Office of Intellectual Property and Commercialization

Annual Report 2013
Letter from Daniel M. White
Associate Vice Chancellor for Research

In Fiscal Year 13, business in the Office of Intellectual Property and Commercialization (OIPC) picked up dramatically. Not only did invention disclosures reach an all-time high, the readiness level of the inventions increased over previous years. More of the inventions were at, or near prototyping stage and more of the software codes were ready for marketing. This is good news for UAF and UAF inventors.

During FY13 the architecture for the commercialization of University of Alaska Fairbanks intellectual property was completed. While the non-profit research corporation, Nanook Innovation Corporation, was established in FY12, the for-profit subsidiary, Nanook Tech Ventures, was not formed until FY13. Neither of these organizations are part of UAF, they both support UAF and UAF inventors by commercializing our intellectual property and facilitating start-up companies through the “Lean-Start-up” model. The boards of directors of the two organizations have talented, dedicated members and we are grateful for their service.

A key role of the Office of Intellectual Property and Commercialization is to work with inventors through the early stages of invention development. This starts with the invention disclosure and ends with assignment of the intellectual property to the Nanook Innovation Corporation for commercialization. The UA Office of the General Counsel serves a critical role in ensuring that Alaska state law, Board of Regents policies, and University Regulations allow for the legal development of our intellectual property. As we have more and more faculty interested in starting up their own companies, the Office of the General Counsel also assists with conflict of interest management. This collaborative approach benefits both UAF and UAF inventors and we are grateful for the guidance of the General Counsel.

Local businesses in Fairbanks and around the state are contacting OIPC looking for opportunities to commercialize intellectual property. Local businesses are key to the development of UAF IP designed for the northern niche market. While national contractors will likely be the licensees of technologies we develop in the area of defense, local companies will likely be the first to develop technologies around mining, fisheries, and energy development in the North. We are grateful to those companies who have contacted us to date and we hope and expect that it is just the beginning.

If you are a UAF inventor, local business, or entrepreneur, please come see us. Engage in this exciting enterprise.

Daniel M. White
Associate Vice-Chancellor for Researcher
Director of the Office of Intellectual Property and Commercialization
As research and development conducted in industry decreases, more businesses look to universities as a source for new products and technologies. The Office of Intellectual Property and Commercialization at the University of Alaska Fairbanks is organized to bridge the gap between university inventors and industry.

In 1994, UAF started the Office of Technology Transfer for the purpose of handling intellectual property developed at the university. In 2011, the office was reorganized with the addition of new staff members, a new office location, and a name change to the Office of Intellectual Property and Commercialization (OIPC).

OIPC works with private companies and entrepreneurs in an effort to market and license the University’s research. We assist industrial partners to meet their research needs.

**About Us**

**Adam Krynicki**  
Business Development Director

Adam joined OIPC in May of 2011. He graduated with his law degree from Duquesne University and is admitted to the bar in the State of Pennsylvania.

**Shelby Mathis**  
Intellectual Property Director

Shelby joined OIPC in February of 2013. She has her bachelor’s degree in Chemical Engineering. She is a licensed attorney in Alaska, Washington D.C. and Florida as well as admitted to the Patent Bar.

**Nickole Conley**  
OIPC Business Director

Nickole joined UAF in 2003. She is the Chief Financial Officer for the College of Engineering and Mines and the Business Director of OIPC. She is currently finishing her degree in Business Administration at UAF.

**Brittany Lewis**  
Paralegal/Office Manager

Brittany joined OIPC in May of 2012. Brittany received her A.A.S in Paralegal Studies from UAF and will be graduating with a B.A. in Justice this fall. She will be attending law school in the fall of 2014.

**WHAT DO WE DO FOR INVENTORS?**

We protect intellectual property.  
We identify licensees of new technology.  
We market these new inventions.  
We contract with industry to build and sell technology.  
We build new startups.

**What is the impact of commercialization?**

We benefit the public by providing better products and services.  
We build opportunities for funding translational research.  
We provide royalties to inventors and UAF.  
We build the local economy and create jobs.
PRODUCING NEW DISCOVERIES

The University of Alaska Fairbanks (UAF) conducts approximately $110 million per year in research. Much of this research leads to new technology, software, and commercial products.

INVENTING NEW PRODUCTS

The Office of Intellectual Property and Commercialization (OIPC) works with UAF inventors to protect, market, and commercialize their technology.

The number of new inventions disclosed to the University by faculty, staff, and students has increased dramatically since OIPC was formed in 2011. In Fiscal Year 2013 alone, 73 new inventions were disclosed by University faculty, staff, and students. For the first time UAF is producing invention disclosures at rates equal to or higher than that of higher learning with a similar amount of research expenditures.

NEWLY PATENTED INTELLECTUAL PROPERTY

“Methods and Systems for Source Tracking”
U.S. Patent Number 8,548,177 (Issued Oct 2013)

“State Filter”
U.S. Patent Number 8,554,816 (Issued Oct 2013)

MAKING TECHNOLOGIES AVAILABLE:

The following technologies are available to interested companies:

- A sensitive, cheaper, durable, and smaller infrasound microphone
- A method to survey and assess property using UAVs
- Signal processing software that can resolve the cocktail party effect
- Signal processing methods that can identify and track vehicles carrying improvised explosive devices
- A non-intrusive microdialysis method for neural drug delivery
- A method to synthesize sphingosines for pure multiple sclerosis pharmaceuticals and cancer treatments
- A formulation to lower metabolic rate and induce hibernation for trauma and stroke patients
- An open neutral voltage balancing device
- Hydrokinetic devices and software to measure turbulence
- Hydrokinetic debris diversion devices
- Discrete Element Model to measure particle compression
- Timesheet tracking software for grant based projects
- Road ice and sea ice mapping tools
- Mineral discovery and exploration software
- A system to easily identify infants at risk of Sudden Infant Death Syndrome (SIDS)
WORKING WITH OUR ADVISORY GROUPS

The Intellectual Property Advisory Committee (IPAC) is comprised of faculty inventors and University support staff. This group is responsible for ensuring that the University is performing due diligence on its invention portfolio, and focusing its efforts properly.

IPAC has helped faculty inventors by awarding seed funds. In 2012, the Intellectual Property Advisory Committee awarded 4 seed funds of $10,000 dollars each. Recipients included:

- Peter Webley: Volcanic Ash Modeling Tool
- Tom Green: Sphingosine Synthesis Method
- Tom Johnson: Hydrokinetic Power Generator
- Xiong Zhang: Soil Volume Change Method

The research under these seed funds has resulted in a new startup company, a patent application, a new prototype, and new software, respectively.

The Fairbanks Regional Economic Partnership (FREP) is an idea exchange between local government, UAF, the Chamber of Commerce, and the Fairbanks Economic Development Corporation on shared economic development issues. Started by Chancellor Rogers, this group focuses on UAF actions that could impact the local economy.

WORKING WITH INVENTORS AND OUR COMMUNITY

OIPC hosts several Inventors’ Forums each year. The purpose of these Forums is to bring inventors together, discuss funding opportunities, and discuss IP development.

At the Biotechnology Inventors’ Forum, Matthew Portnoy, Director of the Division of Special Programs at the National Institutes of Health provided information about available Small Business Innovation Research (SBIR) funding. Following up with this presentation, OIPC discussed conflict of interest management plans and described how faculty may create companies through UAFs new research foundation.

OIPC also held an Inventors’ Forum for UAF Faculty and staff on the topic of “Big Data.” Approximately 30 inventors attended to discuss their software development and licensing efforts.

OIPC HOLDS EDUCATION SESSIONS, INCLUDING:

- The Biotech Student Colloquium
- A Copyright Class for Mass Media Law
- UAF Departmental IP Presentations
- Fairbanks Local Inventor's Breakfasts

OIPC PROVIDES EDUCATIONAL MATERIALS:

- Inventor’s Handbook
- Industry Partnership Handbook
- Startup Handbook

If you are interested in holding an education session, please contact us.
Since the OIPC was formed 3 years ago we have made significant strides to engage, protect, market, and commercialize intellectual property developed at the University. During the first year of operation, our primary goal was to streamline the process from disclosure to commercialization. We did this with the assistance of the UA Office of the General Counsel by establishing template Non-Disclosure Agreements, along with forms for invention disclosure, intellectual property assignment, and licensing. Additionally, our office engaged inventors campus-wide through Inventor’s Forums and presentations to individual departments on the intellectual property protection and commercialization processes.

As is clear from the numbers this year, during fiscal year 2013, OIPC reaped the benefits of this work, allowing us to shift our focus to intellectual property protection and marketing of technologies. With the assistance of the Nanook Innovation Corporation (NIC) and Nanook Tech Ventures (NTV) we have successfully licensed University technology to existing companies and to the first start-up company based on the commercialization of UAF-generated intellectual property. Such success is owed to the dedication of all the members of OIPC, and the members of the Boards of both NIC and NTV.
GREETINGS AND GOODBYES

This year OIPC has gained and said good-bye to some incredible people. In February 2013, Shelby Mathis was hired as the new Intellectual Property Director. Shelby is a local Fairbanks attorney and registered with the United States Patent Bar. She has been a valued addition to the team and has assisted in protecting and marketing technologies, the formation and development of the research foundation and licensing and creation of University IP based start-up companies.

We have also gained Melissa McCumby who will be transitioning into Brittany Lewis’ position as Office Manager late this year. She will be the main point of contact for the office and will be managing OIPC’s day-to-day business. Melissa started as a temp at INE and was Dan White’s assistant before accepting the position at OIPC. Melissa received her bachelor’s degree from Northern Arizona University in Advertising.

We have also had some valued employees leave us this year. Anton Gorodniuk, a graduate student in the MBA program, interned with our office for two academic years while completing his graduate degree. During that time, Anton conducted prior art searches and marketability reports, assisted in developing business plans and methods for the research foundation and drafted several templates for technology commercialization. After receiving his Master’s Degree, Anton accepted an internship in San Francisco as a Research Analyst at Allianz Global Investors.

Brittany Lewis, another UAF graduate, began working in our office as a summer intern a year and half ago, and was promoted to Office Manager/Paralegal. During her time at the office, she drafted and circulated a variety of template contracts, scheduled countless meetings and events, and developed the Inventor’s Handbook, the Annual Report, and designed the OIPC website. Brittany left our office to pursue her law degree.

It is bitter sweet to say goodbye to these valued employees; they have made a huge impact on this office and will be missed, and we wish them the best in their future endeavors.
On Thursday, September 27, 2012, the Board of Regents voted to establish the University of Alaska Fairbanks Research Foundation to assist in the commercialization of intellectual property and the creation of start-up companies. Since then the UAF Office of Intellectual Property and Commercialization (OIPC) has formed Nanook Innovation Corporation (NIC), a non-profit University-supporting organization geared towards commercializing intellectual property generated from research conducted here at the University. NIC subsequently formed and acquired a majority shareholder interest in Nanook Tech Ventures (NTV), a for-profit company designed to take equity in start-up companies commercializing University-generated intellectual property.

During its first year of operation, NIC has received 9 assignments of intellectual property from the University, including technologies for infrasound detection and tracking, volcanic ash monitoring and remote sensing, timesheet management software, and pinbone removal machine technology. NIC has presently licensed 33 pieces of intellectual property, part of one assignment from the University to NTV for sublicensing to the first start-up company, V-ADAPT, Inc. NIC is also currently in negotiations to license infrasound detection and monitoring software to Northrop Grumman, and the Pin Bone Removal technology to a machine shop in Juneau. Such licensing is now possible due in large part to the formation of NIC, which allows OIPC and UAF to move at the speed of business.

ASSIGNMENTS

- V-ADAPT (Volcanic Ash Detection, Avoidance, and Preparedness for Transportation)
- Pinbone Removal Machine Technology
- Timesheet Helper
- PDECS v. 1.0 (Pre-processing, Detection, Estimation, and Classification of Signals)
- PDECS v. 1.0 Supporting Modules
- PDECS v. 2.0 Software Modules
- Infrasound Microphone
- LIDAR for Tax Assessment
- Aerosol Detector
Board of Directors

Daniel M. White  
NIC President

Dan White is the Associate Vice Chancellor for Research, the Director of the Office of Intellectual Property and Commercialization, and the Director of the Institute of Northern Engineering at the University of Alaska Fairbanks. Dr. White joined UAF in 1995, as a Professor of Civil and Environmental Engineering. He earned bachelor’s degrees from Colorado College and Washington State University, and a doctorate from the University of Notre Dame.

Lorna Shaw  
NIC Vice-President

Lorna Shaw serves as the External Affairs Manager for Sumitomo Metal Mining Pogo LLC where she oversees community, public and government affairs for Pogo Mine. She also serves on the boards of directors for several other industry and business organizations, including Alaska Miners Association and the Resource Development Council. She graduated from UAF in 1996 with her BBA and again in 2005 with her MBA.

Mike Powers  
NIC Secretary

Mike Powers was appointed in 2011 to serve as the Secretary of the UA Board of Regents and serves as the Chief Executive Officer for Fairbanks Memorial Hospital and Denali Center. Powers earned his master’s degree in Healthcare Services Administration from the University of Wisconsin at Madison. He serves on the Executive Committee of the Interior Community Health Center, Executive Committee of the Fairbanks Concert Association, and former Co-Chair of the United Way of the Tanana Valley.

John Zarling  
NIC Treasurer

John Zarling has served as an engineering educator and researcher for nearly a half-century, the better part of that at the University of Alaska Fairbanks. He formally retired in 1997, but has remained an important contributor to UAF, to industry in the state, and to arctic and cold-climate research. Zarling has received multiple awards for his excellence as an educator, including the 1993 Emil Usibelli Distinguished Teaching Award, one of the University’s most prestigious awards as well as the Meritorious Service Award in 2013.

John Burns  
NIC Board Member

John Burns, former Alaska Attorney General, is a local Fairbanks attorney and the owner of the law firm Burns & Associates, P.C. Burns received a Bachelor’s degree in History from UAF and a Juris Doctorate from the University of Puget Sound School of Law in Seattle. He serves as an adjunct faculty member at UAF, teaching graduate and undergraduate business law courses. Burns is a member of the Board of Directors of Hospice of the Tanana Valley and serves on the Chancellor's Advisory Committee for UAF.
Nanook Tech Ventures (NTV) was formed on April 5, 2013 and is the for-profit subsidiary of Nanook Innovation Corporation (NIC). NTV works with entrepreneurial faculty, staff, and students to create start-up companies and viable businesses based on their research. Within 60 days of NTV’s formation, the first University IP-based start-up, V-ADAPT, Inc. (Volcanic Ash Detection, Avoidance and Preparedness for Transportation), had also formed to commercialize volcanic ash detection and monitoring software developed at UAF. V-ADAPT will offer online services to the airline industry and commercial shippers who need to detect and track volcanic activity.

Through the formation of University IP-based start-up companies, inventors are able to apply for Small Business Innovation Research Grants (SBIRs) and Small Technology Transfer Research Grants (STTRs). Currently two new companies have been formed by faculty members to apply for these specialized grants, one which develops sensors to map the dispersion and impact of aerosols, and the other develops new nutraceuticals for use in treatment facilities with elderly obese individuals. More faculty-founded companies are also on the horizon, to spur new technology development and support the Alaskan economy.

With this technology accelerator now in place, UAF is poised to create new start-up companies and provide more opportunities for researchers to market their inventions. We encourage all UAF faculty, staff, and student inventors to engage with OIPC and support both NIC and NTV to further develop and commercialize their technologies.

**STARTUPS BY UAF FACULTY AND STAFF**

OIPC has drafted conflict of interest plans for university faculty working with the following companies:

- V-ADAPT, Inc.
- Mobile Mapping Corporation/ ARTIC
- Essential Blends, LLC
- Applied Research Solutions, Inc.
Board of Directors

Scott Bell
NTV President
Scott Bell serves as the Associate Vice Chancellor for Facilities Services. Bell is a UAF graduate with 28 years of experience in the Alaska design and construction industry, including work on several UAF projects. Bell serves on the board of the Greater Fairbanks Community Hospital Foundation and chairs its construction committee.

Adam Krynicki
NTV Vice-President
Adam Krynicki is the Business Development Director for OIPC. Previously, Adam designed a micro-finance program for entrepreneurs and worked for a software company incubator. He is a graduate of Duquesne University and is admitted to the Pennsylvania State Bar.

Randy Weaver
NTV Secretary
Randy Weaver is the Chief Financial Officer for Denali State Bank. Weaver serves on the board for the Alaska Commission on Postsecondary Education. He also serves as the treasurer for the Fairbanks Youth Soccer Association Board of Directors, and as the treasurer for Zion Lutheran Church.

Michelle Rizk
NTV Treasurer
Michelle Rizk serves as the UA Associate Vice President of Budget. Rizk received her BA in International Business and master’s degree in Business Management from UAF. In 2013, Rizk was named as one of The Alaska Journal of Commerce’s Top Forty under 40.

Bill St. Pierre
NTV Board Member
Bill graduated from Kent State University in 1981. He has since lead or participated in multiple start up and early acquisition investments including Tanana Valley Television Company, Internet Plus, LLC, Rogers Software Development, Inc., Digital America, Restaurant Concepts, and Tanana Valley Holdings.

Doug Johnson
NTV Board Member
Doug Johnson is the Executive Vice-President of Professional Growth Systems. Johnson received his BA in Geological Engineering from UAF and is a graduate of the Burklyn Business School. Johnson is a member of the Project Management Institute in Alaska and a board member of the Renewable Energy Alaska Project.

Gloria O’Neill
NTV Board Member
Gloria O’Neill serves on the UA Board of Regents and as the President and CEO of Cook Inlet Tribal Council. She earned her MBA from Alaska Pacific University and BA in Sociology from UAA. She also serves on the Cook Inlet Housing Authority Board of Commissioners, and is a member of the Alaskan Command Civilian Advisory Board.