

Supporting University Startups

October 4, 2017

A brief from the Technology Transfer Evolution Working Group of APLU's Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP)

TECHNOLOGY TRANSFER EVOLUTION: THE VISION

APLU's Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP) has convened the Technology Transfer Evolution Working Group. The group has been charged with identifying ways in which the practice of university technology transfer is changing, and must continue to change, to sustain and increase our responsiveness to the needs of stakeholders, and more broadly to challenges in society and the economy.

To guide conversations and recommendations, the Working Group has established the following vision for the evolution of technology transfer:

University leaders are increasingly responding to the needs of the innovation economy—and in particular their local economies—by including innovation, entrepreneurship, and “economic engagement” programming in their strategic planning processes. As part of this response, university technology transfer offices are evolving, and must continue to evolve, toward participation in a broader scope of efforts—with patents and licensing as one emphasis, and also *connecting with and engaging in other efforts* that support the learning and discovery missions of the university. In evolving toward broader participation in university economic engagement, technology transfer offices will develop deeper relationships with industry and other community partners;



broaden their reach to areas such as education, technology development, and entrepreneurship; and integrate more closely with other supportive administrative functions such as industry contracting. While budget and resource threats to the university research enterprise are creating increased pressure to generate revenue from licensing and innovation activities, university leaders must recognize that successful economic engagement will not be focused on short-term income, but rather on longer-term work on relationship development and ecosystem building.

The Technology Transfer Evolution Working Group has also identified five focus areas for defining and advancing the evolution of technology transfer toward economic engagement leadership. The five focus areas are:

1. Engaging the local and regional ecosystem
2. Re-defining expectations of technology transfer offices
3. Adapting innovation management structures
4. Fostering an entrepreneurial culture, and
5. Supporting university start-ups.

This brief presents issues in the fifth focus areas: supporting university start-ups.

SUPPORTING UNIVERSITY STARTUPS

This brief focuses on the expansion of the mission of technology transfer offices to holistically include programs that support the launch and development of university-based startup companies, potentially including licensing technology but also broader support for startups. For the purposes of this brief, “university startups” are defined as new companies or firms that are dependent on university-issued licenses to new technologies as defined by the [Association of University Technology Managers \(AUTM\)](#).

Outlined here are examples, obstacles, and imperatives related to how technology transfer offices are meeting and can continue to work toward this objective. Included examples illustrate the ways in which university technology transfer offices are evolving toward the vision outlined above. Obstacles identify the hurdles that must be overcome in order to reach a higher scale of success in technology transfer evolution. Imperatives specify what must be done to continue or begin the evolution process. Further discussion of these will be included in the final report of the Working Group, to be released in late 2017.

Examples: What are universities doing well?

- Technology transfer offices are positioning themselves as conveners to create environments of collaboration, relationship-building and networking that support startup growth and funding. They are linking budding university-affiliated entrepreneurs with educators of entrepreneurship to facilitate the illumination and education of core entrepreneurial and business competencies.
- Universities partner with local and regional economic development organizations to offer training opportunities that help entrepreneurs leverage federal programs including Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards. The Kentucky Science and Engineering Foundation offers [SBIR/STTR assistance](#) to Kentucky-based R&D businesses that help them develop proposals and identify matching funds. University of Wyoming's [SBIR/STTR Initiative](#) provides assistance to startups through training, access to mentors, peer networking, and a "Phase 0" program.
- Universities have established internal programs that provide capital for university-affiliated startups. Such programs typically engage internal and external stakeholders throughout a multi-stage review process. Further, university-backed venture capital funds invest university funds into the institution's startup companies. The University of Minnesota's [Venture Center at the Office for Technology Commercialization](#) is an example of such a fund where licensing is a major instrument of venture funding. The Venture Center also helps identify promising technologies from the university startup pipeline and prepares them for market. Indiana University's Research and Technology Corporation manages the [Innovate Indiana fund](#) which provides seed and series A financing to companies with a significant university connection. The University of California, San Diego's [Triton Fund](#) invests exclusively in UC San Diego spin out companies. Triton provides funding to source and prepare startup teams for presentation to investment committees.
- Streamlined licensing programs for university startups remove a significant barrier for translating technologies to market. The University of California, San Diego's [Open Flow Innovation](#) program minimizes time-consuming or bureaucratic steps in the licensing process. The program helps translate technologies into new start-up companies with terms appropriate to their development stage. Washington University in St. Louis offers a [quick start license](#) to speedily foster venture formation based on university technologies. The University of Kansas has a similar [Swift Startup license](#).
- The National Science Foundation's i-Corps program supports teams through critical market and commercialization evaluations associated with a specific technology. Customer discovery and feedback is a key of NSF i-Corps. This core tenet has been incorporated into many technology and invention disclosure evaluation processes. The [State University of New York \(SUNY\) Technology Accelerator Fund](#) added a specific requirement to its application for funding that mandates a completed customer discovery evaluation.

- Universities are working to achieve greater levels of diversity and inclusion in startup leadership. The University of Florida's Office of Technology Licensing collaborates with the [Empowering Women in Tech Startups](#) program to provide budding female entrepreneurs with hands-on training and skills development. University of Florida also includes an Entrepreneurial Women's Center in its incubator space.

Obstacles: What's getting in the way of technology transfer evolving toward the vision?

- Identifying management talent is an ongoing challenge for developing the leadership teams of new startup companies.
- Access to capital is a persistent issue for university-affiliated startup companies. This is particularly an issue when there is a lack of university programs available to assist in early financing for startup companies.
- There is a need for unified metrics and incentives that reinforce startup priorities and promote best practices, both at the technology transfer offices and for the startup firms.
- Faculty don't always find it easy to prioritize startup activities, particularly if there is not clear articulation of benefits for their primary roles and objectives (teaching, research, publication, promotion, tenure, etc.).
- From a technology transfer perspective, organizing a license with a startup can take more effort and resources than licensing to an established company. There is a need for programs, incentives and clarity in technology transfer that encourage and allow for efficient licensing to startups.
- It can be challenging to clearly define, specify and promote the evolving mission of technology transfer offices – shifting away from maximizing royalty revenues and toward a focus on economic development, student/faculty experiences, public benefits. There is also a challenge in articulating this mission uniformly across a university system.

Imperatives: What universities must do to continue the technology transfer evolution.

- Universities must more deeply encourage their technology transfer offices to connect and partner with regional innovation communities to attract experienced entrepreneurs who can serve as mentors to budding campus entrepreneurs. Universities must serve as the bridge between seasoned entrepreneurs and university startups.
- Universities must take an active role in assisting with early-stage financing of university startups including through SBIR/STTR support, infrastructure assistance, and university-sourced seed funds. Coordination and alignment of resources is necessary, as is promotion of lesser known local, state and regional investment sources.
- Universities must align metrics and incentives across campus and systems that encourage faculty and student entrepreneurship as well as engagement with startups. Steps could include broadening promotion and

tenure criteria, streamlining conflict of interest policies, clarifying revenue distribution policies, and promoting opportunities to students through living-learning communities and advising offices. Curriculum flexibility can also encourage and support students' entrepreneurial endeavors.

- Universities must streamline the licensing processes for university startups, aligning these processes with the needs and capacities of new firms. Alignment of processes must be focused on the success of the startup.
- Universities must develop clear policies that reinforce the role of the technology transfer office in new company creation while making sure not to overstate expectations.
- Universities must support the inclusion of women and other underrepresented groups in the entrepreneurial ecosystem across campus. Diversity must be developed among student/faculty entrepreneurs, mentor and capital networks, and company management recruiting efforts.

YOUR INPUT

As the APLU CICEP Technology Transfer Evolution Working Group prepares its final report and recommendations, we'd like to hear from you. Please take a moment to respond to [our brief survey](#) (10 minutes) to tell us what you think of the examples, obstacles, and imperatives that we have identified. You may also email feedback to APLU's Office of Economic Development and Community Engagement at loedce@aplu.org.

FURTHER READING

- [Statement to APLU Members: Recommendations on Managing University Intellectual Property](#)
 - [AAU Technology Transfer Working Group Statement on Managing University Technology Transfer in the Public Interest](#)
 - [Technology Transfer for All the Right Reasons](#)
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The Technology Transfer Evolution Working Group of APLU's Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP) is co-chaired by **Julie Nagel**, President of KU Innovation & Collaboration and Associate Vice Chancellor for Innovation & Entrepreneurship, University of Kansas and **Paul Roben**, Associate Vice Chancellor, Innovation and Commercialization, University of California San Diego.

This brief, *Supporting University Startups*, was prepared by a sub-committee led by **Maura Donovan**, Executive Director, University Economic Development, University of Minnesota. The members of the sub-committee are: **Jane Muir**, Florida Innovation Hub; **Per Stromhaug**, Binghamton University; **Matthew Mroz**, State University of New York; **Rob Ksiatkiewicz**, SSTI, and **Peter Hernandez**, Florida International University.

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A full membership listing for the Technology Transfer Evolution Working Group is available [online](#).

ABOUT APLU

APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. With a membership of 237 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, member campuses enroll 4.9 million undergraduates and 1.3 million graduate students, award 1.2 million degrees, employ 1.2 million faculty and staff, and conduct \$43.9 billion in university-based research.

ABOUT CICEP

APLU's Commission on Innovation, Competitiveness, and Economic Prosperity (CICEP) was created to help leaders of APLU member universities—including presidents and chancellors, senior research officers, provosts, other officers and their staffs—plan, assess, and communicate their institutions' work in local and regional economic development.



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