

Report of the Senate Committee on Students and Educational Policy (SCSEP)

Background

The Faculty Senate Committee on Students and Educational Policy (SCSEP) oversees and advises the Executive Committee on matters relating to the University's policies and procedures on the admission and instruction of students, including academic integrity, admissions policies and administration, evaluation of teaching, examinations and grading, academic experiences, educational opportunities (such as study abroad), student records, disciplinary systems, and the campus environment/climate. In general, the committee deals with the matters covered by the following section of the University's Handbook for Faculty and Academic Administrators: IV.

Campus Climate 2020-2021

Student mental health and well-being have been SCSEP's focus for several years. With the COVID-19 pandemic, student learning and programming went online in March 2020, and continued longer than anticipated through the end of the summer 2021. High-need students were permitted to live in the College Houses for the remainder of spring 2020 and fall 2020. First year students were given the option to live on campus from January 2021, with classes mostly still held online. The mental, social-emotional, and physical health of students specifically related to the COVID-19 pandemic necessarily became the focus of Wellness at Penn efforts for the year. In addition, with a summer of racial justice protests and increased focus on police brutality in minority communities across the United States, the University publicly responded to these concerns as they pertain to our student body in a variety of ways, largely through calls for proposals, public programming, and a multiyear financial gift to The School District of Philadelphia. Almost all the programming has remained online, with a mixed capacity to reach Penn students, many of whom suffer from a variety of social-emotional stresses brought on by the COVID-19 pandemic.

While SCSEP's plan had been to gain understanding of program evaluation for all forms of well-being activities for students this year, and we did do so to some extent, we necessarily shifted more of our attention to more pressing issues pertaining to the COVID-19 pandemic: the Student Campus Compact, COVID-19 testing, student non-compliance, the COVID-19 vaccine rollout, and the social-emotional health of students on and off campus. In other words, some of our goals pertaining to wellness program evaluation (which expand into issues of racial justice) will have to wait for a return to some level of post-pandemic normalcy on campus if we are to capture a sense of the efficacy of the programs. This will enable us to consider what has happened and what measures will be the most effective.

2020-2021 SCSEP Specific Charges

1. Assess and evaluate ways to change University structures, practices, and biases (at the University, school, departmental, and individual levels) that perpetuate systemic racism as they apply to the committee's general charge.
2. Facilitate the changes identified in the previous charge.
3. Collaborate with the Senate Select Committee on Planning for Post-Pandemic Penn (P4) on matters related to pandemic response and recovery and their effects on student well-being.
4. Consider any policy and procedural changes to emergency preparedness and other mechanisms implemented to support student wellness throughout the pandemic response.
5. Evaluate the efficacy and value added by the rapid shift to online learning, including the long-term impacts on Penn.
6. Evaluate the impact of the College Houses and Academic Services (CHAS) pandemic response and identify ways that the Faculty Senate can provide support.
7. Examine the wider set of programs that can address and support student well-being (including but not limited to the Sachs Program for Arts Innovation, faith-based initiatives, and community engagement).

Report

Addressing student mental health and wellness has been a priority for SCSEP since September 2015. With the onset of the COVID-19 pandemic in March 2020, many of these wellness policies and practices – including mindfulness about student social and emotional well-being, allowing for a student to elect a pass/fail grading option without unexpected professional consequences, urging faculty to create the best possible environment for course completion, exam scheduling, and so forth—were prioritized by Deans in communicating with faculty once learning went remote, and this continued through the 2020-2021 academic year. The sheer challenge of moving instruction online revealed, in ways that might not have been obvious in regular campus life, how challenging living and learning can be for all our students, but particularly so for resource limited, or first-generation, low-income (FGLI) students. It is clear now that while we had hoped the pandemic would end more quickly, and we could return to campus sometime in academic year 2020-2021, that simply did not happen. Rather, this was an academic year in suspension. SCSEP will have to assess the evaluations in order to understand the full impact of the pandemic on our students (through data collection and evaluation over the summer and the next academic year, 2021-2022) and then suggest appropriate permanent changes.

In the context of limits imposed by the COVID-19 pandemic, we pivoted instead to what we were able to accomplish within the limits of Zoom conversation and a campus (not including Penn Medicine) largely remote and online. We welcomed the new Vice Provost for University Life, Mamta Accapadi, to discuss her charges and vision for the position; we heard from several presenters about wellness, social, and racial justice initiatives put in place in the past year or two by Penn Medicine; the Paideia Program; the Sachs Program for Arts Innovation leadership regarding the Mellon Foundation's "Just Futures" Request-for-Proposals (RFPs) and the team who led Penn's Just Futures proposal. We asked for the results of campus wellness program evaluations; we heard from a Penn Psychology doctoral student, Anna Franklin, and her faculty advisor, Ayelet Meron Ruscio, associate professor of psychology, on student mental and behavioral health evaluation on college campuses; and from engineering students and their professor, James Won, lecturer in electrical and systems engineering; and we heard their views on student well-being in the midst of COVID-19, a project supported by SNF Paideia, and fruitful in its conclusions.

Committee Findings and Questions

1. In the wake of the COVID-19 pandemic, in March 2020 the challenge for the VPUL team coordinated by its Student Intervention Services team and the offices of Student Financial Services and Penn First Plus, was to get students moved home safely and the campus depopulated as quickly as possible. If that was not an option, students were housed in selected campus buildings and were given access to available Penn Dining resources. The challenges were significant, but Penn stepped up to support the transition in every possible way. Financial and emotional needs, as well as travel arrangements, computer repairs, internet access, and food security, were key concerns. The Center for Teaching and Learning and the Online Learning Initiative support teams kicked into high gear to move all face-to-face instruction online as quickly as possible. In Academic Year 2021-2022, we hope to have the evaluations of the numbers of students who successfully managed the transition and provide support to those who were not as successful.

2. Through much of summer 2020 the administration hoped students would return to campus for fall 2020, but it became clear by August that doing so would constitute significant risk of COVID-19 infection in the absence of a viable vaccine. Most research and learning for students remained remote and online in fall 2020. In spring 2021, with the possibility of a several vaccines receiving FDA emergency use approval, first-year students were invited back to campus, and a Student Campus Compact

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(<https://coronavirus.upenn.edu/content/student-campus-compact>) was required for signature by all students in CHAS to mitigate against the spread of the disease. CHAS developed plans to keep students socially distanced, with one student per room and small clusters of students in shared bathrooms. We will need to learn from CHAS about the successes and challenges of the spring return to campus, COVID-19 testing, adherence to the Student Campus Compact, and the ultimate rollout of the vaccination program. What was the impact of social isolation? How did first-year students fare academically versus in regular academic years?

3. In response to our questions about how best to evaluate student wellness and mental health programming on college campuses, and our own campus, we heard from Anna Franklin, a doctoral candidate in clinical psychology, and her dissertation advisor, associate professor of psychology Ayelet Meron Ruscio. Ms. Franklin's central research question is how colleges can best support student wellness. She suggests that mental versus behavioral health interventions are more successful, though the cost-benefit of the more individualized versus group programs must be considered. Ms. Franklin and Dr. Ruscio recommended that Penn implement a series of "universal" interventions based on cognitive behavioral principles after surveying the student body to ensure these interventions will benefit Penn students. We are curious about the efficacy for international students of these "universal" interventions. What are the possible cultural differences and even stigmas associated with seeking mental health support across our student community?

4. Dr. Accapadi explained that since Penn was in a "recovery" year, she was not instituting new programming for students but rather providing what students need in the current moment. "Zoom burnout" among students, a year of complicated grief and recovery for all (<https://www.jedfoundation.org/covid19-tips-and-resources/>), especially first-year students, who missed out on marquee events such as high school graduation and traditional welcome activities at Penn. There is also concern about the emotional impact of racial and social justice issues in the news (e.g., Black Lives Matter protests), and their impact on student well-being. She outlined eight areas of student well-being: physical, emotional, social, intellectual, environmental, financial, occupational, and spiritual. Our question pertained to how VPUL's student-focused remit might extend to communication with faculty about student needs and concerns. Could VPUL become a "bridge" of communication between students and instructors?

5. The Stavros Niarchos Foundation (SNF) has provided initial funding for Penn's new Paideia Program, a program concerned with student wellness in three ways: service, citizenship, and dialogue. The goal is for every Penn undergraduate to complete one Paideia-sponsored class before they graduate. We inquired about the processes in place for evaluating a rapidly growing program in Penn undergraduate education. In conversation, we received a recommendation for evaluation from SCSEP member Marilyn Schapira: "I [recommend] that the evaluation process of new initiatives could use an implementation framework. The first level of outcomes would include reach, uptake, and feasibility. Specifically, these would include awareness of and participation in the programs (reach and uptake), faculty time and effort, space, and cost (feasibility). Following these implementation outcomes, efficacy outcomes such as wellness (psychological, physical, emotional, spiritual) could be assessed. Efficacy outcomes are more expensive to assess (student surveys, use of health services, educational outcomes) and will require a longer period of time to assess (months to years following the initiatives). The efficacy outcomes would be strengthened by having baseline measures as a comparator group. There are specific frameworks for implementation research that could be used but these are some of the principles."

6. At the recommendation of the Paideia Program, we heard from James Won and two teams of undergraduates who had conducted research surveys on "Student Wellness and Burnout: The Effect of Pass/Fail (P/F) on Student Wellness" and the Paideia Wellness Project that examined the tendency for Penn students to mask emotional struggle with the "Penn face." Students examined the P/F grading option in the COVID-19 pandemic context, asking their peers why they selected or refused that option, and how Penn leadership might change the option's implementation in the future with a goal of reducing student stress over the decision. Students made recommendations to Paideia on how they might improve their presence and visibility pertaining to wellness program-

ming on campus. We are wondering about the impact of P/F options under COVID-19 as students post-COVID apply for jobs, internships, graduate degrees and so forth. Evaluation of how to support students in these processes through messaging from Penn leadership will be useful.

7. In addition to the focus on the challenges of remote learning and social and racial justice, the campus theme for the year was civic engagement (<https://www.nso.upenn.edu/theme-year/theme-year-2020-year-civic-engagement-full>). We addressed that theme by welcoming John McInerney, executive director of the Sachs Program for Arts Innovation, who facilitated conversation with faculty and staff around an RFP from the Mellon Foundation called "Just Futures" (<https://mellon.org/initiatives/just-futures/>). The faculty group constituted itself as CARE, the Coalition for Action, Reinvestment, and Education, led by Deborah Thomas (SAS) and Toorjo Ghose (SP2). Their vision was to leverage the arts for community engagement, dialogue, and social-emotional healing, primarily through teaching and community projects that are student driven. They critiqued a tendency for grants at Penn to serve University interests but less so the interests of the communities with which Penn partners. Our question is how can Penn "listen well" to our community partners as a mechanism for building meaningful relationships?

8. We finished the year by welcoming Lisa Bellini, professor of medicine and PSOM Senior Vice Dean for Academic Affairs. Dr. Bellini described Penn COBALT (<https://www.pennmedicine.org/news/news-releases/2020/may/new-mental-health-platform-provides-support-for-healthcare-workers>), which was implemented as a mental health and wellness resource for the Penn community in response to COVID-19. Penn COBALT curates personalized wellness content based on a brief assessment tool. Three areas for assessing individual wellness include self-care, culture, and working environment. Users are promised anonymity and the capacity to opt out of the system and that the system will not be used for research purposes. We wanted to know if the COBALT program could be replicated across Penn to benefit more students, staff, and faculty. SCSEP members have observed that several peer institutions have produced evidence suggesting that students are best helped by having a mentor to whom they can convey their concerns and problems. Further investigation of the extent to which similar initiatives could be implemented at Penn is merited.

Recommendations for 2021-2022 SCSEP

1. Collaborate with the Senate Select Committee on Planning for Post-Pandemic Penn (P4), which was established in April 2020, on matters related to pandemic recovery and their effects on student well-being, as necessary.

2. Consider any policy and procedural changes to emergency preparedness and other mechanisms implemented to support student wellness throughout the pandemic response based on the evidence on effectiveness that emerges.

3. Evaluate the efficacy and value added by shifting to remote learning. What has been the long-term impact on Penn of such a radical shift in medium of knowledge transmission? What changes will remain in place?

4. Evaluate the impact of CHAS's pandemic response and identify ways that the Faculty Senate can provide support.

5. Examine the wider set of programs that could address and support student well-being (including but not limited to CHAS, SPAI, faith-based initiatives, and community engagement), and advise the development of guidelines and strategies for effective program evaluation for all wellness programs on campus.

Members of the 2020-2021 SCSEP Committee

Huda Fakhreddine, SAS/Near East Languages and Civilizations
Sara Jaffee, SAS/Psychology
Carol Muller, SAS/Music, *Chair*
Marilyn Schapira, PSOM/Medicine
Mindy Schuster, PSOM/Medicine
Krystal Strong, GSE
Alan Strudler, Wharton

Ex Officio:

William Braham, Weitzman Design, Faculty Senate Chair-Elect
Kathleen Hall Jamieson, Annenberg, Faculty Senate Chair
Anita Summers, Wharton, PASEF non-voting member

Report of the Senate Committee on Faculty Development, Diversity, and Equity (SCFDDE)

General Committee Charge

The Committee on Faculty Development, Diversity, and Equity (i) identifies and promotes best practices for faculty development, mentoring, and work environment to facilitate faculty success at all career levels; (ii) evaluates and advocates processes for faculty recruitment, promotion, and retention that promote diversity, equity, and work/life balance for the faculty; (iii) monitors the status of faculty development, mentoring, diversity, and equity; and (iv) issues periodic reports on the activities and findings of the committee that make recommendations for implementation.

2020-2021 Specific Charges for the SCFDDE

SCFDDE recognizes that inclusion does not occur without recognition of existing biases and need for equity on all fronts.

Dismantling Systemic Racism:

1. Assess and evaluate ways to change University structures, practices, and biases (at the University, school, departmental, and individual levels) that perpetuate systemic racism.
2. Facilitate the changes identified in the previous charge.

Promoting Inclusion:

3. Review the application of the University pandemic-related policy on tenure clock extensions to ensure equity and fairness.
4. Review each school's Diversity Action Plan and identify "best practices" to improve each school's plan as well as the University's plan as embodied in its 2019 Faculty Inclusion Report (and in the process explore GSE's internal climate survey as a model for incorporating broad, internal feedback).
5. Review the implementation of Interfolio with respect to its effect on diverse faculty recruitment and retention.

Report on Charges

1. *Assess and evaluate ways to change University structures, practices, and biases (at the University, school, departmental, and individual levels) that perpetuate systemic racism.*

2. *Facilitate the changes identified in the previous charge.*

Systemic racism is no longer the overt objectionable action that is easily identified and thus easily addressed. It now comes in the form of the subvert racial bias that is at times unconsciously implemented, or worse, held in place because of customary practices and long-held traditions. With Penn being among the oldest universities in the country, this institution will inevitably perpetuate aspects of institutional racism that continue to linger in the larger American educational system. In order to address institutional racism and racial bias, we must come to terms with its existence and then embrace institutional and pedagogical approaches that minimize or eradicate its effect.

The first step in engaging in such an ambitious endeavor is the systematic collection of baseline data as well as the development of mechanisms to ensure the continual collection of data to monitor changes across time. Ideally, the University would survey the entire Penn community on an annual basis to gauge individuals' experiences with racism, discrimination, and racial bias. Penn should report these findings and educate faculty, students, and staff on the efforts they are taking to address reported concerns.

The second step in dismantling structural racism is to take action that responds to the data that has been collected. In reviews of Diversity Action Plans, our committee has learned about the many initiatives currently being taken by schools across the University to diversify leadership, faculty and students in response to the data that they have collected. We also learned from colleagues on our committee from PSOM about work that they have undertaken in response to the killing of George Floyd to create several anti-racism committees in various departments focused on structural, policy, and cultural changes. (For example, a January 2021 PSOM publication detailed the roles that medical schools play in propagating the misrepresentation of race in medical curricula and offers approaches for medical educators to modify their courses and curricula to be anti-racist <https://www.nejm.org/doi/pdf/10.1056/NEJMms2025768>).

Yet, this important work being undertaken by the schools is often disconnected from one another and could more effectively be connected

to dismantle structural racism across the entire University. For example, while most schools report providing faculty with latent bias training in relation to faculty searches, it is unclear what these trainings entail and we suspect that it looks extremely different across the schools. More consistent University-wide guidelines would be helpful in ensuring that all schools have a robust and comprehensive approach to latent bias training. One possibility in doing this is through the development of a University-wide train-the-trainer model, which would ensure consistency across schools and allow for the development of consistent policies around issues such as how often faculty should receive latent bias training and the role this training should play in faculty searches and other policy areas.

In the spirit of examining ways of creating more consistent University-wide models for dismantling structural racism, we reviewed the websites of several of our peer institutions and found that many of them comprised University-wide anti-racism committees as well as committed institutional funds for projects that address systemic racism across their campus ([Addressing Systemic Racism Fund](#) | [The Office of the Provost | Brown University](#)). We propose that Penn adopt a similar model. Such a University-wide committee could have among its charges the development of transparent University-wide policies focused on diversity, equity and inclusion. Considering the fact that so many of the schools already have Diversity and Equity offices or committees, this seems like a great place to recruit participants for such a University-wide committee. While our committee's charge is a focus on faculty, we envision that such a University-wide committee could broaden its charge to include a specific focus on the interrelationship between leadership, faculty, staff and students. This committee could, for example, monitor trends on the annual University-wide surveys that we are recommending be implemented and identify areas in need of policy changes.

Recommendations:

- The University should administer an annual survey designed to collect data related to issues of diversity, equity and inclusion across the campus as a way of identifying trends and to develop a plan for policy change as appropriate.
- The University should develop a train-the-trainer program that would increase the number of individuals who are qualified to conduct latent bias trainings. The program should provide the resources needed to deliver training sessions and clearer guidelines for how to recognize and address latent biases that occur during the faculty search process. It would also provide consistent University-wide guidelines on issues such as how much time faculty search committees need to devote to such trainings.
- The University should develop a University-wide anti-racist committee that brings together individuals from the different schools focused on issues of diversity, equity and inclusion to develop University-wide policies focused on dismantling structural racism.
- Review the application of the University pandemic-related policy on tenure clock extensions to ensure equity and fairness.

3. *Review the application of the University pandemic-related policy on tenure clock extensions to ensure equity and fairness.*

COVID-19 has impacted the work and careers of many faculty. Based on results from [a survey delivered to faculty in October 2020](#), it appears that all domains of a typical faculty career have been impacted. In the teaching domain, there has been a general increase in time required for course preparation and delivery. In the domain of advising and mentoring, there has been an increase in time spent advising students experiencing pandemic-related challenges. In the domain of service, there has been an increase in time spent in engagement in efforts to make pandemic-related changes to curriculum, advising, lab access, and more, as well as engagement in pandemic-related initiatives for the department, University, professional association, and other organizations. These changes, which required more time spent on non-research activities, have coincided with less access to resources to conduct research due to restrictions on access to research sites, labs, facilities, studios, and other venues; restrictions on professional travel and field research; loss of access to research subjects; need to restart or pivot research; and

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cancellation of seminars, presentations, and opportunities to collaborate. These challenges have caused a significant slowing of publication and grant funding processes. At the same time, faculty were burdened with uncharacteristic responsibilities such as caregiving and homeschooling responsibilities and health issues (for self or family).

The specific short- and long-term implications of the pandemic have likely affected faculty members differently. Indeed, negative implications for traditional measures of faculty productivity may be greater, on average, for women faculty and faculty of color, given gender differences in caregiving responsibilities, disproportionately negative health- and economic-related effects of the pandemic on Black and Brown people and communities, and greater expectations for women faculty and faculty of color to engage in mentoring and institutional service. Early data show that journal submissions during the early months of the pandemic were lower for women than for men.

While full implications of the pandemic for faculty will play out over the next several years, given the cumulative and longitudinal nature of faculty research, grant, and publication processes, the University has implemented some measures to assure a fair process that takes into account the extraordinary challenges faced by faculties in the last year.

In September 2020, the University extended the probationary period by one year for all faculty who are assistant professors and associate professors without tenure in the tenure, clinician-educator, and research tracks whose reviews have not already begun, who are not in their mandatory or terminal years, and who have not already received an extension related to COVID-19. This automatic extension is designed to offer maximum flexibility. It does not require the faculty to opt in, yet it can also be waived. In addition, all faculty members may include pandemic impact statements in their annual performance and activity reports and in their dossiers for appointment, tenure, and promotion. External reviewers will be informed that the University added a pandemic impact statement to its review process in spring 2021 and will be asked to consider the short- and long-term implications of the pandemic on working conditions, productivity, and career trajectory when making their evaluations if the dossier includes a pandemic impact statement. Reviewers will also be asked to focus on the quality of scholarly contributions more than the quantity. The University also developed a [Guide for Supporting Penn Faculty](#) that is designed to promote diversity and inclusion for faculty in the pandemic. The guide is meant as an aide to inform how we assess productivity during and following the pandemic-era.

While junior faculty have been clearly impacted by the pandemic, associate professors may have been vulnerable as a result of the pandemic, too, as they are a group who are typically young enough to still be meeting childcare demands and are more committed to other projects and initiatives by virtue of their career progress. The Provost's Faculty Development Session: Life Beyond Promotion to Associate Professor was a first step to address this issue.

On resources for mental health and well-being, Penn has an Employee Assistance Program for faculty and staff, many programs of which can be accessed virtually.

Based on the results of the faculty survey delivered in October, prominent issues described by faculty included mental health and wellness and caregiving. The University has since established a special COVID-19 Childcare Grant offering up to \$2,000 per faculty, staff, and post-doctoral researchers whose salaries are less than \$100,000 to reimburse expenses for childcare between September 1, 2020 and May 31, 2021. A new platform, Caregiver Connections, is designed to help people in the Penn community find others in their own neighborhood to address caregiving needs.

4. Review each school's Diversity Action Plan and identify "best practices" to improve each school's plan as well as the University's plan as embodied in its 2019 Faculty Inclusion Report (and in the process

explore GSE's internal climate survey as a model for incorporating broad, internal feedback).

In connection with this charge, SCFDDE created an organizational chart that sought to answer the questions raised in the 2020 report. Some cross-cutting themes that emerged were an increased reliance on diversity search advisors (DSAs) in identifying and challenging biases in faculty searches, the formations of committees focused on issues of diversity, equity, and inclusion (DEI) across schools, and the appointment of deans or other school leaders charged with further promoting each school's mission related to DEI. Some DEI leaders had independent budget authority, while many others did not. Some school plans included measurable goals along with clear deliverables to hold themselves accountable for meeting these goals. Yet, this was the exception rather than the rule, with most reports offering few details on how the schools intend to hold themselves accountable for enacting their visions. In addition, very few schools had reporting requirements for DEI activities of individual departments. Lastly, there were not consistent stakeholders included in all schools, ranging from schools that only included standing faculty to schools that included their entire communities including standing and non-standing faculty, students and staff.

Recommendations:

- The University should develop more specific guidelines as to what elements should be included in each school's Diversity Action Plan, including a budget plan for the proposed actions. At minimum, this University-wide guidance should lay out which populations should be covered by the plan, a requirement for the inclusion of baseline data, reporting requirements, and measurable goals and deliverables for how the school will work to enact DEI. GSE's internal climate survey is one model to follow for incorporating baseline data into the plans.
- Review the implementation of Interfolio with respect to its effect on diverse faculty recruitment and retention.

5. Review the implementation of Interfolio with respect to its effect on diverse faculty recruitment and retention.

Members of our committee met with staff from the Office of the Vice Provost of Faculty to discuss Interfolio. We learned that Interfolio contains some tools that Penn is not currently using that might be helpful in enhancing diversity recruitment efforts. We hope to continue to explore these options in the upcoming academic year.

Recommendations:

- The Faculty Senate should make a formal request for additional information from the Office of the Vice Provost of Faculty with the goal being to eventually encourage schools to make use of these tools as effectively as possible.

SCFDDE Membership 2020-2021

Hydar Ali, Dental Medicine
 Antonella Cianferoni, PSOM/Pediatrics
 Nelson Flores, GSE, *Co-Chair*
 Jorge Gálvez, PSOM/Anesthesiology & Critical Care, *Co-Chair*
 Daniel Gillion, SAS/Political Science
 Carmen Guerra, PSOM/Medicine
 Junhyong Kim, SAS/Biology
 Meghan Lane-Fall, PSOM/Anesthesiology & Critical Care
 Ken Lum, Weitzman Design
 Amy Sepinwall, Wharton

Ex officio:

William Braham, Weitzman, Design, Faculty Senate Chair-Elect
 Kathleen Hall Jamieson, Annenberg, Faculty Senate Chair
 Jorge Santiago-Aviles, SEAS/ESE, PASEF non-voting member

Report for the Senate Committee on Faculty and the Administration (SCOA)

General Committee Charge

The Committee on Faculty and the Administration oversees and advises the Executive Committee on matters relating to the faculty's interface with the University's administration, including policies and procedures (e.g., the Patent Policy) relating to the University's structure, the conditions of faculty employment (such as personnel benefits), and information. In general the Committee deals with the matters covered by the following sections of the University's *Handbook for Faculty and Academic Administrators*: I.A.-D., G., H.1., I.-K., II.E., III., V., VI. (henceforth referred to as the "Faculty Handbook").

2021-2021 Specific Charges

1. Assess and evaluate ways to change University structures, practices, and biases (at the University, school, departmental, and individual levels) that perpetuate systemic racism as they apply to the committee's general charge.
2. Facilitate the changes identified in the previous charge.
3. Explore existing and alternative models for providing public safety and services to the campus community.
4. Examine the effectiveness of outsourced employee benefits and human resources services (including but not limited to WageWorks and Health Advocate) with respect to how well their processes embody Penn's values.
5. Monitor the effectiveness of University support for online teaching during the coronavirus pandemic.
6. Identify and evaluate possible approaches to responding to challenges of fulfilling childcare needs posed by faculty who deliver instruction online.

SCOA expended the bulk of its efforts on charges 3, 4, and 5. Charges 1 and 2 were addressed in the context of the other charges. Charge 6 was addressed by the Division of Human Resources and the Office of the Vice Provost for Faculty (OVFP) prior to SCOA commencing its work (<https://penntoday.upenn.edu/news/penn-announces-covid-19-childcare-grant>).

3. *Explore existing and alternative models for providing public safety and services to the campus community.*

Subcommittee members reviewed and discussed the "Report on Public Safety and Outreach Initiative", which was released on April 13, 2021 (<https://almanac.upenn.edu/uploads/media/031321-Supplement-Public-Safety-and-Outreach-Initiative-Report.pdf>). This report provides recommendations that focus on four themes, with the first being increased transparency from the Division of Public Safety (DPS). The Subcommittee agreed that this is a critically important issue. The report provided a long list of DPS documents that should be available for people within and outside of the Penn community. The Subcommittee agreed with these recommendations and also recommended that DPS provide annual reports on the gender and racial makeup of the Penn Police. It is clear that DPS and Penn Police will be more effective at maintaining a safe community if the members generally reflect the community they serve. Making this information public will likely facilitate this transformation and give confidence to the community. Additional recommendations discussed within the report included accountability of DPS, reimagining public safety and reducing policing, and reinvestment in initiatives that promote safety well-being and belonging that do not involve police.

4. *Examine the effectiveness of outsourced employee benefits and human resources services (including but not limited to WageWorks and Health Advocate) with respect to how well their processes embody Penn's values.*

Following the charge of the Senate Chairs, a SCOA sub-committee made up of Joel Bennett, Peter Kuriloff (Subcommittee Chair), and Marshall Meyer developed a survey of retiring and retired faculty to assess their experiences with WageWorks, Health Advocate, and other vendors providing outsourced services to Penn Faculty. The survey was sponsored by the Penn Association of Senior and Emeritus Faculty (PASEF) and developed and distributed in collaboration with it.

Eight-hundred and twenty-five faculty members were surveyed and 245 (or 30%) responded. This result far exceeded the response rate of the previous PASEF survey conducted in 2017, where 1432 faculty were surveyed and 177 (or 12%) responded. Among the 245 responding in 2021, 147 (or 60% of the respondents) rated one or more of the service providers and wrote narratives explaining their numerical ratings. Overall, they provided 230 narratives of various providers, with the most being devoted to WageWorks (130) and the second most to Health Advocate (69). Initial analyses revealed greater satisfaction with Health Advocate than with WageWorks and, in some instances, serious concerns about the service provided by WageWorks. Issues with WageWorks involved poor communications, lack of vendor responsiveness, problems with billing and reimbursement, and difficulties navigating the website.

The Subcommittee identified several questions for either PASEF or SCOA to pursue. Specific questions concern what is currently outsourced, what must be outsourced by law, and how Penn HR monitors and manages its vendors. More broadly, the Subcommittee recommends that the University determine how widespread the concerns registered here are, urges the University to promptly remedy identified problems, and, if those problems cannot be remedied, urges the University to implement a more responsive system for administering these benefits.

WageWorks is of greatest concern to the Subcommittee. Currently, multiple systems exist in WageWorks for the provision of different types of benefits. The systems have separate websites with separate user IDs and passwords, do not communicate with each other, and this in turn can confuse and frustrate end users. Our impression is that WageWorks' competitors are little better. Both WageWorks and WEX, Inc. have dismal customer reviews.¹ The complaints about WageWorks mirror those of Penn faculty respondents. Per their vision statements, neither company seems especially interested in benefits administration. WageWorks is now a unit of HealthEquity, whose slogan is "Connecting Health and Wealth."² And WEX seeks to position itself as a fintech company: "WEX is a global leader in financial technology solutions."³ Both WageWorks and WEX have recently been through a series of mergers and acquisitions, and two former WageWorks executives were charged by the SEC in February 2021 for misstating its 2016 results.⁴

Given these issues, the sub-committee recommends that SCOA explore Penn's outsourcing of key HR services in comparison with the practices of our peer institutions with the aim of discovering if there are alternatives that better correspond to Penn's values.

5. *Monitor the effectiveness of University support for online teaching during the coronavirus pandemic.*

A Subcommittee comprised of Ryan Baker (Education), Errol Lord (SAS/Philosophy), and Kevin M. F. Platt (SAS/Russian and East European Studies) discussed this charge and determined that the most effective approach to its fulfillment is to administer an online poll to the teaching faculty of the University. To this end, the Subcommittee devised a polling instrument, in consultation with additional faculty with relevant expertise including Alison Buttenheim (Nursing), Camille Charles (SAS/Sociology), and Pilar Gonalons-Pons (SAS/Sociology). The poll addresses pandemic impacts resulting from the switch to online educational activities on: work-life balance relating to care for family members; research, teaching and

1 <https://www.bbb.org/us/ca/san-mateo/profile/employee-benefit-plan/wageworks-inc-1116-79656>; <https://www.bbb.org/us/me/portland/profile/financial-services/wex-inc-0021-20564>.

2 <https://www2.healthequity.com/health-and-wealth/>

3 <https://ir.wexinc.com/home/default.aspx#:~:text=WEX%20Inc%20%2F%20Investors-Investor%20Relations,%2C%20Corporate%20Payments%2C%20and%20Health>.

4 <https://www.sec.gov/news/press-release/2021-23>

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mentoring activities; incidence of discriminatory behaviors; concerns regarding prospects for continued employment; intellectual property, and other matters. As of this writing, we are finalizing the addition of additional questions relating to charge 4 (above) to this poll. We have requested approval for administration of the poll to both standing faculty and adjunct faculty and expect to initiate data collection in the early summer.

Proposed Charges for SCOA in 2021-2022

1. Analyze and assess data derived from polling efforts in 2020-2021 relating to the effectiveness of university support for online teaching during the pandemic.
2. Review and comment on any changes at DPS as a result of the Report on Public Safety and Outreach Initiative released in April 2021.

SCOA Membership 2020-2021

Ryan Baker, Education
Joel Bennett, PSOM/Medicine
Peter Kuriloff, Education
Errol Lord, SAS/Philosophy
Vera Krymskaya, PSOM/Medicine, *Chair*
Steven Messé, PSOM/Neurology
Kevin M. F. Platt, SAS/Russian & East European Studies
Erica Reineke, Veterinary Medicine

Ex-officio members:

William Braham, Weitzman Design, Faculty Senate Chair-Elect
Kathleen Hall Jamieson, Annenberg, Faculty Senate Chair
Marshall Meyer, Wharton, PASEF non-voting member

Report of the Senate Committee on Faculty and the Academic Mission (SCOF)

General Committee Charge

The committee oversees and advises the Senate Executive Committee (SEC) on matters relating to the University's policies and procedures concerning the academic mission, including the structure of the academic staff, the tenure system, faculty appointments and promotions, faculty research, and faculty governance. In general, the committee deals with the matters covered by the following sections of the University's Handbook for Faculty and Academic Administrators: I.E.-F., I.H.2., II.A.-D.

2020-2021 Specific Charges

1. Assess and evaluate ways to change University structures, practices, and biases (at the University, school, departmental, and individual levels) that perpetuate systemic racism as they apply to the committee's general charge.
2. Facilitate the changes identified in the previous charge.
3. Review and comment on the level and quality of departmental, school and University support for faculty to ensure that the best possible online education can be delivered during the COVID pandemic.
4. Develop best practices for decision making across schools, including for hiring and promotion, with emphasis on inclusivity across ranks and tracks.
5. Identify voting practices across departments and schools to determine who votes on what issues and why.
6. Review voting practices to ensure that those practices cannot be used to discriminate against junior faculty.
7. Monitor the extent to which departments and schools are articulating standards of engaged scholarship.
8. Recommend ways in which broader impacts of engaged scholarship are recognized and rewarded in the promotion and compensation process. Collect best practices for setting up guidelines for evaluating faculty activities.

Recommendation Highlights

1. Schools should develop professional growth opportunities for non-standing faculty.
 - a. Faculty in these tracks do not feel appreciated and integrated in department life and do not have a voice in important decisions related to their activities.
 - b. Expansion of voting rights to non-standing faculty would not alone address their challenges.
 - c. Deans, department chairs, and senior faculty may have too much influence on how non-standing faculty would vote, given their vulnerable positions as at-will employees of the schools.
2. Use faculty satisfaction survey results to inform actions.
 - a. School-level results satisfaction surveys should be shared with all faculty during school-wide faculty meetings, and top priorities for improvement should be articulated by school leadership.
 - b. The pandemic may exacerbate the lack of sense of belonging for faculty.

3. Clearly enunciate voting practices.

- a. Ensure uniform application of voting practices within each area (department, school, etc.).
- b. Ensure that conscious decisions approved by faculty are made on occasions when multiple options are possible.
- c. Set explicit guidelines for faculty inclusion on search committees.
- d. The Office of the Provost should provide training for new department chairs on decision-making processes and offer refresher sessions every three years. Content should be informed by best practices in decision-making.

Activity Highlights

The committee discussed the need to have meaningful representation and inclusion in decision making for faculty across all tracks. A special concern has been the non-standing faculty tracks (i.e., the associated faculty and academic support staff). Faculty in these tracks are integral to the University's teaching and research missions and should have ways to meaningfully participate in decision-making and to advocate for their interests.

While analyzing data available to SCOF on issues raised by non-standing faculty in recent years, we identified several areas of dissatisfaction for that group compared to standing faculty. However, a disturbingly large portion of standing faculty also report dissatisfaction regarding their ability to participate in decision-making, to fit well in informal faculty networks, and to receive recognition commensurate with their achievements.

We surveyed department chairs to understand variations in decision-making practices. Some departments do not vote anonymously, which may serve to influence faculty to vote against their preferences. Department chairs have authority to make a wide range of decisions without consultation with faculty. Most chairs report that they consult with faculty when making decisions, but who is included in the consultations is not well defined. We recommend that training be provided for all incoming chairs on best practices in decision-making to promote diversity, equity, and inclusion.

Identifying issues of central faculty concern surrounding the role and disposition of academic support staff and associated faculty

Discussion of issues related to academic support staff and associated faculty have been part of SCOF activity each year in the past decade. SCOF reviews each school's requests to hire in faculty tracks it was not previously approved to hire within, to raise caps on sizes in these tracks relative to standing faculty, and to change the rules for these tracks, usually to enhance the possibility of retaining faculty in these tracks. Though SCOF has not reviewed any specific proposals, the committee is anecdotally aware of some interest in requesting changes in voting privileges for faculty in some of these tracks.

Focus groups convened by the Faculty Senate (pre-pandemic) and studies at other universities have documented that faculty in these tracks

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do not feel appreciated and integrated in department life and do not have a voice in important decisions related to their activities.

Given that across the University these tracks are growing in size and that faculty in these tracks are integral to the education and research missions of the University, we urge schools to develop and make openly accessible clear paths for professional growth for non-standing faculty. Each school should write explicit bylaws outlining the rights and responsibilities for all faculty, including the non-standing faculty. The Office of the Provost should keep these bylaws on file and accessible to members of the faculty.

Based on our survey of department chairs, SCOF members did not believe the expansion of voting rights to non-standing faculty would alone address their challenges. SCOF members voiced specific concerns that deans, department chairs, and senior faculty may have too much influence on how non-standing faculty would vote, given their vulnerable positions as at-will employees of the schools. In studies at other universities, teaching faculty often co-teach with tenure-track faculty. Questions remain as to the power dynamics in these co-teaching settings.

SCOF also reviewed results from the most recent faculty satisfaction survey completed in 2015. That survey included questions related to inclusion in decision-making and sense of belonging in, and recognition by, the department. The survey was administered to faculty in all Penn schools, to both standing and non-standing faculty. Results are dominated by the Perelman School of Medicine (PSOM), given its faculty size.

SCOF studied the responses for the following three statements:

- a. I have a voice in the decision making that affects the direction of my department
- b. I feel excluded from an informal network in my department
- c. I have to work harder than some of my colleagues to be perceived as a legitimate scholar

Responses to the above three statements were indicated based on a 5-point scale (Strongly disagree, Disagree, Neither disagree or agree, Agree, Strongly agree), with larger value indicating higher satisfaction.

For statement (a), there is a large and significant difference between standing faculty (mean 3.63) and non-standing faculty (mean 3.15). Of the standing faculty, 62% said they agree or strongly agree with statement (a), compared to just 43% for the non-standing faculty. On questions (b) and (c), non-standing faculty again indicated lower satisfaction, but the absolute difference was smaller.

Respondents' top five reasons to consider leaving Penn were the same for standing faculty and non-standing faculty except for one. Standing faculty considered leaving Penn to have more time to do research while non-standing faculty were interested in improving prospects for tenure. This finding suggests that providing paths for promotion and career growth should be a top priority for schools that employ full-time non-standing faculty.

SCOF members were struck by the large percentage of standing faculty who expressed low satisfaction on the above statements. For (a), 19.5% of faculty disagreed or strongly disagreed they have a voice in decision-making. For (b), 18% did not feel included in the informal network. For (c), 28% felt they have to work harder to get equal recognition.

The feeling of not being included in the informal network of the department is likely to worsen because of pandemic-enforced isolation, when established connections are likely to continue and strengthen outside of online faculty meetings but developing new connections would be harder. Deans and department chairs must develop explicit strategies for mitigating these problems.

Gender and racial differences in inclusion, decision-making and recognition

A concern was raised during a Senate Executive Committee (SEC) meeting that the gender and racial composition of non-standing faculty is different than that of standing faculty. If this is true, problems in this track would have a disproportionate impact on women and minorities.

The 2015 faculty satisfaction survey shows that there are more women in the non-standing faculty tracks (42%) compared to standing faculty (32%).

In terms of race, there were slightly fewer white faculty in non-standing faculty tracks (74%) compared to standing faculty (77%).

In group comparisons for standing faculty across gender, race, and sexual orientation status, only Asian faculty as a group expressed lower satisfaction on their ability to contribute to decision-making (mean 3.43 versus 3.66, with non-Hispanic white faculty as the comparison group). The mean for Hispanic faculty is 3.77, greater than that for the non-Hispanic white group. The mean for non-Hispanic Black faculty is 3.59.

Feeling included in decision-making varies by rank, with mean satisfaction of 3.79 for full professors, 3.53 for associate professors, and 3.43 for assistant professors.

Black, Hispanic, and Asian faculty reported feeling less included in informal networks and having to work harder to gain recognition.

Inclusion in decision-making is most problematic for Asian faculty and for junior faculty.

SCOF urges the Provost, deans, and department chairs to use results from faculty satisfaction surveys to identify concerns and develop and publish actionable plans to address these concerns. We are particularly concerned that the ongoing pandemic may exacerbate the lack of sense of belonging for faculty. Schools should develop specific plans for improving their voting and decision-making practices. School-level results satisfaction surveys should be shared with all faculty during school-wide faculty meetings, and top priorities for improvement should be articulated by school leadership.

Problematic voting and decision-making practices

SCOF members reported anecdotally different practices for decision-making in their schools and departments. To get a better sense of the range of practices, SCOF requested that department chairs in all schools (approximately 100) complete a questionnaire. A total of 74 responses were received.

The results confirmed that there is remarkable variation across departmental practices. SCOF urges each school and department to outline their practices in their respective faculty handbooks to ensure that they are uniformly applied and that a conscious decision approved by faculty is made where multiple options are possible.

(A) Anonymous voting

Of all responding departments, 59% report using anonymous voting for important decisions such as hiring and promotion. Several report that results remain anonymous among other faculty but all voting information is available to the department chair. We are concerned about the large number of departments where voting is not anonymous. This practice puts a strain on junior faculty, who may not feel comfortable to vote their true preferences. Even for senior faculty members, these practices may stifle opinions and deliberation in decision-making.

With respect to hiring and promotion decisions, many departments do not record reasons for opposing a decision, some doing so in order to preserve anonymity. SCOF recommends that reasons for which faculty vote in opposition to the majority decision should be collected, anonymously and by a departmental non-faculty administrator, and provided to higher-level university committees, who will approve the decision. Reasons should be collected by an administrator and shared directly with the school-wide committees.

(B) Search committee practices

There is considerable variation in the factors that determine the composition of search committees. The most common factors indicated were: maximizing inclusion in decision-making; area fit with hiring priorities; ensuring representation of various constituencies; continuity with prior searches; and seniority.

In 58% of responding departments, search committee members record their independent opinions before the chair or advocate makes a case for or against a decision. Conversely, 20% of departments do not have such a practice. The remaining 22% use other approaches to decision-making.

Only two responding departments indicated that they use specially appointed "devil's advocates" whose role is to challenge search committee choices.

SCOF recommends that departments should set explicit guidelines for inclusion on search committees and record the frequency of faculty par-

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ticipation in this type of decision-making. When choosing candidates to invite for interviews, committee members should identify the factors that would influence those decisions, record them, and evaluate all candidates using the same rubric. At least three independent opinions should be recorded for each candidate before committee discussion, in order to avoid undue influence of an individual's framing (positive or negative) to affect the collective decision.

Similarly, faculty feedback should be collected. Departments should record the percentage of faculty who do not have sufficient information to form an opinion before an open discussion, when opinion will be largely shaped by the presenter.

(C) Department chair responsibilities and training

Many department chairs have the authority to make decisions without faculty consultation. In 84% of responding departments, appointments to search committees are made by the department chair. In some departments, chairs can independently hire lecturers, make decisions about curriculum and teaching assignments, and decide who should be invited to department seminars.

The Office of the Provost should provide training for new department chairs on decision-making processes and offer refresher sessions every three years. Content should be informed by best practices in decision-making.

Use and Usefulness of Student Evaluations

SCOF discussed how teaching evaluations are used in different schools and departments. Anecdotally, in some departments, evaluations are used for promotion but have no consequences for senior faculty. In addition to the variation in evaluation metrics by size and type of course (required versus not), evaluations tend to vary by the degree to which the topic allows "teaching to the test." Also anecdotally, some schools use teaching evaluations to inform decisions about curriculum.

SCOF members expressed concern about the lack of consistent studies of learning outcomes. For example, students of foreign languages were formerly evaluated first according to their progress as measured by carefully constructed tests administered uniformly across all course sections

(the so-called "proficiency-requirement"), and only then assigned traditional grades. The implementation of that system in the 1980s required the establishment of a separate category of instructor, the "Lecturer in Foreign Languages." While that specific category of instructor still exists in SAS, the student evaluation system that made the category necessary was expensive and was eventually abandoned.

SCOF members agree that teaching support, including assignment of both teaching assistants and of lecturers who "co-teach" courses, should be fairly distributed.

SAS representatives to SCOF reported the most constructive uses of teaching evaluations. Low-rated evaluations are used to inform the provision of resources and guidance for junior faculty regarding class preparation and student expectations. Evaluations are not used in punitive ways (e.g., to delay or prevent promotions).

SCOF intends to continue its assessment of course evaluations in the next academic year.

Respectfully submitted,

Ani Nenkova, associate professor of computer and information science, on behalf of the SCOF Membership 2020-2021

SCOF Membership 2020-2021

Ariana Chao, Nursing
Eric Clemons, Wharton
Chenoa Flippen, SAS/Sociology
Ani Nenkova, SEAS/CIS, *chair*
Rebecca Peebles, PSOM/Pediatrics
Alexander Reiter, Veterinary Medicine
Bruce Shenker, Dental Medicine
Julia Ticona, Annenberg

Ex Officio Members:

Roger Allen, SAS/Near Eastern Languages & Civilizations, PASEF Representative
William Braham, Weitzman Design, Faculty Senate Chair-Elect
Kathleen Hall Jamieson, Annenberg, Senate Chair

Report of the Faculty Senate Grievance Commission 2021

The Faculty Senate Grievance Commission of the University of Pennsylvania is an independent committee consisting of three faculty members appointed by the Faculty Senate Executive Committee. This commission is available to members of the Penn faculty and academic support who allege they have been subject to action that is contrary to the University procedures, policies, and/or regulations, that is discriminatory, or that is arbitrary. During Academic Year 2020-2021, the commission was composed of Connie Ulrich (Nursing, Past Chair), Mitchell Berman (Law, Chair), and Santosh Venkatesh (Engineering, Chair-Elect).

At the time of last year's report, the Commission was reviewing one matter concerning non-reappointment of an untenured faculty member. That matter continued through the summer and, with the Commission's active involvement, was eventually resolved by mutually acceptable agreement among the faculty grievant, their department, and the central administration. In addition, this spring three faculty members from diverse schools and departments separately approached the Commission with preliminary inquiries regarding the Commission's jurisdiction and the nature of the grievance process. In each case, the Chair provided the information requested. In one of the cases, the Chair also spoke with the faculty member at length by phone. As of this writing, none of the three faculty members has pursued the issue further with the Commission.

—Mitchell Berman (Grievance Commission Chair, 2020-2021)

Report of the Senate Select Committee on Scholarly Communication

1. Community Foundation and Charge

In September of 2019, the Faculty Senate created a Select Committee on Scholarly Communication to deliberate and report on current issues in the publishing ecosystem and the dissemination of scholarly research. Specific issues identified included how publishers are influencing, and at times inhibiting, the production of and access to information resources and exploring the emerging opportunities to form partnerships and so-called transformative agreements with publishers. Other identified cognate issues included open access models, questions of copyright and retention of authors' rights, privacy, and, more broadly, evolving, new, and experimental models for publishing and the production and dissemination of information. Broadly disseminating within the Penn community a common understanding of the scholarly resource landscape and developments within it was to be one objective. The committee was empowered to delve into practices of the faculty in their various roles in scholarly production (e.g., as authors, editors, reviewers). In the background was the question of whether it is desirable that the Penn Libraries or the University itself should have a strategy for responding to any of these developments, and, if so, what that strategy should be. Most of these topics can be viewed primarily from the perspective of individual faculty members but there might also be the question of how, as a University, we can support broader diffusion of information resources developed and managed at Penn, not the least of these standing faculty scholarship.

This is a very large agenda. Individual topics within it are themselves large, complex, and dynamic. Our objective in this first substantive report was to give a preliminary report to the Senate on context, identifying issues, and to offer the Senate an opportunity to form and give its own views on basic issues and priorities. That is a task which necessitates a document much longer than the usual telegraphic list of activities and conclusions. (This already long document is issued without footnotes. Readers seeking further reading should write to the committee chair.) The committee chair, two senior officials from the Penn Libraries, and the director of Penn Press will be present at the Senate meeting to hear the discussion and to respond to questions about which they have relevant expertise. The Senate or the committee or both can decide after that what the appropriate next steps for the committee might be. These could certainly include either deeper probing or formulating concrete proposals regarding issues raised here and exploration of cognate issues not yet addressed. The committee certainly sees more work that could be done.

Members of the standing faculty made up most of the committee's membership list (reproduced at the end of this report). But the committee benefited greatly from a broader membership. The Penn Libraries is the part of Penn most directly confronting the issues this memorandum has identified and most obliged to make decisions in real time. Its professional staff are not only themselves deeply engaged with its issues but also in active communication with their counterparts in other universities and major research libraries. The committee has been very grateful for the participation of Jon Shaw, Associate Vice Provost and Deputy University Librarian, and Brigitte Weinstein, Associate Vice Provost for Collections and Scholarly Communications, for their assistance in organizing outside presentations and their knowledgeable and thoughtful contributions to our discussions. We also needed expert knowledge from time to time from the inside the publishing world and the very active commitment to our work of Mary Francis, the director of Penn Press, often yielded helpful perspective and deeply informed observations and feedback.

2. Meaning and Uses of Scholarly Communications and Some Brief Context

The term "scholarly communications" will be used in this report to mean reports of research results and papers, essays, and monographs circulated for comment prior to formal publication, as well as articles in conference proceedings, refereed learned journals, and monographs of the traditional sort. Whether some cognizance ought to be taken of less formal means of written and visual communication with a wider public audience is a question we leave for others on another occasion.

For the first century and more of research universities in the United States, the main vehicles for such communications were oral and in print. Seminars and conferences were often an initial setting for the conveyance of new information and ideas, but the contents of these were casually screened at most. Journals and, latterly, conference proceedings were

typically published by learned societies and monographs by university presses. Publication, particularly in journals and monograph form, usually happened only after expert referees reviewed the materials and offered comments, and the authors were obliged to respond as a condition for ultimate publication. Universities relied on publication records, sometimes supplemented with internal reviews and letters from external experts, in their internal tenure and promotion decisions, in evaluating possible lateral appointments, and in setting compensation. Scholarly communications vehicles thus played two roles: they facilitated knowledge transmission and they also served as a basis of institutional assessment and action.

Two further details are important in what follows. First, much if not all of the time and effort involved in refereeing and editorial functions required for journal publishing on this model were either simply donated as a matter of professional responsibility by the individuals in question or quietly underwritten by their universities. (Monograph refereeing was traditionally compensated with several hundred dollars' worth of other books the press published or a cash fee roughly comparable to the books' wholesale value.) That said, however, non-trivial direct costs of production and distribution remained. These were traditionally defrayed by modest submission fees and by subscription income, with members of the learned society paying a relatively modest fee and institutional subscribers paying a much more substantial one. (The counterpart for monographs was payment by the trade at wholesale prices or, if the books were purchased by members of the public directly from the publisher, the higher official retail price or perhaps a discounted version of that [e.g. a convention or author's discount] still above the wholesale price.) Second, whatever entity published the works in question typically held or insisted on being assigned the copyright. These rights were often not zealously enforced; and even when they were enforced, the fees charged for further use were generally modest. But the property rights in law were real and using them to limit access was ultimately seen as necessary for raising the funds required to defray the costs of publication.

3. Changes in the World of Publishing (both on the supply side and the demand side i.e. the OA movement)

The most obvious of these changes may be consolidation in the production of learned journals and changes in their ownership structure. Learned societies began as vehicles for communication and intellectual exchange amongst their members and their publications continue in that role. The societies are generally and understandably not-for-profit organizations. But the costs associated with publication have to be covered somehow. The fixed elements of such costs could to a substantial extent be shared across publications. A for-profit enterprise willing to assume those costs across publications could exploit the resulting economies of scale to lower its unit costs of publication and share some of the resulting economies with the societies in the form of lowered unit prices or periodic transfers of surplus to the society which could then use the funds to subsidize other worthy activities. A number of entrepreneurs, entrepreneurially-minded publishing firms, and even university presses saw the opportunity and, starting in the 1970s, began to offer to publish and distribute on contract. Many learned societies agreed to such arrangements and some even sold journals to such publishers. Consolidation among commercial journal publishers accelerated rapidly in the 1990s and the landscape is now dominated by five commercial firms and a smaller number of university presses. (Commercial firms operate on a significantly larger scale than university presses. See Table 1.) Some publishers—chiefly, though not exclusively, commercial ones—saw a further opportunity. They recognized that some fields were under-served by existing journals and in effect created new journals which they owned. Some of these were priced very aggressively, at least for institutional subscribers. Libraries might have resisted subscribing, but publishers counted on intra-institutional users to essentially force the libraries to stump up. Some figures may provide helpful context to this discussion of pricing. The Penn Libraries pay annual subscription fees as low as \$50 for society-published journals and as much as \$5,000 for a high-end non-profit-published one. The fee for a commercial journal can run as high as \$50,000 a year. The first of these may be cross-subsidized. But there is no reason to think that the expenses involved in producing the third of these are anything like ten times those involved in producing the second. Overall pricing by commercial firms

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eventually began increasing at unsustainable rates and this trend has been a source of deep concern to university librarians for some time now for reasons discussed below.

Table 1: Approximate number of learned journals currently published by the leading commercial and university presses

Springer Nature	3,000+
Elsevier	2,900+
Taylor & Francis	2,700+
Wiley	1,600+
Sage	1,000+
Oxford University Press	450+
Cambridge University Press	380+
University of Chicago	80+

Sources: Publisher websites

The coming of the World Wide Web turbocharged these developments. The publishers, who were better positioned than the learned societies to invest in information technology infrastructure, offered both electronic dissemination of current issues and an online archive. Many customers short of storage space welcomed the alternative—they could, after all, always store downloaded individual articles to which they wanted immediate access in pdf form on some local hard-drive. But all this offered opportunities to publishers which were more problematic from the perspective of institutional subscribers. The publishers began to offer subscriptions to libraries (and so to the libraries' users) of broad or tailored bundles of journals in so-called Big Deals. These were generally multi-year contracts with capped annual price increases over the life of the contract. But the caps and ex-post increases generally far exceeded predicted or actual inflation rates. It would be an exaggeration to say that institutional subscribers were obliged to take everything in the bundle if they wanted to take any of it but it is an exaggeration which captures the spirit of the bundling and especially the pricing: publishers were in this business to make money. (Elsevier's adjusted operating profit margin for both 2019 and 2020 appears to have been above 37%. The figure hasn't dropped below 30% in thirty years.)

It may be helpful to situate the preceding discussion and figures in the context of the Penn Libraries' expenditure. Penn spent 48% of its acquisition budget last fiscal year on journals. Current subscriptions accounted for 38 of the 48 and the remaining 10 went to backfile and archive expense. Of the spend on current journal subscriptions, 63% went to the Big 5 firms. Big 5 price inflation can force the Penn Libraries to confront very difficult choices.

At least one of the developments mentioned above was supported significantly from the side of the demand for publication. As European national governments began to force European university systems to compete for funding, the universities began to put new pressure on their faculty members, tenured as well as untenured, to publish their work regularly. This left faculty members scrambling for outlets. There were also pressures to have work appear in the most prominent venues. Submissions to major journals in particular increased markedly. For many journals, acceptances and publication lag times also increased. The commercial publishers often offered societies larger numbers of issues per year as part of an argument in favor of raising prices to subscribers. This seems sometimes to have created problems for the journals' editors when the larger issue counts were disproportionately larger than the increased flows of high-enough quality manuscripts coming in over the transom. Special issues on themes proposed by volunteer issue editors proliferated in a species of outsourcing paper acquisition and editing. Sometimes these Special issues were populated via open calls for papers; sometimes they were curated from start-to-finish.

A second demand-side development had deeper sources. Overseas national funding bodies comparable to the National Science Foundation and the National Institutes of Health in the United States began discussing in 2018 whether they should insist that publications supported by their funding be available to all interested parties. This was the beginning of the open access movement. In some versions of these funding body initiatives, publication in journals that were not themselves fully open access was to be prohibited. Many STEM researchers (though not all—mathematics is certainly one notable exception) are encouraged or sometimes even required to use money from their grants to support the costs of pub-

lication of their work. Since the bodies in question ultimately financed their grants with public funds, open access was an understandable position, whatever else, either on the basis of first principles (the public paid for this research and it is entitled to know what the researchers found) or on the basis of wanting to avoid padding the margins of the commercial journal publishers. Some large-scale private funders of medical research such as the Wellcome Trust and the Gates Foundation also took this position and the whole program, known as Plan S and discussed in somewhat more detail below, went into effect on January 1, 2021. But as noted above, publication, whether on a for-profit or a non-profit basis, continued to involve costs. If publication is to happen, those costs would have to be paid by someone. (The publishers put this point more obliquely, and perhaps coyly, when they responded by speaking in terms of the model's sustainability. Hedging their bets, they also began developing programs to explore other possible revenue streams to be had from their archives.)

The issues discussed in this section bear most directly on faculty members conducting research in the natural sciences and some of the social sciences and in medically-related fields (at Penn in the Perelman School of Medicine, the School of Veterinary Medicine, and the School of Dental Medicine). Journal article publication plays a more secondary role in some social sciences and, above all, in the humanities. There, the distinction of much of the work published in the marquee journals notwithstanding, the main printed vehicle is the scholarly monograph. The economics of monograph publishing have also been increasingly unfavorable in recent years. The overall picture has broadly been as follows. Sales to individuals have declined as have sales to institutions. Retail prices have been raised to maintain cost coverage. Two prominent reasons sales to individuals have decreased are the increasing feasibility of searching and even accessing monograph content digitally and the increasing precarity of faculty employment terms as more and more teaching traditionally done by tenured or tenure track faculty is done by poorly paid and poorly supported adjuncts. Libraries have generally had fixed or declining resources (at least in real terms) available to fund their overall acquisition budgets. The declines sometimes are due to strictly intra-university resource allocation decisions (or struggles) and sometimes, particularly in the case of public universities, to declining state support. Journal and Big Deal bundle subscription prices have been rising and there have been vociferous constituencies against simply cancelling subscriptions, even those which are egregiously aggressively priced and whose prices increase year after year. In a situation like this, something had to give; and so some previously generously supported activities or acquisitions have had to be less well funded. Libraries that once understood it to be their job to routinely acquire copies of all serious monographs in areas they covered now would feel obliged to be more discriminating even had the prices of monographs not in fact been rising (which they have: see below). Sometimes libraries have protected their users against the worst effects of this increased discrimination by entering into inter-library lending schemes such as Borrow-Direct (a Penn Libraries-initiated and originally essentially an intra-Ivy League consortium, now also including Chicago, Duke, Johns Hopkins, MIT, and Stanford, which provides books from other member libraries far more quickly and conveniently than traditional inter-library loan). It may be worth noting that this is an even worse development from the perspective of publishers, since the success of such programs seemed likely to have a permanent rather than a transitory effect on sales.

4. Significance of the Changes to this Point for the Standing Faculty

It is difficult to concisely assess the impact on faculty members of research universities of the increase in the number of journals. Individual subscriptions to commercially published journals are sometimes remarkably expensive; but faculty members who might want to consult them generally count on their university library or some cognate institution to maintain a subscription. It is presumably easier to find a publication venue somewhere, all else equal; and to the extent that journal contents are scanned or abstracts indexed, presumably knowledge of these papers contents diffuse effectively. It is, on the other hand, not at all clear that publication in newer and less high-status journals is as helpful in obtaining grant support or making an impression on referees or promotion and tenure committees, both situations in which some dossier reviewers may not

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be familiar with either the candidate's publications or the standards of the periodical in question.

The problems we identified above regarding journals have become much worse in recent years at less well-resourced universities, both in this country and—especially—abroad, with the aggressive subscription pricing which followed on publisher consolidation. This is apparently not a major problem in countries with university systems funded by central governments, such as the public university systems in major European countries, since they have generally been in a position to negotiate with the commercial publishers collectively and represent collectives large enough and solvent enough to be able to conduct that negotiation from a position of some strength. The general situation in the Global South and even at less well-resourced public and private institutions in the United States seems, on the other hand, to be very different.

The problems concerning scholarly monographs are even more profound. The leading presses publish fewer titles than they used to. The availability of subventions of publication costs has become an issue on a scale utterly unknown in the pre-tenure days of senior members of the standing faculty. Grants in scientific and social scientific fields often include funds to support publication. But humanities faculty members typically have smaller research budgets than faculty members elsewhere in the University and rarely have grants that might cover publication expenses on any scale. In a world in which tenure decisions are taken to be strictly meritocratic, it would be an uncomfortable state of affairs if private financial resources were necessary to get otherwise perfectly meritorious books into print and place their authors into a position in which they could even conceivably be successful tenure candidates. This could perhaps be dismissed as just an unfortunate fact of life at badly resourced institutions. It would be hard to justify an institution as resource-rich as Penn casually taking such a position.

5. Developments Canvassed, Past and Potentially Pending, Concerning Scholarly Monographs

It may be simplest to address the monograph problems first. Online publication of monographs would certainly evade some of the cost issues. But sustained efforts on the part of, e.g., a serving President of the American Historical Association, do not appear to have led to any widespread acceptance of the idea that refereed online publication of monographs is as valuable as traditional physical publication. One might, from the perspective of academic society, have hoped under the emerging circumstances for more generous university press budgets. (After all, most university presses were initiated to publish works of their university's faculty and other—in Oxford's memorable phrase—"unremunerative works.") Unfortunately, the trend is in the opposite direction. Universities with presses that make profits on any really significant scale seem anxious to spend the money (and particularly in the cases of Oxford and Cambridge, UK tax law makes giving the universities the choice to do this particularly attractive). Universities with more economically marginal presses (even, for example, wealthy Stanford) have recently been publicly casting a skeptical eye on the subsidies they have been paying out of central administration funds. It is not at all clear how to address this problem for, e.g., all assistant professors in the humanities. Closer to home, the only viable choices bearing on our own junior faculty appear to be, in effect, tacitly raising tenure standards (and perhaps biasing them in favor of junior faculty in fields with widespread external grant support and publication subsidies) or supporting all of our junior faculty by establishing some mechanism to fund any required subventions in an equitable fashion. The former seems repugnant to the values of the University. The latter would not be out of the spirit of the University's general approach to junior faculty—we have exacting standards, but we try hard to hire extraordinarily able people and then in various ways try hard to give them conditions during their assistant professorships in which they have a real chance to prove themselves. Developing a mechanism that would be effective without being wasteful would require not just resources but also careful design. If the Senate has views on this, the committee would like to know what they are. If the Senate thinks the idea of subventions worth pursuing, working on details might be a suitable future task for the committee.

6. Developments Canvassed, Past and Potentially Pending, Concerning Journals and Journal Publication

The situation concerning journals is far more difficult. The price inflation deriving from concentrated commercial ownership of journals was itself moving towards crisis. A new factor exacerbated the problem. The traditional contracts at the onset of the online age involved the university library paying and access restricted to some population connected to the university (the possibilities including faculty and staff, current students, alumni, etc.) The publishers were able to estimate likely usage and charge accordingly (at least according to their profit-maximizing lights). The coming of the web initially changed this, mainly by facilitating access to alumni physically remote to the university. But the pressures for open access upended this essentially stable situation. Publishers still wanted to be paid for access, and if that access was to involve people not already paying for it through a contract between the publisher and some institution of their own, the publishers wanted to be paid more. The old subscription arrangements would place that burden on libraries which, more or less by construction, wouldn't necessarily have any connection to the new readers. The libraries were already resource-constrained and did not foresee their Universities wanting to fund such incremental charges. If that were indeed the case, the arrangement the publishers wanted would simply be untenable.

Alternative varieties of open access, it should be said, were mooted. Platinum OA involved immediate free availability with reuse permitted and without any period of embargo. (This, of course, essentially ignored the cost issue or counted on some external benevolence, institutional or personal.) Gold OA looked like platinum but with costs to be covered through article processing charges (APCs), payable by the author(s), the institution(s) employing the author(s), or the research funders. Bronze OA involved free reading on the publisher's website. Green permitted self-archiving by the author or the funder, either on websites of their own or in an open repository. (This is essentially a samizdat version of Platinum. [It may be worth remembering that samizdat publishing was not costless. Green open access also involved someone bearing the costs.]) There were others, but this will give some sense of the variety.

Progress seems to have proceeded on two separate tracks. One took shape as the so-called "Plan S" mentioned previously. This was initially put forward by Science Europe, the association representing the interests of major European public research performing and funding organizations, and later joined by the Wellcome Trust and the Gates Foundation. This demanded a rapid transition to completely open access and forbade publication of funded research in non-OA journals. It created a great deal of controversy, not least from those who had their own reasons to prioritize publication in prestigious non-OA journals and those who performed their research in teams that were only partly funded by the signatories to Plan S. The plan also gave great pause to learned society publishers, who did not feel they could shift the costs to their members. It caused some societies to consider selling their publishing assets.

The other track ran through contracts between publishers and individual libraries, library systems, and consortia. Major journal publishers have offered a variety of contracts of their own design in response to these research funder pressures. The publishers' proposals were generically known as "transformative deals," the transformation being the shift away from subscription-based access towards some variant of full open access. They all involve the publishers having less control over who reads what they publish and less ability to charge readers, or the institutions representing them, for access. The transformative agreements therefore, unsurprisingly, all involve finding someone else to pay: they are, in essence, contracts focused on paying to publish rather than paying to read. Since the initiative for open access might come from the authors of only some papers, one form of these agreements, known as "read-and-publish," involves continuing subscription fees but allowing payments for open access to specific articles. The other common form is known as "publish-and-read" and in this, all the fees were for publication, i.e., APCs. Reading access itself was to be unlimited.

There is intricate detail to these agreements, all of it subject to the commercial calculations of the publishers. Should all the publisher's journals be on this basis or only some? Should any journals be allowed themselves

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to be mixed mode, with pay-to-publish articles being freely available and the others not? Should there be some obligation for the full terms of the contract to be disclosed publicly? The libraries, in effect representing the universities and all of the universities' constituencies, of course wanted in both cases to avoid an outcome in which the new-form agreements resulted in an increased flow of fees to the publishers. (Sometimes they seem to have attained this, sometimes not. It is also worth noting that if the library party to an agreement is a consortium, the costs of "publish-and-read" might fall on institutions whose faculty do more research disproportionately to readership.) There is also the question, generally one for the universities rather than the publishers, of how the APC fees are to be funded if the authors cannot charge them directly to research funds (as would generally be the case, as previously noted, in the humanities). Should the money come from the library's budget as such? Ought it to come from the individual faculty members? Their departments or division of the university? The university proper? Idiosyncratic features of the structure of individual universities' finances and budgeting might have significant influence on what seems to be the most appropriate scheme. This is a second topic which might be suitably assigned to a future committee task list.

A larger question also arises. These transformational agreements are designed to be transitional, a sort of stopgap until a fully open access model is in place. If Penn comes to have views about the form of open access best suited to its collective values and to the variety and composition of its faculty, how might it best advance those views? The University of California system, as we will see below, is large enough to negotiate effectively with the commercial publishers. Penn, acting alone, is not, though we, for example, contract for our Elsevier journals through participation in the NERL (NorthEast Research Libraries) consortium, whose membership includes most of the largest research libraries in North America (Harvard, Yale, Columbia, Princeton, Penn, Stanford, etc.). What sort of attitude would the Senate like the University to have regarding collective action in these matters? And should collective action be confined to collective action negotiating with the present set of publishers? Would the Senate like to see exploration of the possibility of universities or some other not-for-profit entity or entities becoming publishers of peer-reviewed learned journals?

7. Stop Press: The UC System's Deal with Elsevier

For most of the committee's lifetime, it was not only unclear how the journal-funding uncertainty would resolve but was also unclear with drama. These events have recently resolved a bit and this review will summarize the developments.

The University of California system represents a very large account for leading commercial publishers. It also estimates that it generates nearly ten percent of all U.S. research output. In part for that reason, it was particularly well-situated to consider whether the pricing power of the big publishers might be in decline. (One reason this might have been in de-

cline is yet another consequence of the digital world: the various forms of pre-prints circulate much more easily and quickly. In some fields, once the refereeing is done and the paper accepted, the actual publication chiefly matters for the details of formal citation.) UC decided to try to take more control of the structure and cost of its deal with the Dutch giant publisher Elsevier, one of the world's largest scientific publishers. It sought to replace its subscription deal with a publish-and-read contract and had specific price goals in mind. Elsevier was unwilling to agree and on February 28, 2019, UC announced that it would terminate its subscriptions to Elsevier journals. It had alternative third-party means of obtaining articles piecemeal from Elsevier journals, at a reasonable cost, at least in the short run. This seemed unlikely to be the end of the relationship but it certainly was a powerful statement to both Elsevier—a number of senior executives left the firm—and other universities and possible consortia.

Negotiations apparently continued. On March 16, 2021, UC announced that it had negotiated a four-year publish-and-read agreement with Elsevier, integrating reading access and open access publishing. The essential element of the open access part is that all research with a UC lead author published in any Elsevier OA or hybrid journal will be open access by default. University researchers will have access to all Elsevier journals. UC takes the view that this will both support its research activities and make its outputs globally accessible. The agreement is very complex, but to give some sense of the structure, the libraries will pay a fee for the open access, capped at \$10.7 million for the first year and growing at 2.6% per year. (The reading access rights are to be gratis.) Approximately 4,400 articles are expected in the first year. The \$10.7 million is to be funded via APCs. The APCs for the first year for the anticipated number of articles would be a maximum of \$2,449. UC Libraries will pay the first \$1,000 of this. The expectation is that the research funds of the author or authors will cover the rest but if this is infeasible, the UC Libraries will cover the rest. UC seems pleased with the agreement in terms of both dissemination objectives and overall spend. Elsevier is doubtless relieved to get its revenue stream back. It is surely also pleased that UC will pay for open access to UC articles without obliging Elsevier to lower subscription costs to third parties to recognize the UC subsidy—perhaps a small matter now but a potentially large one if the model is copied widely. It will be stuck with the agreement as a model it can expect to be a basis for negotiations with other generally smaller actors, but it seems to have concluded that this is a model it can live with. (To put a tentative number to one part of a Penn comparison, a rough estimate of the number of Elsevier articles with Penn authors these days would be around 2,000.)

8. Possible Interim Actions at Penn

The issues described above have been the subject of widespread discussion across American academia and in the research university library community. For example, the Faculty Senate of the UC System eventually produced the following fairly elaborate "Declaration of Rights and Prin-

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ciples to Transform Scholarly Communication” statement of principles it would like to see in 2018 <https://senate.universityofcalifornia.edu/files/committees/ucolasc/scholcommprinciples-20180425.pdf>.

The Iowa State University Library produced the following in 2019: <https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1000&context=coss-reports>

The need for concise decisions is not yet upon us but probably will be within the next two to three years. Forewarned is forearmed and since some of the issues are ultimately decisions for the University administration, it would probably be wise for the Senate to work out its own views well in advance of needing to speak or be left out of the decision-making.

It might also be observed that the Penn Libraries has to deal with many of these issues on a day-to-day basis. It is also responsible for negotiating contract terms with publishers and the contracts have their own schedules. Whatever the process and pace involving College Hall decision-making turns out to be, it might be helpful to provide the Libraries with a general framework of principles on an interim basis. We would welcome the input of the Senate on the wisdom of developing such a framework. One possible starting point for discussion—though no more than that—might be the following:

I. Prioritize non-profit and learned society and academy-led scholarly publishers over for-profit and commercial publishers.

II. Prioritize publishing models that allow equitable participation in the dissemination of scholarly research.

III. Support sustainable broad, equitable, and open access to scholarly research.

Note that there are concrete steps that both members of the standing faculty and Libraries could take to implement principles like these. (This is an important point: if the ideas behind open access seem important or even if change seems to be coming regardless of what we feel, action on the part of the individual faculty members as well as University institutions like Penn Libraries may be in order.) Faculty authors could choose to publish with a non-profit, society- or academy-led publisher instead of a commercial one. Libraries staff could aid authors in identifying non-profit venues for publication. Faculty editors could transition society and other publications out from under commercial publishers. Libraries staff members could assist such editors in transitioning from commercial publishers in identifying community-based infrastructure and funding. Penn Libraries could increasingly finance society—and academy-led publications over commercial ones. Promotion and tenure committees could, as a matter of policy, affirmatively recognize the supplementary advantage of publication with non-profit publishers. Faculty authors could choose to publish their research open access. Libraries staff members could aid authors in identifying open access options for publication. Penn Libraries could finance open access publications in accordance with the three principles.

All of this might come about, of course, in a completely decentralized

way. If such principles meet with general approval, on the other hand, there might also be a role for leadership from College Hall. Another possible future task for the committee might be to explore and assess the merits of such an initiative and possible details, all in the context of the particulars of the Penn faculty and student community and the situation of the University.

9. Conclusion

We hope this report gives the Senate at least a preliminary sense of the scope of the problems the evolving scholarly communications landscape poses. We hope that the time allocated for discussion of it and any subsequent discussions or correspondence that may occur will elicit views on what aspects of them the Senate would like to see further explored and whether positive proposals would be in order in some future report. Finally, concerning matters on which decisions have to be made on an ongoing basis, we hope that the Senate can give the Penn Libraries its thoughts concerning the framework in Section 8.

Members of the Senate Select Committee on Scholarly Communication 2020-2021

William Braham (Faculty Senate Chair-Elect and Professor of Architecture)

Jerry Jacobs (Professor of Sociology)

Kathleen Hall Jamieson (Faculty Senate Chair and Elizabeth Ware Packard Professor of Communication)

Lewis Kaplan (Professor of Surgery at the Hospital of the University of Pennsylvania and the Veterans Administration Medical Center)

Steven Kimbrough (Faculty Senate Past Chair and Professor of Operations, Information and Decisions)

Eileen Lake (Professor of Nursing)

Rebecka Peebles (Assistant Professor of Pediatrics at the Children's Hospital of Philadelphia)

Kathy Peiss (Roy F. and Jeannette P. Nichols Professor of American History)

Daniel Raff (Associate Professor of Management), Chair

Beth Simmons (Andrea Mitchell University Professor of Law and Political Science)

Non-Voting Members:

Mary Francis (Director of the University of Pennsylvania Press)

Aishwarya Pawar (GAPSA representative, Cell and Molecular Biology Ph.D. candidate)

Jon Shaw (Associate Vice Provost and Deputy University Librarian)

Brigitte Weinstein (Associate Vice Provost for Collections and Scholarly Communication)

Report of the Senate Select Committee on the Institutional Response to the Climate Emergency (CIRCE)

Committee Charge

CIRCE was established in December 2019 for the purpose of facilitating discussion of all aspects of global warming and climate change as they pertain to faculty at the University of Pennsylvania. Specifically, CIRCE will consider the following categories of faculty interest as they pertain to the climate emergency at Penn:

1. Education, including classroom instruction as well as extra-curricular educational activities
2. Research, including as well scholarship, practical expertise, and artistic expression
3. Operations of the University, including decarbonization, energy efficiency, and sustainability
4. Flourishing of community, both within Penn, and between Penn and its regional and international stakeholders

Sub-Committee Organization

It was recognized in its formulation that the charges to CIRCE could not be completed successfully by a single committee. As a result, four sub-committees were formed, specifically: Operations; Research & Education; Community & Policy; and University of Pennsylvania Health System (CIRCE:UPHS). Partly as a result of the pandemic, some of the committees were more active than others.

Operations

The CIRCE Operations sub-committee held 4 meetings throughout the academic meeting. The committee was charged with reviewing several issues including review of the University's responses to the committee's 2020 recommendations regarding Climate and Sustainability Action Plan (CSAP) 3.0, develop and enhance the University of Pennsylvania Health System Climate Emergency and Sustainability Group, explore and advise the University regarding plans to offset remaining carbon emissions beyond those addressed by Solar Power Purchase agreement to meet the 100 x 42 goal, and explore and advise the University regarding plans to offset remaining carbon emissions beyond those addressed by Solar Power Purchase agreement to meet the 100 x 42 goal including air travel. The operations sub-committee also discussed issue concerning Green Banks, sustainability issues related to universities' food and catering services, and met with potential local offset groups that the University was considering in developing its Air Travel Offset program.

University Responses to CIRCE's Operations Sub-Committee's Recommendations Concerning CSAP 3.0

1. The operations sub-committee reviewed the University's responses to the committee's 2020 recommendations regarding the Climate and Sustainability Action Plan (CSAP) 3.0, CIRCE had requested that the University explain the sources of campus utilities, and the role played by the new Solar Power Purchase Agreement for electricity and the purchase of summer steam for chilling. All energy use, emissions, and offsets should be fully reported. The University reported that the Power Purchase Agreement was signed in spring 2020. Eleven enhanced recommissioning studies of buildings are complete and awaiting funding. A thirty-seven percent reduction in overall emissions has been achieved since 2009, and 75% of campus electricity demand will be offset by the Power Purchase Agreement. Prof. Braham, whose research group performs the carbon accounting for ESAC, described the "waterfall chart" that shows how Penn is working towards its carbon neutrality goal. Two big reductions in emissions are projected to be achieved through the power purchase agreement and the offsetting of air travel. Prof. Braham noted that many other peer institutions do not address air travel as part of their carbon emissions. The operations sub-committee is pleased with progress being made on carbon neutrality but feels additional measures will need to be taken to achieve the University's commitment to carbon neutrality by 2042. This will require a commitment and development of Carbon Action Plans from individual schools. In addition, CAP 1.0 declared that the plan would be extended to all of the University's facilities, so CIRCE recommends that action plans be developed for the Health System and for the non-campus real estate holdings of the University.

2. CIRCE's previous recommendation that the University consider a solar installation within the main campus to make the achievement of the new Solar Power Purchase Agreement more visible was not addressed in CSAP 3.0 update. The sub-committee feels strongly that solar installa-

tions should occur on the main campus to demonstrate Penn's commitment to addressing the climate emergency and its commitment to carbon neutrality.

3. CIRCE recommended that the CSAP should explain the energy and carbon performance standards for all new buildings and all renovations, benchmarking them against national standards. The University responded that under physical environment guidelines, 27 buildings are LEED certified, a pilot guideline is being developed to ensure that glass buildings are "bird-friendly," and the development of an Ecological Landscape Stewardship Plan (ELSP) is underway. On a question of whether LEED Silver certifications (which are not carbon neutral) meet Penn's 2042 neutrality goals, the University suggested that LEED has continued to raise its requirements to meet standards over time. Penn did not want to add a significant premium to construction costs, which are already very high in the City of Philadelphia. The Vagelos building costs approximately \$1,500 per square foot for construction. The buildings are not the only element contributing to Penn's carbon footprint, but the University agreed to take a second look at the standards and reconsider undertaking efforts to meet higher standards given the existing funding limitations.

4. CIRCE requested that the updated CSAP should explain the carbon emissions associated with each form of waste, especially the trade-offs between landfill and waste to energy. The University responded that under waste and recycling, Penn has achieved a 23% solid waste reduction, which will be improved in the current year because of the depopulated campus. The sub-committee feels the University's progress on this issue has been adequate.

Carbon Offsets: Air Travel Working Group, Travel Sustainability Fund, Climate Offset Fund, Local Carbon Offsets, and Green Banks

1. The operations sub-committee met with members of an Air Travel Working Group and received updates regarding developing optimal solutions for achieving carbon neutrality for air travel at Penn. A formal plan to address Penn's carbon footprint regarding air travel has been developed and was implemented on July 1, 2021 (<https://cms.business-services.upenn.edu/penntravel/green-travel.html>). The sub-committee continues to receive additional updates on this issue from Office of Sustainability, including the progress being made from establishment of a Travel Sustainability Fund that will invest in best-fit sustainability projects to fully offset the carbon impacts of the University's air travel. The Travel Sustainability Fund is supported by a Climate Impact Offset charge (CLIO), which is applied to air travel, whether booked or expensed through Concur Expense. These charges will be used to generate funding to offset Penn's airfare carbon emissions through purchased offsets given today's market. The CLIO is subject to change as offset markets shift and other avenues for offsetting are explored. It is the hope of the committee that these funds will be used for local carbon offset projects that will impact Penn's commitment to its community and social justice. The local offset project is being developed in association with the Netter Center. The plan also contains recommendations regarding how individuals can make an impact on their air travel carbon footprint. The committee met with the Philadelphia Energy Authority regarding the potential to develop local carbon offsets in association with them and to discuss their Green Bank program. The development of a University-associated green bank could enable faculty and staff to fund personal initiatives to lower their individual carbon footprint such as solar installations or weatherization. The sub-committee will continue to explore the potential of green banks in future meetings. The sub-committee is pleased with the progress the University has made on these issues related to carbon offsets.

Sustainability and The University of Pennsylvania's Dining and Catering Services

1. The operations committee met with Pam Lampitt of Business Services and was given updates on the progress of Penn Dining regarding sustainability and recycling. Under purchasing, Penn Dining has achieved 20% of its purchasing from locally sourced vendors, a new catering website that includes sustainability criteria in its vendor ranking, and new contracts for managed print services. It has also made significant progress on food donations (4.19 tons to Philabundance in 2020), composting, and novel recycling techniques in its facilities (<https://university-of-pennsylvania.cafefonappetit.com/penn-wellness/#sustainability>).

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Business Services has made significant impact in taking single use plastic water bottles out its waste stream with its Green2Go program and creation of water filling stations. Plastic water bottle sales have been reduced from 12% of total sales to 8% since 2012. This still represented about 148,000 single use bottles being sold on campus in 2019. The sub-committee was pleased with the progress made by Business Service in sustainability and recycling in regards to Penn Dining but CIRCE will recommend that the sale of single use plastic bottles be eliminated from campus.

Health System

1. The operations sub-committee received updates throughout the year from CIRCE members associated with the Health System's climate and sustainability movement. The sub-committee did make progress in this charge including establishing a relationship with faculty from the Children's Hospital of Pennsylvania and the formation of a formal sub-committee of CIRCE to address issues related to the University's Health System. The sub-committee will recommend that the University Health System develop and implement CSAP to ensure the University's goal of carbon neutrality.

The CIRCE operations sub-committee makes the following recommendations:

1. Extend the Carbon and Sustainability Action Plan (CSAP 3.0) to include the University of Pennsylvania Hospital system, Children's Hospital of Philadelphia and the University's real estate holdings
2. Require each of the University's schools and centers to develop individual carbon action plans, aligned with the goals of CSAP 3.0 with reporting of their progress toward the goal of carbon neutrality by 2042
3. Develop on-campus solar photovoltaic installations to signal the University commitment to climate change
4. Eliminate the sale of single use plastic bottles by University of Pennsylvania facilities, catering, and food services.

Research & Education Sub-committee Membership 2020-2021

Herman Beavers (English/Africana Studies)
Bill Braham (Design), *Senate Chair-Elect, CIRCE Chair*
Daniel Aldana Cohen (SAS/Sociology)
Caroline Cox (PSOM/OBGYN)
Thomas Daniels (Design)
Jane Dmochowski (SAS/EES, Senior Lecturer), *non-voting member*
William Fleming (The McHarg Center), *non-voting member*
Kathleen Hall Jamieson (Annenberg), *Senate Chair*
Andrew Huemmler (SEAS/CBE, Senior Lecturer), *non-voting member*
Steve Kimbrough (Wharton), *Senate Past-Chair*
Howard Kunreuther (Wharton)
Irina Marinov (SAS/EES)
Eric Stach (SEAS/MSE)
Michael Weisberg (SAS/Philosophy), *Sub-committee Chair*

CIRCE:UPHS Sub-committee Membership 2020-2021

Caroline Cox (PSOM/OBGYN)
Kathleen Fink (UPHS), *non-voting member*
Erum Hartung (CHOP/Pediatrics)
Farah Hussain (PSOM/Clinical Medicine)
Kirstin Knox (PSOM/Clinical Medicine)
Michael McGarvey (Penn Medicine/Neurology)
Anne Reilly (PSOM/Pediatrics)
Misha Rosenbach (PSOM/Dermatology), *Sub-committee Co-Chair*
Hari Shankar (Penn Medicine/Pulmonary), *non-voting member, Sub-committee Co-Chair*
Michelle Walker (Penn Medicine/Endocrinology), *non-voting member*
Jan-Michael Klapproth (PSOM/Clinical Medicine)

Policy and Community

Climate Week at Penn has codified a durable leadership structure that includes CIRCE. The Climate Week core planning team consists of faculty, staff, and students: one member from CIRCE, the director of the Penn Office of Sustainability, the senior director of the Environmental Innovations Initiative (EII), and two leaders from the Student Sustainability Association of Penn (SSAP).

Together with the Kleinman Center for Energy Policy, the CIRCE sub-committee on policy and community will co-organize a webinar on all aspects of e-mobility to help inform decisions by Penn faculty, staff, and administration.

In response to the shift to the single TIAA platform for Penn faculty and staff retirement investments, CIRCE continues to engage the administration and TIAA with the goal of providing clear pathways for fossil free and green investing. The short-term goal is to produce a video or a webinar that will help faculty and staff navigate the brokerage option. The ultimate goal is to have a reliable green choice option similar to the current social choice option on the basic menu.

CIRCE and Kleinman produced a short explainer video to help faculty and staff navigate the PA PowerSwitch website which offers Pennsylvania residents the opportunity to choose renewable electricity. <https://www.youtube.com/watch?v=8dQQdNVwu-U&t=28s>.

CIRCE conducted a webinar called, How Penn Faculty and Staff Can Reduce Their Carbon Footprint at Home, during the 2020 Climate Week at Penn. You can watch it here: <https://climateweek.provost.upenn.edu/event/how-penn-faculty-and-staff-can-reduce-their-carbon-footprint-home-0>.

Community and Policy Sub-committee Membership 2020-21

Anne Berg (History)
Bill Braham (Design), *Senate Chair-Elect, CIRCE Chair*
De'Broski Herbert (Penn Vet)
Andrew Huemmler (SEAS/CBE, Senior Lecturer), *non-voting member*
Kathleen Hall Jamieson (Annenberg), *Senate Chair*
Steve Kimbrough (Wharton), *Senate Past-Chair*
Michael McGarvey (Penn Medicine/Neurology)
Eric Orts (Wharton)
Benjamin Pierce (SEAS/CIS)
Simon Richter (SAS/German), *Sub-committee Chair*
Akira Drake Rodriguez (Design)
Bethany Wiggan (SAS/German)

Operations Sub-committee Membership 2020-21

Bill Braham (Design), *Senate Chair-Elect, CIRCE Chair*
Alison Buttenheim (Nursing)
Jared Farmer (SAS/History)
Andrew Huemmler (SEAS/CBE, Senior Lecturer), *non-voting member*
Kathleen Hall Jamieson (Annenberg), *Senate Chair*
Steve Kimbrough (Wharton), *Senate Past-Chair*
Kirstin Knox (PSOM/Clinical Medicine)
Michael McGarvey (Penn Medicine/Neurology), *Sub-committee Chair*
Howard Neukrug (SAS/EES), *non-voting member*
Anne Reilly (PSOM/Pediatrics)
Misha Rosenbach (PSOM/Dermatology)
Hari Shankar (Penn Medicine/Pulmonary), *non-voting member*
Franca Trubiano (Design)
Michelle Walker (Penn Medicine/Endocrinology), *non-voting member*

SCESF Report on the Economic Status of the Faculty

Fiscal Year 2020: July 1, 2019 through June 30, 2020

The Senate Committee on the Economic Status of the Faculty (SCESF) is charged by the “Rules of the Faculty Senate” to:

- Gather and organize data on faculty salaries and benefits;
- Issue an annual report on the economic status of the faculty; and
- Represent the faculty in the determination of University policy on salary issues.

Because of extenuating circumstances related to the COVID-19 pandemic, SCESF did not submit a report this year. In keeping with practices of previous years, SCESF offers below the publicly viewable tables provided to the committee by the Provost’s Office and prepared by the Office of Institutional Research & Analysis.

Table 1
Average academic base salary percentage increases of continuing Penn standing faculty members by rank in comparison with the Consumer Price Index (CPI) and Penn Budget Guidelines

Group/Condition/Metric		FY 2019-2020
Professor	Mean	4.3%
	Median	3.0%
Associate Professor	Mean	4.8%
	Median	3.0%
Assistant Professor	Mean	3.6%
	Median	3.0%
All Three Ranks	Mean	4.3%
	Median	3.0%
U.S. City Average CPI Growth	Mean	0.7%
Phil. CPI Growth	Mean	0.1%
Budget Guidelines	Mean	3.0%

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

FY 2019-2020 CPI growth for the U.S. and for Philadelphia are based on a change in CPI from June 2019 to June 2020.

Table 2
Percentage of continuing standing faculty awarded salary increase
percentages that exceeded the percentage growth in the consumer
price index (CPI) for Philadelphia

Schools and Disciplinary Areas	Percentage FY 2019 to 2020
Annenberg	100.0%
Dental Medicine	100.0%
Engineering & Applied Science	97.4%
Graduate Education	100.0%
Humanities (A&S)	100.0%
Law	100.0%
Natural Science (A&S)	99.4%
Nursing	100.0%
Perelman-Basic Science	89.8%
Social Policy & Practice	100.0%
Social Science (A&S)	97.4%
Veterinary Medicine	100.0%
Weitzman	100.0%
Wharton	99.5%
All Schools/Areas	97.9%
U.S. City Average CPI Growth	0.7%
Phil. CPI Growth	0.1%
Budget Guidelines	3.0%

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

CPI reported for FY 2019-20 for the US and Philadelphia are based on growth for the period between June 2019 to June 2020.

Table 3
Percentage of continuing FULL PROFESSORS awarded salary
increase percentages that exceeded the percentage growth in the
consumer price index (CPI) for Philadelphia

Schools and Disciplinary Areas	Percentage FY 2019 to 2020
Annenberg	100.0%
Dental Medicine	100.0%
Engineering & Applied Science	96.1%
Graduate Education	100.0%
Humanities (A&S)	100.0%
Law	100.0%
Natural Science (A&S)	100.0%
Nursing	100.0%
Perelman-Basic Science	85.7%
Social Policy & Practice	100.0%
Social Science (A&S)	97.0%
Veterinary Medicine	100.0%
Weitzman	100.0%
Wharton	99.2%
All Schools/Areas	97.3%
U.S. City Average CPI Growth	0.7%
Phil. CPI Growth	0.1%
Budget Guidelines	3.0%

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

CPI reported for FY 2019-20 for the US and Philadelphia are based on growth for the period between June 2019 to June 2020.

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Table 4

Rank of mean salaries of Penn faculty by academic fields as compared to universities participating in the American Association of Universities Data Exchange (AAUDE) survey.

Academic Field	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018
Full Professor								
Annenberg	1/41	1/39	1/43	1/43	1/43	1/42	1/41	1/44
Dental Medicine	10/45	9/43	9/44	11/44	10/46	11/45	15/46	17/49
Engineering & Applied Science	13/55	14/54	13/58	14/59	17/59	16/56	11/56	16/62
Graduate Education	6/47	7/45	4/45	6/45	6/47	6/45	6/47	11/48
Humanities (A&S)	7/56	11/55	11/58	10/59	11/60	10/57	9/57	9/62
Law	7/39	8/38	7/39	8/38	6/41	6/40	4/38	6/43
Natural Science (A&S)	12/56	11/55	14/58	15/59	18/60	14/57	13/57	17/62
Nursing	1/19	1/19	1/21	3/23	1/24	2/24	2/30	2/31
Perelman - Basic Science	6/56	8/55	7/58	8/59	9/60	6/57	6/57	10/62
Social Policy & Practice	6/25	6/23	6/26	4/27	3/27	3/26	1/25	1/27
Social Science (A&S)	8/56	9/55	9/57	9/58	7/59	9/57	8/57	7/61
Veterinary Medicine	3/14	4/13	2/13	3/13	4/13	5/14	4/16	3/16
Weitzman	10/53	11/52	10/55	11/56	11/57	10/54	10/52	11/57
Wharton-Business & Management	5/53	2/52	3/55	2/56	1/56	1/53	1/53	2/58
Wharton-Public Policy	13/54	12/53	5/55	9/56	10/57	9/55	9/55	-
Wharton-Statistics	1/34	2/34	2/36	2/34	1/34	1/32	1/31	2/36
Associate Professor								
Annenberg	-	-	-	-	-	-	-	-
Dental Medicine	13/43	9/41	-	6/44	-	-	-	-
Engineering & Applied Science	11/54	11/53	10/56	11/57	10/57	7/54	7/55	11/61
Graduate Education	8/45	9/44	9/44	6/45	6/47	6/44	6/46	14/48
Humanities (A&S)	11/55	13/54	12/57	10/58	9/59	10/56	8/56	8/61
Law	-	-	-	-	-	-	-	-
Natural Science (A&S)	15/56	17/55	17/58	15/58	17/59	18/56	15/56	20/61
Nursing	5/19	3/19	2/21	7/24	7/25	4/25	5/31	6/31
Perelman - Basic Science	4/55	4/54	3/57	4/58	5/59	5/56	6/56	11/61
Social Policy & Practice	-	-	-	-	-	6/26	4/25	6/28
Social Science (A&S)	8/56	14/55	10/56	7/57	8/58	10/56	8/56	12/60
Veterinary Medicine	6/14	6/13	7/13	7/13	4/13	4/14	6/15	6/15
Weitzman	1/51	3/51	3/52	3/54	4/56	6/53	6/53	9/57
Wharton-Business & Management	2/51	2/51	3/54	3/56	3/56	1/53	1/53	2/58
Wharton-Public Policy	-	-	-	-	-	-	-	2/56
Wharton-Statistics	2/27	2/30	-	-	-	-	1/27	-
Assistant Professor								
Annenberg	-	-	3/41	3/42	-	2/40	-	-
Dental Medicine	-	-	-	-	-	-	-	-
Engineering & Applied Science	7/54	8/54	8/58	10/59	6/59	7/56	8/56	8/61
Graduate Education	-	15/43	12/44	13/44	11/46	13/44	10/45	12/47
Humanities (A&S)	14/56	17/55	14/58	13/59	9/59	9/56	8/56	12/61
Law	6/27	-	-	-	-	-	-	-
Natural Science (A&S)	15/56	22/55	16/58	18/59	20/60	18/57	12/57	17/62
Nursing	3/19	2/19	3/21	5/24	5/25	4/25	8/31	8/31
Perelman - Basic Science	6/56	9/55	9/58	10/59	15/60	5/57	6/57	9/61
Social Policy & Practice	-	5/24	5/26	5/27	6/27	8/26	3/25	-
Social Science (A&S)	7/56	8/55	7/57	8/58	11/59	14/57	13/57	17/61
Veterinary Medicine	5/14	5/12	5/13	5/13	5/13	4/14	8/16	8/15
Weitzman	6/51	4/50	5/54	7/55	7/56	5/52	5/52	6/56
Wharton-Business & Management	4/52	4/51	5/54	7/55	4/56	4/53	5/53	4/58
Wharton-Public Policy	1/54	1/53	1/52	1/55	1/56	1/55	1/55	1/59
Wharton-Statistics	-	-	-	-	-	-	-	-

Using the federal CIP (Classification of Instructional Programs) codes for 2010, departments at comparable universities were mapped to Penn Schools.

Calculations of rank only include those universities that have relevant departments. Therefore, the number of universities among which Penn is ranked varies by field.

Rank is suppressed for all cells which contain fewer than five Penn faculty members.

Table 5
Percentage differences in mean academic base salary of professors at selected research universities for
Academic Years 2011-2012 through 2019-2020

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Full Professors - Mean Academic Base Salaries: Percentage Differences*									
Columbia	8.9%	13.5%	12.1%	13.4%	16.6%	16.8%	15.6%	16.1%	13.1%
Stanford	7.6%	10.9%	11.9%	13.6%	13.3%	13.1%	13.3%	14.5%	10.4%
Princeton	6.7%	7.0%	7.2%	9.3%	9.9%	9.7%	9.5%	10.9%	7.5%
Harvard	9.3%	8.6%	7.7%	8.1%	8.7%	8.8%	13.1%	9.3%	7.0%
Chicago	8.9%	8.9%	9.6%	10.0%	14.7%	9.0%	7.8%	8.2%	3.7%
Yale	-0.7%	-0.4%	-0.1%	0.5%	0.4%	0.1%	-1.4%	3.3%	2.1%
MIT	-5.4%	-4.4%	-3.3%	-1.8%	0.0%	1.4%	2.5%	3.8%	1.3%
Penn	\$181.6	\$187.0	\$192.3	\$197.5	\$202.6	\$209.2	\$217.3	\$223.60	\$237.30
Duke	-3.5%	-3.6%	-3.1%	-2.1%	-2.4%	-2.4%	-3.5%	-4.2%	-6.7%
Dartmouth	-10.7%	-10.5%	-9.5%	-9.6%	-9.0%	-9.6%	-9.5%	-7.1%	-8.9%
Brown	-13.7%	-14.0%	-14.4%	-14.6%	-14.3%	-14.5%	-15.4%	-16.1%	-18.9%
Cornell	-10.9%	-14.5%	-14.2%	-14.2%	-13.6%	-16.7%	-17.8%	-17.9%	-20.7%

NOTES: Excluded are all members of the faculty of PSOM (except basic scientists) and all clinician-educators. Data source: AAUP Salary Surveys.

*Universities are listed from highest to lowest percentage difference for full professors as of 2019-2020. For each year reported, the difference between the Penn mean salary and the mean salary for a comparison university was computed as a percentage of the Penn salary.

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Associate Professors - Mean Academic Base Salaries: Percentage Differences*									
Columbia	6.1%	12.9%	21.6%	21.2%	20.0%	20.4%	15.1%	19.3%	20.6%
Stanford	11.4%	15.2%	17.3%	13.0%	9.2%	11.3%	12.6%	13.7%	15.2%
MIT	2.1%	4.5%	6.4%	7.0%	3.2%	6.2%	6.4%	9.0%	11.7%
Princeton	5.0%	10.1%	8.5%	6.2%	4.5%	4.6%	2.6%	2.8%	5.8%
Harvard	2.6%	1.4%	3.6%	2.3%	-2.3%	-5.6%	8.3%	0.5%	3.6%
Yale	-7.8%	-3.6%	-1.0%	-6.3%	-7.7%	-3.0%	-3.6%	-6.6%	0.1%
Penn	\$117.8	\$117.3	\$119.5	\$125.2	\$132.3	\$135.0	\$140.1	\$143.9	\$145.6
Duke	-2.8%	2.3%	1.1%	1.3%	-2.9%	-0.3%	-0.9%	-1.7%	-0.5%
Dartmouth	-7.9%	-4.9%	-4.9%	-9.6%	-11.9%	-9.6%	-8.4%	-5.6%	-5.9%
Chicago	-3.1%	0.3%	-0.5%	-0.7%	-0.1%	-5.9%	-10.1%	-8.1%	-6.4%
Cornell	-4.1%	-5.6%	-3.5%	-5.5%	-6.5%	-9.1%	-10.1%	-9.8%	-8.5%
Brown	-15.7%	-11.9%	-10.0%	-10.3%	-13.3%	-14.1%	-14.3%	-13.6%	-13.0%

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Assistant Professors - Mean Academic Base Salaries: Percentage Differences*									
MIT	-8.5%	-8.5%	-5.8%	-4.4%	-5.6%	-5.4%	-4.5%	-0.4%	1.7%
Stanford	-2.2%	-4.2%	-0.4%	2.4%	2.1%	0.5%	1.0%	3.3%	1.7%
Harvard	-2.2%	-2.4%	-3.0%	-5.3%	-2.5%	-3.0%	8.0%	1.5%	1.5%
Penn	\$112.3	\$116.2	\$118.0	\$119.6	\$123.3	\$127.5	\$130.3	\$132.6	\$136.5
Columbia	-11.8%	-9.0%	-6.0%	-4.6%	-1.5%	-3.7%	-3.1%	-1.8%	-0.6%
Chicago	-8.6%	-11.6%	-10.5%	-6.1%	-6.1%	-7.3%	-6.8%	-3.1%	-0.9%
Duke	-14.5%	-16.3%	-12.3%	-11.9%	-10.9%	-10.6%	-12.4%	-8.1%	-9.5%
Princeton	-16.1%	-16.7%	-13.8%	-12.5%	-13.0%	-13.8%	-11.6%	-10.7%	-10.3%
Cornell	-13.6%	-15.8%	-16.6%	-13.6%	-8.4%	-11.8%	-10.5%	-10.3%	-10.7%
Yale	-20.1%	-18.9%	-18.7%	-16.7%	-16.2%	-14.7%	-15.9%	-11.1%	-11.9%
Dartmouth	-20.1%	-23.1%	-20.3%	-16.3%	-17.6%	-19.7%	-20.3%	-21.0%	-17.0%
Brown	-26.7%	-26.0%	-24.7%	-22.8%	-23.5%	-25.2%	-25.2%	-24.8%	-25.2%

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Table 5 - Adjusted
Percentage differences in mean ADJUSTED academic base salary of professors at selected research universities for Academic Years 2011-2012 through 2019-2020

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Full Professors - Mean ADJUSTED Academic Base Salaries: Percentage Differences*									
Duke	12.7%	12.6%	11.7%	12.7%	12.5%	12.4%	9.8%	9.0%	6.2%
Princeton	1.7%	2.0%	2.2%	4.2%	4.8%	4.5%	6.4%	7.7%	4.4%
Columbia	-5.0%	-1.0%	-1.1%	0.1%	3.0%	3.2%	0.7%	3.3%	2.1%
Penn	\$158.5	\$163.2	\$169.1	\$173.7	\$178.2	\$184.0	\$192.5	\$198.1	\$210.2
Yale	0.0%	0.3%	-2.0%	-1.6%	-1.6%	-1.8%	-1.3%	1.1%	-1.6%
Harvard	-5.9%	-6.5%	-8.1%	-7.8%	-7.3%	-7.2%	-3.9%	-7.2%	-9.1%
Chicago	8.3%	8.3%	5.7%	6.1%	10.6%	5.2%	-9.7%	-9.3%	-13.1%
Brown	-7.3%	-7.7%	-9.6%	-10.0%	-9.7%	-9.8%	-11.4%	-11.8%	-13.9%
MIT	-18.5%	-17.6%	-17.5%	-16.2%	-14.7%	-13.5%	-12.9%	-12.1%	-15.1%
Cornell	-1.2%	-5.2%	-7.2%	-7.1%	-6.5%	-9.9%	-13.5%	-13.7%	-16.6%
Stanford	-21.1%	-18.8%	-19.1%	-17.9%	-18.1%	-18.3%	-21.4%	-20.5%	-23.4%

NOTES: Excluded are all members of the faculty of PSOM (except basic scientists) and all clinician-educators. Data source: AAUP Salary Surveys.

*Universities are listed from highest to lowest percentage difference for full professors as of 2019-2020. For each year reported, the difference between the Penn mean salary and the mean salary for a comparison university was computed as a percentage of the Penn salary.

Salary figures adjusted using 2007, 2010, 2013, and 2017 Runzheimer Living Cost Indices. Indices for Hanover, NH (Dartmouth) are not available

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Associate Professors - Mean ADJUSTED Academic Base Salaries: Percentage Differences*									
Duke	13.5%	19.4%	16.5%	16.7%	11.8%	14.9%	12.7%	11.8%	13.2%
Columbia	-7.5%	-1.6%	7.3%	7.0%	5.9%	6.3%	0.2%	3.8%	5.0%
Princeton	0.1%	4.9%	3.3%	1.3%	-0.5%	-0.3%	-0.2%	-0.1%	2.8%
Yale	-7.2%	-2.9%	-3.0%	-8.2%	-9.5%	-4.9%	-3.5%	-6.6%	0.2%
Penn	\$102.8	\$102.4	\$105.1	\$110.1	\$116.4	\$118.7	\$124.1	\$127.5	\$129.0
Cornell	6.4%	4.7%	4.4%	2.3%	1.1%	-1.7%	-5.5%	-5.1%	-3.8%
MIT	-12.0%	-10.0%	-9.2%	-8.7%	-12.0%	-9.4%	-9.6%	-7.4%	-5.1%
Brown	-9.4%	-5.4%	-5.0%	-5.4%	-8.6%	-9.4%	-10.2%	-9.5%	-9.0%
Harvard	-11.6%	-12.7%	-11.6%	-12.7%	-16.8%	-19.5%	-8.1%	-14.7%	-12.0%
Stanford	-18.4%	-15.6%	-15.2%	-18.3%	-21.0%	-19.5%	-21.8%	-21.1%	-20.1%
Chicago	-3.7%	-0.3%	-4.1%	-4.3%	-3.7%	-9.2%	-24.7%	-23.0%	-21.6%

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Assistant Professors - Mean ADJUSTED Academic Base Salaries: Percentage Differences*									
Duke	-0.1%	-2.2%	1.1%	1.5%	2.7%	3.0%	-0.3%	4.7%	3.0%
Penn	\$98.0	\$101.4	\$103.8	\$105.2	\$108.4	\$112.1	\$115.4	\$117.4	\$120.9
Cornell	-4.2%	-6.6%	-9.8%	-6.6%	-0.8%	-4.6%	-5.8%	-5.6%	-6.0%
Yale	-19.6%	-18.3%	-20.3%	-18.3%	-17.8%	-16.4%	-15.8%	-11.0%	-11.8%
Princeton	-20.0%	-20.6%	-17.9%	-16.6%	-17.1%	-17.8%	-14.1%	-13.2%	-12.9%
Columbia	-23.2%	-20.6%	-17.1%	-15.8%	-13.0%	-15.0%	-15.7%	-14.5%	-13.5%
MIT	-21.1%	-21.2%	-19.8%	-18.5%	-19.5%	-19.3%	-18.8%	-15.3%	-13.6%
Harvard	-15.7%	-15.9%	-17.2%	-19.2%	-16.8%	-17.2%	-8.2%	-13.7%	-13.7%
Chicago	-9.1%	-12.1%	-13.7%	-9.4%	-9.4%	-10.5%	-21.9%	-18.7%	-17.0%
Brown	-21.3%	-20.5%	-20.5%	-18.6%	-19.3%	-21.1%	-21.7%	-21.2%	-21.7%
Stanford	-28.4%	-29.8%	-28.0%	-26.0%	-26.2%	-27.3%	-29.9%	-28.2%	-29.4%

Table 6
FULL PROFESSORS: Median academic base salary percentage increases of faculty continuing in rank who were Penn
FULL PROFESSORS for FY2020, along with the first and third quartile salary increases

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases, FY 2019-2020		
	(Q1)	(Md.)	(Q3)
All Schools	2.8%	3.0%	3.5%
Annenberg	3.0%	3.0%	3.0%
Dental Medicine	2.8%	3.1%	3.2%
Engineering & Applied Science	2.9%	3.1%	4.0%
Graduate Education	3.0%	3.5%	4.0%
Humanities (A&S)	2.8%	2.9%	3.4%
Law	3.0%	3.3%	3.5%
Natural Science (A&S)	2.8%	2.9%	3.3%
Nursing	3.0%	3.0%	3.0%
Perelman-Basic Science	3.0%	3.0%	3.0%
Social Policy & Practice	3.0%	3.0%	3.0%
Social Science (A&S)	2.8%	2.9%	3.8%
Veterinary Medicine	2.5%	3.0%	3.0%
Weitzman	3.0%	3.0%	3.0%
Wharton	2.9%	3.5%	4.0%
Budget Guidelines		3.0%	

NOTES: The Budget Guideline is provided for comparison purposes. As per Penn policy, it is a guideline for the salary increment pool for all standing faculty members in each school, but not specifically for each rank.

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

Salary increases include increases from all sources (e.g. merit, market, retention).

The median (Md.) percentage salary increase is the mid-point of all increases within each school and rank.

The difference between the third (Q3) and first quartile (Q1) provides a measure of variability in the percentage increases for each school and rank.

Median percentage increases are reported only if the number of faculty members in a given school and rank is five or more, quartile percentage increases are reported only if the number of faculty members is nine or more.

Table 7

ASSOCIATE PROFESSORS: Median academic base salary percentage increases of faculty continuing in rank who were Penn ASSOCIATE PROFESSORS for FY2020, along with the first and third quartile salary increases

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases, FY 2019-2020		
	Q1	Md.	Q3
All Schools	2.8%	3.0%	3.5%
Annenberg			
Dental Medicine			
Engineering & Applied Science	3.8%	4.9%	6.0%
Graduate Education	2.0%	3.0%	3.8%
Humanities (A&S)	2.8%	2.8%	3.2%
Law			
Natural Science (A&S)	2.5%	2.8%	3.0%
Nursing	3.0%	3.0%	3.0%
Perelman-Basic Science	2.0%	3.0%	3.3%
Social Policy & Practice		3.5%	
Social Science (A&S)	2.8%	3.0%	4.5%
Veterinary Medicine	3.0%	3.0%	3.5%
Weitzman	3.0%	3.0%	3.3%
Wharton	3.0%	3.2%	4.0%
Budget Guidelines		3.0%	

NOTES: The Budget Guideline is provided for comparison purposes. As per Penn policy, it is a guideline for the salary increment pool for all standing faculty members in each school, but not specifically for each rank.

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

Salary increases include increases from all sources (e.g. merit, market, retention).

The median (Md.) percentage salary increase is the mid-point of all increases within each school and rank.

The difference between the third (Q3) and first quartile (Q1) provides a measure of variability in the percentage increases for each school and rank.

Median percentage increases are reported only if the number of faculty members in a given school and rank is five or more, quartile percentage increases are reported only if the number of faculty members is nine or more.

Table 8

ASSISTANT PROFESSORS: Median academic base salary percentage increases of faculty continuing in rank who were Penn ASSISTANT PROFESSORS for FY2020, along with the first and third quartile salary increases

School/Area	First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases, FY 2019-2020		
	Q1	Md.	Q3
All Schools	3.0%	3.0%	3.5%
Annenberg			
Dental Medicine			
Engineering & Applied Science	3.2%	4.0%	4.5%
Graduate Education		3.5%	
Humanities (A&S)	2.8%	3.0%	4.5%
Law			
Natural Science (A&S)	2.8%	3.0%	3.2%
Nursing	3.0%	3.0%	3.0%
Perelman-Basic Science	3.0%	3.0%	3.5%
Social Policy & Practice			
Social Science (A&S)	2.8%	3.0%	3.2%
Veterinary Medicine	3.0%	3.0%	3.0%
Weitzman		3.0%	
Wharton	2.9%	3.0%	3.4%
Budget Guidelines		3.0%	

NOTES: The Budget Guideline is provided for comparison purposes. As per Penn policy, it is a guideline for the salary increment pool for all standing faculty members in each School, but not specifically for each rank.

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

Salary increases include increases from all sources (e.g. merit, market, retention).

The median (Md.) percentage salary increase is the mid-point of all increases within each school and rank.

The difference between the third (Q3) and first quartile (Q1) provides a measure of variability in the percentage increases for each school and rank.

Median percentage increases are reported only if the number of faculty members in a given school and rank is five or more, quartile percentage increases are reported only if the number of faculty members is nine or more.

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Table 9
Mean academic base salary of Penn standing faculty members who continued in rank by rank

Rank/Academic Year/Metric			Amount	Not Weighted	Weighted
Professor	2015-2016	Mean	\$207,384	1.71	1.84
		Median	\$187,571	1.88	1.84
	2016-2017	Mean	\$213,373	1.72	1.84
		Median	\$193,812	1.93	1.85
	2017-2018	Mean	\$221,028	1.74	1.85
		Median	\$200,460	1.92	1.85
	2018-2019	Mean	\$227,354	1.72	1.87
		Median	\$205,320	1.86	1.87
	2019-2020	Mean	\$234,677	1.76	1.89
		Median	\$211,391	1.93	1.88
Associate Professor	2015-2016	Mean	\$130,872	1.08	1.25
		Median	\$113,300	1.14	1.26
	2016-2017	Mean	\$135,314	1.09	1.24
		Median	\$115,816	1.16	1.27
	2017-2018	Mean	\$137,758	1.09	1.24
		Median	\$119,710	1.15	1.25
	2018-2019	Mean	\$141,883	1.07	1.25
		Median	\$124,309	1.13	1.25
	2019-2020	Mean	\$143,868	1.08	1.25
		Median	\$126,834	1.16	1.23
Assistant Professor	2015-2016	Mean	\$121,532	1.00	1.00
		Median	\$99,535	1.00	1.00
	2016-2017	Mean	\$123,929	1.00	1.00
		Median	\$100,255	1.00	1.00
	2017-2018	Mean	\$126,802	1.00	1.00
		Median	\$104,498	1.00	1.00
	2018-2019	Mean	\$132,272	1.00	1.00
		Median	\$110,123	1.00	1.00
	2019-2020	Mean	\$133,263	1.00	1.00
		Median	\$109,366	1.00	1.00

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

The data are weighted by the number of continuing faculty members at each rank in each school.

Table 10
Variability of academic base salary for faculty who continued in rank:
first, second and third quartile median salary by rank and year

Rank/Academic Year	Q1	Median	Q3	IQR	IQR-to-Median Ratio	# of Areas
Professor						
2015-2016	\$152,200	\$187,571	\$249,474	\$97,274	0.52	14
2016-2017	\$154,752	\$193,812	\$257,845	\$102,094	0.53	14
2017-2018	\$160,557	\$200,460	\$268,324	\$107,767	0.54	14
2018-2019	\$165,139	\$205,320	\$273,202	\$108,063	0.53	14
2019-2020	\$170,095	\$211,391	\$282,628	\$112,533	0.53	14
Associate Professor						
2015-2016	\$101,414	\$113,300	\$134,386	\$32,972	0.29	14
2016-2017	\$105,210	\$115,816	\$138,339	\$33,129	0.29	13
2017-2018	\$108,932	\$119,710	\$140,858	\$31,926	0.27	13
2018-2019	\$111,554	\$124,309	\$145,655	\$34,101	0.27	13
2019-2020	\$114,350	\$126,834	\$149,867	\$35,517	0.28	13
Assistant Professor						
2015-2016	\$86,801	\$99,535	\$165,000	\$78,199	0.78	13
2016-2017	\$89,746	\$100,255	\$164,250	\$74,504	0.74	13
2017-2018	\$92,739	\$104,498	\$162,500	\$69,761	0.67	13
2018-2019	\$95,383	\$110,123	\$170,500	\$75,118	0.68	13
2019-2020	\$97,695	\$109,366	\$170,000	\$72,305	0.66	14

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Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

Table 11
Percentage Salary Increase Distribution of Faculty Who Continued in Rank by Sex and Rank

Rank/Sex		First Quartile (Q1), Median (Md.), and Third Quartile (Q3) Percentage Salary Increases, FY 2019-2020		
		Q1	Md.	Q3
Professor	Men	2.8%	3.0%	3.5%
	Women	3.0%	3.0%	3.8%
Associate Professor	Men	2.8%	3.0%	3.5%
	Women	2.8%	3.0%	3.8%
Assistant Professor	Men	2.9%	3.0%	3.4%
	Women	3.0%	3.0%	4.0%

NOTES: All salaries are converted to a nine-month base. Academic base salary increases pertain to all Penn standing faculty members with an appointment at the time of the fall census for both years. Faculty members on paid leave or unpaid leave are reported at their full salaries.

Excluded are all members of the Faculty of PSOM (except basic scientists); all clinician-educators in Dental Medicine, Veterinary Medicine, Nursing, and Social Policy & Practice; faculty members on phased retirement plans; and the 12 Deans.

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Table 12

Mean academic base salary of Penn standing faculty members who continued in rank by rank and sex.

Rank/Academic Year /Metric		Unweighted		Weighted by School/Discipline				Men - Women	
		Women	Men	% Difference	Women	Men	% Difference	Unweighted	Weighted
Professor									
2015-2016	Mean	\$198,543	\$210,066	5.8%	\$208,639	\$210,066	0.8%	\$11,523	\$1,700
	Median	\$181,442	\$190,000	4.7%	\$203,478	\$205,589	1.0%		
	Mean	\$202,077	\$216,822	7.3%	\$211,327	\$216,822	3.1%	\$14,745	\$6,518
	Median	\$184,871	\$195,432	5.7%	\$208,079	\$211,620	1.7%		
2017-2018	Mean	\$209,332	\$224,612	7.3%	\$221,277	\$224,612	2.1%	\$15,280	\$4,725
	Median	\$191,455	\$202,303	5.7%	\$214,980	\$218,668	1.7%		
2018-2019	Mean	\$215,827	\$231,146	7.1%	\$229,001	\$231,146	1.5%	\$15,319	\$3,481
	Median	\$197,760	\$207,566	5.0%	\$224,511	\$226,504	0.9%		
2019-2020	Mean	\$223,123	\$238,614	6.9%	\$236,874	\$238,614	0.7%	\$15,491	\$1,740
	Median	\$205,308	\$214,505	4.5%	\$233,038	\$233,411	0.2%		
Associate Professor									
2015-2016	Mean	\$117,024	\$139,565	19.3%	\$127,591	\$139,565	9.4%	\$22,541	\$11,974
	Median	\$107,193	\$123,075	14.8%	\$129,967	\$136,475	5.0%		
2016-2017	Mean	\$125,640	\$141,234	12.4%	\$138,505	\$141,234	2.0%	\$15,594	\$2,729
	Median	\$112,232	\$123,247	9.8%	\$140,304	\$137,831	-1.8%		
2017-2018	Mean	\$132,170	\$141,178	6.8%	\$141,845	\$141,178	-0.5%	\$9,008	-\$667
	Median	\$117,815	\$124,877	6.0%	\$141,123	\$139,411	-1.2%		
2018-2019	Mean	\$136,518	\$145,392	6.5%	\$147,469	\$145,392	-1.3%	\$8,874	-\$1,892
	Median	\$122,250	\$127,062	3.9%	\$145,881	\$143,502	-1.5%		
2019-2020	Mean	\$134,632	\$149,245	10.9%	\$144,834	\$149,245	3.0%	\$14,613	\$4,411
	Median	\$124,795	\$130,139	4.3%	\$141,486	\$144,844	2.4%		
Assistant Professor									
2015-2016	Mean	\$113,120	\$127,485	12.7%	\$123,750	\$127,485	3.0%	\$14,365	\$3,735
	Median	\$95,209	\$106,003	11.3%	\$120,728	\$124,213	2.9%		
2016-2017	Mean	\$114,342	\$131,006	14.6%	\$127,957	\$131,006	2.4%	\$16,664	\$3,1049
	Median	\$96,914	\$108,265	11.7%	\$123,935	\$126,603	2.2%		
2017-2018	Mean	\$117,892	\$134,178	13.8%	\$134,366	\$134,178	-0.1%	\$16,286	-\$188
	Median	\$100,131	\$112,231	12.1%	\$129,538	\$130,074	0.4%		
2018-2019	Mean	\$122,891	\$140,914	14.7%	\$138,599	\$140,914	1.7%	\$18,023	\$2,315
	Median	\$103,186	\$115,951	12.4%	\$135,424	\$136,582	0.9%		
2019-2020	Mean	\$126,569	\$139,702	10.4%	\$138,456	\$139,702	0.9%	\$13,133	\$1,246
	Median	\$103,629	\$116,190	12.1%	\$135,634	\$135,234	-0.3%		

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Salaries for female faculty members are weighted using male weights. Male weights are calculated as a ratio of male faculty in each school/area to the total number of male faculty at Penn. Percent difference is calculated as the difference between male and female salaries divided by the female salary. Negative percent differences indicate that salaries of female faculty exceed those of male faculty.