The Regents of the University of California

SPECIAL COMMITTEE ON INNOVATION TRANSFER AND ENTREPRENEURSHIP
August 19, 2021

The Special Committee on Innovation Transfer and Entrepreneurship met on the above date by teleconference meeting conducted in accordance with Paragraph 3 of Governor Newsom's Executive Order N-29-20.

Members present:	Regents Butler, Leib, Park, Reilly, and Sherman; Ex officio member Drake; Chancellors Christ, Khosla, and Munoz; Advisory members Kahn, Ku, Taylor, Walker, and Wallace
In attendance:	Regent Lott, Regent-designate Timmons, Faculty Representative Horwitz, Secretary and Chief of Staff Shaw, General Counsel Robinson, Provost Brown, Chief Investment Officer Bachher, Executive Vice President and Chief Financial Officer Brostrom, Vice President Maldonado, and Recording Secretary Lyall

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

1.   **PUBLIC COMMENT**

There were no speakers wishing to address the Committee.

Chair Leib thanked the Regents and Chancellors for serving on this Special Committee, specifically thanking Regent Park for agreeing to be Vice Chair and for the work she has done to date. He expressed appreciation to the non-voting advisory members who were volunteering their time to assist the Special Committee and asked each to introduce themselves and provide some background on their experience.

Michael Kahn is an attorney who has practiced law in the Bay Area and represented the University of California on many matters. He has been involved in technology transfer issues for about 40 years in various capacities, including biotechnology companies licensed by the University of California.

Katherine Ku served as the Executive Director of Stanford University's Office of Technology Licensing for 27 years and has been working in the field of technology transfer for almost 40 years. She currently worked for Wilson Sonsini Law Firm as the Chief Licensing Advisor.

Peter Taylor described his long history with the University as the past President of the Alumni Association of UCLA, past Chair of the UCLA Foundation, and past Chair of the UCLA African American Recruitment Retention Task Force. For five years, he served as Chief Financial Officer at the UC Office of the President, then served for six years as a

member of the California State University Board of Trustees. He also currently served on the Second Century Council at UCLA.

Joseph Walker is an investment banker and most recently was Vice Chairman of Investment Banking at JP Morgan. He had a long interest working with start-ups in the University environment, was involved in helping set up Applied Innovation at the University of California, Irvine, and was active at Columbia University.

Peggy Wallace is co-chief executive officer and managing partner of Golden Seeds, an angel investment firm dedicated to promoting women entrepreneurs. The firm had about $150 million invested in women-led companies with a heavy investment portfolio in biotechnology, life care, and deeply scientific companies. She has personally invested in many high-technology companies and served on their boards.

Chair Leib noted that Josh Green was also an advisory member but he was unable to join the meeting.

Chair Leib provided a review of the Special Committee's work and indicated that a Regents Working Group on Innovation Transfer and Entrepreneurship had met over the past year and a half, with several of the same members that were on the Special Committee. The Working Group engaged in a comprehensive review of the current practices at the University and also researched best practices at top-performing universities across the nation in translating research and ideas of faculty and students into new products, services, and innovations.

Chair Leib described the Working Group report which contained 14 recommendations to the President of the University and to the Special Committee. Recommendation 14 was to establish this Special Committee to provide oversight of the implementation of the other 13 recommendations over the next two years. He encouraged the Regents, Chancellors, and advisory members to read the report in its entirety. The report contained practical and reasonable recommendations that have already begun to be implemented with the goal making UC the number one university in the world when it comes to innovation and entrepreneurship. The Special Committee would work closely with the Academic Senate, Office of the President, and the campuses to ensure a successful implementation of these recommendations. He noted that he would assign one or two members of the Special Committee to be responsible for specific recommendations in order to stay on track. Chair Leib reviewed the goals of the meeting, which were to hear about the current work being done with regard to the recommendations and to discuss how the Special Committee can work with the various constituents to map out a schedule and plan for future meetings.

President Drake began his remarks by thanking Chair Leib and acknowledging the members of the Special Committee, noting that they were asked to serve because they were all influential and forward-thinking in the areas of entrepreneurship, innovation, leadership, and higher education. Their collective talents and experiences would help UC coalesce efforts into a force that would lead to great progress for the University. Last year, the University was facing dramatic budget cuts when the Regents Working Group was

underway as well as in the midst of a pandemic presenting significant challenges. He appreciated the forward-looking focus of the Special Committee, which concentrated on the bigger picture and long-term future. The University had now experienced the largest increase in State funding in its history, and he hoped that this would allow UC to create significant results moving forward. President Drake thanked the members for contributing their time and expertise and expressed his enthusiasm to work with the Special Committee.

2.   **PATENT TRACKING SYSTEM: PRE-PROJECT FOUNDATIONAL WORK**

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

Chair Leib expressed the need for and importance of a new Patent Tracking System (PTS).

Vice President Maldonado thanked the Special Committee for its work and began her presentation on Recommendation Four, replacement of the PTS, from the Report of the Working Group on Innovation Transfer and Entrepreneurship.

Ms. Maldonado provided a few general updates to the Special Committee. She was assigned as the point person to coordinate overall implementation of the recommendations of the Working Group for the Office of the President. A leader has been identified for each recommendation. However, due to the long history, many of these recommendations were interdependent and interconnected and not necessarily discrete, requiring collaboration from many departments in order to create a shared understanding of priorities, practices, reward structures, and a sense of purpose. This would require a massive cultural shift across a large community of excellent researchers, scholars, students, alumni, and staff who want to make a difference. They were reimagining the University with a strong passion for public impact and expressed excitement to move forward in partnership with the Special Committee.

She welcomed the new Executive Director of Knowledge Transfer and Innovation Partnerships, Bruce Hunter. He was previously the Executive Director of Intellectual Property, Technology Transfer, and New Ventures at Rensselaer Polytechnic Institute. He had extensive experience in this space in higher education and in the private sector.

The PTS was a UC-developed platform from the 1980s. There have been several updates as the Intellectual Property (IP) world has moved quickly and as campuses have started to develop their own infrastructure. The system was designed to track the University IP portfolio, to manage patenting and licensing functions, and to manage IP-related financial transactions. As technology transfer operations have become more sophisticated, PTS no longer met all of the University's needs and software integration was challenging.

Moving forward, UC needed to understand its current ecosystem in order to unravel, clarify, and simplify roles, responsibilities and processes. The University tracks technology knowledge and other forms of innovations developed at the campuses and incubators by faculty, students, research staff, and alumni. The challenge always has been to effectively

translate this work to industry start-up companies and public use. In the 1980s, the campuses were not set up to provide these translation functions, and so PTS was created. The innovation transfer enterprise depended strongly on relationships established by the researchers on campuses with industry and other stakeholders. Therefore, over time, different UC campuses established their own infrastructures to varying degrees by adopting third-party systems that now must be integrated with PTS. Ms. Maldonado noted that work was being done to reevaluate the business process mapping and redesign.

The Knowledge Transfer Office (KTO) provides patent prosecution and management, financial services, equity management, and annual reporting. KTO does substantial work in financial services to assist the campuses. Several campuses are beginning to develop their own infrastructure for patent prosecution. In developing a new PTS, consideration should be given to how to best support and guide the current ecosystem rather than focusing on functions and policies.

Ms. Maldonado presented a chart which illustrated the current ecosystem and noted that the PTS new user interface was housed in the KTO. UCLA and UC Davis have adopted a product called Inteum innovation technology management. UC San Diego and UC Riverside have adopted Wellspring. The UCLA Technology Transfer Office has been working closely with KTO to create an application programming interface to have its system communicate with PTS to be able to transfer data easily and efficiently.

In one hybrid model scenario that KTO is suggesting, the UC Office of the President (UCOP) would offer patent prosecution and management, financial services, equity management, and annual reporting. Some campuses would subscribe to these full services, for example UC Merced, while other campuses would only subscribe to a few services, like UC Santa Cruz. Finally, UCLA and UC San Diego were fully operational locally.

Ms. Maldonado provided a review of the Working Group's recommendation regarding pre-project foundational efforts. She was happy to report that progress had already been made on this work but there was a substantial need to reevaluate all of the business processes, including ensuring alignment with campus needs, discovering opportunities to seek efficiencies, and simplify workflows. This also included reviewing the University's policies, guidelines, and practices to ensure that they support innovation to the fullest extent rather than obstruct it, and determining what data is necessary.

She expressed agreement with the report of the Working Group. Last year, 20 major workflows were identified that needed to be reexamined with campus consultation. In this process, the ten campus technology transfer offices have been interviewed and other expertise has been leveraged, such as the Ethics, Compliance, and Audit Services department at UCOP, to assist in this development. The interview questions would continue to be reviewed.

Ms. Maldonado presented an overview of the budget and staffing needs, including subject matter experts, project manager, and some consulting services. The majority of the budget requests involved hiring experts.

A draft detailed and realistic timeline was developed to meet the stated goals of replacing PTS. Ms. Maldonado concluded her remarks by expressing the importance and significance of this large undertaking.

Chair Leib underscored the importance of establishing an updated and efficient PTS and indicated that the Working Group realized that having a workable system is crucial for creating a good innovation, entrepreneur, and technology transfer program. He reiterated that this needs to be a priority.

Regent Park expressed appreciation for the presentation and noted her enthusiasm that this was the first item addressed by the Special Committee. The detailed background materials demonstrated that a revision of the PTS was critically needed. The University's information systems are important to supporting the efforts of the Special Committee and the University's entrepreneurs. She asked, as a pre-project foundational task, to identify what campus-level data was required by UCOP to discharge its core oversight and reporting responsibilities. Former Interim Executive Director of the Knowledge Transfer Office Janna Tom indicated that UCOP was working with the campuses to look at the data needed in order to discharge responsibilities and ensure that it has the data necessary to conduct annual reporting to the Regents and other entities. As an example, UCOP was working with UCLA on developing and identifying the specific components and data elements in order to conduct proper accounting and financial services for the campus. Ms. Tom understood that the set metrics that have previously been reported to the Board might be revisited per the Working Group recommendations. UCOP was prepared to adjust the data elements in order to meet those requirements.

Regent Park asked that these data types be explained and how they help UCOP discharge these core duties, in light of the new advisory members on the Special Committee. Ms. Tom gave a data type example, explaining that the KTO distributes royalties and revenue as well as pays the bills of the patent attorneys who are filing and prosecuting the patent applications. KTO tracks information about the case and the invention to ensure that it directly coincides with the law firm invoices. With regard to royalty distributions, KTO needs to track the various inventors on the cases as a license in order to distribute the royalties to the proper inventors.

Regent Park inquired to which other parties, other than the Regents, KTO has a reporting obligation. Ms. Tom replied that KTO provides data to Institutional Research and Academic Planning (IRAP) at UCOP. IRAP uses the data in an online dashboard that the public can access. For example, the dashboard includes data comparing how many invention disclosures were received or how many patents were issued for a particular campus over a period of time. Another group that KTO reports to on an annual basis is AUTM, Association of University Technology Managers. This reporting gives an opportunity for universities to conduct benchmarking and provides some comparison as well as networking. Regent Park suggested that all of this reporting was important to keep in mind as UC developed the new PTS and data validation.

Regent Park asked about the staffing needs that were identified and pointed out that the current budget did not cover subject matter advisors. She asked which area was most in need of additional staff. Ms. Maldonado responded that her office needed assistance with the business project redesign process and was in discussion with a consulting firm about this. She noted that this was quite complex because PTS has been patched over three and a half decades and so this work will require considerable coordination across the ten campuses. She further indicated that Research and Innovation was trying to leverage expertise at UCOP to help map out the framework for the business process redesign as well as inefficiencies in the workflow. Regent Park reiterated that it seemed that UCOP was still in the process of identifying specifically where additional staffing comes into play versus external consultants.

Regent Park encouraged that the draft preliminary timeline be accurate and detail-driven. She questioned why there were two gaps in the timeline. The financial management requirements were slated to be completed in December, followed by a gap until the Request for Proposals (RFP) was approved in March 2022. The other multi-month gap occurred between the time anticipated for the contracting and procurement to be complete and the date for beginning the replacement implementation. Ms. Maldonado indicated that the internal timeline was actually more detailed but had been condensed for this presentation. Ms. Tom indicated that the gaps would allow for a reevaluation of the different components after the business process redesign, consultation with the campuses, and discussion within the University as a State entity which requires a certain process for issuing RFPs and selection of a vendor. Regent Park encouraged to keep items on track in order to keep the momentum moving for an implementation start date of October 2022.

Chair Leib indicated that he and the Special Committee looked forward to working with Executive Director Hunter as he would be a key person in the implementation of these recommendations.

Advisory member Kahn expressed concern about the timeline and noted that it is important to build in some time before the RFP is issued for the KTO to confer with the campuses to confirm that the system is user-friendly. He noted that the origin of the problems that the Working Group heard about was the dysfunctionality in working with the campuses. It would be important to give the campuses an opportunity to opine on the RFP and ensure that it interfaces properly with the various systems as this cannot be determined solely by UCOP. He also expressed apprehension that this would be costly and there did not seem to be a plan for procuring the funding. Ms. Maldonado responded that she would be working with different cultures across the UC system and would be very deliberate about respecting these cultures on each individual campus. Regarding funding, she noted that this was a frequent topic of discussion with Executive Vice President and Chief Financial Officer Brostrom and others.

Chancellor Khosla noted that this was an extremely good step forward and thanked UCOP for its visionary approach.

Chancellor Muñoz thanked Mr. Kahn for his recognition of the sensitivity and the

difference on how this comprehensive system would be applied across the ten campuses, which were at varying stages of maturity. He also expressed appreciation for Ms. Maldonado's understanding of this as well. A possible funding strategy might include campus recharge and/or assessment. Chancellor Muñoz indicated that this should be conceptualized early on relative to the degree of complexity and calibrated appropriately to the campus, depending on campuses' varying stages of maturation and resources.

Advisory member Taylor expressed appreciation for Mr. Kahn's point regarding funding. He suggested that it would be a massive feat for Mr. Brostrom and Ms. Maldonado to establish a system built like this for $5 million to $10 million. These systems were typically extremely expensive but terribly important. Governance was extremely important and campus input had to be a priority. He encouraged the University to build certain buffers into the timeline so that scope changes, campus input, and additional costs would not sideline the timeline. This would also ensure that campuses have opportunities for input as they see the evolution of the new PTS. He suggested that, after system implementation, someone needed to be responsible for the system moving forward. He indicated that committees are not the best way to leverage responsibility and that accountability has to rest with an individual somewhere. When thinking of alternative systems or purchasing off-the-shelf systems, he encouraged UC to think ahead about the maintenance cost of such systems because customized systems were often extremely costly in terms of information technology staff.

Provost Brown thanked Mr. Taylor and Mr. Kahn for their comments. He mentioned that he and Ms. Maldonado had discussed a project implementation team that would be part of the activities around scoping and systems implementation. He indicated that he had implemented systems before at UC Santa Barbara and that customizations can destroy a project; these factors would be under consideration as the project progresses. One of the reasons for customizations is that off-the-shelf products sometimes do not do all that is needed.

Regent Sherman recalled the experience of UCPath and suggested that Ms. Maldonado meet with Mr. Brostrom to learn from that experience. Mr. Brostrom indicated that one of the biggest lessons of UCPath was the fact that governance was initially disregarded. Once the campuses became involved at all levels, he noted that the project went much more smoothly.

Chair Leib thanked Ms. Maldonado on the progress being made to date. He noted that the Knowledge Transfer Advisory Committee (KTAC), a committee made up of campus representatives, including staff of the National Laboratories, had been working on recommendations of its own. He asked if these recommendations had been finalized. Ms. Maldonado stated that these recommendations had been finalized and presented to the President's Innovation Council, but not yet published. There was considerable alignment in the recommendations across the Committees, which was promising. The replacement of PTS was a priority.

3.   **INNOVATION AND ENTREPRENEURSHIP FUNDING STRATEGIES**

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

Chair Leib expressed appreciation for the substantial amount of work being done on the discussion of funding strategies. He thanked Executive Vice President and Chief Financial Officer Brostrom and Chief Investment Officer Bachher for their dedication.

Mr. Brostrom discussed two of the 14 recommendations established by the Working Group. The first one, Recommendation 6, was to provide budget augmentations to help campuses, specifically UC Merced, UC Riverside, and UC Santa Cruz, develop innovation transfer programs. These campuses would receive additional support of up to $1 million annually to build the infrastructure around technology transfer, to add staff, grow their programs, and support the ecosystem until they become self-sustaining. As consultation continues with campuses, UC would evaluate if other campuses might benefit from additional resources; this support would be phased out over time.

There were two ways that the University could fund this: either through a set-aside from the State General Fund allocation, as UC has done with several other campus-specific allocations, or through the campus assessment that the new State budget enabled the Office of the President to reintroduce in order to support systemwide goals. This could be included as a separate line item in the funding allocation so that it can be monitored over time. Mr. Brostrom indicated that his preference would be for the campus assessment because much of this work would benefit the medical centers, the research enterprise, and other parts of UC that would not benefit from the State General Fund allocation. He proposed to continue to work with Vice President Maldonado and the campuses' vice chancellors of research to determine the best funding model to meet these objectives. Chair Leib noted that the Working Group felt strongly that these three campuses needed to build out that infrastructure.

Regent Park asked about the timeline of the potential sources and when funds would be made available to these specific campuses. Mr. Brostrom indicated that he would assess what the campuses' needs were as well as the timeline for hiring, but the consultation process should be quick. He would not want to dispense funds until the campuses were actually able to utilize the funds. An anticipated date would be this fall and advance funds could be distributed to campuses if they were prepared to begin sooner. The Merced campus had indicated that it anticipated moving fairly quickly. He hoped that this matter would not wait until the next budget year.

Regent Park commented that this was not ongoing funding and that it was easier to identify one-time funds. Mr. Brostrom responded that there was a long maturation period for royalties and licenses that make these programs self-sustaining, so UC wished to ensure that these campuses had the funding in place for four or five years before beginning to phase out the funding.

Chancellor Muñoz stated that UC Merced was supportive of this possible recommendation. The campuses were at different stages of maturation, sophistication, and staffing. These funds would provide the resources to assist these three campuses to move more quickly in a positive direction. Mr. Brostrom noted that the ecosystem at UC Merced was very innovative and entrepreneurial. The University needed to build the infrastructure to support these students. Chair Leib indicated that there were different challenges and circumstances at UC Merced, UC Riverside, and UC Santa Cruz.

Mr. Brostrom discussed Recommendation 5, the establishment of a proof of concept fund to fill the gap until the technology or innovation can attract potential additional investors, licensees, corporate partners, or other sources of outside funding. One of the factors that often limits the number of inventions is a funding gap that often, or the gap between the pure research and the commercial application. The report recommended that the University develop a seed fund or a pre-seed fund to bridge this gap and provide the resources necessary to further develop the inventions that would result in greater marketability and commercial viability. Chief Investment Officer Bachher had funded several similar funds already within the University system, and UC would maintain these prototypes. Mr. Brostrom and Mr. Bachher would identify both the resources that are focused on this effort and also the funding needed to launch this.

Mr. Bachher explained the proof of concept idea by recounting that, about six years prior, a student from UC Berkeley showed up at the Office of the President informing them that he raised $5 million from five alumni. The alumni noted that if he received one $1 million from the Office of the President, it would lend substantial credibility to this proof of concept seed fund. Mr. Bachher noted that it was hard to resist investing $1 million. This man took that money and invested $5,000, $10,000 and $15,000 in start-up ideas, even at very early stages, and then took equity in exchange. That man continued to raise follow-up financing for 50 companies. One of those companies was a breakthrough and earned him $1 billion. For the University, Mr. Bachher and his team take risks, but there is a long-time horizon in which investments are measured. With a seed fund or a pre-seed fund, 99 percent of the ideas typically fail but there could be one that would be a breakthrough concept.

Mr. Bachher indicated that there were models within the campuses. In the last seven years, the University culture of innovation and entrepreneurship has expanded. The greatest ideas, the students, and the entrepreneurs were not confining their success to technology transfer or royalties but were thinking about getting the best capital that can help them succeed to build the greatest companies.

He commented that the advantage and competitive edge that the University had for entrepreneurs was the acknowledgment that the University would fund promising projects, even if there was not always a successful outcome. He was confident that the University could put together a proof of concept fund with advice from the Special Committee for the broader UC ecosystem, and there was no reason that success should be confined to UC Berkeley, UCLA, and UC San Francisco. The proof of concept fund would be a seed or pre-seed fund. He underscored that the University had the mindset, culture, and resources to help advance this recommendation and make it a reality for the broader ten campus

network, the medical centers, and the entrepreneurs coming out of the system.

Chair Leib noted that the Working Group had discovered that other institutions had tremendous success with the proof of concept fund. This was a great opportunity for the University.

Regent Park expressed her excitement about this concept and thanked Mr. Bachher for his inspiration. Even if most entrepreneurs fail, the real gain is not the monetary success but rather the fueling of the innovative spirit and motivation.

Advisory member Taylor asked about the annual expenditure of $6 million to $7 million and what specific investments would be distributed. Mr. Bachher noted that more than just money was needed to help an entrepreneur succeed. He described a UC Berkeley professor who created a robot that can pick things out of warehouses and help with separation of items. Mr. Bachher suggested that the professor could utilize warehouses that the University just invested in to test the robots. Sometimes success depended not on funding but on the presence of an ecosystem and a broader network. Mr. Taylor pointed out that these funds were not grants but rather investments. Certain criteria needed to be in place and communicated to campuses to ensure that it is clear that the University is in the business to help but also to produce a return on investment. Mr. Brostrom responded that these programs were not just about funding but also about mentorship, accounting resources, legal resources, and other executive opportunities, which were critically important. Building an entrepreneurial culture would lead to other beneficial outcomes.

Chair Leib agreed that surrounding these investments with support was critically important but concurred about the difference between a grant and an investment. He pointed out that 40 percent of the University's graduate students were from underrepresented communities and one of the reasons why it was so hard for these students to receive funding was lack of past experience. He recommended that the University provide opportunities for non-traditional entrepreneurs. Mr. Bachher indicated that the team that would be making these investment calls would have a direct impact on the quality of the entrepreneurs selected, possibly non-traditional people who are able to make broad decisions. For most of these investors, the focus was on the excitement surrounding an idea, rather than an emphasis on underrepresented and minority students.

Advisory member Ku explained that during her time at the Stanford University Office of Technology Licensing, there was an experimental fund of about $2 million. It was expected to be spent in one year but it took about three years to diminish the fund. The project sizes ranged from $5,000 for a market report to up to $500,000. The goal was to fund enough of a project to make it licensable. There were quarterly meetings with the faculty to discuss the progress of these milestone-driven projects. Ms. Ku noted that determining which projects to fund was difficult and that the application form was intentionally simple, a brief one to two pages. She found that the faculty would typically initially request $100,000; however, she reiterated that Stanford aimed to fund what was needed rather than what had been typically expected from a grant.

Regent Sherman underscored the importance of the mentorship component that Mr. Bachher and Mr. Brostrom could provide to these young entrepreneurs. From his personal venture activity experience, he remarked that the leading companies all have board seats on these start-ups and they have a significant impact on the management of these companies as they grow. He further emphasized the "locomotive effect" of the University investing in companies and suggested that the University was adequately compensated, specifically for ideas that succeed and subsequently move from the seed round to Series A, B, or C funding. He reiterated the importance of the University's contribution and significance that it would have for third-party investors.

Advisory member Wallace concurred with Ms. Ku's comments about the excitement of this conversation as an investor. She noted the importance of definitions, specifically clarification of a proof of concept fund versus a seed fund. Proof of concept funding, as she understood, is typically given to faculty rather than a student entrepreneur. She asked if most proof of concept funds were even backing a company or rather simply moving the technology along. Mr. Bachher agreed with Ms. Wallace and clarified that he was describing a pre-seed seed fund and not restricting it to faculty but seeing it as open to the University community. He was not thinking of this in the context of grant giving and proof of concept for faculty because there was already a well-organized industry and approach to that. In response to Regent Sherman's comments, Mr. Bachher noted that the advantage the University had in maintaining a lead investor status in companies was that once the small pool of capital is exhausted, the University can continue to invest in the successful idea to maintain its stature in the company. He reiterated that this funding is an investment, allowing the University to take an exchange equity, and not a faculty grant.

Regent Reilly asked about the process to determine who receives funds, how much money specific ideas would receive, and if this would be a University-wide protocol or would differ from campus to campus. Mr. Bachher responded that this determination had not yet been made but that UC intended to take a non-bureaucratic and entrepreneurial approach to the process. He noted that if ten projects were funded, there would be 90 others that would be disappointed and that should be acknowledged. Mr. Brostrom added that he appreciated Ms. Ku's comments about the application being a simple process. This was not a business plan but rather a very early stage in the process of development and should not be bureaucratic.

Chancellor Muñoz emphasized the importance for undergraduate and graduate students of having the experience of working with faculty in laboratories developing new innovations. Students' exposure and involvement early on in this process would likely result in long-term intellectual and technological benefits.

Chancellor Khosla congratulated and thanked Mr. Bachher and Mr. Brostrom for the positive changes under their leadership. UC San Diego would be inaugurating a $70 million building, the Design and Innovation Building, where all of the campus' entrepreneurship laboratories and programs would be housed. A seed fund that previously was available only to faculty would be expanded to entrepreneurial teams in the future with funding of

$5,000, $7,000, and $10,000. He hoped that the program the Office of the President was designing would complement and not conflict with what the campuses had already established as all locations attempted to increase the returns in their portfolios.

Chancellor Christ informed the Special Committee that UC Berkeley had a number of these programs already established. The programs also provide critical expertise to the faculty recipients and access to people who understand the start-up universe, which has been proven to be highly successful at UC Berkeley. Mr. Bachher remarked that he was not thinking of this as a UC Office of the President fund but rather as a campus and faculty fund. He reiterated that the intent was to complement existing campus systems and support the campuses' success. Innovation occurs at the local level, so the success of this seed fund would arise from localized effort in partnership with the campuses.

Chair Leib expressed his excitement about this presentation and the progress that has been made in a short period of time.

4. **UPDATE ON VENDOR PROCUREMENT FOR REVIEW OF UNIVERSITY PROCESS FOR ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS**

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

Chair Leib introduced the item, and noted that one of the recommendations of the Working Group, Recommendation 12, was to analyze the enforcement of the University's rights pertaining to intellectual property (IP).

General Counsel Robinson introduced Deputy Counsel for Business, Finance, and Innovation Darnele Wright who was the lead at UC Legal for this project. Mr. Robinson presented a slide providing an overview of the strategic IP management lifecycle from research and development to enforcement and defense litigation.

Mr. Robinson recommended that effort be broadened beyond simply looking at the University's litigation. In the past seven years, the University had only had six active litigation matters seeking to enforce patents. Part of the reason for this was that the University licenses patents to licensees who often pursue litigation that the University is a party to but in which it is not an active participant. With regard to pre-litigation activities, Mr. Robinson reported that at UC there were 7,825 invention disclosures in fiscal year 2019 and 283 license agreements occurring over multiple years. There was $105 million in patent royalty and fee income in fiscal year 2019, of which 65 percent came from the top 25 inventions.

While there was substantial expertise in this area within the Office of the President and on the campuses, Mr. Robinson suggested that an outside consultant be retained who is independent from the University and could put a fresh perspective on the process. The consultant would have industry perspective, could provide benchmarking, and would have resources to complete this process in three to six months. UC Legal engaged in a formal

Request for Proposals (RFP) process, interviewed consultants, discussed qualifications, and refined the problem definition. Five consultants were identified, all of whom have worked with the University previously or who were recommended: Deloitte, Ernst & Young, Pinnacle Reach, Value Strategies, and Crowell and Moring. The University gave the consultants a set of requirements, requesting a process map of the key decision points of the IP management lifecycle beginning with the patent applications of issuance and license agreement to the decision to enter into litigation. UC Legal also requested that the consultant undertake a comparison of the processes at the campuses. Mr. Robinson indicated that the consultants would begin with a focus on three campuses initially as a pilot program before outlining a process map for all ten campuses due to cost concerns and the large scale of the project. The campuses suggested for potential inclusion in the pilot program were UCLA, UC Davis, and UC Santa Barbara. All consultants have submitted proposals.

Ms. Wright provided a high-level summary of the proposals. Some commonalities among the proposals were that each consultant firm intended to carry out an initial gathering and review of documents (technology transfer policies, licensing templates, etc.), review University processes specific to patents as they relate to enforcement, interview key administrators at the campuses that are chosen for the pilot program, and issue a report of written recommendations. Some differences in the proposals included an opportunity to provide a formal presentation to the administration, provide benchmarking activities of peer institutions as well as industry comparables, customization of recommendations for other locations, implementation support or a support roadmap, and one proposal offered to review the University's entire patent portfolio. Ms. Wright noted that while each company has worked with the UC in some capacity, some had greater familiarity with the University's IP processes and portfolio than others. It was anticipated that the dollar value of this contract would potentially exceed the requirements for competitive bidding, so UC Legal would work with UC Procurement on formalization due to the wide variation of pricing.

Ms. Wright indicated that there was not a preferred company at this time in the process. With feedback from the Special Committee and other stakeholders, UC Legal intended to have a better comparison due to the number of differences in the proposals and move forward with finalizing the RFP. In addition, UC Legal would work with campus stakeholders and Ethics, Compliance and Audit Services to ensure that efforts were not duplicated. The consultants suggested that this work could be completed in three to six months following the completion of the RFP process, which was expected to be complete within one to three months.

Mr. Robinson outlined several pending issues including funding. He noted that once the consultation with the campuses and the Office of the President was completed, there would be a better estimate of the cost and then a determination of the source of funding. There might be a joint retention once it was determined if and where there was possible overlap. Another issue to be determined was which department should take the lead on this project. He noted that it made sense for UC Legal to take the lead when the focus was solely on litigation, but if the project moved to business or policy decisions, then UC Legal might

not be the appropriate department. However, he indicated that business and policy decisions have a significant impact on the ability to enforce the University's intellectual property rights. There was a need for further discussion about this with Vice President Maldonado, the campuses, and others with regard to governance over the project.

Advisory member Kahn provided an overview of the complexity of this matter. At the beginning of this project, there was an overall concern that the University might not be collecting potential revenue received as a research entity from some of these high-yielding innovations. This issue was explored by the Working Group and it was determined that there were great inefficiencies in trying to enforce the University's rights because the majority of rights did not yield any monetary value. Most of the licenses were not incredibly successful, but there were a small number that had the potential to yield billions of dollars. The question was how the University could create an efficient system which allows for monetary gain from the narrow margin of successes while not using funds to pursue less successful ideas. An efficient system for funding litigation needed to be explored and a determination made of how best to enforce the University's rights in an efficient and effective way in order to capture all of the assets. If the University could double or possibly triple this revenue, this would be a significant amount of money. Mr. Kahn concluded by noting that the Working Group recognized the importance of the University's role to work for the public good through research. However, if there was an opportunity to produce large amounts of revenue, it would be important for the University to explore this funding source.

Mr. Robinson agreed with Mr. Kahn that there was an opportunity to explore these funds. He mentioned that the University could do better at actively auditing and utilizing its audit rights and licenses to discover royalties or for other enforcement activities. He recommended that the Special Committee provide some direction as to the scope of the goal and direction of focus. Mr. Robinson asked whether the focus should be on properly exercising and being diligent about monitoring the University's rights or, on the other hand, focusing on an efficient system allowing UC to have a good selection process for the funds.

Mr. Kahn confirmed that the Special Committee was focused on enforcement of rights rather than the selection process or how the University placed the funds. There were concerns that the University was not auditing or pursuing a substantial number of rights and not identifying the rights the University should be pursuing. This was a matter not only of litigation but also of auditing rights.

Chancellor Khosla agreed with the previous comments about enforcing the University's rights. He noted that the best enforcers were the faculty because they had an amazing incentive if someone else profited from their technology. He referenced a lawsuit involving Carnegie Mellon University and Marvell Technology where Marvell paid Carnegie Mellon a $750 million settlement based on six lines of code that it did not have the rights to. He expressed understanding for the need to enforce the University's rights but he did not see a need for a consultant in this process, because the University may end up spending more money auditing and creating rules and regulations with little outcome.

Regent Reilly asked if the University had an amount of funds that were not being captured annually by not pursuing enforcement rights. Mr. Robinson responded that UC did not know that number. This is one of the pieces of information UC hoped to capture by process mapping. He suspected that the processes were quite varied depending on the campus. Mr. Kahn referenced an example at UCLA where there was a minor dispute with a company over the licensing rights of a molecule. After multiple lawsuits, it was determined that the molecule was licensed by the University and UCLA received a billion dollars. There were very few circumstances like this but when one occurs, it can yield a substantial amount of funds.

Mr. Kahn addressed Chancellor Khosla's concern regarding a consultant and noted that this was not intended to be a full audit but rather point out clear instances where the University has licensed items that produce a considerable amount of money that can be audited more thoroughly. Chancellor Khosla clarified that these instances typically come to the University's attention through a principal investigator whose technology is licensed or through an accidental situation. He noted that these were typically not brought to the University's attention through consistent and systemic auditing practices, which he opined would be a waste of resources. Chair Leib indicated agreement with Chancellor Khosla's comments.

Advisory member Ku indicated that Stanford University had only sued seven or eight times in probably 50 years for intellectual property rights. She agreed with Chancellor Khosla's remarks that, in general, universities are informed by faculty about cases of infringement so that it is not necessary to go searching for infringement. She recommended conducting audits consistently, having a systematic audit process, and auditing early so that the company and university are on the same wavelength. At Stanford University, surface audits were done for smaller companies and the largest licensees were audited regularly. She noted that unintentional different interpretations of what is covered and what is not covered can be found and that companies understand that audits are a part of good business.

Regent Park expressed hope that hiring a consulting firm would provide an intentional approach and answer some of these questions. If the University was indeed relying on the principal investigators and faculty members to alert the University about any infringements, she asked if these people had enough line of sight into other various issues that may arise. She underscored the importance of spending time and funds responsibly, and noted that the University should be thoughtful about the benefits it would receive from expenditures.

5.   **THE CHALLENGES AND OPPORTUNITIES FACED BY CAMPUSES WITH EMERGING TECHNOLOGY TRANSFER PROGRAMS**

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

Vice President Maldonado introduced the item, which was related to Recommendation 6 from the Working Group on Innovation Transfer and Entrepreneurship Report. She stated

that all the campuses were in varying stages of developing their ecosystems and they had different cultures and contexts.

UC Riverside Vice Chancellor for Research and Economic Development and Professor of Mathematics, Rodolfo Torres, described the unique role that his campus has in the Inland Empire. He expressed his appreciation for the Special Committee, specifically the thoughtfulness of many of the recommendations and the recognition of substantial differences across campuses in the system.

UC Riverside was not yet at a state of maturity in terms of innovation, technology transfer, and entrepreneurial activities, but the campus was committed and convinced that it could take tremendous steps in moving towards the level of success that some of the other campuses have already achieved.

UC Riverside, UC Merced, and UC Santa Cruz had a number of things in common. All three campuses were Hispanic-Serving Institutions and had high percentages of underrepresented minority students, first-generation students, Pell grant-eligible students, and California resident students. According to *U.S. News and World Report*, UC Riverside was respectably ranked first in the nation in terms of social mobility in 2021.

The surrounding Riverside community was younger than the average, with a higher percentage of people who are 18 years old and younger, in addition to a much larger Latino(a) population, and a lower median income than the state average. Some of the counties surrounding UC Riverside have suffered from years of neglect in terms of economic investment and faced environmental challenges in the areas of fire safety, water and air quality, and energy.

Mr. Torres remarked that UC Riverside has established an internationally recognized record in agriculture, clean energy, and natural resources reserves. The campus last year contributed to the creation of more than 20,000 jobs and $2.3 billion in output in the Inland Empire alone.

UC Riverside, UC Merced, and UC Santa Cruz had true potential to be transformative in the economies of their regions but several issues needed to be addressed. One concern was the daily migration and commute to the surrounding communities, like Silicon Valley or coastal areas, to more prosperous job prospects in technology. The lack of capital venture and reduced endowment made it harder for graduates and others to find investments for start-up companies. These companies had to move to other locations in order to receive the next round of investment funding.

In the last five years, almost the same number of patents were assigned to inventors who lived in the Inland Empire as to those who lived in Orange County. However, a large portion of these companies aligned on the coast. UC Riverside had made good use of past investment and Mr. Torres noted that the $2.2 million from Assembly Bill 2664 helped the campus to secure an additional $16 million from other sources to improve entrepreneurial mentorship, an incubator facility, and a proof of concept fund. Any additional temporary

investment would help the campus graduate from the bottom tier and find the right path for a sustainable future.

Mr. Torres concluded by mentioning an ongoing project at UC Riverside, Opportunities to Advance Sustainability, Innovation, and Social Inclusion (OASIS). This was an ambitious research and economic development project that would leverage the relocation of the California Air Resources Board headquarters to Riverside adjacent to the campus. UC Riverside would work with the City and County to create a clean technology park focusing on clean transportation and infrastructure as well as clean energy and fuels.

UC Santa Cruz Director of Industry Alliances and Licensing, Andrea Pesce, noted that she has been at UC Santa Cruz for over four years and described her past positions and experience in technology licensing.

Ms. Pesce remarked that UC Santa Cruz, UC Merced, and UC Riverside were campuses that were a direct reflection of the local communities, allowing for a great opportunity to make transformational economic and social impact on these regions. She stated that the three campuses could make a significant contribution in the agriculture and agricultural technology industry, specifically in translational research, technology innovation, social justice and equity issues, climate justice, resource management, and food sustainability issues.

Technology companies were growing in areas near these campuses, and this would provide significant funding opportunities for the campuses in areas such as ground and aerial transportation innovation.

UC Santa Cruz was renowned for its Genomics Institute, which was the first to sequence the human genome. Its intellectual property included one of the world's leading sequencing technologies. UC Santa Cruz had the largest faculty of ribonucleic acid (RNA) scientists in the world, who were making advances towards disease and cancer diagnostic applications.

UC Santa Cruz's Institute of Marine Sciences set State and international standards for sustainable harvesting practices and natural resource management. The Center for Agroecology and Sustainable Food Systems and the campus' 26-acre farm was part of the founding of the organic farming movement in California. The campus' interdisciplinary Institute for Social Transformation brought core campus values and culture into all research and innovation activities.

The campus was a member of the Association of American Universities, a recipient of National Institutes of Health research funding, and a Hispanic-Serving Institution. UC Santa Cruz pursued research and educational excellence in all fields, but did not have a hospital, medical school, business school, or law school, institutions which build significant financial and social capital and generate alumni who found businesses.

UC Santa Cruz did not have the other sources of income that campuses with medical

centers had, and, as a result, UCSC operated on a tight, risk-averse budget. Any funds spent needed to produce a direct, immediate return. Innovation and entrepreneurship was a long-term investment game and the campus currently did not have adequate funding to support such investments. Ms. Pesce remarked that the additional support through the limited-term budget augmentation would make a significant difference for UC Santa Cruz.

The campus recently launched the Innovation and Business Engagement Hub (The Hub) with the main goal to serve as the nexus for faculty, students, and innovators and the business community around the campus, alumni, and other partners and investors. The Hub planned to expand on some early phase successes enabled by Assembly Bill 2664 funds by building out its Silicon Valley strategy, connecting the campus to the Valley. The campus owned a facility in Santa Clara, its Silicon Valley campus, which was home to the incubator-accelerator program, funded by the Assembly Bill. In addition, The Hub planned to explore expanding and supporting growth in Marina, California, where the campus had over 400 acres inside a tax-designated opportunity zone, adjacent to the tarmac of the Marina Municipal Airport and only an hour and a half drive from Silicon Valley. The campus is considering moving some of its research and workforce development activities to this location, specifically the drone education and research initiative, which was the first of its kind in the UC system.

The budget augmentation would help the campus make these investments and build the social and financial capital it needed to achieve a sustainable innovation and entrepreneurship infrastructure and leverage the massive federal and State funding opportunities available. Ms. Pesce concluded by remarking that the future return on this investment to the University would be significant.

UC Merced Interim Vice Chancellor for Research and Economic Development and Professor of Sociology Marjorie Zatz stated that she has been at UC Merced for seven years and described her past positions and experience.

Ms. Zatz noted that UC Merced was only 16 years old but was rising rapidly through the rankings. The campus had achieved the Carnegie Classification doctoral, high research R2 status in 12 years, faster than any other campus in the nation. The campus' goal was now to achieve R1 status, the highest research designation, and the timeline to reach this distinction was aggressive.

UC Merced was purposefully and strategically situated in a part of the state where it could not only bring a UC-caliber education to the Central Valley but also make important contributions to the region's economic development through innovations in agricultural technology and food production, health sciences research, wildfire research, climate justice, data science, mechanical engineering, computer science, and other fields.

Ms. Zatz shared the many accomplishments at UC Merced and outlined one of the ways in which the campus would engage the resources under discussion and where the University could expect to see a return on investment very quickly.

In the past two years, UC Merced had received about $20 million in new funding for agricultural technology work, which was quite significant for the campus. A year ago, UC Merced received its first National Science Foundation (NSF) engineering research center for the internet of things in precision agriculture, a prestigious program that was renewable contingent upon industry partnerships.

Other recent major awards included one of two new U.S. Department of Agriculture (USDA)-funded artificial intelligence institutes—the Institute for Agricultural Artificial Intelligence for Transforming Workforce and Decision Support. The campus also received two new USDA grants for its mobile robotics laboratory and its robot assistant precision irrigation delivery project. Ms. Zatz remarked that there would soon be an announcement of a sustainable agricultural system grant from USDA for securing a climate resilient water future for agriculture and ecosystems through innovations measurement, management, and market.

UC Merced was proud to be leading UC's multi-campus research partnership on labor and automation in California agriculture, a demonstration project for the campus' new 40-acre smart farm located on the edge of campus. The campus had received funding from commodity groups, such as the Almond, Citrus, and Pistachio Boards as well as from industry, such as Mars, Incorporated.

All of these new initiatives required relationships with industry in order to move the technologies to public benefit. However, the campus needed greater translational research capacity to reach this impact. These projects offered incredible opportunities for partnerships with local and regional industries as well as incredible opportunities for students.

Ms. Zatz reported that UC Merced was tied for second place in the UC system for the percentage of undergraduates who went to earn a doctoral degree. *U.S. News and World Report* ranked UC Merced as the number one institution among public universities in outperforming expected graduation rates. The campus' goal was to engage these same students in entrepreneurial activities to create a culture of innovation.

The three campuses, UC Merced, UC Riverside, and UC Santa Cruz, had hundreds of potentially viable intellectual property opportunities that could make impacts in these communities, the state, the nation, and the world. However, these campuses needed a proactive support system with dedicated personnel to help translate these research ideas into marketable practices and products. The funding being discussed to help these campuses would support innovation and economic development in these communities, would ensure that the faculty's research reaches its markets, and would provide UC students the opportunity to learn how to connect research to economic prosperity. It would allow the capacity to train, educate, and mentor faculty and students in entrepreneurial activities, identifying markets, and partnering with industries and would connect faculty and students with networks so that they can reimagine their career options. Ms. Zatz concluded by remarking how excited the three campuses were by the possibilities ahead.

Chair Leib asked if setting up a mentoring system from campus to campus would be a constructive idea. Mr. Torres responded that this was a good idea and that the campuses were always in need of best practices. He also noted that the campuses were in consistent communication with other campuses. Ms. Pesce agreed that leveraging partnership across the system was an excellent idea. She remarked that the Center for Information Technology Research in the Interest of Society (CITRIS) was a good example of multi-campus partnering that has been extremely successful and that this same model could be applied in other fields. Ms. Zatz commented that this should not be limited to one-on-one mentoring. She noted that UC Merced has been short-staffed and that UC Santa Barbara has been helping share best practices. She would like to be able to draw from good ideas throughout the system, rather than just campus to campus.

President Drake noted that UC is a ten campus system and ideas should be shared throughout all ten campuses, rather than assigning a specific campus designation based on a particular expertise. He expressed concern about limiting this mentoring capability to one campus as the University has an active ecosystem of sharing.

Chair Leib explained that the mentoring system was not a recommendation from the Working Group but that there had been some discussion about this idea. He concurred with President Drake's point.

Regent Park asked whether there were regular formal meetings with research offices throughout the system and questioned the level of interaction with counterparts between the campuses. Ms. Pesce answered that there were monthly intellectual property directors meetings which were highly collegial and collaborative. She noted that there was likely some level of this kind of communication in the campus research communities but not so formally facilitated. Ms. Zatz responded that the Vice Chancellors for Research met at least once a week. Mr. Torres stated that the collaboration was appreciated. In addition, he shared that there were meetings of various sub-groups across the campuses; for example, the Southern California campuses were now meeting with the National Laboratories to create a Southern California Hub in order to increase interaction with the National Laboratories. He expressed appreciation for this collaboration among the campuses and stated this has been an important asset. Regent Park remarked that the power and potential of these three campuses was clear. This presentation had reinforced the importance of the Special Committee's work to help empower these campuses.

Chair Leib explained that, at the suggestion of Regent Butler, the Special Committee would visit the various UC campuses to get a better understanding of the ecosystem of each campus.

6.   **FUTURE GOALS AND MEETINGS OF THE SPECIAL COMMITTEE**

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

Regent Butler acknowledged her appreciation for the amount of work that has been done

to date. She asked what other things the Special Committee might do to ensure the success of the campuses, who were all at different maturation levels. She indicated that there was a premium put on UC Merced, UC Riverside, UC Santa Barbara, and UC Santa Cruz but she suggested that staffing recruitment be reviewed, specifically on the Merced campus. She remarked that the Special Committee should continue the discussion in detail as it visits the campuses and review any gaps or additional ways to support the campuses.

Chair Leib noted that while the Special Committee was tasked with implementing the 13 recommendations of the Working Group, there were also other items that it might want to pursue. For example, there was legislation several years ago, Assembly Bill 2664, which provided funding that helped the campuses. The Special Committee might want to discuss legislation as a future objective.

Chair Leib hoped that the Special Committee would meet off-cycle on the same schedule as the Regents Health Services Committee, in addition to the campus visits.

Regent Park asked President Drake about the President's Innovation Council and asked to what extent it would be beneficial to understand the suggestions from this Council. President Drake agreed that it would be beneficial for the Special Committee to coordinate activities with this Council, which included representatives from the private sector. He noted that he would work with Vice President Maldonado to discuss how to coordinate the work of the Special Committee, which was more operational and dealt with the mechanism of getting ideas to market, with the work of the Council. He underscored his interest in helping faculty and students take their ideas and develop them into marketable products in an efficient and effective manner.

Regent Park encouraged the Special Committee to work creatively to provide opportunities for networking by bringing in employers and other people regionally to advance the innovation transfer and entrepreneurship activities on campuses.

Advisory member Walker remarked that the Special Committee should keep in mind the role of innovation in the arts and humanities as this was a great area of opportunity and an interest of faculty and students. The focus was typically on science, business, and engineering but he encouraged broader thinking about innovation. Chair Leib stated that the Special Committee was interested not only in funding but in fostering ideas in all areas, including the humanities and arts. The focus should be to ensure that the University was not "leaving money on the table."

Advisory member Wallace stated that the Special Committee's scope had been defined around patents which were focused on the science, technology, engineering, and mathematics (STEM) fields. She remarked that, if the Special Committee wanted to be more inclusive in terms of the degrees reflective of the student population, then the focus needed to be broader. Chair Leib agreed that the recommendations of the Working Group were centered on STEM, but he expressed appreciation for the opportunity to broaden the scope to include arts and humanities. He indicated that he had received several comments in agreement with Mr. Walker's comments. The Special Committee should look at ways it

can help to advance the University in all areas.

Regent Lott expressed appreciation for the work being done in this area and offered to assist.

Faculty Representative Horwitz acknowledged his agreement with Chancellor Khosla in establishing a bureaucracy around innovation and intellectual property that was lean, especially in the legal and enforcement areas. He expressed concern about spending funds to facilitate ideas which, as had been noted, did not yield successful results 99 percent of the time.

Regent-designate Timmons acknowledged the outstanding work that has been done and noted that start-ups also required access to equipment and technology. It was not only funding that faculty and students needed in order to allow their ideas to come to fruition.

President Drake expressed appreciation for everyone's engagement and expressed hope that the outcome would hopefully be a smoother pathway for ideas to become practical and useful in the broader world.

The meeting adjourned at 1:20 p.m.

Attest:

Secretary and Chief of Staff