

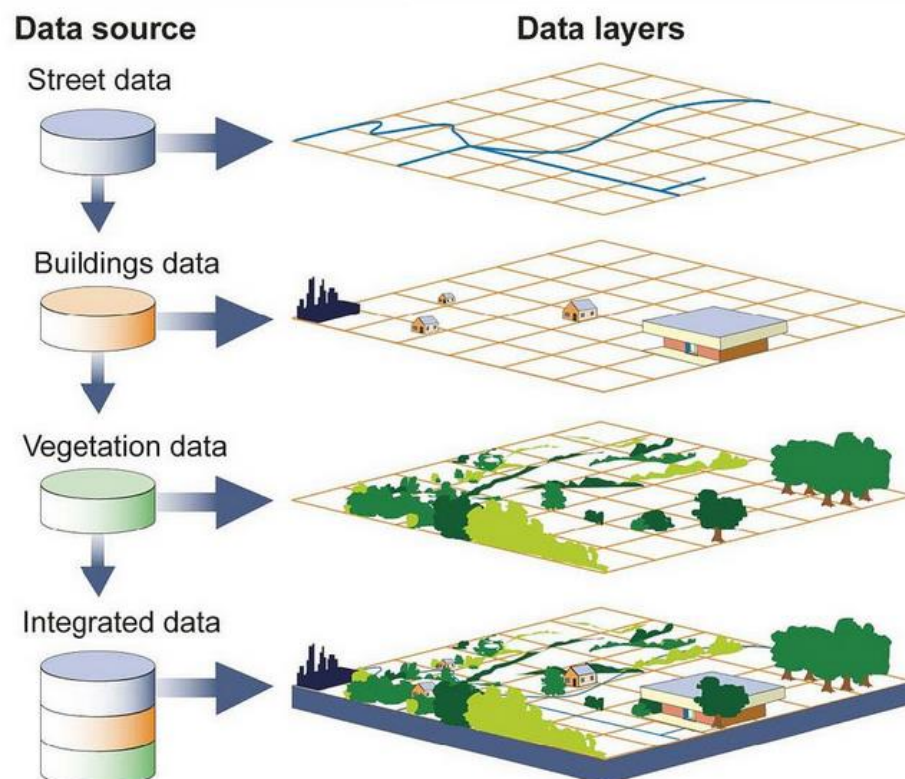
# ***Proposed A.A.S. in GIST (Geospatial Information Science Technology)***



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.



# MCC's Geospatial program

## Current:

24 Credit GIST Certificate

A.S. Geography concentration in GIST (modify SP 21)

## Stackable program expected 2022:

A.A.S. in GIST

24 credit GIST Certificate

9-credit micro-credential for GIST professionals

## 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 GIST Job Outlook

## **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**

<b>FALL Year 1</b>	<b>Cr</b>	<b>SPRING Year 1</b>	<b>Cr</b>
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
<b>FALL Year 2</b>	<b>Cr</b>	<b>SPRING Year 2</b>	<b>Cr</b>
<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

# Alumni Mentoring



Four alumni are providing support to our current students!





# Sample Virtual Internships/Partnerships

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

**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  
Evan\_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 how to do it, I look for a...  
• I had to go to the... to get the survey...  
• Next part to go...  
Michael\_Andrus\_GEG239\_Spring2020.mp4  
▷ 12:47 ⌂ Jun 11

**GIS Training**  
Feature Layers and Creating Maps  
Peter\_Bowman\_GEG239\_Spring2020.mp4  
▷ 9:59 ⌂ Jun 11

**Derrick Neidig**  
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**  
Date:  
• Sentinel-2 Imagery from 2015 and 2020  
• ASTER Level 1T Imagery from 2000 and 2019  
• Landsat 8 Imagery from 1980 and 2019  
• Shapefiles from Humintariat Data Exchange  
Methods:  
• Temporal spatial analysis of mangroves (compare and assess changes over multiple years)  
• Correlation Matrix tool, Export to Raster, Grid, Band combination analysis, Get Cell Values tool to create spectral signature graphs  
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  
• Some of the issues being the program and creating solutions, such that anything that would help 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

## Past

- Colombia: Fundación Universitaria Tecnológico Comfenalco
- Costa Rica: Monteverdi Institute
- Kazakhstan: Kazakh State Agrotechnical University





# Library Professional Development

Deliver innovative outreach and enriched virtual support from Public Librarians!

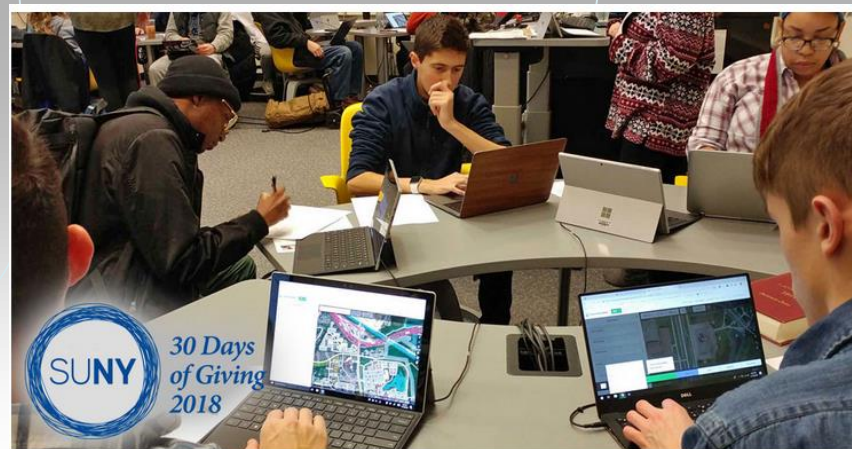


~ 20 Librarians in fall of 2020!

# Enrollment Projections

*Why conservative enrollment?*

Please consider that the AAS focuses in on the traditional student. However, the 3 new courses in the AAS program overlap with the micro-credential for professionals. Thus, we will be pulling from three groups (traditional, professionals and Certificate), and we expect course enrollment in these new courses to be near their max.





# 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](https://atecentral.net/msites/MCC_GIST)*

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

*Questions: Jonathon Little at [jlittle@monroecc.edu](mailto:jlittle@monroecc.edu)*



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