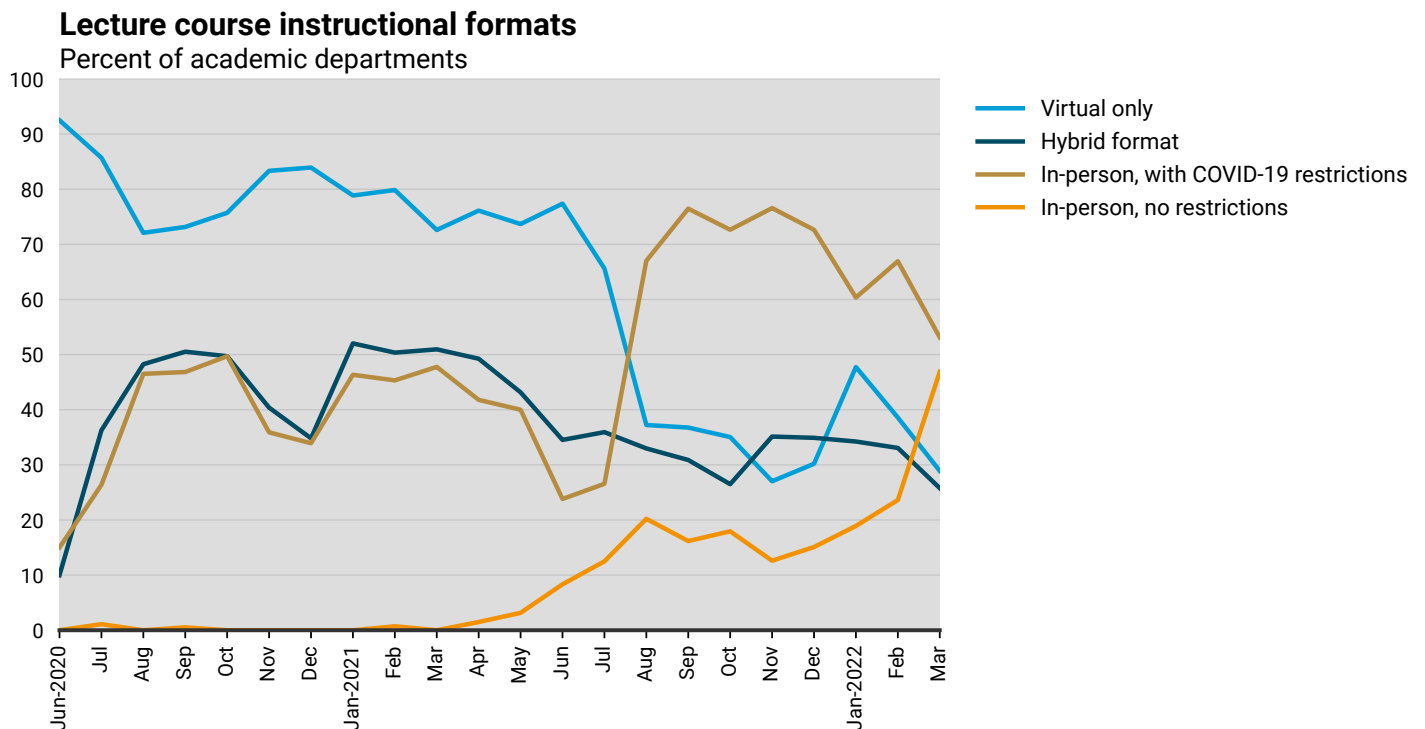




## Pandemic Impacts to Instructional Formats through March 2022

### Lecture course instructional modes

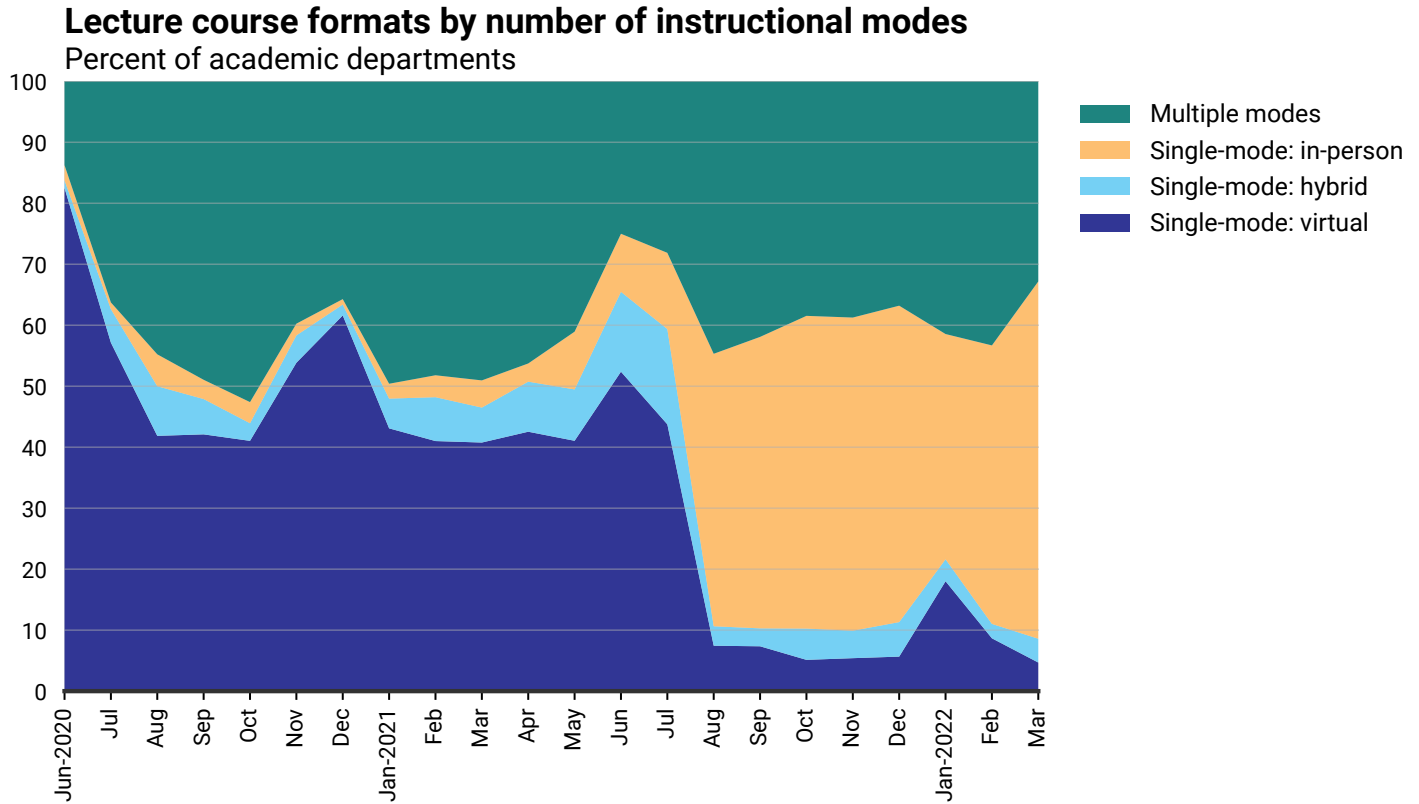


Note: Lines do not sum to 100% because departments were able to specify more than one instructional format in order to capture the range of formats used for lecture courses.

Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

During the pandemic, courses, labs, and field activities have rapidly shifted between online, in-person and hybrid modes of instruction in response to pandemic conditions. With mask mandates easing in early 2022 as the impacts of the Omicron surge waned, there was a return to predominantly in-person instruction for lecture courses, labs, and field activities.

By the start of the Fall 2021 term, most geoscience academic departments resumed in-person instruction with pandemic-related restrictions in place. However, with the spread of the Omicron variant in early 2022, instructional modes transitioned to the use of more virtual instruction. By March 2022, over half of departments reported resumption of only in-person instruction for lecture courses. The return to in-person instruction with no pandemic-related restrictions increased in late 2021.

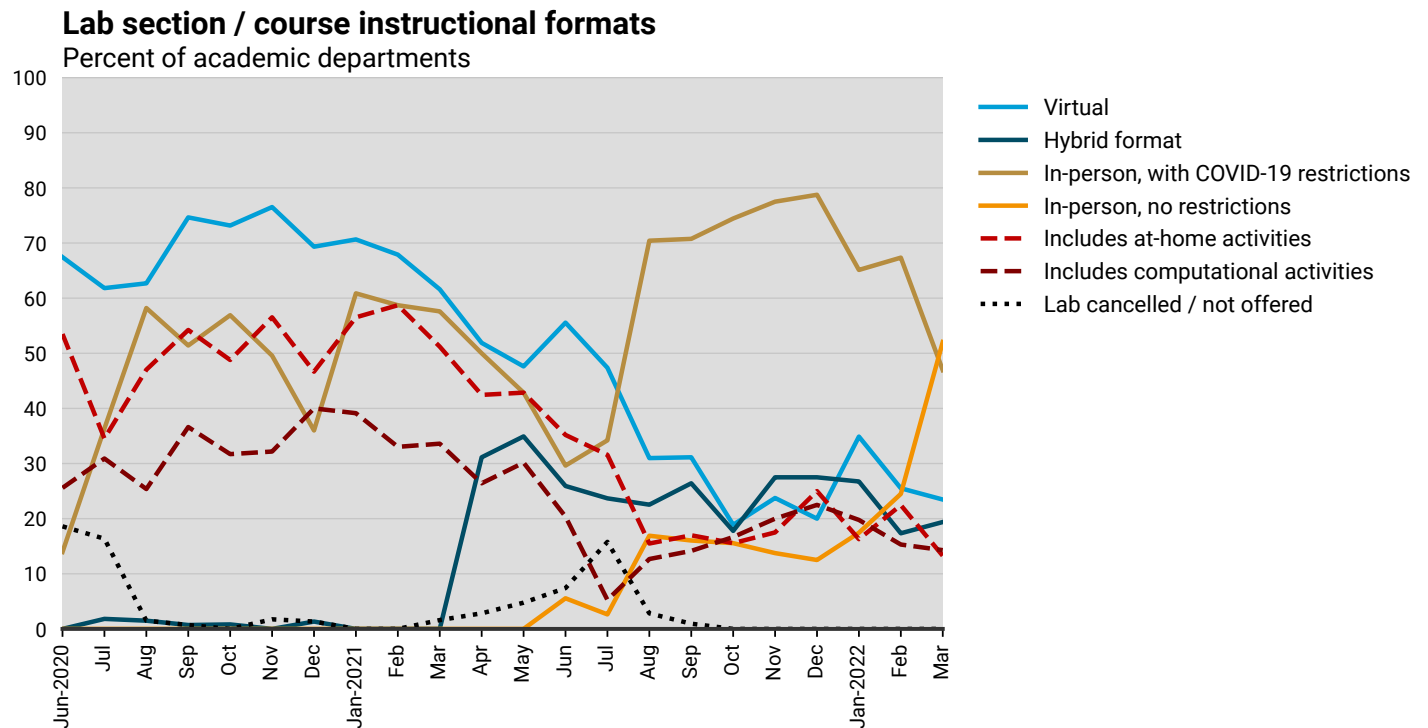


Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

Part of the strain associated with teaching during the pandemic has been the need for faculty to teach via multiple instructional modes. In addition, faculty have consistently reported that the workload associated with course preparation and delivery for virtual and hybrid formats has been much higher than in-person instruction. By March 2022, two-thirds of departments reported that lecture courses were being taught using a

single mode of instruction (i.e., only virtual instruction, only hybrid instruction, or only in-person instruction), and one-third of departments reported that lecture courses were delivered in multiple modes of instruction, usually a combination of in-person instruction with hybrid and/or virtual only formats.

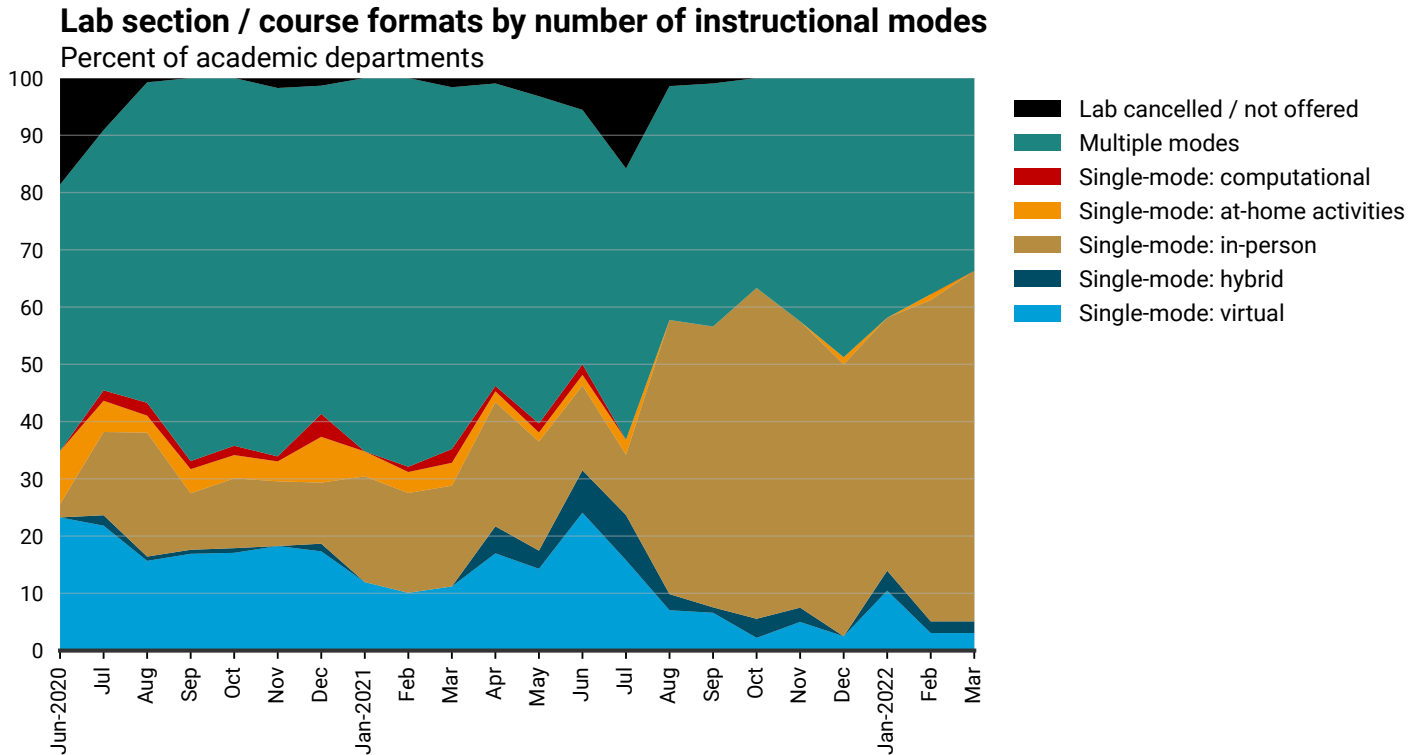
## Lab section / course instructional modes



Note: Lines do not sum to 100% because departments were able to specify more than one instructional format in order to capture the range of formats used for lab sections / courses.  
Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

Instructional modes for lab sections have followed a similar trajectory to lecture courses. While in 2020, most departments reported using virtual labs, that percentage declined through 2021 concurrent with the decline in the use of at-home and computational lab activities. By the start of the Fall 2021 term, most departments had returned to in-person lab instruction, with half of departments reporting that they only offered

in-person lab instruction and approximately one-fifth of departments offering dual modes of instruction (i.e., in-person and hybrid or virtual formats). During the Omicron surge in early 2022, there was an uptick in the use of virtual labs, and with the roll-back of mask mandates, a rapid increase in the percentage of departments reporting a return to in-person instruction without pandemic-related restrictions.

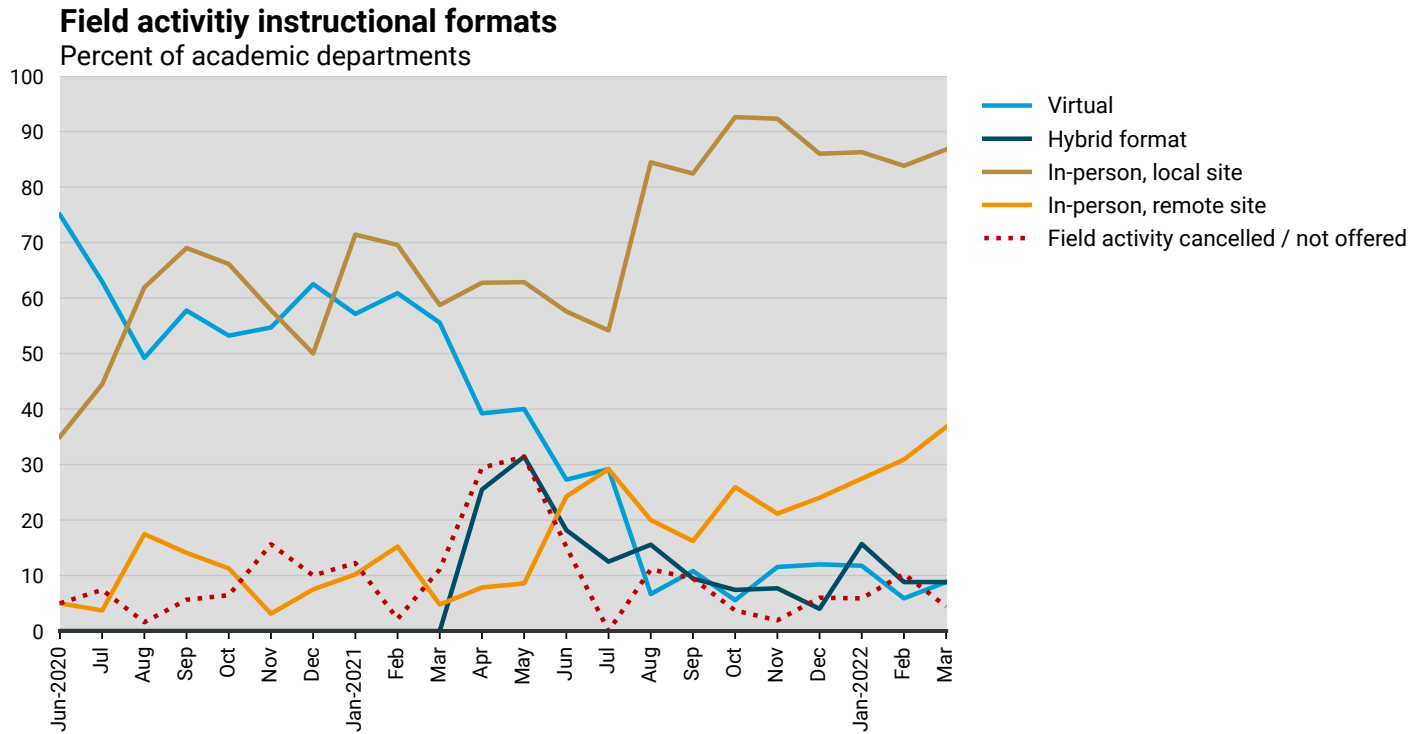


Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

Throughout the pandemic, lab sections and courses have predominantly been offered in multiple formats, with some combination of virtual, hybrid, and in-person, often with at-home and/or computational activities supplementing or replacing in-person lab activities. With the start of the Fall 2021 term, the percentage

of departments offering only one mode of instruction increased as in-person labs resumed, and by March 2022, over 60% of departments offered only in-person lab sections and courses.

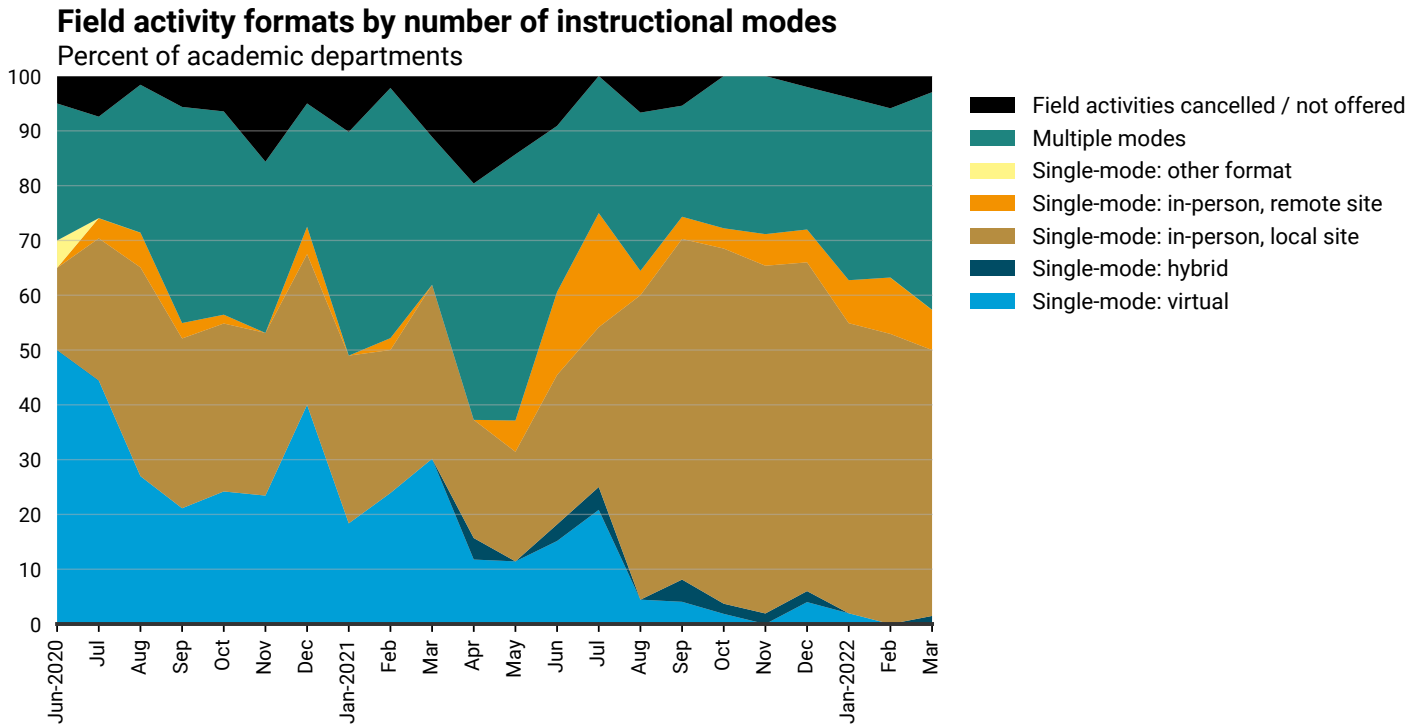
## Field activity instructional modes



Note: Lines do not sum to 100% because departments were able to specify more than one instructional format in order to capture the range of formats used for field instructional activities.  
Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

In Fall 2021, field instruction returned to in-person instruction, but primarily at local sites with over half of departments offering only in-person field instruction. Limitations on vehicle usage and travel persisted for many departments, which likely was a factor limiting the geographic range of field activities. By March 2022,

the use of virtual and hybrid field activities had diminished while over one-third of departments reported offering in-person instruction at remote sites and over 80% of departments offered in-person instruction at local sites.

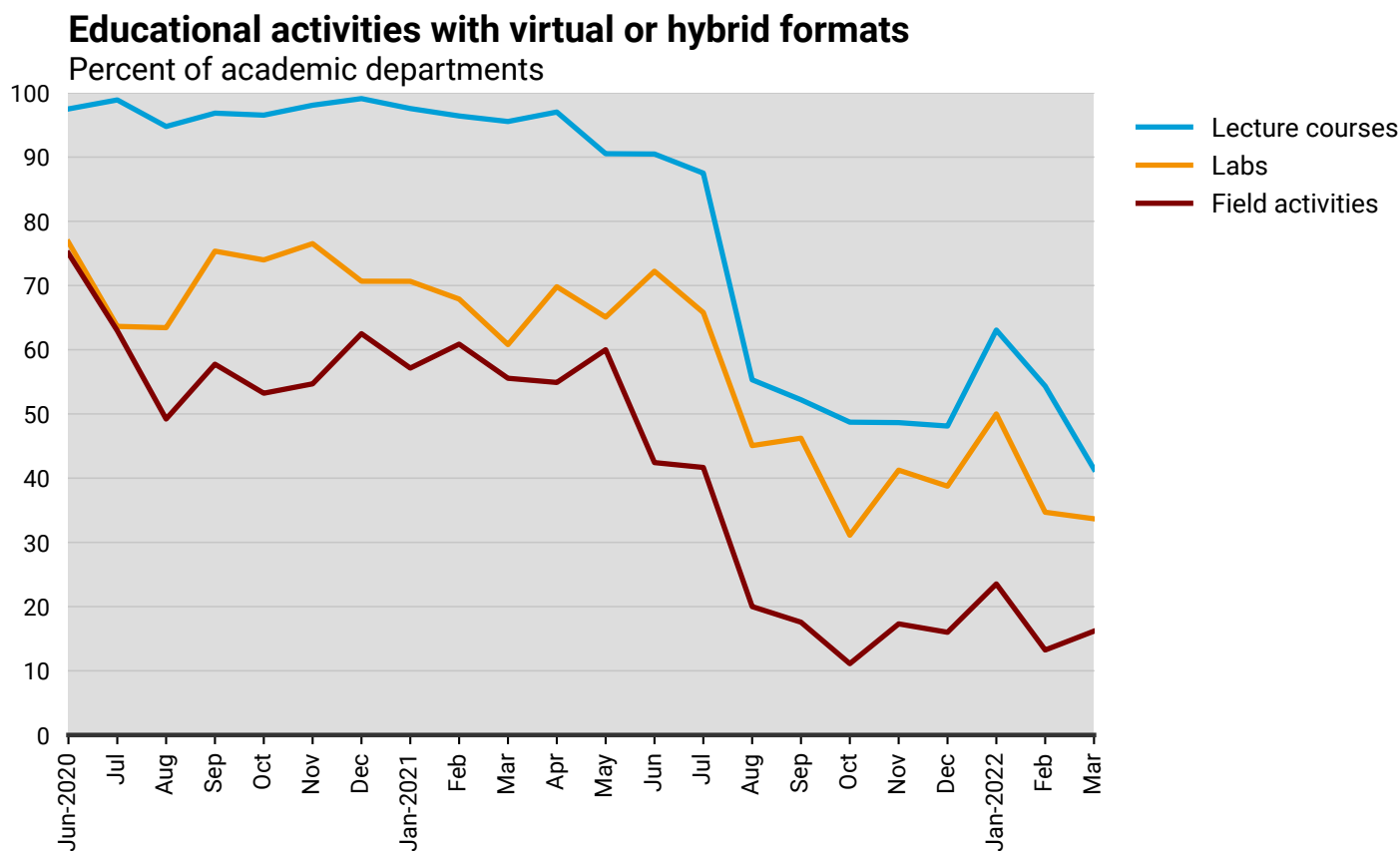


Credit: AGI, data from AGI's Geoscience COVID-19 Impacts Study

For most of the pandemic, field instructional activities have predominantly been conducted in a single instructional format. With the rollout of vaccine programs in early 2021, the use of virtual and hybrid instruction began to diminish substantially while in-person

instruction increased concurrently. As of March 2022, just over one-third of departments offered a mix of in-person field instruction with either hybrid or virtual activities.

## Integration of virtual instructional modes



Credit: AGI, data from AGI’s Geoscience COVID-19 Impacts Study

Integration of virtual and hybrid activities waned substantially during the Fall 2021 term, but with the Omicron surge in early 2022, there was a brief uptick in the re-adoption of these instructional formats. By March 2022, 41% of departments offered virtual or hybrid formats for courses, while one-third of departments offered virtual or hybrid labs, and nearly 16% of departments offered virtual or hybrid field activities.

We will continue to provide current snapshots on the impacts of COVID-19 on the geoscience enterprise throughout the year. For more information,

and to participate in the study, please visit: [www.americangeosciences.org/workforce/covid19](http://www.americangeosciences.org/workforce/covid19)

Funding for this project is provided by the National Science Foundation (Award #2029570). The results and interpretation of the survey are the views of the American Geosciences Institute and not those of the National Science Foundation.