

The Regents of the University of California

SPECIAL COMMITTEE ON INNOVATION TRANSFER AND ENTREPRENEURSHIP

September 20, 2022

The Special Committee on Innovation Transfer and Entrepreneurship met on the above date at the Price Center, San Diego Campus and by teleconference conducted in accordance with California Government Code §§ 11133.

Members present: Regents Hernandez, Park, Reilly, and Timmons; Chancellor Muñoz; Ex officio members Drake and Leib; Chancellors Khosla and Muñoz; Advisory members Green and Ku

In attendance: Regents Blas Pedral and Robinson; Regents-designate Ellis, Raznick, and Tesfai; Faculty Representatives Cochran and Steintrager; Interim Secretary and Chief of Staff Lyall, General Counsel Robinson, Senior Vice President Bustamante, Executive Vice President and Chief Financial Officer Brostrom, and Chancellor Larive

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

1. PUBLIC COMMENT

The following persons addressed the Special Committee concerning the items noted.

- A. Sharanya Sriram, an undergraduate at UCSD, stated that unlike the State of California, the University does not plan to reduce greenhouse gas emissions by 2030 and that UC emits over one billion tons of carbon dioxide annually. She urged the University to adopt the Academic Senate's Memorial, which calls for a 60 percent reduction in on-campus fossil fuel use by 2030 and a 95 percent reduction by 2035.
- B. Ann Huang, an undergraduate at UCSD, expressed concern about UC's involvement in the Thirty Meter Telescope project, which she asserted will negatively affect biodiversity in Hawaii and is opposed by the Native community. She urged the University to withdraw funding from this project.
- C. Valeria Cantor Mendez, an undergraduate at UC Davis, urged the University to divest funds from the Thirty Meter Telescope, provide transparency regarding its funding, and issue a statement announcing withdrawal from the project in solidarity with Native faculty, staff, and students.
- D. Aaron Hurley, a neonatal pediatric respiratory therapist, EMT, and Director of Survivors of the Abortion Holocaust, stated that he worked for seven years at UCLA, where he helped to save children as young as 20 weeks of gestation, while in another area of the hospital, children were being dismembered and their organs were used for medical research. He said that recent research indicates that fetuses can feel pain as

- early as 13 weeks. He asked if Chancellor Hawgood would meet to discuss ethical research and research alternatives.
- E. Robert Byrd, an organizer with Pro-Life San Francisco, spoke in opposition to UCSF's research practices. He asserted that UCSF bioscience laboratories partner with abortion facilities to collect body parts for aborted fetal tissue research and requested a meeting with Chair Leib and Chancellor Hawgood.
 - F. Drew Scott, Skilled Trades Director for Teamsters Local 2010, stated that it took UC two months to respond to the union's initial wage proposal. In the meantime, its members have been dealing with the biggest spike in cost of living in more than 40 years. He asked that UC stop stalling and pay its essential workers fairly.
 - G. Anastasia Rogers, an organizer with Pro-Life San Francisco, claimed that UCSF harvests the organs in utero of children who are healthy and could survive if given medical attention. She asked that Chancellor Hawgood meet with representatives of Pro-Life San Francisco.
 - H. Tim Clement, a representative of Survivors of the Abortion Holocaust and chaplain and counselor with Ventura County Rescue Mission, stated that his uncle decided to donate his organs upon his death, whereas babies' organs are taken without their consent.
 - I. Nan Renner, a UC staff member and alumna, recommended the book, "All We Can Save: Truth, Courage, and Solutions for the Climate Crisis," co-edited by Ayana Johnson, an alumna of Scripps Institution of Oceanography. She stated that UC leads in climate research and must lead in climate action and asked how students, faculty, and staff can work with the University to free it from fossil fuels.
 - J. Jamal Colter, a UCSF Medical Center employee and member of the Teamsters Local 2010 bargaining team, stated that the Teamsters have been bargaining since March and they still do not have a contract. He urged the University to take care of the people who make the University great.
 - K. Jocabed Torres, a UC Berkeley student and member of Pro-Life San Francisco, stated she is appalled by the unethical research conducted by UCSF. She claimed that UCSF had a contract with the National Institutes of Health (NIH) to provide a monthly supply of two healthy, late-term babies from an elective, non-medically necessary abortion. She stated that there are ethical alternatives to research. She noted that she did not feel supported at the University when she became pregnant. She asked Chancellor Hawgood to hold a discussion with Pro-Life San Francisco, which has been requesting a conversation for three years.
 - L. Adam Cooper, a Ph.D. candidate in atmospheric chemistry at UCSD and a climate justice organizer, stated that he can live by his climate values at home by choosing renewable electricity, but must sacrifice those values at UCSD, which depends on a

fracked methane gas power plant to generate electricity. He stated that the University has no commitments, goals, or plans to reduce its emissions and called on the Regents to listen to the Academic Senate, which petitioned to set a goal of UC being carbon free by 2035 and to make meaningful progress within this decade.

M. Kristin Turner, Director of Pro-Life San Francisco, stated that her organization has been getting public records from UCSF since 2019 that show that UCSF has been harvesting organs from children that could survive on their own. She argued that it is ironic to call this reproductive justice when the children have no choice. She urged Chancellor Hawgood to meet with representatives of Pro-Life San Francisco and noted that they have been requesting a meeting for three years.

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

Upon motion duly made and seconded, the minutes of the meeting of June 16, 2022, were approved, Regents Drake, Hernandez, Leib, Park, and Reilly voting “aye” and Regent Timmons abstaining.¹

3. **UPDATE ON THE PROJECT PLAN AND SCHEDULE FOR REPLACING THE PATENT TRACKING SYSTEM**

Vice President Maldonado stated that the Patent Tracking System (PTS) was developed 40 years ago to track the financial aspects of managing patents, not to manage the intellectual property (IP) itself. PTS was incrementally patched over the years to support IP management. Over the past year, the Office of the President (UCOP) and the campuses explored what the system does, who is responsible for various functions, and what a new system should support. This has resulted in a better understanding of the problem and goals for PTS.

Senior Strategy Officer Dorothy Miller outlined a four-phase plan to collaboratively design, implement, and transition to a new intellectual property management system. She stated that UC is engaged in the pre-implementation phase, which includes examining current business practices for managing IP, reviewing prior studies and recommendations, documenting the desired future of innovation and entrepreneurship (I&E) operations, and making recommendations for implementing modern I&E systems and practices. She reported that Huron Consulting had been engaged to meet these objectives and described the project’s governance.

She summarized progress toward completion of the pre-implementation phase and a timeline for key deliverables, which will establish governance, develop business and system requirements, develop campus and UCOP transition plans, and quantify staffing and cost requirements. The team intends on finalizing a Request for Proposals by the end

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

of December 2022 and issuing it by February 1, 2023. The implementation phase is anticipated to occur from 2023 to 2026.

She reported that a project team has been appointed and meets weekly. Several “deep dive” analyses on different aspects of the project were conducted. In addition, the project team adopted governance documents, including a charge and bylaws, which will guide the pre-implementation phase.

Regent Hernandez asked about the funding and staffing requirements for implementing a new system. Ms. Miller replied that this is part of the pre-implementation phase planning and that her office is working with UCOP’s budget office to understand these requirements.

Chair Leib asked if the implementation phase, tentatively scheduled for 2023-2026, could be accelerated if more resources were marshaled to do so. Ms. Miller responded that the three-year implementation period reflects the fact that some campuses will be prepared to transition earlier, while others will not.

Advisor Ku also asked about phasing, questioning if the pre-implementation phase was too aggressive and whether funding would be available to support it. Ms. Miller explained that the pre-implementation phase includes the lessons learned over the prior year. She opined that the timeline is aggressive, but achievable, noting that she and her team meet weekly with the campuses and other internal stakeholders. She stated that a funding request for this phase is currently being negotiated.

Advisor Ku asked Ms. Miller to further describe the “deep dives” and inquired if they were extensive enough. Ms. Miller addressed these concerns by describing the examination of workflows. Ms. Maldonado added that each deep dive session lasts for two hours and focuses on one workflow. She noted that these discussions also revealed an inconsistent understanding of PTS and that the central office has learned from best practices that the campuses use. She confirmed that her division has funding to complete the foundational phase of the pre-implementation work.

Chancellor Khosla suggested challenging current processes to make them more efficient. Otherwise, the software implementation could replicate inefficient processes. Ms. Maldonado assured the Committee that the team is examining and simplifying every workflow. Chancellor Khosla asked why UC is not simply replicating the successful software implementation at UCSD. Ms. Maldonado replied that the team is learning from best practices established by UCSD.

Chancellor Larive noted that some smaller campuses may have difficulty implementing some of these best practices due to staffing issues and wondered how to implement these practices through partnerships and through the “Power of Ten.” Ms. Maldonado emphasized that UCOP is sensitive to the different needs of the campuses. Ms. Miller added that the transition plans are campus-specific and are tailored to where each campus is starting its transition.

Committee Chair Park asked where decision making authority resides. Ms. Miller stated that the systemwide Provost, as the project's executive sponsor, will make decisions regarding the overall project, its timeline, governance, etc. However, each Chancellor will make decisions about whether it makes sense for their campus to assume roles and responsibilities for IP management and accounting; these decisions will be made by November 1.

4. UPDATE ON INNOVATION AND ENTREPRENEURSHIP FUNDING STRATEGIES

Executive Vice President and Chief Financial Officer Brostrom discussed the status of the Working Group's recommendations to establish a proof-of-concept fund and to ensure that all of the campuses had the resources and infrastructure to support innovation transfer programs. He noted that while most campuses have robust proof-of-concept funds, some do not. However, through AB 2664 in 2016, the Legislature provided \$22 million in one-time funding to expand entrepreneurship infrastructure and education programs, which was divided evenly across the campuses and was leveraged by a factor of 14 from other philanthropic and corporate sources. He highlighted the Fresno-Merced Future of Food Innovation Coalition (F3), housed at the Merced campus. A few weeks ago, President Biden recognized F3 as one of the winners of the administration's \$1 billion Build Back Better Regional Challenge, intended to spur regional economic development and next generation clean energy and biotechnology. The F3 program will receive \$65 million to support efforts toward a more resilient and sustainable food system.

Mr. Brostrom stated that the role of the Office of the President (UCOP) is to help jump-start these programs by identifying funding sources and continuing to advocate for new State funds. He highlighted two internal funding sources that could be used to establish proof-of-concept funds: optimizing working capital, which could result in an additional \$100 million in unrestricted revenue annually, and borrowing from working capital.

Mr. Brostrom also highlighted that the 2022-23 State budget provides \$85 million in funding for climate resiliency projects at three campuses (\$18 million for Merced, \$20 million for Santa Cruz, and \$47 million for Riverside).

In addition to pursuing funding opportunities, Mr. Brostrom reported that UCOP is developing a new President's entrepreneurship council to strengthen the entrepreneur-mentor network. Planning for the council is just beginning, and it will be presented to the Special Committee at a future meeting.

Chancellors Muñoz and Larive discussed how they will be using the State climate resiliency funding allocated to their campuses. However, they noted that the State funding was allocated for specific purposes, and that while a small portion may be used for related research in a proof-of-concept fund, they are obligated to use it for the intended purpose.

Advisor Green asked why the University has not established a large, long-term proof-of-concept fund, as recommended in the Working Group's report. Mr. Brostrom responded that the chancellors were not in favor of redistributing existing funds to create a central pool and felt that UCOP instead should assist the campuses that do not already have proof-of-concept funds, helping to identify potential fund sources for these programs.

Regent Leib encouraged UCOP to consider making a request to the Legislature to seed a permanent proof-of-concept fund, given interest from the Governor's office and legislators. He encouraged UCOP to include this in future budget requests. Regent Leib asked Chancellors Muñoz and Larive if they would embrace a proof-of-concept fund. Chancellor Larive stated that a proof-of-concept fund could be very useful over the next five years to help bridge the funding gap until the campus' patent portfolio begins to generate revenue that can then be invested in a proof-of-concept fund and other innovation and entrepreneurship activities. Chancellor Khosla opined that proof-of-concept funds are better established and controlled at the local level and should be leveraged for venture capital funding.

Advisor Ku commented that a proof-of-concept fund established by the President would send a message that this is an important priority for the University.

Committee Chair Park asked if the chancellors would be willing to use the revenues from optimizing working capital to fund innovation and entrepreneurship activities. President Drake replied that chancellors have discretion in terms of allocating these funds and it is the chancellors' choice where to invest the funds.

Regent Hernandez expressed concern that larger campuses may have more discretionary funding than smaller campuses. President Drake responded that UCOP has multiple programs to assist the smaller campuses. Mr. Brostrom added that financial aid is pooled, so as not to disadvantage campuses due to their students' financial profile.

Committee Chair Park emphasized that the Working Group heard from multiple sources at the campuses that proof-of-concept funds should be augmented centrally to provide greater value in propelling innovation and entrepreneurship.

5. **SPEAKER SERIES: UC SAN DIEGO PROFESSOR STEPHEN MAYFIELD – CALIFORNIA CENTER FOR ALGAE BIOTECHNOLOGY**

Professor Stephen Mayfield described the evolution of his career from basic research to focusing on applications of biotechnology and pursuing entrepreneurial activities. He founded several companies before he began focusing on the critical issue of climate change, specifically, using algae as food and as an alternative to petroleum-based polymers. In 2016, he founded Algenesis Materials, a company dedicated to making sustainable and biodegradable polyurethane products. He noted that the number one product made with polyurethane is shoes; 25 billion shoes are made each year and are among the top kinds of pollution in the ocean. Because companies are risk-averse, they were not receptive to using

this new technology, or they anticipated it would take up to six years to evaluate the product and integrate it into factory processes. As a result, Professor Mayfield and his colleagues founded Blueview, a company that manufactures shoes that are 100 percent biodegradable. He displayed a shoe that had disintegrated significantly in a compost bin for six months and noted that in two more months it would be unrecognizable. He stated it would also completely biodegrade in the ocean. He thanked Chancellor Khosla for providing \$50,000 in seed money to help design a prototype that was critical to generating interest from the venture community. He stated that the National Institutes of Health (NIH) and other funding agencies will not fund commercial endeavors because it is considered a conflict of interest. He observed that basic research is valuable but will not help solve the climate crisis and noted that there is an urgency to moving such discoveries from the research laboratory to the market for societal benefit.

Professor Mayfield reflected on how UC both assisted and hindered his entrepreneurial endeavors. He highlighted the change in mindset among faculty and the University over time in terms of positively viewing the pursuit of commercial endeavors. He stated that Chancellor Khosla has been key to this transition by establishing an innovation center to assist faculty in bringing research to market. The center also encourages students to engage in entrepreneurship. However, he opined that rules governing the transfer of technology from the University to the private sector slow the process of translating basic science to solutions for real-world problems. For instance, raising venture funding or having to pay royalties will prevent the widespread adoption of products like his company's flip-flop shoe due to price. The design must be open source, not a source of profit.

Regent Leib asked about the financial arrangements between the inventor and the University. Professor Mayfield replied that the University owns the patents for inventions made by its faculty members. In this case, the University gave his company a non-exclusive, royalty-free license. But venture capital firms want an exclusive license, so the University either takes equity in the company or the company pays royalties for the use of the technology.

Regent-designate Raznick asked Professor Mayfield to describe how the innovation center helped him and how it could help student inventors. Professor Mayfield cited UC Berkeley's Sky Deck as a model to replicate for mentoring students and faculty inventors and helping them start companies without having to raise money from venture capital companies. He stated that such centers are very valuable because they help students learn how to become inventors. He recommended that the University create more such centers. He added that the University could greatly accelerate commercialization by building a prototyping laboratory, which is more sophisticated than maker spaces, because having a product in hand makes it far easier to get funding.

Regent Hernandez asked about the greatest challenge his company faces. Professor Mayfield replied that it is simply educating the consumer about the product and countering "greenwashing" in the fashion industry, which makes inaccurate claims about the environmental sustainability of many products. He noted that his affiliation with UCSD

provides the company with credibility.

6. **ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS BY THE UNIVERSITY OF CALIFORNIA: LICENSE COMPLIANCE AND PATENT INFRINGEMENT**

Deputy General Counsel Darnele Wright introduced James Severson of Pinnacle Research, a consulting firm that specializes in transitioning discoveries to commercialization. Mr. Severson conducted a review of the University's programs for enforcing intellectual property (IP) rights, license compliance, and pursuing relief for patent infringement.

Mr. Severson stated that he interviewed staff at the Santa Barbara, Davis, and Los Angeles campuses as well as top performing universities in this area, and benchmarked key statistics in innovation and licensing at these institutions. However, he cautioned that solely examining patent data misses the value produced by non-patentable innovations. Additionally, these are measures of activity, not impact. In addition, he interviewed industry representatives to assess whether industry best practices could be adopted at UC.

Mr. Severson found that all three UC campuses routinely review royalty reports, but approach audits of licensees differently and do not have documented procedures for auditing. All three campuses stated that budget does not constrain their ability to conduct audits, but the current IT infrastructure does. He concluded that the audit clauses used in contracts by UC campuses are consistent with the best practices of top performing universities.

Mr. Severson noted that interestingly, not all top performing universities actively pursue audits, either because the portfolio is too small, or due to concerns about disrupting the relationship between the licensee and the university. Only half of the universities he consulted have formal review processes. Importantly, he found that they communicate their criteria for auditing during the license negotiation process and through the first sale of products to set expectations and to ensure that reporting is correct. He noted that Stanford, Columbia, and the University of Colorado require licensees to perform a self-audit every two years if the products have annual sales of more than \$5 million.

Mr. Severson provided an overview of his recommendations for UC, including reviewing and strengthening the audit clause in template licenses; improving tools and IT infrastructure to support monitoring compliance; improving communication with licensees about audits; confirming royalty calculations; and implementing procedures for reviewing royalty reports submitted by licensees.

Mr. Severson also found that UC and other universities do not have programs to identify and enforce patent infringement, whereas industry has active monitoring programs. He emphasized the importance of initiating surveillance of the UC patent portfolio to identify infringement with the help of analytic tools. However, he noted that because companies operate in specific markets, it is easier to focus on primary competitors.

Amir Naiberg, Associate Vice Chancellor and Chief Executive Officer of the UCLA Technology Development Group (TDG), and his colleagues described their review of UCLA's license agreements. Angela Kujak, UCLA TDG's Senior Director of Contracts, reported that they performed a "paper audit" assessing whether they tracked all licensees' obligations and if they invoiced and collected on those obligations. Out of 34 agreements selected, 26 were out of compliance. Issues included loss of sublicensing income, unreported products, failure to pay license maintenance fees and other fees, and failure to provide progress reports. As a result, UCLA revised some of its own internal processes to mitigate these failures and avoid the need to do a full audit. She noted that invoicing is at the root of the problem.

TDG Chief Financial Officer and Chief Operating Officer Tim Grauerholz stated that they also did a thorough review of UCLA's equity holdings. He stated that UCLA potentially holds \$40 million in equity from 50 companies, which could significantly benefit UCLA.

Mr. Naiberg offered comments on the recommendations in the Pinnacle Report, reflecting on UCLA's gaps and opportunities. He stated that the Office of the President (UCOP) could provide significant value by coordinating a multidisciplinary team to conduct audits, including accountants and patent attorneys. He also emphasized the need to streamline the process for monitoring licensee compliance, noting that these process improvements must be initiated now and cannot wait until 2026 when a new Patent Tracking System is deployed.

Committee Chair Park stated that Senior Vice President and Chief Compliance Officer Bustamante would also discuss the recommendations of the Pinnacle report at the next committee meeting and she looked forward to exploring its key, high value lessons for the individual campuses.

The meeting adjourned at 2:15 p.m.

Attest:

Secretary and Chief of Staff