The COVID-19 pandemic has adversely affected many members of the Department of Botany and Plant Sciences. These include the following:

**Research Productivity**

*Impacts of campus shutdown and restrictions:*

Research activities of many faculty are entirely dependent on access to their laboratories, field sites, and campus research facilities. Research activities were halted during the campus shutdown in March 2020, partially restored in June 2020 with severe restrictions on the number and spacing of laboratory personnel, and only fully restored in July 2021. During the early phases of the pandemic, living research materials (plants, insect colonies, microbial cultures) may have been lost. Some field-collected materials could not be analyzed, resulting in lost data. Research programs for many BPSC faculty are limited by growing seasons and loss of data/materials from the shutdown during Spring 2020 in some cases resulted in the loss of the entire year. These situations will likely result in the loss of years of research efforts and a total restart of some projects may be necessary. Research projects associated with taste panels, Cooperative Extension Field days for clientele, and on-farm demonstrations were cancelled. In some cases, projects were terminated by granting agencies. The disruption to research was exacerbated by limited access to on- and off-campus analytical facilities, resulting in data acquisition delays and lost samples. During the shutdown, faculty continued to pay the salaries of personnel who were unable to conduct research, resulting in the effective loss of grant funds and a reduction in future research capacity. Receiving shipments of laboratory supplies was eliminated for a period and some critical supplies and reagents remain difficult to obtain. Maintenance and repair of facilities were drastically reduced. Undergraduates were prohibited in labs for more than 1 year, which sharply restricted the research abilities of many labs. The limitations on in-person interactions with graduate students and staff for more than 1 year also negatively impacted research productivity. Discussions via Zoom can’t replace one-on-one discussions, looking critically at data, results, etc. This loss of regular oversight and feedback to researchers can result in loss of research productivity, as problems and solutions are more difficult to identify and address.

*Impacts of travel restrictions:*

With the initial campus closure, travel for field research was sharply restricted, resulting in delayed acquisition of data and, in some cases, complete loss of a field season. Travel restrictions dramatically increased costs and slowed data collection. Travel to out-of-state field sites was impractical and international travel was impossible from 3/2020 – 7/2021. Travel to some locations continues to be challenging. Scientific meetings and conferences and consultation with international agencies were cancelled, delayed indefinitely, or converted to a remote format, resulting in reduced networking and collaborations. This impacts recognition of faculty achievements by peers and initiation of new collaborations.

*Impacts of caregiver responsibilities:*

For some faculty, research productivity has been impaired by the need to care for children, parents, or others, either at home or remotely. Time spent on these tasks has reduced time available for research, with a result in lost productivity, grant application opportunities, and professional activities. Caregiving responsibilities have also impacted research staff in a similar manner, further compounding the impact.

*Impacts on trainee mental health:*

Research and training activities were abruptly halted due to the initial campus closure, which had a large destabilizing effect on trainees and faculty at all levels. Loss of data, samples, and months of research time demoralized trainees in addition to setting back their research progress. This was further aggravated by the significant disruption of all aspects of their routines, spanning all facets of their lives. For many trainees, the situation was compounded by fear of a bleak job market due to the economic downturn. Some trainees also had increased family obligations, such as caring for elderly parents or ailing family members, which took an additional toll on mental health. The overall result was a dramatic increase in reports of depression and anxiety, which interfere with even basic levels of productivity.

**Teaching**

With the rapid move to remote instruction in Spring 2020, instructors and students were unfamiliar and relatively dissatisfied with this approach to teaching and learning. Faculty had to rapidly develop on-line replacements for labs and field trips, which did not always work well, despite their best efforts. Some students felt that learning expectations should be relaxed and were unhappy when they were not. Preparing and teaching an online course required substantially more time than a face-to-face course, further reducing the effort available for research. Successful mentoring of graduate students and postdocs was drastically altered and required extensions of some training periods. Mentoring of undergraduates and/or offering of research courses required for our major were eliminated for 20-21. Extension programs, where Specialists visit growers/stakeholders for assistance and travel for on-site teaching and demonstrations, were cancelled or rescheduled as Zoom conferences. Although webinars allow for some interactions with the industry, the effectiveness of delivering the message is hampered by connectivity problems and lack of in person interactions. Additionally, preparation and online delivery to extension clientele required more time than in-person meetings.

**Research Statement**

The Department of Botany and Plant Sciencesexpects faculty to publish the results of their research in peer-reviewed scientific journals. As the research interests and foci are quite varied across the department, a single quantifiable expectation cannot be applied to each faculty member. It is somewhat difficult to judge faculty productivity by the sheer number of papers per year or per review period as it also depends on the journal expectations. Many of the most competitive venues often require multiple papers worth of data for a single paper. A rough guideline is 1-2 papers per year per faculty. The importance of author order is problematic to quantify as different fields represented by the works of our faculty place different emphases on “first author”, “co-first authors”, “corresponding author”, “last author”, etc. The different types of peer-reviewed papers (research articles, reports, notes, proceedings, perspectives, reviews, syntheses), the research effort represented by a paper, and the impact of those papers on the field can also be viewed differently among as well as within the disciplines housed in our department. In order to assess their role and importance to each publication, the Department considers the candidate’s statements in eFilePlus regarding their individual contributions, the assessment of a department *ad hoc* committee with expertise in the discipline, and the outcome of discussion in the department meeting. Collaborations are increasingly important in Plant Biology, and we rely on the candidate to explain their contributions to collaborative papers. Journal impact factors also vary widely across disciplines represented within the department. The venues for publication should be appropriate for the specific target audience, with the expectation that faculty publish in journals highly ranked in the discipline. Patents are another measure of research productivity, equivalent to a publication. Grants are generally required to support research and to mentor students in the department and grants reflect research productivity and impact across subdisciplines. The typical source, size of grant, and funding rate varies across subdisciplines in the Department, and the amount of grant support needed to support sustainable future research productivity also varies. The Department relies on the candidate’s statements in eFilePlus regarding research productivity to address the issue of grant funding as a component of research productivity in the Department letter.