

# Retooling Library GIS Services for Online Learning and Research



# Megan Slemmons

Emory University



**15,000**  
**Students**



**600**  
**ArcGIS users**

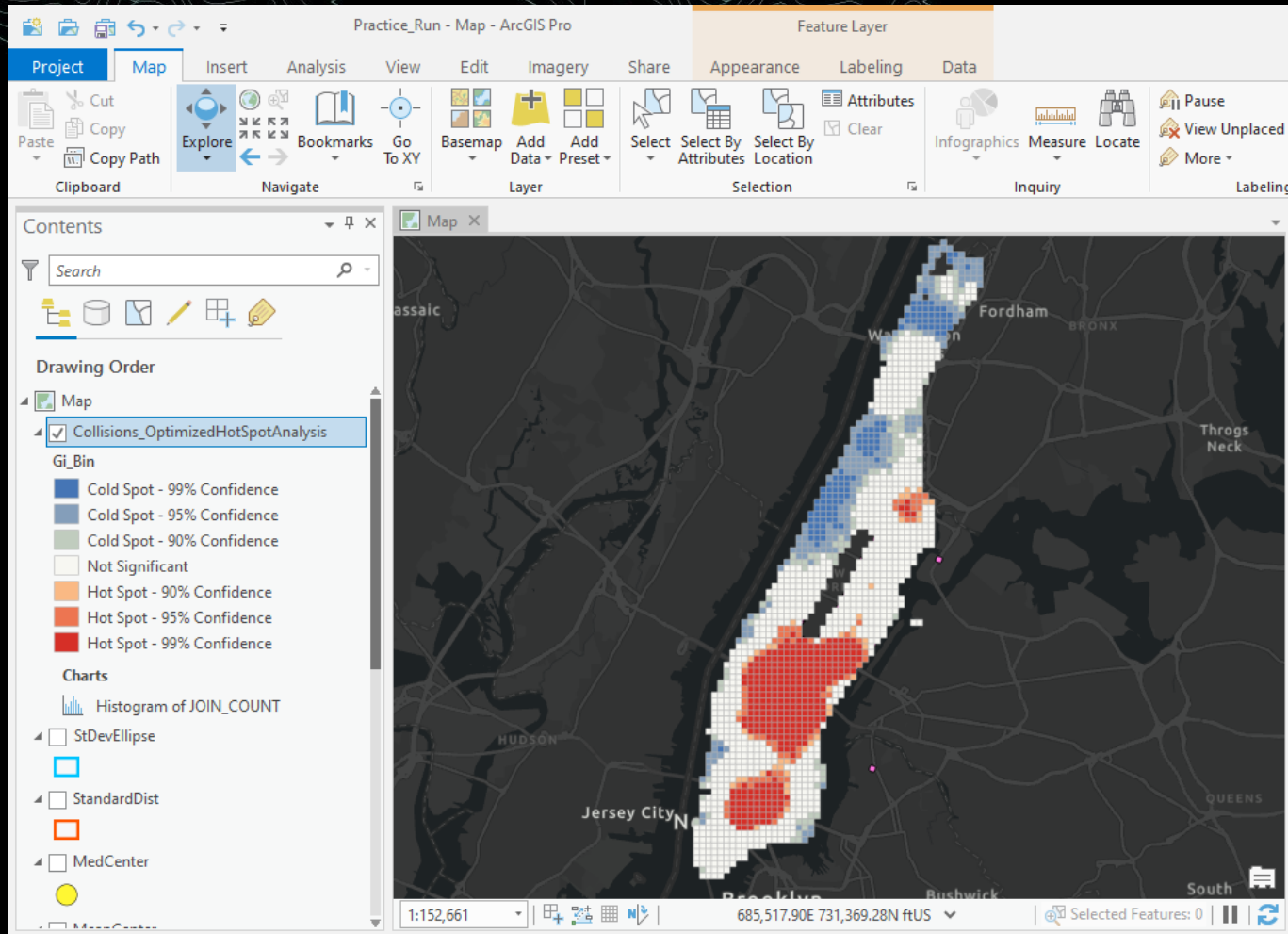
**Private 4+ years**

**Majority**  
**Undergraduate**



**Large city**  
**setting**





# Changing GIS Instruction

Megan Slemmons - Emory University

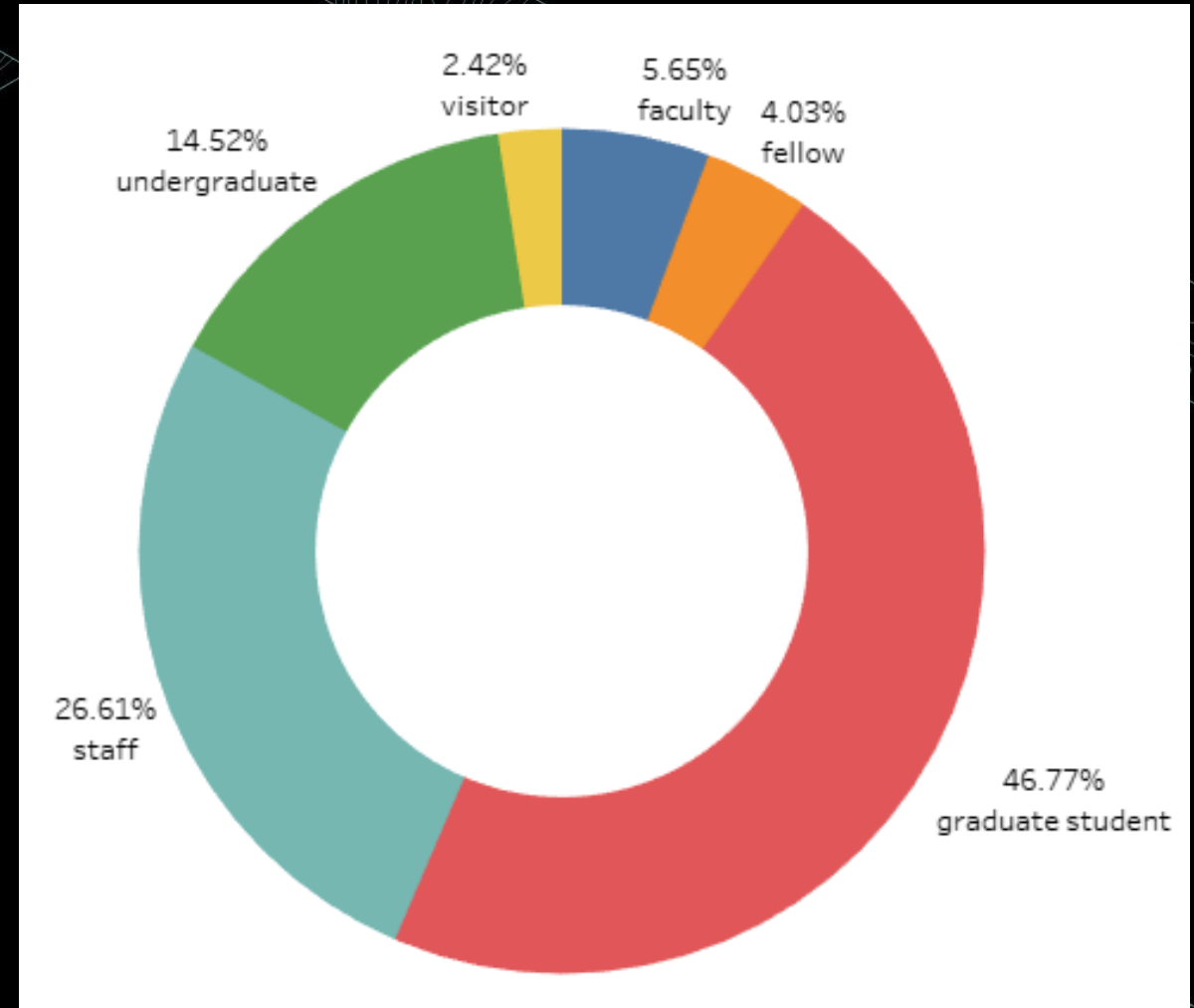
## About my institution

- The Emory Center for Digital Scholarship falls under Library and Information Technology Services
- Discipline-neutral place for GIS support and instruction (among other topics)
- I'm the Esri site license manager
- Emory has no Geography or Planning departments, but does have Public Health School and Environmental Science
- Instruction (in many forms) is a big part of my job



# Who attends our workshops? What does this mean for how and what we teach?

- Our workshops cover a variety of topics, including GIS and mapping, and are open to anyone
- A mix of students, faculty and staff - so audience is researchers, instructors, and practitioners
- From a wide variety of departments
- These workshops are often the only source of training before someone uses GIS
- We're filling a gap where there is a need on campus - training that is open to anyone



Spring 2020 workshop attendee affiliation

# How has instruction changed over time?

- **Format**

- Access to a Windows computer lab was initially a limitation

- **Topics**

- Increased focus on teaching theory and best practices, and not just how to navigate the software and overcome common errors
- Understanding why and when you would use one tool over another
- Switched instruction to all-Pro and greatly increased use on campus
- Data literacy series coming in fall

## Average Nearest Neighbor Summary

Nearest Neighbor Ratio: 0.410320

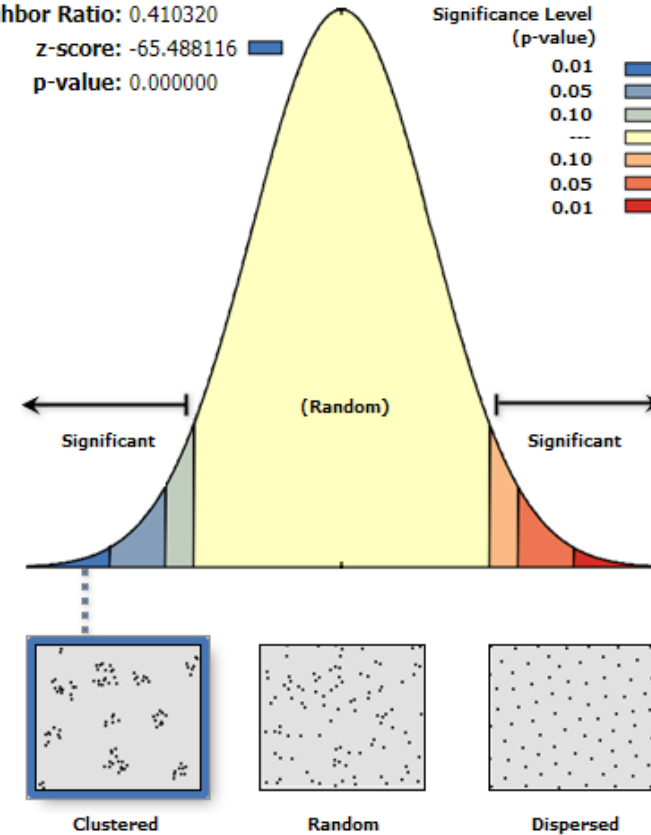
z-score: -65.488116

p-value: 0.000000

Significance Level  
(p-value)

Critical Value  
(z-score)

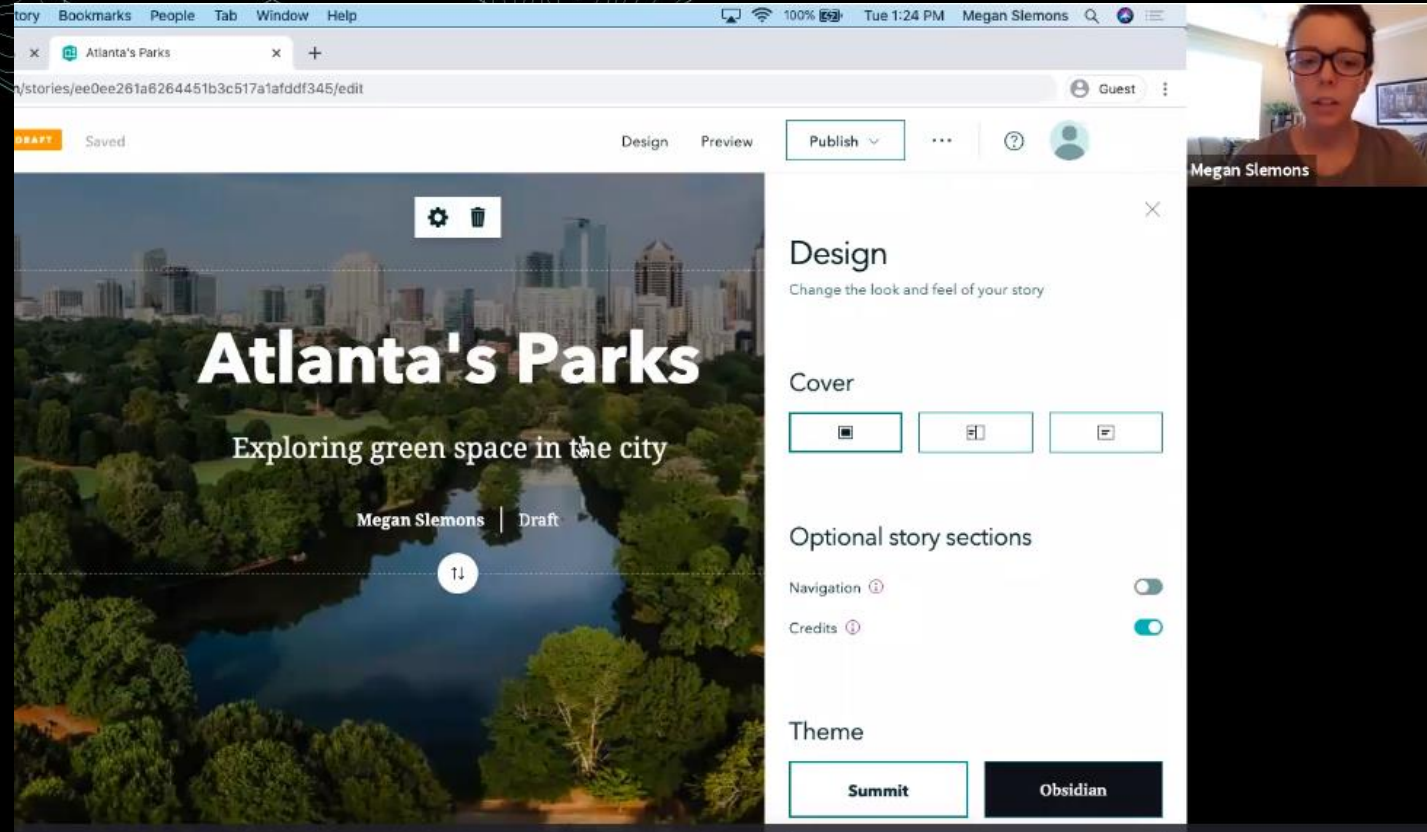
0.01	< -2.58
0.05	-2.58 -- -1.96
0.10	-1.96 -- -1.65
---	-1.65 -- 1.65
0.10	1.65 -- 1.96
0.05	1.96 -- 2.58
0.01	> 2.58



Given the z-score of -65.488116, there is a less than 1% likelihood that this clustered pattern could be the result of random chance.

# How are things changing as we move online?

- Software access - lots of new ArcGIS installations on personal computers
- Workshops are shorter – teach concepts, best practices, and provide hands-on activities for later
- Less interactivity during workshops, but many follow-up consultations
- Increased interest/enrollment in Esri Training
- Focus on web-based tools for fall teaching



# Lessons learned (so far!) from virtual workshops

- Workshops over Zoom have worked out surprisingly well
  - Registration and attendance more than doubled over summer
  - Keep it short and specific (1 hour) - Zoom fatigue is real!
  - Less interactivity
- Changing focus
  - Lots of interest in watching recordings (stored in Canvas site)
    - Changing the focus away from in-person "attendance"
  - Focus on why you'd use this tool, what your data would look like, rather than specifics of use

The screenshot shows the Emory Canvas LMS interface. The top navigation bar includes 'EMORY', 'Account', 'Dashboard', 'Courses', 'Calendar', 'Inbox', 'Studio', and 'Help'. The main content area displays the course 'ECDS\_Workshops\_2020\_2021' and a list of modules. Each module is expanded to show its associated files.

Module	Files
ArcGIS StoryMaps (Summer 2020)	<ul style="list-style-type: none"><li>ArcGIS StoryMaps Zoom recording (Su2020) <a href="#">↗</a></li><li>ArcGIS_StoryMaps_slides.pdf</li><li>StoryMaps_exercise_data.zip</li><li>StoryMaps_exercise_data-1.zip</li></ul>
Intro to Data Visualization in Tableau (Summer 2020)	<ul style="list-style-type: none"><li>Intro to Tableau Zoom recording (Su2020) <a href="#">↗</a></li><li>Intro_Tableau_slides.pdf</li><li>ACS_5yr_2018_Housing.xlsx</li></ul>
Git and GitHub - Working with Data in Teams (Spring 2020)	<ul style="list-style-type: none"><li>Git and GitHub Workshop Facebook recording (Spring2020) <a href="#">↗</a></li><li>Download git <a href="#">↗</a></li><li>Go to GitHub <a href="#">↗</a></li></ul>
R Basics - Introduction to R (Fall 2019)	<ul style="list-style-type: none"><li>R Basics - Introduction</li></ul>



# Russ White



California Polytechnic State University



**22,000**  
**Students**



**2,200**  
**ArcGIS users**

**Public 4+ years**

**Very high**  
**Undergraduate**



**Small suburban**  
**setting**





# Data & GIS at Kennedy Library

Russ White

Data & GIS Specialist  
Robert E. Kennedy Library  
Cal Poly San Luis Obispo



**CAL POLY**

Robert E. Kennedy Library

# Digital Projects Lab | Data, GIS, Statistics

## *Find datasets*

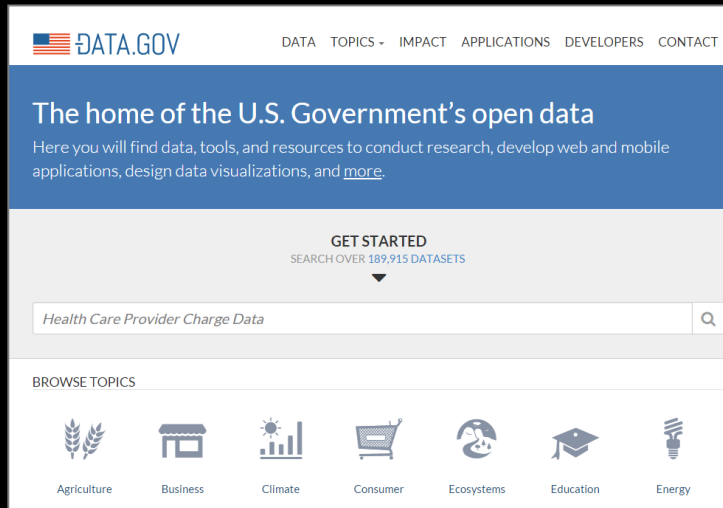
Navigate to find the data you need

## *Consult an expert*

Meet with peer assistants for help with data analysis & tools

## *Visualize & present*

Find creative & effective ways to tell your story



<http://guides.lib.calpoly.edu/DPL>


# Virtual Labs with AWS AppStream 2.0

ArcMap, ArcGIS Pro  
AutoCAD, Revit  
Solidworks ...




















Standard, and  
'Graphics' instance

Managing your data  
is a challenge

**Virtual Computer Labs**

 CAL POLY  
Information Technology Services

Choose your app to get started


 Adams 2020	 ANSYS Electronics Desktop 2020 R1	 ArcGIS Pro	 ArtiosCAD 18.1	 AutoCAD 2019	 Canvas	 Civil 3D 2019 Imperial	 Civil 3D 2019 Metric	 EAGLE	 Firefox
 Fluent 2020 R1	 ICEM CFD 2020 R1	 Mastercam 2020	 Navisworks Manage 2019	 Navisworks Simulate 2019	 OneDrive	 Revit 2019	 SOLIDWORKS 2019 SP3.0	 Workbench 2020 R1	

# Writing and Learning Center | Virtual Help

Schedule an appointment to meet with a peer assistant online.



ACCESS TEXT-ONLY & MOBILE

 **CAL POLY**  
Writing and Learning Center

WELCOME, RUSS ▾ **April 7 - April 13, 2020** Spring 2020 - Online ▾  
◀ PREVIOUS WEEK | CURRENT WEEK | NEXT WEEK ▶

HELP? FILTER THE SCHEDULE BY COURSE OR SUBJECT: DIGITAL PROJECTS LAB ▾

**ALL APPOINTMENTS ARE BEING CONDUCTED ONLINE UNTIL FURTHER NOTICE.**  
*A few minutes before your appointment time, click on your appointment, and then select the 'start or join online consultation' link. For more detailed instructions on how to reserve or engage in your appointment, click [here](#).*  
*If you need help with a course/subject not currently listed, contact the Writing and Learning Center.*

[https://youtu.be/7X86bfj\\_uZY](https://youtu.be/7X86bfj_uZY)

- Sign-in
- Find a peer assistant by course & availability
- Connect via Zoom, Chat, screenshare, or virtual whiteboard



# Patricia Carbajales

Clemson University



**25,000**  
**Students**



**3,700**  
**ArcGIS users**

**Public 4+ years**

**High**  
**Undergraduate**



**Large suburban**  
**setting**



# What have you found helpful in making GIS software accessible?

Flexibility



Software as a Service



Virtual Desktop



Remote Desktop



## Consequences

- Agile response to **diversity**
- Higher outreach to patrons
- **Avoid disruption of services**

## Flexibility



Software as a Service



Virtual Desktop



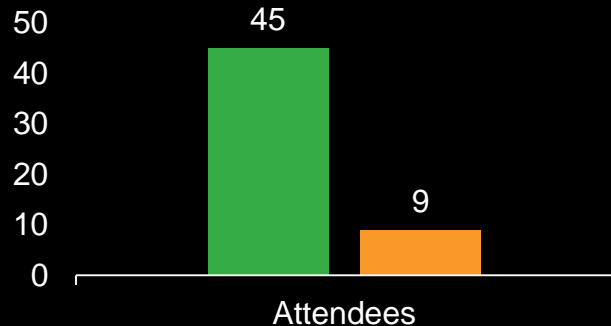
Remote Desktop



# What have you found helpful in engaging students?

Staying Connected – ↑ Availability – Specialized Outreach

Asynchronous OR Synchronous



Moving Online  
Easier -> Wider audience



It's all in the name:  
Cloud Mapping with ArcGIS Online  
OR  
Unleash Your Creativity with Story Maps

# Him Mistry

New York University



**52,000**  
**Students**



**2,700**  
**ArcGIS users**

**Private 4+ years**

**Majority**  
**Undergraduate**



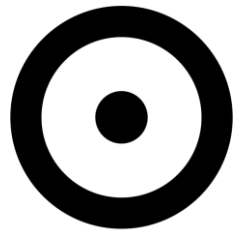
**Large city**  
**setting**



NYU IT + LIBRARIES



CENTRALIZED



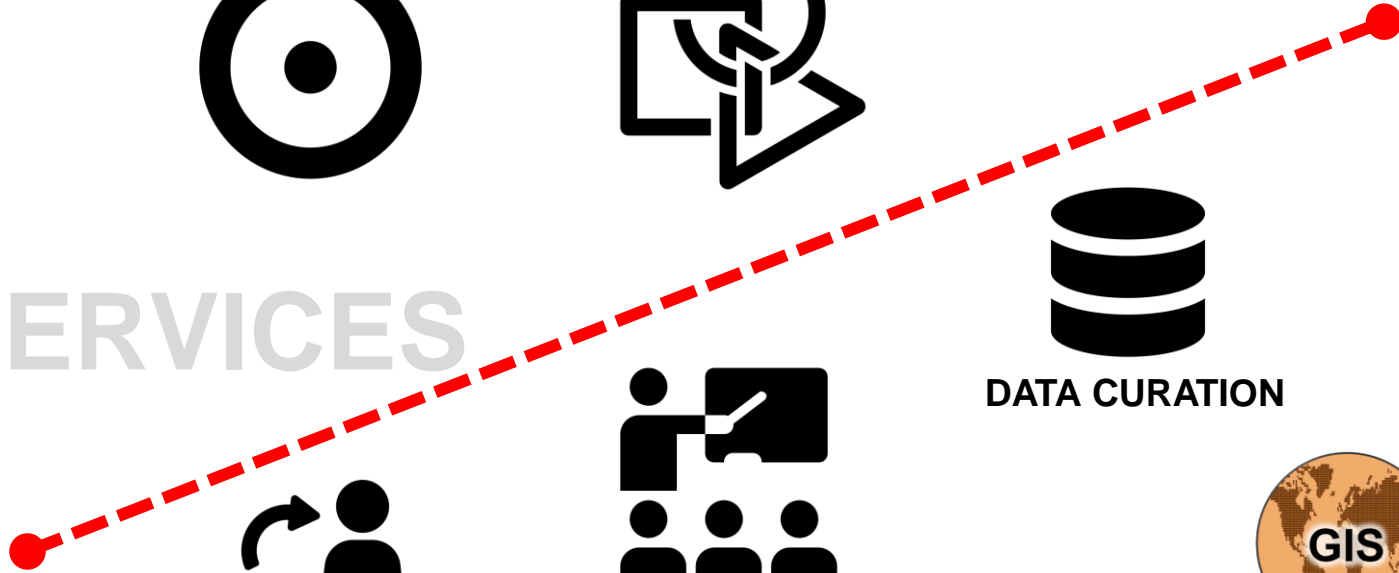
INTER-DISCIPLINARY



2020

DATA SERVICES

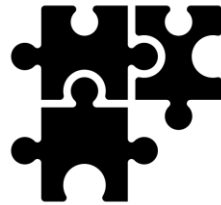
2008



DATA CURATION



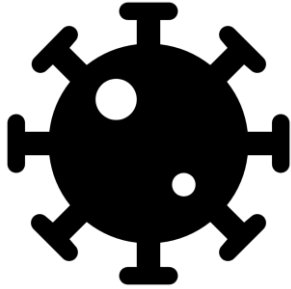
CONSULTS



TUTORIALS

80+ GIS &  
40+ DATA VIZ  
400+ TOTAL



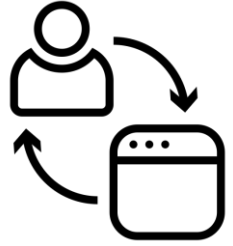


COVID-19

# CRISIS MODE



SOCIAL INJUSTICE



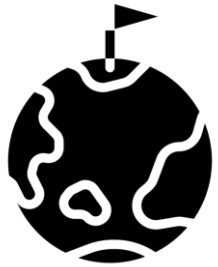
SWITCH TO REMOTE



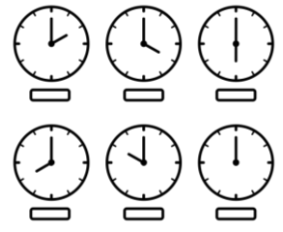
COLLABORATION + PARTNERSHIPS



EXPERIMENTATION: BUSINESS CONTINUITY

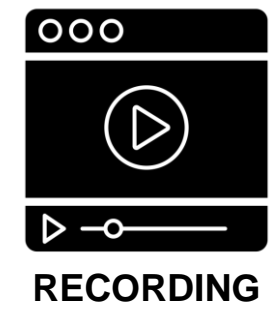
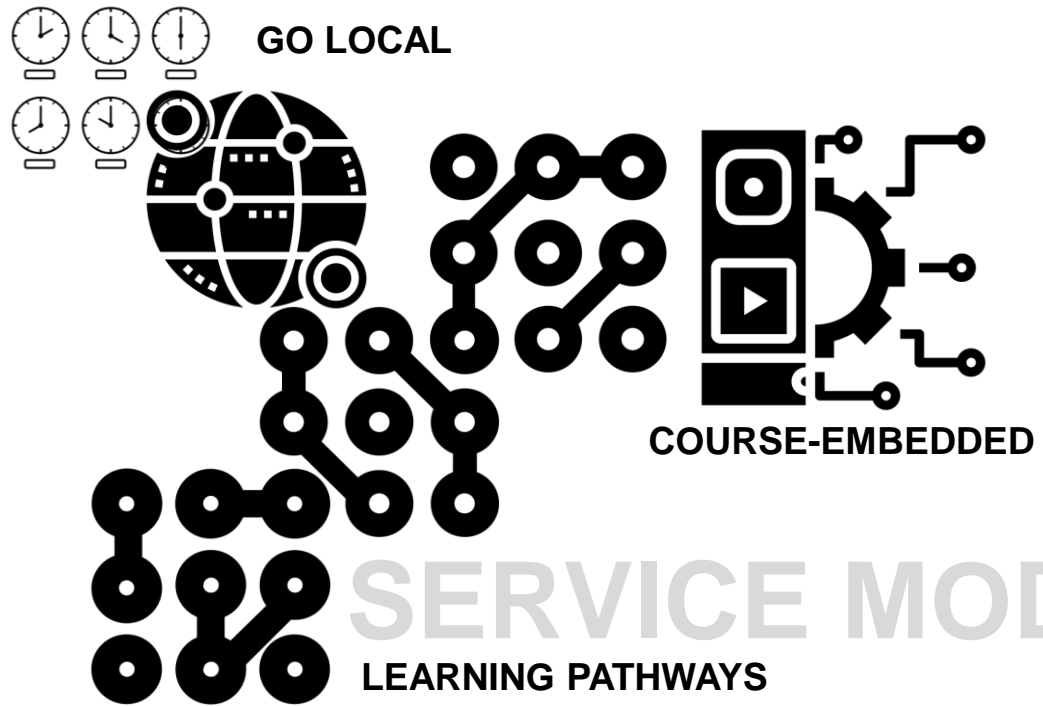


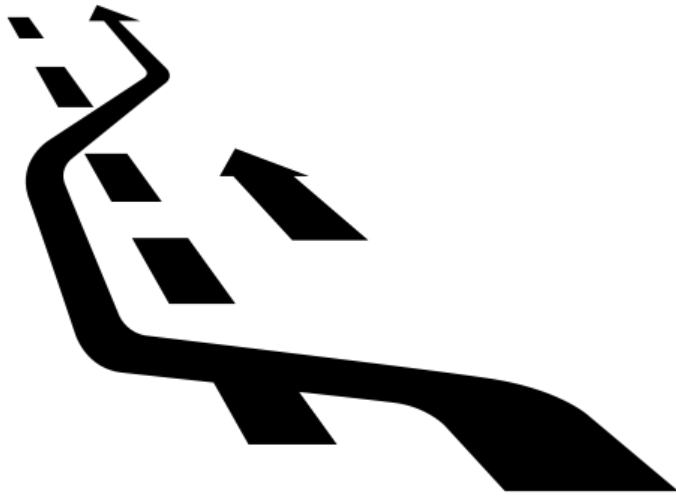
GLOBAL SITES



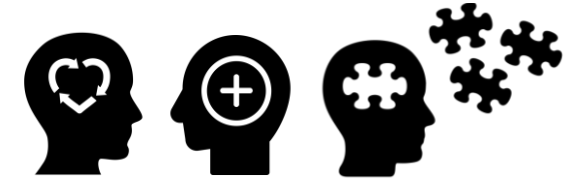
TIME ZONES







PUBLIC HEALTH SAFETY



PSYCHOLOGICAL SAFETY: IDBE



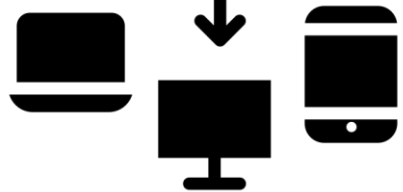
WEB TOOLS

# ROAD AHEAD

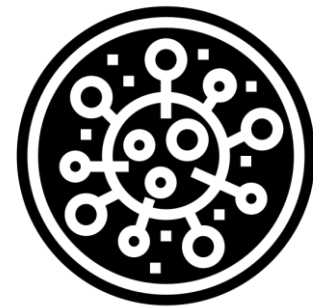
VIRTUALIZED



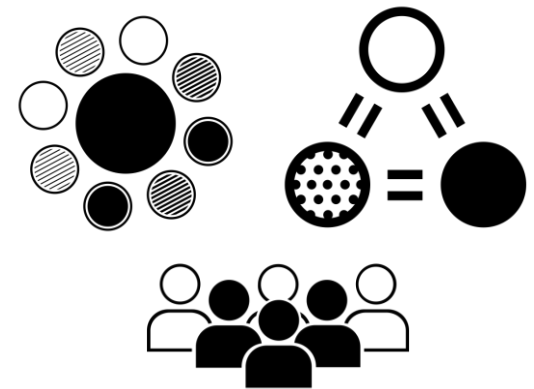
ENVIRONMENT



LOCAL INSTALLATION



COVID RESEARCH



RACIAL INJUSTICE

**HIM MISTRY**

**MANAGER, DATA SERVICES  
NEW YORK UNIVERSITY**

**E: [himist@nyu.edu](mailto:himist@nyu.edu)  
[guides/nyu.edu/dataservices](https://guides.nyu.edu/dataservices)**

# THANK YOU

# Questions ?

#### Noun Project – Artwork Attribution

##### Slide 1

Pieter J. Smith  
Adrien Coquet  
HeadsOfBirds  
Muhammad Samudra  
Pham Duy Phuong Hung  
Rflor

##### Slide 2

mynamepong  
Oleksander Panasovskyi  
Kraya  
Eucalyp  
Becris  
priyanka  
Rafael Garcia Motta  
Cara Foster

##### Slide 3

Eucalyp  
Becris  
Agni  
Nithinan Tatah  
ProSymbols  
Flatart  
Vectors Point

##### Slide 4

Eric Benoit  
esri  
ProSymbols  
priyanka  
Luis Prado  
corpus delicti  
AomAm  
Smallike  
Stephen Plaster  
Yu luck  
Thomas Deckert



# Miriam Olivares

Yale University



**13,500**  
**Students**



**2,900**  
**ArcGIS users**

**Private 4+ years**

**Majority**  
**Graduate**



**Midsized city**  
**setting**



Yale University

Marx Science & Social Science Library

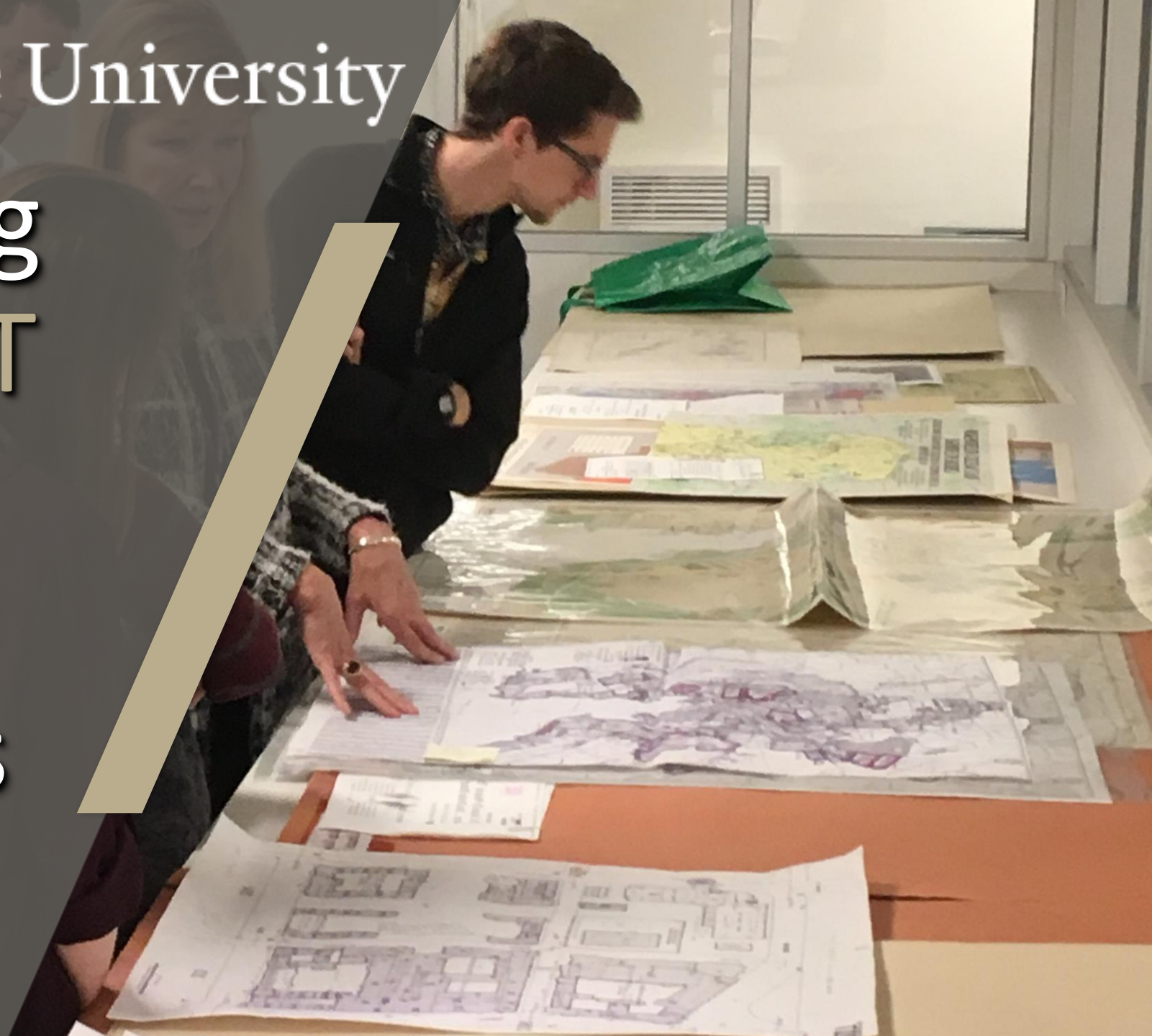
Miriam Olivares,  
GISP

Esri Education Summit 2020



Yale University

# Transforming GIS SUPPORT SERVICES During Emergencies



Esri Education Summit 2020

# CONTENT

- ❑ Infrastructure
- ❑ Instruction
- ❑ Consultations
- ❑ Yale COVID Mapping Initiative



# 1. INFRASTRUCTURE

From desktop to virtual computing

## Before COVID

- 80% Mac undergrad users
- 70 % overall
  - Installing VMs in Macs mostly challenging – computing power
- Some schools offered licensed-VM with troubleshooting
- Majority use open-source VMs

## Post-COVID

- Initially decision-makers were overwhelmed
- Universities consulting w/peers and emulating decision-making
- IT Central started working on virtual desktops
  - Forestry started piloting WVDs
- Gigantic step for GIS integration
  - Learning
  - Project integration



## May 20 – GIS Meet Up

GIS Librarian: “You might want to include Pro if that is an option....”

IT Central: “Right now we are not focused on any of that. I know those are conversations that are going to happen sooner than later....”

## May 21 – E-mail

IT Central “.... our new Test environment (it has Pro)”



## 2. INSTRUCTION

Is asynchronous the answer?



# Asynchronous GIS Learning

2008 @ Texas A&M Map & GIS Library

- Tutorials -YouTube
  - Authored by graduate student consultants
  - 12 videos, from 4 to 19:mins
  - Storyboard then production with voiceover
  - 666,175 views

2017 @ Yale University Library

- Workshops - Panopto: NetID authentication
  - Authored by Ph.D. student consultants, edited by GIS interns
  - Data included
  - 4 videos, from 58 to 135 mins
  - Live workshops and AV room production
  - Closed-captioning
  - 114 hrs overall
- MOOCs, tutorials, Esri virtual training, etc.

## (Virtual) Live

- Registrar courses
  - Forestry/Environment & Public Health
- Library & other departments
  - On-site (or virtual) workshops
    - Intro & intermediate desktop
    - Web-based mapping
    - Special topics & SIG
      - StoryMaps
      - Google Earth Engine
      - Esri Notebooks
- Challenges:
  - Assistance by “2nd instructor” TBD for virtual training



# 3. GIS CONSULTATIONS

Virtual meetings, human  
connection



# Teaching & Project Planning

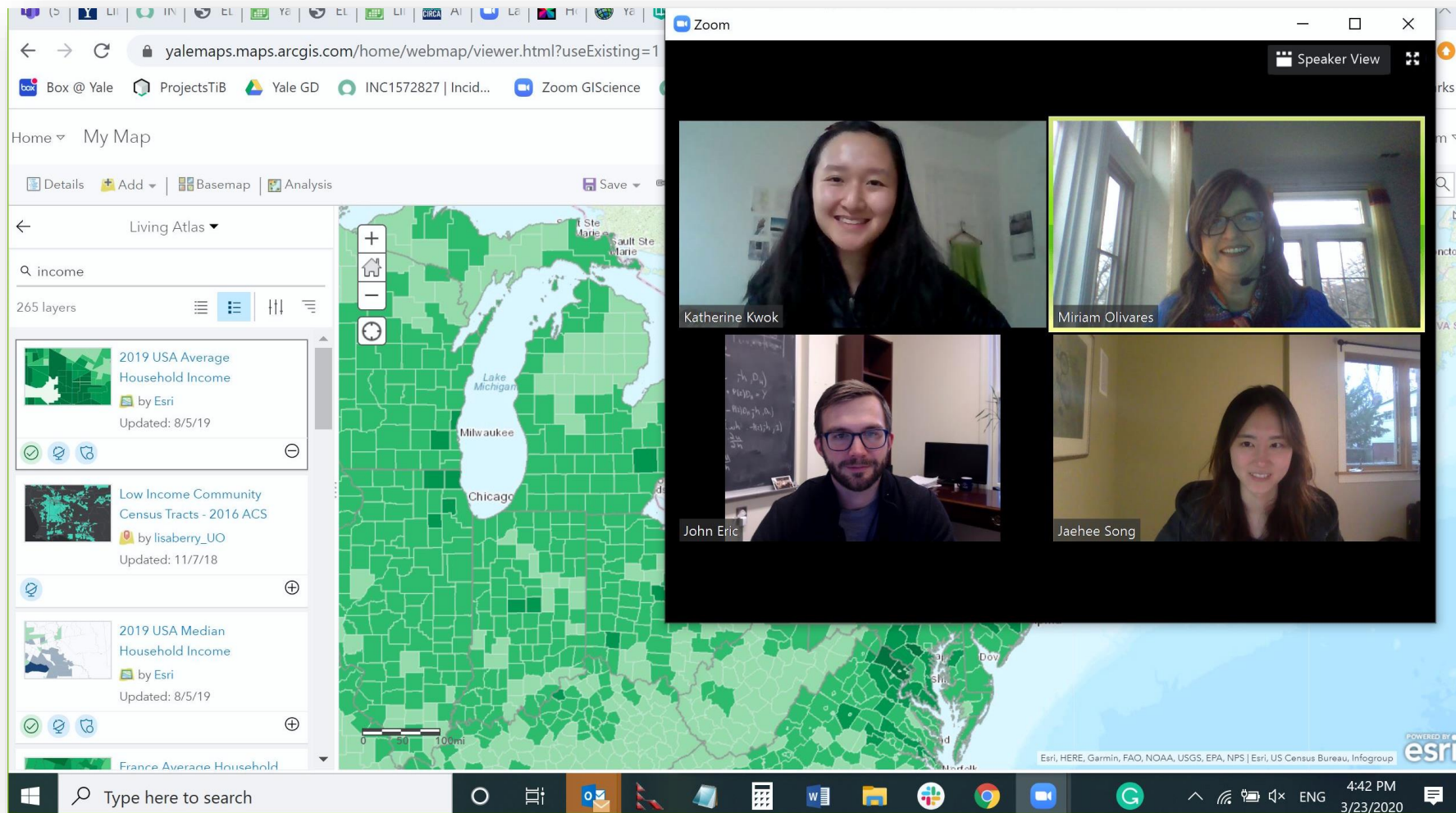
## Selected topics:

- GIS foundations
- Spatial data management
- Power of web-mapping
- Power of desktop mapping
- Connecting researchers with experts across campus and around the world!
- Shortcuts – from basic to complex concepts
- GIS careers & enhancing job hunting
- GIS role models



## Management & Communication

- Electronic reservation
- Ticketing system
- Research Guides & FAQs
- Mailing list
- Slack, Teams or other IM service, including a group's GeoNet instance
- Stats to show decision makers GIS impact across campus
  - Consultations
  - Research guides
  - Website analytics



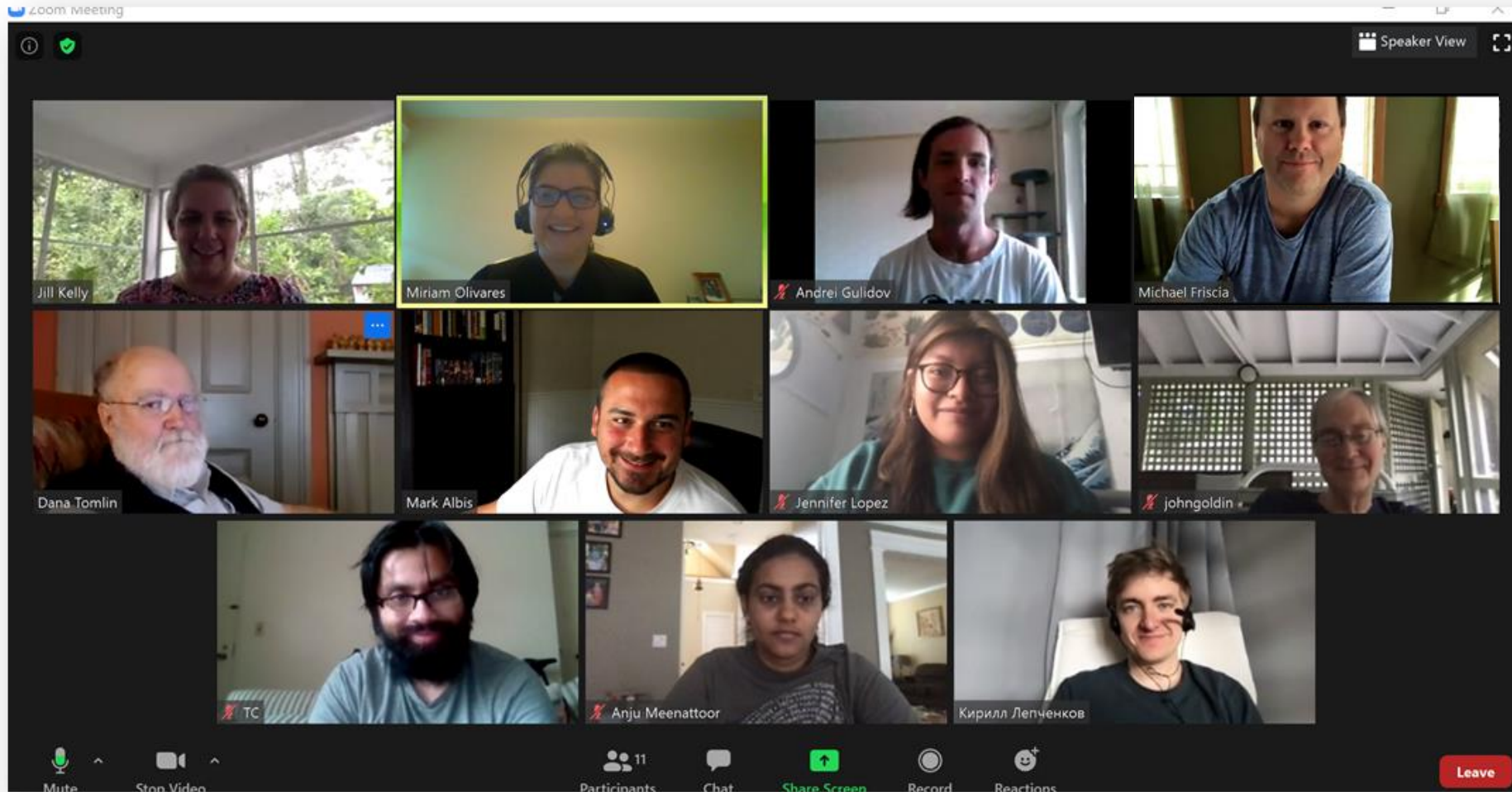
*Virtual consultation with a research team*

# 4. YALE COVID MAPPING INITIATIVE

Fostering collaboration across campus







The COVID Mapping Team



## Program

- Multidisciplinary team
  - Combo: students, faculty, and staff
  - Passion & expertise
- Initial charge: mapping COVID, focus in CT
- Expand to call for proposals
  - Commitment: guidance & GIS expertise
  - Timeline: calendar year
  - Application via Qualtrics: 3 Qs & 6 Qs
- Daily Stand-Up meetings
- Fostering collaboration across campus

[miriam.olivares@yale.edu](mailto:miriam.olivares@yale.edu)

ANY  
QUESTIONS?

EAT  
SLEEP  
MAP



esri®

THE  
SCIENCE  
OF  
WHERE®