University of Alaska Fairbanks

Report on structural options for Institute of Arctic Biology and Department of Biology and Wildlife

Task Force on IAB and DBW Structural Options 12-22-2022

Table of Contents

1. Executive summary	2
2. Introduction	4
3. Aims of the report	5
4. Background	6
4.1 IAB	6
4.2 Department of Biology and Wildlife	9
5. Faculty perspectives	13
5.1 Survey results	13
6. Perspectives from other institutions	16
6.1 Research institutes	16
6.2 Schools and colleges	17
6.3 Graduate Student Experience	18
7. Perspectives from other UAF units	19
7.1 Institute of Northern Engineering, housed within the College of Engineering and Mines, I	
	AI
	19
7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF	19 20
7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF7.3 College of Fisheries and Ocean Sciences (CFOS)	19 20 21
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 	19 20 21 23
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 	19 20 21 23 24
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 	19 20 21 23 24 27
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 11. Acknowledgements 	19 20 21 23 24 27 28
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 11. Acknowledgements 12. References 	19 20 21 23 24 27 28 29
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 11. Acknowledgements 12. References Appendix A Charge to the Task Force 	19 20 21 23 24 27 28 29 31
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 11. Acknowledgements 12. References Appendix A Charge to the Task Force Appendix B Task Force membership 	19 20 21 23 24 27 28 29 31 31
 7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF 7.3 College of Fisheries and Ocean Sciences (CFOS) 8. Discussion of findings 9. Potential Options 10. Conclusion 11. Acknowledgements 12. References Appendix A Charge to the Task Force Appendix B Task Force membership Appendix C 	19 20 21 23 24 27 28 29 31 31 31 35

1. Executive summary

Charged by UAF Chancellor Dan White, a task force comprising 10 members from across campus identified challenges posed by the current structure of the Institute of Arctic Biology (IAB). IAB is currently organized as an independent research institute under the Vice-Chancellor for Research (VCR). The Department of Biology and Wildlife (DBW) is currently housed within the College of Natural Science and Mathematics (CNSM) under the Provost. Drawing on a survey of faculty and reviews of different approaches to organizing research and academics within UAF and at other institutions, as well as an assessment of the status quo of IAB and DBW, the task force identified two structural options for IAB and DBW to position the programs for growth.

Key findings include the following:

- Based on survey results (26 faculty), most reported satisfaction (62%), rather than dissatisfaction (17%) with their current joint appointment with IAB & CNSM. However, faculty were divided on whether the current organizational structure creates problems for them (42% agreed, 50% disagreed). The main issues identified were a lack of flexibility in workload adjustments and having to report to two supervisors. Faculty also reported that CNSM debt hindered hiring, with DBW viewed as subsidizing other departments.
- The size of DBW rivals some colleges and schools in terms of numbers of majors, student credit hour production, and numbers of faculty. It has generated growth in revenue that supports other departments in the college, but college deficits have prevented re-hiring of much needed faculty resources. Lack of shared overhead revenue (indirect cost recovery - ICR) limits collaborative efforts to support research infrastructure and support for students. Inflexible workloads make it difficult for administrators to manage personnel to best utilize existing resources. The size of DBW is not well served by the current model of a two-year rotating chair.
- IAB has compensated for a 43% decrease in General Fund over the last decade by a 55% increase in ICR. However, with the majority of faculty in 50/50 joint appointment with CNSM, IAB and DBW have not been able to hire faculty at the level needed for replacement of faculty, curtailing opportunities for growth.
- College and institute models implemented at other aspirational research university peers hold lessons for UAF. For instance, the University of Colorado Boulder has an institutebased research model; joint appointments structured individually through MOUs at the Institute of Arctic and Alpine Research are of potential interest. College/school structures and research organization at Arizona State University and other peer institutions is also relevant.
- Graduate students at other universities value cross-departmental connections for research and academic benefits. Students also appreciate having a singular administrative contact to process both research assistantship and teaching assistantship contracts.
- At UAF, the College of Fisheries and Ocean Science demonstrates how to successfully combine research and academics within a single unit. College of Engineering and Mines may hold lessons, both in terms of how Institute of Northern Engineering and its component centers are complementing academic programs within the college and how Alaska Center for Energy and Power emerged from the college and has successfully managed a period of rapid growth.

- Two key options for IAB and DBW viewed as equally viable emerged from task force deliberations:
 - Option A: Establishing a College of Life Sciences that integrates IAB, DBW, and other life sciences into a single academic unit. Research centers, major projects, and facilities currently part of IAB would retain their identity in such a college, with an associate dean who may also serve as IAB director providing research oversight.
 - Option B: Enhancing current structures such that IAB and DBW retain their status as a research institute under the VCR and a department within the college, respectively, but with additional efforts to strengthen the position of the DBW chair and negotiating mechanisms for overhead revenue sharing.
- Change management during the transition to a new structure under option A would require close attention to hiring a dean with qualifications and experience in attracting and managing large research programs and promoting research efforts and success of faculty, thereby avoiding putting research at risk in a restructure.

2. Introduction

In March of 2022, UAF Chancellor Dan White charged an "organizational task force to review the organization of IAB [Institute of Arctic Biology] and the Biology and Wildlife Department [B&W]" and specifically to address the following questions (see Appendix A for memo in its entirety):

1. What challenges are posed by the current structure of IAB and CNSM [College of Natural Science and Mathematics] (specifically Biology and Wildlife).

2. What are structures that currently exist elsewhere (particularly in Tier 1 research universities) we might learn from?

3. What are the two structural options for IAB and B&W to position the programs for growth and what may be gained or lost under the two models?

As outlined in the Chancellor's memo, such an assessment was motivated by past successes of IAB in developing a vibrant research program. In addition, the Department of Biology and Wildlife (DBW) has maintained the largest undergraduate program (based on enrollment and degrees awarded) and the second-largest PhD program within CNSM (see section 4b for details). Thus, the task force was charged to assess whether or not the structures currently in place are sufficient to take advantage of any and all growth opportunities. With the vast majority at IAB holding joint appointments with CNSM, questions about the efficacy of dual supervision by director and dean had arisen. As put by the Chancellor:

Academic and research functions and structure — Joining efforts of some colleges or colleges and institutes has been included in many reports over the past decade. While there are often not a lot of cost savings in joining efforts, there can be synergies built and efficiencies in administration. Joining forces between the Institute of Arctic Biology and the College of Natural Science and Mathematics has been suggested on multiple occasions. We should reexamine this possibility in a positive and constructive way, always mindful of "doing no harm."

In roughly two dozen meetings over the course of spring and fall semester 2022, the task force – comprising ten members from IAB, DBW, and other units across campus – reviewed relevant background information, consulted with IAB, CNSM and other program leadership at UAF. Other public universities and research institutes were also consulted to identify potential lessons for UAF. To capture faculty perspectives, a survey was administered to those holding appointments with IAB and DBW in November (Section 5, Appendix C). Team members from other units provided perspectives from other units at UAF of relevance to the questions raised by the Chancellor. Based on these different sources of information and further deliberation the task force identified five different structural options for IAB and DBW (Appendix D) that were further refined and narrowed to two viable options in response to the charge issued by the Chancellor to the group.

3. Aims of the report

This report aims to address the questions posed by Chancellor White (see Section 2, above) related to challenges and opportunities that flow from the current structure of IAB and DBW, and present two alternative administrative structure options for the units that draw from the information compiled during the task force's work. The task force sought to obtain a clear picture of faculty perspectives – identifying barriers to growth, administrative hurdles, and extent of (dis)content with the existing structures – based on a survey administered as part of the group's effort (Section 5). In addition, the current administrative and academic structures, sources of revenue and other relevant indicators were reviewed and summarized (Section 4) under leadership of the IAB executive officer and the DBW chair (both members of the task force).

The report presents and evaluates a broader range of structural options of potential relevance to IAB and DBW, both from within UAF (Section 7) and from other research universities – focusing on those with very high research activity (Carnegie R1). The task force evaluated structures based on consultation with administrators, faculty, and graduate students at these institutions and from publicly available information (Section 6). The report also draws on previous committee work at UAF, specifically the Committee on the Integration of Research and Teaching in the Sciences (CIRTS) with additional perspective provided by CIRTS chair (and current Graduate School director) Richard Collins.

Finally, by drawing on these different sources of information and discussing the findings, the task force was able to develop five different potential structural options for IAB and DBW (summarized in Appendix D). This report discusses the two structural models that emerged as key viable options in line with the charge to the task force. The implications of putting into effect either of these two options are reviewed in a final conclusions section of the report.

4. Background

4.1 IAB

History

The Institute of Arctic Biology (IAB) was established in 1963 by then UA President William Wood and the Board of Regents with a recommendation to cooperate with existing units of the University, which at the time were the biological sciences, Institutes of Marine Science, the Alaska Agricultural Experimentation Station, and the Geophysical Institute. Additionally, IAB was to encourage research, in part by sponsorship of graduate students and was encouraged to enhance its effectiveness by appropriate part-time appointments in IAB for members of the academic departments (Farner Committee Report, 1963). Originally, IAB investigators were largely research faculty, but with time IAB identified a need to improve equity between research and teaching workloads. This led to the current model of hiring faculty into 50:50 joint appointments between academic departments and IAB (Doni Bret-Harte, Pers. comm.). Since then, IAB has contributed to the academic mission though research support and mentorship for students and through joint appointments with faculty within the Department of Biology & Wildlife (DBW) and the Department of Chemistry & Biochemistry (DCB) under the College of Natural Sciences and Mathematics (CNSM) as well as with faculty in the social sciences under the College of Liberal Arts.

Major Programs, Centers, and Facilities

IAB is home to 5 major projects, programs, and centers and 4 research facilities. Many of the programs and facilities support both the research and academic mission of the University.

Programs, Centers, and Major Projects

 Alaska Cooperative Fish and Wildlife Research Unit (AKCFWRU) – a part of a nationwide cooperative program to promote research and graduate student training in the ecology and management of fish, wildlife, and their habitats.
 Alaska IDeA Networks for Biomedical Research Excellence (INBRE) – a statewide program to support new faculty, conduct research, provide new equipment, expand research infrastructure, and train Alaska students in biomedical research.
 Bonanza Creek Long-Term Ecological Research site (LTER) – research that focuses on improving our understanding of the long-term consequences of changing climate and disturbance regimes in the Alaskan boreal forest.
 Center for Alaska Native Health Research (CANHR) – building relationships and research-based knowledge to improve the health of Alaska Native people.
 Center for Transformative Research in Metabolism (TRiM) – the center supports interdisciplinary biomedical research to study hibernation and metabolism with the longterm goal of developing therapies to treat metabolic diseases.

Facilities

1. <u>Toolik Field Station (TFS)</u> - a world-renowned Arctic climate change research station that also serves as a base camp for researchers working along the ecological transect from tundra to taiga to boreal forest. TFS also operates a recharge center.

 <u>Genomics Core Laboratory (Core Lab)</u> – offers a variety of instruments for genomics, proteomics, analytical chemistry, and other general scientific applications as well as library preparation and sequencing services on Illumina's MiSeq platform.
 <u>IAB Research Greenhouse (Greenhouse)</u> – provides a reliable environment for growing plants for research and educational projects year-round.
 <u>Health and Metabolism Research (HaMR) Core</u> – The HaMR Core is a recharge center that <u>includes the Molecular Imaging Facility (MIF) offering</u> access to MRI and NRM spectrometry, <u>microscopy, animal instrumentation and small animal surgery and handling</u>) for research and teaching.

Structure

IAB is led by a Director (with the current director serving as interim) who jointly supervises 30 tenure and tenure-track faculty members with the Acting Dean of CNSM. Of those faculty, 26 are affiliated with DBW and 4 with DCB. Additionally, the Interim Director supervises 8 research faculty and 2 program directors; all of whom have full-time appointments within IAB. The Interim Director also supervises an Admin Assistant, Pre-Award, Communications, and Facilities/Lab Safety staff. Moreover, the Interim Director supervises the Executive Office, which in turn supervises the IAB Business Office staff that is comprised of Fiscal, Post-Award, Procurement, and Human Resources.



Figure 1: Org chart for IAB.

Administrative Attributes

The Director oversees IAB's research, programs, and facilities with the assistance of the Deputy Director and Executive Officer. The Director's Office supports 10 staff members (8.7 FTE) to cover a wide range of administrative support functions.

Faculty Attributes

IAB employs 30 tripartite, tenure track, faculty members who have joint appointments with CNSM (note: this number includes 2 vacancies currently being recruited). The effort for research (IAB) and teaching (CNSM) is mostly split 50/50; however, in some instances the split is 25/75 or 75/25 depending on research or teaching needs by either IAB or CNSM and/or faculty desire to move in one direction or the other. Most faculty have 9-month appointments, but there are 4 non-standard appointments that are less than 9-months. In addition to tripartite faculty, IAB employs 8 bipartite, non-tenure track, term research faculty members that are largely grant supported. IAB also supports 7 post-doctoral fellows on research funded projects.

In recent years, IAB has experienced attrition of joint tenure track faculty with DBW and has not been able to replace them due largely to the financial deficit at CNSM and shrinking general fund support. Recruitments of new joint appointment faculty have only recently begun but fall short of fully recovering lost positions. Instead, IAB has recruited 6 bipartite term research faculty members over the past 3 years to continue research growth.

Research Support Attributes

Research support staff make up the bulk of employees at IAB and are mostly supported by research grants and recharge centers. The number for FTEs fluctuates throughout the year with a slight increase in temporary staff during the summer to support the summer research population at Toolik Field Station. During the academic year, IAB employs 57 benefited staff (52.7 FTE) and 40 temporary staff (20.2 FTE). In the summer temporary staff typically increases to about 60 employees (45 FTE).

Undergraduate and Graduate Student Support

IAB faculty mentor more than 60 graduate students (including 25 doctoral candidates) and encourage undergraduate experiences on funded research projects. During the academic year, IAB supports about 10 undergraduate students and 35 graduate research assistants (GRAs) on active research projects. During the summer, support increases to 15 undergraduates and 45 GRAs.

State General Fund vs Research Funding

On a 10-year scale, general fund (GF) support has steadily decreased while indirect cost recovery (ICR) has gradually increased. In FY14, IAB GF support was \$1.5M higher than ICR. By FY17 the GF and ICR were equal, and this fiscal year ICR is projected to be \$900K higher than GF. Over this time, this represents a 43% decrease in GF and a 55% increase in ICR. For the most part, IAB has been able to absorb the loss of GF through higher ICR returns. Not accounting for inflation, IAB is down 8.4% (~\$500K) in total operating funds since FY14.



Figure 2: General fund and indirect cost recovery for IAB.

Sponsored Research at IAB

Currently IAB has 53 researchers with sponsored research projects made up of 34 Faculty, 4 Staff, 3 Students, and 12 Affiliate Research Scientists. During FY23, these researchers are managing 135 projects with a cumulatively awarded budget of ~\$94M since award inception. A majority of IAB sponsored projects are funded by the National Science Foundation (40 projects for \$41M), the National Institutes of Health (11 projects for \$24M), and the US Geological Survey (30 projects for \$9M).

4.2 Department of Biology and Wildlife

The Department of Biological and Wildlife (DBW) is one of eight departments in CNSM. The department currently employs 28 faculty, the vast majority of which hold tripartite, tenure track, and joint appointments (average 50% in CNSM) with one of two research institutes (85%): Institute of Arctic Biology (IAB) and Museum of the North (Table 1). This pool of tripartite faculty has been successful at obtaining extramural grant funding as part of their joint appointment with a research institute¹; all ICR flows to the research institute. Three faculty are currently bipartite, two as term and one as tenure-track. Department administration is lean relative to the number of students served (see below) and includes a department chair, a program chair for wildlife, an office manager, a lab manager/safety officer, and a part-time receptionist. The total budget in FY2022 was \$2.96 million.

¹ As of December, 2022, 81 active projects funded by NSF, USGS, NIH, etc; \$41 million in FY23 to date in cumulative funds awarded from these awards since inception

Total Faculty (FTEs)	12.9
Total faculty (individuals)	28
Tripartite	89%
Tenured or tenure track	93%
 Jointly appointed with Institute of Arctic Biology 	71%
 Jointly appointed with Museum of the North 	11%
Proportion professor / associate / assistant	57% / 32% / 11%

Table 1. Attributes of faculty employed by the Department of Biology and Wildlife in FY23

DBW administers six-degree programs: B.S., B.A., M.S., and Ph.D. degrees in Biological Sciences (BIOS) and B.S. and M.S. degrees in Wildlife Biology and Conservation (WLBC). DBW is the largest of the CNSM departments in number of majors, degrees conferred (Fig. 3), and – in recent years – student credit hours. Biological Sciences is UAF's largest major (PAIR, Fall 2021). DBW alone is larger than some colleges and schools at UAF. In FY22, it housed more majors than either the College of Fisheries and Ocean Sciences (CFOS) or the School of Education (SOE), and generated more student credit hours than CFOS, SOE, or the College of Engineering and Mines.



Fig. 3. Number of majors (panel A) and degrees conferred (panel B) by CNSM departments in FY22, ranked by total number of majors.

Due to the size and complexity of the unit, the administration of DBW by a faculty chair has been a persistent challenge over the years. Ideally, management of the department requires significant workload investment, institutional knowledge, and the stature to work effectively with the IAB Director. Approximately 15 years ago, Dean Joan Braddock responded to the problem by converting the DBW chair to an administrative position with a 3-year appointment. That held until 2015, when the Faculty Senate stipulated that department chairs be faculty covered by the

Collective Bargaining Agreement and serve a term of 2 years. The administrative demands of overseeing a department of this size, including managing, and growing its programs and balancing faculty workload across a large number of faculty shared with IAB, is a considerable task for a member of faculty.

In 2020, the department launched fully online versions of the BIOS B.S. and the B.A. programs, motivated by the desire to reach learners in rural areas, relocated military personnel and their families, and non-traditional students. Online course development began in 2018 and required a significant effort by faculty, supported in part by the Provost's Office, the Strategic Enrollment Planning process, and eCampus. The online programs resulted in an increase in annual student credit hours (SCH) in DBW from FY20 through FY22 relative to the five previous years; an increase that coincided with the worst of the COVID pandemic, at a time when SCHs across the university were declining.

A major challenge faced by DBW is how to continue to grow and maintain its high-quality undergraduate academic programs, build graduate student enrollment, and foster faculty research and mentorship within a college in which expenses have exceeded revenue for >5 years. For example, in FY22 the DBW and the Department of Veterinary Medicine (DVM) ran surpluses, but other departments did not, resulting in a substantial overall deficit for the college. FY23 projections look better for the college, but the qualitative pattern remains only DVM and DBW are projected to run surpluses, with DBW's projected surplus at over \$340,000. One result of the prolonged college deficit has been hiring restrictions throughout CNSM, resulting in a net loss of faculty in DBW.² Over the past 5 years, the DBW lost 9 tenure-track, tripartite faculty with joint appointments in IAB. In response to these losses, DBW was allowed to hire two bipartite teaching faculty (each of which provides more teaching effort than a tripartite faculty member) and a single tenure-track tripartite faculty member joint with IAB. Two additional, joint DBW-IAB tenure-track appointments were recently approved, and those searches are ongoing, but even if successful, faculty FTEs and numbers at DBW will continue to be lower than any time in at least 15 years.

Another result of budgetary restrictions within CNSM has been a reduction and strict limitation of the number of graduate TAs allowed per year, despite increasing need. Because the delivery of DBW programs requires more work than can be done by the number of graduate TAs provided by CNSM, DBW has hired high-performing (and less expensive) undergraduate assistants to fill in (Fig. 4). Lack of graduate TAships, as well as year-to-year uncertainty in TA availability and a net loss of tripartite faculty, contributed to a decline in the number of PhD students in DBW over time (26% fewer PhD students in 2022 than 2015). This situation limits the ability of a large and productive department to contribute to meeting UAF's goal to achieve Tier 1 status.

² In years prior to CNSM's debt, hiring was sometimes limited by IAB's ability to provide startup funds.



Fig. 4. Change in the number of graduate and undergraduate students employed to teach semester-length lab sections in DBW, and undergraduate student credit hours (an estimate of need), between 2014 and 2022. Starting in FY21, graduate TAships were frozen by CNSM at 34 per year.

To succeed during a time of budgetary contraction in CNSM and net loss of faculty in DBW, the remaining faculty improved efficiency in delivering core curriculum, but the extra work required to "do more with less" likely constrained hours that could be devoted to research and mentorship. This may partially explain the decline in graduate students. Maintaining both face-to-face and online programs, an approach that has provided much-needed revenue to the department and the college, requires both asynchronous online and synchronously face-to-face versions of many courses, adding to faculty workload. The result has been increasing tuition revenue generated by a shrinking and increasingly stressed faculty (Fig. 5).



Fig 5. Change in SCHs and faculty numbers in DBW over time. (SCH data are not yet available for FY23.)

In summary, DBW is a successful department that serves large numbers of students, housed within a financially challenged college. The situation limits DBW's ability to respond to academic needs and opportunities by re-hiring enough faculty. Recent innovations by the faculty increased SCHs during a time unfavorable to enrollment in general, suggesting that if given the opportunity to use the resources it generates, the department has potential to expand its programs and its reach.

5. Faculty perspectives

5.1 Survey results

During November 2022, the Task Force conducted a structured survey (Appendix C) that was designed to assess faculty perceptions of 1) problems (if any) associated with the current organizational structure, 2) factors that may be contributing to problems, and 3) alternative organizational structures. The survey population included faculty (n=26) with appointments in IAB and/or DBW. Faculty provided information on their workload percentages (averages: teaching=37%, research=45%, service=17%) and the length of appointments (<5yrs=3, 5-9yrs=1,10-14yrs=4, >14yrs=14, skipped question=4). Graphs and tables of responses to all survey questions are provided in Appendix C. Below, we provide a summary of survey responses.

The majority (62%) of faculty reported that they were satisfied or very satisfied with their joint appointment with IAB and CNSM, and 17% were dissatisfied or very dissatisfied. Slightly more faculty disagreed or strongly disagreed (50%) than agreed or strongly agreed (42%) that the current organizational structure provides problems for them. When asked about the extent of agreement or disagreement that specific factors contribute to problems *for them*, the factors receiving the greatest percentages of faculty that agreed or strongly agreed were "lack of flexibility in workloads to make adjustments" (42%), followed by "having to report to two supervisors" (35%) (Fig. 6).



Figure 6. Percentages of faculty responses (n=24) to survey question contribution of factors related to organizational structure problems for survey respondents. A. Lack of flexibility in workload adjustments. B. Having to report to two supervisors. C. Mismatch between appointment and allocation of your time. D. Adds confusion to navigating administrative tasks. E. Current structure limits cross/trans/multi/interdisciplinary interaction. F. Extra work associated with administrative tasks (e.g., dual reporting).

When asked about the extent of agreement or disagreement that specific factors contributed to problems *for organizational function*, the three factors tied for receiving the greatest percentage of faculty (50%) that agreed or strongly agreed were "each entity (IAB, CNSM) reliant on different funding streams", "inability to hire new faculty because of debt within CNSM", and "feeling that some departments are forced to subsidize other departments" (Fig. 7).



Figure 7. Percentages of faculty responses (n=24) to survey question on factors related to organizational structure problems for organizational function. A. Feeling that some departments are forced to subsidize other departments. B. Inability to hire new faculty with joint IAB/CNSM contracts because of financial debt within CNSM. C. Each entity is reliant on different funding streams: IAB on research Indirect Cost Recovery (overhead from grants) and CNSM on tuition. D. Conflicts between missions of IAB and CNSM. E. The current structure of IAB and CNSM departments limits the growth potential of life sciences at UAF. F. Feeling that indirect cost recovery funds are unfairly distributed between IAB and CNSM. G. Feeling that general fund revenue (Fund 1) is unfairly distributed among departments within CNSM. H. Current structure limits cross/trans/multi/interdisciplinary interaction. I. Inability to hire new faculty with joint IAB/CNSM constraints on start-up funding within IAB.

Slightly more faculty (38%) disagreed or strongly disagreed that we should keep the organization structure as it is (status quo), with IAB and CNSM separate, as compared to agreed or strongly agreed (31%). More faculty agreed or strongly agreed (41%) that research and teaching should be under one administrative entity than those that disagreed or strongly disagreed (34%). When asked if DBW should leave CNSM and merge with IAB to create a new administrative entity, more faculty disagreed or strongly disagreed (27%) than agreed or strongly agreed (23%). However, it should be noted that many faculty responded that they neither agree nor disagree (27%) or were unsure/no opinion (23%) on the question about the merging of IAB and DBW.

Workload percentages did influence some faculty responses. As compared to faculty with <50% research workloads, faculty with research workloads =>50% research was more likely to:

- Be satisfied or very satisfied with their joint appointment (=>50 research=75%, <50 research=50%)
- To agree or strongly agree that "lack of flexibility in workloads to make adjustments" (=>50 research=46%, <50 research=33%), and "having to report to two supervisors" (=>50 research=50%, <50 research=11%) created problems for them.
- To agree or strongly agree that "inability to hire new faculty because of debt within CNSM" created problems for organizational structure (=>50 research=61%, <50 research=50%).
- To disagree or strongly disagree that research and teaching should be under one administrative entity (=>50% research=38%, <50% research=20%).
- To answer neither, unsure, or no opinion on many questions.

Length of employment (>14yrs [n=14]; =<14 yrs [n=12]) did not influence faculty responses related to questions on extent of satisfaction with current joint appointment, extent of agreement that current organizational structure creates problems, or extent of agreement for alternative organizational structures.

6. Perspectives from other institutions

Following the guidance from the charge, the task force reviewed publicly available information and reached out to administrators, research leaders and graduate students at other universities and research institutes with potential lessons for UAF. Specifically, these included public universities with very high research activity (R1) status and both traditional college-based and institute-based research activity (incl. Arizona State University, University of Colorado Boulder, University of Washington) as well as independent research institutes (Linus Pauling Institute, Natural Resources Research Institute). This information is summarized below for the most relevant peer or aspirational peer institutions.

6.1 Research institutes

Natural Resources Research Institute, University of Minnesota, Duluth

NRRI was founded under a charter established by the Minnesota state legislature. The majority of faculty are research faculty working within six research groups. Only two faculty have joint (50:50) academic and research appointments. Joint appointments are reviewed for renewal on a regular basis.

Linus Pauling Institute, Oregon State University

LPI, is a life science institute focused on nutrition and dietary supplements. Most research funding comes from NIH. LPI was founded on and continues to rely on philanthropy, with the director's effort focused on donor relations. No faculty have faculty appointments under the institute. All faculty appointments are under the dean of a college at OSU. LPI recruits affiliation by offering space, administrative support, technical cores, and seed funds. LPI receives no ICR, with philanthropic support essential to LPI operations.

The Institute of Arctic and Alpine Research (INSTAAR), University of Colorado Boulder (CU) INSTAAR is an interdisciplinary research unit comprised of roughly 35 faculty members and graduate students from several academic departments. INSTAAR houses 19 research labs and 8 research programs. INSTAAR management consists of a director, an associate director, and several committees, with a governing body that includes faculty. Roughly half of the faculty are tenure track, the remainder research faculty (the latter with no institutional salary support, though sharing a portion of ICR is currently under discussion). Through joint appointments INSTAAR has ties with seven departments/colleges across CU. As a result of these linkages, the director sees INSTAAR as an important unit on campus that can bring along a broad part of campus for interdisciplinary or cross-disciplinary campus-wide initiatives.

While the appointment fraction varies, most faculty hold joint appointments with 9-month teaching and 3-month research assignments. Each appointment is defined by an MOU between the institute and the academic unit. These MOUs vary between units and are negotiated individually; some include sharing of overhead depending on what the college or INSTAAR provide in terms of faculty institutional support (lab space, personnel etc.).

The research institute model is widely implemented across CU, with roughly two-thirds of external research funding and much of the high-impact research tied to institutes. At CU, this model is also seen to foster interdisciplinary research which includes links across the arts and sciences at INSTAAR. A further major strength of the model from INSTAAR's perspective is the

focus on flexibility such that research units are more like an enterprise not like an academic department. Pinch points of the model are the inability to directly admit graduate students into research institutes and conveying the institute model to graduate students interested in research.

6.2 Schools and colleges

Arizona State University (ASU)

As an R1 public university ASU has been exploring different academic and research structural models centered around sustainability and futures. Two different approaches that retain key aspects of classic college/department structures while creating openings for cross- and interdisciplinary research are summarized below.

Global Futures Laboratory (GFL). GFL houses the College of Global Futures which in turn comprises four futures-themed schools that bring together faculty across a range of different disciplines centered on sustainability and futures studies. GFL is home to several dozen research centers or institutes, which offer joint appointments with any of the academic units. Directors of larger centers (more than roughly \$5M annual budget) report to the GFL director (ASU Vice-President level) for research and the director of the school for teaching. Smaller center leads report to the college dean for research and school director for teaching.

ASU structures are somewhat fluid to allow the university to take advantage of growth areas and realign research and academic units. During the current president's tenure over two decades roughly two dozen new colleges have been created and several eliminated. The provost's office is set up to implement new programs, schools, or colleges at a rapid pace (e.g., School for Ocean Futures went from decision to implement to fully operational within less than a year). This pace supports a focus on transdisciplinary, action-oriented research and education addressing societal solutions to climate change and other pressing problems that require a sense of urgency.

The School of Life Sciences (SOLS). SOLS was formed as a merger between the Departments of Biology, Plant Biology, and Microbiology in 2003. The SOLS is an academic unit of the College of Liberal Arts and Sciences and is composed of ~120 Faculty organized into six faculty groups (1. Biomedicine and Biotechnology, 2. Cellular and Molecular Biosciences, 3. Global Change Biology, 4. Genomics, Evolution and Bioinformatics, 5. Human Dimensions, and 6. Organismal Biology). The SOLS management structure consists of a director (who is a faculty member), an associate director, a leadership team of senior advisors, and faculty group leaders, who lead the six faculty groups. The director for the SOLS reports to the dean for the College of Liberal Arts and Sciences. The faculty leads negotiate workloads for research, teaching, and service with the members of the faculty groups. The SOLS has few research faculty. Grants and contracts awarded to faculty are administered with the SOLS. The SOLS has over 7,000 undergraduate majors enrolled in nine undergraduate degree biology programs, and over 300 graduate students enrolled in 16 programs (M.S. and Ph.D.).

6.3 Graduate Student Experience

Graduate students at different universities, each with unique academic and research structures, provided the task force with information on the graduate student experience at their respective institutions. The institutions that were interviewed included The University of New Hampshire-Institute for the study of Earth, Ocean, and Space (UNH-EOS), The University of Colorado at Boulder- Institute of Arctic and Alpine Research (CUB-INSTAAR), and The University of Washington- School of Environmental and Forest Science (UW-SEFS). UNH-EOS is a large institute that houses 6 research centers. Most faculty there have joint appointments in EOS and in an academic department (natural resources, earth sciences, biology, marine science). Many research faculty are also affiliated with one of the 6 research centers. UW-SEFS houses academics and research under one roof. An Associate Director of Academics, Associate Director of Research, faculty, and all research units report to the SEFS Director. Graduate students were asked about their perceptions of RA and TA opportunities, administrative obstacles (if any), and course offerings. Student answers provided insight into how organizational structure can alter the graduate student experience.

When asked about RA and TA opportunities, all students noted that both positions have equal pay but differences in workload may exist between the two positions (TAing being a heavier workload, especially at UW-SEFS). In terms of course offerings, students expressed discontent about the dearth of graduate level classes offered in their home department. Additionally, all noted the necessity of flexibility to take courses offered through other departments which may align better with their research focus.

Students at UNH-EOS and CUB-INSTAAR emphasized the benefits of a straightforward and consolidated administrative structure, particularly when it comes to navigating the assistantship contract paperwork process. While UNH-EOS and CUB-INSTAAR both have distinct academic and research units, graduate students reported having a singular administrative contact to assist them with assistantship contracts. A singular administrative contact could reduce confusion, reduce likelihood for gaps between contracts, and overall makes the paperwork process easier to navigate.

7. Perspectives from other UAF units

7.1 Institute of Northern Engineering, housed within the College of Engineering and Mines, UAF

The College of Engineering and Mines (CEM) has 8 undergraduate degree programs plus 8 graduate programs (1 PhD and 7 MS programs) supported through the teaching and research missions by approximately 50 faculty (76% tenure-track and 24% research faculty). CEM is led by a dean who reports to the Provost. There are two Associate Deans (Research and Academic) reporting to the Dean and each Department is led by a Chair, reporting to the Dean. CEM also employs 7 administrative staff and 4 technical staff that report to the Dean's office to support the College and Department services. Tenure-track faculty report to the Dean of CEM and all workloads are managed through CEM (including for faculty jointly appointed in the Institute of Northern Engineering (INE)).

INE is closely associated with the College, and this intertwining of administrative and fiscal structure has become even more cohesive through the past several years of budget shortfalls that forced increased efficiencies. INE is led by an Institute Director who is appointed 50% time for administrative oversight of the Institute along with serving as Associate Dean of Research. The INE Director reports to the Dean of CEM and there is no direct line of reporting to the Vice Chancellor of Research. The current INE Director has a 50% joint faculty appointment with CEM filling a significant teaching commitment. There are 4 active research Centers under INE, each led by a Research Director supported primarily through external research funds.

INE has 8 Research Assistant Professors, 2 Research Associate Professors, and 2 Research Professors. Most of these faculty are full time and not jointly appointed with any other unit. Research faculty currently report to the Dean of CEM for annual review and workload assignments, although this may change now that the INE Director is no longer an Interim position. INE also has 12 research staff (research professionals, assistants, technicians, post-doctoral fellows, etc. supported primarily through research grants and contracts) and 8 administrative staff in the INE Business Office supported through INE funds (3 shared 50/50 appointments with CEM, not counted in the College staff above).

Financial structure: Annual funding comes to CEM predominantly through State appropriated funds (general funds/Fund 1) and tuition revenues to CEM. No ICR is used to directly support the college activities, however tenure-track faculty who bring in external grants and contracts do have a proportion of ICR added to their PI overhead accounts for discretionary spending (described below). The college currently operates on approximately \$3.7 million in annual general funds which has become increasingly important over the past several years with decreasing enrollment trends. The college currently brings in approximately \$2 million in tuition revenue per year - \$1.6 million through general tuition fees and approximately \$400,000 per year through tuition surcharge for enrollment in undergraduate engineering courses (like the surcharge per course in the School of Management).

Tenure-track faculty appointments are supported through 9-month contracts with the expectation of teaching 4 courses/ units per year, however there is flexibility within the confines of the CBA for the Dean to negotiate buy-out of teaching or research within the academic year contract if the faculty has the funding available, and if there is another faculty available to

support the course teaching that semester. Some flexibility is available with a limited number of adjunct professors and instructor staff.

INE receives approximately \$700,000 per year of financial support as general funds, however most of the annual budget is provided from indirect cost recovery (ICR) from tenure-track and research faculty grant funding (approximately \$1 million annually). INE receives 50% of the F&A earned through externally funded grants and contracts. 10% of the ICR received by INE is passed along to the INE faculty serving as PI on these grants and contracts (thus 5% of the overall F&A earned) which is an incentive for high research productivity.

INE business office staff (8-10, although some are shared with the college currently, and 1 is currently being recruited) are supported through these general funds and ICR funding streams. There is also partial support (2 mo per year) for 4 research staff supplied through general funds. Research faculty are expected to support a minimum of 6 months of their appointments through external research grants and contracts and INE will typically supply 3 months of salary support through the ICR funding stream. This support structure is not sustainable unless there are large field-oriented projects bringing in high ICR, and research faculty who can also support 9 months of salary support through external grants.

The overall CEM/INE budget is managed jointly, which provides the effectiveness of balancing fiscal shortfalls that may be seen from time to time on the college or institute side. Due to several years of fiscal shortfalls due to decreasing enrollment and decreasing general fund support there have been many changes to the number of FTE of support positions, and with non-personnel spending within the college. Both the Dean and INE Director feel this structure is effective due to the ability to share resources when the college or institute is meeting a shortfall. This highly integrated structure works well when the Dean and Director are well aligned in purpose and philosophy and are both committed to the success of both the College and Institute. There are currently several positions shared between CEM and INE to meet fiscal shortfalls. Ultimately to get back to peak performance many of these positions would need to return to full capacity (*e.g.*, INE Director cannot grow the Institute with only 50% time). The Dean is responsible for balance of the workloads, which is thought to provide consistency.

7.2 Alaska Center for Energy and Power, Office of the Vice Chancellor for Research, UAF

The Alaska Center for Energy and Power (ACEP) was previously a center under the Institute of Northern Engineering, within the College of Engineering and Mines. The Director previously reported to the Dean of CEM. The Center was moved out of CEM and reorganized under the Office of the Vice Chancellor of Research during a high growth phase, and now the Director reports directly to the VCR. ACEP currently has approximately 80 FTE – one Director, 14 faculty (most of which are research faculty) and the remaining staff, including 5 Research Professional 5s (or the equivalent) serving as the principal investigators on major programs, and several Research Professional 4 positions also serving as principal investigators for large projects or leading research facilities. The two faculty jointly appointed with CEM are tenure track, in that they can be tenured within the CEM department in which they hold a joint appointment but will not be tenured within ACEP.

7.3 College of Fisheries and Ocean Sciences (CFOS)

The business model of the College of Fisheries and Ocean Sciences (CFOS) is that the academic and research appointments of the faculty are within the same college. Faculty members report to the dean, and the CFOS Dean reports to the UAF Provost. CFOS receives an annual budget from UAF (\$3M out of a total of ~\$45 revenue for FY22) in support of its teaching, state-funded research, and service missions. Both tuition (80%) and ICR from research programs (50%, this includes approx. \$1 million ICR annually through operating the RV *Sikuliaq*) funnel back into the overall CFOS budget to support both the academic and the research programs. The ICR return from the ship operation is a critical element of the CFOS budgetary operations. Faculty members annually receive a 5% ICR return from the research programs they lead. This business model runs on a lean administration (staff reduction after the change from a School to a College) because both research and instruction are administered by one unit and allows the College and its faculty flexibility in operation.

CFOS has 30 tenure-track and 8 research faculty across three departments: Fisheries, Oceanography, Marine Biology. All faculty (1 exception of joint appointment) are appointed solely within the College and negotiate one workload with the dean that includes teaching, research, and service components of their workload. The dean sets expectations for minimum teaching (2-3 courses a year) and graduate student load (3 students) but there is flexibility for each faculty member to weigh their workload slightly each year depending on course offering needs and the extent of their research program. The academic programs in CFOS include undergraduate (~65 students) and graduate (~115 students). The growing undergraduate programs offer teaching and advising opportunities for faculty. There also are three graduate programs (Fisheries, Oceanography, Marine Biology) with a PhD and MS option each, one MS in Marine Science program, a new Masters in Marine Policy program jointly with UAS, and the Blue MBA with CBSM, all of which involve faculty advising and delivery of graduate-level classes. The graduate programs are intimately linked with the faculty's research programs as most graduate students are funded through these research grants.

This model has allowed CFOS to almost entirely compensate for faculty losses from retirement or departure over the past 7 years with continued replacement and new hires. While faculty numbers have not been replaced fully over the last few years, CFOS was able to hire (and is currently in the process of hiring) multiple new faculties during financially very trying times for the university. Briefly, in terms of faculty loss/hires over the past 7 years (this includes both research and tenure-track faculty), CFOS will only have 1 net loss of faculty during a time when state budgets were cut by several million. This was mostly due to 1) operation of the research vessel (ICR return), 2) growth of enrollment, and 3) use of leverage/bridge funds (Mariculture initiative funding 1 hire, EPSCoR 2 hires, NOAA QUEST 1 hire, Presidents Professorship 1 faculty support).

The overall maintenance of faculty numbers has allowed CFOS to grow, even during times when other parts of the university continued to downsize. This is evidenced through several new undergraduate and graduate program developments in CFOS during a time of a "no new programs" policy at UAF. Similarly, there was growth in research, for example, the establishment of a new LTER program in the Northern Gulf of Alaska. While CFOS faculty have been very successful individually in obtaining research grants, they do have a history of also focusing on large, interdisciplinary programs that involve several different CFOS faculty. Examples of this are the LTER, the recent EPSCoR Fire and Ice program, the AMBON program, the Center for Salmon and Society, and others. Academically, CFOS faculty working

together were able to obtain important graduate student support through NSF-funded interdisciplinary graduate education and research training (IGERT) program in Marine Ecosystem Sustainability in the Arctic and Subarctic (MESAS), as well as the current Tamamta (a Yup'ik and Sugpiaq word meaning 'all of us') program focusing on the increase in enrollment of Indigenous students. This collaboration across disciplines within CFOS has been encouraged more and more since CFOS members became "one faculty" within the college. This caters very well to the typically interdisciplinary focus of most faculty's research interests within marine science. Collaboration also extends outside of the college to other departments within CFOS as well as other institutions nationally and internationally.

8. Discussion of findings

In reviewing the information collected for this report, flexibility in workloads and financial constraints on growth emerged as the two greatest challenges. An additional challenge is seen in the limited ability to integrate growth and resource allocation towards infrastructure that serves both research and research activities for students (graduate and undergraduate). This latter challenge appears to stem from a lack of shared ICR between CNSM and IAB and thus shared incentives for research programs that serve students. These challenges are intimately tied to the financial constraints that CNSM as the home of DBW is facing, and that have prevented growth of DBW in recent years. At the same time, CNSM offers courses in the physical sciences that are required or provide electives for DBW degrees. DBW faculty have greater support for research effort than other departments within CNSM with a preponderance of faculty having 50 or 75% research appointments within IAB. ICR generated through IAB research contributes to salary support for joint appointments.

Any action that seeks to address these issues needs to consider cross-college or crossdisciplinary models for combined growth of research and academics. Such models exist at UAF, as discussed above, and in a range of different forms at other institutions. At UAF, CFOS for example demonstrates how to successfully combine research and academics within a single unit. CEM may hold lessons, both in terms of how INE and its component centers are complementing academic programs within the college and how ACEP emerged from the college, reorganized under the VCR, and successfully managed a period of rapid growth.

Individual academic or research units need to examine the respective roles of leadership and faculty and how they each contribute to the success of their units. In addition, leadership will need to manage the transition to any potential new structure for large grants or research centers. Examples from other institutions such as ASU suggest that such changes can be managed – provided there is institutional support and alignment around a shared vision.

While at present, the task force does not view a cross-campus consortium or loose administrative structure as viable, this may be something to consider further in the future. Here, ASU with schools, colleges and research centers that seek to integrate broader swaths of sciences, arts, and engineering may hold lessons for UAF, differences in size notwithstanding.

While self-evident, the findings do highlight the fact that location distinguishes UAF – America's Arctic University – and IAB as a world leader in northern latitude life sciences from other research institutions in the US. Building on Alaska's locale and strengths in ways that distinguishes us from other universities is a demonstrated strategy to compete successfully for federal research funding, at a level that exceeds that of our peers by a wide margin (Lopez et al., 2021).

9. Potential Options

Five different structural options emerged from the review of background information and deliberations by the Task Force. All of these are summarized in terms of their structure, disciplinary scope, research, and academics oversight, reporting lines, and other attributes in Appendix D. After consideration of the strengths, weaknesses, and differential impacts of these, the Task Force identified two contrasting structures as the most viable options for UAF. Here we summarize key aspects of each, with further detail found in the Table in Appendix D.

Option A: College of Life Sciences³

Creation of a new college combining life sciences (biology, wildlife, veterinary medicine, and biochemistry) that would also include IAB would streamline lines of faculty supervision while allowing for growth in academic programs and research. The college itself could be structured as other UAF colleges such as CFOS (see Section 7), with a dean overseeing the college and an associate dean-director of research overseeing IAB. Tenure track faculty affiliated with departments would be supervised by the dean. This approach creates clear lines of supervision in terms of workload and evaluation. It allows for some balancing of teaching and research workload distribution (incl. credit for graduate student advising) depending on the faculty member's grant funding levels or curriculum development demands, unconfined by contract restrictions.

Financially, this model would create flexibility for a dean to balance the budget by drawing on revenue streams from both tuition and research indirect cost recovery, along with other potential sources, to invest in areas of greatest need or growth potential. Furthermore, from the perspective of the life sciences, growth in academics and research would be unconstrained by financial limitations exerted by more costly programs within CNSM. Compared to the current split in administrative tasks between CNSM (handles college-only faculty contracts, TA contracts and CNSM staff, and procurement) and IAB (handles HR for faculty joint appointments, graduate RA contracts, IAB staff, and procurement) a college could combine many or all these services under one roof.

A college of life sciences would create an entity that may make it easier for faculty and students across related academic and research programs to identify with a single unit. This might help in bringing students into the unit (which was viewed as a challenge by one of the research institute directors at an aspirational peer institution, INSTAAR at CU). The retention of the IAB institute structure within the college may be attractive to research faculty and graduate students in terms of a clear focus on and prioritization of research. Retaining IAB as an entity to support research within a college of life sciences would also be important for maintaining name recognition and continuity of research programs. Maintaining the current IAB within the college would provide a home for research centers that may not fit into an academic unit and could help recruit research faculty. Tenure track faculty associated with centers would report to the dean, whereas research faculty could report to the associate dean-director of research.

Maintaining strengths in both academics and research hinges on the capabilities and priorities of a single dean with both academic credentials and research and business acumen. Combining these roles can be challenging, with lessons of both success and failure at UAF. Some research-intensive public universities, such as ASU or CU have purposely kept research and

³ Corresponds to Option 3 in Table in Appendix D

academics separate through institute structures (at CU) or novel structures of Schools, Laboratories, and research institutes (at ASU) to maintain strengths in both academics and research independently. At UAF, incorporating a research institute such as IAB with a history of excellence into a college structure may result in loss of recognition and research activity, limiting growth potential.

Depending on how life sciences are defined – e.g., would chemistry be included in its entirety? – creating a separate college may split programs within CNSM currently housed in a single department. A splitting off life sciences from CNSM would in turn also create budgetary challenges for that college given the enrollment and revenue associated with DBW and related programs. This would require restructuring of the state funding allocations at the university leadership level to ensure the continued availability of core academic courses needed for students across the campus programs.

In summary, this option would create organizational efficiencies and the ability to balance teaching and research within a single unit under the supervision of a dean. Retaining IAB as an institute within the newly created college could help maintaining focus on Arctic-themed research and attract research-oriented faculty and graduate students, while continuing to grow research opportunities through close interaction with agencies and other external funders.

Option B: Enhancing current structures⁴

The responses from the IAB and DBW faculty survey (Section 5) do not point to a pressing problem with joint appointments in terms of faculty satisfaction. Considering the success of IAB in the past (Section 4a) and insights shared by faculty and administrators at other public universities with separation between institutes and colleges, retention of existing structures is seen as another key option to consider. Given some of the information and insights emerging from this work, the Task Force sees potential in enhancing current structures as detailed further below. Such improvements may help address shortcomings identified by faculty with the current model in terms of lack of flexibility in workload negotiations and perceptions of DBW subsidizing other programs within CNSM.

The structure currently in place could be very attractive for retaining and recruiting research faculty, graduate students, and taking advantage of research growth opportunities, if IAB and DBW had scope to increase faculty hires using revenues from increased student credit hours and ICR. The focus on Arctic research at IAB (as implicit in its name and some of the key projects housed within IAB such as Toolik Field Station) as well as recent alignment with UAF's focus on Alaska Native programs and Indigenous knowledge, housed within the College of Rural and Community Development and College of Liberal Arts, figure prominently in this context. Cross- and transdisciplinary research is seen as a particular opportunity for growth that complements and builds on existing strengths across UAF. Arts and science collaborations led out of IAB or the recent creation of an earth system science graduate program extending across several departments with IAB and DBW faculty involvement point in a direction that integration of research into a separate college (whether CNSM or life sciences) may not serve as well.

A structure that would retain both a strong research unit director reporting to the VCR with a dedicated focus on sustaining and growing research and a strong dean with a focus on academic programs would require coordination between the units, addressing the lack of

⁴ Corresponds to Option 5 in Table in Appendix D

flexibility in workload negotiations commented on by faculty and administrators. The status quo does play to UAF's strengths that have positioned the university above its peers by emphasizing a focus on Arctic research that generates disproportionately more research than tuition revenue and draws on unique research assets and infrastructure. In the current structure, these strengths also appear integral to the disproportionate tuition revenue generated by IAB and DBW faculty, a core source of income for the college.

At the same time, the Task Force sees potential for growth both within DBW and IAB by enhancing current structures to further highlight and build on strengths in the life sciences within both IAB and CNSM. Challenges in coordinating workloads for joint appointment faculty may be addressed by elevating the DBW chair to an associate dean level with signature authority over workloads. The current structure lacks parity in the number of faculty reporting to the dean and director and elevating the chair to an associate dean would provide a mechanism for both supervisors to oversee many of the same faculty. In the current structure, the chair oversees more faculty in DBW than deans in several other colleges at UAF. Negotiating mechanisms for overhead revenue sharing with faculty to support proposal development, and for revenue sharing with the college to support academic program development have been shown to be successful in other units at UAF (INE and CEM) and other universities (INSTAAR at CU). Developing a structure to provide greater flexibility to change the split of faculty appointments between the institute and college would facilitate changes in faculty commitments as research and teaching needs and foci vary over time. With such measures, IAB – as a research institute outside of college structures - would be well positioned to lead cross- or transdisciplinary initiatives that bring together natural and social sciences, engineering, Indigenous methodologies and the arts and humanities across campus.

10. Conclusion

The task force views the structural options introduced in the previous section as equally viable. Both come with different strengths and weaknesses reflected in the faculty survey and information gleaned from similar models at other institutions and at UAF. Any decision about the future of IAB and DBW will have to rely on a multitude of considerations, many beyond the scope of this report. In that context, it is worth noting that with limited availability of key contacts at other institutions that may hold lessons for UAF, and with relevant findings with broader applicability emerging from some of these interviews, there may be value in hosting – virtually or in person – contacts from some of these institutions at UAF for further exchange. Such exchange may be of value in informing solutions that align with some of UAF's unique attributes (as discussed in Section 8).

The task force recognizes the importance of faculty perspectives represented in the survey findings. Some of the responses such as levels of (dis)satisfaction with the current appointment structures, position of DBW within CNSM, or challenges inherent in dual lines of reporting for faculty, also point to the need to address uncertainty or manage the impacts of change associated with moving forward with either of the two options. In this context it is noteworthy that faculty in IAB and DBW currently skew towards senior, full professor appointments and that increasing the number of junior faculty would be an important aspect of implementing either of the two options.

Finally, reflecting on the trend towards transdisciplinary research and teaching the task force sees a need to identify mechanisms to add disciplinary cross-cut elements to whichever structure is created.

11. Acknowledgements

The task force appreciates graduate students, faculty and administrators sharing their perspectives from the different institutions contacted for this report. Faculty member responses to the survey administered by Todd Brinkman are gratefully acknowledged. Jacqueline Muehlbauer's help in turning the online version of this report into a polished document is much appreciated.

12. References

- Collins, R, E. Allman, P. Barboza, M. Castellini, T. Chapin, K., J. Freymueller, M. Harris, T. Kuhn, D. Sheppard, M. Sousa, R. Wackerbauer, and K. Winker (2010) Final Report of Committee on the Integration of Research and Teaching in the Sciences (CIRTS) to Brian D. Rogers, Chancellor, University of Alaska Fairbanks; January 2010
- Farner, D. S. (1963). *Farner Committee Report*. History of IAB. Retrieved December 14, 2022, from <u>https://iab.uaf.edu/docs/Farner report entire v2.pdf</u>
- Lopez, T. and 14 others (2021) Outcomes for Achieve Tier 1 Research Status Strategic Planning Initiative; <u>https://www.uaf.edu/strategic/goal-3.php</u>.

Appendix

Appendix A – Charge to the Task Force



Daniel M. White, Chancellor P.O. Box 757500 Fairbanks, Alaska 99775-7500 907-474-7112 uaf.chancellor@alaska.edu www.uaf.edu/chancellor/

March 4, 2022

TO: Hajo Eicken, Director, International Arctic Research Center Diane Wagner, Chair, Biology and Wildlife Kristin O'Brien, Biochemistry and Fisheries Todd Brinkman, Wildlife Kelly Drew, Biomedicine Lorrie Rea, Water & Environmental Research Center Katrin Iken, CFOS/IMS Matt Seymour, Fiscal Officer, CNSM Carrie Stevens, Interior Alaska Campus Tazia Wagner, Graduate Student

FROM: Daniel M. White, Chancellor

RE: Institute of Arctic Biology/Biology & Wildlife Organizational Task Force

Per the discussion that follows, I am forming an organizational task force to review the organization of IAB and the Biology and Wildlife Department. Dr. Eicken has agreed to chair and I am hopeful that you will be able to serve on this important task force.

In a communication to the university on April 22, 2021 and in response to the expedited academic review, I laid out a large number of areas that were identified for improvement and actions we have or may take. Among these was the academic and research structure. In the memo I noted:

Academic and research functions and structure — Joining efforts of some colleges or colleges and institutes has been included in many reports over the past decade. While there are often not a lot of cost savings in joining efforts, there can be synergies built and efficiencies in administration. Joining forces between the Institute of Arctic Biology and the College of Natural Science and Mathematics has been suggested on multiple occasions. We should reexamine this possibility in a positive and constructive way, always mindful of "doing no harm."

In a follow-up all-hands meeting with IAB/Biology and wildlife faculty, I explained some of the reasons that this has come up in the past and continues to come up. That is, what problem are we trying to solve by relooking at our current organizational structure? Following are some examples that have arisen:

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual. www.alaska.edu/nondiscrimination

IAB/Biology & Wildlife Organizational Task Force March 4, 2022 Page 2

- 1. Jointly appointed faculty have two supervisors, both of whom write performance reviews and share responsibility for faculty success. However, success has different forms in the department and the institute. Tension on new and untenured faculty is a burden to those faculty. Creating synergy between units and aligning expectations would likely improve efficiency, job performance and job satisfaction.
- 2. In many cases, but especially Biology and Wildlife Department and IAB, all faculty with a few exceptions are represented by both divisions. However, the two organizations have somewhat different needs relative to classes and programs. This is especially true as it relates to the breadth and depth of undergraduate and graduate offerings. Creating synergy between the academic and research programs would help align programmatic offerings to the benefit of UAF's students overall.
- 3. Over the years, units have created entities (e.g., Engineering Science and Technology Experiment Station, or the CNSM Division of Research) as a way to create "alternatives" to our institute structure that has resulted in internal competition and replication of services. Increased synergy between units may reduce the need for replicate services.

UAF has achieved greatness in research, in part, due to our history of "organized research". I believe that it is precisely the structure of the institutes that has enabled many faculty members to flourish and our grant production (measured in \$/faculty) to be three times our peers! However, it is also the structure that is perfectly designed to get us where we are. With that in mind, the following questions arise:

- 1. Does our current organizational structure get us to the next level?
- 2. How has the funding environment changed and how have the areas of research focus changed over the last 10, 25, 50 years? Is our current organizational structure well adapted to take advantage of this change?
- 3. Are there alternative structures that could alleviate some of the inherent conflicts and inefficiencies (e.g., 1-3) that are byproducts of our structure without reducing the benefits it affords?

Given the feedback that I received at the IAB/B&A faculty forum, I would like to provide some additional clarification to what I suspect are concerns with the process of this evaluation.

- 1. There is not a predetermined outcome. The goal of this task force is to study, explore, learn, and recommend possible organizational structures that may lead to a more robust enterprise for faculty of the broad category of life sciences. While a "College of Life Sciences" has been discussed openly, this is not a destination but a concept that has been proposed by faculty as an option for consideration.
- 2. This is not just about money. There is no doubt that the university's financial position has changed dramatically in the last 8 years. While we may be entering a period of stability, the national trend suggests a further shift in financial burden away from state resources and more to "earned" resources (research grants and tuition). Synergy between research and teaching may allow us to not only adapt to the current environment but to grow.

IAB/Biology & Wildlife Organizational Task Force March 4, 2022 Page 3

Timeline: I would be grateful if the task force could substantially answer the following questions by May 1, 2022 with an allowable timeframe to October 1, 2022 should additional time be needed. I would expect that work could continue over the summer but no decisions would be made during the period when traditionally academic faculty are off contract.

Questions to be addressed:

- 1. What challenges are posed by the current structure of IAB and CNSM (specifically Biology and Wildlife).
- 2. What are structures that currently exist elsewhere (particularly in Tier 1 research universities) we might learn from?
- 3. What are the two structural options for IAB and B&W to position the programs for growth and what may be gained or lost under the two models?

Please let me know if you are able to serve on this challenging but necessary task force. I look forward to reviewing the recommendations.

DMW:jdp

Cc: Anupma Prakash, Provost and Executive Vice Chancellor Nettie La Belle-Hamer, Vice Chancellor for Research

Appendix B

Task Force membership

Todd Brinkman Associate Professor, Institute of Arctic Biology and Department of Biology & Wildlife

Kelly Drew Professor, Institute of Arctic Biology & Department of Chemistry

Hajo Eicken (task force chair), Director, International Arctic Research Center

Katrin Iken Professor, College of Fisheries & Ocean Sciences

Jay Jones Professor, Institute of Arctic Biology and Department of Biology & Wildlife

Kristin Olson Graduate Student, Department of Biology & Wildlife, and Institute of Arctic Biology

Lorrie Rea Research Professor, Water & Environmental Research Center

Matt Seymour Executive Officer, Institute of Arctic Biology

Carrie Stevens Professor & Chair, Tribal Governance

Diane Wagner Professor & Chair, Department of Biology & Wildlife, and Institute of Arctic Biology

Appendix C

Survey questions & complete results

Appendix 1. Summary of response	s to all quest	ions on the I <i>I</i>	AB/B&W Task	Force Surv	/ey.		
Q1. Please describe your current p	oosition. (che	ck all that ap	oply)				
NOTE: When addressing non-respondent of the second to this accurate and should be viewed with	onse error, it s question. Th th caution.	was identifie nerefore, the	ed that some s response per	survey part centages a	icipants did re not 100%	not ś	
Answer Choices	Response Percent	Response s					
Tenure Track	42.31%	11					
Non-tenure Track	7.69%	2					
Tenured	73.08%	19					
Non-tenured	3.85%	1					
Bipartite Research Faculty	0.0%	0					
Bipartite Teaching Faculty	3.85%	1					
Tripartite	50.0%	13					
Within Department of Biology and Wildlife	53.85%	14					
Within Department of Chemistry and Biochemistry	0.0%	0					
	Answere d	26					
Q2. How is your current contract s	split between	CNSM and I	AB (%)?				
Answer Choices	Average Number	Response Percent	Response s				
CNSM (%)	52.9	100.0%	26				
IAB (%)	47.9	92.31%	24				
		Answer	26				
Q3. Please describe your typical a	cademic yea	r workload (%	%)?				
Answer Choices	Average Number	Response Percent	Response s				
Teaching	37	100.0%	24				1
Research	45.21739	95.83%	23				
Service	16.75	100.0%	24				
		Answer	24				
Q4. How long have you had a join	t appointme	nt with IAB &	CNSM?				
Answer Choices	Response	Response					1
	Percent	S					
<5 years	13.64%	3					
5-9 years	4.55%	1					
10-14 years	18.18%	4					

>14 years	63.64%	14					
	Answer	22					
05. To what extent are you satisf	ied or dissati	sfied with vo	ur ioint appo	ointment be	tween IAB	and	
CNSM?							
Answer Choices	Response	Response					
	Percent	S					
Very satisfied	29.17%	7					
Satisfied	33.33%	8					
Neither satisfied nor dissatisfied	12.5%	3					
Dissatisfied	12.5%	3					
Very dissatisfied	4.17%	1					
Unsure/No opinion	8.33%	2					
	Answer	24					
<u> </u>	ļ.,		<u> </u>	<u> </u>			
Q6. To what extent do you agree	or disagree t	hat the curre	ent organizat	ional struct	ure of the l	AB and	
civitin creates problems for you:							
Answer Choices	Response	Response					
	Percent	S					
Strongly agree	15.38%	4					
Agree	26.92%	7					
Neither agree nor disagree	7.69%	2					
Disagree	23.08%	6					
Strongly disagree	26.92%	7					
Unsure/No opinion	3.85%	1					
	Answer	26					
	,				·	<u> </u>	
Q7. To what extent do you agree structure contribute to problems ;	or disagree t for you?	hat the follo	wing factors	related to c	organizatioi	nal	
Answer Chaises	Strongly	Agroo	Noithor	Disagra	Strongly	Linguro	Tata
Answer choices	agree	Agree	agree or	Disagre	Disagre	Ulisule	
	agree		disagree	C	P130g1C		1
Lack of flexibility in workload	3	7	2	5	7	0	24
	2	-	2	7	-		22
Having to report to two supervisors	3	5	3	/	5	0	23
Mismatch between appointment and allocation of your time	3	4	3	6	7	0	23
Extra work associated with	1	3	6	8	5	0	23
reporting)							
Adds confusion to navigating administrative tasks	3	3	4	7	6	0	23
Current structure limits cross/trans/multi/interdisciplinar v interaction	3	2	5	5	9	0	24
y mileraction							

Other (please specify)							3
						Answe	24
						r	
08. To what extent do you garee	or disaaree t	hat the follo	wina factors	related to a	raanizatior	nal	
structure contribute to problems for organizational function?							
Answer Choices	Strongly agree	Agree	Neither agree or disagree	Disagre e	Strongly Disagre e	Unsure	Tota I
Feeling that indirect cost recovery funds are unfairly distributed between IAB and CNSM	5	4	4	3	7	3	26
Feeling that some departments are forced to subsidize other departments	3	10	6	3	1	3	26
Feeling that general fund revenue (Fund 1) is unfairly distributed among departments within CNSM	3	5	6	3	3	6	26
Conflicts between missions of IAB and CNSM	4	6	5	3	6	2	26
Each entity is reliant on different funding streams: IAB on research Indirect Cost Recovery (overhead from grants) and CNSM on tuition	7	6	4	5	3	1	26
Current structure limits cross/trans/multi/interdisciplinar y interaction	3	4	6	3	9	1	26
Inability to hire new faculty with joint IAB/CNSM contracts because of financial debt within CNSM	6	7	4	3	2	4	26
Inability to hire new faculty with joint IAB/CNSM contracts because of constraints on start- up funding within IAB	3	3	8	5	4	3	26
The current structure of IAB and CNSM departments limits the growth potential of life sciences at UAF	5	5	6	5	4	1	26
Other (please specify)							4
						Answe r	26
Q9. To what extent do you agree o IAB and CNSM separate?	or disagree t	hat we shoul	d keep thing	s as they ar	e (status qu	ıo), with	

Answer Choices	Response	Response				
	Percent	S				
Strongly agree	23.08%	6				
Agree	7.69%	2				
Neither agree nor disagree	15.38%	4				
Disagree	19.23%	5				
Strongly disagree	19.23%	5				
Unsure/No opinion	15.38%	4				
	Answer	26				
Q10. To what extent do you ag administrative entity?	gree or disagree	that research and tea	nching should	be under one		
Answer Choices	Response	Response				
	Percent	S				
Strongly agree	23.08%	6				
Agree	19.23%	5				
Neither agree nor disagree	11.54%	3				
Disagree	11.54%	3				
Strongly disagree	19.23%	5				
Unsure/No opinion	15.38%	4				
Comment (optional)	0.0%	0				
	Answer	26				
Answer Choices	Response	Response	<i></i>			
	Percent	S				
Strongly agree	7.69%	2				
Agree	15.38%	4				
Neither agree nor disagree	26.92%	7				
Disagree	3.85%	1				
Strongly disagree	23.08%	6				
Unsure/No opinion	23.08%	6				
	Answer	26				
Q12. What other organization	al structures sho	ould be considered?				
Responses						
I think a parallel College of Life administrative efficiency and al IAB that are working very well. new College) nested within IAB (College of Life Sciences?). Bec enterprise, a joint unit would n given UAF's leadership structur	Sciences could b low for growth w I have heard ad and advocates f ause of the stree eed to be well co e. I don't see w	be jointly administered without imperiling IAB vocates for an academ for a research unit (IAE ngth of both the acade onnected with both th hy that couldn't happe	d with IAB, whi 's independen nic unit (Biolog B) nested with emic program ne Provost's an en, potentially	ich could creatice or the aspe gy and Wildlife in a new colle and the reseatid the VCR's or with an Assoc	te ects of e or a ge rch ffice ciate	
Director or Associate Dean serv					1	
	ving as a liaison v	with each of those office	ces.			

Tenure track faculty should be und	er one dean.	IAB should s	eparate from	the DWB.		
The Museum						
the resource management research	n programs s	hould be me	rged with IAB	3		
Clearly, we don't want IAB to merg DBW with IAB could be quite good merging IAB and DBW, you should research (co-chairs?).	e with CNSM (at least for consider a m	I. A separatio DBW). Thoug lodel where c	n of DBW fro h it would cle lifferent facu	m CNSM, a early be a p lty oversee	nd merger of roblem for Cl teaching vs	f the NSM. If
A suitable and fair one for all, total performance	commitmen	t to tenure, f	reedom of sp	eech, share	ed governanc	ce, and
013. What other organizational st	ructures sho	uld be consid	lered?			
Responses						
I work on an NSF funded research p hired to teach solely for CNSM. Ma more solid unit (?).	roject unde ybe this wor	I r IAB, which i kload conflict	s not reflecte could be res	d in my wo olved if IAE	rkload, since and BW wei	re a
Re: question 9, it really depends on	what altern	ative is being	proposed, so	o my answe	er is neutral.	
Form won't let me put 0% for CNSM within IAB, I strongly disagree with now near future state governance of of research success and growth. Sta unique research infrastructure with international Arctic research agend collaboration. IAB's dedicated adm allows faculty to focus more exclus contributes high levels of ICR that a infrastructure.	A or 0% for T the merging we should be atus quo for world-class a. IAB's mult inistrative st ively on thei are essential	eaching. As t of IAB into C focusing out IAB = growth research out disciplinary affing with re r science. IAB to continuing	he current di NSM. At this r collective ef . IAB has com puts that tak environment search and g 's Center's ar the growth	rector of C/ time and w fforts on pro tributed to e center sta promotes r grants mana nd CANHR s of our biom	ANHR housed vith our curre otecting our UAF a strong age in an research gement expe pecifically nedical resear	d 100% ent and models g and ertise rch
It's hard to have an informed opinion research on the pros and cons of di instance. I also think that the leade the event of a merger) are likely to structure.	on about wh fferent mod rship streng be more imp	at would be k els or how dit ths, weakness portant to my	best without fferent mode ses, and value big job satisfact	having seer Is might tal es of the pe ion than th	n any compar ke shape in th ople (or pers e institutiona	rative his son in al
The questions appear to indicate th would have hoped for a more inclu	hat this task f sive approad	force already h and broade	has dismisse er mindsets.	d certain st	ructural char	nges. I
My goal would be to coordinate tea research and educational missions name recognition and internationa maintaining research infrastructure rely largely on research faculty. I co when teaching faculty have funds t	aching and re can synergiz I reputation e such as Toc puld see IAB o buy out fo	esearch for te e. That said it of IAB. Moreo lik and Resea research facu r research.	enure track fa would be a l over, IAB serv irch Centers s Ity being ava	iculty under huge loss fo ves a vital fu such as CAN ilable to fill	r one dean sc or UAF to lose unction in NHR and TRiN in for teachin	o e the A that ng

Organizational change usually creates significant chaos and rarely solves any problems. Pulling DBW out of CNSM will create major problems for the rest of CNSM. Merging IAB into CNSM would create major problems for research. If the Dean of CNSM and Director of IAB have a good working relationship, the current structure serves us well.

The problem of "debt" within CNSM seems artificial to me. UAF cannot run a debt from one year to the next. Thus, this just indicates that CNSM is spending more than the administration thinks that it should. However, teaching is a core aspect of UAF's mission. I don't think that it is reasonable to expect CNSM to be self-supporting through tuition. UAF administration should expect to "subsidize" its teaching.

Percent effort and workload of each faculty member should reflect their success in winning grants and teaching effectiveness, to be re-evaluated each 3-5 years

Appendix D

Different Structural Options (full table)

Link to table

https://docs.google.com/spreadsheets/d/1b-DgANiQFjQ8GJVAXEB1_KjTYRaBCx3eqmHyR0kPSrQ/edit#gid=0