



The Center for Intellectual Property (CIPU)

September 2023

**Assessing Intellectual Property Engagement at the
Largest U.S. University Entrepreneurship and Innovation
Programs**

While business startup activity in the United States has been on a downward trend for decades, the spirit of American entrepreneurship has exhibited signs of life, especially during the COVID-19 era. While business formation and productivity growth has slowed since the 1970s, 2021 and 2022 were the highest years on record for new business applications according to U.S. Census Bureau data.¹ In many ways, this entrepreneurship boom was forced by the COVID-19 pandemic, which eliminated many traditional forms of work during the enforcement of social distancing orders. The state of digital technology, however, is also credited as a major reason why many small businesses have been able to reach customers and improve sales despite financial instability during the pandemic era.²

Entrepreneurship is closely tied to intellectual property rights, which can attract venture capital to increase business operations or grow revenues. To better understand whether the growing spike in American entrepreneurship is improving engagement with or is a result of intellectual property rights, the Center for Intellectual Property Understanding (CIPU) conducted a survey of entrepreneurship and innovation (E&I) programs at the top 10 U.S. universities by undergraduate enrollment during the Fall 2021 semester as reported by U.S. News & World Report.³ Catering to a combined student body of 489,700 undergraduate students, these universities serve as a proving ground for the career aspirations of a great portion of America's young adults.

Understanding the level of IP engagement among students enrolled at these schools provides insight into ways to increase support for the nation's would be entrepreneurs. In this report, CIPU is employing a broad definition of "IP engagement" that presumes at least an introduction to patent, trademark or trade secret matters through E&I coursework or extracurricular programming. This conclusion is reinforced by interviews conducted by CIPU with E&I program directors and students, both of which report students applying for IP rights on products developed through E&I programs as well as conversations on IP matters at entrepreneurial mentoring sessions, business pitch competitions and more. While this report attempts to identify every instance in which IP is mentioned as a component of E&I programs, there is a presumption that participation in E&I programs will lead undergraduates toward some introduction to IP rights.

¹ Business Insider, Jacob Zinkula, *The pandemic created an American entrepreneurship boom – and it looks like it's here to stay*, 28 Jan. 2023, <https://www.businessinsider.com/entrepreneurship-characteristics-trends-how-start-new-business-america-changed-forever-2023-1>, accessed 20 June 2023

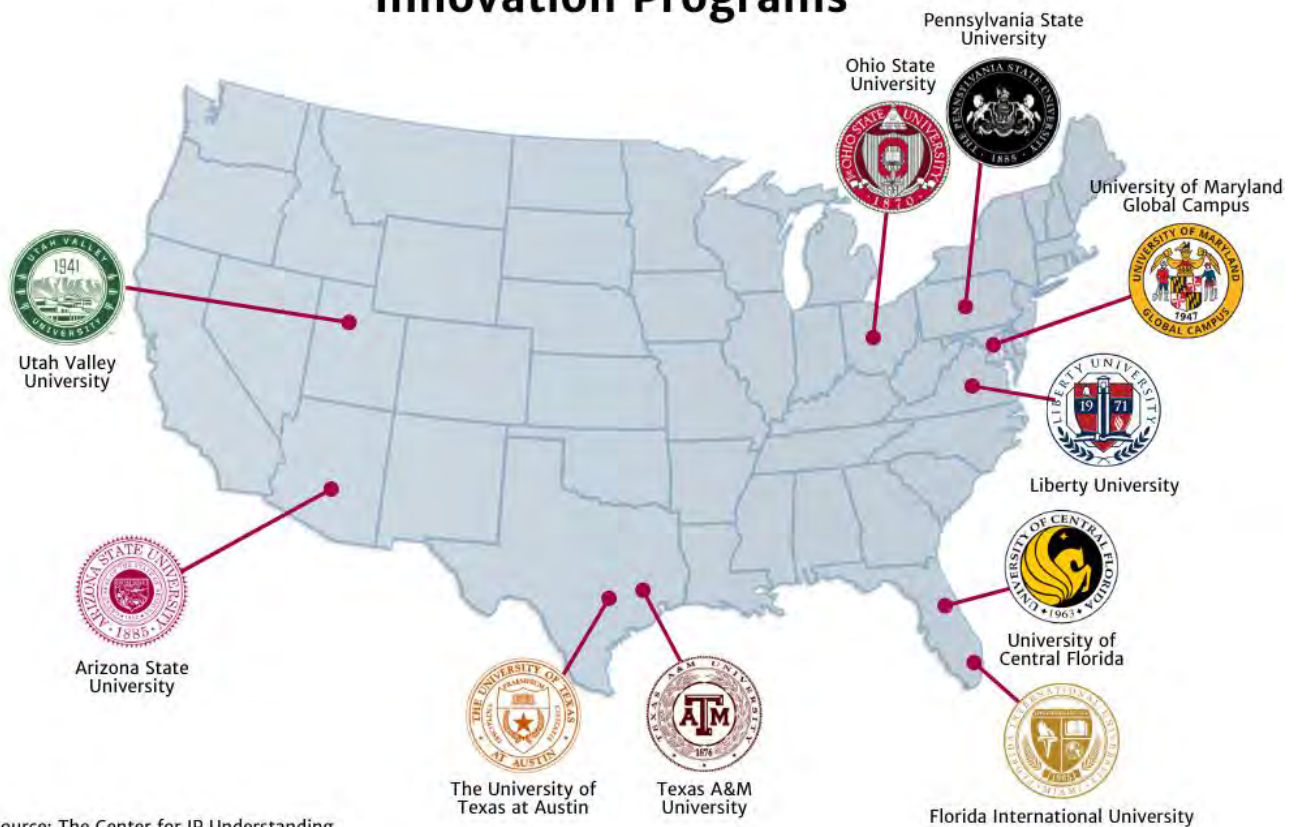
² American Enterprise Institute, James Pethokoukis, *The State of American Entrepreneurship: Everything You Should Know*, 12 Jan. 2023, <https://www.aei.org/articles/the-state-of-american-entrepreneurship-everything-you-should-know/>, accessed 20 June 2023

³ U.S. News & World Report, Sarah Wood, *10 Colleges With the Most Undergraduate Students*, 15 Nov. 2022, <https://www.usnews.com/education/best-colleges/the-short-list-college/articles/colleges-with-the-most-undergraduates>, accessed 29 April 2023

Generally, our research shows that while universities with strong engineering schools tend to have a series of entrepreneurship centers and innovation programming, such programs become even more successful in terms of student career outcomes when an interdisciplinary environment is fostered. Further, a university's high innovation ranking does not always equate with a strong entrepreneurial culture that encourages students to protect the fruits of their creative labors. While the number of students obtaining IP rights for business ideas developed during undergraduate studies is currently low, there are several existing models that educators could consider to improve IP engagement and help their undergraduates identify intangible assets that help to create businesses or build meaningful careers.

Below are summaries of CIPU research of IP engagement conducted at ten U.S. entrepreneurship programs with the highest enrollment.

Largest U.S. University Entrepreneurship and Innovation Programs



#1: Arizona State University

With nearly 65,000 undergraduate students enrolled at the school during the Fall 2021 semester, Arizona State University (ASU) boasts the largest number of baccalaureate candidates among all U.S. colleges and universities. Of the universities surveyed in this CIPU snapshot report, ASU also boasts perhaps the strongest track record for excellence in innovation, placing first overall in U.S. News & World Report's annual ranking for Most Innovative Colleges since the college ranking publication first began publishing that category in 2016.⁴ ASU also ranked 23rd in U.S. News & World Report's undergraduate business rankings and 33rd in the publication's undergraduate engineering rankings.⁵

ASU's high ranking as an innovative university has much to do with information technology systems used by the university to deliver education to its students. In 2020, a team of seventy-five ASU educators, coders and designers developed a virtual reality (VR) educational platform to serve as the world's first VR educational solution for biology students, featuring 12 educational modules in its first iteration.⁶ While such programming is designed to improve educational outcomes, as students taking VR courses learn four times faster than students trained by traditional classroom methods, these initiatives have little focus on intellectual property or entrepreneurship principles that help innovators to build and commercialize VR technologies.⁷

The J. Orin Edson Entrepreneurship + Innovation Institute provides several E&I programs that invite contributions from ASU's undergraduate community. Each September and February, near the beginning of the school's fall and spring semesters, the Institute hosts a series of Launch Days designed to introduce ASU undergraduates to the wider startup and venture capital (VC) resources available through the school's business network.⁸ This February, the J. Orin Edson Institute hosted a presentation by the U.S. Patent and Trademark Office, giving undergraduate students the opportunity to engage directly with the federal agency responsible for granting U.S. patent rights and registering U.S. trademarks.⁹ The Institute also hosted a pair of events

⁴ ASU News, *ASU named No. 1 in innovation for eighth straight year*, 9 Sept. 2022, <https://news.asu.edu/20220911-university-news-asu-no-1-innovation-us-news-world-report-eighth-year>, accessed 1 May 2023

⁵ Id.

⁶ ASU News, *Exploring new worlds in virtual reality*, 22 Dec. 2020, <https://news.asu.edu/20201222-creativity-exploring-new-worlds-virtual-reality>, accessed 1 May 2023

⁷ Id.

⁸ ASU J. Orin Edson Entrepreneurship + Innovation Institute, *Launch Days*, <https://entrepreneurship.asu.edu/programs/launch-days/>, accessed 1 May 2023

⁹ Id.

with ASU's Venture Devils VC community exploring how to commercialize business ideas in the medical technology field.

J. Orin Edson Institute's Launch Days include a week-long entrepreneurship competition known as Open Pitch, which gives baccalaureate, master's and Ph.D students the opportunity to win prizes for successful business pitches featuring technological solutions to consumer and industrial problems. The Open Pitch event hosted by the Institute in Fall 2022 saw about 30 pitches from across ASU's entire student community, and five students received cash awards of \$250 for successful business pitches.¹⁰ During summers, the Institute also coordinates a Virtual Venture Internship program that is only open to ASU's undergraduate community, providing a seven-week internship experience for developing entrepreneurial skills.¹¹

While many of the programs at the J. Orin Edson Entrepreneurship + Innovation Institute are geared toward wider swaths of the ASU community, undergraduates at the university do have other opportunities to engage in industry-specific incubator programs. For example, any ASU student with a health-related business idea is eligible to participate in the Institute's Health Entrepreneurship Accelerator Lab, which provides opportunities for mentorship from healthcare executives as well as summer internships with innovative healthcare companies.¹²

Takeaways:

- ASU is very well recognized as an innovative university campus and may in fact be in its own class on that subject.
- Some of ASU's ranking as an innovative university is due to innovative education delivery systems, not necessarily more innovative or entrepreneurial course programming.
- ASU's entrepreneurship programming provides undergraduates with an opportunity to engage directly with the USPTO.

#2: University of Central Florida

¹⁰ ASU J. Orin Edson Entrepreneurship + Innovation Institute, *Past winners of Open Pitch Week share their experience*, 2 Feb 2023, <https://entrepreneurship.asu.edu/blog/2023/02/02/past-winners-of-open-pitch-week-share-their-experience/>, accessed 1 May 2023

¹¹ ASU J. Orin Edson Entrepreneurship + Innovation Institute, *Virtual Venture Internship*, About, <https://entrepreneurship.asu.edu/programs/virtual-venture-internship/>, accessed 5 May 2023

¹² ASU J. Orin Edson Entrepreneurship + Innovation Institute, *Health Entrepreneurship Accelerator Lab*, <https://entrepreneurship.asu.edu/programs/edson-entrepreneurship-innovation-at-healab/>, accessed 5 May 2023

The University of Central Florida (UCF) is the only other U.S. university that enrolled more than 60,000 undergraduate students during the Fall 2021 semester. Along with being one of the top schools for undergraduate enrollment, UCF also ranks highly among U.S. News & World Report's rankings of most innovative schools and is currently tied for 20th in the most recent edition of those rankings.¹³

Opportunities to engage in business startup activity and E&I programs are available to UCF undergraduates through the university's Center for Entrepreneurial Leadership. The Center is the home of UCF's chapter of Blackstone LaunchPad, a network partnering with 46 schools across eight U.S. states and the Republic of Ireland.¹⁴ UCF's chapter gives undergraduate students at the school access to 18 mentors connected to the school's community, bringing expertise in areas important to business startups including marketing, product development and seed funding.¹⁵ Dr. Cameron Ford, the Center's Founding Director and an associate professor of management at UCF, said in an interview that the LaunchPad and its associated mentoring programs and access to internship opportunities were the "crown jewel" of the Center's educational initiatives. Along with LaunchPad, the Center for Entrepreneurial Leadership also hosts speakers series focused on startup stories, startup resources, entrepreneurial mindsets and empowerment through entrepreneurship.¹⁶

Many undergraduates accessing resources through Launchpad also decide to become members of the UpStarts Incubator, a business incubator facility at the Center for Entrepreneurial Leadership offering mentoring activities and free office space to business teams.¹⁷ As Dr. Ford notes, unlike many business accelerator programs, the UpStarts Incubator has no time-bound commitment, allowing students flexibility in building their business around their class schedules. Eligibility for the UpStarts Accelerator is open to a wide portion of the public as only one member of a business team must be a UCF student to qualify, although applying students must show evidence of product-market fit.¹⁸ The incubator offers weekly competency training sessions practicing a community model in which students provide constructive criticism on the current status of other students' startup projects.

Many students engaged in UpStarts obtain further mentoring help. During the 2022-23 school year, the Center scheduled approximately 1,200 mentoring appointments with 400 unique

¹³ U.S. News & World Report, Most Innovative Schools, <https://www.usnews.com/best-colleges/rankings/national-universities/innovative>, accessed 17 May 2023

¹⁴ Blackstone LaunchPad, <https://www.blackstonelaunchpad.org/>, accessed 18 May 2023

¹⁵ UCF Center for Entrepreneurial Leadership, Mentors, <https://cel.ucf.edu/mentors/>, accessed 18 May 2023

¹⁶ UCF Center for Entrepreneurial Leadership, Events, <https://cel.ucf.edu/events/>, accessed 18 May 2023

¹⁷ UCF Center for Entrepreneurial Leadership, Incubator, <https://cel.ucf.edu/incubator/>, accessed 18 May 2023

¹⁸ Id.

students. However, Dr. Ford noted that the Center has served as many as 1,000 unique students in a year prior to the COVID-19 pandemic, and that Hurricane Ian's impacts last September impacted the Center's programming this past year. Many times, Dr. Ford and mentors working with students discuss intellectual property topics related to their business, especially related to social media, website and trademark assets related to branding. While patents are sometimes discussed, undergraduates working with UpStarts tend to make more use of trade secrets. "Patents are expensive and not always successful," Dr. Ford noted. "We're clear with our students what patents do and don't do before they make that investment." For additional resources, many students are connected with staff at UCF's John C. Hitt Library, which is part of the USPTO's Patent and Trademark Resource Center network.¹⁹

Innovative undergraduates at UCF with a competitive edge can take part in several startup competitions, the most prestigious of which is the Joust New Venture Competition, which awards up to \$50,000 in cash to the top four venture proposals submitted by UCF students.²⁰ This competition is open to the entire UCF student community, including graduate students. Similar to the UpStarts Accelerator program, teams need only have one member enrolled as a student at UCF to qualify.²¹ This competition is also open to startups that have already accepted non-institutional funding up to \$150,000.

UCF also makes an Entrepreneurship minor available to undergraduates through the university's College of Business, although students do not need to be enrolled in a major degree program in the business school to enroll in the minor.²² Students must complete a total of 18 credit hours in E&I topics, including required coursework in new venture design and creativity and entrepreneurship.²³ Undergraduates pursuing UCF's Entrepreneurship minor who are enrolled in major degree programs in UCF's other colleges, including the College of Engineering and Computer Science and the College of Optics and Photonics, must complete six credit hours focused on marketing and innovation topics related to their interdisciplinary background. Dr. Ford estimates that about 1,500 undergraduates per year complete entrepreneurship coursework each year, but also said that there's not typically much overlap between those students and participants in the UpStarts Incubator.

Takeaways:

¹⁹ UCF, UCF Libraries, UCF Research Guides, Patents, <https://guides.ucf.edu/patents>, accessed 12 June 2023

²⁰ UCF Center for Entrepreneurial Leadership, Joust New Venture Competition, <https://cel.ucf.edu/competitions/joust-new-venture-competition/>, accessed 18 May 2023

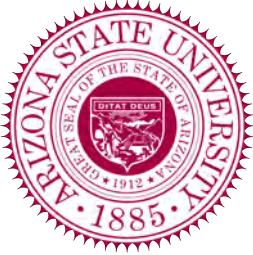
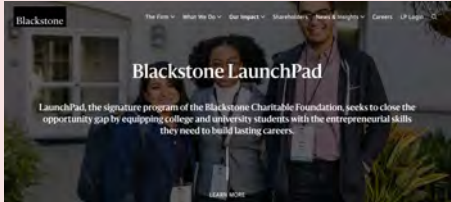

²¹ Id.

²² UCF, College of Business, Entrepreneurship Minor, <https://www.ucf.edu/degree/entrepreneurship-minor/>, accessed 20 May 2023

²³ Id.

- Partnership with a nationwide entrepreneurial network like Blackstone LaunchPad provides UCF undergraduates with access to a strong, established network of business startup resources.
- UCF students have several competitive opportunities to develop business ideas, but actual entrepreneurial resources that could aid in IP protection are only available to first-place winners.
- Eligibility requirements for UCF's business incubator programs are widely drawn, allowing undergraduates to pursue business ideas with members of the wider Orlando community.

Highlights at the Entrepreneurship and Innovation Programs of Arizona State University and the University of Central Florida

Institution	Offers	Does Not Offer
 <p>Arizona State University</p>	<ul style="list-style-type: none"> • Provides several E&I programs that invite contributions from ASU's undergraduate community • E&I programming provides undergraduates an opportunity to engage directly with USPTO • Competitions enable students to win cash awards • Virtual Venture Internship program is open to ASU undergraduate community 	<ul style="list-style-type: none"> • Blackstone LaunchPad student entrepreneurship network  <ul style="list-style-type: none"> • VR courses that focus on intellectual property or entrepreneurship principles which help innovators to build and commercialize technologies
 <p>University of Central Florida</p>	<ul style="list-style-type: none"> • Center for Entrepreneurial Leadership gives undergraduates opportunities to engage in business startup activity and E&I programs • UCF's chapter of Blackstone LaunchPad provides undergraduates access to 18 mentors • Resources guide students to become members of the UpStarts Incubator, a business incubator facility at the offering mentoring activities and free office space to business teams 	<ul style="list-style-type: none"> • Virtual E&I course/internship offerings

Source: The Center for IP Understanding

#3: Texas A&M University

The 56,723 undergraduate students enrolled at Texas A&M University (TAMU) are situated a two hours' drive away from either Austin, which has a thriving business startup community, and Houston, where the city's high tech sector has not seen the employment attrition experienced in Silicon Valley and other regions.²⁴

Several E&I programs for TAMU's business-minded undergraduates are operated through the university's McFerrin Center for Entrepreneurship, which serves as a central hub for more than 30 entrepreneurship programs available across the wider TAMU community.²⁵ One such program is Aggies in Business (AiB), which is also open to TAMU's graduate students. Students participating in AiB have opportunities to provide consulting services on business strategy, data analytics and marketing for actual business startups.²⁶ While undergraduates participate in Aggies in Business, the most recent student leader teams for the program were composed entirely of students pursuing their Master's in Business Administration (MBA).²⁷

Another E&I program hosted by the McFerrin Center for Entrepreneurship is Aggie PITCH, a university-wide business pitch competition open to individuals or teams of current TAMU students, either graduate or undergraduate, as well as any former students who have graduated from a school within the Texas A&M University System.²⁸ During the Spring 2023 semester, more than \$38,000 in prize money was awarded to 10 winning entrants, many of whom have planned to reinvest those winnings into prototyping, testing and other product development activities.²⁹ Entrants in Aggie PITCH must abide by a No Confidentiality Agreement, which cautions students against disclosing confidential information with advisors and other participants during the course of the competition.³⁰

²⁴ Dice.com, Nick Kolakowski, *Texas Cities Still Drawing Prime Tech Talent*, 15 May 2023,

<https://www.dice.com/career-advice/texas-cities-still-drawing-prime-tech-talent>, accessed 20 May 2023

²⁵ TAMU, McFerrin Center for Entrepreneurship, About, <https://mcferrin.tamu.edu/about/>, accessed 20 May 2023

²⁶ Rev Ventures, Aggies in Business, <https://mcferrinrevventures.com/aggies-in-business/>, accessed 21 May 2023

²⁷ Id.

²⁸ TAMU, McFerrin Center for Entrepreneurship, Aggie PITCH, <https://mcferrin.tamu.edu/program/aggie-pitch/>, accessed 21 May 2023

²⁹ Texas A&M Today, Lara Robertson, *Aggie PITCH Awards McFerrin Cup And More Than \$38,000*, 7 April 2023, <https://today.tamu.edu/2023/04/07/aggie-pitch-awards-mcferrin-cup-and-more-than-38000/>, accessed 21 May 2023

³⁰ TAMU, McFerrin Center for Entrepreneurship, Aggie PITCH, No Confidentiality Agreement, <https://mcferrin.tamu.edu/wp-content/uploads/2022/01/Confidentiality-For-Website-Aggie-PITCH-2022.pdf>, accessed 21 May 2023

The largest college by enrollment on the TAMU campus is the College of Engineering, which had nearly 23,000 undergraduate and graduate students attending during the fall 2022 semester.³¹ The entire College of Engineering community can take part in the college's Engineering Inc. program, which provides weekly networking sessions where business-minded engineering students can discuss startup progress and strategies for business pitches.³² According to Chris Curran, Director of Engineering Inc., students and student teams can receive small group meetings or one-on-one mentorship with relevant faculty and/or TAMU alumni based on the stage of their business idea. "Engineering Inc. is oriented toward students who just want to start to develop and learn about the entrepreneurial mindset," Curran said in an interview, noting that some undergraduate students come to the program with a fledgling business idea to seek mentoring and small grants. Curran estimates that somewhere around 80 percent of students engaged in Engineering Inc. are undergraduate students at TAMU, and around five students in the program filed provisional patent applications during the past school year to claim their innovations at the U.S. Patent and Trademark Office.

Another E&I program within TAMU's College of Engineering spurring undergraduates toward innovative mindsets is Aggies Invent, a 48-hour innovative design competition during which students develop business ideas in a multidisciplinary setting.³³ Eight times each school year, this competition features an industrial problem posed by one of the school's corporate sponsors or public institutional partners, with students forming teams to develop potential solutions.³⁴ According to Curran, a handful of students each year leave Aggies Invent with a business idea that they pursue through Engineering Inc. or elsewhere. Students who have participated in Aggies Invent are also eligible to complete a certificate program in Concept, Creation and Commercialization (C3), which requires students to complete 13 credit hours in courses such as enterprise basics, tech company management and innovation mindset.³⁵

The wider undergraduate student community at TAMU is eligible to complete an Entrepreneurship minor, a concentration that students can complete with 15 credit hours of

³¹ TAMU, College of Engineering, Facts and Figures, <https://engineering.tamu.edu/about/facts-and-figures/index.html>, accessed 22 May 2023

³² TAMU, College of Engineering, Engineering Inc., <https://engineering.tamu.edu/student-life/eep/engineering-incubator/index.html>, accessed 22 May 2023

³³ TAMU, College of Engineering, Aggies Invent, <https://engineering.tamu.edu/student-life/aggies-invent/index.html>, accessed 22 May 2023

³⁴ TAMU, College of Engineering, Aggies Invent, About, <https://engineering.tamu.edu/student-life/aggies-invent/about.html>, accessed 2 June 2023

³⁵ TAMU, College of Engineering, Concept, Creation and Commercialization Certificate, <https://engineering.tamu.edu/academics/certificates/c3-certificate.html>, accessed 22 May 2023

coursework.³⁶ Students completing this minor complete six hours of foundational coursework in areas like consumer behavior and product management, with additional discipline-specific courses in liberal arts, business or agriculture and life sciences.³⁷ Each of these disciplinary pathways ends with capstone courses in entrepreneurship and small business management, although students may get course credit for internships or independent research projects pending the university's approval.

Takeaways:

- Entrepreneurial programs at TAMU are generally open to the entire university community without any singular focus on undergraduate students.
- TAMU students engaged in business startup competitions are at least cautioned to consider against disclosures of confidential information.
- Small business competitions exist that could be used to teach IP topics to TAMU undergraduates, giving them a chance to pursue business interests independent of the university's resources and network.

#4: Liberty University

Situated in Lynchburg, VA, Liberty University is the sole private institution among the top 10 U.S. universities by undergraduate enrollment with just over 48,000 baccalaureate attendees during Fall 2021. Liberty University, affiliated with Southern Baptist Convention church coalitions, bases its approach to a liberal arts education on Southern Baptist principles. Compared to other universities on this list, Liberty University is not a major research institution, ranking 654th among U.S. universities for total research & development expenditures during 2021.³⁸

Liberty's School of Business is home to a Center for Entrepreneurship that offers E&I workshops and other entrepreneurial resources to the university's entire student community.³⁹ Any Liberty University student can take part in the Center's year-long Spark! Incubator, which offers weekly

³⁶ TAMU, Catalogs, 2023-24 Undergraduate Catalog, Entrepreneurship - Minor, <https://catalog.tamu.edu/undergraduate/interdisciplinary/entrepreneurship-minor/#programrequirementstext>, accessed 22 May 2023

³⁷ Id.

³⁸ National Science Foundation, National Center for Science and Engineering Statistics, Academic Institution Profiles, Rankings by Total R&D Expenditures, <https://ncesdata.nsf.gov/profiles/site?method=rankingBySource&ds=herd>, accessed 2 June 2023

³⁹ Liberty University, School of Business, Center for Entrepreneurship at Liberty University, <https://www.liberty.edu/business/entrepreneurship/>, accessed 2 June 2023

networking and mentorship meetings for developing startup business ideas brought by students.⁴⁰

The most recent school year at Liberty University featured a pair of Create Fest business pitch competitions overseen by faculty from Liberty's School of Business and School of Engineering.⁴¹ While last December's Create Fest was the first such competition hosted by Liberty University, this March's event offered a \$10,000 cash prize to the winning entrant. Undergraduates engaged in this program are encouraged to develop marketable inventions through a faith-based design and engineering approach that Liberty refers to as "creationeering."

Liberty University's School of Business is unique in that it offers a full undergraduate degree program in business administration with a focus on developing entrepreneurship skills.⁴² Students completing this bachelor's degree program complete four years of study in core business courses including management, marketing and financial principles, as well as more focused coursework in developing entrepreneurial opportunities and innovating into markets and industries.⁴³ Fall 2022 was also the first semester that Liberty's School of Engineering made a Technology Entrepreneurship minor available to undergraduate students, requiring completion of 16 credit hours in entrepreneurial coursework including a technology and development practicum.⁴⁴

Takeaways:

- While programming for entrepreneurial minded students are relatively scant at Liberty University, the institution has increased the availability of such programs in the past school year

⁴⁰ Liberty University, School of Business, Center for Entrepreneurship, Spark! Incubator Program, <https://www.liberty.edu/business/entrepreneurship/spark-incubator-program/>, accessed 2 June 2023

⁴¹ Liberty University, Liberty News, Academics, 1 Dec. 2022 *Create Fest combines engineering minds, business savvy to develop marketable inventions*, <https://www.liberty.edu/news/2022/12/01/create-fest-combines-engineering-minds-business-savvy-to-develop-marketable-inventions/>, accessed 2 June 2023; Liberty Champion, Emily Giroux, 6 March 2023, *"Shark Tank" Style Competition at Liberty Offering \$10,000 Prize for First Place Winner*, <https://www.liberty.edu/news/2022/12/01/create-fest-combines-engineering-minds-business-savvy-to-develop-marketable-inventions/>, accessed 2 June 2023

⁴² Liberty University, School of Business, B.S. in Business Administration - Entrepreneurship, <https://www.liberty.edu/business/bachelors/business-administration/entrepreneurship/>, accessed 5 June 2023

⁴³ Liberty University, Course Catalog, Business Administration (B.S.) - Entrepreneurship - Resident, <https://catalog.liberty.edu/undergraduate/colleges-schools/business/business-administration-major-bs/entrepreneurship-resident/>, accessed 5 June 2023

⁴⁴ Liberty University, School of Engineering, Minor in Technology Entrepreneurship, <https://www.liberty.edu/engineering/minors/technology-entrepreneurship/>, accessed 5 June 2023

- Liberty is unique among universities surveyed by this report in offering a full four-year bachelor's degree program in entrepreneurship.
- A lack of a deeper research and development focus by Liberty correlates with the school's relative lack of E&I programs.

#5: Ohio State University

Ranked fifth among U.S. undergraduate institutions by enrollment with 47,106 students attending in Fall 2021, Ohio State University (OSU) offers incoming undergraduates the opportunity to take part in the Entrepreneurship and Innovation Scholars (EIS) program, one of 16 scholar programs offered through the OSU Honors and Scholars Center.⁴⁵ OSU students taking part in the EIS program are required to partake in a Scholars Seminar series during the fall semester of their freshman year. This series is designed to introduce students in the EIS program with innovation and entrepreneurship resources available through the OSU community and instill an entrepreneurial mindset in students.⁴⁶ First-year EIS students are also paired with second-year student mentors and are given priority to live in an EIS community in the Norton House residence hall, giving undergraduates with innovative business ideas the chance to interact with like-minded individuals.

The entire Ohio State community, including its undergraduate students, have access to makerspace tools and seed funding for healthcare business ideas at the university's Innovation Studio, which operates out of two locations on the school's campus.⁴⁷ To qualify for funding through the Innovation Studio's business incubator program, a business team needs to be composed of at least two members of the OSU community, those members must be from different disciplines, and inventions must be disclosed to the school's Technology Commercialization Office when applicable.⁴⁸ While projects supported by the Innovation Studio are limited to the healthcare field, student developers have access to prototyping tools including 3D printers and laser cutters.

A charitable bequest to Ohio State University's Fisher College of Business in 2018 established the Tim & Kathleen Keenan Center for Entrepreneurship, which provides several E&I resources

⁴⁵ OSU Honors and Scholars Center, *Entrepreneurship and Innovation Scholars*, <https://honors-scholars.osu.edu/scholars/programs/entrepreneurship-and-innovation>, accessed 5 May 2023

⁴⁶ Id.

⁴⁷ Ohio State University, College of Nursing, The Innovation Studio, <https://nursing.osu.edu/offices-and-initiatives/office-innovation-and-strategic-partnerships/innovationstudio>, accessed 8 May 2023

⁴⁸ Id.

for student and faculty entrepreneurs at OSU.⁴⁹ One of the Keenan Center’s flagship programs is LaunchpadOSU, unaffiliated with the Blackstone LaunchPad network, which hosts startup weekends during which OSU undergraduates can form business teams, brainstorm ideas and work on pitch development skills.⁵⁰ While LaunchpadOSU is open to students without business ideas, undergraduate teams pursuing entrepreneurial activities can apply during the first month of the fall semester for the President’s Buckeye Accelerator.⁵¹ Selected teams participate in a six-week Boost Camp to refine their business ideas before a final presentation competition at the end of the school year, with winning teams receiving up to \$50,000 in startup funding.⁵²

At Ohio State University’s Fisher College of Business, undergraduate attendees are able to declare a minor concentration in Entrepreneurship & Innovation.⁵³ Students pursuing this minor must complete a series of coursework in new venture creation, introduction to design practice, product design engineering, as well as an entrepreneurship and innovation practicum.⁵⁴ The minor also requires students to take one elective course from among a series of course topics including corporate innovation and technology commercialization.

The Fisher College of Business also offers experiential E&I programs designed specifically for undergraduate students through the college’s Center for Innovation Strategies. One of these programs, an innovation accelerator known as OnRamp, provides opportunities for undergraduate students to participate in innovation workshops and team activities centered on new product commercialization.⁵⁵ One of the OnRamp activities for student teams is Tech Push, which directs teams to analyze the intellectual property portfolios of sponsoring companies and apply those portfolios to new industry verticals.⁵⁶

According to Paul Reeder, Executive Director of the Center for Innovation Strategies, OnRamp has a unique structure among university innovation programs in that the program is completely

⁴⁹ Ohio State University, Keenan Center for Entrepreneurship, About, <https://keenan.osu.edu/about-0>, accessed 19 June 2023

⁵⁰ Ohio State University, Keenan Center for Entrepreneurship, LaunchpadOSU

⁵¹ Ohio State University, Keenan Center for Entrepreneurship, President’s Buckeye Accelerator - Program Timeline, <https://keenan.osu.edu/presidents-accelerator-application-selection-process>, accessed 19 June 2023

⁵² Ohio State University, Keenan Center for Entrepreneurship, President’s Buckeye Accelerator, <https://keenan.osu.edu/presidents-buckeye-accelerator>, accessed 19 June 2023

⁵³ Ohio State University, Fisher College of Business, Undergraduate Programs, Entrepreneurship & Innovation Minor, <https://fisher.osu.edu/undergraduate/academics/curriculum/minors-specializations/entrepreneurship-innovation-minor>, accessed 8 May 2023

⁵⁴ Id.

⁵⁵ Ohio State University, Fisher College of Business, Center for Innovation Strategies, Undergraduate Experiential Programs, <https://fisher.osu.edu/centers-partnerships/center-innovation-strategies/students>, accessed 11 May 2023

⁵⁶ Id.

funded by external partnerships with corporate sponsors. About 650 OSU undergraduates have participated in OnRamp since the program was established in 2018. While the program was originally geared toward OSU engineering students, Reeder said that the program has rendered even more valuable results for corporate sponsors as coordinators actively encouraged an interdisciplinary environment. “We recognized that diversity of student engagement was a better way of coming to an innovation model,” Reeder said in an interview. While undergraduates engage in activities applying corporate IP, students are paid employees of the Center and the rights to innovations developed through OnRamp’s Tech Push vest back in the original corporate sponsor. Students don’t leave this program with their own IP, but Reeder noted that undergraduates have leveraged their experience in the program into new business development positions with OnRamp corporate sponsors, even students from non-engineering degree paths.

Takeaways:

- Entrepreneurship and innovation programming geared toward first-year students provides an early introduction on these topics to Ohio State University undergraduates.
- As opposed to entrepreneurship programs at other schools, Ohio State University offers multiple opportunities to engage with intellectual property topics.
- Team-oriented entrepreneurial activities give Ohio State University undergraduates experience in environments similar to innovative business startups.

#6: Florida International University

Florida International University (FIU), which welcomed just over 46,000 undergraduates to its campus during Fall 2022, is another public research institution in this survey that enjoys a strong reputation for innovation. The Miami, FL-based university ranked 15th overall in U.S. News & World Report’s rankings of Most Innovative Colleges for the 2022-23 school year.⁵⁷ While FIU has a number of top-ranked graduate programs, its undergraduate international business program was ranked 2nd overall by U.S. News & World Report for the most recent school year.⁵⁸

Established in January 2016, StartUP FIU operates a business and innovation incubator available to the entire FIU student community in the third floor of the campus’s Management & Advanced Research Center (MARC) Building.⁵⁹ This E&I program employs an interdisciplinary

⁵⁷ FIU, About, Rankings & Facts, <https://www.fiu.edu/about/rankings-facts/index.html>, accessed 5 June 2023

⁵⁸ Id.

⁵⁹ StartUP FIU, About Us, <https://startup.fiu.edu/about-us/>, accessed 5 June 2023

approach, welcoming students from across all FIU degree programs, and coordinates workshops, pitch competitions and other resources to develop entrepreneurial skills in participating undergraduates.⁶⁰ During Summer 2023, this program offers a weekly roundtable series for student entrepreneurs looking for feedback on their business startups, and a virtual series called Hacker Nation offering online discussion on a series of emerging sectors of technology.⁶¹

The Spring 2023 semester at FIU featured a GSK Innovation Challenge hosted by StartUP FIU and sponsored by pharmaceutical giant GlaxoSmithKline.⁶² About 30 FIU undergraduates participated in the 12-week innovation challenge, which directed students to identify ways of reducing health disparities related to the widespread medical condition referred to as shingles.⁶³ Students participating in the GSK Innovation Challenge interviewed medical professionals and the shingles patient community to understand the problem and develop solutions to be tested.

Like other schools in this survey, FIU offers curricular programs with a focus on innovation and entrepreneurship. However, these programs are focused on industrial sectors that are not heavily reliant on intellectual property protections. FIU's Chaplin School of Hospitality & Tourism Management offers a baccalaureate program in Food Innovation & Entrepreneurship, and while the program includes coursework in culinary innovations and food analysis, culinary professionals seldom rely on IP protections other than trademarks.⁶⁴ FIU also has a university-wide Social Innovation & Entrepreneurship program open to ideas from the university's entire student community, but innovative forms of community engagement typically do not give rise to intellectual property protections.⁶⁵ FIU's College of Business offers a 12-credit entrepreneurship minor, but the program is only available to students enrolled in a degree outside of the business school.⁶⁶

Like the University of Central Florida, FIU is also home to a chapter of the university entrepreneurial network Blackstone LaunchPad that is in the course of being established at FIU.

⁶⁰ StartUP FIU, Student Entrepreneurship, <https://startup.fiu.edu/student/>, accessed 5 June 2023

⁶¹ FIU, Events Calendar, StartUP FIU, <https://calendar.fiu.edu/department/StartUP>, accessed 5 June 2023

⁶² FIU News, Irene Ferradaz, *Health-innovation challenge encourages students to rethink barriers to care*, 26 Jan. 2023, <https://news.fiu.edu/2023/health-innovation-challenge-encourages-students-to-rethink-barriers-to-care>, accessed 5 June 2023

⁶³ Id.

⁶⁴ FIU, Chaplin School of Hospitality & Tourism Management, Course Catalog 2022-2023, Food Innovation/Entrepreneurship, <https://hospitality.fiu.edu/programs/undergraduate/bs-in-hospitality-management/food-innovations-entrepreneurship/food-innovation---online-2022.pdf>, accessed 5 June 2023

⁶⁵ FIU, Social Innovation & Entrepreneurship Program, <https://change.fiu.edu/>, accessed 5 June 2023

⁶⁶ FIU, College of Business, Minor in Entrepreneurship, Courses, <https://business.fiu.edu/undergraduate/minor-in-entrepreneurship/courses.cfm>, accessed 5 June 2023

Last December, the university announced that it had received a \$500,000 grant from the Blackstone Charitable Foundation to establish a chapter of the student business startup association to be housed at FIU's Pino Global Entrepreneurship Center, which is otherwise mainly focused on entrepreneurial activity outside of FIU's undergraduate student community.⁶⁷ The FIU chapter will coordinate several activities including student participation in Blackstone LaunchPad's national business pitch competition.⁶⁸

Takeaways:

- A high ranking among university innovation programs does not necessarily translate into a wide availability of E&I programming for undergraduate students.
- Entrepreneurship degree programs at FIU are focused on areas of innovation that are not conducive to the use of patent rights.
- Student business pitch competitions at FIU appear to be available on an ad-hoc basis dependent upon corporate sponsorship, whereas other schools offer such competitions at least as frequently as once a semester.

#7: University of Maryland Global Campus

The University of Maryland Global Campus (UMGC) served a total of 45,100 undergraduates during the Fall 2021 semester, but the university's focus on online education and offerings at satellite campuses across the world means that the vast majority of students enrolled at UMGC lack opportunities to interact across degree programs. This eliminates much of the interdisciplinary environment upon which student entrepreneurial centers at other U.S. universities thrive.

While UMGC's online format greatly improves flexibility for undergraduates who benefit from non-traditional pathways to a bachelor's degree, there is no support for extracurricular E&I programming outside of the degree programs offered by the university. The school currently offers 34 undergraduate degree programs including programs in business administration and several technology subject areas including cybersecurity, applied technology and biotechnology.⁶⁹ Capstone courses in biotechnology, applied technology and management information systems require undergraduates to demonstrate proficiency in applying

⁶⁷ Miami's Community News, Florida International University, *New grant will establish Blackstone LaunchPad for FIU student entrepreneurs*, 16 Dec. 2022, <https://communitynewspapers.com/florida-international-university/new-grant-will-establish-blackstone-launchpad-for-fiu-student-entrepreneurs/>, accessed 5 June 2023

⁶⁸ Id.

⁶⁹ UMGC, *Online Bachelor's Degrees*, <https://www.umgc.edu/online-degrees/bachelors>, accessed 6 June 2023

technological concepts to develop innovative solutions, but there's no indication that students are taught how to protect any innovation developed during these capstones.⁷⁰

While none of the required coursework for UMGC's bachelor degree in business administration includes any entrepreneurial topics, the school does offer a minor concentration in Small Business Management & Entrepreneurship.⁷¹ This minor requires the completion of 15 credit hours in courses focused on e-commerce management, new venture planning and small business fundamentals. While the small business management course includes modules on innovation, the new venture planning course appears to focus on franchising rather than business models that upscale through licensing opportunities.⁷²

Takeaways:

- Online learning environments do not create the kind of in-person interdisciplinary campus required for successful student entrepreneurship or innovation programs to take shape.
- Entrepreneurship courses available through online education formats focus more on teaching students about franchising opportunities than how to build innovative business models protectable by intellectual property.

#8: University of Texas at Austin

The eighth-largest U.S. university by undergraduate enrollment, just over 40,000 baccalaureate students at the University of Texas at Austin (UT Austin) have access to E&I programs operated at colleges across the major research institution. Many of those resources are connected to the wider entrepreneurial network across the city of Austin, which routinely ranks as one of the top cities in America for entrepreneurs and business startups.⁷³ UT Austin itself has a great

⁷⁰ UMGC, Online Bachelor's Degrees, Management Information Systems, <https://www.umgc.edu/online-degrees/bachelors/management-information-systems>, accessed 6 June 2023; UMGC, Online Bachelor's Degrees, Applied Technology, <https://www.umgc.edu/online-degrees/bachelors/applied-technology>, accessed 6 June 2023; UMGC, Online Bachelor's Degrees, Biotechnology, <https://www.umgc.edu/online-degrees/bachelors/biotechnology>, accessed 6 June 2023

⁷¹ UMGC, Minors, <https://www.umgc.edu/online-degrees/bachelors/minors>, accessed 6 June 2023

⁷² Id.

⁷³ *Forbes*, "Is Austin, Texas, The Best City in America?", Laura Legley Bloom, 31 May 2019, <https://www.forbes.com/sites/laurabegleybloom/2019/05/31/is-austin-texas-the-best-city-in-america/?sh=4ebe73765c50>, accessed 12 May 2023; *TechCrunch*, TechCrunch City Spotlight, "Austin emerges as a city of unicorns and tech giants," 6 April 2022, <https://techcrunch.com/2022/04/06/how-austin-texas-has-evolved-into-a-city-of-unicorns-and-tech-giants/>, accessed 12 May 2023

reputation as a university with a strong business startup culture; in 2022, the school was ranked second by Princeton Review among the top undergraduate programs for entrepreneurs.⁷⁴

UT Austin is another university connected to the Blackstone LaunchPad student entrepreneurship network, which operates as a front door to the more than 160 programs across the UT Austin campus supporting entrepreneurs according to Diego Rubio, Program Manager at the LaunchPad at UT Austin. Rubio estimates that about 80 percent of students of the 4,000 to 5,000 total students involved with the LaunchPad each year are UT Austin undergraduates. While LaunchPad itself doesn't have resources to help undergraduates with IP matters, the program does connect students with the Austin Technology Incubator (ATI), a startup incubator affiliated with UT Austin. The LaunchPad also coordinates the Student Entrepreneurship Acceleration and Launch (SEAL) nine-week summer incubator program, formerly an ATI program that LaunchPad has operated for the past five years.⁷⁵

One year-long E&I program in which any UT Austin undergraduate can enroll through their respective college is Longhorn Startup, which has a seminar lecture series in the fall semester as well as a lab component during spring semesters.⁷⁶ The fall weekly lecture series features several presentations of founder stories, a speed pitch competition with a \$1,000 cash prize and interviews for the spring lab practicum. Undergraduate entrepreneurs with scalable ideas who are selected for the spring program receive weekly sessions with business mentors within the UT Austin community. The spring syllabus in particular includes a component on intellectual property, which notes that UT Austin will not own any interest in businesses developed at Longhorn Startup, including any interest in intellectual property developed by the startup.⁷⁷ According to Rubio, many UT Austin undergraduates are introduced to entrepreneurial resources through the LaunchPad and then take part in Longhorn Startup, which then produces many of the students who return to the LaunchPad to participate in the SEAL summer accelerator program.

Undergraduate students with an entrepreneurial bent attending UT Austin also have networking resources made available to them through the Herb Kelleher Entrepreneurship Center, named after the co-founder of Southwest Airlines and hosted within UT Austin's

⁷⁴ *CultureMap Austin*, "UT Austin leads nation with 2 of the top entrepreneurship programs, says Princeton Review," 22 Nov. 2022, <https://austin.culturemap.com/news/innovation/university-texas-entrepreneurship-rankings/>, accessed 12 May 2023

⁷⁵ Austin Technology Incubator, Student Entrepreneurship Acceleration and Launch (SEAL), <https://ati.utexas.edu/seal/>, accessed 12 June 2023

⁷⁶ Longhorn Startup, <https://longhornstartup.notion.site/Longhorn-Startup-d974c32419fe48f79a9233663a3840f0>, accessed 11 May 2023

⁷⁷ Longhorn Startup, UT Austin Spring 2023 Syllabus, https://docs.google.com/document/d/182m2xJIS0R-h3lq2dYxvr_mhN1izb7AK1WJ-TLVLH_I/edit, accessed 11 May 2023

McCombs School of Business. The Herb Kelleher Center hosts a series of Startup Coffee Connect networking events to which UT Austin undergraduates can bring their business startup ideas and connect with other like-minded members of the UT Austin academic community.⁷⁸

UT Austin attendees can also participate as student founders in the Herb Kelleher Center's Forty Acres Founders program, which partners undergraduate and graduate students on projects to analyze markets and develop business plans for business ideas.⁷⁹ Undergraduate students can earn three credit hours toward their bachelor's degree by completing this program and have the opportunity to pitch investors for seed grants on the business plans developed through this program.⁸⁰ During the fall semester, the Center also hosts an annual DisrupTexas Pitch Competition that is only open to undergraduate attendees of UT Austin and which awards a total of \$35,000 in prizes, including \$8,000 to the team pitching the best business idea.⁸¹ Eligible business ideas are not limited to a particular industry and awards have been handed out in the past to teams pitching ideas in healthcare tech, education tech, software-as-a-service, retail, entertainment and social good.⁸²

One of the more popular minor concentrations available at UT Austin is the Entrepreneurship Minor, which enrolls about 750 students from across 150 different major programs at the university.⁸³ Students must complete 15 credit hours of studies to finish the concentration, including required E&I coursework as well as courses in new venture mechanics.⁸⁴ While undergraduates can also take courses in tech transfer and intellectual property law for technologists, those options are included among a few dozen electives, of which students must only complete a single course to complete the minor.⁸⁵ A slightly different study program, entitled the Bridging Disciplines Program, allows UT Austin students to earn a certificate in Innovation, Creativity & Entrepreneurship for completing 19 credit hours in various innovation and entrepreneurship courses.⁸⁶ The coursework for this certificate includes three to nine

⁷⁸ UT Austin, McCombs School of Business, Herb Kelleher Entrepreneurship Center, Startup Coffee Connect, <https://herbkellehercenter.mcombs.utexas.edu/coffeeconnect/>, accessed 12 May 2023

⁷⁹ UT Austin, McCombs School of Business, Herb Kelleher Entrepreneurship Center, Forty Acres Founders Program, <https://herbkellehercenter.mcombs.utexas.edu/faf/>, accessed 12 May 2023

⁸⁰ Id.

⁸¹ UT Austin, McCombs School of Business, Herb Kelleher Entrepreneurship Center, DisrupTexas Undergraduate Pitch Competition, <https://herbkellehercenter.mcombs.utexas.edu/disruptexas/>, accessed 12 May 2023

⁸² Id.

⁸³ UT Austin, McCombs School of Business, Entrepreneurship Minor, <https://entrepreneurship.mcombs.utexas.edu/>, accessed 12 May 2023

⁸⁴ UT Austin, McCombs School of Business, Entrepreneurship Minor Requirements, <https://entrepreneurship.mcombs.utexas.edu/requirements/>, accessed 12 May 2023

⁸⁵ Id.

⁸⁶ UT Austin, School of Undergraduate Studies, Bridging Disciplines Program, Innovation, Creativity & Entrepreneurship Curriculum Sheet, https://utdirect.utexas.edu/apps/ugs/mybdp/bdp/nlogon/curriculum_sheet/11/, accessed 12 May 2023

credit hours in a focused context, and the Science, Technology, and Engineering context also includes electives in tech transfer and applications of IP law.⁸⁷

Takeaways:

- Undergraduates attending UT Austin have several opportunities through the university for engaging with the robust entrepreneurial community across Austin, TX.
- Minor and certificate programs at UT Austin with an entrepreneurial focus include courses in tech transfer and IP, but those classes are only offered as electives and aren't required education.
- UT Austin's entrepreneurial programs are focused on connecting students from across different disciplines, and make heavy use of startup pitch competitions to test business ideas.

#9: Pennsylvania State University

Located in the middle of Pennsylvania well away from major metropolitan centers in Pittsburgh and Philadelphia, Pennsylvania State University welcomed 40,600 undergraduates to its campus in State College, PA, during the Fall 2021 semester. Recently, Penn State was ranked among the top two dozen schools in U.S. News & World Report's rankings for both best undergraduate business programs as well as best undergraduate engineering programs.⁸⁸ Last November, The Princeton Review issued its rankings for best universities for undergraduate entrepreneurship studies with Penn State ranking 23rd overall and 3rd in the Mid-Atlantic region.⁸⁹

Entrepreneurial undergraduates at Penn State looking for curriculum and funding opportunities to advance their ideas have a few options available through the Center for Penn State Student Entrepreneurship.⁹⁰ The Center is responsible for managing the university's Entrepreneurship and Innovation (ENTI) minor concentration, which requires undergraduates to complete core coursework in entrepreneurship and then additional coursework in one of ten concentration areas or "clusters," such as biotech, new media or technology based entrepreneurship.⁹¹ The Center also operates the Lion LaunchPad Microgrant program offering grants up to \$500 to

⁸⁷ Id.

⁸⁸ Penn State, Facts and Rankings, <https://www.psu.edu/this-is-penn-state/facts-and-rankings/>, accessed 6 June 2023

⁸⁹ Penn State, News, *Penn State ranked in top 25 nationally for undergraduate entrepreneurship*, 17 Nov. 2022, <https://www.psu.edu/news/academics/story/penn-state-ranked-top-25-nationally-undergraduate-entrepreneurship/>, accessed 7 June 2023

⁹⁰ Center for Penn State Student Entrepreneurship, About, <https://cpsse.psu.edu/about>, accessed 7 June 2023

⁹¹ Center for Penn State Student Entrepreneurship, Entrepreneurship and Innovation Minor (ENTI), <https://cpsse.psu.edu/enti>, accessed 7 June 2023

teams of Penn State students to be used on prototyping, licensing or other startup business expenses.⁹²

Penn State offers a four-year bachelor's degree program in Corporate Innovation and Entrepreneurship (CIENT) at the university's Smeal College of Business.⁹³ Core coursework that must be completed by undergraduates pursuing the CIENT major include new venture creation and strategic management of innovation and technologies, which includes lesson materials on analyzing patent portfolios for technology commercialization.⁹⁴ CIENT students also have a choice of electives including entrepreneurial management as well as entrepreneurial investment and resource acquisition.⁹⁵

Undergraduates at Penn State can take advantage of E&I programs founded at individual colleges of the university thanks to generous bequests. For example, Penn State's Smeal College of Business houses the Farrell Center for Corporate Innovation and Entrepreneurship, founded in 1992 through a charitable endowment from investment banking firm Farrell and Company.⁹⁶ Rising second- and third-year students enrolled in the CIENT major at Smeal can take part in the Experienceship program established in 2022 thanks to an endowment from Penn State alumnus Doug Leech and his wife Leila.⁹⁷ Undergraduates participating in Experienceship receive a stipend for a 10-week placement with a Pennsylvania-based business having annual revenues less than \$1 million to gain professional development experience working in a small business environment.⁹⁸

During the Spring 2023 semester, Penn State's College of Information Sciences and Technology hosted the Bardusch Family IdeaMakers Challenge, which pits teams of two to five Penn State undergraduate students in a competition to develop an early-stage business idea.⁹⁹ Student teams participating in the IdeaMakers Challenge receive faculty mentoring and skill training

⁹² Center for Penn State Student Entrepreneurship, Microgrant Program, https://cpsse.psu.edu/lion_launchpad/microgrant_program, accessed 7 June 2023

⁹³ Penn State, Smeal College of Business, Majors and Minors, Corporate Innovation and Entrepreneurship, <https://undergrad.smeal.psu.edu/majors/corporate-innovation-and-entrepreneurship>, accessed 7 June 2023

⁹⁴ Vimeo, *CIENT Ambassador Mikayla Agard: MGMT 457W*, <https://vimeo.com/636369259/040d6bcf36>, accessed 7 June 2023

⁹⁵ Supra n. 96

⁹⁶ Penn State, Smeal College of Business, Farrell Center for Corporate Innovation and Entrepreneurship, <https://www.smeal.psu.edu/fcfe>, accessed 6 June 2023

⁹⁷ Penn State, Smeal College of Business, Anne Louise Cropp, *Doug and Leila Leech create fund to support student experienceship at Smeal*, <https://www.psu.edu/news/smeal-college-business/story/doug-and-leila-leech-create-fund-support-student-experienceship-smeal/>, accessed 7 June 2023

⁹⁸ Penn State, Smeal College of Business, 2023 Experience Flyer, <https://www.smeal.psu.edu/fcfe/2023-cient-experienceship-flyer.pdf/view>, accessed 7 June 2023

⁹⁹ Bardusch Family IdeaMakers Challenge 2023, About, <https://pennstateideamakers.weebly.com/>, accessed 6 June 2023

from entrepreneurs to develop idea pitching skills.¹⁰⁰ The IdeaMakers Challenge is named to honor an endowment supporting the pitch competition from Penn State alumni Bob and Susan Bardusch, whose charitable gift to the college in March 2021 helped to establish the competition.¹⁰¹

The Bardusch Family IdeaMakers Challenge runs in conjunction with Penn State Startup Week, a university-wide week-long series of entrepreneurial programming established in 2012 at the College of Information Sciences and Technology.¹⁰² Sponsored by PA-based financial services company PNC Bank, Penn State Startup Week offers a speaker series featuring startup founders, workshops on emerging technology topics and several networking events.¹⁰³ During the most recent Startup Week this past March, officials from the U.S. Patent and Trademark Office took part in a panel discussion regarding a new patent pro bono program for the state of Pennsylvania.¹⁰⁴

Another E&I program operated in conjunction with Penn State Startup Week is the Inc.U undergraduate competition sponsored by Invent Penn State, an accelerator and coworking space program with activities across all 24 campuses of the state university system.¹⁰⁵ The 2023 version of this competition featured six undergraduate student teams from across the Penn State system competing for a cash investment pool totalling \$30,000 and additional resources like startup mentorship.¹⁰⁶

Over in Penn State's College of Agricultural Sciences, a charitable endowment from alumnus Earl Harbaugh established a series of entrepreneurship and innovation programming for undergraduates enrolled in degree programs at that college.¹⁰⁷ This endowment has in part gone to support the Ag Springboard Competition, a team-based business pitch competition

¹⁰⁰ Id.

¹⁰¹ Penn State, News, Jessica Hallman, *Bardusch family establishes endowment to support IdeaMakers Challenge*, 26 March 2021, <https://www.psu.edu/news/administration/story/bardusch-family-establishes-endowment-support-ideamakers-challenge/>, accessed 7 June 2023

¹⁰² Penn State Startup Week, About, Overview, <https://startupweek.psu.edu/about/startup-week-overview/>, accessed 7 June 2023

¹⁰³ Penn State Startup Week, Schedule of Events, <https://startupweek.psu.edu/event-details/schedule/>, accessed 7 June 2023

¹⁰⁴ 2023 Penn State Startup Week, A New Patent Pro Bono Program for Pennsylvania, <https://startupweek2023.sched.com/event/1GGqR/a-new-patent-pro-bono-program-for-pennsylvania-in-person?iframe=no>, accessed 7 June 2023

¹⁰⁵ Invent Penn State, About, <https://invent.psu.edu/about-ips/>, accessed 7 June 2023

¹⁰⁶ Invent Penn State, Inc.U Competition, <https://invent.psu.edu/programs/inc-u-competition/>, accessed 7 June 2023

¹⁰⁷ Penn State, College of Agricultural Sciences, Entrepreneurship & Innovation, About Us, <https://agsci.psu.edu/entrepreneur/about>, accessed 7 June 2023

which has awarded more than \$64,000 in prize money and provided business startup coaching to 325 students.¹⁰⁸

While not an E&I program, the Law, Policy, and Engineering Initiative at Penn State's School of Engineering Design and Innovation is establishing a Patent Agent Career Pathway summer program for upper-level undergraduate students in science, technology, engineering and mathematics (STEM) fields.¹⁰⁹ This summer program, which includes seminars on patent application drafting and patent prosecution, is designed to introduce STEM students to career pathways toward becoming a patent agent.¹¹⁰

Takeaways:

- Endowments from multiple alumni who want to improve access to entrepreneurship and innovation resources have created a critical mass of such programming across several colleges of Penn State University.
- Penn State's new patent agent program shows that undergraduates can be exposed to potential careers in IP outside of entrepreneurship and innovation programming.
- Penn State undergraduates have several competition-style programs through which they can improve their entrepreneurial skills while earning cash awards

#10: Utah Valley University

Located in Orem, UT, a suburb of the city of Provo, Utah Valley University (UVU) welcomed more than 40,500 students to its campus in Fall 2021, and that number only increased to more than 43,000 students in Fall 2022.¹¹¹ UVU's enrollment numbers have grown in large part due to the university's open admissions model, which does not take into account standardized testing scores. More structured enrollment practices were instituted back in Fall 2012, but the school still maintains an open admissions model.¹¹²

Several forms of E&I programming providing support for student-run business startups are available to UVU undergraduates through the UVU Entrepreneurship Institute. Each semester, the Institute hosts a Silicon Slopes Entrepreneurship Lecture Series featuring a series of 14

¹⁰⁸ Id.

¹⁰⁹ Penn State, College of Engineering, News, Mariah R. Lucas, *New program launches STEM majors into patent law career path*, 17 May 2023, <https://news.engr.psu.edu/2023/patent-agent-career-pathway-launches.aspx>, accessed 7 June 2023

¹¹⁰ Id.

¹¹¹ UVU, Newsroom, About UVU, Key Stats, <https://www.uvu.edu/newsroom/stats.html#>, accessed 9 June 2023

¹¹² UVU, Visitors & Community, History of UVU, <https://www.uvu.edu/visitors/history.html>, accessed 9 June 2023

speakers from the business startup world giving hour-long talks on startup topics.¹¹³ During the past school year, the Institute also hosted Opportunity Quest, a competition open to UVU's entire student community and awarding cash prizes of up to \$3,000 to the best three-page executive summary for a startup concept.¹¹⁴ Eligibility requirements mandate that teams have at least one UVU student in a prominent leadership role and less than \$100,000 in total revenue, debt or financing.¹¹⁵

Throughout the school year, UVU undergraduates also have several opportunities to obtain seed funding from resources available through the Entrepreneurship Institute. The first phase of the Institute's Seed for Startups program gives UVU students the opportunity to submit a five-minute pitch video with a one-page executive summary on a rolling basis throughout the year, making them eligible for \$1,000 cash awards for business expenses.¹¹⁶ Successful pitches are then invited to the program's second phase, the ZinnStarter Pitch Event taking place in late spring, which awards up to \$2,500 to be spent on business activities.¹¹⁷ Eligibility requirements are drawn a little broader for the ZinnStarter Pitch Event as only one member of the business team in any role, not necessarily leadership, is required.¹¹⁸

More inventive endeavors are encouraged among UVU's student community by the Innovation Challenge, which was last hosted in December 2022 by the Entrepreneurship Institute. Participating undergraduates submit a three-minute video describing a problem to be solved, a prototype of a solution, and methods for testing and validating the efficacy of their prototype.¹¹⁹ Top entrants are asked to attend a finals event for the competition where they will show their video submission in front of a panel of judges who then have five minutes for questioning entrants on their ideas.¹²⁰ This past year's competition required students to design prototypes such that they were composed of at least 80 percent of materials found in campus recycling bins.¹²¹

¹¹³ UVU, Entrepreneurship, Silicon Slopes Entrepreneurship Lecture Series, <https://www.uvu.edu/woodbury/entrepreneurship/lecture-series/>, accessed 11 June 2023

¹¹⁴ UVU, Entrepreneurship, Events, UVU Opportunity Quest, <https://www.uvu.edu/woodbury/entrepreneurship/events/opportunity-quest.html>, accessed 11 June 2023

¹¹⁵ Id.

¹¹⁶ UVU, Entrepreneurship, Funding Opportunities, <https://www.uvu.edu/woodbury/entrepreneurship/seedfunding/index.html>, accessed 11 June 2023

¹¹⁷ Id.

¹¹⁸ Id.

¹¹⁹ UVU, Entrepreneurship, Fall 2022 UVU Innovation Challenge - Rules and Registration, <https://www.uvu.edu/woodbury/entrepreneurship/events/innovationchallenge.html>, accessed 11 June 2023

¹²⁰ Id.

¹²¹ Id.

Project-based experience on developing innovative answers to industrial problems is available to UVU students at the university's Innovation Academy through its Excellence & Innovation Initiative (E2I). This program matches student teams working on projects for corporate sponsors and coordinates their activities on development activities.. UVU undergraduates can apply through E2I for paid positions as team members or project managers; while students in any UVU degree path may become a team member, project managers must have some relevant management experience.¹²² Students can also submit their own projects to E2I for the Igniter Funds program, which offers up to \$5,000 in business expenses and the opportunity to retain intellectual property created by the project.¹²³

UVU undergraduates also have an opportunity to complete a minor concentration in Entrepreneurship available through the university's Woodbury School of Business.¹²⁴ Students must complete 21 credit hours including required coursework in topics like business pitch techniques and feasibility analysis.¹²⁵ The minor concentration program also requires undergraduates to complete a pair of elective topics in topics such as innovative opportunity development, which introduces students to prototyping processes.¹²⁶

Takeaways:

- UVU undergraduates have opportunities to obtain seed funding that could be used on research and development activities giving rise to intellectual property assets.
- Entrepreneurship competitions with widely drawn eligibility requirements give UVU undergraduates the ability to develop business relationships with partners outside of the university community.
- UVU entrepreneurship programming and curriculum provides several opportunities for undergraduates to engage with prototyping processes.

Student Outcomes: Positive Impacts Abound, but E&I Program Visibility Must Increase

In order to gain a fuller understanding of the impact of entrepreneurship and innovation programming on students, CIPU also spoke with students attending programs in our survey. Generally, students reported positive impacts from their IP engagement while at

¹²² UVU, The Excellence & Innovation Initiative, Students, <https://www.uvu.edu/innovation/e2i/students.html>, accessed 12 June 2023

¹²³ Id.

¹²⁴ UVU, Catalog, Entrepreneurship, Minor, <https://www.uvu.edu/catalog/current/departments/strategic-management-and-operations/entrepreneurship-minor/>, accessed 12 June 2023

¹²⁵ Id.

¹²⁶ Id.

entrepreneurship and innovation programs, including improved business acumen and better career opportunities.

Apoorva Mekala, a 2021 graduate of Ohio State University, credited her participation in the university's E&I (Entrepreneurship and Innovation) programming with helping her build skills that she uses in her work in brand partnership development for grocery delivery company Instacart. Mekala completed the E&I minor at Ohio State and participated in the OnRamp program during the Spring 2021 semester. Training on presentational skills and exposure to C-suite decision making processes has translated very well to working at Instacart with 30 consumer packaged goods brand partners, helping them develop strategic ad campaigns on Instacart's platform to increase sales. While Mekala's day-to-day work doesn't involve much IP engagement, her introduction to IP through Ohio State's E&I courses and OnRamp program has made her more aware of the need to treat confidential and sensitive client information, like upcoming product launches, with care and discretion.

Anthony Mango, a 2019 graduate of Ohio State University, says that his experience in the university's Integrated Business & Engineering (IBE) program helped expose him to like-minded students pursuing business ideas. A diabetes patient, Mango had been interested in medical product development well before college, and the multidisciplinary nature of Ohio State's IBE program led him to apply and enroll. Mango reports an early introduction to IP topics during his undergraduate studies, noting that IBE courses freshman year included lectures and assigned work on IP searches and understanding patent claims. Since graduation, Mango has gone on to earn his master's in medical product development and now works in innovation and investment management with private hospital Orlando Health. Mango works with innovative startups in the medical device space to identify investment opportunities and also leads Orlando Health's internal innovation accelerator, where he spends much of his day-to-day work handling IP matters. "My idea of patents was very limited going into college," Mango said in an interview. "My exposure [to IP rights] during my undergraduate studies helped me slowly pick up the skill of how to navigate that world."

Krishan Sachdev, a 2019 graduate of UT Austin, had already filed patent applications on a medical device invention before engaging with E&I programming during undergrad. He credits his experiences with Austin Technology Incubator and UT Austin's healthcare-focused E&I courses with teaching him how to create business value from his innovation and how to pitch his business to attract stakeholders. Sachdev's experience, however, underscores the critical nature of an early introduction to IP rights.

Through personal connections, Sachdev met a patent attorney passionate about Sachdev's invention who helped him file patent applications. "I can tell you that a lot of the early success we had was based on the fact that we already had patents," Sachdev said. "People took us a lot more seriously and our efforts were a lot better understood and valued because we had taken the initiative to develop IP rights on the invention." An early understanding of U.S. patent law also helped Sachdev understand the one-year deadline for filing a patent application after making a public presentation of his invention, which he acknowledged could have damaged his business interests if his early mentor hadn't explained this point of law prior to participating in pitch competitions. Since graduating, Sachdev has started medical school and is the co-founder and CEO of a medical device company based on his invention.

Positive Impacts

IP engagement has clear positive impacts on career prospects for undergraduate students and universities should ensure that incoming students are made aware of E&I programming. While Mango's awareness of Ohio State's IBE program made that university his top choice, Mekala reported being unaware of the E&I programming at the school until she was an underclassman attending the university. Mekala notes that she believes that the school's E&I programs are now promoted better to students, but she remembers coming across entrepreneurship coursework at Ohio State by chance while perusing the university's course catalog. "Once I got involved with the school's E&I programming, it made my college experience and shaped my entrepreneurial career," said Mekala, who also followed her entrepreneurial spirit to found the Women's Network, a nonprofit Mekala established after earning her bachelor's degree to support women entrepreneurs and inventors through microgrants and by creating networks of women entrepreneurs across the country.

Conclusion

Strong undergraduate entrepreneurship programs have a few defining characteristics. They typically feature a central hub facility connecting students to business resources and mentorship. These centers tend to host at least one business pitch competition during the school year that challenges undergraduates to develop new business ideas that could give rise to IP rights. Each of these 10 universities offer at least a minor concentration in entrepreneurship, although the coursework for those concentrations appear to focus very little on IP-related topics. While some schools have shown some success in developing programs with virtual aspects, such as Arizona State University's Virtual Venture Internship summer program, schools offering primarily online-only educational programs without a significant

physical campus do not support the kind of networking required to develop business ideas with diverse teams.

One particular program generating a lot of positive feedback from entrepreneurship center directors and staff interviewed for this report was the Blackstone LaunchPad network. The University of Central Florida, Florida International University and University of Texas at Austin are the only three schools on this list that are members of Blackstone's LaunchPad, which supports the development of on-campus entrepreneurship and innovation facilities and connects students with mentorship opportunities from business professionals. While FIU is currently in the early stages of building its own LaunchPad chapter, the programs at UCF and UT Austin were credited as central features of the entrepreneurship programming at those schools.

In terms of potential takeaways for improving student engagement with intellectual property, one seemingly simple way to achieve such an outcome would involve rethinking part of the model of business pitch competitions being hosted by university entrepreneurship centers. Although cash prizes help to reinforce the competitive nature of these activities, a better approach could incorporate some form of resources for patent, trademark or copyright filings that could be accessed by all contestants by the close of the competition.

Schools could further encourage such activity by subsidizing student-filed IP applications, although the impact of university intellectual property policies on such practices should probably be assessed. One interesting approach was suggested by UT Austin alum Krishan Sachdev. Although cash prizes from pitch competitions are often spent by winners on startup costs, Sachdev said that schools should consider earmarking all cash prizes specifically for IP attorneys and filing costs.

"If the competition can award students money dedicated to submitting a patent application, it can put them in a highly advantageous position," he said. Given the one-year bar to patentability after public presentation under U.S. patent law, meeting students with these resources early is critical for protecting a valuable business interest.

Although externally funded models of student entrepreneurship programming come with greater complexity and rely on corporate sponsorship, they afford great flexibility that allows students to interact with corporate IP in novel ways. Of particular note is the OnRamp program at Ohio State University's Fisher College of Business. Operating without the constraints of university policies requiring new innovations to be assigned to the school, undergraduates engaged in Tech Push activities gain practical experience in corporate IP commercialization.

Such experience lends itself both to entrepreneurship and, in the case of some students participating in OnRamp, career paths in corporate innovation. While building sponsorship for such programs will undoubtedly be difficult, OnRamp provides one such external model supporting greater student engagement with intellectual property.

Alumni networks also have an undeniable impact on the level of entrepreneurial resources available to a university's undergraduate community. Penn State University alone hosts three major entrepreneurial initiatives funded in large part by charitable bequests from alumni. The importance of mentorship for students pursuing business startups further underscores the importance of maintaining relationships with successful alumni who are able to impart their business skills to the next generation.

An early introduction to intellectual property protections and their importance to startups is critical for business-minded students, whether they go on to work for large corporations or focus on developing their own innovations. If E&I programs at universities across the United States are able to increase student resources for obtaining IP rights and focus on providing early mentorship from patent attorneys, those schools will better enable their students to forge their own career paths following graduation.

This report was researched and prepared by Steven Brachmann, an intellectual property journalist and a graduate of the University of Buffalo School of Law.