselors of participants to understand the importance and relevance of geospatial technology and goals of the all year round workshops and activities. Career choices are discussed with families and peers who make valuable suggestions and provide vital inputs to the participants. They assist the participants in making informed decisions in making their career choices. Parents enjoy the interaction at these cafes and carry forward the experience to others in their social network, which promotes education and research at the BCC Geospatial Center and the support from NSF and NASA.





# Professional Development Program

## EDUCATORS FROM MIDDLE SCHOOLS, HIGH SCHOOLS, AND COLLEGES

The main objective of the Professional Development Program at BGCCCI is to train educators from both STEAM and non-STEAM field to learn the benefit and usage of Geospatial Technology, and Integrate spatial thinking and geospatial technologies into their own teaching practice. The ten day PDP Program works with educators, through lectures and hands-on exercises to identify opportunities for integrating GIS data on social variables into their own curriculums through the usage of geospatial tools in their discipline and syllabi.



Educator Affiliations include STEM Teachers NYC, Bronx Community College, Harry S Truman High School, James Madison High School, Brooklyn College, Learning Tree Preparatory School, Tenafly Public School, Mott Hall, Bayside High school, and York College.

# Collaborations with Industry Consortium

By working with an Industry consortium consisting of leading geospatial companies in the world BGCCCI acquires valuable feedback about the demand for current skills. The BGCCCI advisory board consists of representatives from leading geospatial companies who deliver guest lectures, workshops, demonstrations, brown bag sessions and opportunities for valuable internships, which prepares skilled BGCCCI technicians for potential careers.





# Workshops by the **Industry**

The NSF-ATE program at the BCC Geospatial Center of the CUNY CREST Institute works with Industry giants to deliver inspiring workshops and lectures to students. Trained Instructors and Advocates from Companies such as ESRI come in and help us inspire workshop participants to be spatially enabled.



# Geospatial Curriculum

Two pathways courses GIS 11 and GIS 12 [***Introduction to Geographic Information Systems and Introduction to Remote Sensing***] were designed in 2014 and offered to students in fall 2015. The two courses have provided opportunities for multidisciplinary BCC students to get exposed to geospatial technology and applications. The cumulative enrollments [**320**] in these two courses underline their popularity and relevance to the need to acquire current workforce skills.

```
graph TD; A([The BCC-CUNY Certificate Program in Geospatial Technology [CPGT] articulates with advanced courses at other colleges]) --- B[CUNY York College  
Bachelors of Science in Geology/Environmental Health]; A --- C[CUNY Lehman College  
Bachelors of Arts in Geography]; A --- D[CUNY Hunter College  
Bachelors of Arts in Geography and Environmental Science];
```

The BCC-CUNY Certificate Program in Geospatial Technology [CPGT] articulates with advanced courses at other colleges

CUNY York College  
Bachelors of Science in  
Geology/Environmental Health

CUNY Lehman College  
Bachelors of Arts in  
Geography

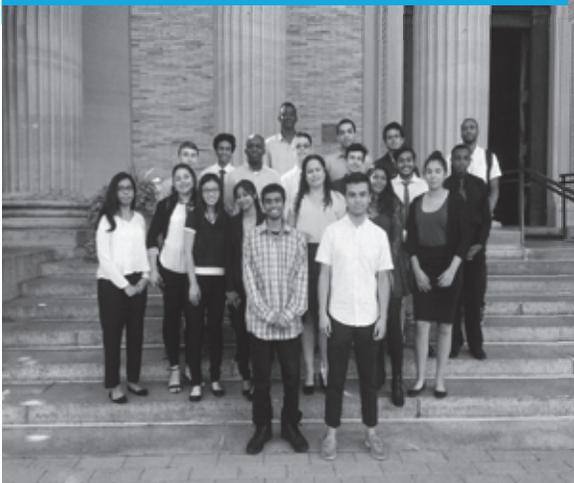
CUNY Hunter College  
Bachelors of Arts in  
Geography and Environmental  
Science



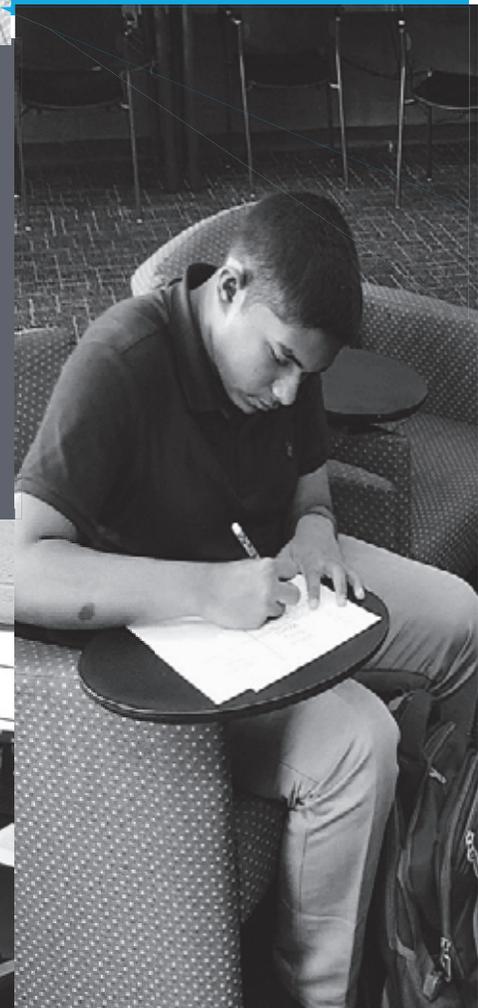
# Proposed GPGT – New Courses



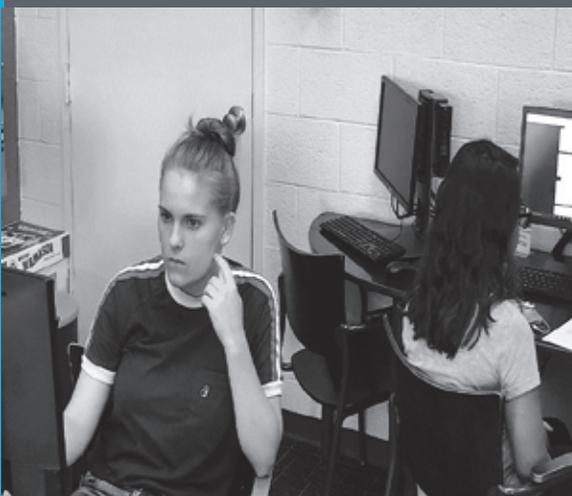
**GIS14- This class will provide a firm understanding of the conceptual and technical issues that affect the implementation of geospatial technology in research investigations, as well as planning and management applications. Topics will include map projections, data models, types of spatial analysis, data integration techniques, multivariate modeling, geo-statistical analyses, data quality, data accuracy and basic programming.**



**GIS 13- The objective of the course is to learn basics of data collection and analysis using hand-held Global Positioning System (GPS) receivers. Students will be trained to use GPS receivers and collect data from the study area or project site in the Bronx, and other parts of New York City.**



**GIS 15- Students will learn to process and analyze BIG geospatial data for specific applications and develop critical thinking skills in their applications to designing and delivering spatial solutions. They will be exposed to all components of a geospatial project in detail that will give them information about managing projects successfully.**





## Proposed Certificate Program in

# Geospatial Technology

The certificate program in Geospatial Technology (CPGT) is an entry-level program designed to help students with little to no formal GT training or work experience develop the skills necessary to either integrate GIS into an existing career or find an entry-level GIS job. Upon successful completion of the CPGT, students will have developed greater appreciation for geography and increased spatial awareness. They will be able to ask higher-order geographic questions and to solve advanced geographically-based problems. Since the GT professional field generally prefers students with a completed degree, this certificate program is designed for students who already hold a bachelor's or associate degree.

**The following two curricular initiatives focusing on Geospatial Technology are proposed:**

1. A 15-credit Certificate Program in Geospatial Technology (CPGT)
2. A 18-credit Option in Geospatial Technology (GT) to be offered in the existing AS Liberal Arts and Sciences (AS LAS) Degree Program



# Pathways for Skilled Technicians

Bronx Community College Geospatial Center of the CUNY CREST Institute (BGCCCI) is a center of excellence that has been promoting education, training and cutting-edge research to students, instructors and the community since 2010. The center has collaborated with a consortium of Industry and imparted skills to students, interns, educators, researchers from the New York City and nearby regions. The table below shows a snapshot of selected successful pathways to geospatial technology and careers that were nurtured and honed at the center.

## Partners and Sponsors

### Federal



### Industries



Staff	Workforce Skills Acquired at BGCCCI	Internships and Employment
<b>Leroy Brown</b> BCC and York College undergraduate	<ul style="list-style-type: none"> <li>Research</li> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>Research Associate and BGCCCI Center Coordinator</li> <li>GIS College Lab Technician</li> <li>Department of Environmental Protection (DEP)</li> <li>Department of Homeland Security</li> </ul>
<b>Juan Pablo Medina</b> B.S in Chemistry – Benedict College	<ul style="list-style-type: none"> <li>Research</li> <li>Administrative</li> </ul>	<ul style="list-style-type: none"> <li>NSF-ATE Administrative and Research Associate</li> <li>Geospatial Center Coordinator</li> <li>GIS Adjunct College Lab Technician</li> <li>NSF-ATE SWIP Mentor and Geospatial Workshops Graduate Assistant</li> <li>PhD Program Candidate at the Earth and Environmental Sciences (E.E.S) CUNY Graduate Center</li> </ul>
<b>Tania Vara</b> NYU Graduate	<ul style="list-style-type: none"> <li>Research</li> </ul>	<ul style="list-style-type: none"> <li>Research Associate (BGCCCI)</li> </ul>
<b>Asif Zaman</b> Geospatial Major - Adelphi University and Pratt Institute	<ul style="list-style-type: none"> <li>Teaching</li> <li>Research</li> </ul>	<ul style="list-style-type: none"> <li>Adjunct Lecturer (Geospatial Technology at BCC)</li> <li>Research Associate (BGCCCI)</li> <li>Geospatial Instructor (NSF-ATE Geospatial Workshops)</li> <li>Intern at City Planning Department</li> </ul>
<b>Jeremy Cohen</b> Masters in GIS - Hunter College	<ul style="list-style-type: none"> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>GIS Graduate Assistant in the NSF-ATE Geospatial Workshops</li> </ul>
<b>Umar Ali</b> BCC Undergraduate	<ul style="list-style-type: none"> <li>Supervising</li> </ul>	<ul style="list-style-type: none"> <li>Mentor in the HS SWIP</li> </ul>
<b>Aniket Ithape</b> MS in Data Science	<ul style="list-style-type: none"> <li>Research</li> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>Research Associate NSF-ATE program</li> <li>Adjunct Lecturer in Geospatial Technology (BCC)</li> </ul>
<b>Nicaela Cartagena</b> Earth Sciences - City College of New York Undergraduate	<ul style="list-style-type: none"> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>GIS Instructor (NSF-ATE program)</li> <li>Tutor (Geospatial Technology - BCC)</li> </ul>
<b>Stephanie Rodriguez</b> Masters in Environmental Science - Brooklyn College	<ul style="list-style-type: none"> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>GIS Instructor Geospatial Workshops NSF-ATE program</li> <li>Adjunct Lecturer in Geospatial Technology (BCC)</li> </ul>
<b>Tubuo Baggio</b>	<ul style="list-style-type: none"> <li>Research</li> </ul>	<ul style="list-style-type: none"> <li>Unpaid Intern at BGCCCI</li> <li>Intern at NYC Department of City Planning</li> </ul>
<b>Karen Sullivan</b> Adjunct lecturer in Computer Technology at New Jersey Institute of Technology (NJIT)	<ul style="list-style-type: none"> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>GIS Instructor NSF-ATE Geospatial Workshops</li> </ul>
<b>Myra Sanchez</b> Hunter College Undergraduate Student	<ul style="list-style-type: none"> <li>Teaching</li> </ul>	<ul style="list-style-type: none"> <li>Graduate Assistant GIS Instructor Geospatial Workshops</li> </ul>
<b>Dhruv Kumar Bhatt</b>	<ul style="list-style-type: none"> <li>GIS Analysis</li> </ul>	<ul style="list-style-type: none"> <li>Geospatial Intern BGCCCI</li> <li>GIS Analyst (City of Myrtle Beach)</li> </ul>
<b>Pupel Barua</b>	<ul style="list-style-type: none"> <li>Research</li> </ul>	<ul style="list-style-type: none"> <li>BGCCCI Research Associate</li> <li>Coordinator Recruiter at Marks Home Care Agency</li> </ul>
<b>Jacquay Wilder</b> Mercy College Undergraduate	<ul style="list-style-type: none"> <li>Administrative</li> </ul>	<ul style="list-style-type: none"> <li>NSF ATE Administrative Assistant</li> </ul>
<b>Ayan Barua</b>	<ul style="list-style-type: none"> <li>Research</li> <li>Administrative</li> </ul>	<ul style="list-style-type: none"> <li>BGCCCI Research Associate</li> <li>BGCCCI Center Coordinator</li> </ul>
<b>Wahab Mohammed</b> BCC Undergraduate	<ul style="list-style-type: none"> <li>Research</li> <li>Administrative</li> </ul>	<ul style="list-style-type: none"> <li>BGCCCI Research Associate</li> <li>BGCCCI Center Coordinator</li> </ul>

# Meet the Geospatial Team



**Dr. Ratan Dhar**

Associate Professor & Program Director  
of Environmental Health Science at York  
College (The City University of New  
York)



**Dr. Sunil Bhaskaran**

Professor at the City University of New  
York and founding Director of BCC  
Geospatial Center of the CUNY CREST  
Institute.



**Ushana Persaud**

Geospatial Coodinator at Bronx  
Community College Geospatial Center of  
the CUNY Crest Institute



**Zahira Munawar**

Geospatial Coodinator at Bronx  
Community College Geospatial Center of  
the CUNY Crest Institute



**Meloryn Quezada**

Geospatial Coodinator at Bronx  
Community College Geospatial Center of  
the CUNY Crest Institute

# IMPORTANT URLS

**BCC Geospatial Center of the CUNY CREST Institute --**

**<http://www.bcc.cuny.edu/academics/geospatial-center-of-the-cuny-crest-institute/>**

**NSF-ATE & NASA-EONS URL --**

**<https://atecentral.net/msites/bhaskaran/home>**

**Twitter @BGCCCIGeo**

**BGCCCI Director's LinkedIn -- <https://www.linkedin.com/in/sunilgeospatial123/>**

# Acknowledgements

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