

The Regents of the University of California

**SPECIAL COMMITTEE ON INNOVATION TRANSFER AND ENTREPRENEURSHIP**

February 16, 2023

The Special Committee on Innovation Transfer and Entrepreneurship met on the above date at the UCI Beall Applied Innovation, 5270 California Avenue, Irvine Campus and by teleconference in accordance with California Government Code §§ 11133.

Members present: Regents Matosantos, Park, Reilly, and Timmons; Chancellors Christ, Hawgood, and Muñoz; Ex officio member Leib; Advisory members Green, Ku, and Walker.

In attendance: Regent Pouchot, Regent-designates Ellis and Raznick, Faculty Representatives Cochran and Steintrager, Secretary and Chief of Staff Lyall, Deputy General Counsel Wright, Provost Newman, Executive Vice President and Chief Financial Officer Brostrom, Vice President Maldonado, Chancellor Gillman, and Regents Analyst Sheridan.

The meeting convened at 10:00 a.m. with Special Committee Chair Park presiding.

**1. PUBLIC COMMENT**

- A. Nazli Azimi, Chair of Terasaki Institute for Biomedical Innovation and founder of two biotechnology companies, emphasized the importance of creating an environment that supports entrepreneurial aspirations. UC Irvine Beall Applied Innovation (BAI) did this by providing capital investment and human capital to help create successful companies from basic research.
- B. Bill Carpou, CEO of OCTANe OC, shared that his organization convened ideas, resources, people, and capital and worked closely with UCI to help companies find capital and customers.
- C. Chris Barty, UCI professor and former chief technology officer at the National Ignition Facility at Lawrence Livermore National Laboratory, opined that the infrastructure for entrepreneurship at BAI was superior to any he has experienced, including at Stanford University. He said a company he founded has hired 35 interns in the past three years, which provided an excellent experience for UCI students.
- D. Ken Beall, Managing Partner of Dartbrook Partners, expressed the Beall family's excitement the growth that has occurred at UCI in this area. In 2014, his father Don Beall, retired chairman of Rockwell, served on a committee that examined technology transfer and the translation of research into products and companies at UCI.

- E. Gerry Deren, Executive Director at Siemens Digital Industries Software, shared that he was responsible for “academic enablement” at 1,500 schools across the nation to promote workforce development. Siemens’ Adopt a University program connected companies with students at universities, including UCI.
- F. Gina Heitkamp, CEO of Gengirl Media, a toy company, expressed gratitude for Beall Applied Innovation. She founded the company as an MBA student at UCI, when she won a business plan competition and used the money to construct a prototype. At BAI, her company received mentorship, networking, and funding through the Cove Fund, which enabled the business to grow and provide products to Target stores. Eventually, the brand was acquired by Nickelodeon.
- G. Abraham Lee, UCI professor and director of the Center for Advanced Design and Manufacturing of Integrated Microfluidics (CADMIM), a National Science Foundation Industry/University Collaborative Research Center, remarked that it is very beneficial for students to be able to turn their ideas into real-world applications, using taxpayers’ money and for the benefit of society.
- H. Jinny Lee, UCI alumna and member of the BAI board, shared that BAI was why Orange County embodied the culture of innovation. She added that Edwards Lifesciences, where she was Senior Vice President, collaborated with the UCI School of Medicine.
- I. Jeff Shaw, UCI alumnus and Vice President of Leasing for The Irvine Company, disclosed that his portfolio included UCI Research Park, which comprised 36 buildings adjacent to the Irvine campus, including BAI. He stated that the research park’s connection to UCI was a catalyst for its success, noting that many leading-edge technology, medical, and life sciences companies located there for the ability to collaborate with UCI faculty and to be among a community of innovators. The company was proud of its partnership with UCI.
- J. Paul Strasma, President and CEO of Capillary Biomedical, stated that his company licensed its technology at another university but intentionally chose to relocate to BAI to be part of the Cove ecosystem. He added that it was a “magical experience” that he hoped to repeat. The company created 25 jobs and eventually moved into its own space and was acquired by a larger company.
- K. Paul Voois, Managing Partner at Cove Fund, a seed-stage venture capital firm headquartered at The Cove, shared that Cove Fund has raised \$44 million since 2015. It was established in collaboration with BAI and benefitted greatly from the relationship. The benefit could be direct, such as when the Fund invests in a company founded from UCI intellectual property or from one of its accelerator programs, or it could be indirect, based on the network emanating from BAI. Cove Fund has directly invested \$11 million in companies thus far, and its affiliates have

invested an additional \$30 million in the companies, raising a total of \$225 million and resulting in an impact over 20 times the original investment.

- L. Caitlin Yang, UCI student entrepreneur studying mechanical and material science engineering, shared that BAI has been pivotal to her efforts to found StartSmart and the Grasshopper Fund, a youth crowdsourcing platform. She thanked BAI for all of the support she received through its various programs, networks, and pitch competitions.
- M. Julie Hill, Chair of the UCI Foundation Board of Trustees and former board member of Anthem, stated that BAI helped connect the two institutions to improve the health outcomes of patients with asthma. Over the past 25 years, she watched the University grow in its academic research and its social commitment to provide educational opportunities for first-generation students and students of color and noted that it was a pleasure to be involved.
- N. Dylan Rodriguez, UC Riverside professor and former Chair of the UCR Academic Senate, urged the Regents to address the relationship between UCR and a private company, Beacon Economics. Through an agreement with the Regents, Beacon had a license to do business under the guise of the UCR Center for Economic Forecasting and Development and was authorized to brand its products with the UCR name, for which it paid UCR a ten percent royalty. He stated that the fast-food industry spent tens of millions of dollars promoting Beacon's findings in an effort to repeal fast food workers' rights. He asked the Regents to investigate this arrangement.
- O. Scott Joslyn, Chief Information Officer at UCI Health, stated that UCI Health applied research at the bedside to improve the quality of care and health outcomes. He expressed appreciation for UCI Health's partnership with BAI.

2. **INCREASING THE IMPACT OF THE RESEARCH ENTERPRISE – UCI BEALL APPLIED INNOVATION**

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

Chancellor Gillman described the history of UC Irvine Beall Applied Innovation (BAI). Established in 2013, it subsumed the offices of Technology Alliances, Corporate Relations, and Industry Sponsored Research under a single umbrella. Following a recommendation of a prior task force on strengthening technology transfer led by Regent Makarechian, BAI's executive director reported directly to the campus provost, which signaled the importance of the initiative to the community and prevented it from becoming too cautious and bureaucratic. Following a gift from the Beall family, it was renamed Beall Applied Innovation.

Chancellor Gillman reported that, over the past eight years, more than 50 board members and 300 innovation advisors and mentors lent their domain expertise to improve the likelihood of commercialization of UCI's groundbreaking discoveries. To fill the gap in access to affordable wet laboratory space in Orange County, the Beall Family Foundation founded University Lab Partners in conjunction with BAI and now shared over \$3 million in scientific equipment and infrastructure. BAI also established The Cove to create a gathering space to encourage partnerships and a mature regional ecosystem. He stated that UCI-affiliated start-ups have yielded over \$34.1 billion of investments and returns, comprised of \$15.3 billion from returns through liquidity exits (e.g., mergers, acquisitions, and initial public offerings) and \$18.8 billion in investments into these start-ups. Approximately 63 percent of these investments and returns has occurred in the past five years, and 78 percent has been invested in companies in California.

Chancellor Gillman provided examples of BAI programs, including a showcase called "Born in California" that featured the UC system's most investment-worthy startups seeking seed and Series A investors, and the Inclusive Entrepreneurship Task Force, which sought to ensure that innovation and entrepreneurship pathways are extended to first-generation, low-income, and underrepresented faculty, students, and alumni.

UCI Chief Innovation Officer Errol Arkilic emphasized that BAI not only moves University research to industry, but also brings lessons from industry to the University to affect knowledge creation and foster "use-inspired research." He described the four components of BAI's structure: research translation, such as technology transfer and intellectual property portfolio management; New Ventures, which takes ideas and turned them into companies; Enterprise Collaborations, which focuses on complex translation projects; and Industry-Sponsored Research, which facilitates research contracts with industry.

He stated that BAI's current strategic aims included creating a use-inspired research culture, or "harvesting"; providing actionable market and business intelligence to researchers, or "guiding"; and working at the speed of business and being business-friendly, or "empowering."

He reported that, over the past several years, UCI has invested \$4 million of proof-of-product funding in 56 projects. He estimated that proof-of-product funding increases the likelihood of market entry by as much as 50 percent.

Regent Timmons asked if the "harvesting" model may have the unintended consequence of inhibiting creative research that has no obvious market. Mr. Arkilic responded that use-inspired research simultaneously searches for use and for a deep understanding of fundamental principles. Chancellor Gillman added that UC will always be committed to basic research, but emphasized the importance of valuing faculty and researchers who want to translate their research into public impact.

Board Chair Leib commented on the inspiring public comment session and congratulated Chancellor Gillman for the campus' achievements. He then asked what UCI needs from

the Office of the President that would provide value to its innovation and entrepreneurship (I&E) enterprise. Mr. Arkilic responded that proof-of-concept funding would provide the biggest impact since the private sector does not fund early stages of work.

Regent Reilly asked what other challenges inhibit progress. Mr. Arkilic responded that the campus needs to develop a better system to decide where to allocate their limited resources.

Special Committee Chair Park asked how much funding is reinvested to support the innovation enterprise infrastructure. Chancellor Gillman responded that currently, UCI's I&E enterprise is supported by campus funds. However, the ability to control licensing and keep equity on the campus will create a financial model that will allow UCI to make investments in BAI.

### 3. **ENTREPRENEURSHIP COUNCIL**

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

Executive Vice President and Chief Financial Officer Brostrom stated that the Entrepreneurship Council will strengthen the entrepreneurial ecosystem at every UC campus to ensure access to resources to help support the development and ultimate commercialization of ideas. It will create a repository of support resources, such as webinars, white papers, and access to finance and legal documents, promote mentorship opportunities, and share best practices. The Council will consist of nine members, including four campus innovation leaders, four external economic advisors, one of whom could be a Regent, and the systemwide Provost and Executive Vice President, and will meet three times per year. He noted that Provost Newman brings to UC a great deal of experience and interest in fostering entrepreneurship.

Provost Newman remarked that there are several models across the country that could be emulated; the University of Arizona has 1,400 business leaders who comprised a mentoring network to advise its faculty. She committed to organizing such a network at UC and ensuring that they are connected to the campuses.

Chancellor Muñoz stated that he was encouraged by the report. He was struck by the story of a faculty entrepreneur at UCSD who shared that a \$50,000 proof-of-concept grant provided by the campus catalyzed the successful launch of his company. He noted that, with the judicious application of revenue, guided by experience, UC can do important things.

Advisor Ku suggested that campuses may want to create their own local entrepreneurship councils. She expressed concern that a central council would not be able provide networking and support infrastructure-building for all ten campuses. Advisor Green agreed that joining money and mentorship is a key to success. Regent Matosantos cautioned that UCOP should ensure that the council serves its purpose as a facilitator and does not become an obstacle. Mr. Brostrom noted that several campuses have existing councils and admitted

that a previous entrepreneurship council at UCOP was too “Oakland-centric.”

Regent Raznick asked if mentorship would be provided for all aspects of the commercialization process, such as legal, technology, marketing, supply chain, and executive management. Mr. Brostrom responded that the University must do a better job of collaborating across the campuses, sharing best practices, and disseminating existing expertise in these areas. Regent Raznick suggested the council include UC alumni. Faculty Representative Cochran added that the council should include a faculty founder who is an entrepreneur as a member. Mr. Brostrom said that these suggestions would be considered. Special Committee Chair Park noted that the position of executive director of innovation and entrepreneurship, which would provide staff leadership to the council, is currently vacant and urged UCOP to find a strong leader. She also suggested doing an analysis of plans for the Council to identify what could cause the initiative to fail.

**4. UPDATE ON INNOVATION AND ENTREPRENEURSHIP FUNDING STRATEGIES**

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

Executive Vice President and Chief Financial Officer Brostrom reminded the Special Committee that in 2018–19, State Assembly Bill (AB) 2664 provided \$2.2 million to every campus to launch campus proof-of-concept (PoC) funds. Campuses were able to leverage these funds to raise additional monies from philanthropy and other private sources. Today, most campuses rely on philanthropic gifts to fund entrepreneurship activities. However, last year, UC received \$85 million in climate resiliency funds, including \$18 million to UC Merced, \$20 million to UC Santa Cruz, and \$47 million to UC Riverside. The bill’s language encouraged that the funds be used for innovation and entrepreneurship.

UCI Chief Innovation Officer Errol Arkilic stated that a modest investment of \$50,000 to \$100,000 in PoC funding can help assess an invention’s commercial viability and whether it is worth the risk to develop. Without this early-stage investment, it is difficult to know which nascent technologies will be attractive to private industry. PoC funds are provided to technologies prior to establishing a company; there is no possibility of using equity to fund this stage of development because a company does not yet exist.

Mr. Arkilic added that the availability of PoC funding is highly unpredictable, which makes it difficult to manage a portfolio of activity. He emphasized that in 2018–19, the campuses were able to leverage more philanthropic funds due to AB 2246 than any other year before or since. He stated that UCI’s PoC funding makes up only 0.05 percent of its research funding and opined that this far too low to meet its needs; it should be at least 0.5 percent. For instance, BAI recently received 30 proposals seeking PoC funding; it may only be able to fund two, even though at least half of the proposals will be competitive.

UCSD Associate Vice Chancellor for Innovation and Commercialization Paul Roben explained that PoC funding bridges the University and the private sector. It not only funds

milestones to commercialization, such as building prototypes; it also builds networks and strengthens the entrepreneurial ecosystem. People interested in early-stage technologies often become mentors, investors, buyers, and even CEOs for the companies that are the beneficiaries of PoC funding.

He argued that the return on investment of PoC funds is tremendous. UCSD provided \$1 million of PoC funds and the 15 projects that benefited raised \$10 million in additional funding. Other benefits included recruiting 25 industry advisors, employing 65 students, executing 29 license agreements, and founding nine start-up companies. Within one year of the award, half of the projects resulted in start-up companies. In summary, PoC funding is critical not only for supporting projects, but also for building the innovation ecosystem.

UCB Assistant Vice Chancellor for Intellectual Property and Industry Research Alliances Carol Mimura noted that for the eighth consecutive year, UC Berkeley was second only to Stanford University in the number of start-up companies created and the number of founders. She held that this success was due largely to access to funding. However, like other campuses, there are many more promising research projects than existing PoC funding can support. On average, UCB is able to fund less than ten percent of applicants for PoC funds. Ms. Mimura recalled that the Regents Working Group report recommended that PoC funds be made available to campuses on a matching basis. She was confident that at UCB, PoC funding could be leveraged to double any funds provided by the Office of the President (UCOP). PoC funding would produce a multiplier effect by generating more gifts, as well as involvement by alumni, students, companies, and the University community.

Regent Matosantos requested data on the return on investment for AB 2664 funding, whether AB 2664 helped to close the wealth and equity gap in California, and how much of the funding was invested in California-based companies. She suggested creating a revolving fund or endowment structure through which UC would be able to fund I&E activities on an ongoing basis. She speculated that the State may be willing to commit funds for this purpose over time. She suggested considering including elements of interest to the State in a legislative proposal, such as a preference for California-based entities with a requirement that any benefits be returned should the entity later decide to leave California. Mr. Brostrom responded that UCOP analyzed the return on investment for AB 2664 funds and found that it provided a return of 14 times the original investment, and an overall economic impact of \$280 million. He commented that the idea of using taxable bonds to seed a PoC fund is promising but would require a pipeline of revenue to service the debt.

Chair Leib requested that UCOP draft a memo demonstrating the value proposition of a PoC fund. He also suggested that moneys to seed a PoC fund be included in UC's legislative budget proposal. Mr. Brostrom responded that none of UC's requests for one-time funds were approved last year, but he raised the idea of a "set aside" whereby UC would use a portion of its existing State appropriation to launch a PoC fund.

Provost Newman mentioned that Georgia provides loans that can be forgiven if the recipient remains in Georgia; this is an investment in economic growth and job creation.

She opined that any structure that is created should be an evergreen program that can become sustainable and return benefits to the campuses. Regent Matosantos asked what level of investment would be needed to create an evergreen PoC fund.

Regent Raznick raised the possibility of creating a “UC Innovations Investment Fund” to broaden the pipeline of investors. Mr. Roben clarified that PoC funds direct money to laboratories to prove the commercial viability of an idea. Advisor Green emphasized the difference between PoC funding, which is investing in an idea that may or may not lead to a company formation, and venture funding, which is investing in a company.

5. **SPEAKER SERIES: ADVANCING USE-INSPIRED RESEARCH – FROM THE TRENCHES**

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

UC Irvine Professor Leslie Thompson presented her research on Huntington’s disease, which causes cognitive, motor, and behavioral dysfunction and is ultimately fatal. With the help of UCI Beall Applied Innovation (BAI), she has formed a company to develop cellular therapies to treat neuro-degenerative disorders, including Huntington’s and Alzheimer’s diseases. UCI investigators have a 50 percent ownership interest in the company. BAI assisted with pursuing a sponsored research agreement, forming the company, licensing intellectual property, and exploring possible conflicts of interest.

Regent Ellis asked if her research could have an impact on other mitochondrial disorders. Ms. Thompson responded that it has profound possibilities for other disorders.

Regent Reilly asked when the company will begin clinical trials. Ms. Thompson replied that the company plans to file for approval next month; if approved, the company is ready to start clinical trials immediately.

Special Committee Chair Park asked about potential conflicts of interest. Ms. Thompson responded that an assessment was done and no conflicts were found.

6. **IMPLEMENTING AN IMPROVED OPERATING MODEL FOR INNOVATION TRANSFER SERVICES: STATUS UPDATE**

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

Provost Newman reviewed the status of each of the 14 recommendations of the Regents Working Group and referred Regents to the Appendix in the written item that provided a timeline for the completion of each of the recommendations, with realistic goals and assignment to accountable leaders.



Vice President Maldonado reiterated that replacing the Patent Tracking System (PTS) will take considerable time. Complex business processes and information systems must first be evaluated for their continued relevance. She noted that replacing the intellectual property (IP) management system at UCSD took almost five years and at the National Institutes for Health, it took seven years. She stated that the Office of the President (UCOP) has just finished work that led to the decision to implement a partially decentralized business model. It is currently simultaneously working on the Requirements and Business stages of the plan as outlined in the item. The aim is to align business processes with the capabilities of the available commercial IP management systems.

Ms. Maldonado stated that the implementation phase will begin in Fiscal Year 2023–24 and will be completed in FY 2026–27. During this phase, new business processes will be adopted, and specific functions will move from UCOP to the campuses. In FY 2027–28 UC will cease operating PTS.

Senior Strategy Officer Dorothy Miller elaborated on the steps required to deconstruct and redesign 30 different business processes to prepare for the implementation of a new IP management system. For each business process, staff must determine the rationale for the process, its component parts, who is responsible, and the data and length of time needed to complete it. She provided an analysis of one business process as an example.

Ms. Miller stated that while it is redesigning business processes, UCOP is simultaneously working to identify IP software that will replace PTS. She reported that UCOP will issue a Request for Information in late February 2023 to solicit input from potential vendors, which will be followed by a Request for Proposals (RFP).

UC Santa Cruz Assistant Vice Chancellor for Innovation and Business Engagement Ryan Sharp provided a campus perspective on the decision to adopt a hybrid, partially decentralized business model that resulted from the December 2022 Council of Chancellors meeting. He commented that because UCSC has a smaller innovation enterprise, it could not afford to implement its own IP management system and will benefit from UCOP's support and the economy of scale in managing complex financial accounting and legal agreements.

Special Committee Chair Park queried the chancellors about whether the campuses, with the exception of UCSD which has opted out, will use the same set of centralized services or if there will be a menu of services from which to choose. She also asked the chancellors for their perspectives on the decision made at the December Council of Chancellors meeting.

Chancellor Muñoz responded that there would be a menu of services that each campus could take advantage of at different times depending on their needs.

Chancellor Gillman agreed and shared that the chancellors viewed either a fully centralized or fully decentralized model as problematic. The chancellors wanted to maximize opportunities for decentralization for those campuses that wished to manage their own

affairs. As other campuses develop the capacity to do so over time, some centralized functions would no longer be needed.

Chancellor Hawgood replied that UCSF is working toward full acceptance of delegated authorities for legal and equity management but plans to use the central IP management system. However, the campus may re-evaluate that decision if the replacement system takes too long to implement.

Chair Park asked how much the cost of the campus assessment vis-a-vis the level of service from UCOP factored into campus' decisions to use central services. Chancellor Hawgood replied that while cost is always a factor in decision-making, UCSF is prepared to contribute to a new patent tracking system. He noted that, unless a significant number of campuses support a central system, it will not be financially feasible. He requested that chancellors be consulted when evaluating the RFP. Provost Newman affirmed that the choice of system will be a collective decision.

Chancellor Christ responded that the chancellors decided to mutually invest in a new patent tracking system and financial system, which would save the campuses money.

Chancellor Hawgood added that tracking compliance would be an important function that is not currently performed by PTS. Ms. Miller confirmed that this is one of the requirements that UCOP will seek in a software product.

Special Committee Chair Park asked how business process optimization can be performed concurrently with the procurement process, which should be informed by the former optimization process. Ms. Miller responded that the existing software options are designed around best practices and there is little difference among the products. UC plans to change its business processes to align with the functionality of available products and does not plan to customize, which would delay implementation. Currently, UC business processes are designed around the limitations of PTS.

Regent Matosantos summarized that campuses will vary in their adoption of responsibility for equity management and legal compliance; as campuses build capacity, they may decide to take responsibility for these functions. However, all campuses, with the exception of UCSD, will depend on UCOP for a centralized IP management and patent tracking system as a long-term solution.

Advisor Ku urged that the technology transfer offices be involved in choosing the vendor.

Regent-designate Ellis urged that UCOP learn from the mistakes made with other large IT projects.

Special Committee Chair Park asked when the details of the service level agreements and campus assessment will be decided. Ms. Miller responded that drafts of the service and operational level agreements will be discussed with the campuses in May. Special Committee Chair Park expressed concern with the sequence and timeline.

7. **MANAGING CONFLICT OF INTEREST IN INNOVATION PROGRAMS**

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

Executive Director of Research Policy Analysis and Coordination (RPAC) Deborah Motton provided an update on the status of revisions to the systemwide equity policy and patent policy; the patent policy will be sent for a 90-day systemwide review in the next week. She also reviewed existing systemwide policies that address conflict of interest (COI) in research that are required by external agencies or State law. None of them address COI in licensing and innovation. However, there are multiple documents that provide guidance in managing COI in licensing that are outdated and difficult to navigate and apply.

In an effort to streamline the guidance for ease of use and allow campuses the flexibility to manage any conflicts of interest, RPAC partnered with UC Legal to draft revised guidance utilizing model language from the Regents Working Group report. It then formed a work group comprised of campus innovation leadership from several campuses to review the draft guidance and revise it to better meet campus needs. The final guidance will be issued by April 2023 and RPAC aims to have all relevant policies and guidance documents revised and accessible on a new, easy-to-navigate webpage by next year.

Regent Timmons asked about oversight to ensure that conflicts of interest do not occur. Ms. Motton replied that this expertise is at the campus level and is performed by campus offices of licensing.

Special Committee Chair Park noted variability in how each campus has interpreted and enforced COI and suggested that this created inequities in how faculty inventors were treated from one campus to another. Ms. Motton responded that a systemwide group will be convened to focus on COI in licensing and to ensure that the guidance is implemented consistently across the campuses.

The meeting adjourned at 2:30 p.m.

Attest:

Secretary and Chief of Staff