Supporting Economic Development through Innovation

A Presentation for the Alaska 30th Legislature
Senate Labor & Commerce Standing Committee

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University of Alaska
Vice President for Academic Affairs and Research

February 16, 2017

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UA research addresses problems that affect the economy in the Alaska



With a fleet of unmanned vehicles and sensors, data can be collected safely and efficiently

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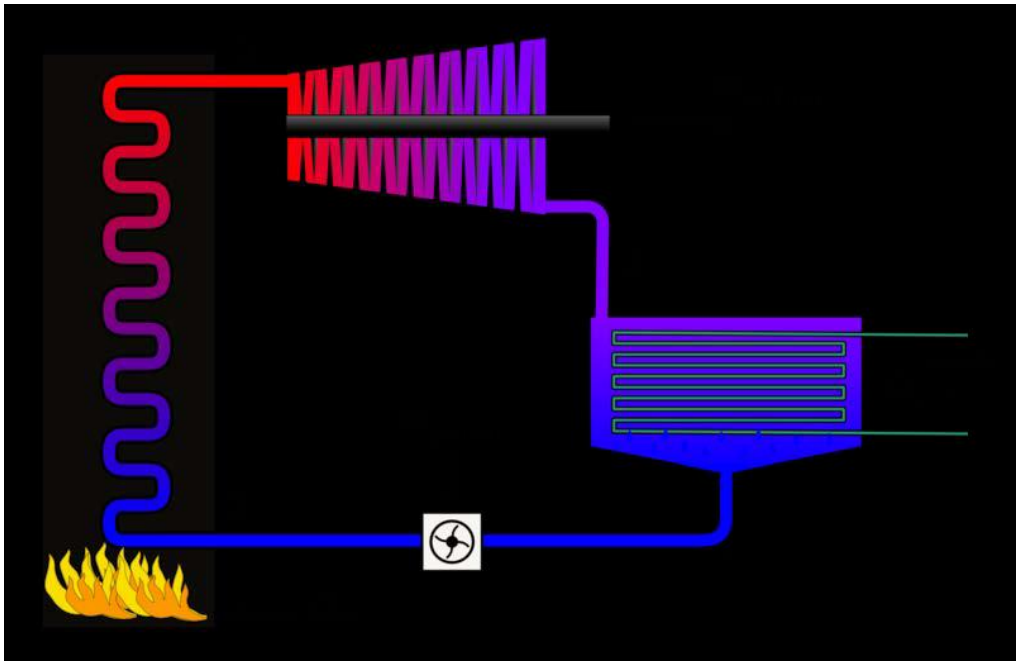
UA research leads to new inventions



UAF is addressing energy issues for all of Alaska

ACEP
Alaska Center for Energy and Power

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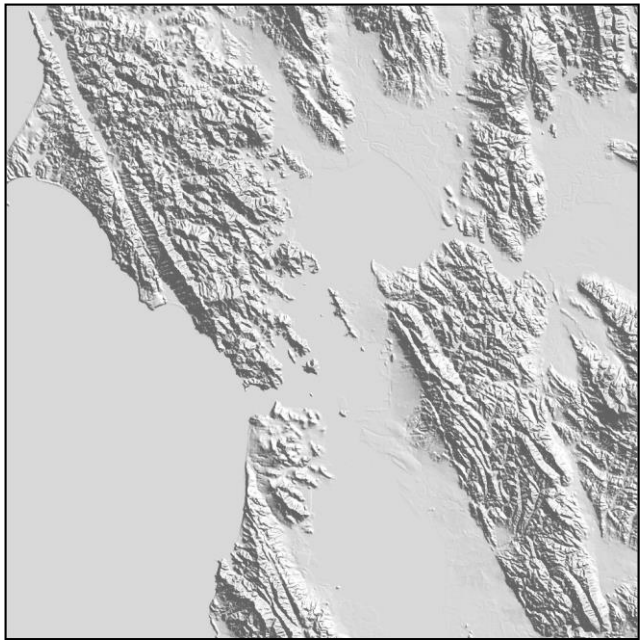
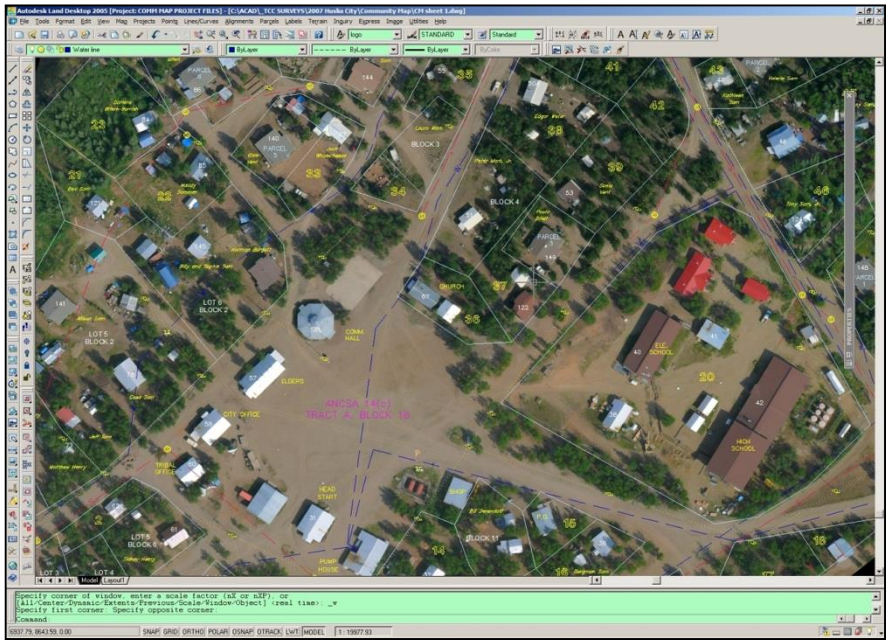
UA research leads to new inventions





UAF research has produced new software to detect mineral seams and analyze aerial surveying data.

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Benefits of Commercialization

- Benefits to the State's University
  - Businesses establish a strong relationship with the University and sponsor more research
  - Inventors receive royalties
- Benefits to the Economy
  - Businesses establish a competitive advantage and increase revenue
  - The economy grows and creates jobs
- Benefits to Consumers
  - Consumers receive better quality, lower cost, and more efficient products or services

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How does UA turn inventions into products or services?

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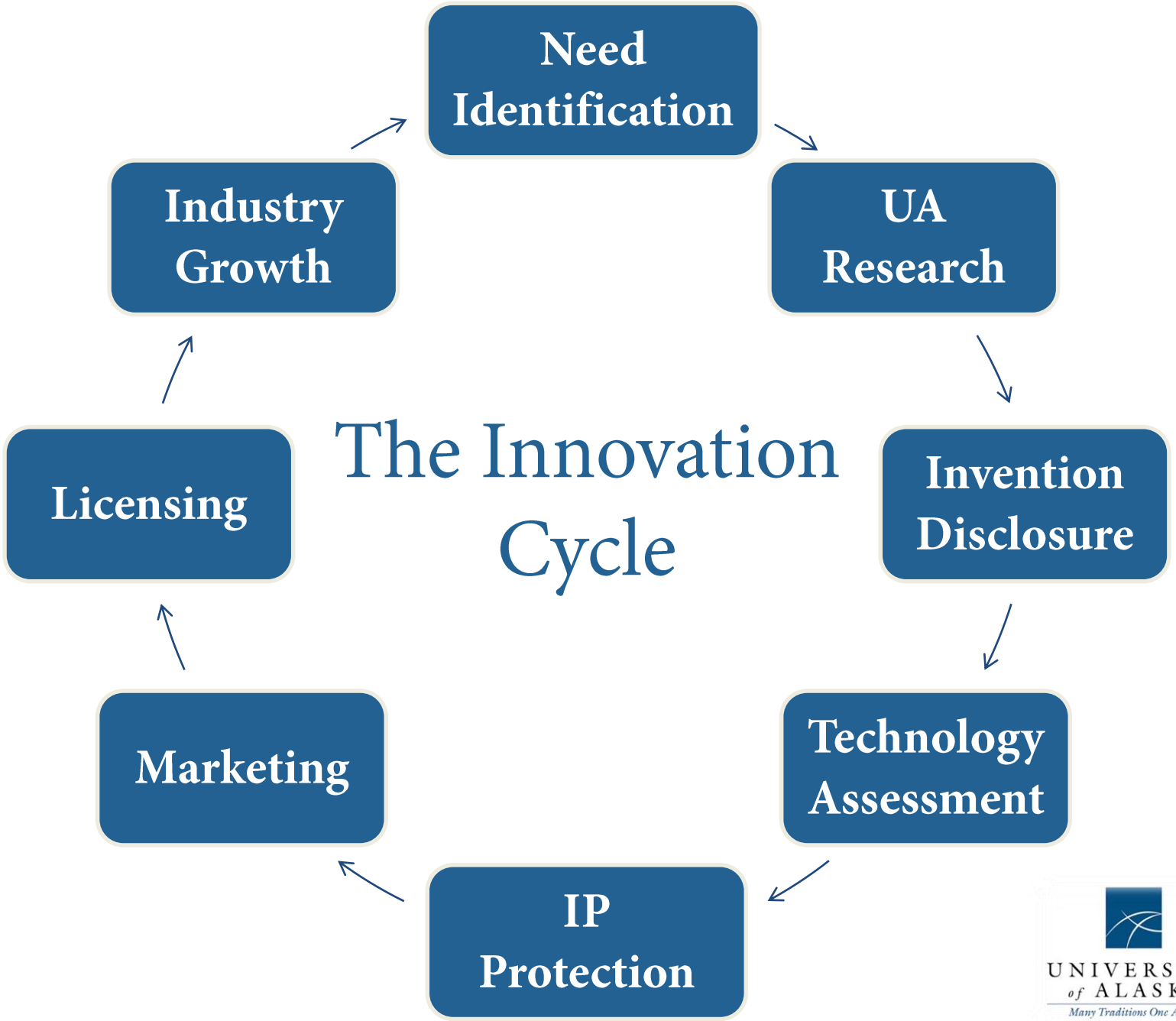
The Innovation Cycle



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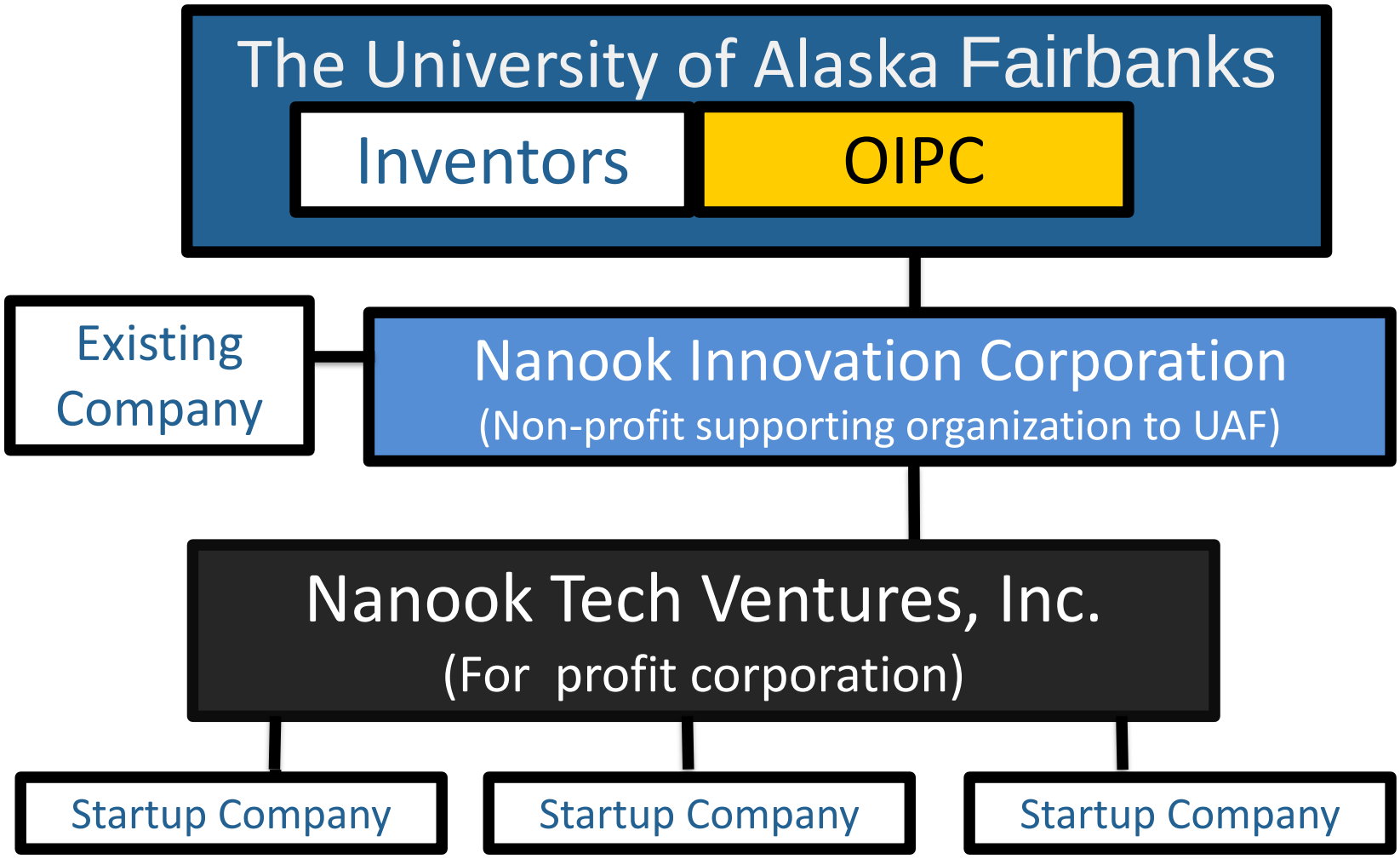
Office of Intellectual Property and Commercialization

- Identify and protect Intellectual Property of university innovators
- Supporting Economic Opportunity through licensing UAF technologies and faculty-led startup companies

Kelly Drew, left, UAF faculty, Mark Billingsley center, UAF OIPC, and John Cabeca, right, USPTO (Photo by Rich Collins)



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New Technologies for Alaska and the World

- Method and composition for inhibiting thermogenesis
- Dynamic mill simulator
- Volcanic ash forecasting
- Rabies treatment protocol
- Comparative 3D modeling for tax assessment purposes

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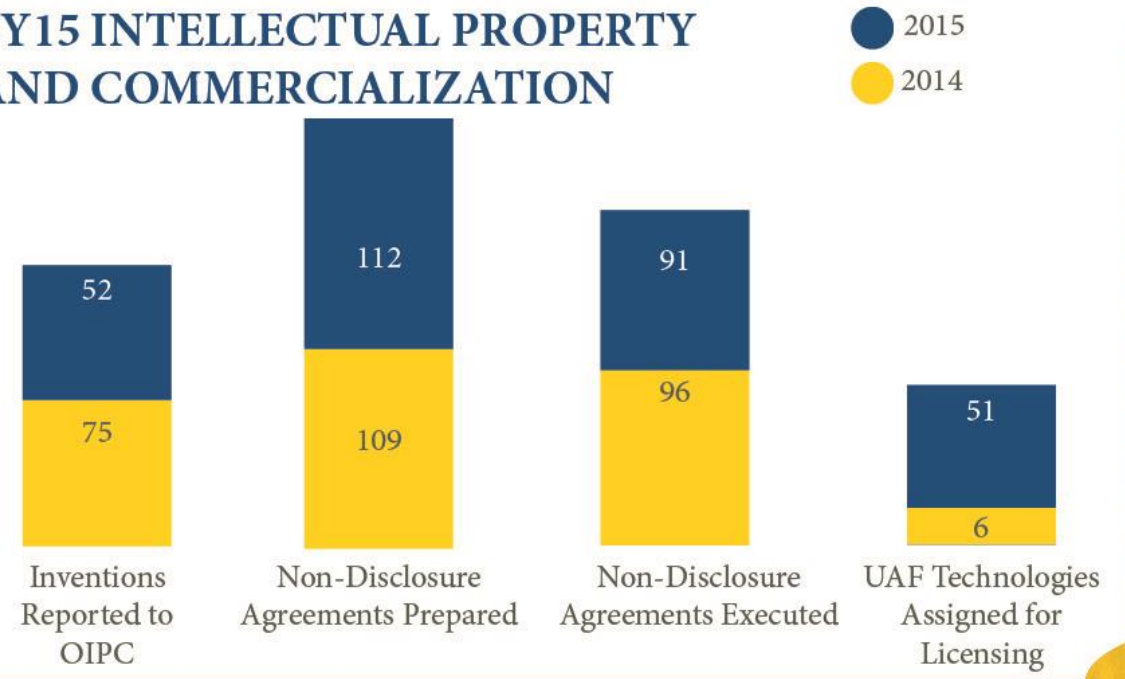
FY15 INTELLECTUAL PROPERTY AND COMMERCIALIZATION



2015 PATENT STATISTICS

- 4 Utility Patents Filed
- 2 Design Patents Filed
- 1 Copyright Filed on Software
- 1 Utility Patents Granted

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UAF University–led Startup Companies

- Be Cool
- BhaisaPi Tech
- Cereon
- Coupi
- Essential Blends
- Fairbanks Fodar
- Oxergy
- V-ADAPT

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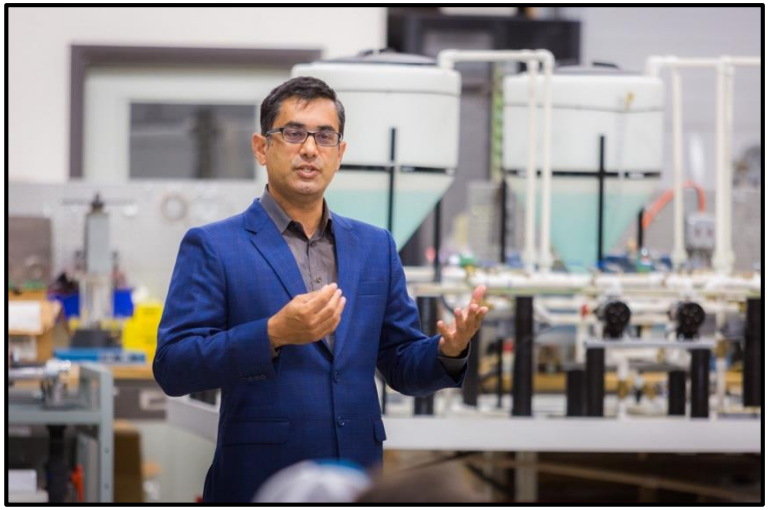
Talented Innovators

2016 Inductees
Alaska Statewide Committee for Research
Innovators Hall of Fame



UAF Innovator Dr. Rajive Ganguli

UAF Innovator Mr. Jeff Rothman

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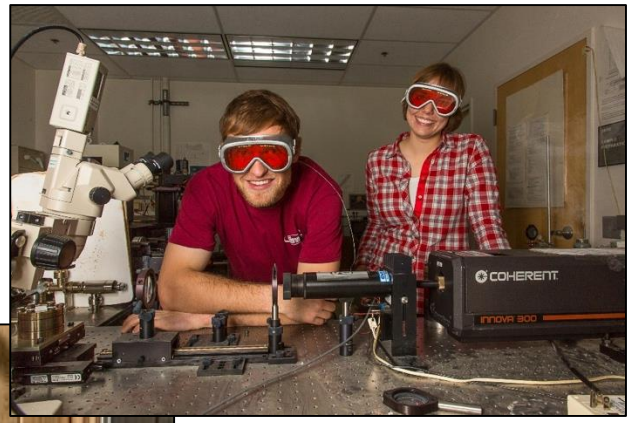
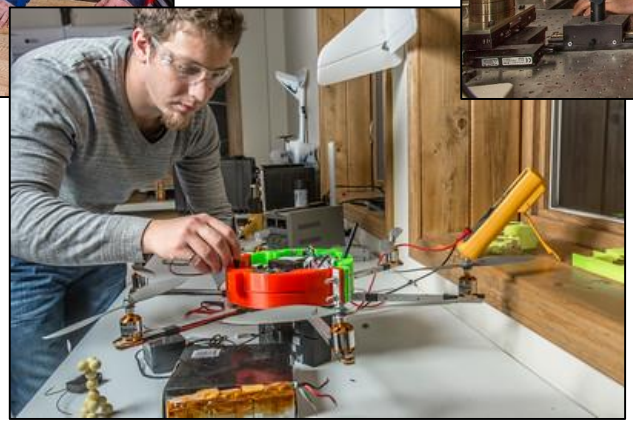
Investing in Our Future

- Bringing Business and Engineering students together on specific projects
- Supporting student innovators
- Supporting technologies that are being developed in new university laboratories and centers (i.e., ACEP, ACUASI, ELIF, Murie Building)





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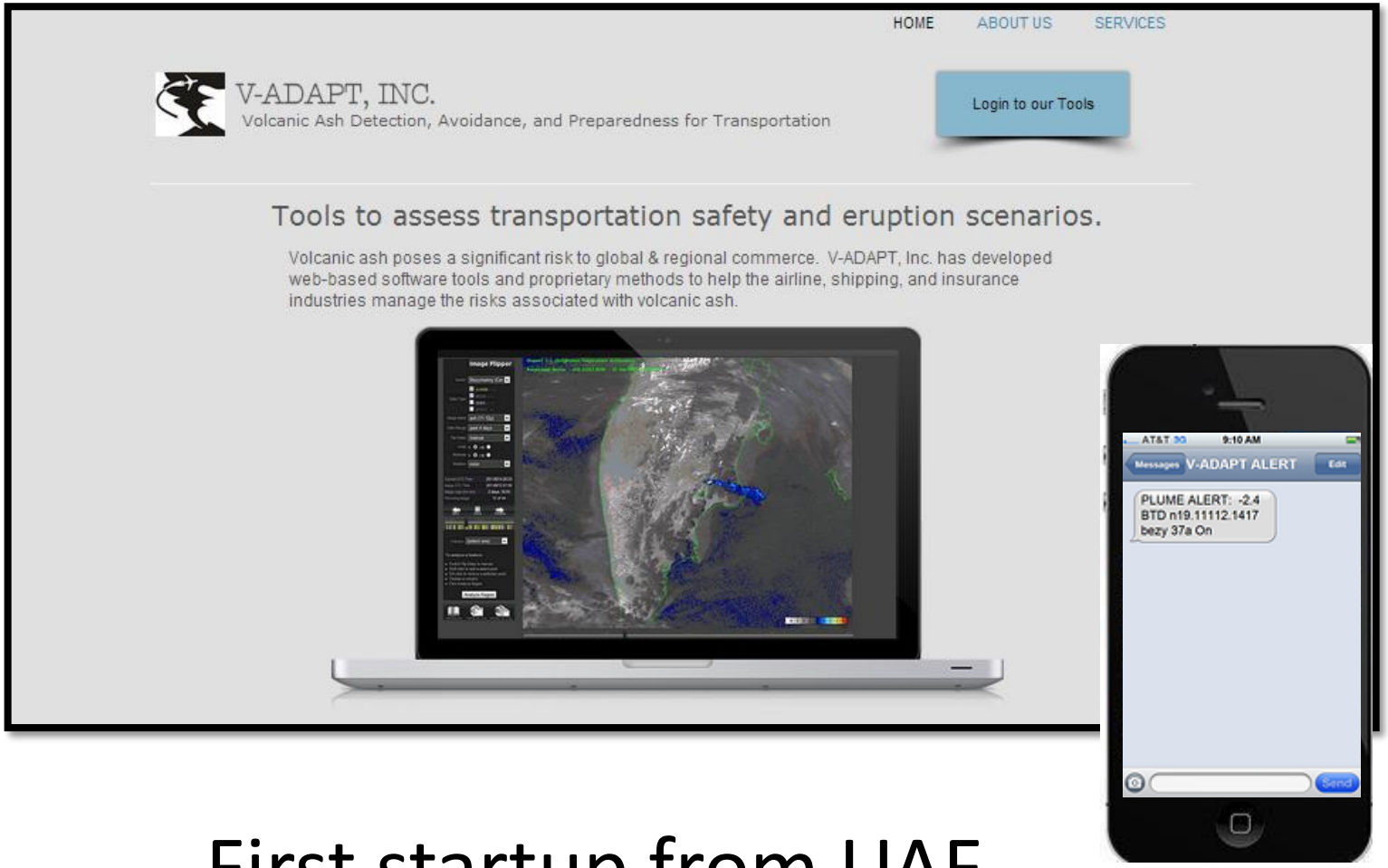

First startup from UAF

www.vadapt.net

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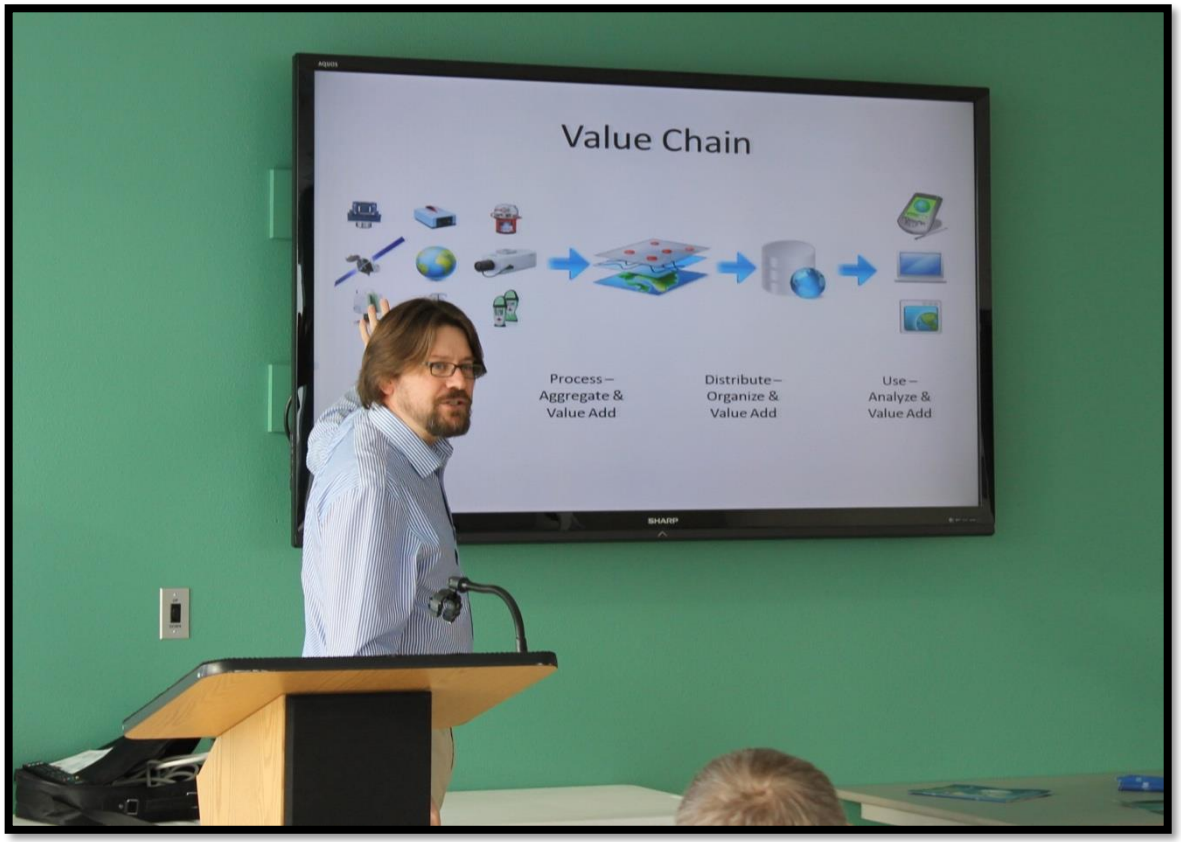

Several companies created based on UAF intellectual property are launching startups to build new technology under SBIR and STTR grants right here in Alaska.

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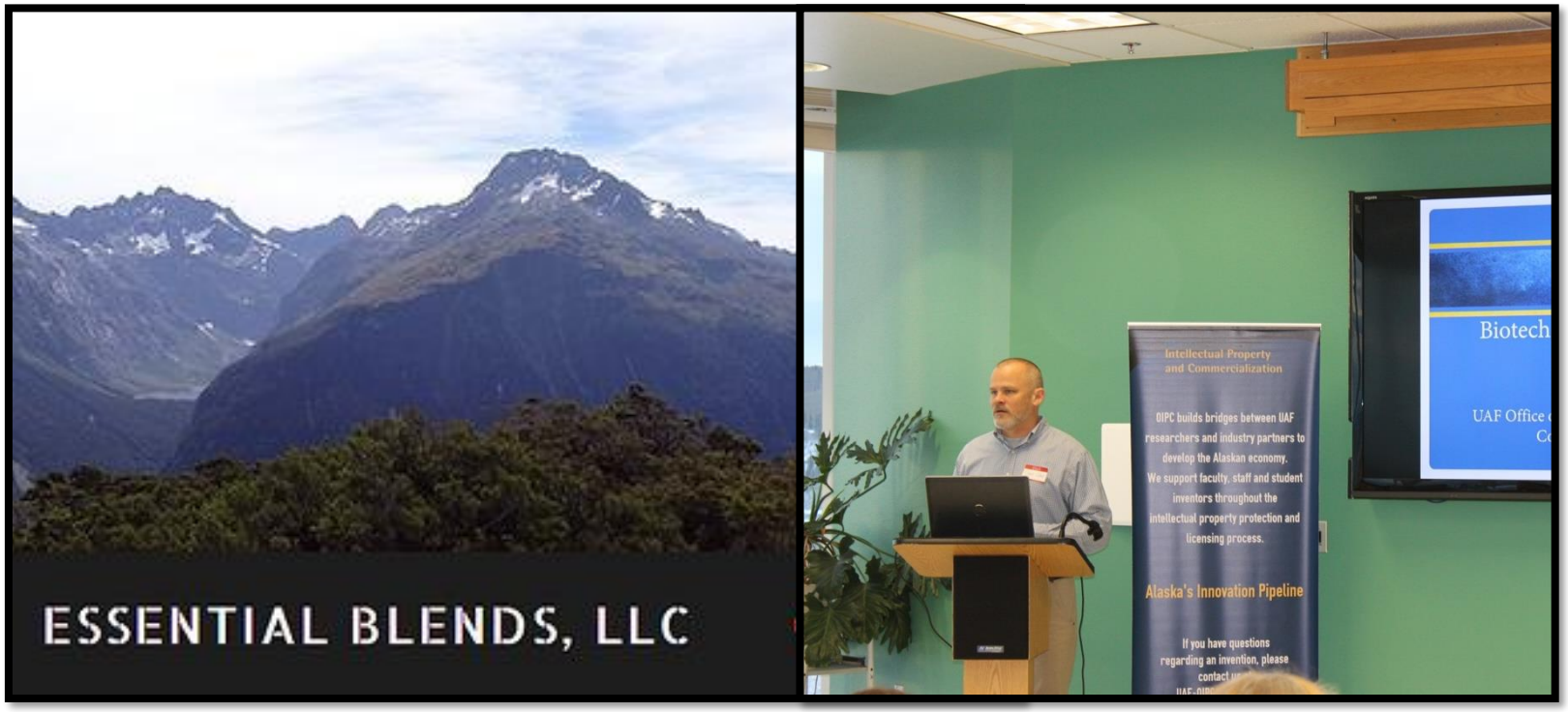

Faculty have moved to Fairbanks due to the unique start up opportunities provided by UAF OIPC, the Nanook Innovation Corporation and Nanook Tech Ventures.

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UAA Commercialization Engines

- Office of Research and Commercialization (ORGS)
- Commercialization Infrastructure
- Patent Portfolio
- Startup Companies

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UAA ORGS

- Faculty, staff and students submit invention disclosures to ORGS
  - If selected, the invention moves to the patent process.
- Decision is made to license the patent, or form a startup company.
- Commercializes new technology utilizing Seawolf Infrastructure.
- Provides incentives for innovation through:
  - Innovate Awards
    - 6:1 return on research investment through externally funded grants.
    - Award success rate of 49% - twice above the national average.
    - Its research formed the foundation for the first four UAA startups.
  - Patent Wall of Fame

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UAA Patent Portfolio and Startups

- Increase in Patent Application Filings
- Over 75% of Provisional Filings have evolved into Non-Provisional Patent Filings
- 8 Patents Issued since FY 11
- First 4 Startups

ZENSOR™

CFT™ CFT SOLUTIONS

Cogniceutic Solutions, LLC.

Best University Startups™ 2016

RHIZOFORM LLC

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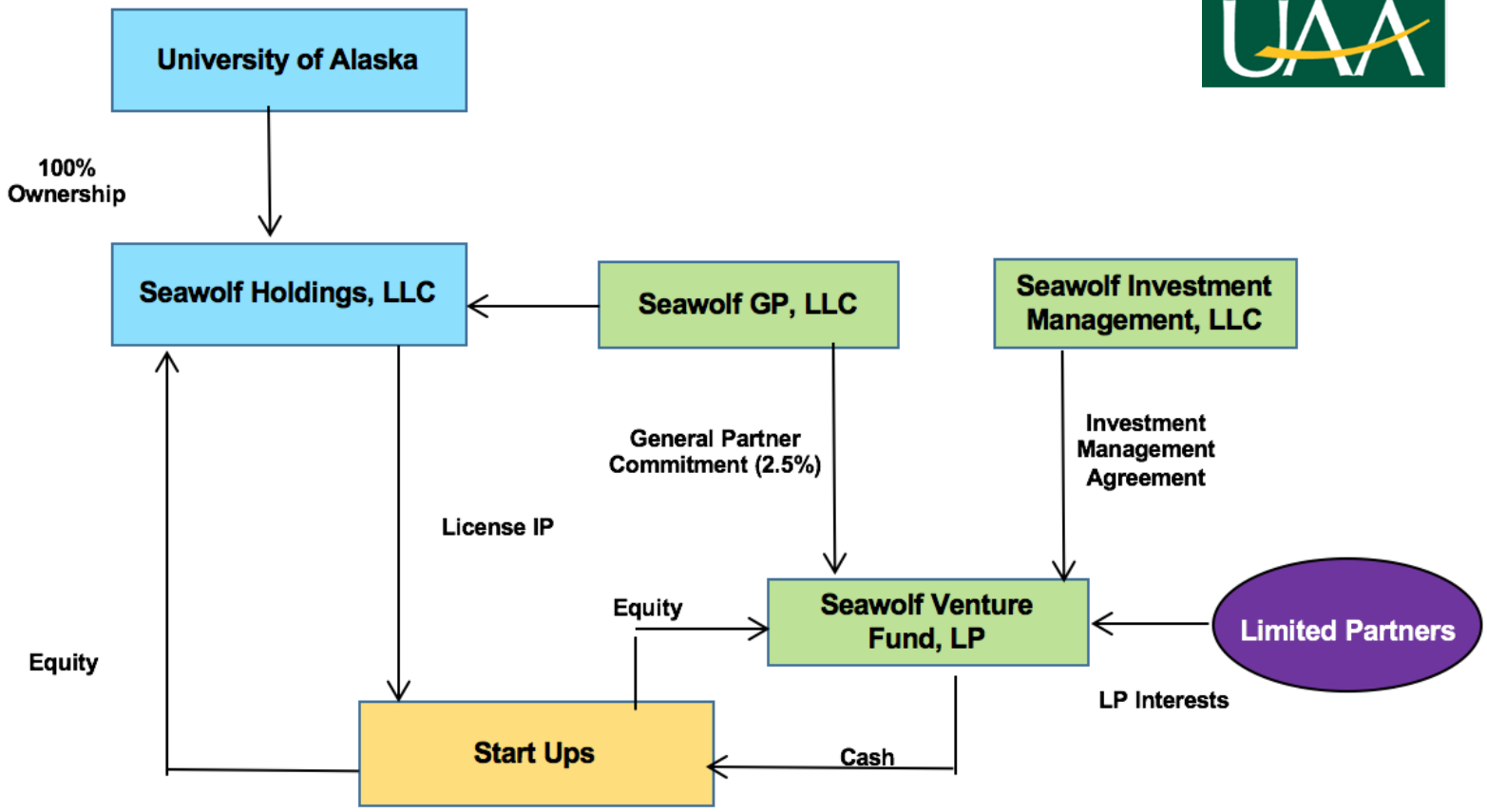
Commercialization Infrastructure



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Commercialization Infrastructure

- Seawolf Holdings LLC
  - Provides a corporate interface between UAA and its enterprise companies
  - Licenses UAA's Intellectual property to the start ups
  - Holds equity stakes in start-ups, on behalf of UAA, in return for UAA providing an exclusive license to the startups for use of IP
  - Oversees companies and affiliate relationships
  - Managed by an independent Board of Directors of industry leaders, entrepreneurs

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RHIZOFORM LLC

Named one of the top 36
“Best University Startups” Nationwide by the National Council of Entrepreneurial Tech Transfer

PRODUCT

Biomaterial for insulation and packaging.
No plastic pollution, no waste streams - biodegradable at the end of the life cycle.
Potential replacement for plastic insulation, like styrofoam.

DEMO DAY AT CONGRESS

As part of the Award, Rhizoform participated in Demo Day at Congress, on September 20, 2016.

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CFT Solutions

- Innovative snow removal and deicing using carbon fiber tapes (CFT)
  - CFT keeps a surface free of snow and ice – eliminates plowing, and shoveling
  - Environmentally friendly, cost effective - operates only when needed
  - **Patent pending** #14/024,152 – Yang

Cogniceutic Solutions, LLC

- Nutritional therapy to improve memory loss, treat neuro-degenerative diseases associated with aging
- Inspired by the Alaska bog blueberry
  - Compound responsible for improving memory isolated by UAA Professor McGill
- Testing underway to determine dosages
- Human testing the next step
- Submitting SBIR to NIH
- Patent pending #14/192,681 - McGill

UAA

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Zensor

- Improved wireless sensors for remote monitoring, system management, climate change, surveillance and security
  - Low cost, ultra-long lifespan sensors do not require batteries
  - Collect, transmit and store data
  - Can form ad-hoc networks
- Featured in Alaska Business Monthly 2013
- Patent Issued –February 9, 2016
  - # US9,257,036 B2 – Lund

UAA

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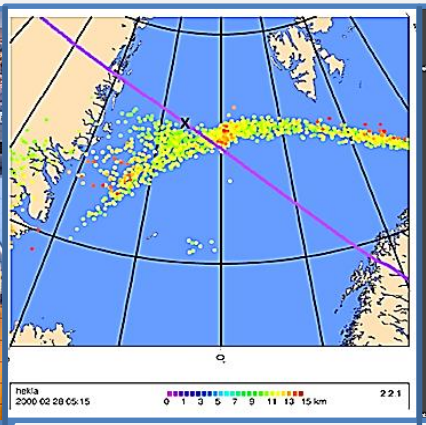
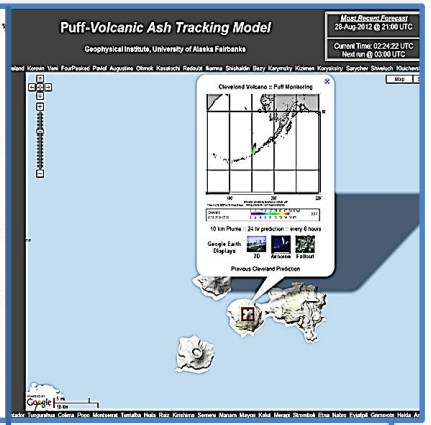
University Commercialization

Solving real problems

Protecting intellectual property



Licensing intellectual property



Building Startups

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THANK YOU

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