The Regents of the University of California

SPECIAL COMMITTEE ON INNOVATION TRANSFER AND ENTREPRENEURSHIP
December 16, 2021

The Special Committee on Innovation Transfer and Entrepreneurship met on the above date by teleconference meeting conducted in accordance with California Government Code §§ 11133.

Members present: Regents Hernandez, Leib, Park, Reilly, and Sherman; Chancellor Christ; Ex officio member Drake; Advisory members Green, Kahn, Ku, Taylor, Walker, and Wallace

In attendance: Faculty Representatives Cochran and Horwitz, Secretary and Chief of Staff Shaw, Deputy General Counsel Wright, Executive Vice President and Chief Financial Officer Brostrom, Vice President Maldonado, and Recording Secretary Lyall

The meeting convened at 10:05 a.m. with Special Committee Chair Leib presiding.

1.   **PUBLIC COMMENT**

There were no speakers wishing to address the Special Committee.

2.   **APPROVAL OF MINUTES OF PREVIOUS MEETING**

Upon motion duly made and seconded, the minutes of the meetings of August 19 and October 21, 2021 were approved, Regents Drake, Leib, Park, Reilly, and Sherman voting "aye" and Regent Hernandez abstaining.[1]

3.   **INNOVATION TRANSFER AND ENTREPRENEURSHIP TRANSFORMATION UPDATE**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

President Drake reported that the project teams, senior executive team, and campus leaders are collaborating to exchange ideas, review progress, and make decisions to advance the recommendations of the Regents' Working Group on Innovation Transfer and Entrepreneurship Report (Working Group). This is complex as the scope of innovation and entrepreneurship across the UC system varies from campus to campus.

Vice President Maldonado provided an update on progress implementing the Working Group's 13 recommendations. She presented a chart outlining the members of the five work stream teams – Business Processes and Systems; Research and Innovation Policy Review; Legal and Compliance; Funding Augmentation; and Academic Personnel Policy and Guidelines - and identified the two recommendations that each team is coordinating.

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[1] Roll call vote required by the Bagley-Keene Open Meeting Act [Government Code §11123(b)(1)(D)] for all meetings held by teleconference.

There is a core team, responsible for three of the recommendations that would be providing oversight of the project, including the work stream teams. An executive committee, which includes the University Provost, Chief Financial Officer, General Counsel, Chief Investment Officer, Academic Senate Chair, and the Senior Vice President of Ethics, Compliance, and Audit, will provide overall guidance and assess the progress of the core and work stream teams.

Implementation of the Working Group's recommendations is complex and requires cross collaboration among several UC Office of the President departments, the Academic Senate, and the campuses. As requested by the Special Committee, each work stream team has developed timelines with dates of completion for each recommendation.

Due to the complexities of some of the recommendations, TreMonti Consulting, a firm specializing in innovation and entrepreneurship in higher education, has been retained to complete a best practices assessment to evaluate the existing campus business practices and systems. This assessment will be completed by July 2022.

The Business Process and Systems work stream, led by Bruce Hunter, Executive Director of Innovation Transfer and Entrepreneurship, is responsible for recommendation #1, refresh the UC Office of the President's (UCOP) roles, responsibilities and business processes, and recommendation #4, replacement of the Patent Tracking System. His team is consulting with campus technology transfer offices to understand campus needs prior to establishing systemwide business processes. The effort to replace the Patent Tracking System will commence in fall 2022.

The Research and Innovation Policy Review work stream, led by Deborah Motton, Executive Director of Research Policy Analysis and Coordination, is responsible for recommendation #2, realignment of equity management from the UC Office of the Chief Investment Officer to the campuses and recommendation #7, update of policies to reflect current business needs and establish a process for ongoing periodic review and revision.

Ms. Maldonado explained that responsibility for recommendation #2 has been transferred from the Office of the Chief Investment Officer to the Office of Research and Innovation, as equity policy is under the purview of this office. The transfer of equity management to the campuses will be discussed at the Special Committee's February 2022 meeting. Research Policy Analysis and Coordination will work with campuses to review policies addressing business needs and will make recommendations by fall 2022.

The Legal and Compliance work stream, led by Darnele Wright, Deputy General Counsel, is responsible for recommendation #3, realignment of legal and policy compliance from the Office of General Counsel to the campuses, and recommendation #12, probe the strengths and weaknesses of UC's existing efforts to protect its intellectual property rights. Drafts implementing recommendation #3 are nearly completed. For recommendation #12, an outside consultant will be retained to complete an assessment of intellectual property rights enforcement, anticipated to be executed by June 2022.

The Funding Augmentation work stream, led by Brad Werdick, Chief of Staff to the Chief Financial Officer, is responsible for recommendation #5, creation of a proof of concept

fund, and recommendation #6, provide budget augmentations to help campuses develop innovation transfer programs. This team completed consultation with the campuses in November 2021 and plans to provide a summary of their findings by early 2022 and finalize implementation for the 2022-23 fiscal year budget.

The Academic Personnel Policy and Guidelines, led by Susan Carlson, Vice Provost of Academic Personnel and Programs, is responsible for recommendation #8, revision of promotion and tenure guidelines to include consideration of innovation and entrepreneurship, and recommendation #9, revision of academic personnel policy regarding leaves of absence to include pursuit of innovation and entrepreneurship activities. The Academic Senate committees are conducting a review of promotion and tenure guidelines and anticipate initial review completion by January 2022. The UCOP Academic Personnel and Programs Office will then assess policy implications and formulate a systemwide working group to propose specific changes by August 2022. If changes to the Academic Personnel Manual or policy are recommended, this effort will take an additional year to complete full review. For recommendation #9, systemwide review of these policies is expected to be completed by January 2022 with any changes implemented by July 2022.

The Core Team is responsible for recommendation #10, creation of a program to recognize innovation and entrepreneurship; recommendation #11, creation of a re-branding campaign showcasing UC innovation; and recommendation #13, proposition of new ways to measure the public impact of UC innovation and the effectiveness of its innovation transfer enterprise. Work on these three recommendations will likely begin in fall 2022. For recommendation #13, a project on diversity, equity and inclusion metrics has been established, led by UC Davis Director for Industry Alliances Damon Tull. A request for proposals is being completed to retain a consultant to provide program and change management support by January 2022.

Ms. Maldonado presented a slide outlining the approach to the campus engagement for each recommendation and work stream, and emphasized the importance of campus input as critical for the success of this transformation. Certain work streams will require extensive engagement with campus stakeholders.

Chair Leib emphasized the urgency of implementing the recommendations. He remarked that one of the concerns of the Working Group was the level of bureaucracy within the University.

Regent Park noted that much work has been done on this topic in the past and asked that the Special Committee be briefed on the work of the Knowledge Transfer Advisory Committee, specifically the information regarding Patent Tracking System. Ms. Maldonado responded that the work done previously is an important reference for the current effort.

Regent Park remarked that the University's governance layers sometimes impede rapid change. She encouraged Ms. Maldonado to ensure that the implementation work is done in a timely manner.

Regent Park suggested that the expertise of UC faculty and staff be utilized to assist with these changes. In particular, Chief Data Scientist at UC Health Atul Butte has launched the Center for Data Driven Insights that works successfully with the campuses. Regent Park suggested that it would be beneficial to have Dr. Butte advise the efforts of the work streams.

Chair Leib asked that several members of the Special Committee meet with any external consultants to ensure alignment of interests. Ms. Maldonado agreed.

Advisory member Kahn noted that the work completed by the Working Group included substantial input at a variety of campus hearings that underlined the frustrations of the current system. He asked if any members of the Working Group or other Regents were consulted before the request for proposal was issued for the retention of a consultant. Ms. Maldonado responded that the Special Committee and Regents were not consulted. Advisory member Kahn suggested that, in the future, this consultation occur.

Advisory member Kahn asked for a copy of the work plan for TreMonti Consulting. Ms. Maldonado responded that she will provide it.

4. **PROPOSED PLAN FOR BUSINESS PROCESS REVIEW AND PATENT TRACKING SYSTEM REPLACEMENT**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Ms. Maldonado introduced Executive Director Bruce Hunter. Mr. Hunter joined UCOP in August 2021 and previously served at Rennsalaer Polytechnic Institute as the Executive Director in the Office of Intellectual Property Optimization.

Mr. Hunter provided an update on the Regents' Working Group Report recommendation #1, refreshing UCOP's roles, responsibilities and business processes, and recommendation #4, replacement of the Patent Tracking System (PTS). He reported that his meetings with UC campuses allowed him to gain a better understanding of current operational business processes, the relationship between each campus and UCOP, and the uses and challenges associated with PTS. Each campus has a different innovation and technology transfer organization, varying business processes, and unique interactions with PTS.

In order to establish new business processes and replace the Patent Tracking System, it is important to conduct an analysis of how innovation transfer occurs at each specific campus.

TreMonti Consulting was retained in November 2021 to conduct this analysis, define best practices, and prepare a report with suggestions from the campus, faculty, and UCOP on how to address the Working Group's recommendations. TreMonti Consulting has over 200 university clients and advises universities on best practices, intellectual property software tools, organization structure, intellectual property management process, and other areas related to innovation transfer.

Richard Swatloski, Compliance Practice Leader and Director of TreMonti Consulting, described his experience with innovation management and provided an overview of the project scope and planned best practices assessment. He explained that they will review past efforts to understand previous concerns and recommendations. In January 2022, each UC campus will be interviewed to understand the challenges and complications regarding the operational processes and procedures. Campus constituents, administrators, technology transfer staff, faculty and industry will all be engaged in the process to understand the opportunities for improvement. TreMonti will provide a written report outlining each campus' process and provide suggestions for each campus to address the recommendations by July 2022. Specific campus and UCOP workflows will be created to implement the recommendations. It is anticipated that draft implementation workflows will be created in September 2022, final implementation workflows will be established in December 2022, and implementation of workflows will begin in January 2023. Due to the complexities and scale of these processes, migrations to the new platforms on average can take between six months to four years. Moving the information from PTS to another system will be a substantial effort that will require significant time.

Advisory member Kahn encouraged the consulting firm to review the information that the Working Group collected from a variety of universities around the country over several all-day meetings. He remarked that the Working Group has previously met with constituents on the ten UC campuses so it may be concerning to have a consulting firm be asking the same questions.

Advisory member Taylor asked about the feedback on the implementation work flows. He noted that it will be critical for the campuses to assist in the design of their work flows. Mr. Hunter responded that the structure has not yet been established but the campuses will be fully engaged in the process.

Regent Hernandez asked if the academic medical centers and the national laboratories provide intellectual property patents and questioned how these processes are monitored. He recalled that intellectual property at the national laboratories was previously structured whereby the Department of Energy (DOE) had first rights, since they provided direct funding to the laboratories, and then the UC system had second rights if the DOE passed on the opportunity. Mr. Hunter replied that he will follow-up with Regent Hernandez on the question.

Regent Park asked what the greatest challenges and opportunities will be with a multi-campus system in informing the consulting firms overall approach. Mr. Swatloski replied that he has not yet spoken to the campus constituents but he understands that from an innovation standpoint, there are varying levels of culture, complexities, and systems. He explained that the previous work of the Working Group as well as additional interviews with the campuses will help inform where inefficiencies and improvements are on the campuses and assist in establishing recommendations in order to create the greatest return on investment for the University.

Regent Park asked whether the final report will include suggestions for possible replacement systems for PTS. Mr. Swatloski stated that if PTS does need to be replaced,

TreMonti Consulting will provide suggestions and guidance on the specifics required for a systemwide tracking system.

Regent Park emphasized the importance of specific recommendations, including a solicitation for implementing changes. If the final report is too vague, it could result in additional consulting and a lengthier process.

Regent Park requested that the Special Committee meet with the consultants regularly throughout the process to ensure that progress is being made.

Chair Leib remarked that the Working Group spent several hundred hours over a year and a half reviewing PTS, meeting with the campuses, and doing extensive research on the innovation and entrepreneurship processes and practices within the UC system. The advisors on the Working Group and the Special Committee have impressive portfolios and world experience on this topic. He noted frustration that this prior work seems to be largely ignored in this process. It is important for TreMonti Consulting to learn from the work of the Working Group and take advantage of the expertise of the Special Committee.

Mr. Hunter addressed the concerns raised by the Regents and shared his experience in creating a successful PTS system at a single institution, which required six months to review roles and responsibilities and a year to complete the installation of the system. He remarked that the UC system has a complex structure but he is confident about obtaining results with the support of the consulting firm and the campuses. The roles, responsibilities, and business processes are coded in the PTS so establishing a suitable system that requires minimal modifications will be a multi-year project.

Regent Park and Chair Leib acknowledged Mr. Hunter's dedication to this endeavor. Chair Leib encouraged Mr. Hunter to continue the dialogue with the Special Committee and the expert advisors who can provide substantial guidance in this process.

5. **INCLUDING INNOVATION AND ENTREPRENEURSHIP IN PROMOTION AND TENURE DECISIONS**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Faculty Representative Horwitz described the process of merit, tenure and promotion at the University for ladder-ranked faculty.

Two years after hire, an assistant professor is eligible for review based on demonstrated innovation, excellence in teaching, research or creative scholarship, and public service. The assistant professor is awarded a merit increase to assistant professor step three upon positive review. At year six of the faculty members' appointment, they are eligible for evaluation of tenure, a significant distinction for the faculty member.

In order to obtain tenure, the department extensively evaluates the quality and quantity of the professor's research, creative scholarship, teaching record, professional activity and

service and contributions to diversity, including review by external distinguished faculty of the candidate's research in comparison to other work in the discipline. The review responses are evaluated by senior faculty members of the department, who vote on the promotion. The department chair presents a letter to the divisional dean outlining the candidate's accomplishments and providing an overview of the vote. The divisional dean reviews the information and writes a letter of assessment as well, which is then presented to the campus Committee on Academic Personnel (CAP).

CAP is a highly regarded Committee of the Academic Senate comprised of approximately 12 faculty members from varying scholarly disciplines. This Committee typically meets weekly to discuss individual faculty files and votes to approve, disapprove, or modify promotion cases. CAP then submits its recommendation to the chancellor who has the final decision on tenure status.

The Academic Personnel Manual (APM) guides the process of tenure. However, the APM does not provide a clear overview of how patents or entrepreneurial activity is considered in a faculty review. CAP has historically included faculty's patent and innovation work in the category of public service. A professor receives acknowledgement for any research that leads to a patent but does not receive additional credit for actual patent applications. The APM allows for some flexibility in that if the patent itself is the innovation, the candidate may include that in their self-assessment.

Faculty Representative Cochran stated that the APM clearly conveys that faculty should have excellence in innovation, no matter the discipline, but it does not provide guidance on how or where this creative activity should be executed. Faculty innovation is highly differentiated across disciplines, which makes it challenging to define expectations around quality, innovation and excellence.

Ms. Cochran remarked that the peer review process for merit and promotion is arduous. In order to determine if patent recipients or faculty engaging in external business start-ups are being treated fairly in the process of CAP review, she suggested that the University use personnel data and interview CAP members to determine if further guidance on review of external entrepreneurship and patent procurement is warranted in the APM.

Faculty Representative Horwitz noted that these are the Senate leaderships' personal opinions. The Regents' request to examine the APM has been forwarded to the systemwide CAP and Research Policy Committees to make recommendations to the Academic Council by January 2022. If the recommendation is to make changes to the APM and the Academic Council agrees, then there will be a 90-day full Academic Senate review of any proposed changes.

Rich Carter, professor of chemistry and faculty lead for Innovation Excellence-Office of Research at Oregon State University, shared that he and Karl Mundorff received a grant from the National Science Foundation to facilitate a nationwide conversation focusing on the recognition of and impact on innovation and entrepreneurship on faculty promotion and tenure decisions. The Promotion and Tenure Innovation and Entrepreneurship (PTIE) effort created a coalition of approximately 68 members, including five UC campuses, to

identify best practices and suggest language, metrics and process reform for evaluation of faculty promotion cases.

Mr. Carter underscored that the focus is to broaden the qualification for promotion and tenure to be more inclusive of academic disciplines, including arts and humanities, which may not be fully valued under the current paradigm. The intent is not to make innovation and entrepreneurship a required component for faculty or reduce the importance of basic research in anyway. The goal is to support faculty who seek to have influence beyond the traditional publication and grant model. This effort does not seek to make faculty into business people or justify a money-making mechanism. Supporting the pursuit of knowledge is a core value of a university; if research associated with innovation and entrepreneurship is not valued as highly as basic research, then the paradigm does not protect this pursuit.

PTIE's report, including authors from UC Berkeley and UC San Diego, made four recommendations – developing university-wide language valuing innovation and entrepreneurship, innovation and entrepreneurship metrics, innovation and entrepreneurship evaluation criterion, and process changes. Mr. Carter stated that these recommendations can serve as a structure for universities to support advancement and develop a model where all disciplines are valued.

Karl Mundorff, Executive Director for Innovation and Entrepreneurship at Oregon State University, explained that in a national survey conducted by PTIE, it was clear that innovation and entrepreneurship is important in the recruitment of faculty. However, institutions do not know how to evaluate this research. Another concern that arose from the survey centered around patents. Most institutions have a limited patent budget so if patents are the only innovation and entrepreneurship criteria, then that may cause conflict regarding funds allocated by the research offices.

Chair Leib asked which UC campuses are part of the coalition and inquired what it means to be a part of the coalition. Mr. Carter responded that UC Berkeley, UCLA, UC Riverside, UC San Diego, and UC San Francisco are in the coalition. Representatives from institutions who worked with the coalition were typically senior administrators involved in the promotion and tenure process. When the coalition discussed specific topics, a cross-section of university constituents were involved, including faculty.

Advisory member Wallace asked if faculty impact on students' performance in innovation and entrepreneurial efforts was considered in promotion and tenure decisions. Mr. Carter responded that the total impact of a faculty member, including mentoring, is addressed in the PTIE recommendations. A large percentage of high school and college students desire to start a business at some point in their careers. The most important output of a university are the people it produces. Mr. Mundorff noted that employers are looking for employees with innovation and entrepreneurial skills as these are typically adaptive thinkers.

Regent Park asked what information the Academic Senate committees will consider when analyzing the recommendations to the APM. Faculty Representative Horwitz responded that the committees will be reading the Working Group report, Mr. Carter and Mr. Mundorff's work on innovation, entrepreneurship, promotion, and tenure, the Committees

on Academic Personnel information on patents and entrepreneurial activities, as well as other papers on the impacts of changing the criteria for tenure and promotion. He underscored the significance of changing the APM. There may be resentment regarding the varying incentives related to patents between the disciplines, specifically between Science, Technology, Engineering and Math (STEM) and non-STEM fields. Regent Park stated that this is intended to allow for inclusivity throughout the UC system and across disciplines.

Regent Park asked if basic research scholarship will be devalued if there is a change to the APM regarding innovation and entrepreneurial activity. Faculty Representative Horwitz responded that he is uncertain but suggested that some faculty will believe that is the case. He noted that the APM and CAP already reward faculty for innovative or entrepreneurial activities. Specifically highlighting it in the APM will have complex consequences.

Regent Park asked if there has been a discussion in the Academic Senate about establishing a committee specifically on innovation and entrepreneurship. Faculty Representative Horwitz explained that the Committee on Research Policy already oversees innovation and entrepreneurship.

Regent Reilly asked Professor Carter if any of the recommendations of the PTIE report have been implemented on any campuses and, if so, what the results were. Professor Carter remarked that it is too early in the process to indicate specific outcomes, but there is a 21-institution group that is working collaboratively to implement and adopt some of the recommendations at their own institutions. This is a long-term effort that will likely take years to measure significant results. Professor Carter suggested that the UC system could be a leader and help change the nationwide landscape.

Chancellor Christ noted that this would not be a major change in culture, as rewarding faculty for entrepreneurial activities is already occurring on campuses. It is just a matter of how formalized this change needs to be in the APM.

6.   **ACADEMIC PERSONNEL LEAVES OF ABSENCE FOR INNOVATION AND ENTREPRENEURSHIP UPDATE**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Vice Provost Carlson provided an update on proposed changes to the Academic Personnel Manual (APM) Policy 759 in response to the Working Group on Innovation Transfer and Entrepreneurship Report's recommendation #9 to revise academic personnel policy regarding leaves of absence to include pursuit of innovation and entrepreneurship activities. She explained that this policy is used for tenured faculty, as a mechanism to manage the option of unpaid leave.

The three proposed amendments include citing the most common reasons for unpaid leave; clearly stating that academic appointees on such leaves are still required to report under conflict of commitment policies as faculty continue to have obligations to the University as employees; and explaining that leaves without pay will not exceed one year but may be extended and limited in length.

The proposed revisions were circulated to stakeholders and the 90-day review period concludes on January 26, 2022. These stakeholder reviews help to ascertain intended and unintended consequences of proposed policy revisions.

Regent Park asked if a faculty member taking a leave without pay as opposed to a leave with pay, is limited to the same conflict of commitment, outside professional activities, and compensation policies. If that is the case, she remarked this is rather restrictive and questioned the rationale for requiring faculty to report outside professional activities and be limited to compensation margins during a leave without pay. Ms. Carlson responded that during any leave, paid or unpaid, the APM-025 conflict of commitment policy still applies for general campus faculty. During leave without pay, faculty in the Health Sciences Compensation Plan and general campus faculty do not have a limit to the number of days that can be spent on outside professional activities. However, faculty under the Health Sciences Compensation Plan are subjected to APM-671, not APM-025, and are required to disclose outside professional activities and compensation in either leave situation. In addition, each medical school has adopted specific implementation guidelines.

President Drake underscored the complex nature of these policy changes. He stated that if a faculty member takes a leave to pursue other opportunities, it can be challenging for the departments to ensure that the daily work of the department is being performed while also supporting innovation and entrepreneurship activities. Departments are often small and when a faculty member takes a leave, it can have a substantial effect.

Advisory member Kahn stated that when a faculty member takes a leave of absence, they are still subject to the campus' conflict of commitment policies. He remarked that it is important for the campuses to protect intellectual property as well as understand the outside professional activities of a faculty member, even during a leave period, so that planning may be done for any continued research.

Regent Park stated her concern that these policy changes might not incentivize entrepreneurial endeavors as was the intent of Working Group's recommendation. She agreed with President Drake's comment that faculty leaves do have departmental impacts which should be a consideration in these proposed changes.

7.   **INNOVATION AND ENTREPRENEURSHIP IN THE ARTS, HUMANITIES AND SOCIAL SCIENCES**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Richard Andrews, Associate Director of the UC Berkeley Center for New Music and Audio Technologies and Executive Director of the Eco Ensemble at UC Berkley, described his research. His Center has produced several patents and licensed software that resulted in several million dollars of income through sponsored research and industry affiliate programs and successful fundraising efforts for these initiatives.

Mr. Andrews shared that he created an arts entrepreneurship course that allows students to develop an idea for an arts organization and turn it into a functioning, sustainable business.

In addition, he has taught a course on the intersection of policy and business and wrote a book on arts entrepreneurship to provide guidance to artists in the development of practical business skills. He recently received a grant from the UC Berkeley Sutardja Center for Entrepreneurship and Technology to create new instructional materials around innovation, specifically in non-STEM disciplines.

He noted that several students in his arts entrepreneurship course have created successful projects and businesses with social impact, including a documentary film making company, an online archival research platform about social movements, a school that teaches art students software engineering skills, and a holocaust education exhibit that travels to school and museums.

Mr. Andrews shared that undeclared and art majors are the most significant student majors that enroll in the arts entrepreneurship course. Students who take the course have a competitive advantage in the job market when they present a business plan that they have created to a future employer.

He suggested that the University offer more courses on this topic, establish academic minors and degree programs in arts entrepreneurship, engage with incubator programs and industry partners to create internships and mentoring programs, and generate communications that feature UC-developed creative businesses with positive societal benefits.

Lisa Bosman, Assistant Professor in the Department of Technology Leadership and Innovation at Purdue University, described her experience with accelerator startup programs. As an industrial engineer, she noted her disappointment that universities are not teaching entrepreneurial skills to engineering students. She co-authored the book "Teaching the Entrepreneurial Mindset to Engineers" and recently expanded her work to all disciplinary backgrounds. She has received over two million dollars in federal funding to support her startup research in solar energy performance modeling as well as faculty professional development in the entrepreneurial sector.

Ms. Bosman remarked that the University of California and the Board of Regents have the power and influence to change the way university administration supports faculty commercialization efforts to benefit both the faculty and the institution. She illustrated several ways in which non-STEM faculty have successfully commercialized ideas.

She suggested several changes that the University can implement to allow faculty professional development opportunities that promote and optimize innovation and entrepreneurship activities. Promotion and tenure changes should be implemented that value innovation and entrepreneurship. Accelerator startup programs for faculty could be provided. Other ideas include allowing for a co-working space to connect likeminded individuals and ideas, reimbursing faculty for patent costs, providing course relief so faculty are able to focus on their endeavors, and offering access to resources like computer science programmers and graphic designers for website creation. She emphasized the importance of business mentors to assist with business development and startup related issues as well as legal support to explain the legal consequences of creating startups while

a University employee. Providing entrepreneurial seed funding and adopting clear intellectual property policies that are specific to faculty could also benefit these endeavors.

Scott Hartley, a venture capitalist and author, highlighted the importance of the arts and humanities in the innovation and entrepreneurship sector. He described his experience in technology at Google and Facebook and as a venture capitalist for the past decade. He has run a small seed fund and made approximately 200 investments in early stage startups in the U.S across varying sectors.

Mr. Hartley remarked that his book, "The Fuzzy and the Techie: Why Liberal Arts Will Rule the Digital World," was created from the idea that arts and humanities are at the center of innovation. He stated that many successful well-known entrepreneurs have arts and humanities degrees and backgrounds. One of the intents of his book was to highlight the intrinsic benefits of humanities and noted the importance of having a psychological lens. An entrepreneur is an empathetic and communicative story-teller.

He stated that some of the major innovations that are typically seen as technology based are in actuality steeped in humanities.

He mentioned examples of the value that an intersection between the arts and technology can provide. For instance, self-driving cars require interpretation of forms of communication when stopped at stop signs. Someone with an anthropology doctorate can assist with development of software to interpret these modalities.

Advisory member Kahn asked if students in the education or library studies fields were involved at UC Berkeley in the arts entrepreneurship course. He stated that projects from both of these fields often use technology to allow collections to be accessible and digital. Mr. Andrews responded that there is a lot of interest from students in these majors. The library sciences has been through a revolution in making works accessible and searchable. In education, there is substantial interest in using technology when designing a hybrid course. Digital archiving and search ability is an area that warrants further exploration.

Advisory member Wallace praised Mr. Andrews for his work at UC Berkeley teaching business skills to all disciplines. She noted that there are severe gender disparities and lack of opportunities for women in STEM. Women receive only two to ten percent of venture capital. She suggested discussion be held at a future meeting about this issue.

Regent Park asked how the University can explain to students about capitalizing these efforts, even the ones that are not designed for substantial monetary returns but rather societal impacts. Mr. Andrews responded that he asks his students to create their own measure of success, whether it be substantial monetization with large scale impact or smaller scale with deep meaning as both are valued equally.

Advisory member Green explained that in his experience the most successful technology startups have succeeded because of the interactions of the people involved, not due to the technology or market opportunities. The technology rarely fails, but people contribute to the success or failure of a startup, and this is where non-STEM graduates can be influential.

He asked if there are opportunities to change the divide between STEM and non-STEM students in order to establish a more collaborative approach.

Mr. Hartley agreed about this divide and suggested that students need to be given the vocabulary to connect the two in a more relevant way,

Ms. Bosman shared that when she is applying for accelerator startup programs, she is asked about the technology and not about the people behind this technology, which may be a barrier for those in the non-STEM fields. She suggested that the National Endowment for Humanities develop a comparable program to that of the National Science Foundation to assist in providing entrepreneurial training for humanities faculty and students.

Mr. Andrews remarked that in the music technology research environment, there is great collaboration between non-STEM and STEM students. He noted that this has been the main formula for success.

Mr. Walker stated non-STEM students and faculty need the same entrepreneurial support, training, and skills as those provided to those in the STEM fields. He underscored the importance of the intersection between arts and humanities and STEM.

8.   **UC FACULTY INVENTORS AND FOUNDERS**

[Background material was provided to the Special Committee in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Robin Hunicke, professor of Digital Art and New Media at UC Santa Cruz and founder of the startup company *Funomena*, described her background as an artist, scientist, and game developer.

Due to the dearth of women in the gaming industry, she founded *Funomena,* an independent game studio/developer, to create a diverse, equitable game company. Ms. Hunicke was recruited to teach a class in the Digital Arts and New Media Program at UC Santa Cruz, and subsequently founded its Arts Games and Playable Media Program (AGPM). She described the challenges of establishing the AGPM program with limited funding. While teaching at UCSC, Ms. Hunicke was able to continue to build her company and entrepreneurial activities.

She shared that her entrepreneurial activities would have likely failed if she did not already have tenure. Challenges included lack of resources within the University to successfully create programs, systemic campus culture that does not celebrate change or failure positively and the intense pressure placed on junior faculty especially woman and people of color.

She remarked that tenacity in the arts is an essential component of innovation in technology. Collaborative efforts with students and other departments have enabled the creation of a strong interdisciplinary creative program.

She described her current work developing an interactive design course, an online degree completion program for women, and strengthening the AGPM program curriculum.

Ms. Hunicke suggested that the University be more intentional about creating opportunities for entrepreneurship and innovation by developing ecosystems that support this work and promote collaboration. She underscored the need to establish value by providing rewards and prestige for these efforts such as creating a UC in-residence program for innovators that maintains the faculty's full salary. Some other ideas include establishing a UC-wide entrepreneur Slack or Discord channel to communicate ideas, creation of a UC Lab Innovation Fund that distributes grants, and hiring young, diverse faculty leaders with fresh ideas and enthusiasm.

Advisory member Taylor praised Ms. Hunicke for her suggestion of an innovator in residence program. He asked if a target of excellence hire with tenure for someone with a nontraditional academic background is common at the University. Faculty Representative Horwitz responded that when funding is available, there are opportunities for these hires. Ms. Hunicke commented that a target of excellence hire is sometimes perceived as an outsider from a traditional academic faculty perspective.

Chair Leib asked what challenges that Ms. Hunicke faced in the creation of a program and as an entrepreneur at the University. Ms. Hunicke responded that she was able to circumvent many challenges because she is in the arts. As such, her research that she was reviewed on as a faculty member was a substantial part of her entrepreneurial endeavors. She remarked that if she was in the engineering or computer science fields, she would have had to leave the University due to the constraints related to entrepreneurial activities.

Ms. Hunicke underscored the great challenges facing the University in terms of knowledge transfer and commented that UC has the power to make a great impact in this arena.

The meeting adjourned at 2:25 p.m.

Attest:

Secretary and Chief of Staff