

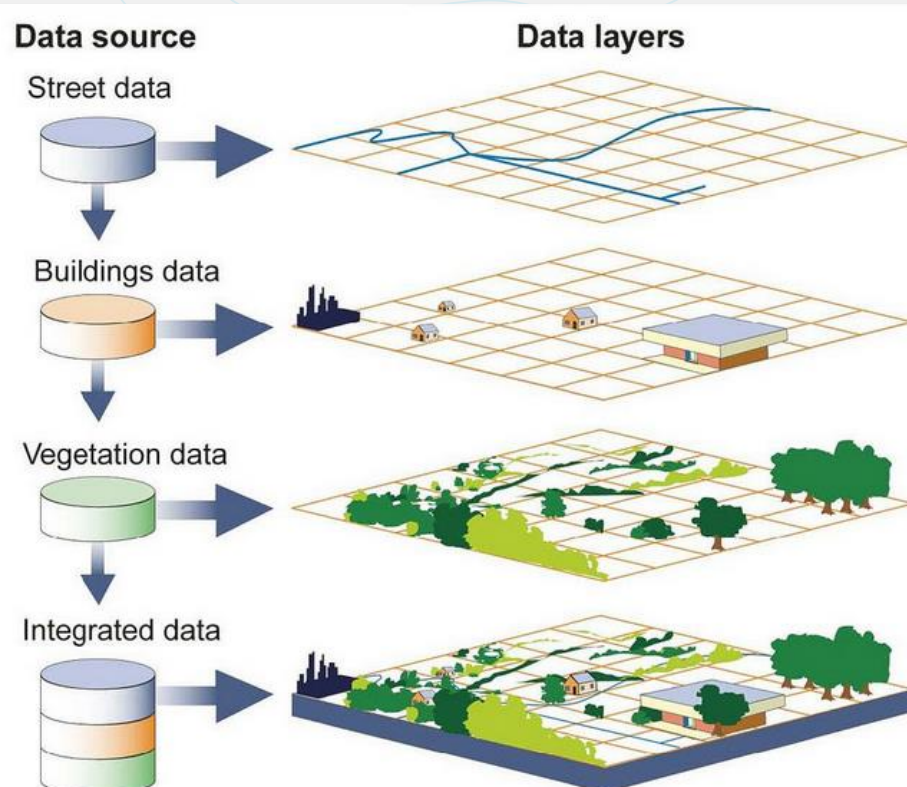
Geospatial Information Science Technology GIST Program at MCC



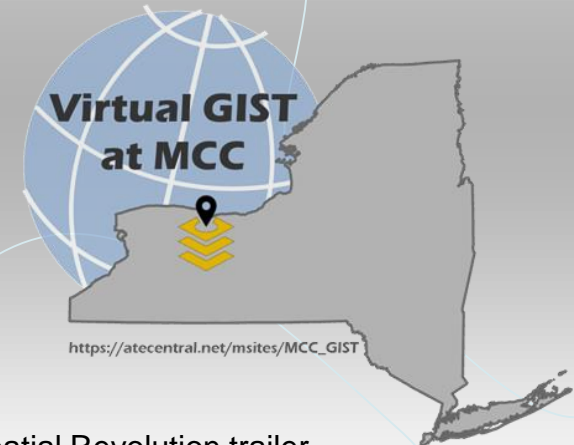
The *Meeting Workforce Needs for Skilled Geospatial Technicians through Virtual Geospatial Information Science Technology Education* project was funded through the U.S. National Science Foundation (NSF) Office of Advanced Technological Education under Grants Award # 1955256 to Monroe Community College. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

What is Geospatial Technology?

Integration of Geographical Information Systems, Remote Sensing, and GPS.



<https://www.nationalgeographic.org/encyclopedia/geographic-information-system-gis/>



Geospatial Revolution trailer -
<https://www.youtube.com/watch?v=ZdQjc30YPOk>
Pandemic (short)
<https://www.youtube.com/watch?v=rWZ1M7Z2Jho>

MCC's Virtual Geospatial program

Current Stackable program!

24 Credit GIST Certificate

9-credit micro-credential for GIST professionals

A.A.S. in GIST

Geospatial Information Science and Technology (Gist)

● Certificate [Department of Chemistry and Geosciences](#)

GET THE "G.I.S.T." ON THE
GROWING FIELD OF GEOSPATIAL
INFORMATION SCIENCE AND
TECHNOLOGY

Geospatial Information Science and Technology (G.I.S.T.) is used virtually everywhere. It converts remote sensing information provided by satellites and imagery into digital data.

[Start My Application >](#)

[Explore Careers >](#)

[School of Science,
Technology, Engineering &
Math \(STEM\)](#)





2018-2028 Job Outlook faster than average

Geospatial Information Scientists & Technologists:

Employment: 413,000

Projected Growth: Faster than avg, 7-10%

Median Wages: \$88,550

Geographic Information Systems Technicians:

Employment: 412,800

Projected Growth: Faster than avg 7-10%

Median Wages: \$88,550

Cartographers and Photogrammetrists:

Employment: 11,800

Projected Growth: Much faster than avg, 11%+

Median Wages: \$65,470

Remote Sensing Technicians:

Employment: 72,400

Projected Growth: Faster than avg, 7-10%

Median Wages: \$50,550

Source: Bureau of Labor Statistics. Employment figures are for 2018; projected growth is for the period 2018-2028; median wages are for 2019.

AAS in Geospatial Information Science & Technology (GIST)

Table 1

FALL Year 1	Cr	SPRING Year 1	Cr
Introduction to GIST	3	<i>Web Mapping</i>	3
Cartography	3	Spatial Analysis	3
English	3	Art/Foreign Language	3
Introduction to Remote Sensing	3	Physical Geography Lab	1
Math	3	Physical Geography	3
		Physical/Health Education	2
FALL Year 2	Cr	SPRING Year 2	Cr
<i>UAS Data Acquisition and Management</i>	3	<i>Introduction to Programming for GIS</i>	3
Statistics	3	Capstone Course in Geospatial Technology	2
Elective	3	American History	3
Human Geography	3	Program Elective	3
Elective	3	Elective	3
		Elective	3

← Micro-credential

Micro-credential →

← Micro-credential

Micro-credential in GIST



**Starts Fall Semester!
Finish Your Micro-Credential Spring Semester**

GIST CERTIFICATE – PREPARE FOR ENTRY LEVEL WORKFORCE POSITION OR MICRO-CREDENTIAL

Earning MCC's 24-credit **GIST Certificate** prepares you for the GIST workforce and/or the **micro-credential**, or transfer to a bachelor's degree program in Geography of geospatial technology. Complete the program in one or two years depending on your life demands. You can also earn the **AS in Geography** along with the GIST Certificate at the same time!

GIST CERTIFICATE includes a 50-hour internship

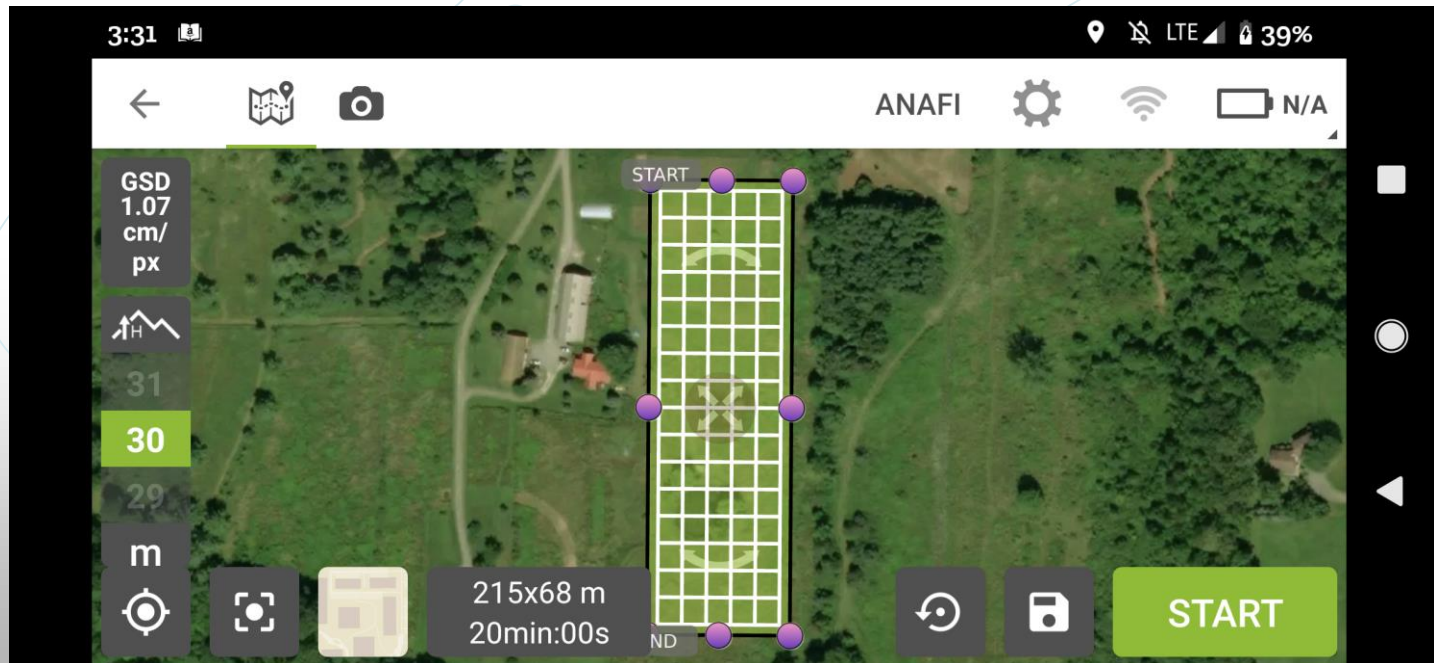
GROWING JOB MARKET

Projected growth* through 2028 is faster than average. Median wage* for mid-career \$50-88K/yr.
* 2019 Bureau of Labor Statistics.

Employers include: EagleView, LaBella Associates, Esri, New York City, MRB Group, local towns



Micro-credential in GIST



Alumni providing enhanced support and mentoring!



Four alumni are providing support to our current students!



Sample Virtual Internships/Partnerships

- EagleView
- New York State Department of Environmental Conservation
- NY State Department of Health
- American Red Cross
- National GeoTech Center of Excellence
- Genesee Land Trust
- American Red Cross

Maya

Description

- This map shows the old and new paths of the Erie Canal in a Vintage Style
- This map also shows some of the

Evah_Valenti_GEG239_Spring2020.mp4
▷ 8:13 ⌂ Jun 11

Researching the Survey

- In this part of my oration to talk that gave the most trouble... in order to find out the way to work properly!
- I had to spend a lot of time to find the survey.
- Next part to go is the work of the survey.

Michael_Andrus_GEG239_Spring2020.mp4
▷ 12:47 ⌂ Jun 11

GIS Training Tour

Feature Layers and Creating Maps

Peter_Bowman_GEG239_Spring2020.mp4
▷ 9:59 ⌂ Jun 11

Derrick_Neidig_GEG239_Spring2020.mp4
▷ 14:18 ⌂ Jun 11

Kazakh Soil and Steppe Types

Salvatore_John_Ragusa_GEG239_Spring2020.mp4
▷ 22:34 ⌂ Jun 12

Data and Methods

Catherine_DuBreck_GEG239_Spring2020.mp4
▷ 14:31 ⌂ Jun 12

The Darkness Below the Canopy

- Better growth in meadows or forested areas?
- Traditionally poor growth below the dark canopy.

Alex_Tedrow_GEG239_Spring2020.mp4
▷ 11:59 ⌂ Jun 12

Supervised Classification

- Training polygons, view histograms
- Create signature file
- Maximum Probability Classification
- Reclassify data

Colin_Dahlberg_GEG239_Spring2020.mp4
▷ 12:24 ⌂ Jun 12

THE PROBLEM

- The problem was that this was too complex of a problem for me to solve within the given time period
- When I was drafting out the program, knowledge had to be built up
- Several of the team were using the program and creating solutions, which had varying that worked best with the specific problem.

Michael_Coughlin_GEG239_Spring2020.mp4
▷ 12:30 ⌂ Jun 12

Survey123 for ArcGIS

Maggie>Weisenel_GEG239_Spring2020.mp4
▷ 8:21 ⌂ Jun 12

Global Virtual GIST Internships

Current

- Malawi: Cornell University and partner in Malawi
- Mexico: Universidad Autónoma de San Luis Potosí
- Kazakhstan: Kazakh State Agrotechnical University

Past

- Colombia: Fundación Universitaria Tecnológico Comfenalco
- Costa Rica: Monteverdi Institute



Library Professional Development

Deliver innovative outreach and enriched virtual support from Public Librarians to support students!



~ 20 Librarians in fall of 2020!
And 20 more in 2021!

Recruitment of Students

- 1) GIST summer camp
- 2) dual credit enrollment
- 3) targeted recruitment of introductory GIST students
- 4) MCC Mapping Club events – 400 attended in the fall!



Thank you! Questions?

Jonathon Little: Associate Professor of Geography/GIST and NSF ATE Principal Investigator

Heather Pierce: Assistant Professor of Geography/GIST and co-PI

Catherine DuBreck: co-PI & EagleView

Wayne Howard: Senior team member, Adjunct, & co-founder Solara Concepts

Alumni: Drew Ortego, Catherine DuBreck, Kareem Howard, & Enith (Annie) Lay Soler

NSF External Evaluator: Donna Lange, Rochester Institute of Technology Professor/PI DeafTEC

Special thanks to:

Board of Trustees and Provost Wade

Curriculum Office at MCC (Andy Freeman), STEM (Margaret Kaminsky), and Chem/Geo (Jessica Barone)

MCC Library Staff, Katie Ghidiu, and Public Librarians

Rochester Regional Library Council, Tina Broomfield

Monroe County Library System & Patricia Uttaro, Pioneer Library System and Ronald Kirsop

Jian Qin (Syracuse University) and Keith Jenkins (Cornell University)

Rochester City School District and Carmelita Brown-Wallace (Upward Bound)

GIST Advisory Committee: Vince DiNoto, Buffy Quinn, Dan Allen, Andy Mendola, Justin Cole, Jackie Sax

Internships: NY State Department of State at University of Albany, Genesee Land Trust, National GeoTech Center of Excellence, New York Geographic Alliance, GIS Scholars, EagleView, GIS-SIG, Water for South Sudan, River Area Council of Governments, Tug Hill Commission, and Genesee River Watch.

Grant web site: https://atecentral.net/msites/MCC_GIST

MCC GIST program web site: <https://www.monroecc.edu/depts/geography/>

Questions: Jonathon Little at jlittle@monroecc.edu



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