University Research Committee Report for 2022-2023 Academic Year Charges

June 27, 2023

The University Research Committee, as a strategic group of the University's research enterprise, had the following charges for the 2022-2023 academic year:

1) <u>Staffing and research infrastructure</u>: The Committee will capture faculty experiences and concerns about current structures and policies around staffing as these relate to research productivity. While recognizing that what constitutes "research staff" and "research productivity" may vary widely across units at USC, the Committee will aim to identify recurring or particularly salient issues around staffing in the research context. For example, the Committee may explore faculty experiences and concerns about navigating school policies, University policies, and laws which affect research staffing; whether current policies allow research staff to grow in their positions; and overall, what staffing policies and structures would make better research environments for conducting research and the people involved.

2) <u>Culture and graduate students</u>: The Committee will explore how faculty-driven culture issues in the research context affect graduate students. Given the Culture survey results showing graduate students are one of the most distressed groups at USC, the Committee will consider how faculty can create a productive working and learning environment for and with graduate students. More specifically, the Committee will identify key culture issues impeding graduate student well-being and research progress, such as lack of mentoring and toxic environments, and develop guidelines which can be discussed and utilized by individual faculty, departments, and/or schools. The Committee's work may encompass informal interviews or focus groups with USC faculty, graduate students, or other stakeholders and review of relevant literature.

The committee met monthly to study these charges and identify the pertinent elements to focus on but also formed two sub-committees, one for each charge. The sub-committees which were delegated each a chair and also met monthly were tasked with taking a deep deeper dive into their respective charge. Each sub-committee prepared a report that was edited and approved by all members of the broader committee. We present you with the reports on the findings and recommendations related to the charges of the 2022-2023 University Research Committee.

Sincerely,
Bodour Salhia (co-Chair) and Darnell Cole (co-Chair)

The USC University Research Committee's Research Infrastructure – Staffing and Employment Report (RISE Report)

During the 2022-2023 academic year, the interdisciplinary University Research Committee (URC) took up a charge to conduct a preliminary examination of staffing and employment issues related to research productivity across several Schools in the University. To focus our report, we began by conceptualizing two broad areas of research-related staffing along the typical research cycle; a cycle we simplified for brevity of this report (See Figure 1). These two broad staffing areas occur in distinct, yet interacting, sides of sponsored research. First, there is research administration staff who assist principal investigators (PIs) to complete research applications (i.e., "pre-award") and manage implementation of research awards (i.e., "post-award"). Second, there are the research implementation staff (e.g., laboratory technicians, clinicians, project specialists, project coordinators) who are hired as mission-critical employees to help PIs complete high-quality research projects. The URC recognizes the crucial nature of both broad staffing areas to the success of research at USC, but this report focuses on the latter group of staff directly involved in implementing research.

Figure 1. Staffing within a simplified sponsored research cycle

The URC prioritized this focus because **PIs must staff their research projects quickly and effectively** to fulfill project milestones along ambitious timelines, thus successfully delivering results promised to sponsors. The University has taken great strides in recent years to improve the research infrastructure, including increasing efficiencies and staffing with the institutional review board (IRB), facilitating dialogue to improve communication and relations with the USC Stevens Center for Innovation, and establishing administrative leadership to support research (e.g., Senior Vice President for Research and Innovation). These high-level improvements facilitate USC's competitiveness in research, but the URC emphasizes that ground-level improvements are also necessary; especially ground-level improvements in processes around staffing. Beyond the clear problems of jeopardizing research timelines and deliverables, problems with staffing can contribute to PI anxiety, drop in morale, and burnout, which have all been amplified by the COVID-19 pandemic.

The URC also prioritized this ground-level focus on staffing as coming at an opportune time while the University strategizes research growth. On January 12, 2023, President Carol Folt sent an update to faculty and staff about the University's research direction, writing "our goal is to double USC's research portfolio over the next decade." While high-level administrative developments scaffold the President's vision, there must be equal attention to the bedrock from which that scaffolding rises: the research staff who provide the day-to-day project necessities for PIs' sponsored projects.

The committee discussed several areas of need and identified two key areas for this report that require clarification and consistency both across Schools and between Schools and the University: (1) lack of transparency and standardization of research staff hiring and dismissal processes; and (2) inadequate resources for recruitment and development of postdoctoral fellows (postdocs).

1. Lack of transparency and standardization of research staff hiring and dismissal processes.

Summary of deficits: The committee acknowledges the autonomy among Schools to individualize their procedures and policies to accommodate their distinct forms of research. However, PIs experience different hiring practices across Schools, which indicates that best practices are not shared between schools and which can delay hiring and onboarding. PIs also experience significant delays in hiring contract research staff due to delays between post-award offices and the University Department of Contracts and Grants. Additionally, in the unfortunate instances that PIs need to dismiss an employee, there is considerable confusion regarding School, University, and State policies and procedures for dismissals. Often, PIs feel unsupported by School human resource (HR) departments or left without systems of appeal. The considerable size of the University, coupled with individualized Schools, contributes to inefficiencies and an environment that is difficult for PIs to often navigate, inhibiting cross-School collaboration on large-scale, interdisciplinary research projects.

Recommendations of potential actions:

A. **Study and report about the heterogeneity of hiring and dismissal processes across schools.** Although Schools have autonomy through their own HR departments, this has also led to highly variable practices and interpretations of University, State, and Federal employment regulations. Through a large-scale examination of PIs' experiences with hiring/dismissal processes across Schools, the URC recommends that the University examine these practices across schools and identify how and where systems and procedures are meeting or failing to meet PIs' needs and therefore research needs.

B. **Develop and disseminate a system of best practices for managing research staffing (e.g., hiring, dismissal, and staffing shortfalls).** Subsequent to the aforementioned recommendation, Schools with efficient and effective hiring/dismissal processes can offer guidance to implement changes in Schools struggling to meet PIs' needs or Schools wanting to improve or streamline their hiring/dismissal processes.

C. **Identify and disseminate best practices that apply to *all* Schools, beginning with a foundation of what is minimally required by law.** An examination across Schools should summarize (1) how each HR office operationalizes the minimum standards of State and Federal laws to which USC is held, and (2) how those minimum standards are communicated to stakeholders.

D. **Identify and disseminate the specific requirements of State and Federal law versus School and University policies.** When PIs need to hire/dismiss research staff, the process often occurs against a multiple and convoluted layers of legal and organizational regulations that are difficult to interpret and follow. The fragmentation of HR across individual Schools contributes to PI confusion regarding which requirements are State, Federal, School, or University, and also leads to

exceedingly prolonged dismissal processes that often lead to inefficient use of resources and worsening tensions between the PI and staff member.

In summary, the committee believes it is essential to develop a set of best practices in hiring/dismissal processes, delineating which processes are mandated by law (i.e., State and Federal) versus potentially amenable to organizational (i.e., School and University) change when needed to improve outdated and ineffective processes.

2. Inadequate resources for recruitment and development of postdoctoral research fellows (postdocs).

Summary of deficits: Although still acquiring skills to become independent researchers, postdocs provide crucial, high-level research staffing by implementing scientific activities and developing novel directions in which to grow research for new applications. Postdocs contribute to the innovation and prestige of the University, and there are considerable challenges in keeping USC competitive in recruiting postdocs. Examples of these challenges include professional development and compensation and benefits (e.g., postdocs with families are uniquely disadvantaged given the enormous cost of living in Los Angeles).

Recommendations of potential actions:

A. **Determine methods to synchronize salary and benefits for postdocs to account for cost of living in LA area.** LA is currently gripped with both an exorbitant cost of living and a shortage of affordable housing. For postdocs, who often uproot their lives (sometimes with spouses and children in tow), an intensive, time-limited position (often only a 1- or 2-year appointment) in a high-cost city can be a deterrent. Thus, because of the larger-scale challenges of LA (i.e., high costs, scarce housing, poor public transportation infrastructure), USC loses highly talented postdocs to universities in more accommodating and affordable environments. USC must be responsive to the larger city- and county-wide economic forces that its postdocs navigate. USC should create a menu of options that could specifically assist postdocs, such as developing campus-supported housing options and working with mentors and Schools to offer funds to supplement postdoc salaries *in addition to* Schools' base salary offers.

B. **Support the Office of Postdoctoral Affairs to develop and test effective tools for postdocs and mentors to create career development plans and maintain updated resources for postdocs and mentors.** Current tools at USC for career development plans are largely viewed by both postdocs and their mentors as cumbersome and onerous. The Office of Postdoctoral Affairs could be supported, by the University, to conduct a review of extant career development templates, identify promising examples, and develop and test tailoring those tools across Schools.

C. **Conduct a recurring needs assessment of postdocs including, but not limited to, topics of compensation, benefits, housing, career development and trajectory, and skills development.** Postdocs, due to their limited terms at USC, work within multiple and highly dynamic environments including evolving job markets and ever-advancing technical, professional, and practice skills. To be responsive to postdoc needs and to forecast strategies to stay competitive in

gaining postdocs, the University must have formalized and routine monitoring of postdocs' needs. The University should also develop tools to assist in screening and hiring international applicants.

Summary

The lack of clarity and standardization of staffing processes across Schools leads to inconsistency and inefficiency that affect the potential for PIs and other stakeholders to successfully implement their research projects. Transparency is a key objective that should drive efforts to gather information across Schools and the University to better understand the landscape around hiring and dismissal processes related to research staffing. At a staffing level, USC operates a large, de-centralized research enterprise that is ever growing and mostly School-specific. Amidst the breadth of this vast web of research, a lack of standardization leads to fragmented HR practices and, ultimately, highly variable experiences between Schools and even between PIs in the *same* School.

As the University positions itself to meet the President's goal to "double USC's research portfolio over the next decade," ground-level breakdowns in research staffing will undermine sponsored research, both in terms of meeting commitments for current research awards and in diminishing PI motivation to pursue future opportunities. PI effort diverted to administrative minutiae and barriers incur tremendous costs to productivity and confidence in the organization. We emphasize that the solutions to these research staffing barriers are *within* the University's control, if there is willingness to invest at the ground-level foundation of research with similar fervor devoted to the administrative level. Growing USC's research expenditures requires commensurate growth in efficient, transparent, and standardized procedures for the in-house, day-to-day operations upon which successful research depends and should culminate in a guide of "best practices" used widely across the University.

This report is presented by the following members of the 2022-2023 University Research Committee:

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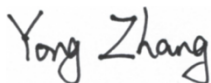Department of Quantitative and Computational Biology

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The USC University Research Committee's Grad Student Mentoring Sub-Committee Report

In 2008, the University successfully secured a grant from the Mellon Foundation with the goal of "Building an Institutional Culture of Mentoring at USC". From 2008 to 2015, the Provost's Office worked "to create a social framework or culture that supports mentoring in the overall university community and assesses different models of faculty mentoring at the university's eighteen schools." Through the grant, USC created an Associate Provost for Faculty Development charged with coordinating programs to assist faculty in research, teaching, mentoring, and professional development. The centrality of mentoring was also introduced into the 2008 Faculty Handbook with language that states:

> "Mentoring is an important component of faculty responsibilities. Depending on the discipline, the research effort involves the supervision and mentoring of undergraduate students, graduate students, other faculty, and those occupying post-doctoral or other research positions. Such mentoring is also part of a faculty member's teaching effort."
> https://faculty.usc.edu/mentoring/resources/

The university has continued its commitment to mentoring through an annual award for mentoring administered by the Provost's Office. However, the promise of the earlier initiative remains unfilled. As a result of changes in leadership and disruptions associated with the pandemic, the significant momentum gained through previous efforts has slowed. Effective mentoring structures are in place in many USC departments and schools. However, there is a perception that the university collectively lacks a central structure that promotes consistent and effective mentoring of all graduate students. Minimum expectations also do not appear to be clearly defined and accountability across the university is limited.

In 2022, the URC Graduate Student Mentoring sub-committee was asked to explore how faculty-driven culture issues in the research context affect graduate students. Given the recent Culture survey results showing graduate students, and PhD students in particular, are some of the most distressed groups at USC, the Committee considered how faculty can create a productive working and learning environment for and with graduate students. More specifically, the committee sought to identify key issues impeding graduate student well-being and research productivity, such as lack of mentoring and toxic environments, and to develop guidelines which can be discussed and utilized by individual faculty, departments, and/or schools.

The committee recognized that good mentoring is happening in many parts of the university. The group also acknowledged that mentoring needs to be tailored to different disciplines and departments. A theme in the committee's conversations was thinking about ways to **"formalize the informal."** As such, to ensure maximum flexibility, the committee discussed recommendations and models that might be adopted or adapted. Whenever possible, the committee also identified solutions at different institutional levels, including at the university, schools/program, and student level.

Through a series of conversations in the fall and spring semester, the committee identified the following challenges and recommendations:

1: Perceived lack of a centralized support structure for mentors and mentees at USC.

Recommendations of potential actions:

A. A university-wide group should be convened to regularly discuss mentoring at USC. The group should include representatives from the Office of Research, Academic Senate, Graduate School, Faculty Affairs, Center for Excellence in Teaching, Center for Excellence in Research, and Graduate Student Government. The goal of this group would be to collect and share data that can be used to improve mentoring across the university and to propose programs or activities to support an ongoing culture of mentoring. The group should also collect and share models for mentoring that would meet the needs of particular schools or programs.

B. Supplement the current mentoring awards with activities that recognize schools and departments that have strong mentoring structures in place. We recommend identifying a central source of funding to which schools and departments could apply for implementing mentoring programs through both formal (e.g. symposia) and informal gatherings (e.g. social events).

C. Build mentoring into the annual faculty merit review process and as part of the promotion/productivity report.

D. As appropriate, student mentoring plans should be included as a criteria for internal funding opportunities through the Office of Research. We recommend reviewing the recent Visions and Voices call for proposal that included very explicit questions about how students would be involved in the planning and implementation of the project. Strong mentoring plans could be a criteria for USC research teams.

2: Perceived lack of accountability regarding expectations for graduate student mentors

Recommendations of potential actions:

A. The university-wide mentoring group should develop baseline expectations, formal support structures, and training opportunities for mentors who serve on committees, including developing more explicit language around the responsibilities of the various committee members. Recognizing the variability of programs, expectations may be developed based on broad fields or the norms for a discipline. For example, school executive administration can sponsor lunch to pair with mentoring events to show both buy-in from leadership and facilitate community-building.

B. The group should develop baseline expectations for mentors who supervise research (recognizing that this may be distinct from the mentoring that happens as part of a student's dissertation committee). Incentive structures don't always align between good and well-funded research, and good mentoring. Faculty who receive research grants that will involve students should participate in an "onboarding" process that would enable faculty to effectively supervise research assistants. This onboarding process will also ensure that faculty have access to ongoing support if difficulties arise.

C. The university should emphasize the importance of the faculty Director of Graduate Study (DGS) or faculty PhD coordinator. This group is tremendously important to support graduate students. They are relied upon to administer procedural questions of graduate student studies, and yet it appears to be a group that does not regularly connect. The university could encourage cross school networking and support for these positions. We also recommend that the university institute a policy to ensure institutional memory in these positions, i.e. through overlapping of the position with the current DGS and incoming DGS working together for at least a year.

D. Each school should develop and regularly assess a mentoring plan appropriate for its student population. The evaluation and regular review of this plan should be built into the PhD funding structure. We recommend that each program develop a "training or mentoring protocol" for students in the program – ideally, this would be linked to something like the PhD Outcomes Program and be both transparent but also have some built in accountability.

3: Graduate student dependency on a single faculty advisor for funding and academic progress can make it difficult to move forward if the original match is not good.

Recommendations of potential actions:

A. With guidance from the program director or DGS, each student should have the option of identifying potential secondary mentors from the very beginning of their studies. This includes faculty and staff who are tasked with guiding progress to the degree as well as mentors who can assist with socialization, and professional development beyond the academy.

B. Encourage programs to identify a network of support for students at the point of admission to the PhD program. This "Mentoring Committee" (as distinct from the dissertation committee) might include a primary faculty advisor, a secondary faculty "mentor", the Director of Graduate Studies, and at least one senior student mentor.

C. Leaders in schools and PhD programs should collaborate to create mechanisms for changing advisors without stigma. (This recommendation is drawn from the "Evolving the PhD at USC: Enacting Shared Responsibility for Diverse Outcomes and Diverse Students" Report of the USC Joint Academic Senate/Graduate School Task Force on PhD Education, June 29, 2022). Programs should be encouraged to proactively plan for programmatic transition points wherein students can change advisors. This might include a semester of fellowship support while new advisors are identified, or other models appropriate to the program or school.

D. The "primary" advisor may serve in the traditional role (as funder and chair of the student's qualifying and dissertation committees), but students should not have to rely on a single faculty member for both academic and financial support. We recommend that at least one alternate faculty member be identified as a formal "Mentor."

4: Few mentoring opportunities tailored to the needs of graduate students of color and/or first-generation students

Recommendations of potential actions:

A. Fund "training grants" to support first-gen students, students of color and others - both from internal and external sources. Securing external training grants is time and staff intensive. Currently, the graduate school provides top offs to students who are assigned to training grants, but we recommend that the university provide more support to faculty seeking external training grants.

B. Expand the role of the USC Career Center to better support graduate students. Ensure that the Career Center's First-Generation Mentor Program is available to graduate students. See https://careers.usc.edu/experiences/first-generation-mentor-program/

C. Programs should be encouraged to establish a proseminar that regularly brings students and faculty together. The committee recognized that both formal and informal gatherings help to broaden the possible mentor network and increase familiarity with faculty from beyond a specialized field of study. These opportunities may be organized by school or by broad discipline if programs are small.

5: Smaller graduate programs may lack faculty and/or staff to provide students with an appropriate network of mentors

Recommendations of potential actions:

A. The university should establish a central hub for finding graduate student mentors and mentees. We recommend reviewing the University of Buffalo Network for Enriched Academic Relationships (NEAR) program as an example: https://www.buffalo.edu/grad/beyond/professional-development/near.html

B. The mentoring network should include student mentors. As appropriate, students should be involved in faculty meetings and decision-making about the program. Students are also responsible for the culture and USC could think about providing support to student mentors – for example through formal training programs, community building opportunities, and top offs.

C. Incentivize affiliated or external faculty to participate in student mentoring. To support students, many smaller programs rely on a pool of mentors that go beyond the department's tenure-track faculty. There is little recognition of this extra effort.

7: Lack of clarity re: involving masters students in the research endeavor. The current funding structure for research requires tuition, fees and a stipend for students serving as Research Assistants. This makes involving masters students in research cost prohibitive for many programs and schools.

Recommendations of potential actions:

A. The university should clarify when research becomes a "research assistantship". Implement ways to provide masters students with research experience that does not undermine the RA experience.
B.

Summary

The URC committee recognized that good mentoring is happening in many departments and schools, however students do occasionally fall through the cracks. There is also a perception that students and mentors lack support when things go wrong. Through extensive discussions, the committee identified challenges and proposed recommendations, including establishing a university-wide mentoring group, recognizing and supporting schools with strong mentoring structures, developing baseline expectations for mentors, and creating mechanisms for advisor changes. Additionally, the committee emphasized the importance of tailored mentoring for graduate students of color and first-generation students, as well as supporting smaller programs lacking mentor networks. The university should also clarify the expectations of research assistantships, including for master's students. By implementing these recommendations, USC can foster a robust culture of mentoring, enriching the academic journey and ensuring the success of its graduate students.

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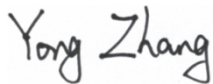Department of Quantitative and Computational Biology

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