# Navigating Change on a Cloud GIS Campus
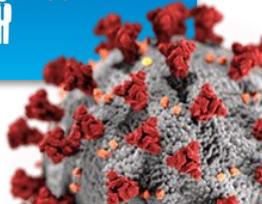
*Peter A. Knoop*

LSA TECHNOLOGY SERVICES
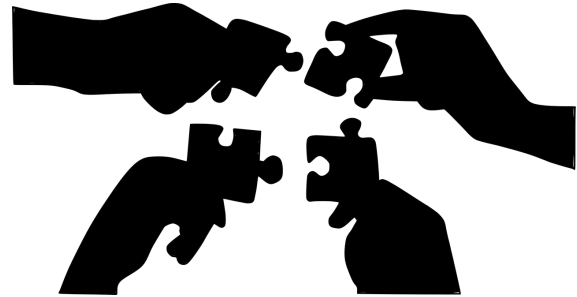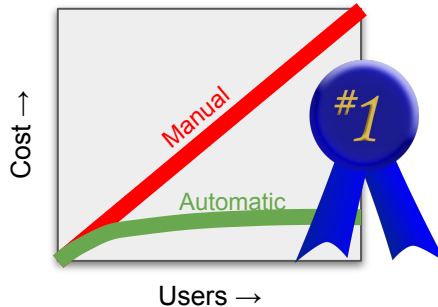UNIVERSITY OF MICHIGAN

# Navigating Change on a Cloud GIS Campus

*[ Cloud GIS | Web GIS | Geo-enabled | Geospatial Cloud ]  … Campus*

- Long-term: Desktop-centric to Cloud-centric GIS transition
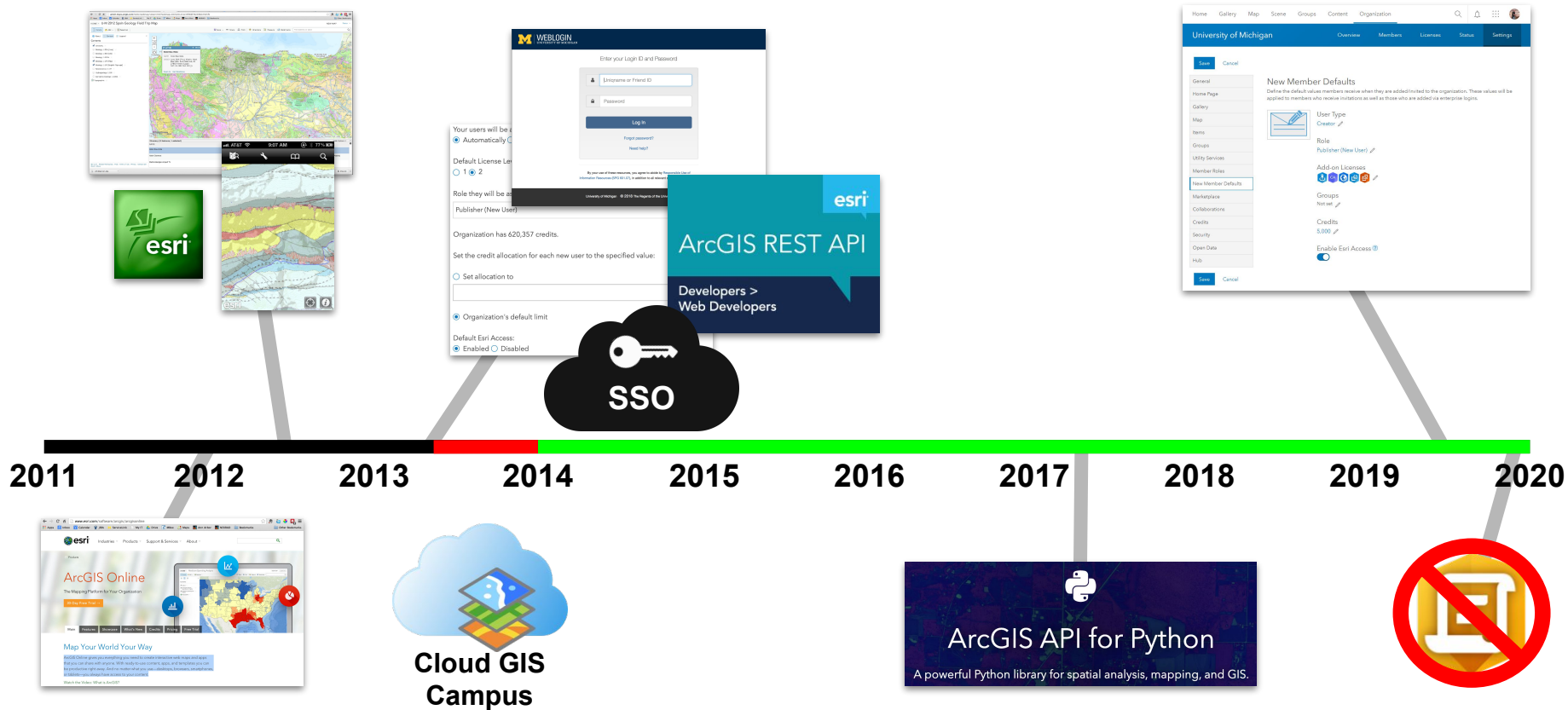- Short-term: Covid-19 driving teaching and research virtual

# Becoming a Cloud GIS Campus: Pillars of Success

1. Centrally-funded Education Institution Agreement
2. Best Practices for scalable, automatic access to everything for everyone
3. Collaboration - Building Bridges



Yesterday's pre-conference workshop: Managing ArcGIS in Higher-Education
Case Studies: University of Michigan and UC San Diego

# Long-term: Navigating the change to Cloud GIS



2011　2012　2013　2014　2015　2016　2017　2018　2019　2020

SSO

ArcGIS REST API

Developers >
Web Developers

ArcGIS Online

Cloud GIS
Campus

ArcGIS API for Python

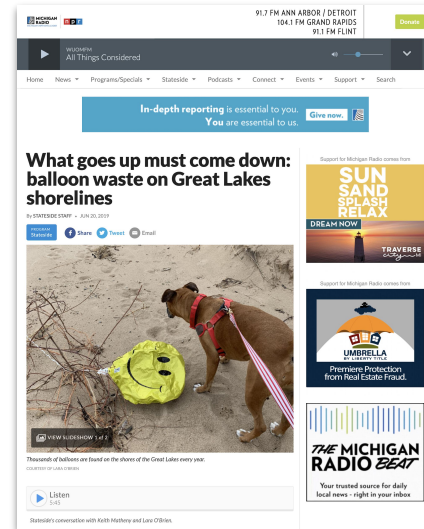A powerful Python library for spatial analysis, mapping, and GIS.

# Are you a Cloud GIS campus?

- "If you know what all of your GIS users on campus are using GIS for, then you're not a Cloud GIS campus yet..."



Lara O'Brien
U-M 2020 EDC
Student of the Year

University of Michigan ArcGIS Usage Dashboard
Represents teaching and research use across all three campuses: Ann Arbor, Dearborn, and Flint
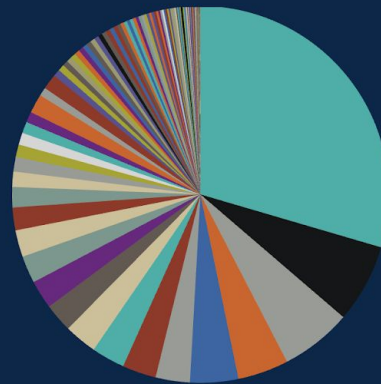
**Registered Users**

# 6,039

(as of 7/27/2020, 12:20:05 PM UTC)

*Last update: 12 minutes ago*
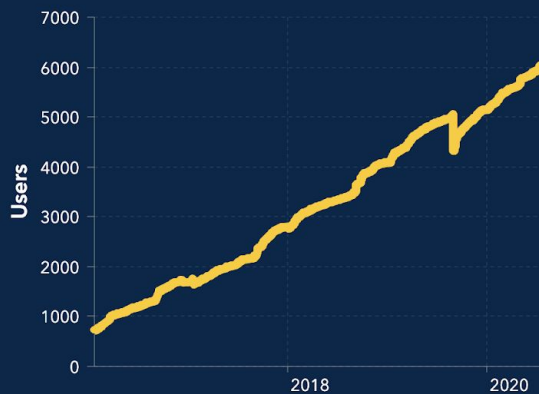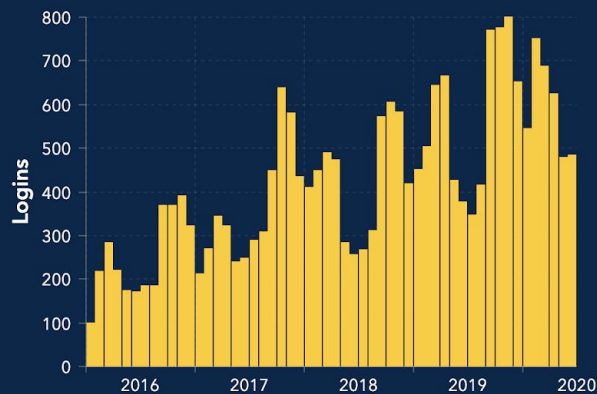
**Unique Logins per Week**

**Units**

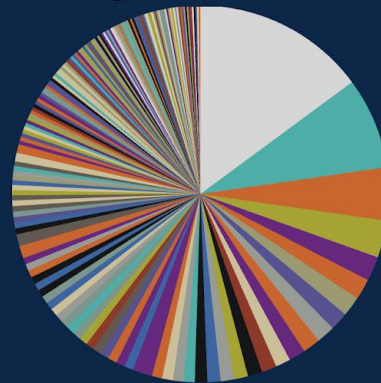Unit affiliations of active faculty, staff, students, and sponsored affiliates.

**Registered Users by Day**
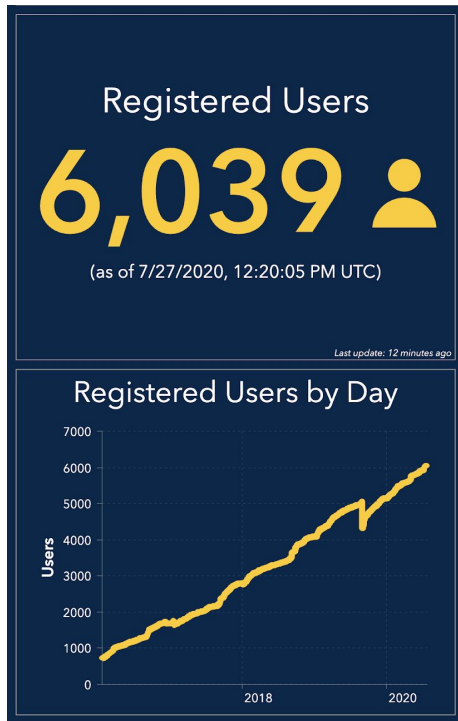
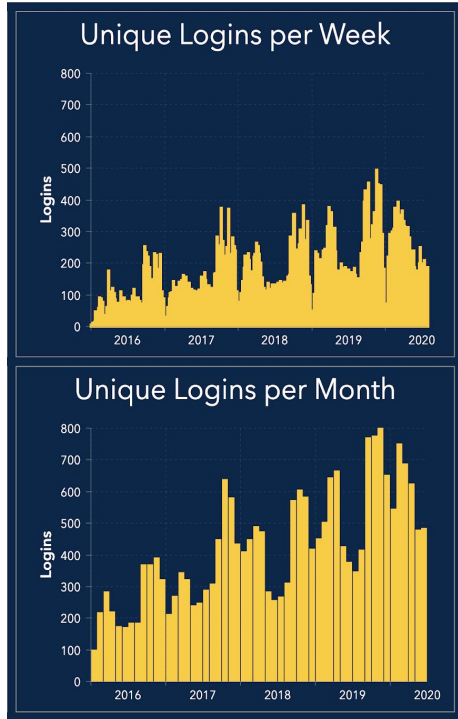**Unique Logins per Month**

**Degree Programs**

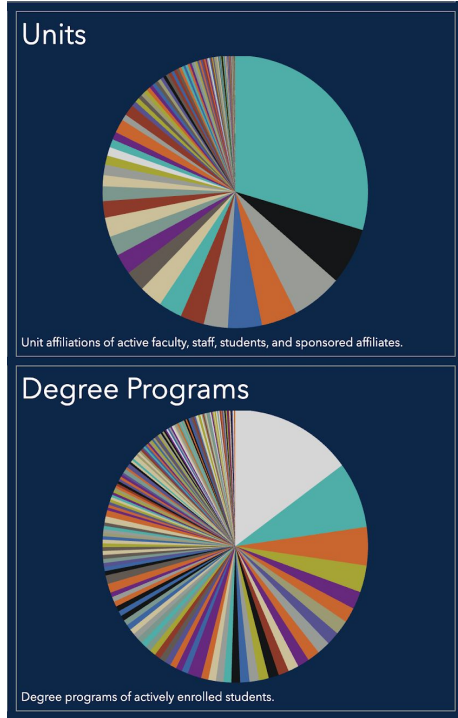Degree programs of actively enrolled students.

# How many users do we have?



- ~6% of potential user-base

- Growth rate increasing year-over-year

# How often are people using GIS?



Unique Logins per Week



Unique Logins per Month

- 5-10% are regular users
- Large user-base for non-desktop (*e.g.*, StoryMaps, GeoPlanner, Collector, Survey123, Web Maps)
  - <20% of courses using GIS mention it

- Covid-19 "bump"
  - Researchers not going into the field; existing data and new projects
  - Newly virtual courses adding GIS activities
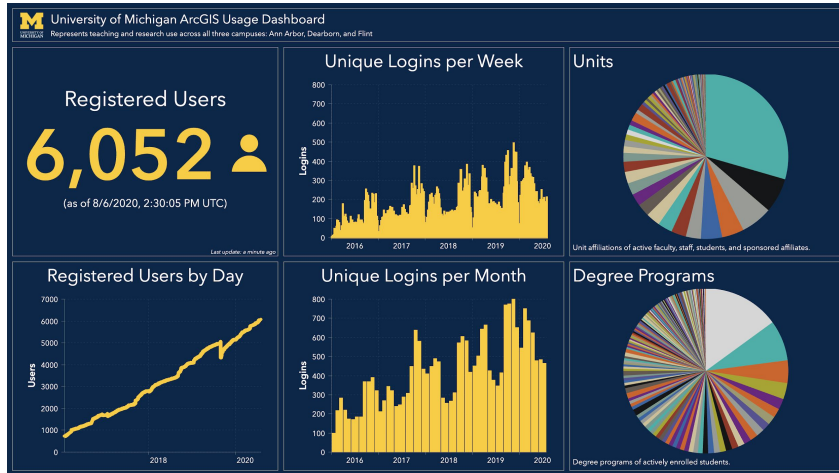
# Where are our users from?



Units

Unit affiliations of active faculty, staff, students, and sponsored affiliates.

Degree Programs

Degree programs of actively enrolled students.

- ● >70% of Units

- ● >80% of Degree Programs
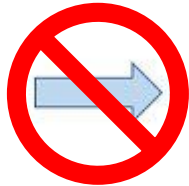
# University of Michigan ArcGIS Usage Dashboard



➤ GIS use is broadly spread across university

➤ "GIS is just another tool for everyone to use."

➤ "Access and reliance on self-help is better than no access at all!"

# Long-term: Navigating the change to Cloud GIS

- "desktop" GIS users are still first-class citizens
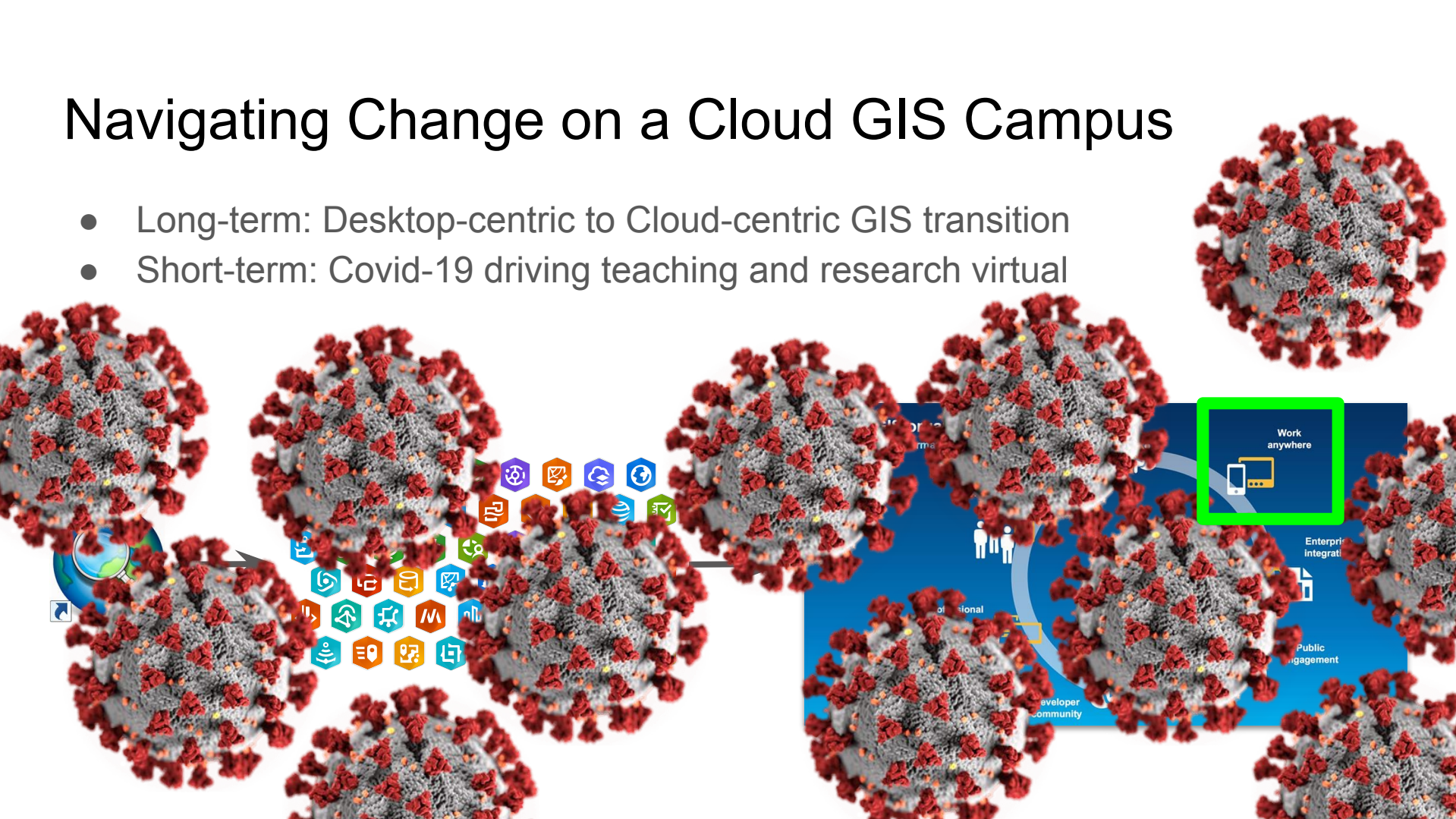- New Users are starting with Pro



ArcMap

ArcGIS Pro

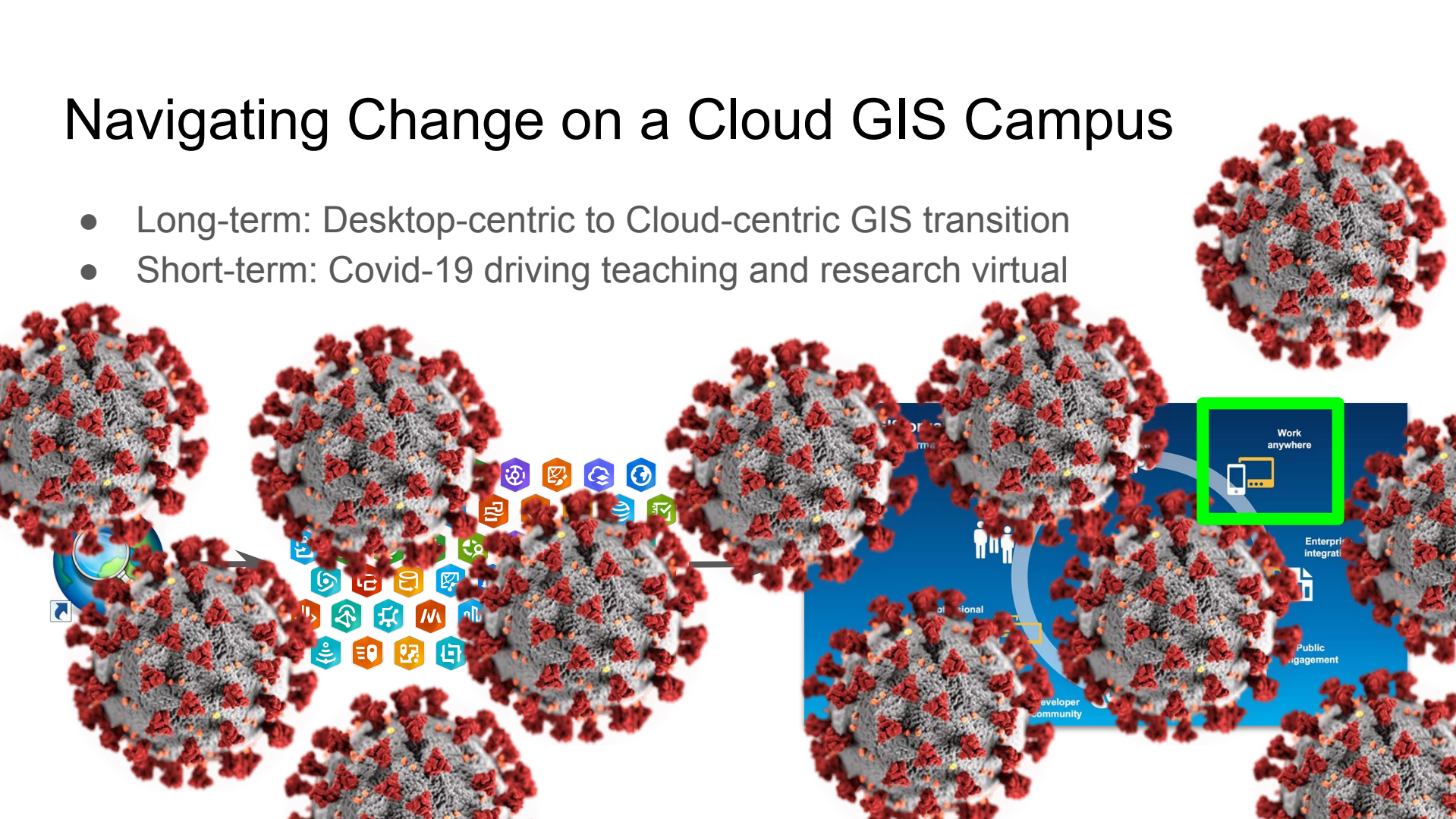**108**

**817**

**2020 Year-to-date**



Your ArcGIS organization
Your geographic information portal

Executive access

Work anywhere

Knowledge workers

Enterprise integration

Professional GIS

ArcGIS

Public engagement

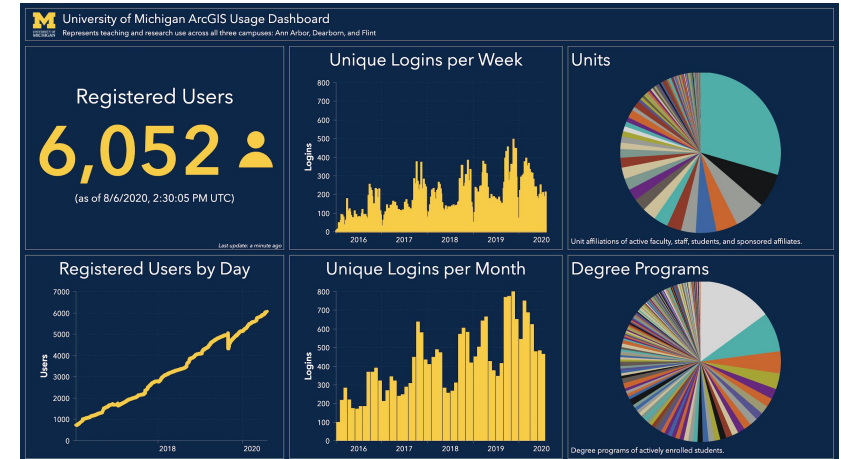Developer community

# Navigating Change on a Cloud GIS Campus

- Long-term: Desktop-centric to Cloud-centric GIS transition
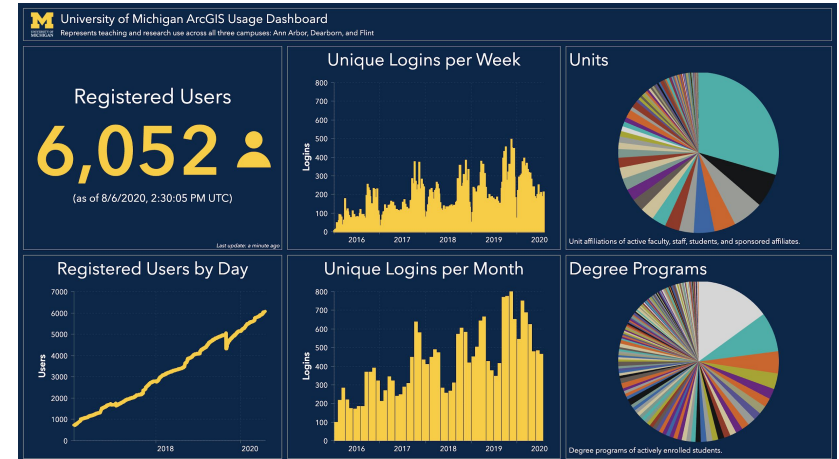- Short-term: Covid-19 driving teaching and research virtual

# Short-Term: Navigating Covid-19 changes in GIS

- Software as a Service (ArcGIS Online, StoryMaps, Collector, *etc.*)
  - No change to navigate...
  - Managing ArcGIS is automated on a cloud GIS campus
  - Usage increased, however, administrative load did not

# Short-Term: Navigating Covid-19 changes in GIS

- "desktop" GIS (ArcGIS Pro, CityEngine, ArcGIS Maps for Adobe, *etc.*)
  - → Loss of access to physical machines; big impact on teaching
  - Self-Installs on personal machines
  - Switch from heavyweight to lightweight GIS tools
  - Scale-up virtual environments (VMware; AWS AppStream and EC2)

# Closing Thoughts...

- Fully-embrace Cloud GIS and geo-enable your campus
  - Empower Everyone with Everything
  - An investment with immediate payoff (*i.e.*, reduce resources spent administering ArcGIS)
  - Provides long-term flexibility and scalability to deal with hard to predict or unexpected needs.
- How do you get there?
  - Centrally fund Education Institution Agreement
  - Automate administrative tasks for ArcGIS
  - Build a team of experts and stakeholders
- ArcGIS Usage Dashboards
  - [ GeoNet | StoryMap ] → ArcGIS Notebook
  - University of Michigan
  - Penn State University
  - University of Idaho