

Spatial Analysis Lab AY21-22 Review

[Soundtrack](#)

Why Do We Hurtle Ourselves Through Every Inch of Time and Space

Get Out the Map - Indigo Girls

The 2021-22 Academic Year marked the transition from remote learning to fully in-person. What transpired during the fall and spring semesters demonstrated the adaptability and continued voraciousness for spatial fluency from the Smith community and the village it takes to sustain an intimate liberal arts education. Characteristically, the SAL persisted through fulfilling increased demand without sacrificing quality. A quantitative overview of the year is offered in this introduction, supplemented by qualitative comments detailed in sections to follow. For AY21-22, the SAL taught 2 credit-bearing courses, worked with 19 classes (a 12% increase from the five-year AY average), and fielded a total of 378 inquiries (a 25% increase from the five-year AY average). The depth of student engagement was distinct this academic year, from our lab student associates to students intersected in courses to those who sought out help, these students asked critical spatial questions and pursued the solutions on their own accord. This of course, includes the tremendous help from two Lab Associates (an elevated title from “Lab Assistants”), Wayne Ndlovu ‘22 (GEO & SDS) and Haley Schmidt ‘22 (ES&P and SDS), who were able to bring their respective disciplinary lens to inform the SAL’s curricular activities, as well as apply newfound spatial knowledge to their own studies.

Oh, Won't You Gimme Three Steps

Gimme Three Steps - Lynyrd Skynyrd

We offered five workshops total for AY22, with 31 registrations and an average attendance rate of 60%.

Our two lab associates this year, Wayne Ndlove ‘22 (GEO & SDS) and Haley Schmidt ‘22 (ES&P and SDS), each developed and hosted a workshop of their choice. This involved choosing a topic that was relevant to their interests and what they considered to be favorable in their studies thus useful for their peers. The below descriptions and workshop tutorials were written by Wayne and Haley respectively, and an attendee reflection follows:

- [Spatial Interpolation Workshop](#) (with Wayne): This exercise is designed to introduce the concept of interpolation and how to use this method in ArcGIS Pro. In this exercise we will be using Chloride concentration data collected by Dr. Julie Richburg at Kampoosa Bog in Stockbridge and Lee, MA in 1998 as part of her Master’s Thesis Project. The goal of her project was to understand the effects of road salt pollution on the plant diversity and distribution within the wetland. Using the kernel and kriging/co-kriging interpolation methods we will show the predicted spatial variation in chloride

concentrations throughout this wetland. The format of this guide is adapted from the Model water quality using interpolation lesson by Eric Krause.

Wayne was great and I definitely wish I went to more of the workshops!! They had put together very detailed and clear documentation that I'm sure I'd be able to look back on and follow again. It was a great introduction to ArcGIS and to the geological work they have been doing!! Good luck to Wayne!!!!

– Emma Kornberg '22 (AMS)

- **[Data Collection with ArcGIS Field Maps](#)** (with Haley): Interested in learning how data is collected in the field? In this workshop we will learn how to use ArcGIS Field Maps for field data collection and GIS mapping. Field Maps is a mobile app that combines data collection, map viewing, and location tracking. We will use it to map street lights around campus. We will then learn how to upload and use this data in ArcGIS Pro. Come prepared to spend some time outside!

I really enjoyed the workshop. I had never done any mapping before (aside from some drone data collection in IDP 109) and I feel like it gave me a great overview of how things work. It was fun to go out and actually try out the data collection process, and I think Haley did a great job of teaching us how to use the online system and navigate the interface!

– Maya Sposito '22 (EDC)

The other three workshops were a series on accessibility in mapping, these include leveraging crowdsource mapping to capture accessible resources on Smith campus, improving colorblind friendliness in cartography, and creating tactile maps for sensory reading of a map.

- **[Mapathon for Accessibility on Smith Campus](#)**: Crowdsourcing mapping, or volunteered geographic information (VGI), leverages participatory action and citizen science to gather information that could benefit the collective good. In this mapathon (a coordinated map editing event), we will contribute to three crowdsourced maps that address various aspects of accessibility that are currently deficient for campus: wheelchair accessibility, pedestrian friendly sidewalks, and safe restrooms.
 - Jennifer He (Staff, Library Web Content Specialist) remarked that she found the workshop to be instrumental to considering the revisions in the Libraries' accessibility map, as well as the potential to use spatial analysis to draw out the insights from the Nielson UX surveys.
- **[Colorblind Friendly Cartography](#)**: How do you make maps that balance accessibility and functionality? In this workshop we will explore tools that can help improve your maps for a broader audience, with particular focus on colorblind safe color palettes and visual contrast between features.
 - Heather Rosenfeld (Lecturer, ES&P) noted the colorblindness evaluation tools that are new to them (e.g. [Chroma.js](#), [Color Oracle](#), [Contrast Ratio](#)) to be

incorporated into their ENV229 Critical Cartography and Environmental Social Movements course.

- **Tactile Mapping:** Tactile maps are designed with blind and/or visually impaired users in mind, to be read by touch. We will practice design thinking principles to prepare 3D printable maps that are empathetic and useful by the intended audience.
 - After the workshop, one of the Design Thinking Initiative's Studio Design Partners assisted with the 3D printing

Takin' Care of Business

Takin' Care of Business - Bachman-Turner Overdrive

In the 2021-22 academic year, the SAL tangoed with 17 classes – 2 of which the SAL singularity jazzed: IDP109 and IDP153. This translated to 43 instructional sessions.

Semester/Year	Code	Title	Sessions	Semester Total	AY Total
Spring 2022	ENV201/202	Researching Environmental Problems	3	23	48
	ENV229	Critical Cartography & Environmental Social Movement	2		
	GEO301	Aqueous Geochemistry	1		
	SOC232	World Population	1		
	GEO251	Geomorphology	1		
	REL293	Social Justice, Spirituality, & the American Radical Tradition	2		
	ENV312	Sustainable Solutions	1		
	IDP153	Introduction to GIS	4		
	CCX	Smith Alliance for Justice & Equity	1		
	ANT221	Thinking From Things: Method, Theory and Practice in Archaeology	1		
	SDS192	Intro to Data Science	1		
	Open to all community workshops		5		
Fall 2021	SDS192	Intro to Data Science	2	25	48
	ENV312	Sustainable Solutions	3		
	GEO101	Intro to Earth Processes & History	1		
	IDP109	Aerial Imagery & Cinematography	14		
	CCX120	Community-Based Learning: Ethics & Practice	2		
	ARH204	Inkas, Aztecs and Their Ancestors	1		
	ENV101	Sustainability & Socio-Ecological Systems	2		

To demonstrate the breadth and depth of curricular engagement, we offer a sampler from each division that somewhat departs from the usual suspects, with the instructors' commentary as well as future avenues for the SAL:

Division I - Humanities: **REL293 Social Justice, Spirituality, & the American Radical Tradition**

Students in REL 293, "Social Justice, Spirituality, and the American Radical Tradition" completed a project in radical cartography with a local non-profit, MANNA Community Kitchens, and the Spatial Analysis Lab. Folks at MANNA help individuals experiencing food insecurity, and they often point their guests to other service providers. However, MANNA staff often only have a list of addresses at best to do so. They wanted maps noting various resources that they could give their guests. In particular, they wanted to know where all of the food access points are located in Northampton and surrounding environs, as well as where

the shelter resources are located. They also thought that a map that included a comprehensive list of service resources would be helpful. Tracy Tien took these questions and created two lessons that she presented to the class -- the first on the principles of radical cartography and the second on the mechanics of ArcGIS software to answer MANNA's questions. With this, students created a map in their small groups that answered one of MANNA's three queries. We then shared our maps with MANNA. Due to their hectic schedules, we have not heard back from our MANNA friends, but hope that this will happen in the near future.

As I reflect on this activity, I anticipate including a radical cartography project with the Spatial Analysis Lab in a course in the future. Very few of my students had experience with GIS programs. However, Tracy's tutorial was easy to follow and included a guide to help them on their own. In addition, Tracy's lesson on radical cartography introduced a new dimension for thinking about activism -- a focus of the course. In sum, we learned new methods for inquiry and added new applied skills to our toolkit for the course and beyond.

– David Howlett (Mellon Visiting Assistant Professor, REL)

In preparation for this course, Haley helped transpose Northampton's Resilience Hub website and report on all the available resources in a spreadsheet. Prior to diving into the geocoding lesson in ArcGIS Online, the students practiced crowdsourcing and populated the addresses, noting the challenges and suspect nature of choices in representation/knowledge capture. [The tutorial](#) was on geocoding, proximity and summary analysis to show feasibility of access for individuals. The students had lively discussions about representations in maps, and thoughtful queries about creating walk sheds that demonstrated deeper understanding of the spatial analysis (e.g. the distinction between separate vs. dissolved sheds, and the subsequent effect on summary statistics – separate sheds show the reachable resources by foot for each bus stop.) Potential areas of improvement:

- More direct interaction between MANNA and the students
- Have the students do the crowdsourcing spreadsheet after the lecture, or as an assignment to do prior to the tutorial
- More guidance in map layout and incorporate peer feedback

Division II - Social Science: ANT221 Thinking From Things: Method, Theory and Practice in Archaeology

My class attended a workshop in the new Knowledge Lab on how to use Google Earth. The class enjoyed the experience and most of the students, who had never used GE before, came away with a basic understanding of it and its various tools. Most importantly, the students were able to understand abstract three-dimensional relationships in space that Tracy demonstrated. The students were very engaged as they explored a given location using satellite imagery, spinning and zooming in on a particular site. The overall experience was new for most of them and many were eager to spend more time with this tool. In terms of the actual space of the Knowledge Lab, the students said afterward that they found it a bit hard to see the board; a few said they found the two computer monitors confusing and unnecessary.

A couple also said they think the experience would have been different and more engaging if they were working alongside someone rather than working alone. I think this last point is a valid one, especially for those students who were entirely unfamiliar with Google Earth.

– Patricia Mangan (Lecturer, ANT)

This Google Earth Pro demonstration was the inaugural teaching experience in the Alumnae Gym Knowledge Lab, a collaborative teaching and working space strongly encouraged for the SAL to utilize, which features dual monitors and the ability to cast the instructor screen on the larger monitors surrounding the room. The session started with reviewing key terms (such as spatial resolution, remote sensing platforms, map scale, and georeferencing) from the two required readings (“Shining Light on Looting: Using Google Earth to Quantify Damage and Raise Public Awareness”, and “Google Earth and Archaeology”). The basic and advanced features in GE Pro include: basic navigation, search, add placemarks, annotate, timelapse, ruler, save image, record tour, and sunlight. It is also worth noting that this is the first time that students have commented directly on the user experience of a physical space, which provides keen insight on potential discrepancies between the anticipated and actualized experiences.

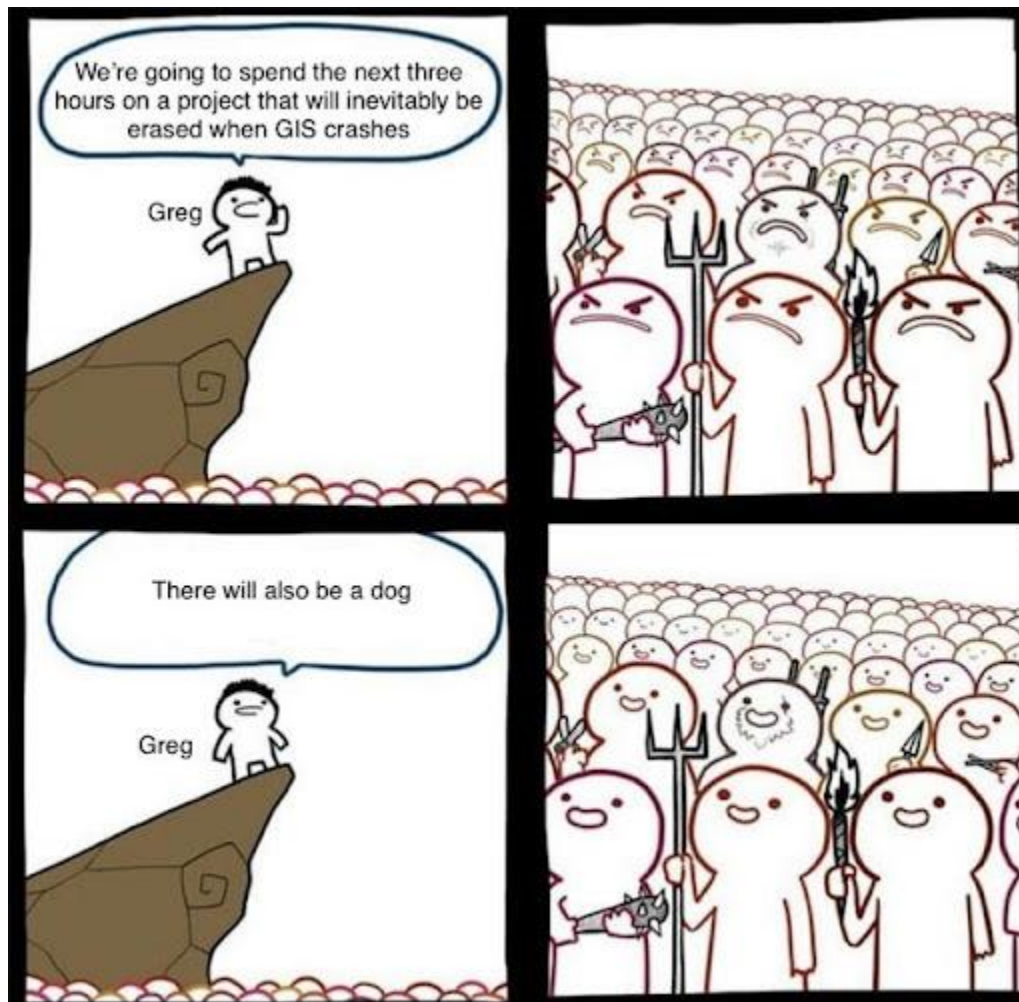
Division III - Natural Science: **GEO250 Geomorphology**

Students in my GEO251 Geomorphology class used ArcGIS Pro on the Spatial Analysis Lab computers for almost all of my labs this past spring semester (8 GIS labs total). We used ArcGIS Pro for a number of different applications, including mapping sea level rise in coastal cities, analyzing landslide risk along highways in California, mapping the extent of Glacial Lake Hitchcock here in the Pioneer Valley, and estimating the age of volcanic cinder cones based on their slope morphologies. The Spatial Analysis Lab and ArcGIS Pro are a vital part of my Geomorphology course, and allow us to think about surficial geological problems at larger scales and in a more quantitative way than utilizing field studies alone. Students gain familiarity with software that is in high demand in Geo-related industries and businesses, learn how to create detailed maps, and how to extract quantitative data from ArcGIS Pro for further analysis. The Spatial Analysis Lab staff have also been incredibly helpful answering GIS-related questions and making sure our time in the SAL runs smoothly.

– Greg de Wet (Assistant Professor, GEO)

This was the first semester that the Geomorphology GIS labs transitioned to Pro. From the perspective of spatial curriculum at Smith, this presents another synergy between the other GIS classes that have adopted ArcGIS Pro this year: GEO/ENV150 Intro to GIS, GEO301 Aqueous Geochemistry, ENV201/202 Researching Environmental Problems, ENV229 Critical Cartography & Environmental Social Movement, and ENV312 Sustainable Solutions. Students proved to be confident in their skills navigating the software, drawing upon their learning from these other courses, and developing their own spatial methodologies. Students who have previous experiences with ArcMap and/or other mapping software also provided caring support for their peers who have difficulty contending with the process at first. Compared to last spring, where there were regularly tended to labs and Geomorphology office hours, based on the

aforementioned observations of self-efficacy, this spring experienced only minor hiccups that required troubleshooting along the way.



(Image courtesy of Geosciences Class of '22)

Division IV - Interdivisional/Self-Designed: **CCX120 Community-Based Learning: Ethics & Practice**

50+ Students in my class (CCX120—Ethics and Practice of Community Based Learning) were active participants in a SAL lab class, Thursday, October 28th, 2022. Students were invested in the topics of subjectivity in mapping, as well as the active utilization of mapping tools for empowerment, liberation, and uplifting of marginalized communities. In Tracy and Jon's interactive course, students were presented with various models of expertly crafted digital methodologies for creating not just maps, but sharing stories, histories, tracing the small currents of change in communities that tell a larger story. Students were personally affected by skillful training by Tracy and Jon to not only seek answers, but ask hard questions. The analog maps were a hit, since I heard about them in their reflection pieces afterwards. One of my students came to me after class, very excited, saying she learned just the resource to find

the data she had been searching for to support a data science project she was struggling through all semester.

– Nancy Zigler (Assistant Director of the Jandon Center)

This collaboration was exemplary of the SAL's propensity for building community of practice around critical spatial thinking, symbiose with partner campus organizations and teaching staff, and empowering student inquiry beyond the specific class. This course sparked student work in CCX320 Capstone Seminar for the Community Engagement and Social Change Concentration, ENV312 Sustainable Solutions, SAJE Fellowship project, to name a few. We also observed (perhaps due to Baader-Meinhof Phenomenon) confluences of students in several other formal/informal curricular engagements.

The Map That You've Painted Doesn't Seem Real

Maps and Legends - R.E.M.

Customarily, SAL intersects with classes beyond conventional class visits. These select examples demonstrate the SAL's commitment and plasticity to enable students and faculty to incorporate GIS as the users are able, and reaffirm that the Lab's engagement is most appropriately described as scalar quantities – by magnitude (which is always positive).

In Class List

IDP109 Aerial Imagery & Cinematography

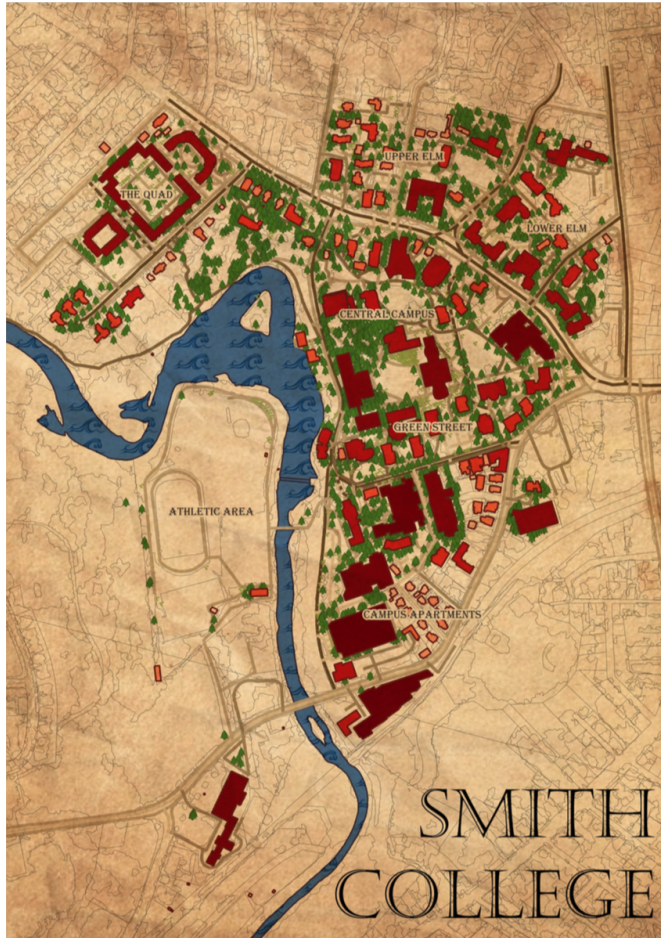
The final projects in the expanded two-credit, semester-long course required the groups to incorporate (1) mapping/spatial analysis/3D modeling and (2) cinematography production highlighting drone flight and aerial imagery acquisition; complemented by (3) a compelling narrative that effectively communicates to the intended audience. The course rejuvenates the use of MacLeish Field Station, and broaches fieldwork in a muddy fashion, and builds the SAL's [open spatial data and imagery repository](#).

- [The Beaver Cycle at MacLeish](#)
- [Genetic Conservation Collection Areas at MacLeish](#)

IDP153 Intro to GIS

This course was reimagined and offered as a credit-bearing interterm course. 25 students preserved four days of intensive yet rewarding QGIS experience, culminating in a final map project of a choice between: reimagining the campus map or environmental justice implications of TRI (Toxic Release Inventory) sites in MA. Example of each topic with student permissions to share:

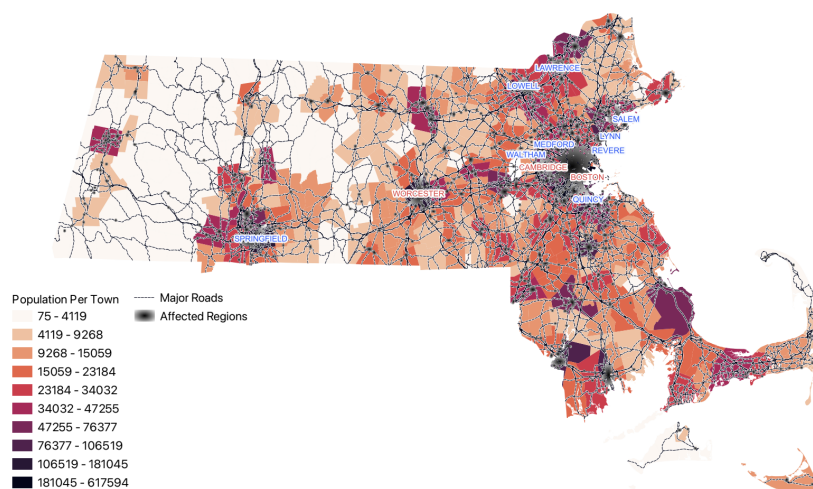
- "Fantasy Smith" by Joyce Huang '25 (SDS)



- “Toxic Waste, Town Population, and Transportation: Case of MA” by Rosemary Zhang ‘23 (MTH & ECO)

Toxic Waste, Town Population, and Transportation: Case of MA

Shuzhe(Rosemary) Zhang



ENV312 Sustainable Solutions

Four out of the five final projects prominently featured GIS:

- The Ecological Factor: Culvert Assessment for Replacement or Removal in Northampton, MA
- Evaluating the Flood Risks of Smith College in Relation to Northampton, MA
- Investigating Food Procurement in Massachusetts State Prisons Through a Food Justice Lens
- Building Community through Environmental Stewardship: A New Perspective on Productive Conservation

Early on in the semester, all five project groups individually divulged their proposed methodology and [reviewed a compilation of spatial datasets](#) that might be relevant to their topic. Subsequently, the four groups consistently sought out help during help hours as they explored, conducted, and finessed their research.

ENV229 Critical Cartography & Environmental Social Movements

New course – an exquisite cartography course through a critical lens – offered by Heather Rosenfeld. The course utilized the SAL counter-mapping efforts for more generative work that challenges formal institutional memories and offer conscionable narratives from its members. The students' submissions are featured in the SAL:



Beyond Class List

Div I - ARX340 Taking the Archives Public

- “[Shifting Ground in San Francisco: 40 Years of Business Turnover and Gentrification in Hayes Valley](#)” by Ruby Spies ‘23 (SOC)

With no prior mapping experience, Ruby’s foray into GIS took the form of wrangling various spatial data (such as San Francisco’s Registered Business Locations from SF’s open data portal, historical census data from IPUMS National Historical GIS, and the Living Atlas), guiding the viewer through the narratives with intuitive web apps, and putting thoughtful touches in customizing pop-up windows and articulating the data limitations investigating an issue through time.

Div II - ECO361 Economics of Discrimination

- Final paper on the impacts of one-child policy on the sex ration in China - He (Violet) Yong ‘22 (ECO)

Violet found publicly-available historical Chinese county population census data (1950s - 2000) as shapefiles and Excel attribute tables. With no prior knowledge of GIS, Violet was guided through creating choropleth and bivariate choropleth maps, with attention to data classification schemes. The paper received an A and classmate accolades!

Div III - EGR100 Engineering for Everyone

- [Smith Accessibility Map](#) by Anna Gunning '25 (EGR) and Carolyn McDonald '23 (EDC)

Encouraged by their instructor Sarah Moore, Anna and Carolyn’s prototype assignment was an accessibility map for a campus building. They selected McConnell and Sabin-Reed, and created and tinkered with their accessibility features referencing resources from the Mapathon for Accessibility on Campus workshop, particularly [Wheelmap](#) to help them consider what attributes to incorporate.

Div III - GEO223 Geology of Active Volcanoes

- Volcanic Field Trips in the Cascades - web map that links to each groups’ StoryMaps electronic field guide

Inspired by the StoryMaps assignments on students’ hometown geology in GEO101 Intro to Earth Processes & History, the students in this new course created electronic field guides in StoryMaps to be implemented on their physical outing to the Cascades.

Eager for Action and Hot for the Game

Life in the Fast Lane - Eagles

Kahn Student Fellowship

- Democracies Redux: Resumptions, Resilience, Reconciliation, and Restoration (2021-2022) - “Boundaries and Delineations: The Democratization of Mapping and Participatory Design in Northampton, MA” by Amrita Acharya '23J (ART)

Amrita conducted a Herculean year-long Kahn research examining and implementing cognitive mapping in perceived neighborhoods in Northampton. Amrita started with implementing spatial methodologies from scholars like Emily Talen (*Neighborhood*) and Kevin Lynch (*The Image of the City*), to facilitating an IRB-approved geo-enabled Survey123 survey circulated through Northampton neighborhood Listservs, to measuring and calculating consensus of neighborhood shapes from the survey results.

Jandon Center Smith Alliance for Justice & Equity Fellowship

- [TransHealth Resource Map](#) by Maria Mutka '22 (ANT) and Rae Ettenger '23J (ES&P)

Maria and Rae were part of the first cohort of Jandon Center SAJE scholars, whose fellowship guides them through theory and practice in community organizing. Starting with the fall lecture, and a demonstration of volunteered geographic information/crowdsourced data collection in their winter retreat, Maria and Rae persisted in envisioning, prototyping, and iterating versions of an interactive web app for people to filter, find directions to, and gauge accessibility with public transportation to TransHealth resources.

STRIDE

- “Malthi in Media: Gaming in the Bronze Age” by Sarah Kam '24 (MTH), Nora Sullivan '24 (MES), and Annika Lof '25 (Undeclared) with Rebecca Worsham (Assistant Professor, CLS)

The group was investigating a small archaeological site, Malthi, in Southwest Greece. With collaborators from other universities, the group used orthoimagery of the site to generate centroids for each room, where they want to associate several attributes on artifacts, how densely populated each room was, and other relevant information, to be displayed in an intuitive web map featured in WordPress. The students learned the basics affordances of ArcGIS Online and the process of converting DMS to DD coordinates.

Honors Thesis - History

- “Aintabtzis in America: An Armenian Community Rebuilt” by Alex Martin '23 (HST & GOV)

Alex collected up to four unique addresses for 1,100 individuals that trace the life trajectory of each. They used ArcGIS Online to systematically geocode and keep track of current and historical addresses (in lieu of manually using Google My Maps to mark each location), as well as showing density of these locations.

Master's Thesis - Biology

- Investigating conditions for a montane Magnolia tree species viability in western Virginia by John Berryhill (Landscape Curator, Botanic Garden) - [blog post without spoilers](#) for John's impending thesis defense

Wayne, furnished with the appropriate dataset leads and workflow, worked with John to conduct several analyses to show the progression of suitability ranges. The final results include the statistical results that supported his findings and accompanying maps to provide impactful visuals to his paper.

Research Project at the Smithsonian Institution - American Studies

- "What Does Dollar Do?: D.C. Food Access Today through the Lens of the Dollar Store" by Emma Kornberg '22 (AMS)

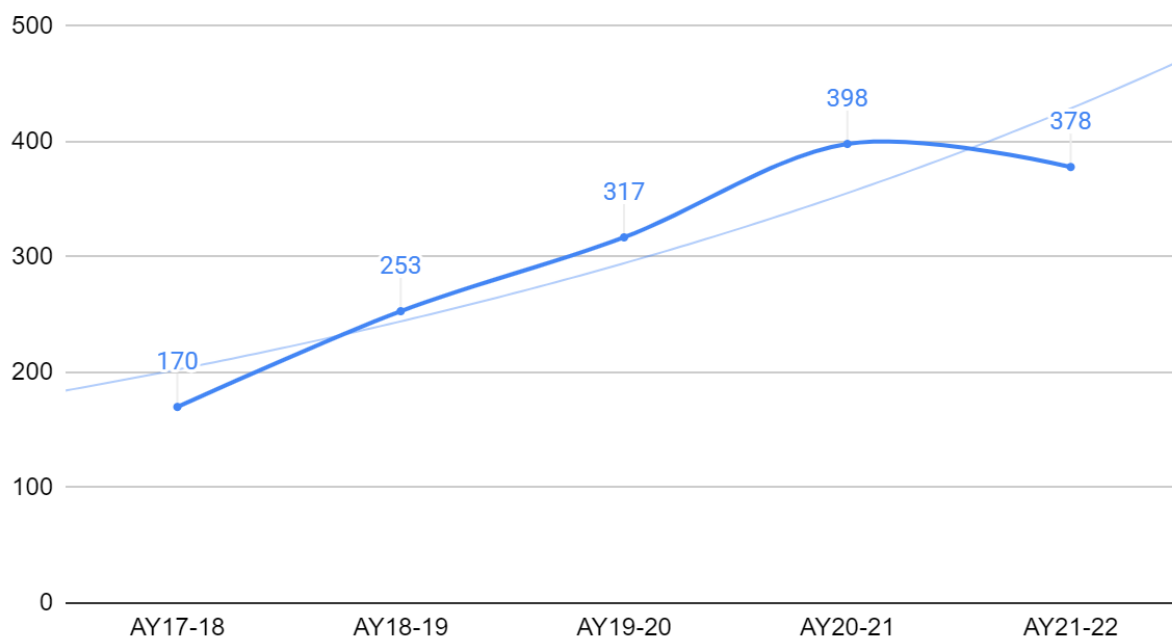
Emma, applying the spatial modules she learned in SDS192 Intro to Data Science, generated her own maps in R to show Dollar Store locations as they relate to levels of socio-economic and demographic aggregates such as census tracts and wards. She was advised on anchoring multiple shapefiles in R, reconciling administrative boundary delineations, and spplot for symbology.

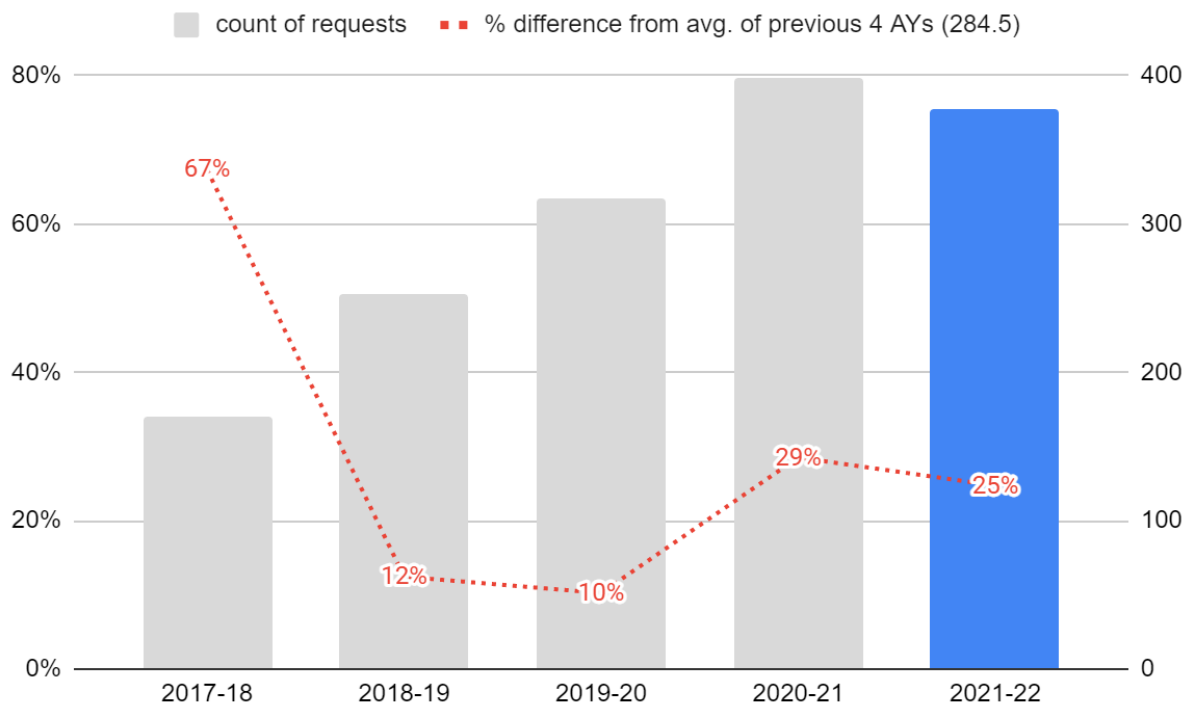
Put Out the Fire and Don't Look Past My Shoulder

Baba O'Riley - The Who

Insights from our help log:

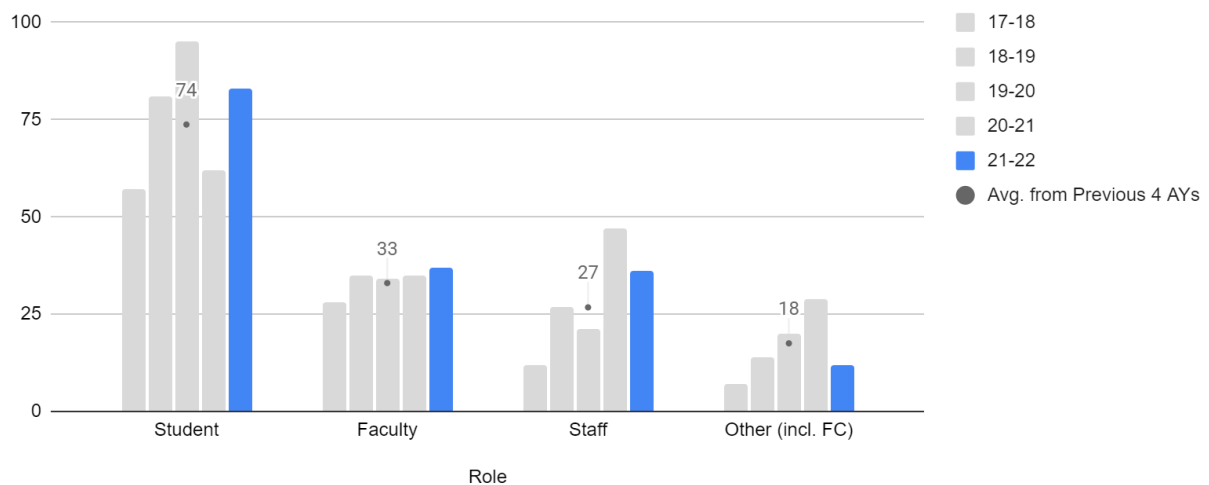
AY Support Trend (Five-Year; AY17-AY22)





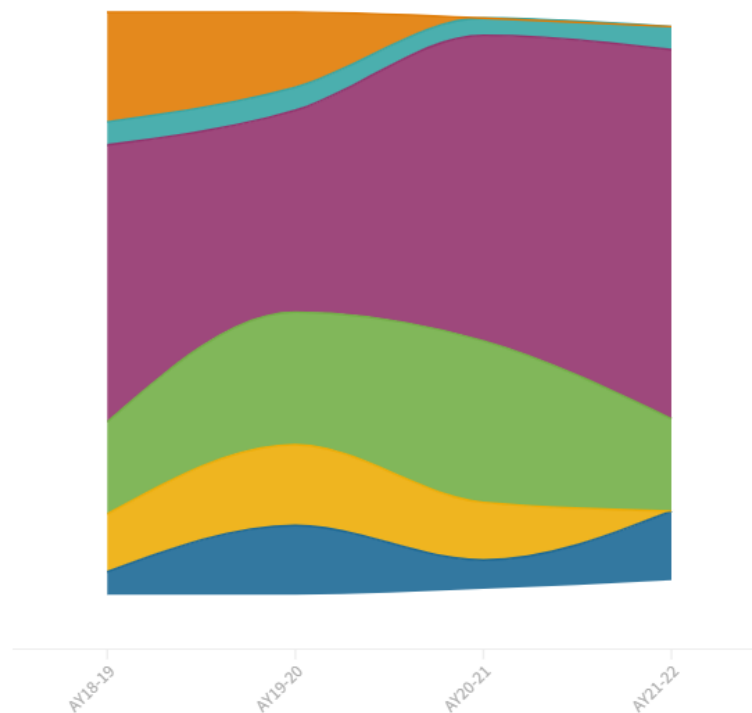
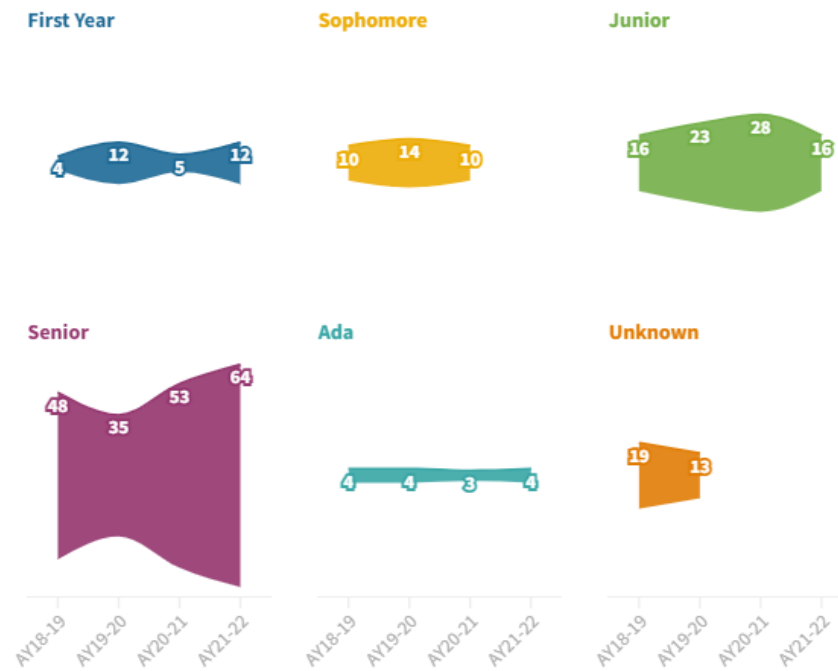
The overall support trend continues on a steady upward trajectory. Help requests for AY21-22 was 25% above the average of the previous four academic years.

User Type Compared to Previous Academic Years



The user composition compared to the five-year AY average for its respective category. Students, faculty, and staff all increased whereas there was less engagement with “other”

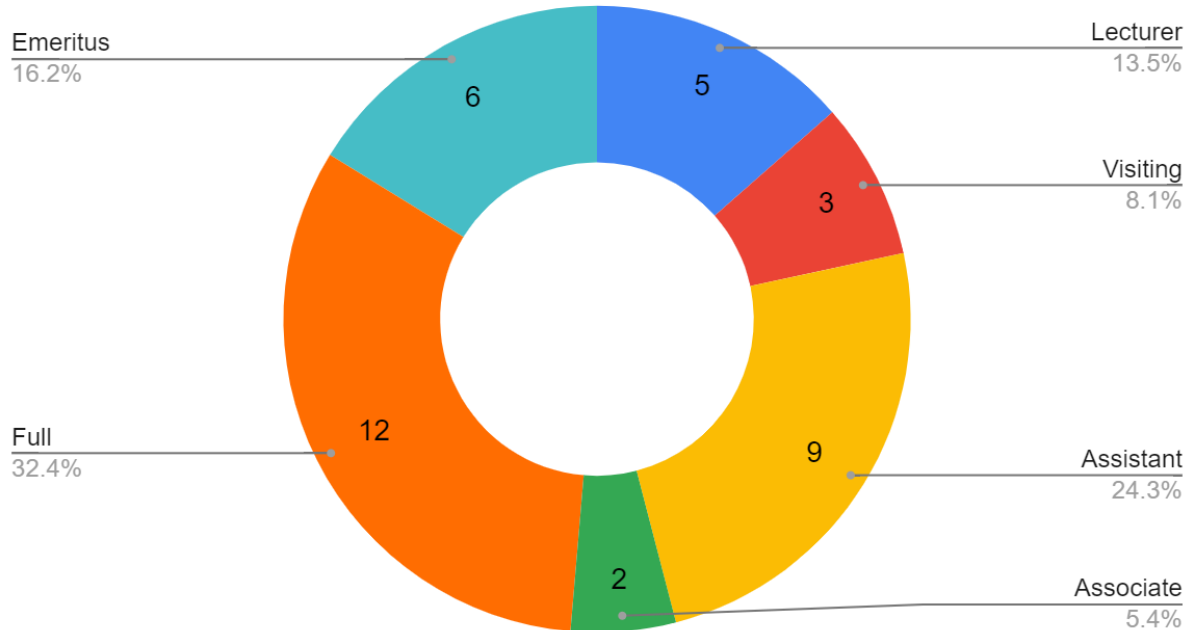
(which entails alum, Five College affiliates, community members). This decrease is a reasonable outcome from covid considerations, where community-based engagement is limited.



Breakdown of students by class year from AY18 to AY21 (we started tracking class year in Spring 2018) to illustrate the volume of each class year in percentage to the total.

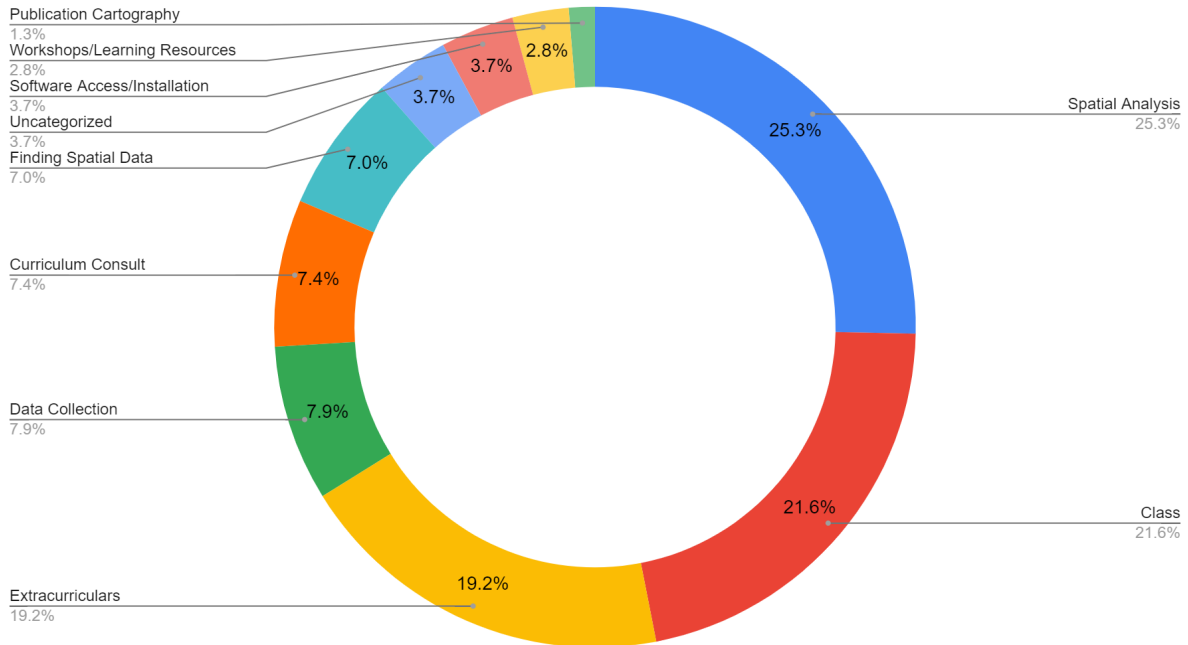
Cross-referencing the classes we worked with, there are significantly more first-year students compared to AY20, as there were several 100-level courses. Seniors are consistently more fluent in seeking out support, coupled with a few upper-level courses that utilize GIS in final projects. We also observe that many seniors don't "discover" the SAL until later in their academic career, and aren't able to enroll in GEO/ENV150, thus we got a high enrollment of seniors in our interterm GIS course.

AY21 Faculty by Rank

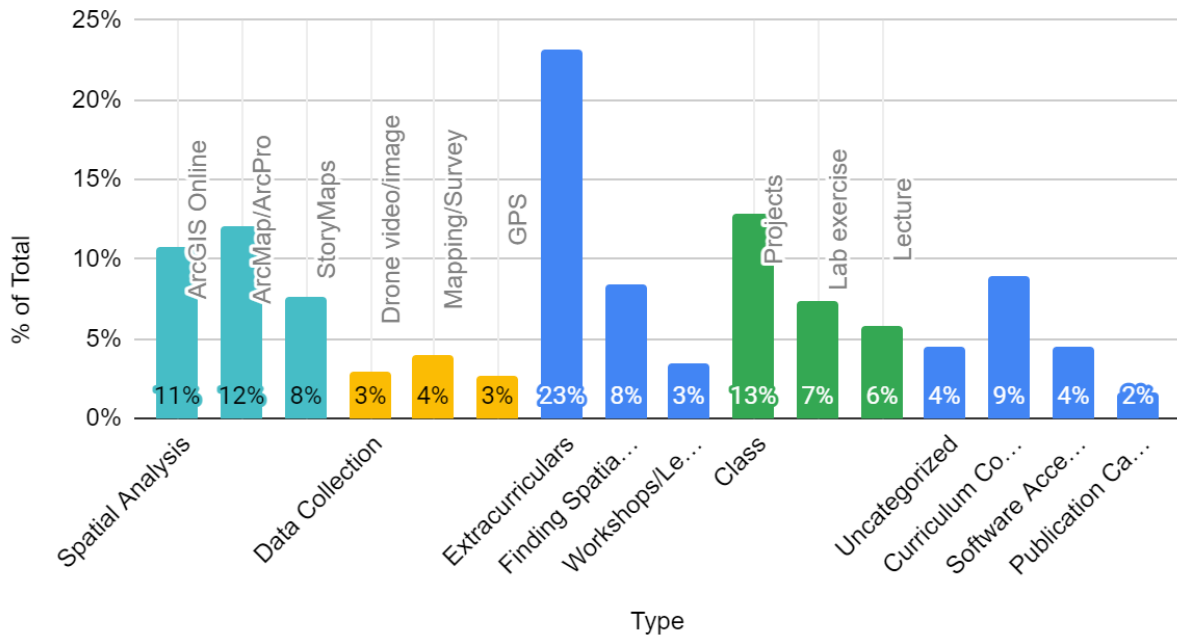


The instructor profile is intended to gauge the potential permeability of GIS in the curriculum, as reflective of the flexibility of instructor demographics.

Breakdown of Requests



AY21-22 Request by Type & Subcategory

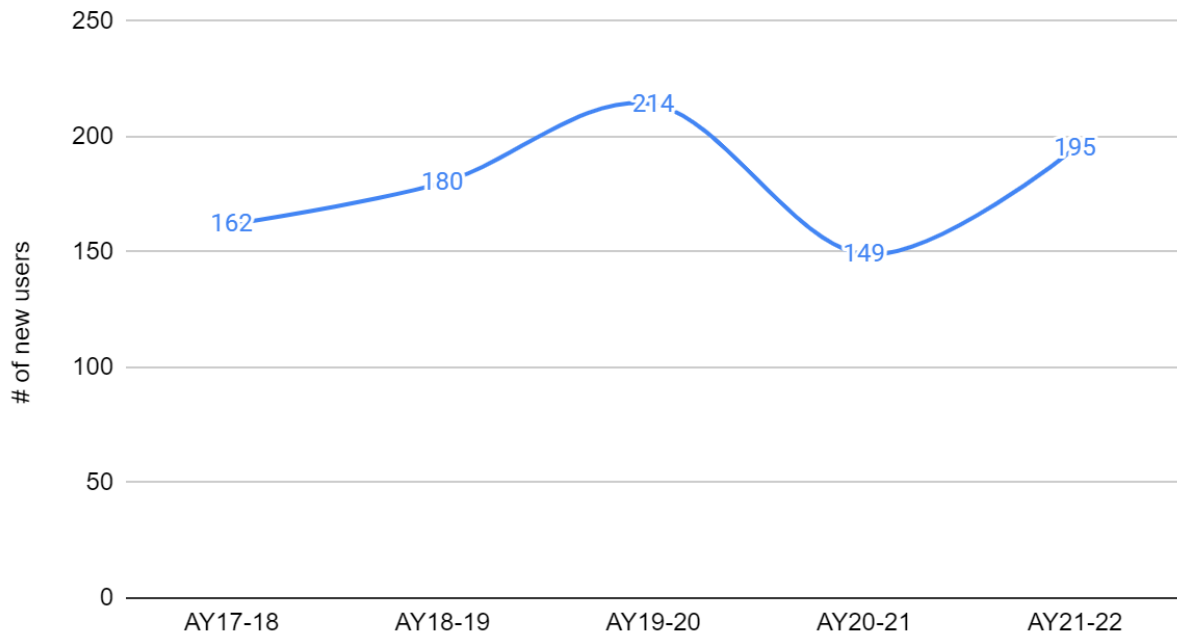


Request breakdown by type and sub-categories (classification scheme below for reference):

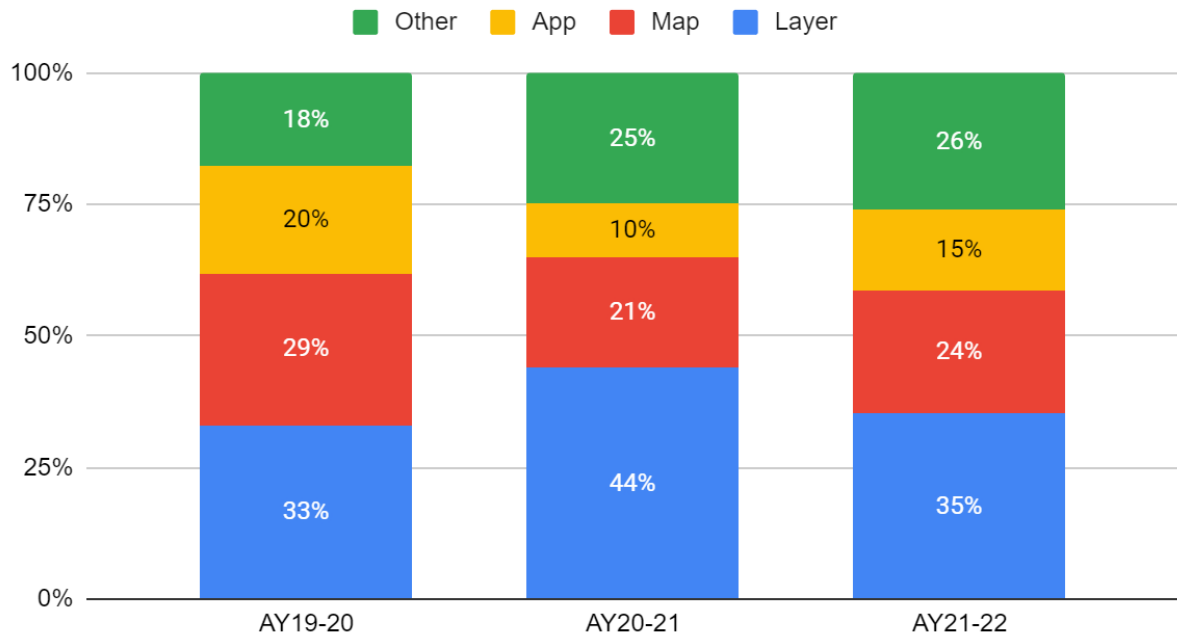
Type	Subcategory
Spatial Analysis	ArcGIS Online
	ArcMap/ArcPro
	StoryMaps
Data Collection	Drone video/image
	Mapping/Survey
	GPS
Extracurriculars	
Finding Spatial Data	
Workshops/Learning Resources	
Class	Projects
	Lab exercise
	Lecture
Uncategorized	
Curriculum Consult	
Software Access/Installation	
Publication Cartography	

For AY21-22, *Spatial Analysis* remains the predominant type, followed by *Classes* – substantiating the breadth of classes and also the depth of learning (for several classes, the spatial thinking lecture is followed by hands-on practice solving a spatial inquiry using GIS; for others, there are mapping assignments and projects that follow.) The *Extracurricular* category is higher, partially attributed to classification problems with a multinomial model, where Tracy coded IRB-related work to this category, but also service such as the Digital Media Hub Service Team.

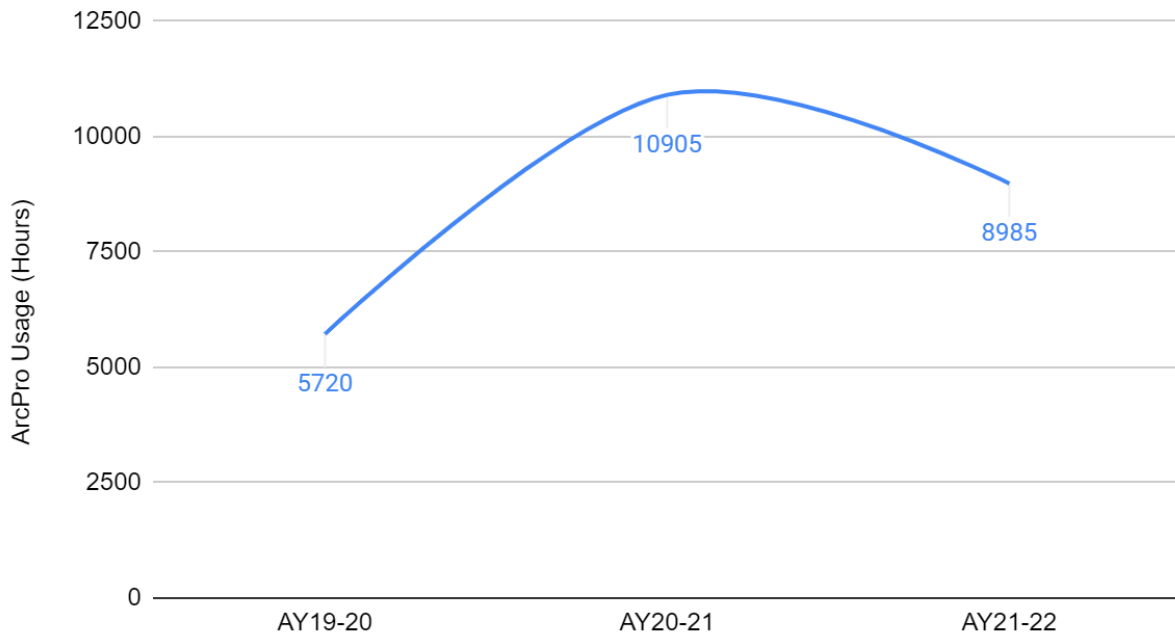
New ArcGIS Online Users



ArcGIS Online Usage by Content



Adoption of ArcGIS Pro in Usage (Hours)



ArcGIS Pro was widely adopted in AY21-22, as noted previously. As part of the Esri ecosystem, ArcGIS Pro is fully integrated with ArcGIS Online, furthering the sustained usage of the web-based platform. The ArcGIS Online content is indicative of usage - increased apps and maps suggest active analysis and interactive visualization (web maps) and communicating scholarship (such as StoryMaps.)

I'll Always be Around, and Around and Around

Highwayman - The Highwaymen

- [Jandon Center Community Partners Map](#) by Wayne Ndlovu '22 (GEO & SDS)

This project started [in 2018](#) (this first version by Hannah Davis '20) as a way to spatially inventory the Jandon Center's evolving community partners and their missions. As these partnerships progressed, so has the map iterated - exemplar of the dynamic cartographic design. Wayne wrote about her approach and using Map Viewer [here](#).

- [Tofurkey Map](#)

On- and off- (mostly on-) going tradition in the SAL to dish out thanks before the Thanksgiving break by crowdsourcing how the Smith community's stomach is spending their holidays.

- Map of Indonesia for SCMA's [FX Harsono: NAMA](#) exhibit

Indonesia: A Brief Modern History

1602 Dutch East India Company (VOC) founded as an instrument of the empire in the East Indies (present-day Indonesia)

1740 During the *Chinezenmoord* ("murder of the Chinese"), at least 10,000 ethnic Chinese massacred in the port city of Batavia (now Jakarta)

1799 After the dissolution of the VOC, Indonesia falls under direct Dutch rule

1928 Young Indonesian nationalists declare the Youth Pledge proclaiming one motherland, one nation and one language

1942 Japan invades and occupies the islands

1945 Indonesia declares independence

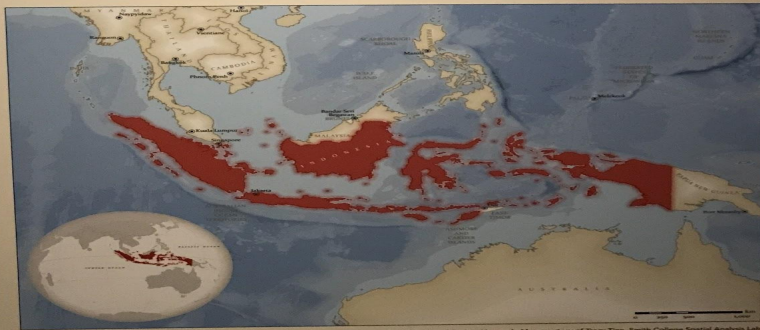
1945–1949 Indonesian National Revolution against the Netherlands. People of Chinese descent, considered an outgroup and spies, are killed and their shops looted

1965 An abortive coup leads to a mass anti-Communist purge, resulting in killings and expulsion of many Chinese Indonesians

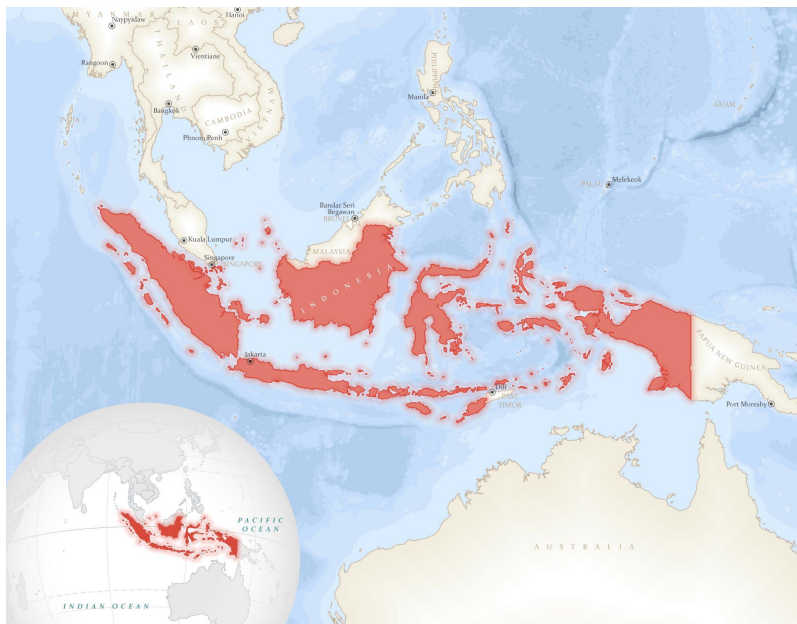
1966–1967 Suharto comes to power. Anti-Chinese laws passed mandating assimilation instead of integration, including ones requiring the adoption of Indonesian-sounding names, closing Chinese-language schools and newspapers and prohibiting the practice of Chinese cultures and religions

1998 Triggered by the Asian financial crisis, riots and rapes occur throughout Indonesia in May, targeting properties owned by Chinese Indonesians and women and girls of Chinese descent

1998 and After Suharto resigns after 32 years in power ushering in a period of democratization. Most anti-Chinese legislation revoked



Data sources: Natural Earth and Project Linework. Map courtesy of Tracy Tien, Smith College Spatial Analysis Lab

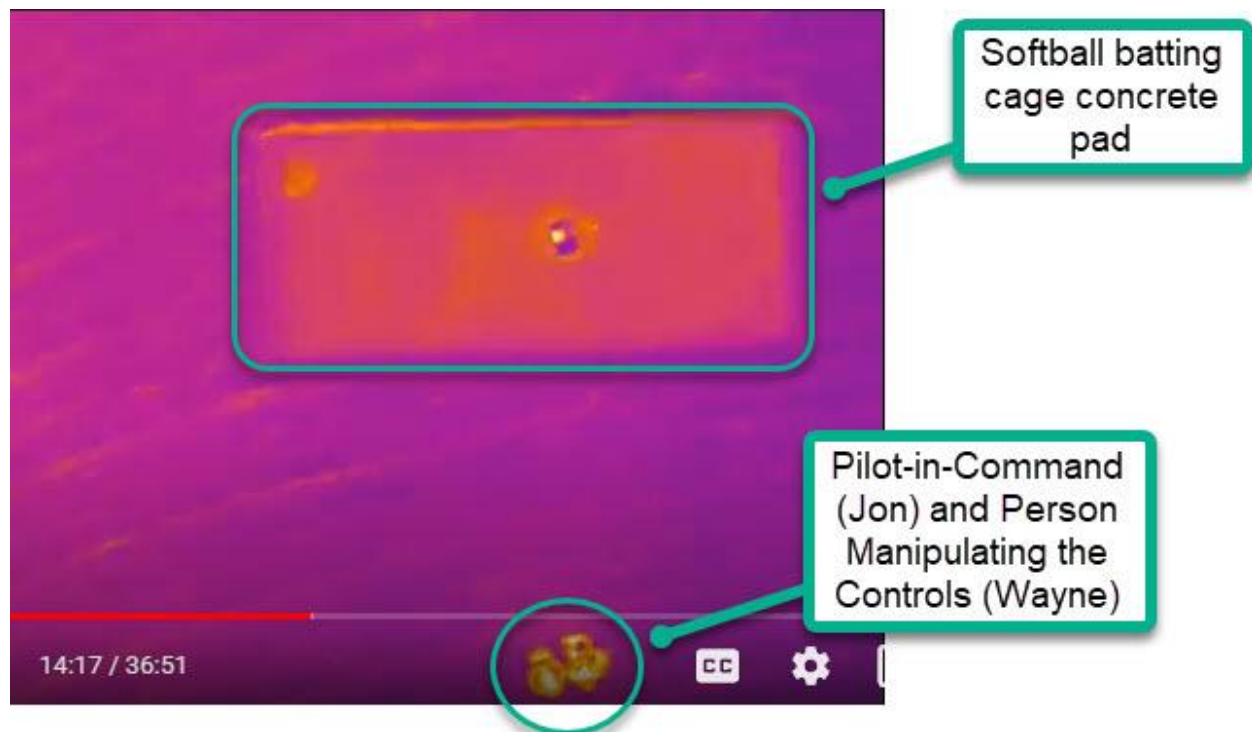


Soaring Ever Higher

Carry On Wayward Son - Kansas

- FLIR Thermal Drone-Mounted Camera

The Forward Looking InfraRed (FLIR) camera captures heat signatures to visible images. Wayne took on the role of primary investigator in this research and development: "I got to write my own version of a manual for the camera which combines both hardware setup and some software configurations. After our first drone flight using the camera, we got some cool footage of the pond and sports field. I will be working on analyzing the footage...and researching ways thermal cameras can be incorporated into some research studies particularly in those focused in hydrology and ecology." This expanded capability adds another dimension to aerial survey mapping.



- Pine Island Lake

The Pine Island Lake Association in Westhampton was interested in investigating the changes in aquatic plants such as brasenias, tape grass, elodea on the lake. About 77% of the entire community property is in conservation. The survey mapping results provided the basis for aquatic plant, algae management and a comparison to 2020.

- [Our fleet expanded](#)

Hope You Got Your Things Together

Bad Moon Rising - Creedence Clearwater Revival

- Anti-Racist Learning Community for Faculty & Staff Who Teach

Jon and Tracy participated monthly in the Anti-Racist Learning Community during the fall, where each session was devoted to introspecting and broadening anti-racist practices in the classroom, these include inclusive mentoring, anti-racist pedagogies and curriculum re-evaluation. We were able to implement a few practices learned concurrent with the fall 2021 IDP109 course, and [outlined our plan](#) to revise the syllabus and content for the upcoming fall.

- Higher Education Institutional ArcGIS User - ArcGIS Online, StoryMaps

Jon and Tracy contribute to a larger consortium of higher education institutions in suggesting and discussing ideas to implement in ArcGIS Online and StoryMaps.