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## **Entrepreneurship**

en·tre·pre·neur·ship

**noun** \, äˈn-trə-p(r)ə-ˈnər\ 'ship, -ˈn(y)ūr\ 'ship

**Definition** (as construed by UCLA): The passionate determination to translate a vision into reality for the greater good of society; the creation of new knowledge for practical benefit.

## **FORWARD**

Nearly four years ago, the Office of the Vice Chancellor for Research took on the task of evaluating UCLA's approach to entrepreneurship. This examination included a review of our current successes, an analysis of approaches taken by peer institutions, and recommendations for enhancement. This evaluation produced two pivotal reports: *An Ecosystem for Entrepreneurship Part I* and *An Ecosystem for Entrepreneurship Part II: Transition to a New Technology Transfer Process*.

These two reports catalyzed a new entrepreneurial culture at UCLA; they provided a strategic framework to advance university-based innovation and introduced progressive views of the roles and responsibilities of academic institutions to encourage and foster an entrepreneurial environment. Anchored by a separate 501(c)(3) nonprofit organization formed to provide guidance and initiate greater opportunities for entrepreneurship across the UCLA campus, this proposed framework garnered enthusiastic support and was brought before the UC Regents for consideration. In May 2013, the UC Regents approved the adoption of this new framework unanimously. This nonprofit organization, led by a Board of Directors comprised of individuals possessing extensive experience in bridging the worlds of academia and business, will be created and will formally begin its duties by the end of 2014.

In this third and final installment, we want to share the perspectives from faculty interviews conducted over the last four years – over 100 in all – on what entrepreneurship means to them, and what are the desirable effects of continued expansion of this entrepreneurial culture. There was not always clear agreement, and this report reflects the diversity of those opinions. It is our hope that this final report will not end this dialogue, but will, instead, encourage continued discussion.



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**UCLA ECOSYSTEM FOR ENTREPRENEURS, PART III:  
A STRATEGIC BLUEPRINT FOR ENTREPRENEURSHIP AT UCLA  
SUBMITTED FOR CAMPUS DISCUSSION**

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>BACKGROUND AND METHODOLOGY .....</b>	<b>4</b>
<b>1. HISTORY AND CONTEXT .....</b>	<b>4</b>
<b>2. STATUS OF ENTREPRENEURSHIP ON CAMPUS AND RESOURCES .....</b>	<b>5</b>
<b>3. OBJECTIVES AND PROCESS .....</b>	<b>7</b>
<b>MEANING OF ENTREPRENEURSHIP ACROSS CAMPUS.....</b>	<b>7</b>
<b>FACULTY ENTREPRENEURSHIP EDUCATION AND AWARENESS.....</b>	<b>9</b>
<b>PROCESS AND NAVIGATION OF UCLA RESOURCES FOR ENTREPRENEURSHIP .....</b>	<b>10</b>
<b>FINANCIAL SUPPORT FOR SUCCESSFUL ENTREPRENEURSHIP .....</b>	<b>10</b>
<b>CAMPUS CULTURE OF ENTREPRENEURSHIP.....</b>	<b>11</b>
<b>COLLABORATION BETWEEN THE ACADEMY AND PRIVATE SECTOR ACTIVITIES.....</b>	<b>12</b>
<b>1. REAL ESTATE.....</b>	<b>12</b>
<b>2. REPUTATION .....</b>	<b>16</b>
<b>NAVIGATION OF CONFLICTS.....</b>	<b>17</b>
<b>RECOMMENDATIONS FOR UCLA’S ENTREPRENEURIAL ECOSYSTEM .....</b>	<b>19</b>
<b>1. CREATION OF A 501(C)(3) NONPROFIT TO OVERSEE OIP-ISR .....</b>	<b>19</b>
<b>2. A SUSTAINABLE FINANCIAL MODEL TO SUPPORT OIP-ISR.....</b>	<b>20</b>
<b>3. BUSINESS ADVISORY BOARDS SERVING INDIVIDUAL SCHOOLS AND DIVISIONS .....</b>	<b>21</b>
<b>4. ENTREPRENEURIAL EDUCATION.....</b>	<b>22</b>
<b>5. ENHANCING HEALTHY RELATIONSHIPS WITH INDUSTRY.....</b>	<b>24</b>
<b>6. USE OF CAMPUS SPACE FOR ENTREPRENEURIAL VENTURES .....</b>	<b>27</b>
<b>7. VENTURE PHILANTHROPY .....</b>	<b>27</b>
<b>8. NAVIGATING CONFLICTS OF INTEREST .....</b>	<b>28</b>
<b>9. BETTER NAVIGATION OF ENTREPRENEURSHIP ON CAMPUS .....</b>	<b>28</b>
<b>CONCLUSION .....</b>	<b>29</b>
<b>APPENDIX I.....</b>	<b>31</b>

## EXECUTIVE SUMMARY

A new entrepreneurial culture has emerged and is taking shape on UCLA's campus. This cultural movement was catalyzed by a report entitled *An Ecosystem for Entrepreneurship at UCLA: An Invitation for Campus-wide Input*. Now referred to as *Ecosystem I*, this report focused externally on what other institutions were doing to cultivate entrepreneurship and compared it to what was being done at UCLA. A second report, *Ecosystem for Entrepreneurs II: Transition to a New Technology Transfer Process*, now referred to as *Ecosystem II*, took a closer look at the structure of the Office of Intellectual Property and Industry Sponsored Research (OIP-ISR), and its entrepreneurial activities. Many of the programs and actions defined in these two reports have already been implemented across campus, while others are still in progress. Most recently is UCLA's request and the UC Regents' unanimous approval of a new, non-profit corporate entity with a Board of Directors (OIP-ISR Board) to oversee UCLA's tech transfer program. Such efforts undertaken to foster entrepreneurship and innovation have been met with great support and excitement, reinvigorating faculty, students and staff across campus, as well as the community at large.

Apart from the opportunities identified in *Ecosystems I and II*, there are several more key components, opportunities, and questions pertinent to the growth of this Ecosystem model, which we seek to address in this third and final report. This report focuses on UCLA faculty members' perspectives on the most important concerns and areas for improvement to entrepreneurship on campus. The methodology for gathering information for this report was straightforward: through a series of one-on-one interviews, faculty members were asked questions relating to the use of campus space, academic-industry relations, education, culture and conflicts, all of which allowed us to better understand what would foster entrepreneurship and innovation.

How faculty members from across campus define entrepreneurship not only shaped their answers but further reinforced a common view that success as an entrepreneurial university is not solely defined by the commercialization of its inventions. The humanities, liberal arts and social sciences, for example, have been fueling innovation for hundreds of years through their examination of the human condition. The Grand Challenges of society initiative tackled by the University resonates with faculty values and allows them to support the campus' social mission and connect with the outside world on innovative solutions. UCLA's Ecosystem for Entrepreneurs involves a campus-wide culture of entrepreneurship and innovation that transcends technology transfer.

Entrepreneurship is not synonymous with commercialization; rather, it is an approach to increase the impact of a discovery or innovation, the translation of a good idea into real benefit. The vast majority of discoveries and innovations made by UCLA faculty and students are never intended to be of commercial value, but are expressions of creative scholarship and individual passions that may serve society in small or large ways. Significant financial value will be found

in fewer than one in a thousand of these discoveries, but, if properly managed, those that do can return licensing income that will support many campus priorities. From UCLA's perspective, an entrepreneurial university must continue to deliver innovative ideas to society for the public good. At the same time, it must strive to realize the benefits of the occasional financial successes to assist in continuing to provide creative scholarship for the public good.

To achieve those goals, UCLA must enhance the culture of entrepreneurship on our campus. UCLA is an engine of innovation and discovery, where knowledge is both created and disseminated; our campus is cohabited by outstanding faculty and motivated students who want to make a difference. We have a critical mass of human capital and research tools with an almost unlimited capacity to address society's pressing problems. Our graduates will fill the ranks of public service, healthcare, education, business, and industry. Our students will identify and analyze society's Grand Challenges in areas as diverse as the environment, social inequality, health and education – and help to solve them. To do so, they will need to have the range of learning experiences that are an essential foundation in a complex industrialized democracy. One of those skills will be the ability to think entrepreneurially, and UCLA will need to provide them with opportunities to do so.

With this report, we identify where immediate changes can be made, and in some cases are already being made, to support the Ecosystem model. Though consensus did not emerge around every issue, we tried to address as many opinions as possible in the recommendations of this report. Feedback supported the creation of an OIP-ISR Board of Directors populated by individuals with extensive industry experience who could help guide important decisions around patent investment and licensing strategies. It was also recommended that individual schools build their own business advisory boards to promote translational research and potentially raise proof of concept funds and venture philanthropy. It was well recognized that campus would benefit from expansion of entrepreneurial educational programs and courses which are already numerous on campus. However, as entrepreneurial resources proliferate, facilitating the navigation of those resources will be necessary as confusion already abounds on campus. It was broadly acknowledged that campus would benefit from improved relationships with industry, and that expanding industry use of campus space merits further consideration by a campus committee. However, with increased entrepreneurship and industry relationships, educating faculty on conflict of interest issues and facilitating the CIRC process will be more important than ever.

As the Ecosystem for Entrepreneurship forges ahead, there will be new issues and opportunities that will be continuously assessed. Yet, with this third and final report we hope to provide a promising blueprint to frame the discussion of entrepreneurship that can be shared by the entire campus.

## BACKGROUND AND METHODOLOGY

### 1. HISTORY AND CONTEXT

In July 2010, the Office of the Vice Chancellor for Research (OVCR) initiated a review of entrepreneurship at UCLA. On the recommendation of Anderson School of Management Dean Judy Olian, Professor William Ouchi, Sigoloff Chair in Corporate Renewal, Anderson School of Business, led this initiative. The first campus report, *Ecosystem I*, was distributed March 10, 2011. This report involved a study of our current method of fostering entrepreneurship; a review of the entrepreneurial initiatives at other leading research universities; and recommendations to improve our current strategies for handling entrepreneurship on campus. *Ecosystem I* focused on three essential components for success: (1) appropriate organizational structure; (2) educational programs that foster and support entrepreneurship and (3) business advisory boards.

A second report, *Ecosystem II*, was authored by Professor Ouchi and published in September 2011. This report took a closer look at the structure of the Office of Intellectual Property and Industry Sponsored Research (OIP-ISR), and its entrepreneurial activities. It revealed that while the UCLA technology transfer office was relatively successful, its historic licensing revenues fell short of top peer research universities. The report also observed that three crucial elements necessary to taking tech transfer to the next level were missing, including: (1) business judgment as to which inventions were best suited for commercialization; (2) financial capital to invest in the patent process and start-up companies; and (3) market-based compensation for staff. To meet these needs, the report recommended the formation of a new nonprofit, wholly-owned subsidiary that would oversee all technology transfer activities, managing for the benefit of UCLA and the University of California, the intellectual property created by UCLA faculty, students and staff and owned by the Regents.

To meet these needs, the report recommended the formation of a new 501(c)(3) nonprofit, wholly-owned subsidiary, governed by a Board of Directors (OIP-ISR Board) comprised primarily of individuals possessing extensive experience in the business of commercializing research. On May 16, 2013, the UCLA campus received unanimous approval from the University of California Board of Regents to reorganize the governance of our Office of Intellectual Property and Industry Sponsored Research (OIP-ISR) in alignment with the recommendations of *Ecosystem II*. This important effort to enhance UCLA's technology transfer function is designed to protect the intellectual property and the reputation of UCLA while improving sponsored-research relations with the business community. The OIP-ISR Board will bring a new level of professional capabilities to assist campus with decisions about patenting, licensing and industry-sponsored research contracts. It is anticipated that the governance structure will be operational by July 2014 (*see Recommendations, Section 1*).

The previous *Ecosystem* papers presented the current state of UCLA technology transfer, capturing one particularly inventor-driven form of entrepreneurship on campus. In spite of the barriers to entrepreneurship identified by the preceding analysis, UCLA has had an impressive entrepreneurial track record in recent years. This report attempts to synthesize the campus views on what is required to make UCLA a leader in facilitating entrepreneurship.

## **2. STATUS OF ENTREPRENEURSHIP ON CAMPUS AND RESOURCES**

UCLA has proven to be one of the top universities for startup creation over the past few years. Since the University of California Office of the President (UCOP) began reporting individual campus startup numbers in 2009, UCLA consistently generated more startups than any of its UC counterparts. Over the last five fiscal years through FY2013, UCLA launched between 15-25 technology-based startups per year. These numbers place UCLA in the top three institutions in North America in number of startups generated across institutions reporting to the Association of Technology Managers (AUTM). These startups are an important driver for advancing UCLA technologies to market. For example, in June 2013 a UCLA startup, Aragon Pharmaceuticals, was acquired by Johnson & Johnson for \$650 million, plus additional contingent payments of up to \$350 million based on reaching predetermined milestones.

Part of what facilitated the growth of startups at UCLA in recent years is the increased availability of incubator space and resources on campus. Every year, The California NanoSystems Institute (CNSI) aims to provide flexible lab space to 8-10 early stage incubation projects in health, energy, the environment, and information technology. Since its founding in 2009, the CNSI incubator has graduated six startup companies. At the School of Engineering and Applied Sciences (HSSEAS), the Institute for Technology Advancement (ITA) provides technology development services for faculty research, helping to secure project funding and defining paths to commercialization. Three UCLA startups have spun out of ITA's program, and others have also benefited from its services. Finally, the summer of 2012 saw the successful launch of Startup UCLA, a student-focused accelerator based in the social sciences, which graduated nine student-initiated internet and mobile application-based startups after ten weeks of mentor-guided development. Startup UCLA just finished incubating their second class of 10 startup teams.

Recognizing the importance of startup-focused programming and especially dedicated space, UCLA leadership has committed to identifying and developing further real estate ready for startup incubation on or near campus. The UCLA Medical Center is currently planning the development of additional incubator space in the Center for Health Sciences South Tower (the old hospital) which is currently under renovation. Startup UCLA has also spawned a proposal to dedicate space and programming for entrepreneurship in the undergraduate dormitories.

In addition to incubators, UCLA departments host a series of academic and extracurricular programs aiming to bolster entrepreneurship on campus. The Price Center for

Entrepreneurial Studies in the Anderson School of Management oversees all teaching, research, extracurricular, and community activities related to entrepreneurship at Anderson, as well as new undergraduate courses in entrepreneurship. Notable of Price's activities, the [Technology & Innovation Partners \(TIP\) Program](#) brings together multidisciplinary teams of graduate students to assess the feasibility and market potential for UCLA intellectual property (IP), collaborating with OIP-ISR to aid in technology transfer. Toward similar ends, the [Business of Science Center \(BSC\)](#), which sprang from the Department of Molecular and Medical Pharmacology, organizes student-run assessments of UCLA IP, as well as graduate school courses and venture competitions across campus with the goal of training graduate students for careers in the private sector and assisting campus faculty and clinicians in technology transfer. In January of 2013, BSC, the David Geffen School of Medicine, and the Henry Samueli School of Engineering launched the [Advancing Bioengineering Innovations \(ABI\) Program](#) with the purpose of inventing, developing and commercializing devices that address pressing unmet needs in medicine. The [Technical Entrepreneurial Community at UCLA \(TEC\)](#) also hosts entrepreneurial events for undergraduate and graduate students from technical fields. OIP-ISR joined most of the groups above as well as others in convening an Entrepreneurship Council which now meets monthly to coordinate entrepreneurial initiatives.

To further promote entrepreneurship on campus, OIP-ISR launched a number of new initiatives since the summer of 2012. On the first Friday of every month, OIP-ISR hosts an informal networking session inviting guest speakers involved in various aspects of entrepreneurship (e.g., incubators, startup executives, etc.). OIP-ISR recently launched an [Entrepreneurs-in-Residence \(EIRs\) Program](#) allowing PIs to gain personalized advice and feedback on entrepreneurial endeavors from entrepreneurs with experience in their fields. This year's EIRs hosted a "Startups 101" seminar to educate the UCLA community on how to form a company and see it through to success. Separately, a series of workshops were initiated by OIP-ISR to educate faculty members on how to best utilize the valuable federal funding programs: Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR). In March of 2013, OIP-ISR hosted its first in a series of planned industry partnering events which showcased UCLA medical device technologies for industry representatives interested in licensing the technology or sponsoring research opportunities. A second event for cleantech and advanced material technologies brought industry leaders and investors to campus in September of 2013. In addition, seventeen UCLA startups and technologies were showcased for entrepreneurs and investors at the annual First Look Los Angeles event in June 2013. These initiatives and others are discussed at further length below.

Though UCLA has seen significant excitement and activity around entrepreneurship in recent years, this has not been a coordinated effort. Individual professors, departments, and divisions have championed these programs with insufficient collaboration, often leading to programmatic redundancy. Communication between organizations is not optimal, sometimes leading to duplicative efforts across campus. Moreover, due to the growing number of resources

across campus, faculty members have found it more difficult to navigate and optimally use the appropriate resources for the given situation.

### **3. OBJECTIVES AND PROCESS**

This report identifies the opportunities, barriers, best practices, and concerns related to entrepreneurship on campus, as expressed by faculty. It considers all aspects and manifestations of entrepreneurship across campus and also puts more emphasis on the relationship UCLA and its faculty have (or should have) with industry. The objective of this paper is to build a consensus for recommendations around these areas— some of which will be implemented immediately, others in due course, in addition to other areas which will require further analysis. This document will be used to facilitate further discussion around these topics, inform strategic direction, and provide a foundation for an ever-changing blueprint that can be modified as hypotheses evolve.

The input of over 100 individuals has been incorporated in this report. Building on the seventy (70) interviews conducted by Professor William Ouchi from July 2010 to March 2011, 37 faculty members across campus, schools, and divisions were interviewed from May 2012 through February 2013, including deans from 13 schools. These interviews were conducted by 2-3 representatives of OIP-ISR and OVCR. The interviewees were advised that their comments would remain confidential, except with their permission. Emerging themes were then compared and contrasted with other peer research universities: and including other UC campuses, Stanford, Columbia, Caltech and University of Wisconsin.

#### **MEANING OF ENTREPRENEURSHIP ACROSS CAMPUS**

Early in our faculty interview process it became clear that definitions of entrepreneurship varied quite widely across campus. The most significant differences emerged between “North” and “South” Campus (UCLA colloquialisms referring to the liberal arts and hard sciences, respectively), where the goals, forms and outputs of research differ. However faculty across campus seemed to agree that university entrepreneurship involved translating research and ideas formulated on campus into the real world. *Ecosystem I* eloquently put forth this idea earlier: “*entrepreneurship is the passionate determination to translate a vision into reality for the greater good of society – the creation of new knowledge for practical benefit.*” Translation though, is not always obvious and can occur in both direct and indirect ways. Opinions, or rather perceptions of entrepreneurship, diverge around the nature of translation, largely due to differences in research outputs and their perceived values.

The most obvious form of research translation is commercialization of inventions. Even professors with quite alternative views of entrepreneurship acknowledged this form first. It is more common for faculty from the South Campus to search for and/or recognize commercial potential for their research, collaborate with the Office of Intellectual Property and Industry

Sponsored Research to secure IP rights, and then license out the technology to either a startup or an existing company. Sometimes the research will originate with an industry partnership, with the end goal of commercialization in mind. Though this path to translation can be simply described, in reality it is anything but linear. One professor who successfully launched a company pointed out that true entrepreneurship lies in overcoming the many hurdles in the translation process. On South Campus this predominantly occurs with inventions in medicine and engineering, such as new pharmaceuticals and new technologies. However we have seen increased licensing activity from North Campus as well, particularly in copyrightable works such as educational tools. The value of this entrepreneurship is clear as the work product may be used for societal benefit and often produces quantifiable proceeds.

Direct translation of university ideas can have non-commercial or non-revenue-generating outputs, making this form typically less obvious. In the public policy space, faculty collaborate with governments, businesses, and organizations to implement their proposed policies. Artists display their works in museums and other public forums across the world. Non-licensable ideas are translated through conference presentations, which in turn change ways organizations and individuals operate on a daily basis.

Other interactions with industry lead to more indirect translation, without necessarily resulting in material or monetary outputs. This includes formal university-industry research collaborations, both funded and unfunded, event sponsorships, and consulting agreements. Partnerships with industry allow for professors' research to have an impact and audience. The benefit goes the other way as well. Professors feel that even without clear outputs, interaction with industry can lead to more interesting and meaningful research experiences, as it allows for real-world engagement. Companies also often have data, equipment, materials, and other useful research tools which academics would not be able to access otherwise.

These various forms of entrepreneurship are all rooted in creative problem-solving, which was another common definition that emerged from the interviews. Professors explained that finding ways to solve complex problems using creative, nonconventional approaches is entrepreneurial. Some professors believe that asking difficult questions is entrepreneurial in the first place. Typically the need to find creative solutions arises in environments with limited resources, though often results with more interesting and valuable outputs.

How faculty members define entrepreneurship also has some implication on the role they expect campus to take with respect to encouraging entrepreneurship as well as the types of problems they believe are obstructing the entrepreneurial environment. This paper seeks to address all forms of entrepreneurship on campus, including those outside the purview of licensing and industry sponsored research.

## FACULTY ENTREPRENEURSHIP EDUCATION AND AWARENESS

Perhaps one of the most frequently raised concerns was the lack of educational platforms and understanding about entrepreneurship, and more specifically, what resources and services have been available to help faculty become more entrepreneurial. Independent of their entrepreneurial venture experience, faculty members expressed a need for further education via training sessions, presentations, workshops, forums and individual meetings.

The type of information sought by faculty members often varies from department to department. Most of the disciplines within the Arts, Humanities, and Social Sciences do not have a tradition of entrepreneurship in the commercial sense. As one dean explained, they have not been able to see how their work can add value to the private sector or even that their ideas may be protected under intellectual property law. Some professors have had entrepreneurial ideas but lacked experience in business planning nor any understanding of how to take their ideas through to fruition. Others were unaware that UCLA has a technology transfer office on campus that can assist them with intellectual property matters. This lack of information may have resulted in hundreds of missed opportunities by the University.

Unapprised of the University's services, professors have reached out to external organizations for assistance. "It never crossed my mind that UCLA could have had a role" in my entrepreneurial ventures, remarked one professor who has now been involved in two startup companies. "The University has lost ideas because people haven't known what to do with them or where to go." Several faculty members also expressed the fear that they might lose control over their discoveries if they notified UCLA officials. As explained by a number of professors, this fear has derived from their lack of understanding over the campus IP ownership policy. The faculty in these schools strongly believed that in order to improve entrepreneurship, they need more instruction on what is possible in the realm of entrepreneurship; clear communication of intellectual property law and policy; and information about existing services on campus, specifically those provided by OIP-ISR.

Other areas on campus, particularly the "hard" sciences, have a greater understanding of intellectual property law and entrepreneurial pursuits because their work is often tied to creating physical inventions that can be brought to market. Yet, they too expressed a desire for further education to enhance their entrepreneurial opportunities. They felt it would be helpful to have more instruction and guidance on topics like product development, business plans, and determining market potential. Several faculty members suggested that entrepreneurial mentors be assigned to junior faculty. The message was clear that further guidance, instruction, and mentorship would be valuable to faculty, no matter where they fall on the spectrum of the entrepreneurial experience.

## **PROCESS AND NAVIGATION OF UCLA RESOURCES FOR ENTREPRENEURSHIP**

Over the last several years, the enthusiasm for entrepreneurship on campus has resulted in an incredible proliferation of organizations and resources designed to support faculty, students and postdoctoral scholars (post-docs) in their entrepreneurial pursuits. A number of these organizations, such as the [Business of Science Center](#), the [Institute for Technology Advancement](#), the [Entrepreneur Association](#), and [Startup UCLA](#), provide a host of services to its target groups, from mentorship, to facilitation with industry, to funding. Campus also provides services through various internal institutions, including its administrative offices, campus counsel, OIP-ISR, and the Conflict of Interest in Research Committee (CIRC).

Campus has embraced these organizations and resources, and recognizes that they are essential components of UCLA's Entrepreneurial Ecosystem. However, as these organizations continue to expand and multiply without any formal coordination between them, the frictional costs also increase. As an example, faculty members are more frequently reporting confusion as to whom they should turn to about licensing and intellectual property issues. Several academic departments have complained of a similar problem when trying to get business ideas involving industry approved by Murphy Hall. There has been no defined process or person to call when pursuing a project. Instead they have been bounced back and forth between various administrative and legal offices and deals have been lost or delayed by issues like IP or risk management and insurance. "We need a pathway where intellectual property and liability are covered without having to reinvent the wheel every time we engage a company."

In addition, this lack of coordination between the organizations leads to redundancy and conflicting information and processes between the organizations and OIP-ISR. These conflicts, in turn, put UCLA's IP at risk. There is a need to improve coordination, reduce redundancy and conflicting information, and provide clear direction to resolve issues.

## **FINANCIAL SUPPORT FOR SUCCESSFUL ENTREPRENEURSHIP**

Launching a successful entrepreneurial culture requires long-term investment and the path begins with patience and unfettered support for research and discovery. Research drives innovation and innovation drives long-run economic growth, creating jobs and improving living standards in the process. University-based research is of particular importance to innovation, as the early-stage research that is typically performed at universities serves to expand the knowledge pool from which the private sector draws ideas and innovation.

All innovation begins with basic research, which aims to increase understanding and is undertaken out of curiosity rather than a specific commercial application. Basic research is not intended to generate commercial revenue; it is typically funded by government agencies, foundations, industry, and philanthropic initiatives which recognize its vital role in building knowledge that sparks technological advances. Research only begins to turn profitable on its

own during commercialization, when new discoveries become products and can be monetized. Between these stages, however, there is a point where traditional sources of funding taper off but risk remains too high and rewards too obscure for private funding to kick in to bring it to market. This point in research is considered the “Valley of Death” because so many potential innovations fail here, no longer cutting edge enough for government support but not yet sufficiently viable for profit-maximizing investors.

UCLA faces critical issues in addressing the Valley of Death to bridge the funding gap. Funding is needed to allow researchers to build a prototype or otherwise prove the viability of the innovation (also known as a “proof of concept”). This enables both campus and potential investors to move the innovation to a decision point about business potential and possible options such as seeking license agreements or creating a startup company. To address the gap, UCLA must find funding resources that can provide critical, necessary development between the research lab and the potential marketplace.

Many faculty members expressed great concern and frustration with finding funding to continue their research that has reached this juncture. For them, funding at this point is critical – it can mean the difference between nurturing worthwhile, but unproven technology to a point that it develops into products benefitting millions and killing off promising research prematurely. Faculty shared several ideas for obtaining additional funding for these purposes. One idea was for the campus to make more efforts to “tap into alumni better.” Another strategy is to go straight to donors for gifts. As one professor in the Humanities Division explained, it is often easier to obtain gifts than secure industry funding or grants in the soft sciences. Having more industry leaders sit on various campus boards that make contributions to faculty projects was presented as another possible fundraising tactic.

Some faculty members felt that the campus should focus on showcasing UCLA’s research to investors and key players by giving them access to professors and a database that included descriptions of each faculty member’s research interests. Faculty members pointed to Stanford and Caltech as two universities which successfully employed this method of showcasing their research capabilities to obtain funding. Some of this information is already available via the OIP-ISR website, and there are further efforts underway to make this information more easily accessible.

### **CAMPUS CULTURE OF ENTREPRENEURSHIP**

Faculty members from across campus agreed that all the efforts taken over the last few years to improve the entrepreneurial environment on campus have made a significant and noticeable difference. Yet, many also felt that despite these changes UCLA has not sufficiently shown it truly values entrepreneurship, and that real transformation would require a cultural shift in how campus leadership views and treats entrepreneurship.

The absence of explicit institutional support and encouragement for entrepreneurial activity in campus policies, many faculty argued, is indicative that it is academically undervalued. As one faculty member explained, “for promotion and other purposes, publishing is what counts; being entrepreneurial does not count.” As expressed by some faculty members, the campus needs to realign the faculty incentive structure to reward entrepreneurship. A number of the faculty members interviewed believed that this can be accomplished by including entrepreneurship as a metric in hiring, promotion, and tenure decisions. This would allow faculty to pursue innovative ideas without concern that it would affect their advancement. These issues are not unique to UCLA, and other universities have begun making policy changes in response to similar challenges. The concept of permitting course reductions in exchange for entrepreneurial endeavors was proposed as another solution. Yet, some faculty members at UCLA expressed concerns about such policy changes, arguing that, at minimum, junior faculty should focus on proving academic rigor.

The faculty also spoke of their own cultural barriers to entrepreneurship. There are faculty members on campus who saw an inherent conflict between entrepreneurship and pure academia, as well as those who think “industry is evil” and that it is “offensive to make money off academic research.” These faculty have expressed their difficulty reconciling how entrepreneurship can coexist with UCLA’s mission to promote education and public service. For others it is simply difficult to think of their work as a discovery. They do not believe they are trained, or that it is their role to solve these problems. As they see it, entrepreneurship is inapplicable to their work. There are also some professors who are too busy to take on entrepreneurship.

A common view emerged from interviews that a balance of incentives, mentorship, and other educational measures are needed to change the faculty mindset and advance a more progressive culture on campus.

## **COLLABORATION BETWEEN THE ACADEMY AND PRIVATE SECTOR ACTIVITIES**

### **1. REAL ESTATE**

Real estate on the UCLA campus is a precious commodity. While it is not surprising that faculty often request newer, bigger, and better space on campus to grow and expand their offices and labs, there has also been a dramatic increase in requests from industry to have space on the UCLA campus where they can conduct company activities. This includes requests from startup companies asking UCLA to create more incubator space on campus to house and assist with the operations of these small businesses.

Currently, UCLA provides 2,000 square feet of lab space dedicated to housing startup companies in the California Nanosystems Institute (CNSI). Companies housed in CNSI pay a fee to obtain access to lab space, a suite of core facilities, general lab instrumentation, and

meeting facilities. In addition, several departments on campus have also housed industry for short periods of time to work on specific company projects. While there is no established mechanism or program for hosting industry in buildings outside of the CNSI, requests have steadily grown.

Through our interviews, we learned that there were three primary points of view with respect to housing industry on campus: (1) some faculty believe UCLA should create more incubators and provide industry with more access to campus space; (2) some faculty believe that the risks caused by industry's presence on campus – such as conflicts of interest, inadvertent loss of intellectual property rights, perception that revenues generated from taxes are being used to benefit private interests – outweigh the benefits gained by UCLA; and (3) some faculty do not oppose the presence of industry on campus but are mindful of the potential problems and the importance of setting appropriate standards that will be enforced.

*View 1: Providing on-campus space to industry can promote further entrepreneurship*

Many of the faculty members we interviewed were in favor of allowing companies onto campus to conduct company activities, thus creating a larger industry presence at UCLA. Believing this would be good for UCLA “because [companies] stimulate the translational mindset, even from a learning perspective,” faculty were in support of allocating more on-campus space to both established companies and incubating startup companies. Other supporters commented that renting space to industry could “help with the [financial] bottom line and enhance UCLA by supporting campus pursuits and interests.”

Location was a key factor for these faculty members. They felt strongly that companies had to reside on campus as those off campus did not derive nearly as much benefit. In addition to laboratory facilities, companies located on campus also enjoy a unique ecosystem comprised of faculty and scientists from a cross section of UCLA departments. This proximity facilitates company employees, faculty, and students to exchange ideas, link talent, technology, and know-how, and help bridge the gap in the misalignment of cultures between academia and industry. Companies directly benefit from the nurturing environment created on campus, and faculty and students benefit from gaining industry perspectives on research and employment opportunities. In contrast, some faculty members believe that companies located off campus struggle to gain entrance into this ecosystem because of the geographic barrier. As one faculty member stated, “[s]o even if it's Westwood, it's not as good as if it's here on campus. If you can't walk to it, it might as well be in Pasadena.”

Moreover, these faculty members expressed there are other advantages to having companies reside on campus: incubators and other on-campus space generate both immediate and long-term revenue including rental income, possible equity in companies, partial ownership of new IP developed through collaborations, royalties from successful companies, downstream gifts, and many other mechanisms both direct and indirect. One faculty member commented that

companies could be charged a premium on rent and UCLA equipment could be leveraged. And, if successful, these companies might become large donors to UCLA.

*View 2: Allocating space on campus for industry creates many conflicts*

Some faculty members were against ceding campus space to companies. They believed that the risks associated with hosting companies on campus outweigh the benefits to UCLA. As one faculty member explained, too many unmanageable problems arise when industry is physically operating their own businesses on campus, especially if that space could be used by UCLA faculty. The proposed solution is to have companies reside off, but close to campus. Ample benefit could be derived from companies located nearby without invoking the myriad of problems associated with on-campus industry residents.

One concern that faculty members had was that campus would be influenced to shift priorities to benefit those companies on campus. If these companies were charged rent, campus might decide it was more advantageous to charge companies for space than provide it to faculty. Another example given by one faculty member involves the use of core facilities on campus that are open to industry users. These facilities could charge industry as much as three times more than they charged UCLA faculty. As the costs to operate these facilities increases, operators of these facilities might be motivated to set aside more time for industry members over UCLA faculty, thus essentially prioritizing the needs of industry over campus needs.

Campus is especially at a high risk of running into problems if faculty members and their startup companies are allowed to co-locate within the same lab. As explained by one faculty member, co-location of academic and private research in the same laboratory would challenge even the most scrupulous attention to conflict of interest.

Another issue cited by several faculty members was the risk of cross pollination from communal workspace and shared instruments. The close proximity between companies and UCLA faculty, personnel, and students increases the chances that intellectual property could be inadvertently lost to a company that resides on campus. One faculty member cited this concern as a reason for excluding established companies on campus. He explained that startup companies are here because they need facilities; they are concentrating on their own research and intellectual property, “[t]here’s not too many people snooping around and the people in there are gonna be pretty much focused on what they’re doing.” In contrast, established companies have their own facilities and the primary reason these companies want to be on campus is to gain some sort of competitive edge. They may want to hear about research and development that is coming out of our labs. The potential to lose intellectual property to them is high. The risk of loss escalates when students who might not have the experience to distinguish what they can and cannot share with a company interact frequently with company employees. Some faculty members relayed stories they heard where company employees “stole” research results and intellectual property from the University and published or patented before the University.

Additional issues that confront and confound faculty members include: conflicts arising from the use of campus laboratories as workspace for companies, conflicts of interest and commitment for faculty, staff, fellows and student entrepreneurs, in which the latter almost become de facto company employees, there would need to be a fair selection process, leasing of state property at a fair-market rental price in conformity to state law, research compliance, and an acknowledgement of the stress on under-resourced offices of technology commercialization.

A simple way to alleviate and, in some cases, resolve these conflicts is to have companies reside off campus. As one faculty member expressed, “it is better to have a privately funded business park off, but close to campus.” Other faculty members agreed that there was no problem in having one’s startup off-campus. Ideally, as one faculty member suggested, campus could facilitate the development of space near campus for startup companies. The often cited example is the creation of the incubator near UC Irvine where UC Irvine took the initiative to get a technical park built near the campus.

*View 3: Appropriate standards and guidelines are needed if industry is allocated space on campus*

The third point of view came from faculty members who were not opposed to increasing industry’s physical presence on campus, but were wary of the inherent problems that would need to be resolved. These faculty members recognized the benefits for companies on campus: access to advanced facilities at a reasonable price, legitimacy from having a UCLA address, direct access to UCLA scientists, opportunities to learn about the research and technologies coming out of UCLA labs. They recognized the benefits for UCLA – additional income through space and equipment rental, employment opportunities for its students, opportunities to foster relationships for future collaborations and funding, facilitation of the commercial development of University intellectual property, and an overall boost to the entrepreneurial spirit on campus.

At the same time, there was also no hesitation in voicing concerns about having industry on campus. In particular, these faculty were mindful of the potential problems associated with a growing industry presence. These faculty members stressed the importance of implementing procedures that took into account ways to (a) ensure the integrity of how space is used and allocated, (b) protect against threats to the fundamental core values of the campus, and (c) avoid loss of intellectual property. Some faculty wanted to be certain that the benefits to the campus affected the entire campus and did not privilege only the “hard” sciences.

To address the allocation of space, some faculty recommended that a faculty committee be formed to make this decision. Others suggested that the Chancellor or his designee should decide. “Space should always be allocated based on agreed upon priorities and principles, defined by faculty and administration, including representatives from the Deans’ office, departments, research units, and junior faculty. There should be a well defined scope for interaction between academia and industry on campus,” suggested one faculty member.

## 2. REPUTATION

A healthy Entrepreneurial Ecosystem requires a positive perception and good relations with outside industry. Faculty and administration agreed that this is one component of UCLA's ecosystem that required significant improvement. "UCLA has had a reputation for being the worst institution to work with both within the UC system and beyond." UCLA's reputation has been blamed on numerous factors, including the following:

- UCLA's conflict of interest policy has been too restrictive. As discussed below, faculty members felt that historically UCLA's default position has been not to trust the investigator and to simply avoid the conflict rather than manage it.
- UCLA has been a hard nose negotiator of intellectual property terms. Faculty members spoke about deals they believe were lost because of UCLA's inflexible approach to IP ownership rights.
- UCLA has not been helpful with people who want information about what is going at UCLA. According to faculty, there has been very little effort by the campus to reach out and establish relationships with industry, and when industry has made efforts to engage UCLA, often they were not provided with quality customer service and as a result industry quickly lost interest.
- UCLA has made it difficult for faculty to navigate how to receive money from companies and individuals seeking to support their research. Faculty complained that the amount of time, confusion, paperwork and back-and-forth discussions necessary to identify how to label money (*i.e.*, as a gift, sponsored research, *etc.*) has been frustrating to companies that want to deal with UCLA.
- Sales and Services – the method currently most commonly used for collaboration with businesses – is an antiquated system that no longer works, particularly in cases involving partnered business deals between academic departments and outside companies. As stated by one dean, "systems need to be revised to enter a new world order."
- Smaller companies that want to engage in small scale sponsored research have not been able to afford to work with UCLA because the indirect fees leave little money for actual research.

These factors have hindered the negotiation process and overall experience that industry has working with UCLA, and ultimately deters industry from UCLA. As one faculty member put it, "companies tend to go back where they are successful and we are not one of them." What we need is an "industry welcome sign."

## NAVIGATION OF CONFLICTS

The complex and demanding nature of academic research today inevitably gives rise to competing obligations and interests. Faculty members are expected to serve on committees, to train young researchers, to teach, and to review grants and manuscripts while simultaneously pursuing their own research and outside interests, including outside activities that may relate to research conducted on campus. However, to preserve the integrity of the University, UCLA researchers, and the research conducted therein, special steps should be taken to assure that conflicts do not interfere either with the responsible conduct of research or with the faculty member's primary obligations to the University .

A robust Entrepreneurial Ecosystem will give rise to conflicts in two key areas: (1) financial conflicts of interest, including conflicts of interest in research, and (2) conflicts of commitment. While a conflict in one area often coincides with conflicts in another area, financial conflicts of interest and conflicts of commitment are governed by separate policies and are handled by different campus organizations.

Conflicts of commitment arise from situations that place competing demands on a faculty member's time and loyalties. It is not atypical for faculty to be working concurrently on campus research, teaching and advising students, participating in peer review panels, sitting on industry advisory boards, and/or serving as a paid consultant or as an officer of a private company. Each of these activities place demands on a faculty member's time and energy. Care needs to be taken to assure that these commitments do not inappropriately interfere with one another. Financial conflicts of interest arise in situations that create perceived or actual tensions between the possibility of personal financial gain and the important value of maintaining objectivity in research and keeping the public trust. Reviews of financial conflicts related to research are not only required by law but they are also important parts of the entrepreneurial landscape.

At UCLA, determining what policies apply and which office has jurisdiction to review a particular conflict is not always intuitive. For example, the UC Office of General Counsel is responsible for collecting and reviewing financial disclosures from all UC employees deemed, by their title and job function, "designated officials." UCLA's purchasing department reviews conflicts that may arise from a request to purchase items or services from a company in which a UCLA employee has a financial interest. Most issues relating to conflict of commitment and outside activities of faculty members are reviewed by the Vice Chancellor of Academic Personnel. And the Office of the Vice Chancellor for Research, with support from the Office of Research Policy and Compliance, is responsible for ensuring that financial interests disclosed by faculty and other UCLA researchers are reviewed by the faculty Conflict of Interest in Research Committee (CIRC).

Many of our discussions with faculty confirmed that faculty members lacked understanding and were often confused about how to address conflicts. It became apparent that

many investigators conflated the concepts of conflicts of interest and conflicts of commitment. Few faculty members were able to separate the two issues. It was also clear that faculty members were unsure who should be consulted when issues arose, and instead, pointed to CIRC for all conflict issues, including those under the purview of other campus units.

Most faculty members acknowledged that the conflict of interest rules and review process were not well understood. One often cited comment was the perception that there was no one available to advise faculty on the conflict process. As a result, people were frustrated and “didn’t fill out the forms correctly, pleaded ignorant, came back years later and wanted to retroactively disclose things that they should have disclosed earlier.” In addition, it was reported that many faculty believed that by disclosing a conflict they would be automatically prohibited from moving forward. Many faculty members commented that the rules did not appear to be enforced uniformly and, as a result, faculty could not predict whether their proposed activity could be managed. “If the rules were clear and everybody understood it and people realized that the rules were for their benefit, they would disclose things and we wouldn’t have had problems,” explained one faculty member.

Faculty who were interviewed agreed that the campus needs to manage conflicts rather than avoid them if UCLA wants to foster further entrepreneurship. As entrepreneurship increases, conflicts tend to increase. Entrepreneurial faculty members felt that campus is still in denial; they expressed that campus needs to accept that there are going to be conflicts of interest and that the presence of conflicts is not necessarily a bad thing. As one faculty member commented, “the University should not automatically assume the worst.”

Despite the criticism, some faculty members recognized that managing conflicts is not a problem unique to UCLA. One self-identified “serial conflicted” faculty member acknowledged that this is an issue endemic to all research institutions. The biggest issue, he said, arises when faculty members are too intimidated to confront the conflict and, instead they lose out on commercialization opportunities by avoiding the conflict altogether or they ignore the situation by violating conflict policies. “Managing the conflict requires a lot of communication with the COI committee, which can take time and be intimidating.” Based on his many conversations with colleagues at other high level institutions, including MIT and Stanford, he recognized that the CIRC works hard to help manage conflicts and believes that he would not be able to obtain the same positive outcome at other institutions.

Others suggested that there should be a more engaged process for determining and managing conflicts of interest in research. One faculty member suggested that “the key is to develop a set of acceptable standards and processes by which these conflicts are managed in an ongoing basis. It should be an ongoing process where there is oversight and interaction, and policing, if their needs to be, and if somebody makes a mistake then everybody’s got to come clean and say we made a mistake and deal with it.” An alternative recommendation posed was to discourage junior faculty from engaging in entrepreneurial activities that give rise to these types

of conflicts. Rather, it was suggested that junior faculty should focus on proving their academic rigor and set aside entrepreneurship until after achieving tenure. “It is a mistake to push faculty to do this before the tenure decision unless this is some obvious opportunity that they can’t pass up; after tenure [faculty] know they can survive, then it’s a matter of balancing the two sides.”

Faculty who were interviewed raised concerns about other conflicts that emerge with increased entrepreneurship. Some had ethical concerns regarding the reputation of companies with which UCLA collaborates. Others were concerned about the use of UCLA resources to benefit a faculty member’s own startup and the possibility that someone might steer research towards areas that would provide direct benefit to the startup. Some expressed concerns about conflicts of commitment and more specifically about the amount of time faculty were devoting to outside activities that could eventually bleed into campus research, blurring the lines of what is acceptable. Related to this concern is the growth of student involvement in a faculty member’s outside activities. As explained by one entrepreneurial faculty member, campus should be careful when evaluating the appropriateness of activities where faculty hire their own students to work for their own startups or when faculty direct students to study areas because of the commercial potential. The goals for students – publishing and graduating – differ from those of companies. Thus, conflicts may arise when entrepreneurial faculty are supervising students and mentoring them through the graduation process on the one hand but hindering their ability to publish in order to benefit company goals on the other hand. As a result of this concern, some faculty members suggested that it is not appropriate to hire their own students or even broach the subject of possible outside employment until students have graduated.

## **RECOMMENDATIONS FOR UCLA’S ENTREPRENEURIAL ECOSYSTEM**

### **1. CREATION OF A 501(C)(3) NONPROFIT TO OVERSEE OIP-ISR**

On May 16, 2013, our campus received unanimous approval from the University of California Board of Regents to reorganize the governance of our Office of Intellectual Property and Industry Sponsored Research (OIP-ISR). This important effort to enhance UCLA’s technology transfer function was undertaken to protect the intellectual property and reputation of UCLA while improving our delivery of innovations and scholarship to society. Within a year, the staff of OIP-ISR will report to the board members of a newly created 501(c)(3) nonprofit corporation that will be comprised primarily of individuals possessing extensive experience in bridging the worlds of academia and business. These will be Friends of the University: leaders in such fields as pharmaceutical manufacturing, technology, engineering, and venture capital. The Board will also include in its membership UCLA Academic Senate faculty. This board will bring a new level of professional capability to assist our campus with decisions about patenting, licensing, campus investment, risk tolerance, and industry-sponsored research contracts. The University stands to benefit from their real world business experience.

These board members will not benefit financially in any way from their service to UCLA: they will receive no compensation for their services, nor will they have any disqualifying financial interests. They will be held to the same conflict of interest standards as the UC Regents, the UC President, and the Governor of California. The UC Office of General Counsel, the UC President, and the UCLA Chancellor will ensure that charter documents and internal policies will hold the board members to the same standards that apply to other University officials. All finances will be received by and distributed from University and campus accounts. The performance of OIP-ISR and its board will also be reviewed by a soon-to-be created Chancellor's Oversight Committee, which will consist of deans, UCLA Academic Senate appointees, and senior campus administrators. UCLA students will be appointed to the committee as well. The Regents have expressed keen interest in evaluating our progress.

## **2. A SUSTAINABLE FINANCIAL MODEL TO SUPPORT OIP-ISR**

### **A. OIP-ISR Operations**

The salary, benefits and patent legal expenses of OIP-ISR are currently paid from the Campus Share of licensing and royalty revenues and some 19900 State funds.

The Campus Share is defined by UC policy. After all patent, legal and joint holder expenses for an IP portfolio are paid, the inventors and research unit receive 50% of licensing revenue, and the General Fund (12.5 %) and Campus Share (37.5%) receive the remaining 50%. The Campus share is distributed at the discretion of the Chancellor. We propose to continue this self-supporting financial model, but with several refinements. Each year, the Chancellor will receive a detailed financial report and budget request that has been prepared by the OIP-ISR staff, approved by the OIP-ISR Board.

The Board will provide the Chancellor with the necessary data, opinions and philosophies to decide: (1) the staffing levels, distribution of expenses and compensation for OIP-ISR staff; (2) the level of patent and legal expenses to be invested in University intellectual property; and (3) other possible OIP-ISR budget categories such as Proof-of-Concept Grants (see below), campus investments in specific technology platforms (see below), or other infrastructure that would enhance entrepreneurial discovery and scholarship. The Chancellor's Oversight Committee will review the performance of the OIP-ISR on an annual basis, and will advise the Chancellor on any concerns from the campus.

### **B. Additional Possible Uses of OIP-ISR Revenues**

The Campus Share of licensing revenues has traditionally been used to pay for OIP-ISR operations with the remainder being proportionately distributed to the deans from whose schools the successful licensing events were produced. Since the Campus Share is distributed at the discretion of the Chancellor, there is the opportunity for flexibility in its use.

After reviewing recommendations from the OIP-ISR Board and the Oversight Committee, the Chancellor may wish to allocate a portion of the Campus Share to:

- 1) **Campus Proof-of-Concept grants.** Targeted campus investments in select IP may significantly enhance its value price to a licensing event.
- 2) **Technology Transfer and other infrastructure.** Specific platforms that enable discovery-based research and scholarship for the explicit purpose of enhancing commercial value may be entertained as worthy of campus investment, alone or in partnership with a specific school, division or center.
- 3) **Other Campus Priorities Unrelated to Entrepreneurship.** The Chancellor may choose to use OIP-ISR funds to support important programs to advance academic scholarship unrelated to where the revenue originated, such as initiatives in the performing arts or languages.

### **3. BUSINESS ADVISORY BOARDS SERVING INDIVIDUAL SCHOOLS AND DIVISIONS**

Faculty who were interviewed expressed a need for industry expert guidance, which can be provided through Business Advisory Boards (BABs) as advocated for in *Ecosystem I*. BABs would utilize the experience of industry experts to facilitate the translation of faculty inventions. Facilitation can occur through individual faculty mentorship or broader educational programming in specific areas of expertise. BABs also have the potential to utilize their relationships with industry to make introductions and catalyze more industry sponsored research. OIP-ISR is in the process of assembling its first BAB from the medical device industry, building on the success of the Medical Device Partnering Conference in February 2013. However, the consensus on campus is that deans should assemble their own BABs and define responsibilities according to the individual needs of their faculty and students. This is already happening at UCLA. The Henry Samueli School of Engineering launched the Institute for Technology Advancement (ITA) to assist faculty in starting new companies based on their research and enable the development of new multi-disciplinary research efforts for the school. The David Geffen School of Medicine is in the process of launching a new accelerator to help faculty along similar lines.

BABs should also have the capacity to help identify and promote investment in opportunities in which Deans could invest discretionary funds. These funds could then be used to support various translational efforts – from proof-of-concept research to funding patent expenses in which the campus is unwilling or unable to support – with a commensurate return to the school should the investment yield licensing income. BABs should use their in-depth expertise to play an active role in these investment decisions.

However, close coordination between the BABs and the OIP-ISR Board is essential. The campus needs to avoid different stakeholders providing conflicting advice to faculty entrepreneurs. In addition, relationships with industry could potentially be undermined if the campus is not providing a consistent message. For external stakeholders, UCLA is one campus, and should be consistent in our communications to the broader community.

#### **4. ENTREPRENEURIAL EDUCATION**

Producing graduates, trainees and faculty who can convert a good idea into a public good is essential to UCLA's mission to serve the public. To achieve this goal, the UCLA community must have access to a wide range of entrepreneurial learning experiences. It is also crucial to expand the number of educational services available as student and faculty interest in entrepreneurship continues to increase. For these reasons, the educational component of the Ecosystem for Entrepreneurship has become a priority and, as revealed below, great effort has been taken to make both formal and informal instruction available to the entire UCLA community.

##### *Undergraduate educational programs and courses*

Entrepreneurial courses and programs being offered to undergraduate students across campus continues to grow each year. Just this past year, the Anderson School of Management has added five new courses to their Undergraduate Entrepreneurship Program, ranging from Business Plan Development to Entrepreneurial Finance and Accounting. The program will also provide its students with opportunities for internship/field experience. The Department of Economics is offering a new course called the [Social Enterprise Academy](#), which provides hands-on experience to students interested in becoming entrepreneurs for a good cause. With help from in-class workshops, successful entrepreneurs and MBA students from the Anderson School of Management, teams of students work with different nonprofits to develop business plans for growth. At the end of the course, students present their business plan before a panel of judges, competing for a \$10,000 prize to start up their business idea. [Startup UCLA](#), which is organized by the Division of Social Sciences, is also expanding its offerings by hosting more events and presentations from accomplished investors and entrepreneurs, in addition to its successful 10-week summer accelerator program for undergraduate students. Other schools and departments are adding introductory courses on entrepreneurship with plans to expand their programs based on student interest.

##### *Educational programs and course for graduate and postgraduate students*

There are also increasing campus-wide efforts to reach out and educate graduates and postgraduates. [The Business of Science Center \(BSC\)](#) organizes student run assessments of UCLA IP, offers venture competitions and graduate level courses geared towards training in technology transfer and careers in the private sector. In December 2012, the BSC also began

offering the [Advancing Bioengineering Innovations \(ABI\)](#) program. ABI is a two-quarter long course designed to teach students about the medical device design process through lectures, guest speakers, and a hands-on project. Multi-disciplinary teams of graduate students evaluate actual unmet medical needs identified in the UCLA Hospital System and invent and develop practical solutions that address these needs. The team-based project component of the course is complemented by lectures and panels from UCLA faculty and industry experts to provide additional teaching and guidance on the product development process and entrepreneurship as it relates to medical devices. The goals of the ABI program are to develop medical device solutions that improve patient care and prepare students for careers in healthcare, product development, and entrepreneurship.

The Price Center for Entrepreneurial Studies at Anderson engages its graduate students through activities like the [Technology & Innovation Partners \(TIP\)](#) program, in which the students assess the feasibility and market potential for UCLA IP. [The Institute for Technology Advancement \(ITA\)](#), which is made available to all students and postgraduate students provides business development support and strategic direction for new startup companies and provides further information about entrepreneurial resources on campus.

*Entrepreneur-in-Residence Program, Mentors and Coaches Made Available to All Students, Postgraduates and Faculty*

OIP-ISR provides the UCLA community with entrepreneurial guidance through various educational and mentoring services. First, the newly implemented [Entrepreneurs-in-Residence \(EIRs\)](#) program aims to connect UCLA technologies with industry executives, serial entrepreneurs, and the larger investor community. EIRs lend their own industry and startup experience to help guide and bolster entrepreneurial efforts across campus. EIRs are involved in a range of activities on campus, including: meeting with UCLA inventors including faculty, post-docs, and graduate students, to lend commercial perspective on research/technologies; providing guidance to faculty and student entrepreneurs interested in starting a company; holding on-campus seminars and speaking engagements to share their own experiences; and advising faculty, post-docs, and students on startup matters. The EIRs launched a “Startups 101 Seminar Series” featuring lectures for faculty, staff, and students on how to create a successful startup business. The series aimed to familiarize participants with terminology used by entrepreneurs, lawyers, and investors when forming and financing a new company, and equip participants to assess the feasibility of a business concept and communicate that concept. Further lectures are planned around specific areas of interest such as FDA regulation.

OIP-ISR has also begun offering legal and mentor office hours for faculty thinking of starting companies. OIP-ISR staff is meeting with startup law firms in Los Angeles to put together packages for UCLA startup companies. These firms have also offered to host additional seminars and office hours to assist faculty.

### *OIP-ISR Seminar Series*

OIP-ISR recently initiated a Campus Series on Intellectual Property – a rotating series of classes designed to educate faculty and researchers about IP addressing a variety of topics, including: (1) the difference between patents, trademarks and copyrights; (2) the process for securing a patent; (3) UCLA’s policy and procedures on IP; and (4) the technology transfer process. Further initiatives have included an SBIR / STTR Workshop, the first of a planned series on how to win funding from Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. SBIR and STTR grants are useful sources of non-dilutive funding designed for small businesses driving forward significant innovation, such as those from universities.

### *Other OIP-ISR outreach*

In addition, more informal channels for faculty engagement are being pursued. In FY2013, presentations to department meetings were implemented as an evaluation criterion for every OIP and ISR officer, and in FY2014 OIP-ISR’s aspiration is to reach every department and division.

OIP-ISR is also producing reference publications on Frequently Asked Questions (FAQs) on [entrepreneurship](#), [SBIR / STTRs](#), and [technology transfer](#). OIP-ISR has implemented a monthly “UCLA Invents” newsletter, an email-based news bulletin highlighting startup and technology commercialization developments and opportunities at UCLA. OIP-ISR is now also providing new faculty with a welcome letter in order to help ease their transition to UCLA and inform them of the various services available to them in technology transfer and entrepreneurship.

Additional planned initiatives include an online IP training for faculty, being developed in partnership with UCOP and UCLA.

## **5. ENHANCING HEALTHY RELATIONSHIPS WITH INDUSTRY**

There is no dispute that collaborations between industry and academia present tremendous opportunities for advancing knowledge, applying it to real-world problems, and bringing forth a myriad of social benefits. Academic-industry research arrangements have proven critical to the development of numerous powerful technologies in medicine, agriculture, energy, and other fields. But the increasing complexity of these arrangements calls for careful management of these collaborations in a manner consistent with the long-term interests of both the University and the broader society, including private industry.

Determining what steps to take to improve academic-industry relationships and facilitate industry engagement is complicated and requires careful consideration. Currently, efforts are

being made to review certain campus policies and existing guidelines relating to industry engagement. In addition, several recommendations are being considered and vetted to increase partnerships and improve external relations.

### *Industry Sponsored Research*

At a time when universities are receiving increased pressure to be engines of economic growth, the desire to generate academic-industry collaborations is great. However, getting to the point where these relationships can grow dramatically is not easy. The ability of a university and a company to work jointly in research depends upon each party's ability to agree on research goals and related legal and business terms. A successful relationship can lead to a well-prepared next-generation workforce, the transfer of basic research discoveries into commercial applications, and increased benefit to the public. Inadequate or misguided management of industry relationships, however, threatens the very principles that universities hold most sacred: academic freedom, scientific objectivity and accuracy, broad dissemination of knowledge through publication, and the development of products and technologies that serve the public good.

In an effort to enhance UCLA-industry relations, OIP-ISR has increased efforts to help faculty form and maintain relationships with potential industry partners. Specifically, OIP-ISR has increased its outreach efforts both on campus and off. Concerted efforts are being made to reach out to departments to better explain OIP-ISR's expertise and its overall role within UCLA's research organization, as well as the newly-implemented programs that can assist faculty in increasing its visibility to potential industry partners. OIP-ISR is also focusing efforts to engage industry and understand each potential partner's specific needs; this direct interaction enhances our ability to connect industry with our faculty. The overall goal is to develop long-term relationships with these industry partners and translate these relationships into large multi-year sponsored research collaborations.

In addition, OIP-ISR has approached several industry sponsors who have numerous recurring collaborations with UCLA to discuss ways to facilitate and streamline the research contracting process. As a result, several of these industry sponsors elected to enter into master agreements with campus. These industry sponsors include Amgen, Siemens, Takeda, and Roche. Though, each party to these agreements are allowed to exercise its discretion to determine whether the terms of the master agreement are appropriate for a specific scope of work, we expect that the majority of research projects will fall under the terms of the master and, thus, will require no further negotiation. There will, however, be exceptions. We expect some special projects will require alternate terms due to unusual factors such as a high probability that valuable intellectual property will be developed, the presence of third party materials and/or funding, or the use of University-owned background intellectual property. Although alternate terms may need to be negotiated, the majority of the terms under the master agreement will require no further negotiation saving both time and effort.

### *Industry Use of Campus Space*

Over the past five years, there have been increasing requests from various UCLA departments to make both office space and lab space on campus available for industry to conduct its own proprietary research. As previously discussed, many divergent opinions were voiced about allotting campus space for industry use. One of the few areas of consensus centered around the lack of official campus guidelines. Rather, when such requests for space are made, each department uses different standards and imposes different conditions for each situation such that there is a lack of uniformity across campus.

UCLA does not have a policy or other uniform guidance that addresses use of campus space for industry. A few years ago, an effort was made to draft such a policy, however, it was never finalized. Given the current push to work closer with industry, it may be advisable to form a committee comprised of representatives from across campus to address the various issues that were raised by faculty, to review the prior documents relating to use of campus space for outside entities, and to set policy to be adopted campus-wide.

### *Protection Against Inadvertent Disclosures*

Traditionally, we've placed great trust in our faculty and campus administration to self-regulate and administer its own practices to review and report any issues of concern with respect to disclosure of confidential information, including intellectual property. However, mounting concern from lawmakers, government agencies, and the public demonstrates the clear need for stronger measures to protect public trust in academic research. Most recently, the implementation of the America Invents Act (AIA) changed the patent system such that the first inventor to file a patent application is awarded the patent even if the inventor made the invention later than other patent applicants who filed later. As a result, researchers need to be made better aware to contact OIP-ISR as early as possible and in advance of any publication submission or any public presentation to ensure that their ideas are protected. In addition, any disclosure of intellectual property to third parties should be carried out under a non-disclosure agreement executed through OIP-ISR.

Moreover, to ensure that our faculty understand the implications of the AIA, OIP-ISR has sponsored numerous lectures on campus taught by reputable law firms to explain these rule changes. OIP-ISR has also made arrangements with these firms to hold open office hours to enable concerned researchers to discuss their intellectual property with these legal experts.

In addition to its own researchers, other opportunities for inadvertent disclosure of information abound due to the presence of outsiders working on campus. Specifically, UCLA hosts numerous visitors from other institutions and from industry to participate in research activities on campus. These visitors have broad access to labs and frequent interactions with faculty and students. There is no consistent system to track these visitors or to ensure that appropriate approvals have been sought and required documents protecting University and

campus assets, including intellectual property, have been signed. OIP-ISR is assisting Audit in its review of the campus' current policies and procedures and will help recommend a course of action to mitigate the risk of any liability caused by the activities of these visitors.

## **6. USE OF CAMPUS SPACE FOR ENTREPRENEURIAL VENTURES**

Many technologies developed at UCLA have been the foundation for startup companies. In some cases, these start-ups involve the faculty members who created the intellectual property. There are a number of reasons why faculty members are not allowed to conduct work for their startup companies within their UCLA labs. Use of campus facilities in this manner can create unmanageable conflicts, liabilities, and other penalties for campus and the researcher imposed by the IRS and other government agencies. UCLA recognizes, however, that there are times that the academic lab may be pursuing basic research that is complementary to the startup's development work or there may be instances where proof of concept or reduction to practice experimentation is needed and the academic laboratory is best equipped to perform this work. In these cases, the start-up can enter into a sponsored research agreement with campus to fund this work. Funding from startups to the faculty founder's academic laboratory are handled by OIP-ISR with approval from the Conflict of Interest in Research Committee.

As previously discussed, the campus currently provides 2,000 square feet of lab space to house startup companies in CNSI. At CNSI, an Incubation Committee comprised of CNSI faculty, in consultation with OIP-ISR and CNSI business advisors, evaluate company applicants and their intellectual property to decide entry into the incubator. One eligibility requirement for all companies is that the intellectual property to be developed in the incubator must be licensed from UCLA.

Given the high demand and purported success of companies inhabiting the CNSI incubator, UCLA needs to consider whether additional space should be made available on campus. As with established industries using space on campus, there is also a lack of guidance from campus regarding use of space by startup companies. In order to maintain some consistency and to discourage certain forum shopping between departments, campus needs to establish procedures and guidelines for determining (a) how space is assigned, (b) whether there should be certain uniform terms applicable to all outside entities regardless of the entity's size, (c) eligibility requirements, (d) rent, and (e) what constitutes permissible versus impermissible use. As other universities are establishing space on their campuses for academic-related entrepreneurial ventures, and private entities are quickly competing to offer affordable research space, UCLA needs to be actively considering these issues now so that it is not left behind.

## **7. VENTURE PHILANTHROPY**

UCLA has the opportunity to attract philanthropic gifts that can be invested in the translation of UCLA inventions into external applications, whether commercial, nonprofit, or otherwise. Donors will know their gift has the potential to generate significant returns to society

and campus, should the funded technology be successfully translated. These funds could be raised by the OIP-ISR Board as well as individual school BABs, and awarded to UCLA inventions that, in their business judgment, are worthy of investment.

Other leading institutions have attempted to pioneer this model. For example in 2007, Harvard established a Biomedical Accelerator Fund with a gift of \$5 million from a Business School alumnus and an additional \$5 million from other sources. In April of 2013, they raised an additional \$50 million to grow the fund and establish life-sciences-entrepreneurship fellowships at Harvard Business School. This is proof that there is significant appetite from philanthropic sources for this type of contribution. We believe that this model can be improved. UCLA should consider this significant opportunity, and should look to other university best practices to guide the design of fund structures.

## **8. NAVIGATING CONFLICTS OF INTEREST**

While campus encourages entrepreneurial activities such as transforming technology developed in campus laboratories into broad commercial applications, it is imperative that this be done ethically and with integrity. The manner with which conflicts are reviewed have not been well understood and many resources available to faculty have been underused and not well known. Due to the complexity of these issues, Executive Vice Chancellor and Provost Scott Waugh established a Conflict of Interest Task Force in June 2011. The Task Force, chaired by Vice Chancellor for Legal Affairs Kevin Reed, was charged with recommending steps that should be taken to simplify the management of financial conflicts of interest in research while preserving the highest ethical standards.

After careful review, the Task Force recognized that the policies, regulations, and laws governing conflicts of interest were often inconsistent due to differing definitions and requirements imposed by institutional, state, and federal organizations. Because the existing laws and regulations were beyond the purview of the campus, the Task Force focused on improving procedures to implement and administer the various policies, regulations, and laws that relate to conflicts of interest.

Recommendations to improve the review of conflicts fall into three main categories: (1) improve support to investigators, (2) increase CIRC efficiency, and (3) fill gaps not currently addressed in the existing conflict of interest policies and procedures. In addition, new regulations effective August 23, 2012 have invoked additional changes to the management and review of conflicts at UCLA. For more details regarding the recommendations and the steps that have already been taken to improve the review process, see Appendix I.

## **9. BETTER NAVIGATION OF ENTREPRENEURSHIP ON CAMPUS**

With the growing number of cross-campus initiatives being offered to support entrepreneurship and number of administrative offices involved, faculty need a better way to

navigate the various organizations and resources. As a first step, OIP-ISR worked with many of the entrepreneurial organizations on campus, including, OIP-ISR, BSC, TEC, ITA, EA, and Startup UCLA, to convene an Entrepreneurship Council. The Council now meets on a monthly basis to discuss common issues and concerns, inform one another of their activities, discuss shared policy issues, and better coordinate their efforts in support of the UCLA community. One of the initiatives that all groups have aligned behind is a more robust re-launch of BRUINcubate, a pilot project from OIP-ISR. It is a portal listing all entrepreneurial groups, resources and events on campus, as well as additional resources off campus to help the UCLA entrepreneurial community get the information they need to start a business or connect with talent.

In addition, OIP-ISR will make it easier for faculty to remain in contact and navigate issues, policies, and the various organizations that touch entrepreneurial aspirations by assigning a single Officer to serve as a personal concierge in navigating issues, policies, and the various organizations that touch entrepreneurial aspirations. Anytime faculty members have questions or concerns about their portfolio, they can return to this same person, who will help them navigate the complex and dynamic Entrepreneurial Ecosystem at UCLA.

## CONCLUSION

The landscape at academic institutions is changing, and the consensus across campus is that UCLA must adopt a modern entrepreneurial mindset in order to effectively continue delivering innovative ideas to society for the public good. Though not the primary motivator, occasional financial success may arise from these activities, and should be used to support the research, education, and public service mission of the University. Increasing entrepreneurship on campus, however, leads to conflicts and divergent choices, both of which need to be actively and transparently managed to ensure the integrity of the institution.

The views expressed by faculty included in this report highlight the breadth of choices and diversity of perspectives across campus. As the Ecosystem for Entrepreneurship forges ahead, there will be new issues and opportunities that will require continuous reassessment and consideration. UCLA is already making progress on many of the historic challenges to entrepreneurship on campus, but it is clear that much more can and should be done. The significant momentum seen over the last two years must be sustained if UCLA is going to take its place amongst the top entrepreneurial universities.

We would like to acknowledge contributions and insights from across and beyond campus that informed this report. This draft is the product of inputs from many sources, including the administration, technology transfer staff, the Office of the President, peer institutions, and, most importantly, faculty and deans. We hope this report successfully captured both the spirit and diversity of viewpoints expressed.

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## APPENDIX I

As previously discussed, the Conflict of Interest Task Force, established June 2011, reviewed the current campus research-related conflict procedures and practices and, through its review, devised a list of recommendations to help streamline procedures and assist faculty. In addition, new regulations effective August 23, 2012 provided more guidance on the management and review of conflicts. Recommendations to improve the review of conflicts fell into three main categories: (1) improve support to investigators, (2) increase CIRC efficiency, and (3) fill gaps not currently addressed in the existing conflict of interest policies and procedures.

### *Improve Support to Investigators*

Through our interviews, it became clear that most faculty members have been confused and intimidated by the conflicts review process. As a result, faculty often fail to provide full information, leading to delays as the staff tasked with collecting information must go back to the faculty member numerous times in order to obtain full disclosure. To break this cycle of confusion, CIRC staff should be more proactive and increase assistance to faculty members at the time proposals are first submitted for review. When complex cases arise, staff should provide guidance and status updates throughout the review process and, after the determination has been made, staff should meet with the faculty to explain the decision to ensure that the reasons for the determination and the conditions for management are fully understood. This recommendation also requires a decision regarding where resources should be allocated to enable such increased assistance.

Another potential source of support could be an online portal that brings together all relevant information, including policies, procedures, forms, and resources for assistance. The portal should enable faculty to obtain information about the status of the conflict review and other relevant information in one place. The Office of Legal Affairs, with the Office of Research Administration, the Office of Research, Policy, and Compliance, and OIP-ISR should create a user-friendly “rules of the road document” that provides detailed instructions for faculty and identifies resources to assist faculty with disclosures.

### *Increase CIRC Efficiency*

As revealed through the Conflict of Interest Task Force findings, the efficiency of the CIRC is hampered by multiple handicaps: a lack of sufficient information, an absence of linkages to other campus units, and inadequate technology. The most critical hindrance is the lack of a database to house all information collected, and be a repository for all recommendations made by the CIRC and final determinations issued by the Vice Chancellor for Research. The campus recently invested in the development and implementation of Phase I of a web-based disclosure system (eDGE) in order to implement revised federal regulations. What remains to be addressed are steps required to further develop eDGE in order to use the system to capture financial disclosures required under other federal and state regulations, to link with other campus

legacy systems, to achieve greater efficiencies by using the system's meeting management functions and to document CIRC cases and reports. Presumably a robust database could also generate workload metrics, data on turnaround times and other information of interest to campus leadership and the research community. Consideration of any of those prospects will involve the identification of resources that are currently not available.

Ideally, the electronic systems used by the Office of Research Policy and Compliance (RPC), ORA, the Office of Research Protection Programs (OHRPP), and the Office of Intellectual Property, would be connected. Although these separate systems are not linked electronically, RPC staff do have access to the other databases. RPC staff have also established close working relationships with staff of these offices. Ann Pollack, Assistant Vice Chancellor – Research serves as a liaison to the Office of the Vice Chancellor for Academic Personnel and to the Office of Legal Affairs

The Task Force also recommended that CIRC meetings be organized in a way that permits routine cases to be handled expeditiously so that the committee can devote more meeting time to discussion of ones that are novel and complex. In actuality the meetings have been organized in this way for several years. In addition, and even before release of the Task Force's report last year, investigators have frequently attended a portion of the monthly meeting to engage in discussion with the Committee. In some instances this is done at the investigator's request. At other times investigators are invited to join the meeting by the Committee.

#### *Fill Gaps in Conflict of Interest Policies and Procedures*

Implementation of the measures recommended above should greatly improve the efficiency of conflict reviews, however, there are several potentially useful practices that remain absent. The Task Force report noted that there is no formal appeals process for faculty who are dissatisfied with conflict decisions but recommended that one be put into place. While not a formalized process, the Vice Chancellor for Research, to whom the Conflict of Interest Review Committee (CIRC) is advisory, does occasionally receive requests for reconsideration of a CIRC determination. He has consistently referred those requests back to the CIRC and in all cases these individuals have been invited to talk with CIRC Chair and the Assistant Vice Chancellor – Research, or to come to a committee meeting.

The Task Force also recommended that a single office of record be responsible for holding official copies of all forms related to conflict disclosures, including financial conflict of interest disclosures and conflict of commitment disclosures. This is a recommendation that needs to be examined by a cross-section of campus and UC officials to determine its feasibility. Although not addressed by the Task Force, it was raised in the faculty interviews that as the Entrepreneurial Ecosystem on campus expands, policies for students, postdoctoral scholars and staff involved in the commercialization of research that gives rise to conflicts should also be developed. As a pilot program for OIP-ISR staff, an informal advisory committee was formed to review proposed outside activities when requested by an OIP-ISR staff member in order to

ensure that those activities do not conflict with Staff Personnel Policy 82 (Conflict of Interest for staff members).

In reviewing the faculty interviews and the Task Force recommendations it is clear that many faculty members have been unaware of the existing policies and procedures in place and have not fully understood what the review process entails. Similarly many have not understood why the conflict review process is necessary for both individual investigators and the campus. The call for the campus to provide more outreach in order to inform the faculty of the importance of disclosing, the disclosure and review process, is clear. The challenge is to deliver the appropriate message to the right audience.