# University Consortium for GEOGRAPHIC INFORMATION SCIENCE

# UCGIS Quick Education Survey Summary

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## Two sentence summary

We invited everyone who taught last semester/quarter/what-have-you to participate in our quick survey on what worked and what didn't work in your wide world of remote teaching, and we received some great responses from 19 wonderful people. This survey was sent to the UCGIS All_members list for response, and responses were received during January of 2021.

## Survey Results

*Survey questions are listed at the end of the summary document.*

### Technologies worth trying

*Ordered by mentions. The most suggested technology worth trying is listed as #1. Links direct to technology page for reference - not as an endorsement.*

1. [Camtasia](#)/[Screen-Cast-O-Matic](#): Both suggested as useful technologies for recording videos, editing them, and posting for students to use. Check with your institution for potential licenses - both have relatively cheap education licenses as well.

2.  [Slack](): Recommended for quick communication, mutual/community support on questions, and easing troubleshooting. Free license supports 10k messages - education license steeply discounted.
3.  [Jamboard]() (and other [Google Workspace]() tools): Interactive group work, visualization, organization, and other productivity tools. Institutional licenses may already be embedded - most free with Google Account.

## Technologies that tanked

*Ordered by mentions. The technology that performed the worst is listed as #1. No links here as these are more conceptual ideas that failed!*

1.  Internet connections. Students have quite variant access to the internet (and stability when connected). Flexibility in due dates, modes of access, and presentation of course materials are the best practices to overcome this issue as building out internet infrastructure is not within our area of responsibility! Ideas to overcome include:
    a.  Structuring assignments with a clear sequence rather than with explicit, punitive due dates;
    b.  Providing multiple modes of access to course materials (live connection opportunities as well as recorded content);
    c.  Allowing questions/feedback in multiple contexts (live class Q&A, discussion boards, Slack, etc.)
    d.  Encouraging students to plug into routers with ethernet cables rather than relying on WiFi (strange but true!)

    Each of these attempt to reduce the necessity of live, high stakes internet connections for more smoothed, asynchronous workload and access.

2.  Virtualization/VPN setups. Many reports of these constructs not being able to handle the computational and data needs of GIS. Some experienced success with remote desktop connections to physical machines - others did not.
3.  Various issues with ArcGIS Pro/Online, Jupyter, Anaconda, and others. The usual issue of updating labs, instructions, workflows for new updates is magnified in difficulty when students may not be working from the same software version.

## What are the most innovative ways you taught this semester?

*No ordering. Just an unordered list of great ideas! Lightly edited from form responses.*

- Virtual field trips and working with students to explore and document their local watersheds.
- Students came alive in communication and groupwork with Discord (it was like pulling teeth in Zoom main or breakout rooms)
- Helping other faculty set up a class group in ArcGIS Online to allow StoryMaps group projects a little more interactivity / online collaboration among students. I created an "Empowered User" type in AGOL to allow faculty with this user type to choose to let their students collaborate on projects within the group.
- Bluejeans breakout sessions, Teams breakout sessions
- Using Jamboard to have students participate interactively.
- Virtual field trips using Google Earth Pro
- The long classes are the hardest to keep students engaged, i.e 1hr50mins. I kept the initial lecture segments to 10 (ideal) or 20 (max) minutes, then engaged in some sort of live activity. Live activities could be carried out using breakoutrooms, polleverywhere, Kahoot, Quizlet, etc. Segments of these can't be longer than 5-10 minutes, or they will switch out/multitask. Closed lecture with just a few slides i.e. reviewing a few highlights of what was just learned, about what's coming up in the next class, and a review of a few upcoming deadlines, guest speakers, etc. Questions. This is basically like what I used to do on campus; I just didn't have to do this online before COVID.
- I sent students randomly into zoom breakout rooms of 3-4 people at the beginning of class for 5-10 minutes to chat amongst themselves with no agenda. got lots of very positive feedback from students that because of those few minutes each week, it became the only class of the semester where they were able to make friends and find study partners.
- Live input and analyses embedded in Storymaps, including QuickCapture
- Not sure how innovative this is, but flipped my classes - put all my lectures online as videos and used class time for sign up slots for meeting with individual students. Worked pretty well.
- I had students go through environmental impact statements in groups and evaluate the maps and GIS in the statements

- StoryMap portfolios to accumulate all student work. Helped students integrate everything from my Introduction to Spatial Thinking course.
- I used assessed discussion boards for design critiques in my cartography course and these promoted really good engagement and interaction among the students and it was noticeable in the increased quality of their assessed maps. There were several hundred posts from a class of 30. Moderating these boards did take me 2-3 hours per week though.
- Not sure how innovative it is, but breakout rooms are one of the best simulations of the classroom experience I can think of.
- Live "drop-in" sessions to work on labs

## Any gems that you thought were cool and hope to try in the future?

*No ordering. Just an unordered list of great ideas! Lightly edited from form responses.*

- For asynchronous classes, you can plan at least two weeks ahead of time. This would give a necessary buffer to test and change parts of the module, if required.
- Still haven't prepared any videos for watching outside class, but will try that this semester.
- Managing ESRI products via ArcGIS Online was helpful with online courses; I'm a big supporter of open source software (QGIS, MultiSpec, etc.) for my classes and that made fall 2020 much easier (although we do have ESRI products and use them often) because students could just download it themselves
- Discord for groupwork and collaboration, with Zoom for "God" mode when students were in groups
- I'm digging the relatively new ArcGIS Online ability to make your university account public-facing because I think it may help attract new students to our programs and also should make it easier to google the instruction guides for how to access ArcGIS software at our university.
- Standing and teaching by walking a bit around a large screen, ie a computer casting to a TV, and streaming this live via Zoom as part of a lecture, is greatly appreciated by students. Perhaps because it mimics a real classroom a bit more.
- Using Google Docs (slides, spreadsheets, docs) in an interactive lesson during a live zoomed streaming lecture, to get the students to actively engage in real time; seems better received by students than using the LMS live (ie discussion boards)."

- Voicethread, for interactive asynchronous discussions. I've seen it used effectively in a GIS course.
- The students are going to go on an outdoor 'walkabout' and then go online and record what GIS data is available for a site, and what isn't, and what they'd want to see.
- Virtual presence technologies, or teaching face to face!

## Would you use basic GIScience videos related to the GIS&T Body of Knowledge entries for courses if they were available? (https://gistbok.ucgis.org)

*Breakdown:*

- 68% : Yes
- 32% : Maybe, depending on content, quality, and/or relevance
- 00% : No

## Just curious - when did you first hear of UCGIS?

*Breakdown:*

- Earliest: 1994
- Latest: 2020

## Survey Questions

1. Technologies worth trying (e.g., Shortcut for editing asynchronous videos)
2. Technologies that tanked (e.g., Virtual machines lagged with spotty internet for many students)
3. What are the most innovative ways you taught this semester? (e.g., Using zoom breakout rooms for live programming in small groups)
4. Any gems that you thought were cool and hope to try in the future? It could be from you, a colleague, or something you read.
5. Would you use basic GIScience videos related to the GIS&T Body of Knowledge entries for courses if they were available?
6. Just curious - when did you first hear of UCGIS?