

Report 1

Meeting State of Alaska Arctic Needs: Graduate-level Research at the University of Alaska from 2010-2018

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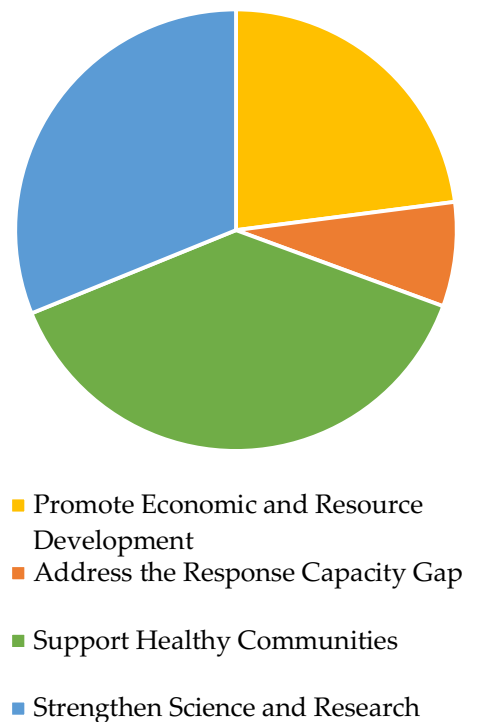
Key Findings

1. The University of Alaska Fairbanks is responsive to State of Alaska priorities.
2. The growth of development in the Arctic should be met with an increase in post-graduate research related to the response capacity gap.
3. Research at the University of Alaska Fairbanks prioritizes healthy communities in rural areas and statewide.
4. The least researched region with Arctic-relevance is the Southcentral region.

Overview

This report is the first in a series of short reports examining the significance of Alaska as the Arctic State of the United States and the role of the University of Alaska system (UA). In 2011 during the administration of Governor Parnell the Alaska Northern Waters Task Force was created by the Legislature to examine issues of the opening of Alaska's Arctic waters to greater interest and traffic. Based on the recommendation of this task force, the Alaska Arctic Policy Commission (AAPC) was created by HCR 23 (1&2) in 2012 to "develop an Arctic policy for the state and produce a strategy for the implementation of an Arctic policy." This bipartisan effort comprised 26 Commissioners – 10 legislators and 16 experts. It was chaired by former legislators Senator McGuire and Representative Bob Herron. Beginning in early 2013 and ending its work in early 2015, with a three-month public comment and survey period in Spring 2014, the commission created a Preliminary Report, a Final Report, and an Implementation Plan. These documents as well as related information are accessible at <http://www.akarctic.com/>. On the advice of the AAPC, the state legislature passed and governor approved Alaska Statutes Title 44. State Government § 44.99.105. Declaration of state Arctic policy. This new legal

Figure 1 UA Research (2010-2018) by AAPC Lines of Effort





declaration sustained the work of the AAPC by adopting as “priority lines of effort for the Arctic policy of the state” those proposed in the implementation plan. Below is the section of the policy addressing the state priorities.

(b) It is important to the state, as it relates to the Arctic, to support the strategic recommendations of the implementation plan developed by the Alaska Arctic Policy Commission and to encourage consideration of recommendations developed by the Alaska Arctic Policy Commission. Priority lines of effort for the Arctic policy of the state include

- (1) promoting economic and resource development;
- (2) addressing the infrastructure and response capacity gap in order to support the Arctic region;
- (3) supporting healthy communities; and
- (4) supporting existing and fostering new science and research that aligns with state priorities for the Arctic.

(c) In this section, “Arctic” means the area of the state north of the Arctic Circle, north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers, all contiguous seas, including the Arctic Ocean, and the Beaufort, Bering, and Chukchi Seas, and the Aleutian Chain, except that, for the purpose of international Arctic policy, “Arctic” means the entirety of the state.

Given the close relationship between the University of Alaska system (UA) and the state government, this inaugural report of the Center for Arctic Policy Studies, as reformed in 2017, evaluates the alignment between the University of Alaska Fairbanks and State of Alaska Arctic priorities. How well has the UAF entrained its graduate student population, future experts, along the lines viewed as significant by the State of Alaska, and enshrined in law? What is the nature of the research conducted that meets the priority lines of effort?

Methodology

At the University of Alaska, research is completed by students, research centers (e.g., International Arctic Research center) and institutes (e.g., Institute of Social and Economic Research), academic departments and faculty, State and Federal laboratories (e.g., Naval Arctic Research Laboratory) and more. As culminating events in research for students, graduate degrees at the Masters and PhD levels demonstrate expertise in specific fields of study, the focal areas of research supported by the University of Alaska. This research orientation includes UA faculty, programs, and administration, and, in many cases, the importance of such research to national, state, and other funders. In brief, the graduate level work produced by UAF provides empirical evidence of the university system perceiving and investigating what is important to the State in Arctic Policy. We selected the date range of 2010-2018 to capture a period of time after the International Polar Year (2007-2009), which brought significant attention to the Arctic and research in diverse fields (e.g., social sciences, biological and geophysical sciences, interdisciplinary studies) related to the North. We used Scholar Works (<https://scholarworks.alaska.edu/>) which only hosts graduate work from UAF, it does not include graduate work from UAA or UAS. While those are not PhD granting institutions, they do have a variety of Masters programs that are also likely to contain theses pertinent to the

North. All theses and dissertations published by UA since 2010 were accessed for relevance to one or more of the Alaska Arctic Policy Commission’s (AAPC) four Lines of Effort; the research did not need to take place in the Arctic alone. If the abstract did not provide sufficient information or was unclear, the full document was accessed. Research that was identified as similar or relevant to a Line of Effort was compiled in an excel document. Research that addressed more than one Line of Effort was assigned a primary and secondary Line of Effort. Then the regional (Interior, North Slope, Northwest, Southcentral, Southeast, Southwest) or general (Marine, Rural, Statewide) geographic scope of the research was identified and noted in the excel document. Only the primary Line of Effort was used to evaluate the regional and topical distribution of the University of Alaska’s research. A final caveat, the resulting number of theses and dissertations is smaller than the actual total number because highly narrow search terms were used tied to the lines of effort to avoid “over-counting.” Upon our review of the initial draft we became aware of dozens of works that are highly pertinent to the Arctic and the lines of effort but simply were excluded based on search terms. We will expand those terms and revise our report to include them.

Results

In the eight years analyzed, a minimum of 183 theses and dissertations tied to at least one of the four Lines of Effort from the Declaration of state Arctic policy have been published by the University of Alaska Fairbanks.

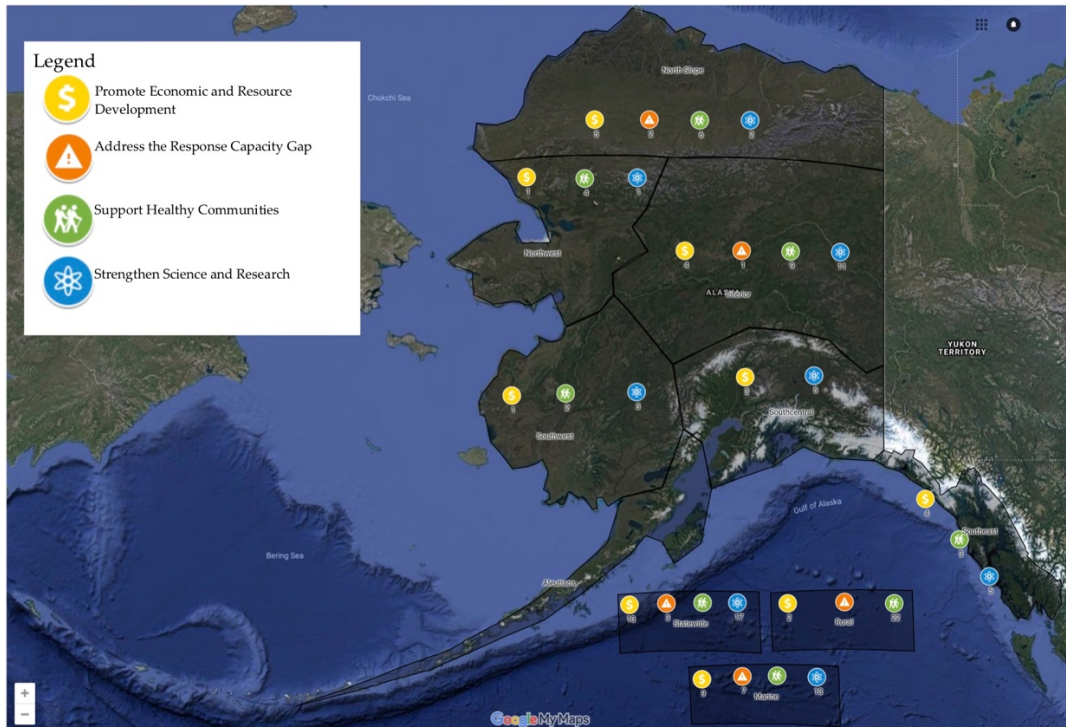
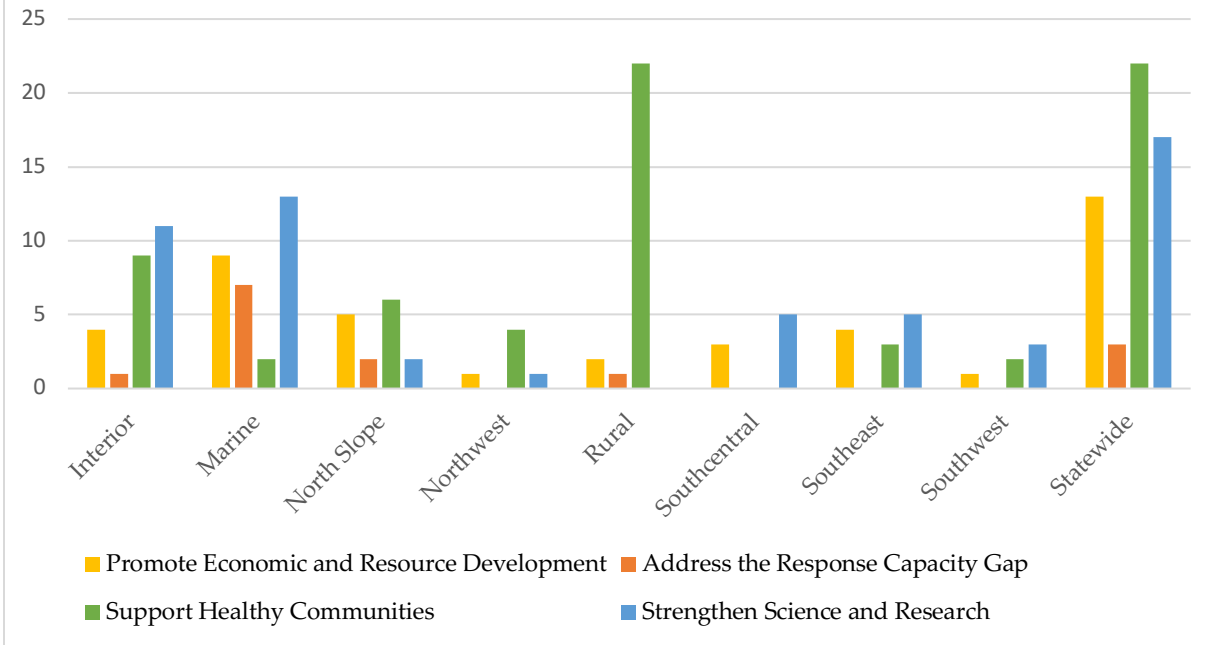
By Lines of Effort, the numbers of MA and PhDs (see Figure 1):

1. Promoting economic and resource development – 42 (23%),
2. Addressing the infrastructure and response capacity gap in order to support the Arctic region – 14 (8%),
3. Supporting healthy communities – 70 (38%),
4. Supporting existing and fostering new science and research that aligns with state priorities for the Arctic – 57 (31%).

By geographical focus (see Figure 2)

Interior - 25	Southcentral - 8	Rural - 25
North Slope -15	Southeast - 12	Marine - 31
Northwest - 6		Statewide - 55

Figure 2 Geographic Distribution of UA Research (2010-2018) by AAPC Lines of Effort



This map shows the geographic distribution of UAF Research (2010-2018) by the AAPC Lines of Effort. This map was created using Google My Maps.



Discussion

The International Polar Year, the build up to it and lessons learned, played an important role in focusing global attention on the Arctic at a time when scientific studies were establishing as fact what many people, especially further north and in remote areas, had noticed – the Arctic was changing rapidly. Between 2006-2010 significant funding and energy went into research, teaching, and outreach by the UA. At the national level, the National Science Foundation between 2007-2009 alone awarding funding to 93 Arctic and Antarctic proposals, though not all of them came directly to the UA. In sum, there was a pulse of funding and focus on the Arctic and developing arctic expertise at the graduate level in the early 2000s. The University of Alaska was responsive to research areas found to be significant by the AAPC even prior to its own report. This indicates the UA itself has a good sense of the programs and research lines that matter to the people and interests of the state and has invested in creating expertise in these areas. State of Alaska priorities in a post-IPY world and after the AAPC report continue to be recognized and investigated.

The advance of industrial infrastructure, financial capital, and extractive and non-extractive resource development in the Alaska region of the Arctic, marine and terrestrial, requires different levels of expertise and thus different sorts of training and degrees. This report is concerned with graduate degree expertise that develops from Masters and PhD research. However, in order for there to be “Alaska grown” expertise in these fields there should be a stronger push for scholarship leading to research, broadly, in Arctic security such as disaster and emergency prevention and response, search and rescue, maritime transportation, resource-related infrastructure, and coordination of resources across jurisdictional boundaries.

UAF has a very strong focus on healthy communities in rural areas and statewide. We are making strides in meeting the needs of our Indigenous residents and rural stakeholders through numerous research projects and graduates. This is likely to be strengthened by the development of the One Health program.

The North Slope is a focus for our research. Southcentral Alaska is the least researched area of the state – and yet shows biggest growth in population. We could do a better job of researching how changes in the Arctic affect other areas of the state. Lastly, a better system designed by UA to track the total production of graduate level research vital to the state and applicable to the Arctic Policy of the State of Alaska is advised. This could be relatively inexpensive and would be able to distribute research results more effectively to state and federal agencies and decision-makers.