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March 23, 2020

TO James R. Johnsen, President, University of Alaska

FROM Daniel M. White, Chancellor, University of Alaska Fairbanks

RE UAF Expedited Academic Review

In

10.06.10.C.2, UAF followed the following process for expedited, exceptional Program Review
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incl <https://uaf.edu/assessment-review/expedited-review.php>).

The effort began last October and we are now nearing the final stages of the process. Remaining steps are as follows with this step constituting step number 1, below:

1. Monday, March 23 by 5pm - Chancellor recommendations will be sent to the UA President and VP of Academic, Students, and Research.
2. April 1, 2020 ons go to the SW Academic Council
3. April 9, 2020 BOR Public Testimony
4. April 13-14, 2020 BOR Academic and Student Affairs committee meets to discuss recommendations
5. June 4-

I concur with

except in the following where I have recommended a different path:

1. Atmospheric science delete with opportunities for students in existing departments in similar areas (e.g., physics, chemistry, engineering) including possible alternative appointments at UAF for research intensive faculty
2. BA Earth Science delete
- 3.

DATE: 11 November 2019
TO: Expedited Program Review Committee
FROM: Kinchel C. Doerner, Dean College of Natural Science and Mathematics
SUBJECT: SWOT Analysis for Department of Geosciences

Introduction: The Department of Geosciences is an academically diverse department responsible for both undergraduate and graduate degrees. The educational services provided by the department are critical for Alaska and the w(tm)20().D 181.07 681.82 Tm0 g0 G

This analysis is written to help the committee understand the specific fiscal challenges facing the department. The SWOT analysis provided by the department relays an accurate description of the breadth, depth, and scale of departmental initiatives and faculty so will not be repeated at length here.

Strengths:

faculty produce many scholarly publications, write and are awarded many competitive grants, and teach across at least two distinct disciplines. The expertise of the faculty is critical to the industrial infrastructure of AK (e.g. study of oil and gas formations), the municipal needs (e.g. coastal erosion) of AK, and an understanding of the circumpolar north. The degrees programs prepare students in these critical areas for direct employment in Alaskan organizations and loss of the programs will be noticed by external stakeholders. I feel the strengths and relevance of this department are largely self-evident and are adequately

Weaknesses:

in undergraduate programs. For FY19 the department had 174 total students (19.3 students/ faculty member). While this is a reasona 612 TQ.000069 2sp61tpr1Y,IGeoscience department had priority toward graduate programs (i.e., M.S., Ph.D.) which necessarily require fewer students per faculty member. If we consider the undergraduate and graduate enrolment separately we have 10.6 students per faculty (96/9.01) and 8.7 (78/9.01) students per faculty, respectively. Graduate enrolment is nearly equivalent to undergraduate enrolment. While the number of undergraduate students should be increased, geology and geography are not disciplines which tend to attract large numbers of students or provide service courses to other departments and colleges. Thus it is unlikely for Geosciences to quickly realize substantial increases in undergraduate students. Also, substantial increases in graduate students would not benefit to the department, as adding graduate students requires hiring additional faculty exasperating the situation.

Perhaps stated more clearly, the department currently manages its finances using an undergraduate-based model. That is, state support and tuition/ fees received from both non-majors and majors are used to subsidize the graduate programs. This model works well for departments with high undergraduate enrolments and modest research efforts; however the Department of Geosciences has the opposite structure with a modest undergraduate profile and an extensive research program. The current fiscal model is inappropriate and not sustainable.

Any increase in extramural funding received by faculty members will not benefit the department. Nearly all indirect cost recovery realized by Geoscience faculty (with few exceptions) is received by the university to be applied toward general overhead costs or received by the research institute to which the faculty member has sponsorship. Very little indirect cost recovery from extramural funded projects is available to the department to be applied toward academic salaries or other expenses. Similarly, extramural funding, to expand research, which pays for tenured or tenure-track faculty salaries for a few years should not be considered a viable solution to the fiscal problem of the department. Eventually, the extramural funding ends but the faculty salary costs continue, sometimes for decades. Thus, any claim that increasing levels of extramural funding will alleviate the fiscal challenges

COMMITTEE RECOMMENDATION FOR GEOSCIENCES

STRENGTHS:

- Programs meet science needs of the state.
- Offers GERs and required courses for other majors as well as courses for Geosciences majors.
- Strong graduate programs, representing a significant portion of UAF's PhDs.
- Faculty very productive in research and have proven success in competing for external grants.
- Most of the graduating students either continue on to higher education or find employment in the geosciences.
- Critical link with the Geophysical Institute: Research at the GI is led by GEOS faculty and carried out by graduate students in the PhD and MS programs (Geosciences, Geophysics).
- Close collaboration with The Alaska Division of Geological and Geophysical Surveys (DGGS).

WEAKNESSES:

- Enrollment in Geoscience programs rises and falls with activity in the petroleum and mining industries.
- Reduction in numbers of faculty has limited the course offerings for students, and has directly affected the graduate programs since fewer faculty are available to supervise and support students.
- One of the staff positions that has not been replaced is the Director of the Advanced Instrumentation Laboratory (AIL).
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ses could increase enrollment, especially from out of state students.
 support: Faculty in the department have been highly successful securing
 g and supporting graduate students on RAs.
 Remote Sensing Science Certificate.
 onal job demand for Geoscientists: At the national level demand for

Geoscientists is expected to increase by 6% in the period 2018-2028.

THREATS:

CENTRALITY TO MISSION:

Serves unique science needs of the state.

INDICATORS OF QUALITY:

Faculty and students are highly productive in publication and external funding.
Employment of graduates.

COST EFFECTIVENESS:

9 FTEs for 172 students (94 undergraduates & 78 graduates) with unrestricted salaries and benefits cost of approximately \$1.65 million.

| | MAJORS | DEGREES |
|------------------|--------------------|------------------|
| Earth Science BA | FY15: 6/ FY19: 8 | FY15: 0/ FY19: 1 |
| Geography BA | FY15: 11/ FY19: 8 | FY15: 2/ FY19: 0 |
| Geography BS | FY15: 18/ FY19: 10 | FY15: 3/ FY19: 2 |
| Geoscience BS | FY15: 91/ FY19: 68 | FY15: 8/ FY19: 7 |
| Geoscience MS | FY15: 25/ FY19: 36 | FY15: 4/ FY19: 9 |
| Geoscience PhD | FY15: 11/ FY19: 11 | FY15: 0/ FY19: 0 |
| Geophysics MS | FY15: 12/ FY19: 8 | FY15: 3/ FY19: 1 |
| Geophysics PhD | FY15: 25/ FY19: 23 | FY15: 0/ FY19: 5 |

*Geoscience was formerly Geology.

COMMITTEE RECOMMENDATION FOR GEOSCIENCES

Earth Science BA:

| RECOMMENDATION: | ADDITIONAL COMMENTS: | DATE FOR FOLLOW UP: |
|--|---------------------------------------|---------------------|
| Continuation w/ improvement plan (8 votes) | Improve enrollment and time to degree | Two years |

Geography BA:

| RECOMMENDATION: | ADDITIONAL COMMENTS: | DATE FOR FOLLOW UP: |
|-----------------------------------|---|---------------------|
| Revision or restructure (8 votes) | There is not demonstrated need for both the BA and BS. Department should decide which is needed in order to | One year |

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UAF Expedited Program Review, Fall 2019

CNSM Geosciences

| part | label | fy2015 | fy2016 | fy2017 | fy2018 | fy2019 | 2018-2019 Change | 2015-2019 Change |
|--------|-----------------------------|--------|--------|--------|--------|--------|------------------|------------------|
| | BA Earth Science | 6 | 16 | 12 | 10 | 8 | -20.00% | 33.30% |
| | BA Geography | 11 | 7 | 4 | 8 | 8 | 0.00% | -27.30% |
| | BI Premajor - Earth Science | 1 | 1 | 0 | 0 | 0 | | -100.00% |
| | BI Premajor - Geography | 2 | 2 | 1 | 2 | 1 | -50.00% | -50.00% |
| | BI Premajor - Geoscience | 4 | 3 | 4 | 1 | 1 | 0.00% | -75.00% |
| | BS Geography | 18 | 13 | 17 | 14 | 10 | -28.60% | -44.40% |
| Majors | BS Geology | 21 | 12 | 5 | 5 | 4 | -20.00% | -81.00% |
| | BS Geoscience | 70 | 76 | 62 | 79 | 64 | -19.00% | -8.60% |
| | MS Geology | 25 | 26 | 28 | 19 | 17 | -10.50% | -32.00% |
| | MS Geophysics | 12 | 11 | 12 | 9 | 8 | -11.10% | -33.30% |
| | MS Geoscience | 0 | 0 | 0 | 0 | 0 | | |
| | PHD Geology | 11 | | | | | | |

| FY19 Salaries and Benefits | | |
|----------------------------|--------------|----------------|
| CNSM Geosciences | Restricted | \$0.00 |
| | Unrestricted | \$1,668,376.32 |
| | Total | \$1,668,376.32 |

| FY19 Instructional Expenditures | | |
|---------------------------------|--------------|----------------|
| CNSM Geosciences | Restricted | \$0.00 |
| | Unrestricted | \$1,884,436.11 |
| | Total | \$1,884,436.11 |