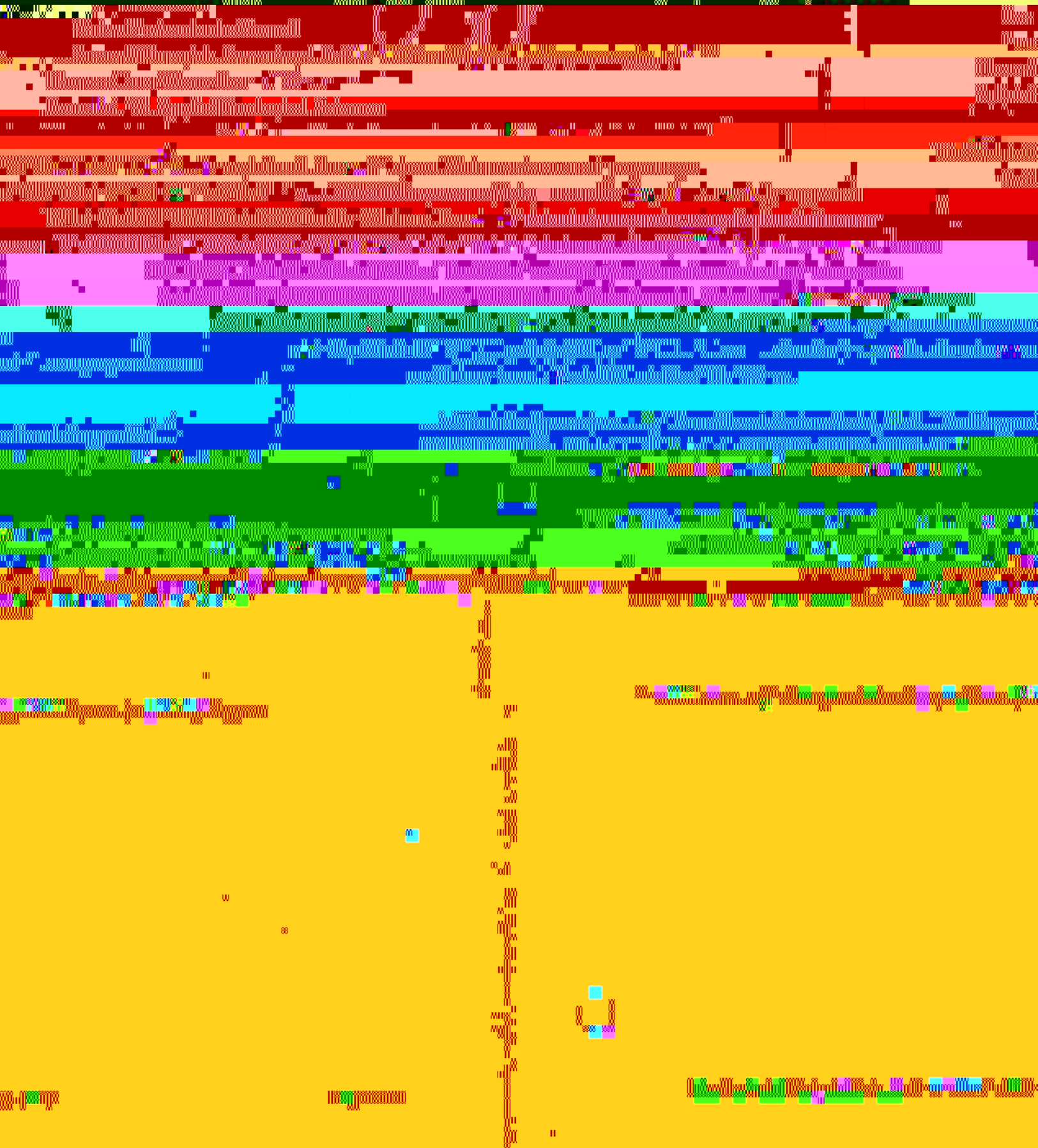




3211 Providence Drive



1a. UA University
UAA

1b. School or College
CAS

1c. Department or Program
Geological Sciences



<input type="checkbox"/> Recommend disapproval by VPAAR	UA Vice President for Academic Affairs & Research	Date
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²Net FTE (full-time equivalents). For example, if a faculty member will be reassigned from another program, but his/her original program will hire a replacement, there is one net new faculty member. Use fractions if appropriate. Graduate TAs are normally 0.5 FTE. The numbers should be consistent with the revenue/expenditure information provided.

Master of Science in Applied Geological Sciences Prospectus

Program Overview

The Department of Geological Sciences has offered the BS in Geological Sciences for 11 years and boasts a 100% job and or graduate school placement of its graduates. There are 122 currently enrolled (AY15-16 and 16-17) BSGS majors in the program and an average of 15 students graduate each year.

The Department currently has thirteen 600-level courses (mostly stacked with 400 level courses) and two Research/Thesis course sections to facilitate meeting graduate level instructional and research requirements. Additional 600-level courses are either planned or are currently in the curriculum approval process. Enrollment in these 600-level courses currently comprises graduate

Critical Achievements and Partnerships

- 1) The Geological Sciences Community Advisory Board, which was formed seven years ago.

membership of this board includes geoscience professionals from the petroleum industry, environmental consulting, minerals and industry, Alaska Native Corporations, and multiple state and federal agencies including the USGS and BLM. All of the members hold at least a BS in geology and most have an MS or PhD degree in geology. Two of the members are

The proposed MSAGS program aligns with the 5 goals of the UA Academic Master Plan by:

- Preparing Alaskans for the state's future by providing skilled graduates for high-impact jobs in the critical field of geological sciences, which forms one of the pillars of the state's economy through its natural economic resources.
- Promoting graduate level teaching and research on the UAA campus, which will enhance the professional development and scholarship of the geological sciences faculty.

Research & Development (R&D) and Scholarship to Enhance Alaska's Communities and Economic Growth:

by offering graduate emphases that are directly applicable to the Environmental, Petroleum, and Mining industries.

Accountability to the People of Alaska:

- *Serving Alaska and its diverse peoples by bringing the opportunity to pursue graduate-level*

Student Demand and State Needs

There are over 100 companies operating out of Anchorage and throughout Alaska who hire employees with graduate level degrees in the geosciences. Currently, UAA does not contribute to those workforce needs and the only other graduate degree granting program in the Alaska does not produce sufficient MS graduates to meet the burgeoning needs of the petroleum, minerals

UAA MSAGS. Additionally, place-bound students who want to further their education to the MS

Starting in Spring 2025, students for graduate programs will be able to take the course online.

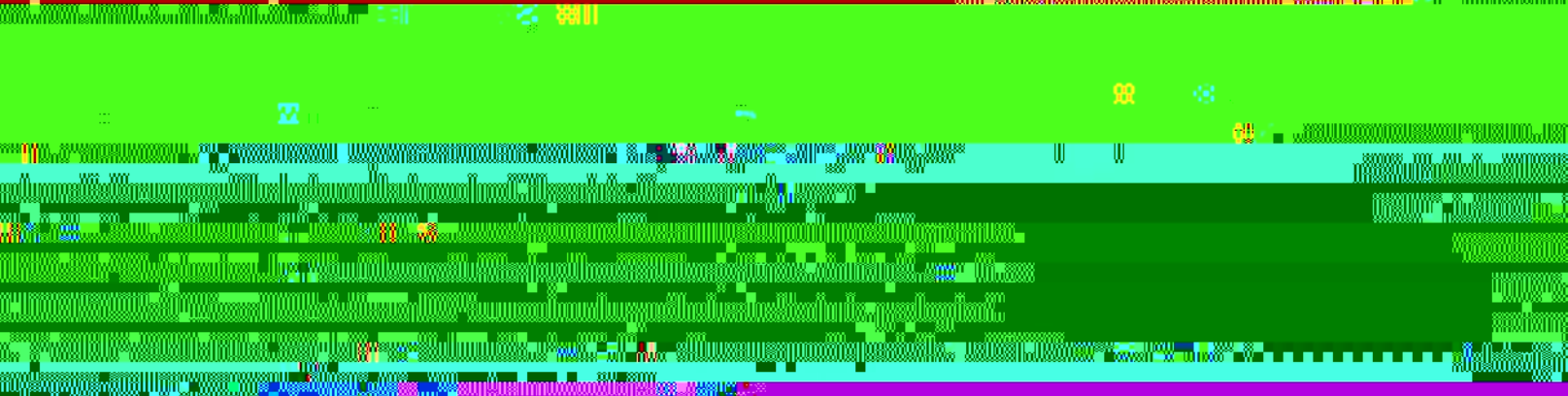
Learn more about this course



Home | My Courses | My Grades | My Profile | My Account



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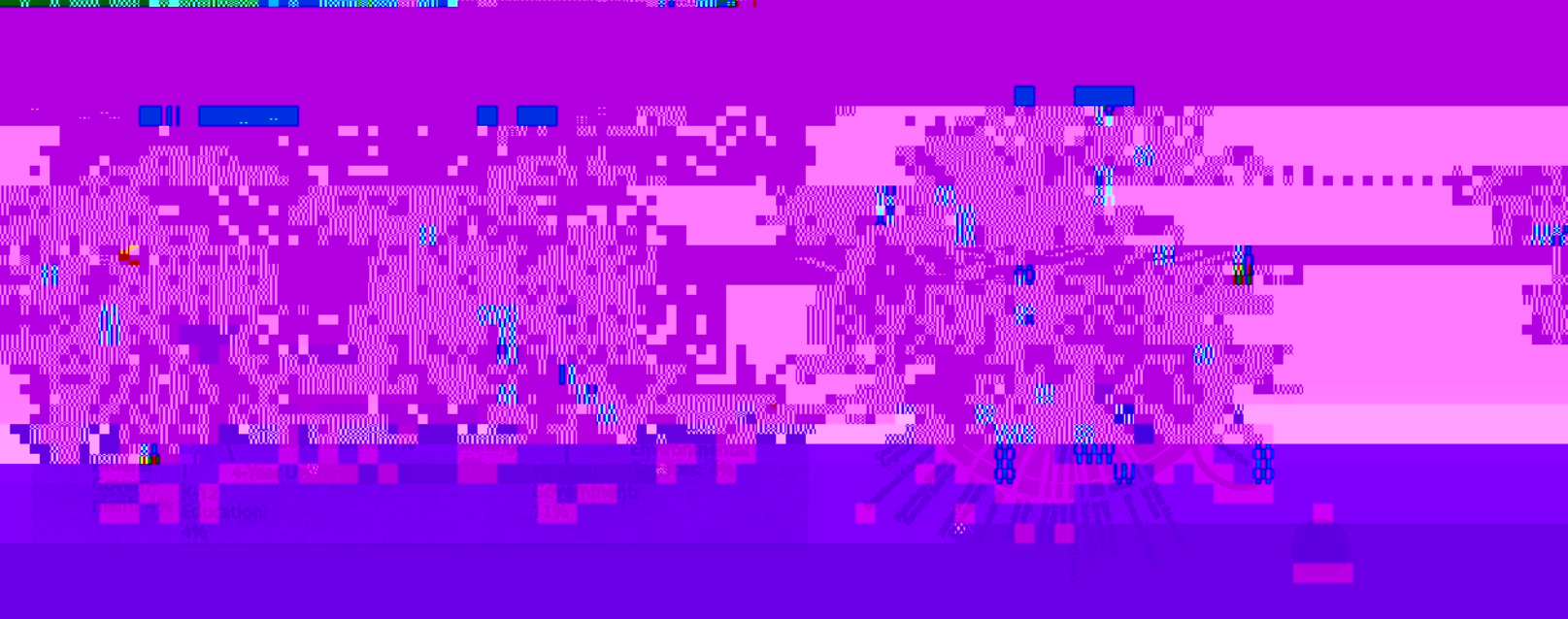


Figure 2a. Nearly 2/3 of MS geoscience graduates working in the oil and gas industry whereas only 1/3 in the industry have only a BS degree (American Geological Institute, 2013)

Figure 2b. Job trajectories for all geoscience graduates by subdiscipline highlighting the top 5 industries that hire geoscience graduates



Current Capacity and Quality

The Department of Geological Sciences currently consists of 5 tenured/tenure-track faculty members with 2 additional tenure-track faculty slated to begin in the Fall 2017 semester. Additionally, the department has 2 term instructors who contribute to the lower-division undergraduate curriculum instruction. The department currently offers 13 stacked upper division/graduate level courses that have predominantly supported an existing graduate program hosted by the graduate school (MS Interdisciplinary Studies), with enrolled students consisting of current undergraduate Seniors in the department (many of whom are preparing to pursue a graduate degree program), existing UAA graduate students, and local industry professionals seeking graduate education opportunities to provide leverage for career advancement in Alaska. These classes are currently offered as part of existing workload agreements; all tenured/tenure-track faculty members are already required to offer at least one of these courses per year. Therefore, the creation of the MSAGS program will not result in significant changes to existing workloads. Moreover, the enrollment capacity of these courses (i.e. classroom/facility capacity)

MSAGS students receive an instructor-based professional graduate degree

Resource Implications

The resources required to initially develop a successful MSAGS program are already available for instruction and research mentoring. The MSAGS program will have the option of a research-based thesis and, therefore, beyond coursework, the program will require resources to support MSAGS students (i.e. graduate research assistantship) and research projects. This can

graduate and undergraduate students to unparalleled access to software tools that will benefit

both instructional and research efforts. The department also has an on-site rock-crushing facility for sample preparation and a wide selection of field and safety equipment for faculty and students to utilize during field-based learning and research projects.

UAA

- volcanology, and megafloods. NASA, 2012-2016, \$324,197.
- 3) PI: Surface features and tectonic histories on Enceladus and Dione: A comparative analysis. NASA, 2012-2015, \$161,034.
 - 4) PI: Collaborative Research: Testing the role of magma and related fluids in early-stage rifting, East Africa. NSF, 2011-2015, \$269,591. Co-PIs C. Ebinger, Univ. of Rochester and T. Fischer, Univ. of New Mexico

Other External Resources

The Department has many strong ties with the resource related industries in Alaska. These relationships have culminated in many positive outcomes for the Department and UAA. For example, the mining industry donated \$200,000 to support a term faculty position in mineral resources which led to a tenure-track position that was recently filled, with the faculty member starting in the Fall 2015 semester. Industry sponsored research is identified above in the research grant support section and has exceeded \$1M in recent years, primarily originating from the mining and mining industry. We anticipate that since we have now added faculty expertise

The instructional and programmatic objectives of the MSAGS program will be periodically and regularly assessed in accordance with a rigorous Academic Assessment Plan that will include Direct Course Level Assessment (fundamentally linked to the stated Program Student Learning

... Research products (e.g., research thesis or professional project) and

- 5) Dr LeeAnn Munk (Professor of Geological Sciences): Geochemistry and Environmental Geology

Courses:

GEOL A660 Environmental Geochemistry
GEOL A665 Isotope Geochemistry
GEOL A688 Professional Project
GEOL A689 Geology Graduate Professional Practices
GEOL A690 Graduate Topics in Geology
GEOL A698 Directed Research
GEOL A699 Graduate Thesis

- 6) Dr Erin Shea (Assistant Professor of Geological Sciences): Igneous and Metamorphic Petrology, Geochronology, and Economic Geology

Courses:

GEOL 600 Igneous and Metamorphic Petrology
GEOL 601 Geochronology
GEOL 602 Economic Geology

MS, Applied Geological Sciences Catalog Conv

Graduate study in applied geological sciences prepares students for work in the multitude of careers including environmental geology/sciences, oil and gas industry, minerals and mining, and state and federal agencies that require a deep and broad foundation in the geological sciences. A Master of Science degree in Applied

Code	Title	Credits
GEOL A640	Advanced Hydrogeology	4

GEOL A656	Geoarchaeology	3
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GEOL A658	Advanced Geology of Alaska	3
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GEOL A660	Environmental Geochemistry	3
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GEOL A665	Isotope Cosmochronology	3
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Can multiple problem states get a literature review, and one or more sections of

field of study.

either peer-reviewed or at a conference pro-

cessed in

II. Applied Petroleum Geoscience

Code	Title	Credits
GEOL A63	Advanced Petroleum Geology	3
GEOL A69	Advanced Depositional Systems and Dynamic Stratigraphy	3

Code	Title	Credits
GEOL A55	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A56	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A57	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A58	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A59	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A60	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A61	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A62	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A63	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A64	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A65	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A66	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A67	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A68	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A69	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A70	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A71	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A72	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A73	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A74	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A75	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A76	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A77	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A78	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A79	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A80	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A81	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A82	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A83	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A84	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A85	Advanced Petroleum Geology	3

Code	Title	Credits
GEOL A86	Advanced Petroleum Geology	3

Professional Project Requirements, if applicable

The project must solve an applied or practical problem in the geological sciences to the extent that original developments by the student are evident in the project report.

1. The project problem and solution must be explained in the context of the current state of the science by

means of a thorough review of pertinent literature.

2. The project must include advanced technical components directly involving modern practice and applications of geological sciences.
3. The project must have sufficient scope to clearly demonstrate the student's advanced technical expertise in geological sciences.
4. The project report must demonstrate command of knowledge and skills directly associated with the

MS. Applied Geological Sciences New Course Descriptions

GEOL A623: Advanced Igneous and Metamorphic Petrology

3 credits

Igneous and metamorphic processes and the evolution of the lithosphere. Application of field, petrographic, and chemical data to models of tectogenesis and metamorphism.

GEOL A626: Advanced Mineral Resources

3 credits

Mineral resource genesis, classification, exploration, development, and associated environmental factors with a focus on metallic and non-metallic minerals. Specific analysis of mineral resource availability, exploration techniques, viability of extraction and processing, and assessment of environmental implications of extraction. Includes one or more case studies of existing exploration and/or mining sites.

GEOL A618: Advanced Structural Geology and Geomechanics

3 credits





Comcast
Communications
Alaska, Inc.

Christophe Mornet
Orishoré Exploration Manager

P.O. Box 100360 – Suite ATO 1470
 700 Gateway Center
 Anchorage, Alaska 99516-0360
 Phone (907) 265-4340
 christophe.mornet@comcast.com

February 2017

the MSAGS program will provide opportunities for the Alaska State and

March 2017

never professional career by

night





Oil and Gas

February 2, 2017

Dear Provost Gingerich:

Office of Glacier Oil and Gas



The following is a summary of the information provided to you regarding the proposed development of the oil and gas resources on the University of Montana campus. This information is provided to you for your information and is not intended to be a contract or any other legal instrument.

The University of Montana is currently reviewing the proposed development of the oil and gas resources on the University of Montana campus. This information is provided to you for your information and is not intended to be a contract or any other legal instrument.

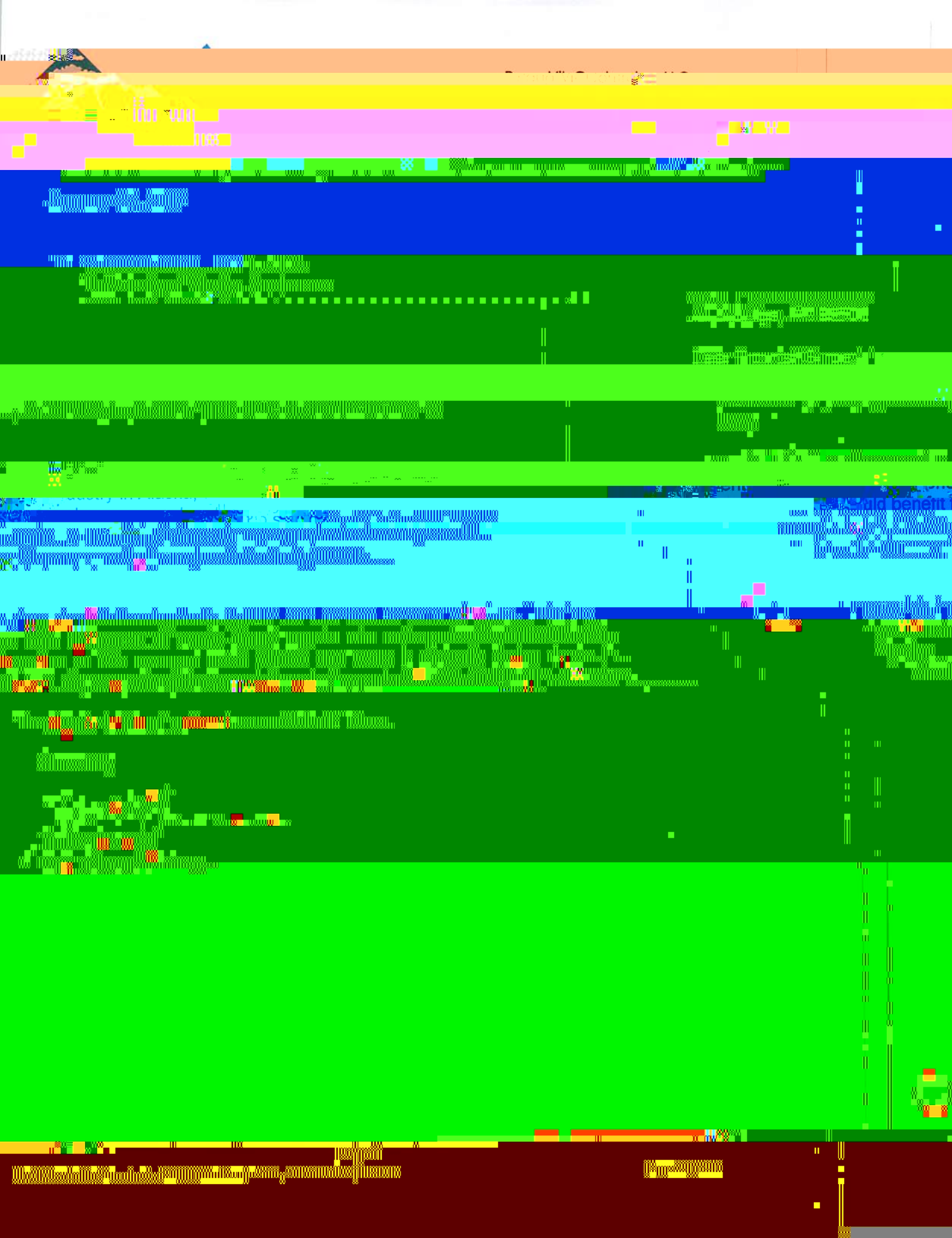
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The University of Montana is currently reviewing the proposed development of the oil and gas resources on the University of Montana campus. This information is provided to you for your information and is not intended to be a contract or any other legal instrument.

Very truly yours,

Kathleen C. Geringer
Provost and Vice President
University of Montana
1700 University Avenue
Missoula, MT 59811





Feb 16, 2017

Dear Provost Gingerich:

I am writing on behalf of Schlumberger to support the MS Applied Geological Sciences program at UAA. The Geological Sciences are a fundamental part of resource-based jobs in the State of Alaska and it is critical that we have a well-trained workforce to support these jobs. For example, in within

Schlumberger we employ 20 geoscientists each year and 100% are hired from outside the state. The MSAGS program at UAA will provide the training necessary for people in Alaska to receive the

background and training in three key areas of applied geological sciences: 1) environmental geoscience, 2) petroleum geoscience, and 3) mineral resource geoscience.

VULNERABILITY PROFESSIONAL SERVICES, LLC

P.O. Box 870507, Wasilla, AK 99687 U.S.A

PH: 907-373-4000, Fax: 907-373-4010

January 27, 2011

Dr. Sally

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12

Provost Sam Gingerich
Office of Academic Affairs
University of Alaska Anchorage
3211 Providence Drive, ADM 214
Anchorage, AK 99508

November 17, 2016

Dear Provost Gingerich:

I am writing as a member of the UAA Geology Department Community Advisory Board in support of the MS Applied Geological Sciences program at UAA. The Geological Sciences are a fundamental part of resource-based jobs in the State of Alaska and it is critical that we have a well-trained workforce to support these jobs.

I am retired from Federal Service after working 35 years as a geologist for the Bureau of Mines

and the Bureau of Land Management (BLM). Over the years we have hired several student interns from the UAA Geology Department and found them to be self-motivated and excellent workers. After graduating several of these students have transitioned to full-time employment

with BLM. Some would like to further their education and career opportunities by getting a

February 6, 2017

Dear Provost Gingerich:

~~Low students support movement of the MS Applied Geological Sciences program at UAA. The~~

Geological Sciences are a fundamental part of resource-based jobs in the State of Alaska and it is critical
that we have a well trained workforce to support these jobs. The MSAGS program at UAA will provide



January 18, 2017

Dr. Sam Gingrich, Provost
University of Alaska Anchorage
321 Science Drive
Anchorage, AK 99508

Dear Dr. Gingrich:

Dear Sam,

I am pleased to hear that you are interested in the position of Provost and Vice President for Academic Affairs at the University of Alaska Anchorage. I am confident that your extensive experience in higher education and your leadership skills will be a great asset to our institution. We are currently seeking a dynamic leader who can guide our academic programs and foster a culture of innovation and excellence. Your background in managing large-scale academic operations and your commitment to student success align well with our vision for the future of UAA. We would like to schedule a meeting to discuss your qualifications and the responsibilities of the position in more detail. Please let me know your availability for a meeting in the next few days.

We are looking for someone who can bring a fresh perspective to our academic leadership and who is committed to the success of our students and faculty. Your previous experience in developing and implementing strategic academic plans and your strong communication skills are highly valued. We are excited about the possibility of working with you and believe that you have the potential to make a significant impact on our institution. We look forward to hearing from you soon.

If you have any questions or need further information, please do not hesitate to contact me. We are committed to providing a supportive and collaborative environment for all our employees. Thank you for your interest in the position and for the time you have spent reviewing our materials. We hope to hear from you soon.

Sincerely,
[Signature]
[Name]
[Title]

Enclosed for you are two copies of the position description for the position of Provost and Vice President for Academic Affairs. Please review the description carefully and let me know if you have any questions or need further information. We are committed to providing a supportive and collaborative environment for all our employees. Thank you for your interest in the position and for the time you have spent reviewing our materials. We hope to hear from you soon.

Very truly yours,
[Signature]
[Name]
[Title]

Enclosed for you are two copies of the position description for the position of Provost and Vice President for Academic Affairs. Please review the description carefully and let me know if you have any questions or need further information. We are committed to providing a supportive and collaborative environment for all our employees. Thank you for your interest in the position and for the time you have spent reviewing our materials. We hope to hear from you soon.

February 13, 2017

Dear Provost Gingerich,

I am a geological advisor to CASA Exploration (currently based in Houston, TX) and I emphatically support the UAA Department of Geosciences proposed MS degree program. I have worked extensively

and development projects in Alaska for 20 years (ARCO/Phillips/ConocoPhillips) and had early

organized the UAA and UAF Geosciences Departments as well as both to both benefit from

J. A. MUNTER CONSULTING, INC.

January 31, 2017

Dr. Sam Gingerich, Provost
University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

Dear Provost Gingerich:

This letter is to support UA's proposal to create a Master's program in geoscience at UAA.

I first became aware of the need for advanced environmental education at UAA in 1989 when I was

asked to teach the course "Groundwater Dynamics" as an Adjunct Instructor through the
Engineering Department at UAA and the classroom was packed with around 30 people. Many of



UMIATQ

ENVIRONMENTAL

December 2013

Umiatq Environmental
1000 10th Street, Suite 100
White Plains, NY 10604
Tel: 914.261.1111
Fax: 914.261.1112
www.umi-atq.com

Umiatq Environmental is a leading provider of environmental consulting services to the construction industry.

Umiatq Environmental provides a wide range of services including:

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• Remediation and Site Investigation
• Air Quality and Noise Assessment
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• Wetlands and Water Resources
• Environmental Monitoring and Assessment
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• Environmental Stewardship and Sustainability
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Fax: 914.261.1112
www.umi-atq.com

Umiatq Environmental

Umiatq Environmental is a leading provider of environmental consulting services to the construction industry. Our team of experienced professionals is committed to providing high-quality, cost-effective solutions to our clients.

1/31/2017

Dr. Sam



Prof. Dr. Michael Jive
Anchorweg 4, Gaskä 99508

Dear Provost Gägerich,

I am writing in regards to the proposed Mission Statement of the University of Applied Sciences, which I have read and discussed with my colleagues. I am pleased to see that the document is well-structured and clearly communicates the university's vision and values. I believe it will serve as a strong foundation for the institution's future growth and success.

I have a few suggestions for improvement. First, I think it would be beneficial to include more specific examples of how the university's values will be implemented in practice. This could help to make the mission statement more tangible and actionable. Second, I would like to see more emphasis placed on the university's commitment to social responsibility and sustainability. These are important areas that should be clearly defined and integrated into the overall mission.

Overall, I am very impressed with the work that has been done so far. I am confident that with these minor adjustments, the mission statement will be a powerful tool for guiding the university's future. I would be happy to discuss these suggestions further and provide any additional input that may be helpful.

Thank you very much for your time and consideration. I look forward to hearing from you again.

Yours sincerely,
[Signature]

[Name]
[Address]
[Phone Number]

[Email Address]

[Date]



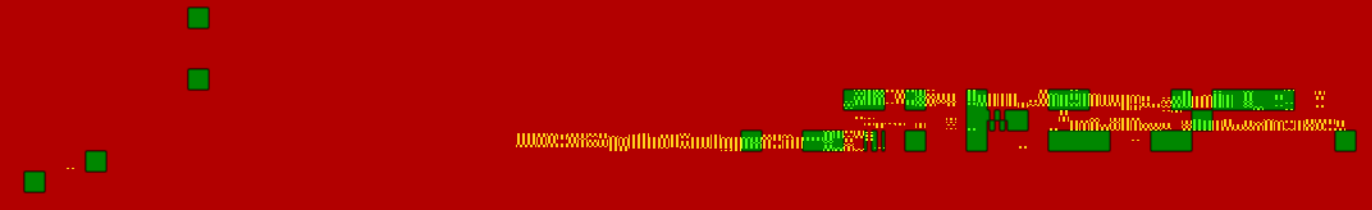
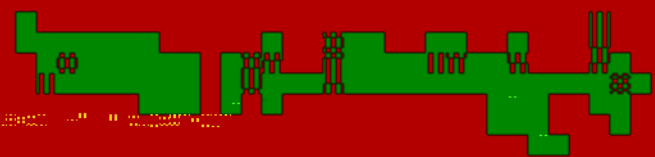
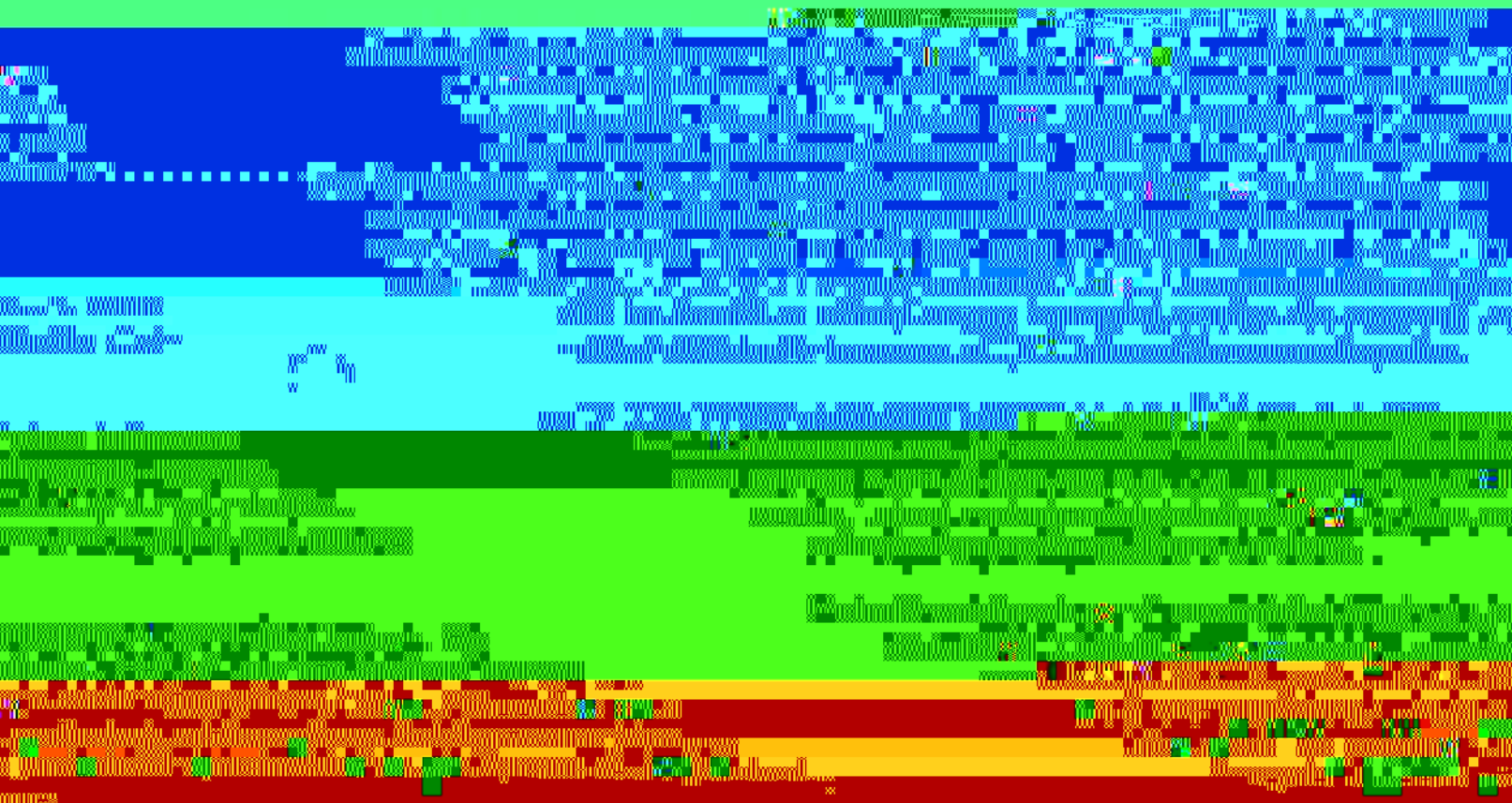
Anchorage AK 99516

January 31, 2017

Dr. Sam Gingerich, Provost
University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

Dear Provost Gingerich:

This letter is to support UA's proposal to create a Master's program in geoscience at UAA. As a resource development state, it is important for Alaska's decision-makers to understand how



30 January, 2017

Dr. Sam Gingerich, Provost
University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

Dear Provost Gingerich:

I am writing to you as UAA student Association president. I am writing to you as UAA student Association president.

UAA The Geological Sciences are a fundamental part of resource based jobs in the State of Alaska and its

John W. Roder

San Diego, California 92101
707-202-8277

5 February 2017

Academic Affairs
University of Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508

From: Sam Cline, Director and Executive Vice-Chancellor

Southcentral Alaska has more Earth science and Earth engineering professionals in industry and government on a per capita basis than anywhere else in the United States. Many of these individuals

Dear Professor Gingerich:

I am an adjunct instructor in Geology at the UAA Chugiak-Eagle River campus. I wish to express my support for the establishment of a Master's Degree program in Geology at UAA. The need for people with advanced education in earth sciences has never been greater, considering both our state's resources and needs, and the advancements in scientific understanding of environmental issues central to the requirements facing us in the future. I have been teaching at UAA for eight years, and have seen enrollment grow from a dozen or so students to sixty or more every semester for the past three

January 22, 2017

Dr. Sam Gingrich, Provost

University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

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Dear Provost Gingrich:

As a senior geological sciences undergraduate, I am writing to support the proposed MS Applied

January 20, 2017

Dr. Sam Gingerich, Provost
University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

Dear Provost Gingerich:

I am writing to support the proposed MS Applied Geological Sciences (MSAGS) program at UAA. The Geological Sciences are a fundamental part of engineering and resource-based jobs in the State of Alaska and it is critical that we have a well-trained workforce to support these jobs. The MSAGS program at UAA will provide Alaska the training necessary for successful careers in three key areas of applied

geological sciences: 1) environmental geoscience, 2) petroleum geoscience, and 3) mineral resources

January 31, 2017

University of Alaska Anchorage
3211 Providence Drive
Anchorage, AK 99508

Dear Provost Gingerich,

As a graduate from UAA's Geological Science undergraduate program and prospective graduate student, I am writing in support of the proposed MS Applied Geological Science program at UAA. The Geological Sciences are a fundamental part of resource-based jobs in the State of Alaska and it is critical to have a well-trained workforce to support these jobs. Prospective Alaska-based graduate students such as myself will be provided with the training necessary for successful careers in three key areas of applied geological sciences: 1) environmental