

CURRICULUM VITAE
for
MATTHEW E. CALHOUN

Assistant Professor of Civil Engineering
Department of Civil Engineering
College of Engineering
University of Alaska Anchorage
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ACADEMIC BACKGROUND

- Ph.D. (2015) University of Alaska Fairbanks
 College of Engineering and Mines
 Department of Civil Engineering
 Dissertation: *Synergistic Effects among Leading Indicators of Construction Safety Performance*
- M.S. (2010) University of Colorado at Boulder
 Department of Civil, Environmental, and Architectural Engineering
 Construction Engineering and Management
 Thesis: *Quantifying the Effectiveness of Pair-Wise Interactions among Safety Program Elements through a Cross-Impact Analysis*
- B.S. (2002) University of Alaska Anchorage
 School of Engineering
 Civil Engineering
 Leadership Honors

PROFESSIONAL EXPERIENCE

- Assistant Professor of Civil Engineering
2015-Present University of Alaska Anchorage
 Courses: Fluid Mechanics, Properties of Materials, Introduction to Engineering, Hydraulic Analysis and Design, Hydrologic Analysis and Design, Design of Engineering Systems (faculty advisor), Surface Water Dynamics
- Assistant Director of ANSEP
2015-Present Provide leadership aimed at effecting systemic change in the hiring patterns of Alaska Natives in the STEM professions. Work includes mentoring, program and proposal development, project execution and research on Alaska Native education.
- Teaching Assistant
2008-2010 University of Colorado at Boulder
 Department of Civil, Environmental, and Architectural Engineering
 Courses: Introduction to Engineering, Pre-college STEM Outreach Activity Modules
- Research Assistant
2008-2010 University of Colorado at Boulder
 Department of Civil, Environmental, and Architectural Engineering
 Topics: Construction Safety and Construction Safety Program Effectiveness

Director of Pre-College Academic Enrichment in Rural Alaska
 2006-2008 University of Alaska Anchorage
 Department of Student Affairs

Adjunct Instructor
 2007 University of Alaska Anchorage
 School of Engineering
 Course: Introduction of Engineering

ANSEP Summer Bridging Coordinator
 2006 University of Alaska Anchorage
 Alaska Native Science & Engineering Program (ANSEP)

Construction Engineer
 2002-2004 Ahtna Construction
 Fairbanks, AK
 Role: Project Management, Estimating, Quality Control, Materials Procurement, Heavy
 Equipment Logistics, Redline Drawings, Project Closeout

PROFESSIONAL REGISTRATIONS

Fundamentals of Engineering Certificate, Alaska, May, 2002

TEACHING

IDEA Course Evaluations (UAA only, raw and adjusted scores are based on a 5-pt scale)

- Indicates first time teaching course
- NA Not enough respondents (under 10)
- IP In progress

Course Title	# Students	Term	Progress-Objectives		Instructor/Course Avg.		Summary Evaluation	
			Raw	Adj.	Raw	Adj.	Raw	Adj.
CE A464 – Hydrologic Analysis & Design	18	Spring '21	3.6	3.6	4.5	4.5	4.1	4.1
CE A438 – Design of Engineering Systems	20	Spring '21	3.9	3.9	4.8	4.8	4.4	4.4
ENGR A151 – Introduction to Engineering	15	Spring '21	4.5	4.5	4.7	4.7	4.6	4.6
CE A462/662 – Surface Water Dynamics	9	Fall '20	3.9	3.9	4.3	4.3	4.1	4.1
CE A461 – Hydraulic Analysis and Design	19	Fall '20	4.0	4.0	4.3	4.3	4.2	4.2
CE A464 – Hydrologic Analysis & Design	24	Spring '20	3.7	3.7	3.7	3.7	3.7	3.7
CE 438 – Design of Engineering Systems	27	Spring '20	3.7	3.7	4.4	4.4	4.1	4.1
ENGR A151 – Introduction to Engineering	13	Spring '20	NA	NA	NA	NA	NA	NA
CE A462/662 – Surface Water Dynamics	22	Fall '19	4.1	4.1	4.4	4.4	4.3	4.3
CE A461 – Hydraulic Analysis and Design	27	Fall '19	4.1	4.1	4.4	4.4	4.3	4.3
ENGR A151 – Introduction to Engineering	9	Spring '19	NA	NA	NA	NA	NA	NA
CE A464 – Hydrologic Analysis & Design	31	Spring '19	4.3	4.0	4.7	4.3	4.5	4.2
CE 438 – Design of Engineering Systems	33	Spring '19	4.2	3.8	4.4	3.9	4.3	3.8
ENGR A151 – Introduction to Engineering	32	Fall '18	4.3	3.9	4.7	4.2	4.5	4.1
CE A461 – Hydraulic Analysis & Design	38	Fall '18	4.5	4.3	4.8	4.4	4.7	4.4
CE A334 – Properties of Materials	22	Fall '18	4.3	4.0	4.7	4.3	4.5	4.2
CE A464 – Hydrologic Analysis & Design	31	Spring '18	4.2	3.9	4.7	4.4	4.5	4.2
ENGR A151 – Introduction to Engineering	15	Spring '18	4.4	4.2	4.7	4.4	4.6	4.3
CE A464 – Hydraulic Analysis & Design	33	Fall '17	4.4	3.7	4.9	4.1	4.7	3.9
CE A334 – Properties of Materials	33	Fall '17	4.6	4.1	4.8	4.3	4.7	4.2
CE A334L – Properties of Materials Lab 02	12	Fall '17	4.5	4.1	4.7	4.2	4.6	4.2
ENGR A151 – Introduction to Engineering	30	Summer'17	NA	NA	NA	NA	NA	NA
CE A464 – Hydraulic Analysis & Design	30	Fall '16	NA	NA	NA	NA	NA	NA
CE A334 – Properties of Materials	34	Fall '16	4.5	4.1	4.5	3.8	4.5	3.9
CE A334L – Properties of Materials Lab 01	11	Fall '16	3.9	3.5	4.3	3.7	4.1	3.6
CE A334L – Properties of Materials Lab 02	12	Fall '16	4.9	4.6	4.5	4.4	4.7	4.5
CE A334L – Properties of Materials Lab 03	11	Fall '16	4.2	3.8	4.5	3.9	4.4	3.8
ENGR A151 – Introduction to Engineering	53	Summer'16	NA	NA	NA	NA	NA	NA
ES A341 – Fluid Mechanics	57	Spring '16	4.1	3.8	4.7	4.4	4.4	4.1
ES A341L – Fluid Mechanics Lab 01	14	Spring '16	4.3	3.8	4.5	4.1	4.4	3.9

ES A341L – Fluid Mechanics Lab 02	14	Spring '16	4.3	3.7	4.8	4.4	4.6	4.1
ES A341L – Fluid Mechanics Lab 03	19	Spring '16	4.2	3.6	4.4	3.8	4.3	3.7
ENGR A151 – Introduction to Engineering	40	Fall '15	4.0	3.5	4.9	4.5	4.5	4.0
CE A334 – Properties of Materials	29	Fall '15	4.2	4.0	4.7	4.6	4.5	4.3
CE A334L – Properties of Materials Lab 01	9	Fall'15	NA	NA	NA	NA	NA	NA
CE A334L – Properties of Materials Lab 02	11	Fall'15	3.7	3.5	4.5	4.4	4.1	4.0
CE A334L – Properties of Materials Lab 03	9	Fall'15	NA	NA	NA	NA	NA	NA
OVERALL COURSE AVERAGES			4.2	3.9	4.6	4.3	4.4	4.1

MERIT-BASED AWARDS AND HONORS

- University of Alaska Anchorage College of Engineering Faculty Appreciation Award from 1st and 2nd year Engineering Students (2015)
- Only Alaska Native to earn a PhD in Civil Engineering (CE) in the world and mentoring another Alaska Native CE PhD student since middle school. Expected doctoral graduation date: 2022

FUNDED RESEARCH

Year	Project Title	Agency	Role	Total
2021	Alaska Native Science & Engineering Program Summer Camp Initiative	Alaska Community Foundation	Co-PI	\$15,000
2021	Arctic Domain Awareness Center – Environmental Risk Index	Department of Homeland Security	Co-PI	\$207,076
2020	University of Alaska Alfred P. Sloan Foundation Indigenous Graduate Partnership Program 2020-2023	Alfred P. Sloan Foundation	Co-PI	\$633,280
2019	INNOVATE – 3-D printed human replacement joints based on Shark Cartilage	University of Alaska Anchorage	Co-PI	\$101,231
2017	Support of the Alaska Native Science & Engineering Program	Education Credit Management Corporation (ECMC) Foundation	Co-PI	\$600,000
2017	National Action Council for Minorities in Engineering – Undergraduate scholarship	National Action Council for Minorities in Engineering	PI	\$30,000
2017	NSF Engineering Diversity: Broadening Participation in Engineering Dissemination Conference	National Science Foundation	Co-PI	\$200,000
2017	University of Alaska Alfred P. Sloan Foundation Indigenous Graduate Partnership Program 2017-2020	Alfred P. Sloan Foundation	PI	\$342,630
2017	Alaska Alliance Louis Stokes Alliance for Minority Participation (LSAMP) 2017-2022	National Science Foundation	Co-PI	\$3,000,000
2015	Rural Alaska Incinerator Toilet Project Start-up	Alaska Native Science & Engineering Program	PI	\$10,000
TOTAL FUNDED RESEARCH				\$5,139,217

NON-PROVISIONAL PATENT APPLICATION

1. Artificial Tessellated Implants, and Systems and Methods of Making and Using the Same, Application US 62/787,923

PEER-REVIEWED JOURNAL ARTICLES PUBLISHED

1. Hallowell, M.R., and Calhoun, M.E. (2011). “Interrelationships among highly effective construction injury prevention strategies.” J. Constr. Eng. Manage., ASCE, 137(11), 985-993.

PEER-REVIEWED CONFERENCE PROCEEDINGS PUBLISHED

1. Yatchmeneff, M. and **Calhoun, M.** (2019). "Revisiting engineering identity in a common introduction to engineering course to improve retention." Proceedings of the 2019 American Society of Engineering Education annual conference and exposition, ASEE, Tampa, Florida, June 15-19, 2019.
2. Yatchmeneff, M. and **Calhoun, M.** (2017). "Exploring engineering identity in a common introduction to engineering course to improve retention." Proceedings of the 2017 American Society of Engineering Education annual conference and exposition, ASEE, Columbus, Ohio, June 24-28, 2017.
3. Yatchmeneff, M., Schroeder, H., and **Calhoun, M.** (2016). "How to develop Alaska Native STEM students in middle school and high school." Proceedings of the 2016 American Society of Engineering Education annual conference and exposition, ASEE, New Orleans, Louisiana, June 26-28, 2016.
4. **Calhoun, M.** and Schroeder, H. (2014). "Do it right the first time." Proceedings of the 6th Annual First Year Engineering Experience Conference: Enhancing the First Year of Engineering Education, ASEE, College Station, Texas, August 7-8, 2014.
5. **Calhoun, M.E.** and Hallowell, M.R. (2010). "Interrelationships among construction safety program elements: A cross-impact analysis." *Proceedings of the 2010 Construction Research Congress*, ASCE, Banff, AB, Canada, May 8-11, 2010.

OTHER PUBLICATIONS

1. Schroeder, H. and **Calhoun, M.** (2016). "Alaska Natives say yes to Alaska's offshore development." Real Clear Energy, June 27, 2016.
2. **Calhoun, M.E.** (2015). "Synergistic Effects among Leading Indicators of Construction Safety Performance." University of Alaska Fairbanks, December 2015. (Ph.D. dissertation)
3. **Calhoun, M.E.** (2010). "Quantifying the effectiveness of pair-wise interactions among safety program elements through a cross-impact analysis." University of Colorado, December 2010. (M.S. thesis)

INVITED PRESENTATIONS (WITHOUT PROCEEDINGS)

- Presentation: "Doing research while including Indigenous voices." Cold Regions Research and Energy Laboratory conference. June 2020. (20 minutes, 50 attendees)
- Keynote: Graduation remarks for Doyon Foundation graduates, May 2020. (15 minutes, 100 attendees).
- Panel: "No Do Overs in the Arctic: Applied Research and its Contributions to a Rapidly Changing Era." Alaskan Command Arctic Symposium, University of Alaska Fairbanks, November 15, 2019. (45 minutes, 150 attendees)
- Keynote: Graduation remarks for Native Student Services, University of Alaska Anchorage, May 3, 2019. (10 minutes, 100 attendees)
- Presentation of awards for partner organizations: ANSEP Annual Celebration, Anchorage, AK, January 25, 2019. (7 minutes, 1,400 attendees)
- Panel: "How to leverage corporate funding." Louis Stokes Midwest Center of Excellence, Indianapolis, IN, June 22, 2018. (1 hour, 40 attendees)
- Presentation of graduates: ANSEP Annual Celebration, Anchorage, AK, January 26, 2018. (7 minutes, 1,500 attendees)
- Keynote: "How to develop an effective STEM community that is measurable." Louis Stokes Midwest Center of Excellence, Indianapolis, IN, February 22, 2017. (20 minutes, 200 attendees)
- Presentation of graduates: ANSEP Annual Celebration, Anchorage, AK, January 27, 2017. (7 minutes, 1,400 attendees)
- Presentation: "Developing an effective STEM community learning model based off the ANSEP model." Native American Science & Engineering Program, Anchorage, AK, January 18, 2017. (60 minutes, 25 attendees)
- Presentation: "Alfred P. Sloan Indigenous Graduate Program (SIGP) annual update." American Indian Science & Engineering Society (AISES) National Conference, Minneapolis, MN, November 11, 2016. (10 minutes, 55 attendees)

- Presentation: “Starting Early for Preparing to Study STEM.” Alaska Native Charter School, March 3, 2016. (25 minutes, 300 attendees)
- Introduction: ANSEP Annual Celebration, Anchorage, AK, January 29, 2016. (5 minutes, 1,200 attendees)

RESEARCH PRESS IN POPULAR MEDIA

- Alaska Business Monthly, “ANSEP Success – Graduates engage, motivate, and teach.” 09/01/2016
- Anchorage Daily News, “UAA sees first Alaska Native engineering faculty.” 09/14/2015

PROFESSIONAL DEVELOPMENT

- *High-Impact Practices Mini-Grant Workshop*, CAFÉ, University of Alaska Anchorage, May 10-11, 2018.
- *World Intellectual Property Day*, AEDC and University of Alaska Anchorage, May 3, 2016.
- *National Science Foundation Day at UAA*, University of Alaska Anchorage, April 8, 2016.
- *Promotion & Tenure Progress towards Tenure*, CAFÉ, University of Alaska Anchorage, March 25, 2016.
- *Effective College Teaching Workshop*, Richard Felder, Hosted by The University of Colorado at Boulder, Boulder, CO, Feb 19-21, 2009.

STUDENT ADVISING

Graduate Committee Member or Chair

- Stephanie Armstrong (MS project, 2018) – committee member
- Josh Craft (MS project, 2018) – committee member
- Gregory Michaelson (MS project, 2018) – committee member
- George Taylor (MS project, 2018) – committee member
- Michael Ulroan (MS project, 2018) – committee member
- Kristopher Ford (MS thesis, 2020) – committee member
- Cameron Wilson (MS thesis, 2020) – committee member
- Evelina Natekin (MS thesis, expected Spring 2021) – committee member
- Leslie Bielski Petre (MS project, expected Fall 2021) – committee member
- Yue Zhao (MS thesis, expected Fall 2021) – committee member
- Jake Ciufu (MS thesis, expected Fall 2021) – committee member
- Sophia Tidler (MS project, expected Fall 2021) – committee chair

PROFESSIONAL MEMBERSHIPS

- Associate Member, American Society of Civil Engineers (ASCE)
- Member, American Society of Safety Engineers (ASSE)
- Member, American Indian Science & Engineering Society (AISES)
- Member, American Concrete Institute (ACI)
- Member, American Society of Engineering Education (ASEE)

SERVICE ACTIVITIES

- National Science Foundation Louis Stokes Alliance for Minority Participation Bridge to the Doctorate review panel (March '19)
- UAA representative and presenter to NSF's Louis Stokes Alliance for Minority Participation (LSAMP) annual national conference (2015-present)
- UAA representative, presenter and judge to the American Indian Science & Engineering Society annual national conference (2015-present)
- UAA ANSEP Alumni Committee (2013-present)
 - Started the ANSEP alumni scholarship fund (To date: raised +\$600,000)
- UAA College of Engineering Lab coordinator for the Construction Materials Lab (2015-present)
- UAA-ANSEP faculty mentor for 1st year undergraduate students (meet as a group every Friday)
- UAA-ANSEP faculty advisor for Alfred P. Sloan Indigenous Graduate Program (SIGP) graduate students (~10 students) (meet every Friday)
- UAA faculty mentor for ANSEP Middle School Academy, Acceleration Academy, Summer Bridge, and University students (2,500+ students)
- UAA faculty advisor with Michele Yatchmeneff for American Indian Science & Engineering Society (AISES) club (2015-present)
- UAA faculty advisor for UAA's Engineers without Borders (EWB) club (2019-present)

- UAA College of Engineering CSE tenure-track search committee member
- UAA College of Engineering Civil Engineering – Water Resources curriculum committee
- UAA Diversity Council member
- UAA Alaska Native Studies Council member

OUTSIDE SERVICE ACTIVITIES

- Doyon Foundation Board Member, elected for 2020-23 term