

Resources & additional PD

GTCWNY



The GeoTech Consortium of Western New York was funded through the U.S. National Science Foundation (NSF) Office of Advanced Technological Education under Grants Award # 1501076 to Monroe Community College.



Monroe Community College
STATE UNIVERSITY OF NEW YORK

Individual Meeting || Fall PD || Email List

- Individual Meeting
 - We will meet with you in Sept or Oct at least once before you implement your activity. This will be at your school site.
- Fall PD (2-3 hours)
 - What date can you **NOT** attend the Fall GIS workshop at MCC?
Wed, Oct 7 || Thur, Oct 8 || Wed, Oct 28 || Th, Oct 29
- Spring PD (2-3 hours)
 - Sometime between April 11-15
- Summer – share thoughts with cohort 2
- Email group

Fall date to implement GIST Activity

- GIST Activity Implementation Date = Thur, Dec 10
- Let us know when you plan to do it.
- We will informally observe/help. This is part of the NSF grant.



Historical Map of North America (1650)

GEG 130 – Dual Credit

- Offered this fall
 - Online
 - F2f M/W 1-2:50
- SUNY Gen Ed Natural Science Lab credit (3 credits)
- Course Flyer
- Take a class or two handout

Digitize Earth!

Course Title: Digital Earth
Course Number: GEG 130

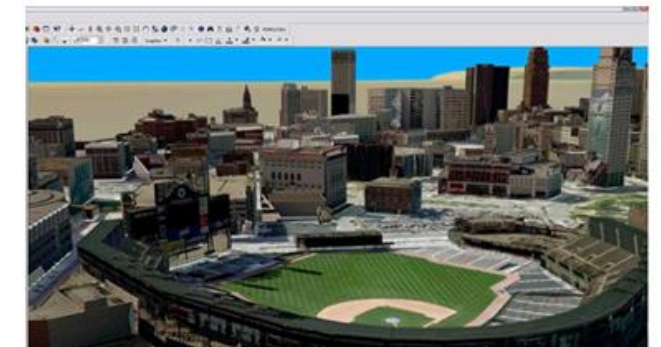
High Job Demand!

According to the U.S. Department of Labor, the geospatial sector is one of 12 that is projected to have far-reaching impact on the U.S. economy.



Description:

The course themes include GIS basics, geography, sustainability, energy, business, your interests, and the ability of Geographical Information Systems (GIS) to solve real world problems.

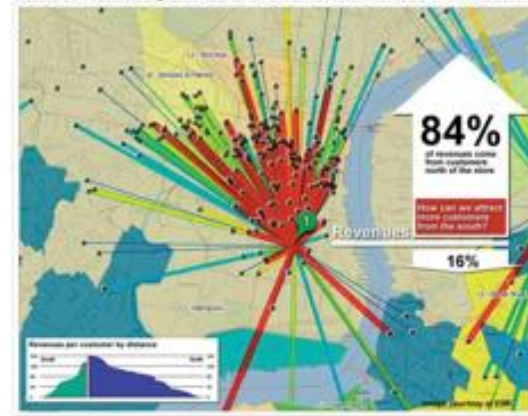


Business GIS (GEG 135)

- ArcGIS Online used
- Still has seats
- Available in the evening Tue/Th this fall
- Could develop as dual credit if interested...let me know.
- 3 credit SUNY Gen Ed Social Science

GEG 135 (Business GIS)

- 3 SUNY Gen Ed Social Science credits
- No prerequisites!
- Demonstrate the basic competence in the use of GIS software, data and services.
- Apply Business Geographic methods to a real world organizational situation such as site selection.
- Explore visualization tools, such as images, charts, graphs, maps, and geopresentations to analyze human impacts on societal issues.



Time:

GEG 135
Tue/Th 6-7:50
CRN 21177

Faculty:

Razy Kased
rkased@monroecc.edu
Phone 585-292-2396

Sample Student GIS Posters

- M:\Courses\GEO\GTCWNY\PD workshop files\GEG130_Poster_Examples

Rock Climb New York

Using Geographical Information Systems
To Map New York Climbing Locations

By: Chris Katz



CCS Nationals 2012
Photo courtesy of David Engel



5.6 on Shanty Cliff
Photo courtesy of David Engel

Purpose

Map indoor and outdoor climbing locations in New York state and make easily accessible.

Methods

I compiled data from many different websites such as topout.com, which were each specific to bouldering or roped climbing, and combined the data into one spreadsheet. The spreadsheets (Figure 1) contain the geographic coordinates (latitude/longitude) of each site as well as whether the site has bouldering and/or roped climbing. A grade range for each type of climbing the site had to offer was also included.

Future Goals

The future goal of this project is to create an interactive map available to the public which will provide climbers and non-climbers a chance to easily find indoor and outdoor climbing locations in New York State. My vision is for the web site to incorporate a map in which users will be able to use zoom and pan features to browse sites as well as a text based database. The map will have removable layers such as satellite view, topographic map and geologic map. The user will also be able to click on a location and have a popup appear with that locations details such as the name, type of climbing, grade ranges, and a link to the locations personal website and directions. I also hope to add a form users can fill out and enter to help add additional sites that may have been missed or have been newly climbed. This also has the potential to be integrated into a mobile app to be used on the go.

Bouldering Grades

V0-V10 (and beyond)
V0: very easy, V10-Very difficult

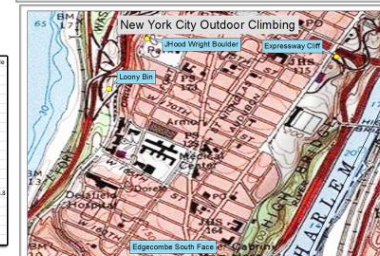
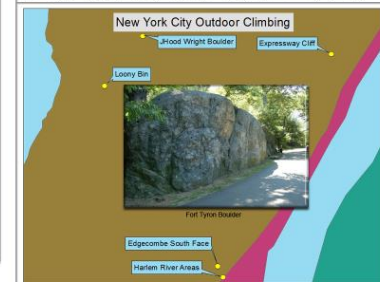
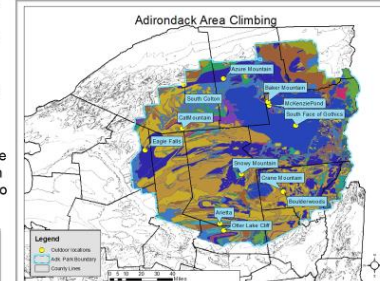
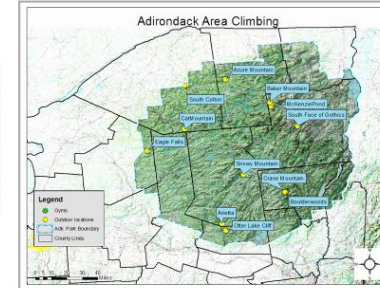
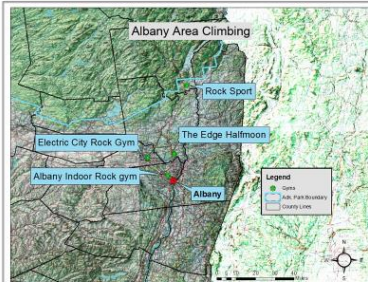
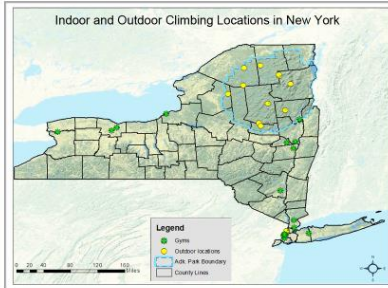
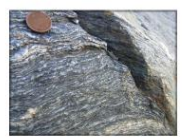
Roped Grades

5.1-5.13 (and beyond)
5.1: very easy, 5.13-Very difficult

Pelitic schist is a foliated metamorphic rock.

Alluvium in loose unconsolidated rock, not well suited for climbing, it's commonly formed by lake or glacial deposits.

Dolostone is a sedimentary carbonate rock which is resistant to erosion and contains a high percentage of dolomite.



ID	Location Name	Latitude	Longitude	Gym	Outdoor	Bouldering	Roped	Bouldering Grade	Roped Grade	ID	Location Name	Latitude	Longitude	Gym	Outdoor	Bouldering	Roped	Bouldering Grade	Roped Grade
1	Red Barn Climbing Gym	43.684232°	-77.664797°	Y	N	Y	Y	V0-V10	N/A	1	NYC Outward Bound	40.788770°	-73.918007°	N	Y	N	N/A	N/A	5.4-5.8
2	Nagsa Climbing Center	43.232007°	-76.839997°	Y	N	Y	Y	V0-V10	5.6-5.12	2	Fort Totten Park	40.862287°	-73.918007°	Y	Y	N	N/A	N/A	5.7-5.8
3	RockVeritas	43.154402°	-77.374037°	Y	Y	N	N	N/A	5.3-5.5	3	Snowy Mountain	43.893438°	-76.341087°	Y	Y	N	N/A	N/A	V0-V10
4	The Edge Hallroom	42.842237°	-73.752083°	Y	Y	Y	Y	V0-V10	5.6-5.13	4	Boulevardwoods	43.337977°	-73.907794°	Y	Y	N	N/A	N/A	V0-V6
5	The Inner Wall	42.781137°	-74.274997°	N	Y	Y	Y	V0-V10	5.6-5.12	5	Rockefellerland	44.308945°	-74.018423°	Y	Y	N	N/A	N/A	V0-V4
6	Albany Indoor Rockgym	42.682349°	-73.786187°	N	Y	N	Y	V0-V10	N/A	6	South Face of Gothics	44.12324°	-73.83861°	Y	Y	N	N/A	N/A	5.5-5.10
7	The City Rock Gym	42.832370°	-73.846237°	N	Y	Y	Y	V0-V10	5.6-5.12	7	Armetta	42.25544°	-74.33081°	Y	N	Y	N/A	N/A	5.0-5.12
8	Rock Sport	43.331337°	-73.861332°	Y	Y	Y	Y	V0-V10	5.6-5.12	8	Azure Mountain	44.54121°	-74.50061°	Y	N	Y	N/A	N/A	5.8-5.12
9	The Wall	43.440237°	-76.212927°	N	Y	N	Y	V0-V10	N/A	9	Baker Mountain	44.33481°	-76.10051°	Y	N	Y	N/A	N/A	5.7-5.10
10	The Cliff	41.698447°	-73.271037°	Y	Y	Y	Y	V0-V10	5.6-5.13	10	Carl Mountain	44.100021°	-76.84661°	Y	N	Y	N/A	N/A	5.7-5.8
11	The Rock Club	40.937808°	-73.778637°	N	Y	Y	Y	V0-V10	5.6-5.13	11	Crane Mountain	43.33379°	-73.38777°	Y	Y	N	N/A	N/A	5.6-5.11
12	RockVeritas Boulders	43.154402°	-77.374037°	N	Y	Y	Y	V0-V10	5.6-5.13	12	Eight Falls	43.186151°	-76.12051°	Y	Y	N	N/A	N/A	5.0-5.13
13	Island Rock	40.787237°	-73.866037°	N	Y	Y	Y	V0-V10	5.6-5.13	13	Other Lake Cliff	43.13396°	-74.49961°	Y	Y	Y	V7	N/A	5.6-5.11
14	Manhattan Plaza Health Center	40.788770°	-73.918007°	N	Y	Y	Y	V0-V10	5.6-5.13	14	South Colton	44.88771°	-74.82111°	Y	Y	N	N/A	N/A	5.6-5.11
15	Sports Center of Chelsea Piers	40.742787°	-74.007837°	Y	Y	Y	Y	V0-V10	5.6-5.13	15	Edgecombe South Face	40.84072°	-73.80061°	Y	Y	N	N/A	N/A	V0-V7
16	The Sports Club LA	40.742787°	-73.942724°	N	N	Y	N/A	N/A	5.6-5.12	16	Expressway Cliff	40.840012°	-73.919192°	Y	Y	N	N/A	N/A	5.9-5.11
17	City Climbers Club	40.721337°	-73.849007°	N	Y	Y	Y	N/A	N/A	17	Harlem River Areas	40.670394°	-73.917992°	Y	N	Y	N/A	N/A	V0-V10
18	Looney Bin	40.844308°	-73.846176°	Y	Y	Y	Y	N/A	N/A	18	Looney Bin	40.844308°	-73.846176°	Y	Y	Y	N/A	N/A	V3-V6
19	Shanty Cliff	40.844308°	-73.846176°	Y	Y	Y	Y	N/A	N/A	19	Hood Wright Boulder	40.844308°	-73.846176°	Y	Y	Y	N/A	N/A	V3-V7

Africanized Honey Bees: The "Killer" Bees

By Zachary Hayes 5/10/2012
GEO 130 Project

Introduction

Africanized Honey Bees were created in 1959 by crossing the deadly European honey bee subspecies with the more aggressive African subspecies in an effort to breed bees that were resistant to the Varroa mite. The bees were first introduced to the United States in 1972. The original group brought from Africa to Central and South America. They were first observed in the lower Rio Grande Valley, in Texas in 1980. They currently extend a range from California to Florida and as far north as Nevada and Utah. The Africanized Honey Bee (often referred to as killer bee) is much more aggressive than most honey bees, tends to attack humans in their nests. They also spread much more rapidly, breeding seasons (Fig. 2) of these bees to create new colonies as often as every six weeks. European honey bees generally require only one year.

Methodology

A key tool to use in displaying the spread of Africanized honey bees is mapping. Using the program ArcGIS, I was able to create a map of the distribution of Africanized honey bees in the United States by county using data from the Agricultural Research Service at the USDA, with graduated colors showing which year they were first found in each county (Fig. 1). Then, using GIS data from NOAA, I created maps showing monthly maximum temperature (Fig. 3) and mean average temperature (Fig. 4) in that correlation between these measurements and honey bee spread by comparing averages. I then selected the temperature zones which the bees tend to inhabit and created a layer from that selection (Fig. 5). Using that layer, I created which regions have suitable temperatures for the bees.

Discussion

The temperature maps of mean daily average and mean daily maximum temperatures both correlate closely with the extent of Africanized Honey Bees, with the bees not spreading from regions they have established for some time, such as southern Texas, and areas with lower temperatures. Mean daily average temperatures seem to show a stronger correlation, as I used that property more extensively in future analyses.

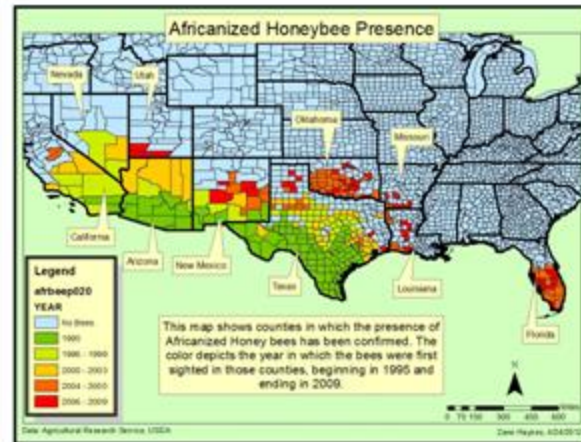


Figure 1. <http://www.aphis.usda.gov/ahbe/> ©2009

Questions and Goals

There have been many attempts to humanize the killer bees and to breed them to be more temperate, but the extent of their spread and proliferation has not stopped. One goal has been to create additional resistance to Varroa mites in these regions. An important goal is to create a more temperate honey bee subspecies so that the bees are not as aggressive as the Africanized honey bees and are less likely to sting. For this reason, temperature will be the primary focus for predicting their spread.

Results

Using the temperature data, I was able to compare the mean daily maximum and daily average temperatures to the current extent of the Africanized Honey Bees. Observing that the bees seem not to spread into counties with mean daily average temperature under 20 degrees, I was able to create a map showing regions with suitable temperatures for the bees.

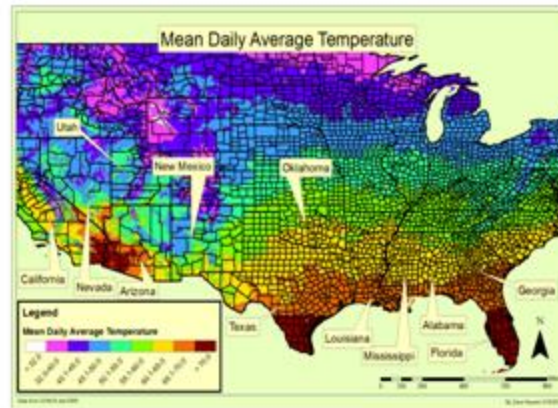


Figure 1.



Africanized Bee (left)
European Honey Bee (right)



Figure 2. <http://www.aphis.usda.gov/ahbe/>

References

- Wagner, Dan. "Killer Bees: Frequently Asked Questions About Africanized Honey Bees." *USDA Agricultural Research Service*. 11 Nov. 2011. Web. 02 May 2012.
- Wagner, Dan. "Africanized Honey Bees." *USDA Agricultural Research Service*. 02 Aug. 2009. Web. 02 May 2012.
- van, "Africanized Honey Bees Swarm." *The Oregonian, Tri-Weekend*. 14 July 2010. Web. 10 May 2012.

Introduction



Figure 2. <http://www.aphis.usda.gov/ahbe/>

Implications and Conclusion

The areas with suitable temperatures for the bees (orange regions, Fig. 2) should have their residents educated. For those regions at risk, for possible future to grow, residents should be advised of proper precautions to avoid being stung by the bees, as well as how to recognize the bees.

Acknowledgements

I am grateful to ESRI for donating ArcGIS to Maricopa Community College for student use. I am grateful to NOAA for donating the temperature data, and to the USDA for making the bee data publicly available. I am grateful to my professors, advisors, or recommenders approved in this material and those of the author and do not necessarily reflect the views of the Professor Collier Maricopa Community College. Identification of specific products and manufacturers in this text does not imply endorsement by Maricopa Community College.

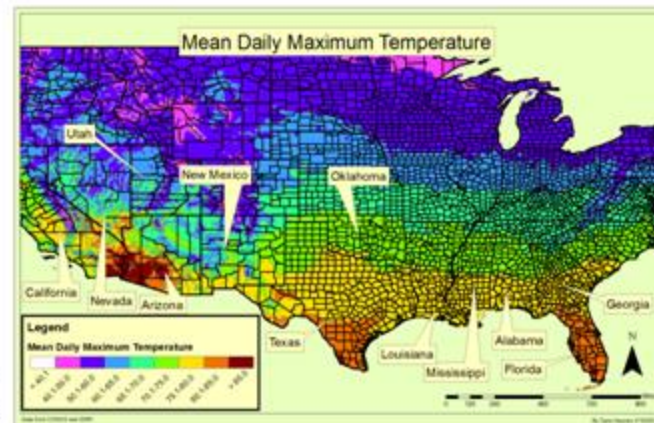


Figure 2.

Get the GIST Certificate!



MCC's 24 Credit GIST (Geospatial Information Science Technology) Certificate - Get the GIST!

Fall semester

Course Number	Course Title	Credits
GEG 100	Physical Geography I Lab	1
GEG 101	Physical Geography I	3
GEG 130	Digital Earth	3
GEG 131	Cartography	3
Elective Course	Options include: Business GIS, Technical Writing, Intro to Stats, & Intro to Python	3
Total		13

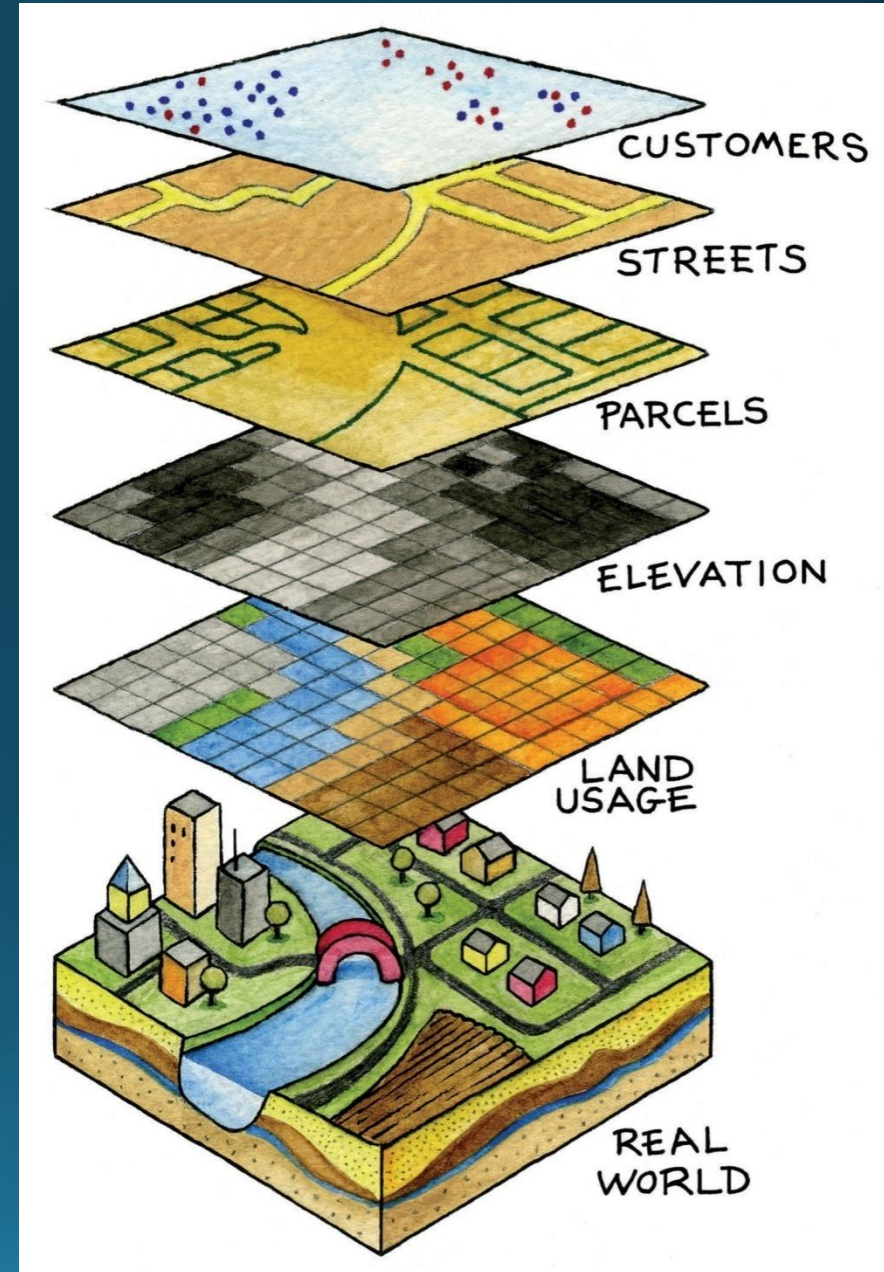
Spring semester

Course Number	Course Title	Credits
GEG 102	Human Geography	3
GEG 133	Introduction to Remote Sensing	3
GEG 230	Advanced GIS	3
GEG 239*	Capstone Course	2
Total		11

*Late Start Spring/Summer session I

GIST Student Opportunities

- Intern with local GIS company/GIS jobs
- Scholar's Day poster or presentation in April – could win \$1000!
- NY GIS list serve
- Conferences
- Local GIS networking at GIS-SIG
- Capstone Course
- More!



Former GEG 130 students (Digital Earth)

- I have been doing independent study with one of my professors involving some really cool things with Geospatially Enabled Business Intelligence (basically merging data warehousing/mining models and techniques with GIS). Last month I spoke with ESRI and hope to do an internship with them next spring or summer. I will be taking a few higher level GIS courses next year and am considering a minor (I spoke with Brian Tomaszewski about it). More recently I used my final project from your class to secure a job at the **Board of Governors of the Federal Reserve** in Washington D.C. this summer.
- Received a job with Agrinetix after just taking GEG 130! Now working with Esri.

GIST – High Growth

- Geospatial is a high growth industry. Source: Department of Labor
- Geospatial careers are among the fastest-growing in the U.S. and world today, and geospatial jobs are currently available in every industry. Source: http://www.aag.org/galleries/jobs-careers-files/Geospatial_panel_notes_2012.pdf



The screenshot shows the top navigation bar of the United States Department of Labor website. The header is red with the DOL logo on the left and navigation links on the right. Below the header is a search bar. The main navigation menu is white with red text. The current page is titled "High Growth Industry Profile - Geospatial Technology".

UNITED STATES DEPARTMENT OF LABOR
Employment and Training Administration

A to Z | Site Map | FAQs | Forms | About DOL | Contact Us | Español

Enter Search Term Search

ETA Home Find Job & Career Info Business & Industry Workforce Professionals Grants & Contracts TAA Program Foreign Labor Certification Performance & Results Regions & States

[ETA Home](#) [Division of Strategic Investments](#) > [Industry Profiles](#) > High Growth Industry Profile - Geospatial Technology [★ Was this page helpful?](#)

Contact Us

Solutions for Business

Industry Snapshots

Exploring GIST Careers (Middle/HS)

- <https://www.youtube.com/watch?v=M7tK9CjRmlo>

**Global Positioning
and
Geographic Information
Systems**

Local GIST Career Options & GTCWNY Partners*

- Pictometry* <http://www.eagleview.com/>



- GIS-SIG* <http://www.gis-sig.org/>



- Fibertech Networks* <http://www.lighttower.com/>



- Monroe County GIS* <http://www.monroecounty.gov/gis>

- Exelis <http://www.exelisinc.com/>

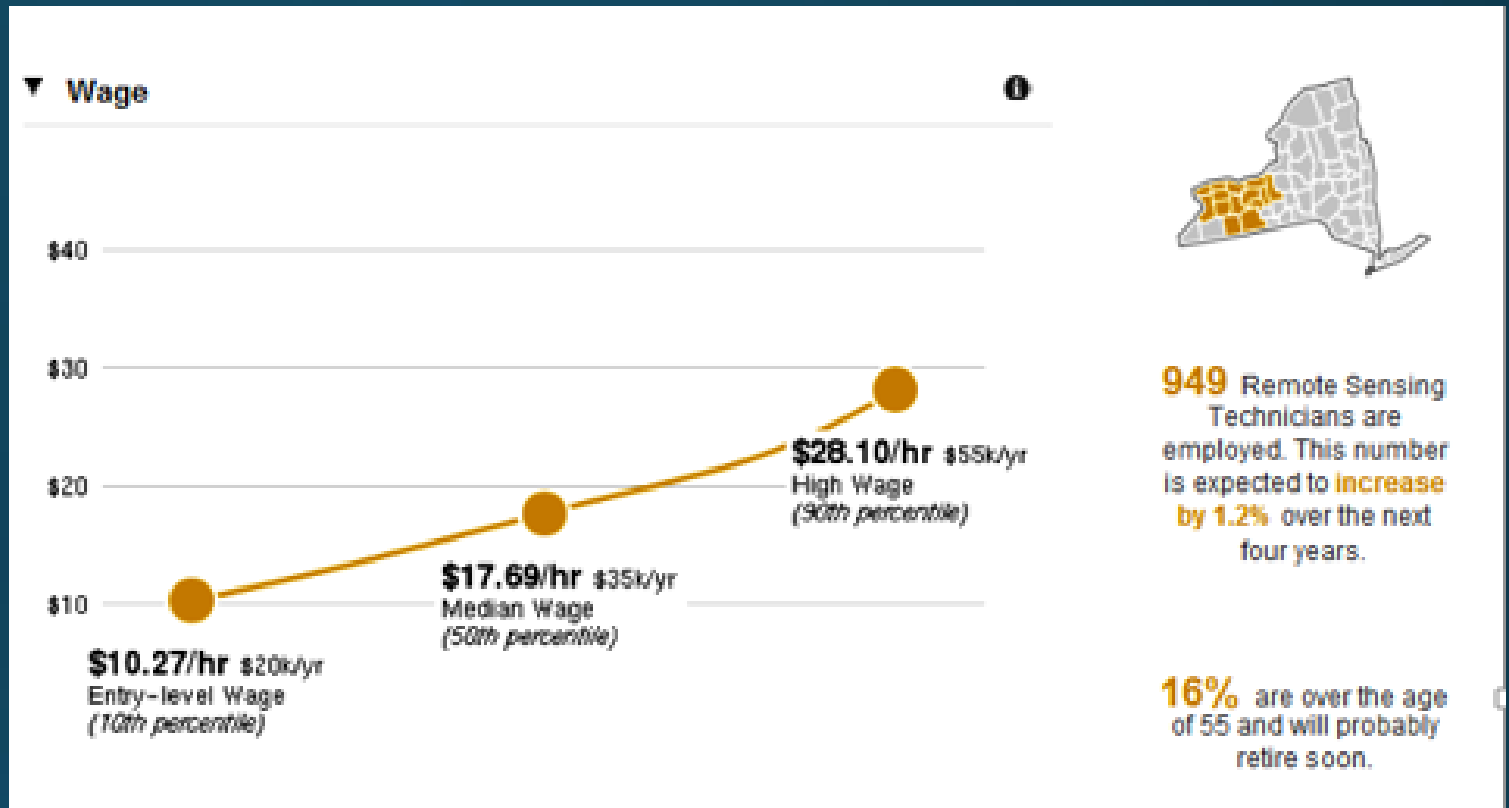
- Local Towns/cities

- Agrinetix

- More!



Geospatial Technician Data within 50 miles of MCC



MCC's Career Coach uses Economic Modeling Specialists, International (EMSI) and Equifax business data to provide current employment data for western New York. Data from EMSI is often cited in The New York Times and The Wall Street Journal.

National GIST Career Options

- Most decent size companies
- Government
- Physical: USGS, NOAA, NWS, park service...
- Human: banking, insurance, law enforcement, business, healthcare...
- Esri <http://www.esri.com/>
- National security industry
 - U.S. Geospatial Intelligence Foundation include: GeoEye, AGI, Harris, SAIC, Esri, ATT, NJVC, TASC, SI, Oracle, Microsoft, Digital Globe, Raytheon, Boeing, BAE Systems, Lockheed Martin, GDT, Ball Aerospace, Intergraph, Booz Allen Hamilton, Northrop Grumman, IBM, L-3, CACI

GIST Jobs

- **GIS Jobs Clearinghouse**
<http://www.gjc.org/>
- NY GIS Members <http://www.nysgis.net/member-area/jobs/>
- ESRI Users Conference <http://www.esri.com/careers/main/job-search>
- AAG (Association of American Geographers)
http://jobs.aag.org/home/index.cfm?site_id=15004
- It is who you have networked with!
- Employees are also looking for internships! What employers are looking for - http://www.aag.org/galleries/jobs-careers-files/Geospatial_panel_notes_2012.pdf

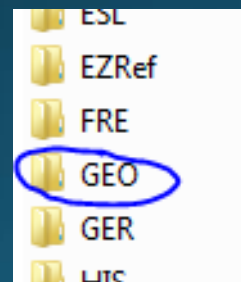
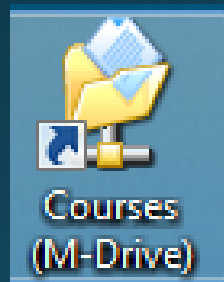
Online Resources + More

- Handout
- ***GTCWNY**
<http://www.nygeographicalliance.org/node/36>
- ***ArcGIS Online Gallery**
<http://www.arcgis.com/home/gallery.html>
- ArcGIS
 - Lessons
<http://edcommunity.esri.com/Resources/ArcLessons>
- ***Google Earth Engine**
<https://earthengine.google.org/#intro>
- ***Esri Connect Ed Video**
<http://www.esri.com/connected>
- Data CUGIR <http://cugir.mannlib.cornell.edu/>

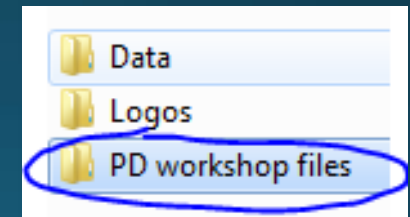
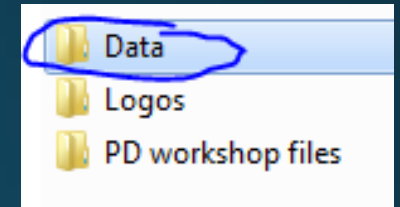
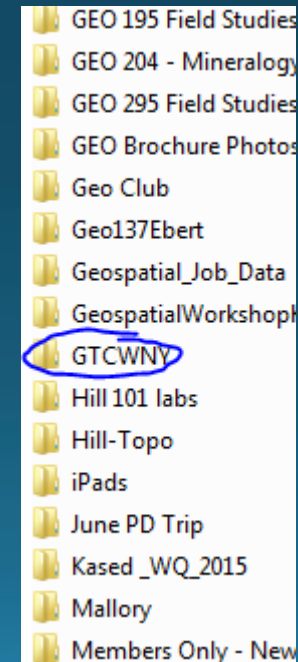


M-Drive (access from MCC only)

- Online Resources M:\Courses\GEO\GTCWNY\PD workshop files
- Some of your requested data is available on M-drive @ M:\Courses\GEO\GTCWNY\Data



Scroll way
down to
GTCWNY



Open Lab time

- Some of your requested data is available on M-drive @
M:\Courses\GEO\GTCWNY\Data
- Feel free to modify existing activities
- If you develop your own, please share so we can have a collection to share.
- Considering developing your own exercise?
 - Tips
- Break with snack food! ~ 11

Management of ArcGIS Online

- We will discuss with your tech folks at each district
- What we need from you...who is a good person to reach out to at your district?
- Should be ready to go with
- We can come to your class and help you set it up.
- We will try and get this set by end of Sept.

Conferences + Other Resources

- Other Resources Handout
- **Esri Connect Ed Video** <http://www.esri.com/connected>
- Interested in presenting implementation of your GIST activity and/or dual credit? Grant will pay for 1 or 2.
 - GIS/SIG (local)
 - Student Lightning Talks (5 minutes)
 - Meet potential local employers
 - April 2016
 - <http://www.gis-sig.org/conference.html>
 - Pittsford, NY
 - NCGE (summer) <http://www.ncge.org/>
 - Esri <http://video.esri.com/series/250/2015-esri-user-conference-plenary-dash-watch-the-entire-day>
 - AAG (Late winter/spring)

Questions & Thank you!



- Heather and I have release time to visit and support you! We want you to be successful in implementing your GIST activity!
- Any Q after the workshop, please email!

Evaluation