Transform UAF’s intellectual property development and commercialization enterprise

Committee: Peter Webley (chair), Cathy Cahill, Owen Guthrie, Bahareh Barati, Kenna Metivier, Gwen Holdmann, Mark Billingsley, Caleb Severn, Mark Herrmann, Tahia Rivara, Gerald Montuya, Andrew McDonnell, Juliet Shepherd (external member, FEDC), John Wanamaker (external member, Alaska Venture Partners)

Who do we want to be?

In 2025, University of Alaska Fairbanks will be a champion for innovation and a leadership voice for entrepreneurism in Alaska, as the U.S. Arctic’s Innovative and Entrepreneurial University. UAF will support the development of social, cultural and technological entrepreneurs, in partnership with the local community, and foster local and scalable innovative companies from commercializable intellectual property developed at the university and in the community. UAF goals are to: 1) be the driver of Alaska’s innovation economy and a leadership voice in focus for U.S. Arctic innovation and entrepreneurship; (2) produce graduates with an entrepreneurial mindset and skilled in the processes necessary to bring research to commercialization and grow viable businesses; and (3) deliver economic, societal, cultural and educational impact to Fairbanks, Alaska, and people of the circumpolar North.

UAF will foster and cultivate its innovative individuals to demonstrate, validate and execute high-caliber value propositions from university and community resources and, in conjunction with local partnerships, leverage its position to provide entry points for all levels of entrepreneurship from concept validation to execution, for anyone who is able to pitch and drive a commercializable idea. UAF will maintain a strong online presence to highlight its innovation and entrepreneurship opportunities and activities, including but not limited to invention disclosures and value-added technologies available for licensure, with details and contact information for UAF and community-based startup companies in addition to connections to its entrepreneurship and business development programs. The innovation ecosystem will focus on all forms of entrepreneurial development — teaching educators an innovation and entrepreneurship curriculum, teaching entrepreneurial skills and practices, encouraging the development of commercializable research and service opportunities, holding ideation events and competitions, and creating opportunities for nondilutive startup capital. UAF will build an innovation and broader impacts (research-to-impact) component into its graduate programs and lead the charge to embed entrepreneurship as an integral part of the school system from K-12 to university and integrate into a statewide innovation ecosystem.

UAF will grow its facilities and provide the tools for innovation, commercialization and entrepreneurship across its campuses. UAF will maintain a mentorship program where innovative companies and faculty are working with junior faculty, postdocs and students on their entrepreneurial projects in Alaska and with those companies wanting to come to Alaska. UAF will grow its current ambassador program and, where appropriate, increase the program to represent the full breadth of UAF’s teaching, research and service/engagement, as well as attract and engage UAF alumni to return to Alaska with their own IP to grow new businesses and industry in Fairbanks and across the state.

UAF will develop transdisciplinary teams to build solutions to the challenges and needs of the local community, the state of Alaska as well as the Arctic and circumpolar North, and form agreements with the greater community to realize this in Fairbanks. UAF will implement effective processes and terms to transfer developed IP from UAF to the community as we all together aim to develop new economic opportunities.
As UAF builds towards 2025, the vision is to:

- Develop and support a culture of innovation and entrepreneurship on campus and in the greater community through reciprocal partnerships.
- Provide the resources to foster creative, social and technological entrepreneurship.
- Build innovative communities to develop solutions to focused challenges and needs.
- Create opportunities to grow today’s and tomorrow’s innovators and entrepreneurs.

Who are we now?

UAF’s faculty, staff and students are currently supported by the Office of Intellectual Property and Commercialization (OIPC) along with the Center for Innovation, Commercialization and Entrepreneurship (Center ICE). OIPC connects the intellectual property, declared through invention disclosures, to Nanook Innovation Corp. (NIC), which assists inventors in getting technologies into the hands of businesses. NIC can assign IP to Nanook Tech Ventures, which works with entrepreneurial faculty, staff and students at UAF to create businesses based on new discoveries.

OIPC is supported by faculty ambassadors who focus on interactions with innovative faculty, staff and students and provide advice to budding entrepreneurs on the process from invention disclosure to commercialization. OIPC is advised by an Intellectual Property Advisory Committee on a full range of matters related to IP and commercialization.

Inventions disclosed through OIPC are recognized at the end of each academic year through the IDEAS awards. These awards highlight the best inventions and all aspects of UAF from faculty, staff, students and postdoctoral researchers, as well as the best across UAF and best overall with greatest commercial potential.

There are 12 active U.S. patents that have a UAF lead, as well as five startup companies formed or co-formed by UAF personnel and that are connected to Center ICE and/or licensing technology. UAF has 15 of the 33 members in the Alaska Northern Innovators Hall of Fame, since its inaugural class in 2014-2015. This highlights the innovative nature of UAF’s academics and how the state recognizes the contribution that they and UAF have made to the development of Alaska and its future.

OIPC and Center ICE support the ideation process through a variety of events and workshops. These include the Lean Launchpad workshop, the UA Community Challenge, the National Science Foundation I-CORPS site and the Hacking for Defense course. Additionally, since 2009, the School of Management has been responsible for and hosted the Arctic Innovation Competition, a great opportunity for innovators and entrepreneurs of all ages. UAF has been the co-lead with Fairbanks Economic Development Corp. (FEDC) on Fairbanks events during Techstars Alaska Startup Week, which brings entrepreneurs, local leaders and friends together to build momentum around Alaska’s entrepreneurial opportunities. OIPC, in conjunction with Center ICE and FEDC, co-organized and co-hosted the 2018 Fairbanks Alaska Startup Weekend, a 54-hour event to develop a commercial product from an initial idea.

There are a number of innovative, transdisciplinary projects that are fostering new ideas and building the next entrepreneurs. These include but are not limited to eCampus, which builds an online presence for UAF’s classes to complement and enhance face-to-face opportunities and provide a richer experience for our students. Additionally, the Geophysical Institute’s status as a University Affiliated Research Center recognizes UAF’s accomplishments and growing stature in nuclear treaty monitoring support and the Alaska Center for Unmanned Aircraft Systems Integration’s position as a leader in UAS research, development and integration. The Biomedical Learning and Student Training program enhances capacity for undergraduate biomedical research and efficacy for engaging students in education and training for biomedical careers. The One Health Initiative recognizes the interdependence of human, animal and environmental health and takes a holistic approach to the well-being for all. Finally, the College of Fisheries and Ocean Sciences’ Alaska Blue Economy Center serves as a resource and support center for research, instruction and outreach related to Alaska’s vast aquatic resources and ecosystems.
How do we get there?

To be the driver of Alaska's innovation and entrepreneur economy and produce graduates that are skilled in the processes and tools to bring research to commercialization, UAF will focus on five strategies to deliver an economic, societal, cultural and educational impact to Alaska and the circumpolar North.

1. Innovative culture across the university
   
   - **Ideation and entrepreneurship** — Budding entrepreneurs and innovators will be exposed to the opportunities that can develop from an entrepreneurial mindset as well as highlight UAF innovators and alumni who have focused on entrepreneurial activities in their careers.
   
   - **Recognizing entrepreneurial activities** — UAF will celebrate innovative individuals to emphasize the idea of innovation to students interested in their respective degree programs and will continue with its yearly awards to highlight the best invention disclosures from the academic year.
   
   - **Social, creative, cultural and technological entrepreneurs** — Many innovative and creative projects can focus on the greater well-being, be it financially, socially, technologically or physically. Connecting to the United Nations’ sustainable development goals as well as highlighting innovative projects on campus will demonstrate to students the relevance of their entrepreneurial activities and highlight how UAF is developing innovative practices for the greater good.
   
   - **Supporting innovative researchers** — The ecosystem will focus on all innovative teaching, research and service/engagement activity. Examples include working with faculty, through college and institute senators, to integrate all entrepreneurial activity into promotion/tenure unit criteria; support and recognition for staff; and a growth of the entrepreneurial mindset in student projects and research.
   
   - **Building the next generation** — UAF will lead the charge to embed entrepreneurship as an integral part of the Alaska school system, from K-12 to the university, and to integrate it into a statewide entrepreneur/innovation ecosystem. UAF will support the growth of a virtual middle college approach and will develop a process to bring eCampus into the Alaska schools so it is for Alaskans, developed by Alaskans.

2. Resources to foster innovative, creative culture and entrepreneurship
   
   - **Facilities to develop a broad-minded design thinking approach** — Faculty, staff and students will be given the time and space to develop their grand scale ideas so UAF can develop new innovative solutions to the grand challenges of Alaska, Arctic and circumpolar North and build an innovatively minded campus.
   
   - **Continued growth of tools** — OIPC will support all areas of UAF work, from invention disclosures to patents and from copyrights to trademarks. UAF will support its faculty, staff and students to be trained on how to talk to businesses, including the capacity to pitch ideas and perform customer discovery.
   
   - **Mentorship program** — Innovative and entrepreneurial faculty will be partnered with budding entrepreneurial students, connecting them to companies in Alaska and companies that want to come to Alaska. UAF will connect its staff, students and faculty to its alumni to provide mentorship for its entrepreneurs and develop a pool of advocates and mentors centered on our high-profile disciplines that our innovators can contact for advice and mentorship.
   
   - **Ambassador program** — UAF will continue its current program and increase the program to represent the full breadth of teaching, research and service/engagement across UAF. Ambassadors will also come from the staff and students at UAF to represent the breadth of innovative academics at UAF.
   
   - **Promoting and marketing the value of our IP** — UAF will build a stronger online presence for its invention disclosures to provide critical information on the currently available technology for those outside the UAF system and points of contact for our startup companies. It will provide a portal for current entrepreneurs at UAF to highlight their work and provide a one-stop shop for all things entrepreneurship at UAF. UAF will develop a process to regularly review and identify growth opportunities for its IP.
• **Recognition of our entrepreneurs** — There will be support for a UAF presence at the Alaska Innovation Summit and at other U.S. and international entrepreneur-focused conferences. There will be support for external recognition of UAF’s entrepreneurial staff, students and faculty, such as members of Alaska Hall of Fame for Innovation, and for proposing and having members accepted into the National Academy of Inventors.

3. **Engage local community, Alaska and the circumpolar North to develop solutions to focused challenges and needs**

• **Open innovation** — UAF will work on solutions to the challenges and needs of its local community and the state of Alaska, as well as the Arctic and circumpolar North. It will evaluate the process of moving from exploration (basic research) to innovation (applied research) to commercialization (entrepreneurship), as it applies to UAF.

• **Build projects into academic programs** — UAF will build challenges into capstone projects and independent study classes. This will allow students to work in teams to develop a solution to real-world challenges. Students will go through the lean launch process and perform customer discovery, as well as follow the design-and-build process from a prototype to a minimum viable product and the final solution.

• **Industry liaison program** — Liaisons will first focus on the industries that connect to UAF’s strengths. They will build a mechanism to develop more industry-sponsored research, as well as be an advocate for UAF IP and available innovations that will connect to industry challenges and needs.

• **Business brand** — Develop online content and physical presence with engagement officers/industry liaisons. Here, the UAF Office of Development and Alumni Relations will be well versed in the newest technologies to promote. The branding can go hand in hand with UAF’s academic teaching, research and engagement and be a mechanism to bring companies to work alongside UAF’s faculty, staff and students.

• **Engage with local community** — There will be active communication with the community, including local government, mayor’s offices, FEDC and Small Business Development Center-based companies, to engage them and address their challenges in mutually beneficial ways. UAF will be open to collaborations from the community into UAF and to help from the community.

• **Entrepreneurial funding** — UAF will diversify its support for entrepreneurial activities and apply for external funding programs from local industry and large multinational companies. These will provide assistance for research and training and connect UAF academics with the leading entrepreneurs in the country.

4. **Interdisciplinary innovative communities across the university, Alaska and the Arctic**

• **UAF-wide design challenge** — UAF will build a design challenge integrated across UAF’s colleges, schools and institutes, following the UA Community Challenge. A list of ideas and challenges would be available for teams to propose solutions. These teams could move onto further opportunities, such as the I-CORPS program, AIC, Launch Alaska and the Innovation Summit.

• **Interdisciplinary themes approach** — UAF will build a theme-based approach to UAF’s research, teaching and service/engagement that would run in parallel to the colleges/schools/institutes and would foster transdisciplinary collaborations. UAF will align developed technology to a theme so that companies could connect to all intellectual property under a theme, based on the companies’ interests.
5. Adaptable to the Alaska and Arctic of tomorrow

- **Adaptable resources** — UAF will ensure it has a full-time director for its technology transfer office, as well as IP specialists and industrial liaisons. It will support a Center ICE space for startup companies and budding entrepreneurs so Fairbanks-based startups and companies can also come and work with UAF. Focused activities with local community members and organizations will work on the big ideas and major challenges for Alaska.

- **Design thinking focus on growth sectors** — UAF will apply design thinking to the next growth sectors for the Alaska, Arctic, U.S. and world economies. It will evaluate the major growth areas and economic sectors for Alaska, working with UAA Center for Economic Development (CED) to ensure that UAF research and commercial technology transfer stay at the forefront and its graduating students are the innovators of tomorrow.

**Concluding remarks**

Transforming UAF’s intellectual property development and commercialization enterprise will drive the university to be the U.S. Arctic Innovative and Entrepreneurial University. UAF needs to move forward together as a university and connect to Fairbanks, Interior Alaska and the state to drive Alaska’s innovation economy, produce skilled graduates to bring research to commercialization, and deliver an impact to Alaska and the people of the circumpolar North. UAF will foster and support all innovation activities and entrepreneurship and build interdisciplinary teams to work with the local community to provide solutions to their greatest challenges. As students are exposed to tomorrow’s technologies during their time at UAF, they will be the innovators of tomorrow and build the Alaska economy as the state and the university look to 2025 and beyond.