



Research for Alaska

Daniel M. White, PhD
Interim Vice Chancellor for Research
University of Alaska Fairbanks

Shaping Alaska's Future

Shaping Alaska's Future has research as one of the 5 themes. Following are research effects statements that guide our planning.

- UA is the first choice of state and federal entities and private industries in Alaska to meet their research and development needs.
- UA is a major center of culture and the arts in Alaska and is a center of excellence for Alaska Native and indigenous research and scholarship.

Shaping Alaska's Future

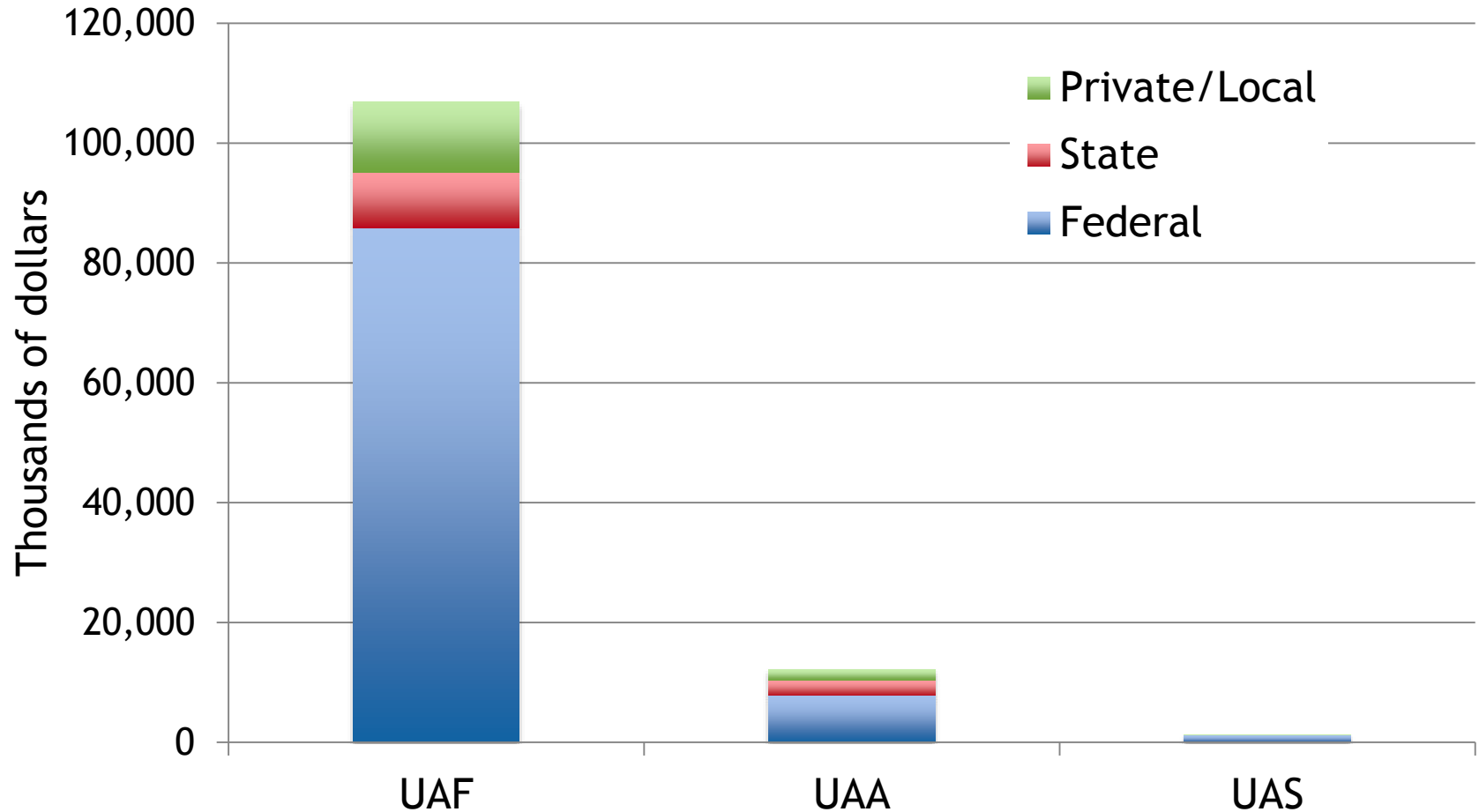
- UA is a recognized world leader and international collaborator in arctic research.
- Alaskans and their communities use research-based information, enriched by traditional knowledge, to successfully adapt to change.
- UA recruits and retains top research faculty and students and maintains modern, world-class research facilities, equipment and infrastructure.

State Committee on Research

The State Committee on Research (SCoR) is co-chaired by the Lt. Governor and the University Vice President for Academic Affairs and Research. The SCoR works with the State and the University to create a research plan that addresses State needs.

Research as an industry

FY14 UA direct research expenditures

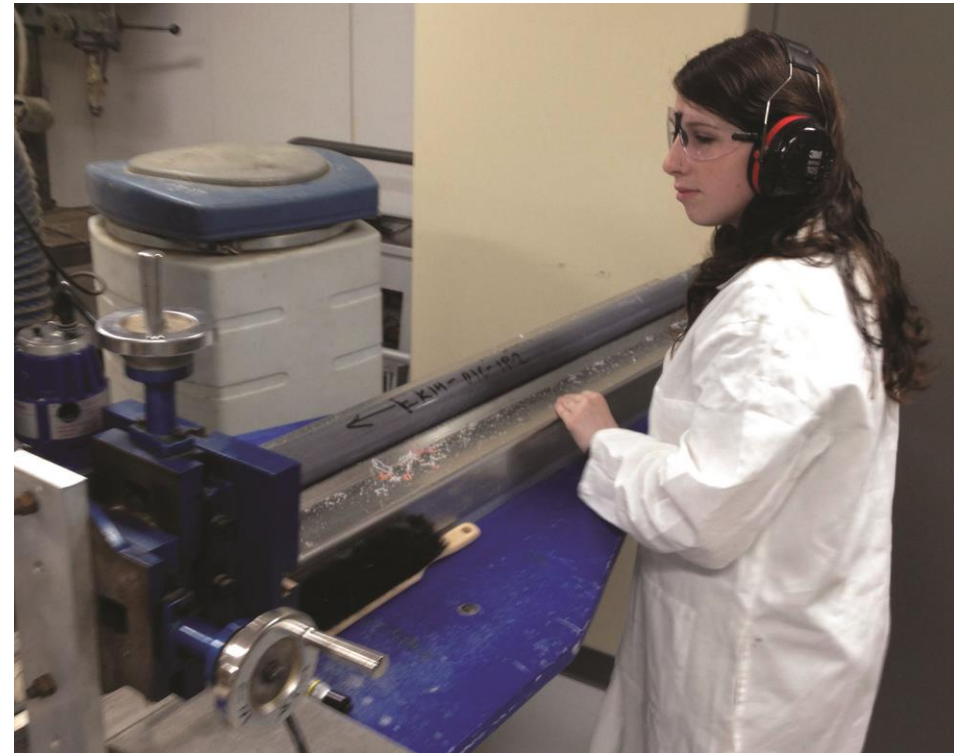


University of Alaska Southeast

- \$20.9 M grant portfolio (13 Federal agencies!)
- Meeting the Shaping Alaska's Future goals with its research
- Regional focus
- Statewide collaborator on many of the large system grants
- Partner with Juneau Economic Development Corporation - research clusters initiative
- Joint appointments with UAF and collaborate on support to MS/PhD students.

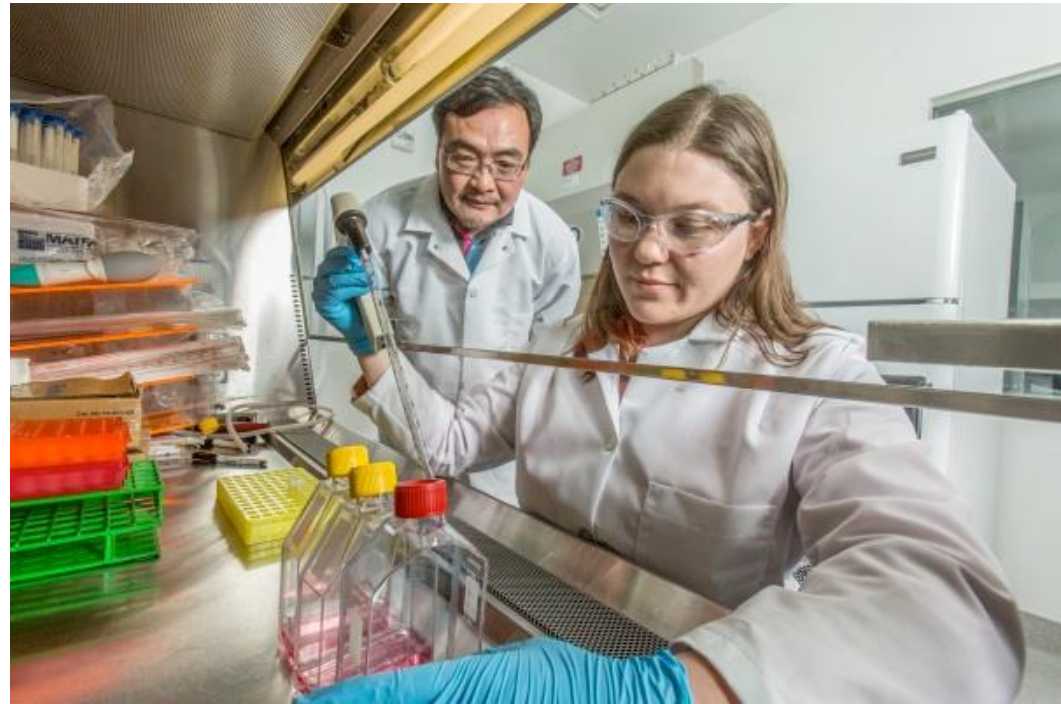
Building research capacity

- EPSCoR, \$20 million over five years
- UAF leads the three universities
- Stimulate sustainable R&D capacity and competitiveness



Building research capacity

- INBRE, \$18 million from the National Institutes of Health
- Statewide biomedical research and student training
- Interface between health, disease and the environment in people and animals



Student-focused opportunities

- BUILD grant, \$24 million from the National Institutes of Health
- Engage rural and minority students in biomedical and health careers
- UAF, nine rural campuses and UAS



Mining workforce grant

- \$8.1 million U.S. Department of Labor grant
- Match skilled workforce with high paying jobs
- UAF, UAS, UAA industry and the State of Alaska



Alaska Native health research

- Collaborative research with Alaska Native communities
- Received \$50 million in support since 2001
- Three, five-year NIH grants for Biomedical Research Excellence



Hazards mitigation





Ocean acidification

- Impacts to shellfish farming and potential impacts to fisheries
- Alaska's fishing communities most vulnerable



Leveraging State Investment

- In FY14, approximately \$25M in state \$ was used to support research; by leveraging this investment, UAF faculty used \$110.4 M in grants and contracts for research. This reflects an average of \$4.7 of external funding for every \$1 of state general fund investment.

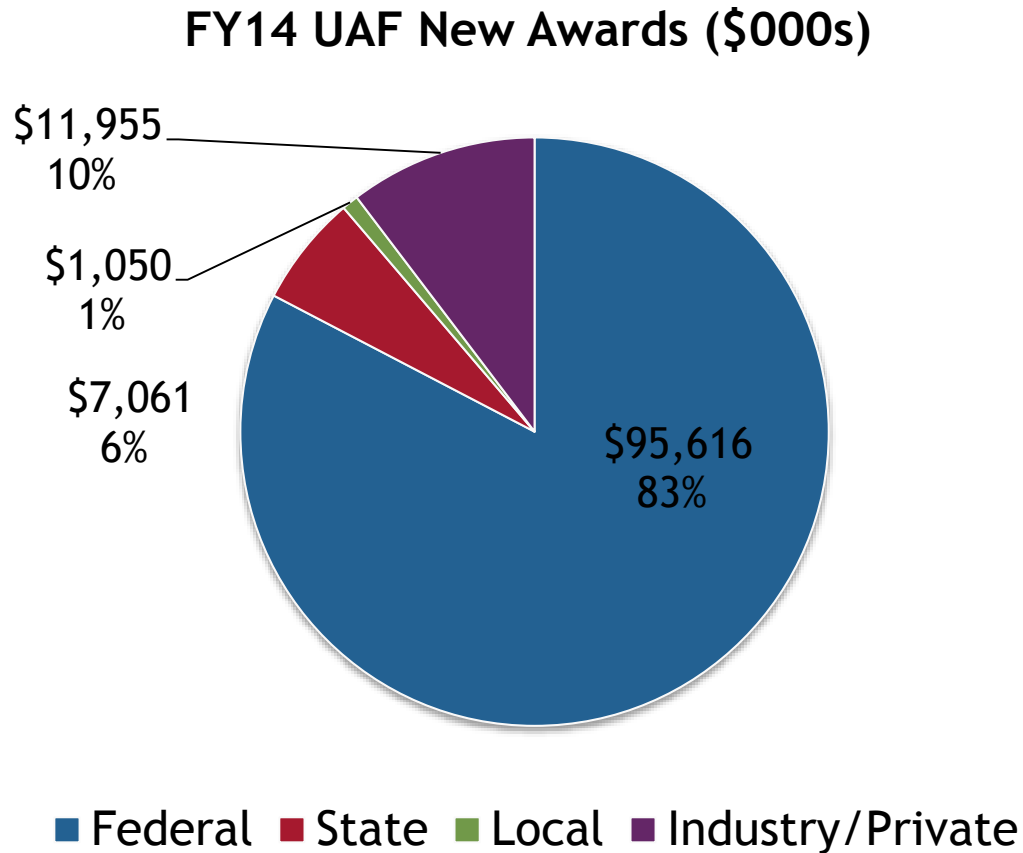


Sources of Research Funding

- In FY14, UAF received 355 new awarded proposals, with a total value of \$115.6 million. The majority of the \$ is from (83%) federal agencies; smaller amounts come from industry or private sources (10%), the State of Alaska (6%), and local governments (1%).

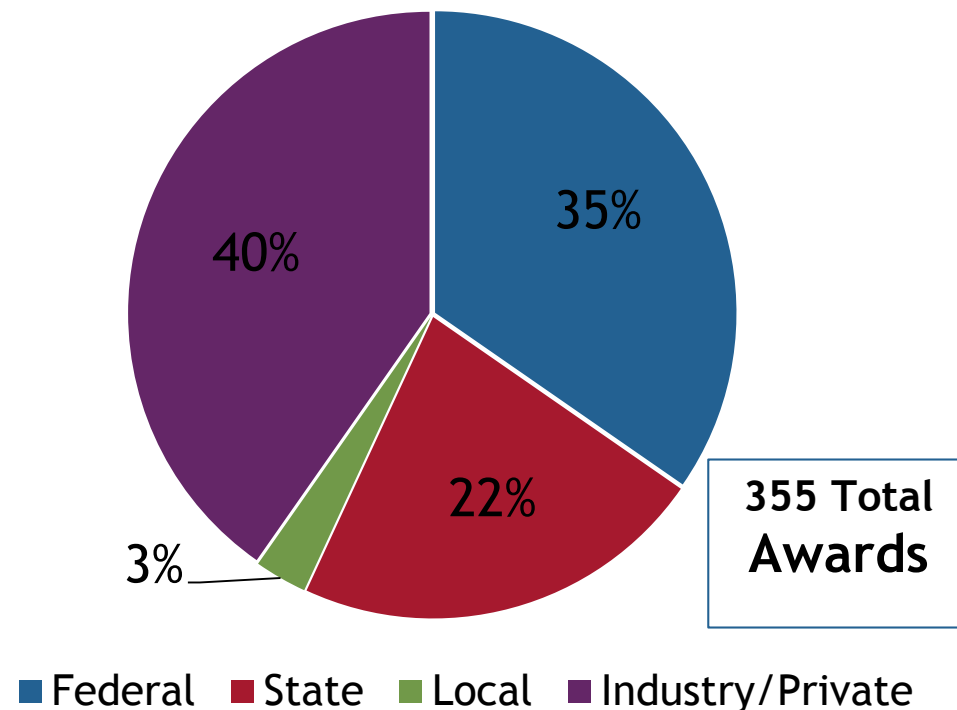


Sources of Research Funding



Sources of Research Funding

FY14 New Awards by Agency Type



Research for Alaska

- In FY14, 82.4 percent of all grant and contract dollars for research were spent on projects related to Alaska, with UAF contributing 89.5 percent of all Alaska related restricted research expenditures for the UA System.



Research for Alaska

Direct solutions to and assistance with problems



Research for Alaska

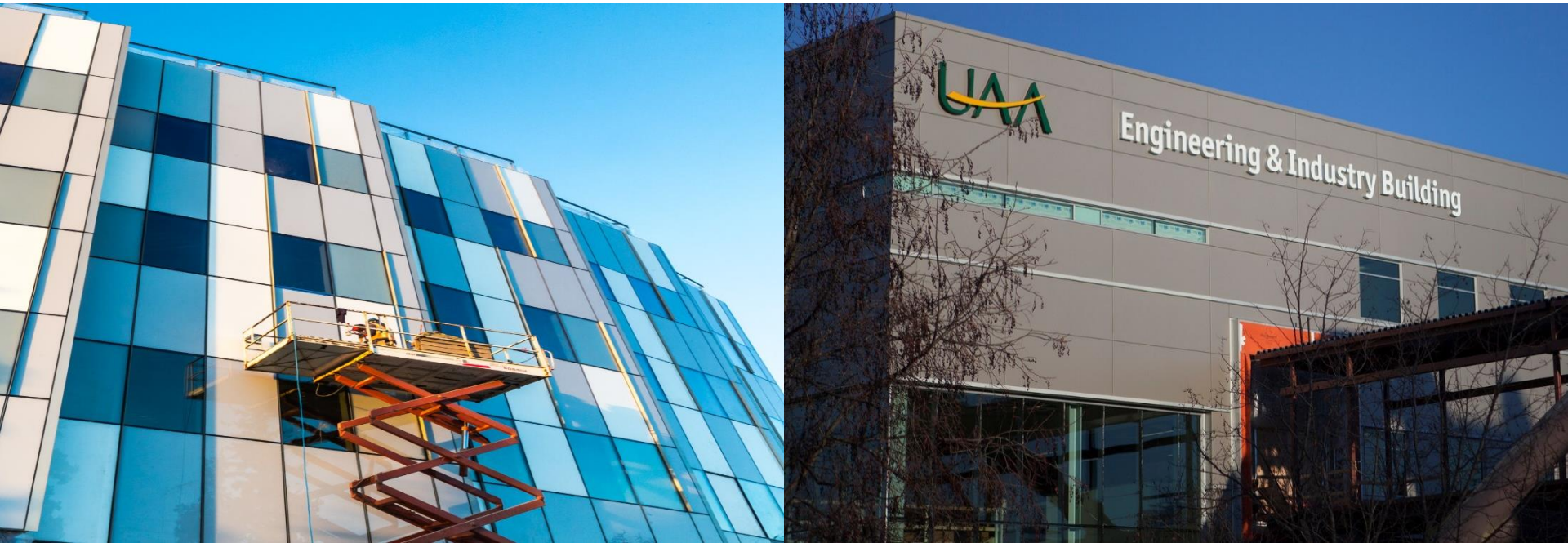
Input to the state for policy decisions of impact to Alaska



Staying Competitive for Alaska



Staying Competitive for Alaska

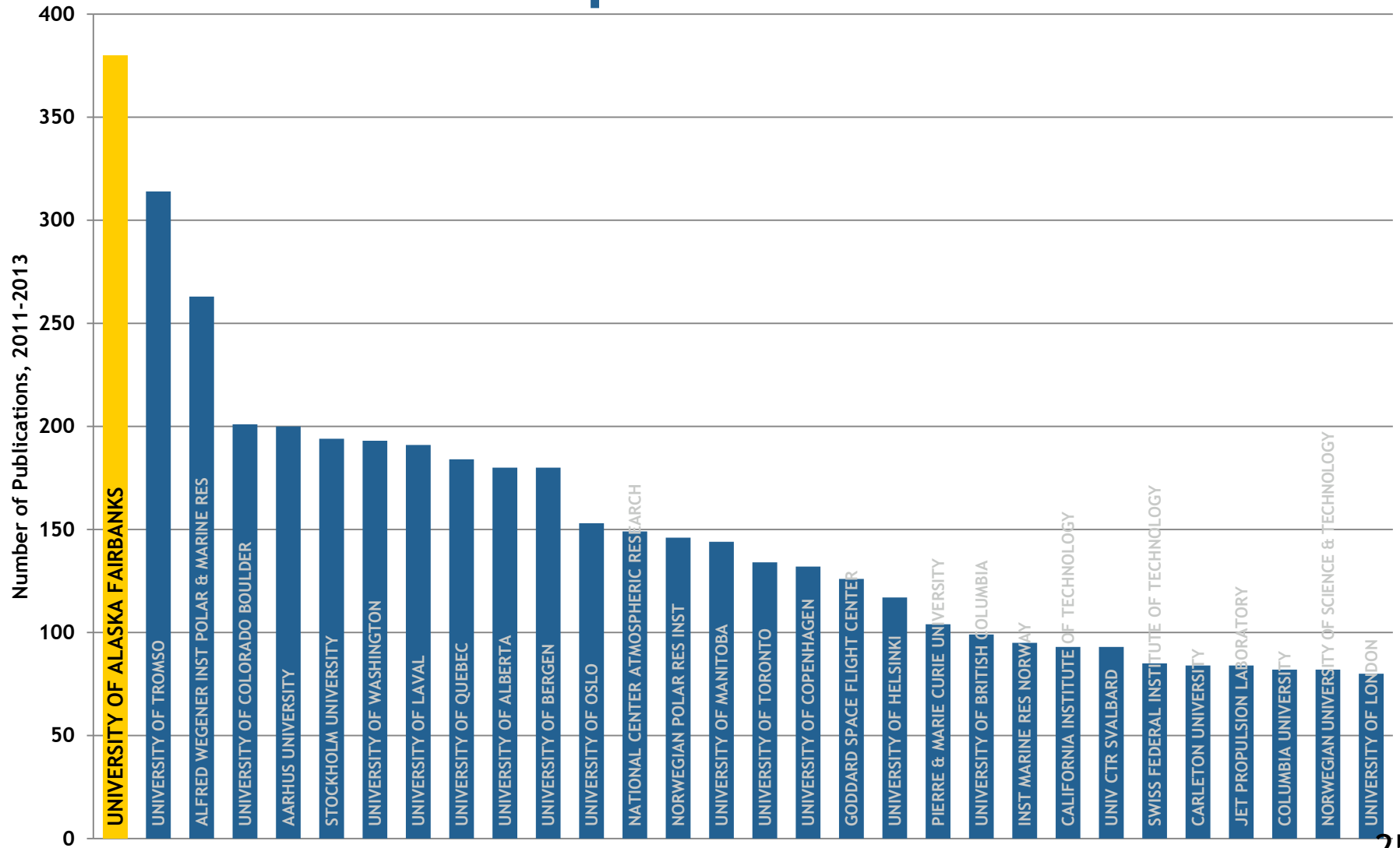


Staying Competitive for Alaska

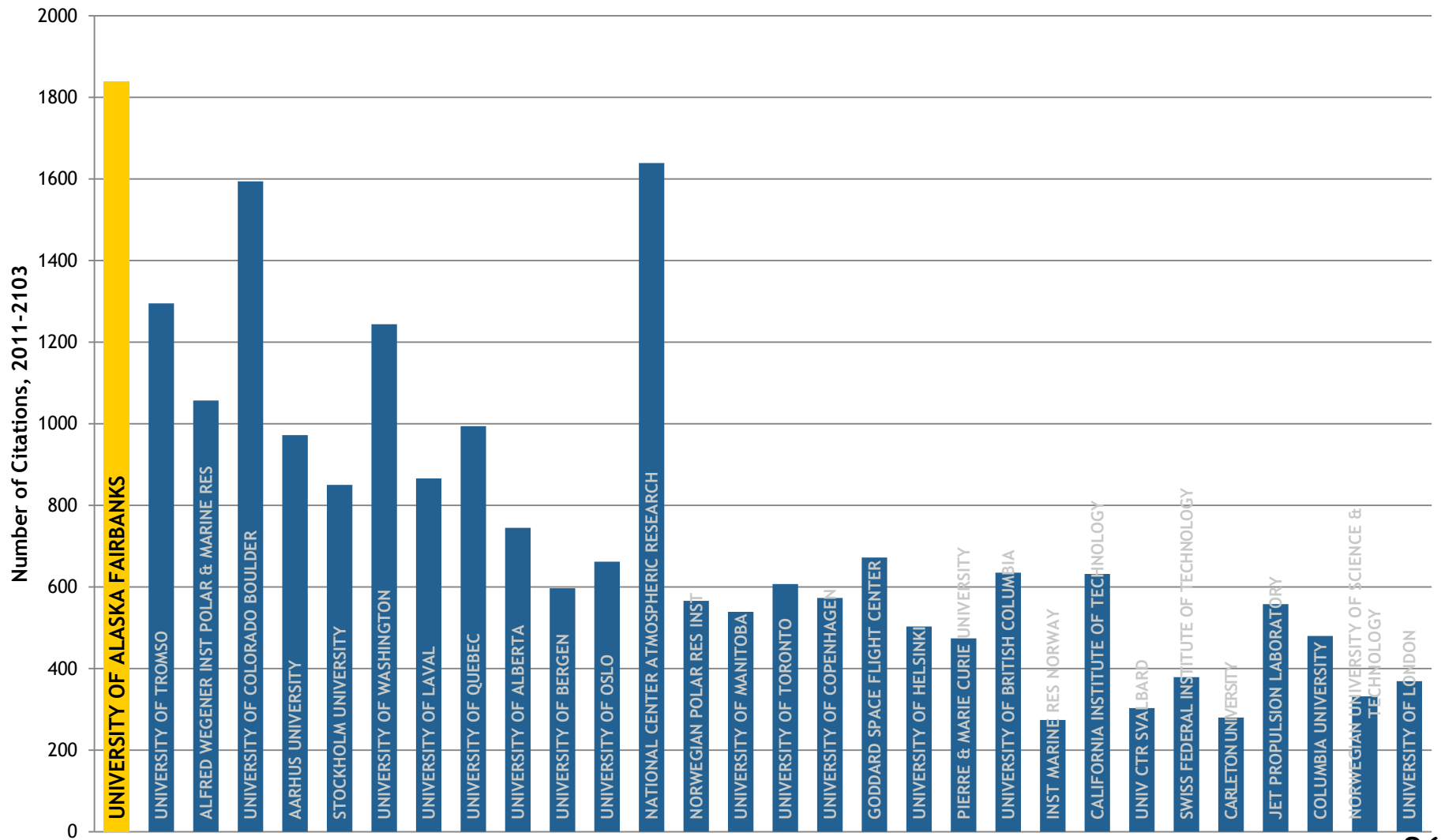


Tripp Collier, one of the project managers for the student ice arch

Arctic publications



Citations of Arctic publications



UA Eligibility and Obligations

Grants and contracts awarded to the universities normally require the university or the UA System to provide facilities, administrative support, and qualified faculty and staff for the duration of the grant. Many of the costs for these services are covered by the grants and contracts.

UA Eligibility and Obligations

- In addition to fiscal management, UA and its universities are also required to follow a large number of federal regulations pertaining to research. These are too numerous to describe in detail here, but include:
 - *Regulations governing use and care of vertebrate animals in research.*
 - *Regulations governing human research.*
 - *Regulations governing biosafety.*
 - *Regulations on environmental health and safety.*
 - *Regulations concerning research misconduct.*



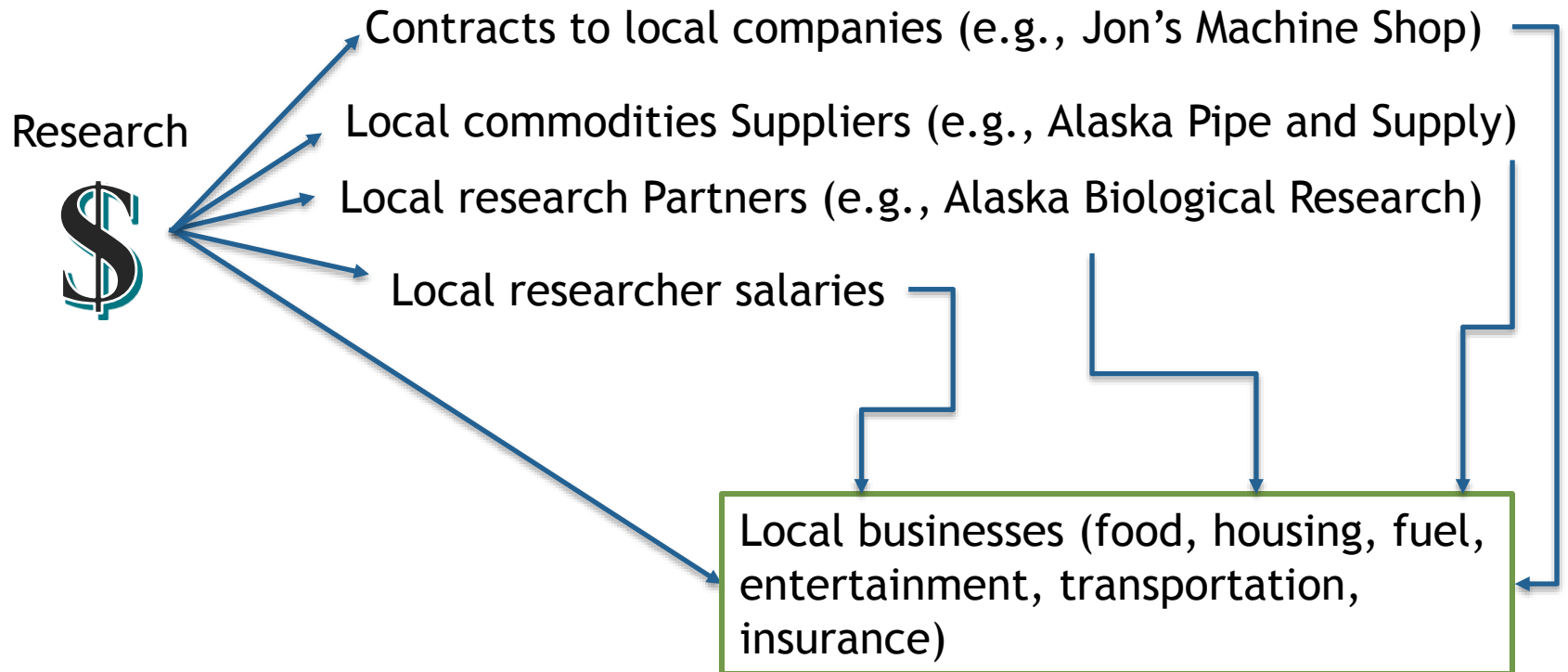
Growing Alaska's economy

Economic impact

- The Economic Impact of the University of Alaska 2012 McDowell Group, Inc.

Between FY02 and FY11, competitive grants awarded to the University have accounted for approximately \$1.3 billion in revenue that might not otherwise have come to the state. Thus, a large proportion of the University-generated research revenue represents new dollars into the state.

Research Numbers



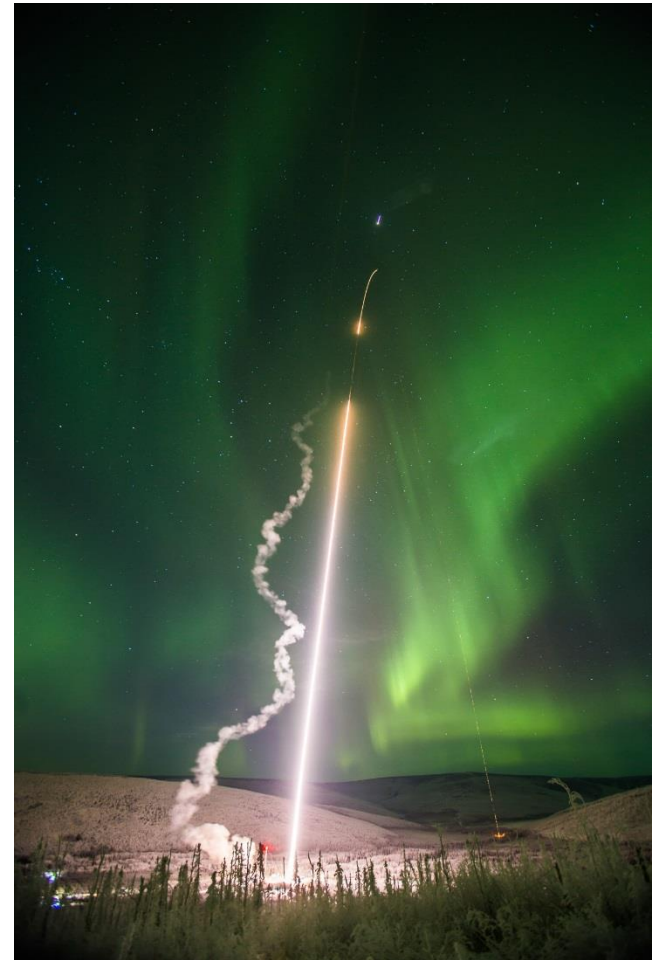
Alaska Center for Energy and Power

- Hands-on center looking at innovative energy solutions
- Training new generation of engineers
- Leveraged \$29 million, nine times the state's investment



Poker Flat Research Range

- Only high latitude rocket range in the U.S.
- Situated beneath the auroral oval
- Home to a growing fleet of unmanned aircraft



Unmanned aircraft systems



Partners



Arctic oil spill research

- Technologies to help with oil development and shipping
- Provide the science and technology to address issues



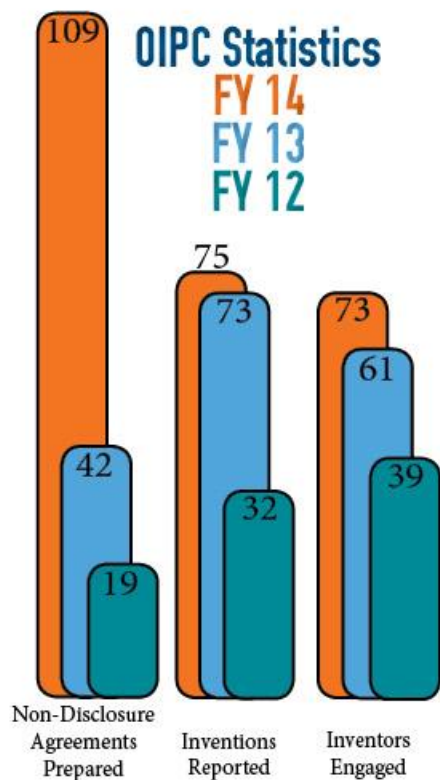
Oil and gas development

- Applied research in hydrocarbon optimization
- Recovery of viscous oil, shale oil and gas
- Industry needs: permitting, ice formation in TAPS, etc.





Office of Intellectual
Property and Commercialization
University of Alaska Fairbanks



• Licensed Technologies

FY 14 - 40
FY 13 - 0
FY 12 - 1

• Patent Applications Filed

FY 14 - 7
FY 13 - 5
FY 12 - 3

• Patents Granted

FY 14 - 2
FY 13 - 0
FY 12 - 0

• Start-up Company

FY 14 - 1
FY 13 - 1
FY 12 - 0



Economic Development for Fish Processing

After years of development and no private sector licensee, the pinbone removal technology has been licensed to Freeman Bell Machine Shop in Juneau and several prototypes have been transferred to end users.



**V-ADAPT, INC.**

Volcanic Ash Detection, Avoidance, and Preparedness for Transportation

[Login to our Tools](#)

Tools to assess transportation safety and eruption scenarios.

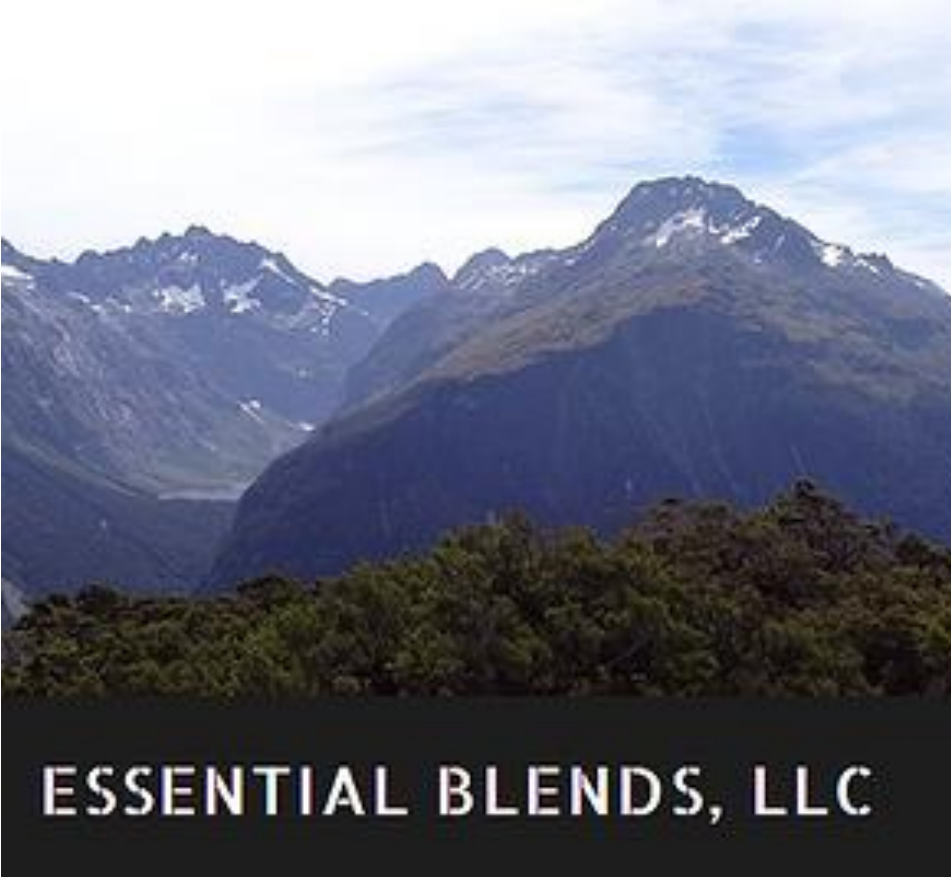
Volcanic ash poses a significant risk to global & regional commerce. V-ADAPT, Inc. has developed web-based software tools and proprietary methods to help the airline, shipping, and insurance industries manage the risks associated with volcanic ash.



First startup from UAF
www.vadapt.net



There are several companies in the innovation pipeline. Several are launching startups to build new technology under SBIR and STTR grants right here in Alaska.



Faculty have **moved to Fairbanks** due to the unique start up opportunities provided by OIPC/NIC/NTV.



THANK YOU