

Department of Structural Engineering
Departmental Covid Impact Statement
Fall 2021

It has been recommended that each Department write a Covid impact statement, outlining how the research, teaching, and service in our discipline have been affected by the pandemic.

All our faculty were adversely affected by the increased teaching responsibilities associated with converting courses to remote instruction during Spring 2020, AY 2020-21, and for some faculty members, into AY 2021-22. Although faculty in the Department responded well to this challenge and found new ways to interact with students through breakout sessions and remote office hours, this required a considerable amount of time. A major challenge during the pandemic was to organize hands-on learning exercises associated with courses. In-person laboratory sections with social-distancing were permitted during this time period, but many laboratory exercises had to be organized for remote learning. This involved the development of kits that were sent to students as well as innovative hands-on-learning exercises designed to use materials available at home. Advising research students remotely was a challenge for some faculty, especially when some students moved to different time zones during AY2020-21.

Many faculty in our Department rely upon laboratory and field testing for their research, with laboratory testing including both small-scale materials testing as well as large-scale testing in the Powell Laboratory, Englekirk Structural Engineering Center, and the SRMD laboratory. Although the large-scale laboratories closed for a short while in Spring 2020, they were reopened in Summer 2020 albeit with work schedule changes and social distancing requirements that affected the pace of testing. Several of our faculty worked on the upgrade of our Large High Performance Outdoor Shake Table to apply 6-degree of freedom motions, which progressed almost entirely during the pandemic and was a major time commitment. Field testing and instrumentation of full-scale structures was not always possible during the pandemic, although some faculty were able to receive special permission to travel. Small-scale materials testing in our laboratories was mainly affected by the ability for individual students to be able to work in the laboratory. Although many graduate students were added to the essential personnel list, their productivity dropped because they were not able to keep a normal schedule, did not have the support of peers in the laboratory, or in some cases decided that they did not want to work in the laboratory due to health concerns. The reductions in graduate student productivity affected the faculty in our Department both in terms of obtaining data for research projects, but also in administering research grants and contracts as students still had to be supported even in the case that they were not contributing fully to projects. Many faculty and students were able to pivot and adapt their projects to reach desired outcomes under the changed circumstances, but there were effects on overall research productivity.

While many research funding agencies were flexible in deadlines for ongoing projects, contracts for some projects that had been organized prior to the pandemic were not fully executed due to budgetary constraints. This led to a reduction in the support available for new research programs, which may have affected research trajectories and led to a change in direction. Our Departmental staff was affected strongly by the pandemic, with many departing for other jobs or taking leaves of absence. The challenges with the ESR system meant that

faculty do not always have a good idea of their research budgets and there were many examples where additional work was necessary to solve budget problems. These issues took away from time that could be spent on research and teaching.

Other areas of research were adversely affected. While our Department was able to organize remote seminars by invited speakers, there were fewer opportunities for faculty and graduate students to come together and discuss new ideas. Some journals were adversely affected by the pandemic, with reviewers taking longer to review manuscripts or editors becoming ill. Our discipline traditionally has longer review periods for journal papers (it was not uncommon for journal papers to take 1 year to be published after initial submission prior to the pandemic), so this could have an adverse effect on research productivity. Our department also saw sabbaticals that were delayed because of restrictions, particularly among those whose sabbaticals included international travel. It is also important to note that service work increased dramatically during this period, since faculty had to attend to more crises and develop strategic plans for the Department.

Effects on productivity were particularly pronounced for faculty caring for school-age children and elderly parents. While some faculty were able to maintain similar levels of productivity as before the pandemic, the overall psychological and emotional effect of the pandemic has had an effect on faculty that may result in fatigue and burnout in the long term that will result in lower productivity. We expect that Covid will likely have continued impact on faculty research productivity in future review cycles. Even in cases where faculty had sufficient published work to meet department standards in their first review cycle since the pandemic hit, the pipeline for research publications in the next review cycle (due to all the factors named above) may be negatively impacted.