



SOUTH DAKOTA MINES

An engineering, science and technology university

Department of Geology and Geological Engineering

Recent theses/dissertations: Fall 2019 – Spring 2022

Fall 2019:

NOTICE OF THESIS DEFENSE

MS Candidate: Shannon Harrel

Program: Paleontology

Title: Taphonomic Effect of Fluvial Sediment Abrasion on Dental Microwear

When: Tuesday November 5th, 2019 2:00 PM

Where: Paleontology Research Laboratory – Room 153

Shannon Harrel's research was conducted under the direction of Major Professor Dr. Darrin Pagnac.

NOTICE OF DISSERTATION DEFENSE

PhD Candidate: Kyle Hazelwood

Program: **Geology** and Geological Engineering

Title: Late Cenozoic history of the Black Hills of South Dakota and Wyoming: a study of landscape evolution via stream profile analysis

When: Wednesday November 13th, 2019 9:00 AM

Where: Surbeck Center – Bump Lounge

Kyle Hazelwood's research was conducted under the direction of Major Professor Dr. Larry Stetler.

NOTICE OF DISSERTATION DEFENSE

PhD Candidate: Umit Yildiz

Program: **Geology** and Geological Engineering

Title: Characterization of Fault Architecture and Fault Seal Analysis at Cherokee Ridge, Greater Green River Basin, South-Central Wyoming

When: Tuesday November 19th, 2019 8:30 AM

Where: Classroom Building – Room 329

Umit Yildiz's research was conducted under the direction of Major Professor Dr. J. Foster Sawyer (Emeritus Professor, Fall 2021).



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NOTICE OF THESIS DEFENSE

MS Candidate: Caleb Ubl

Program: Geology and **Geological Engineering**

Title: Statistical Analysis of Interpolation Methods for Determining Aquifer Elevations Using ArcGIS

When: Friday November 22nd, 2019 12:00 P.M.

Where: McKeel Room – Surbeck Center

Caleb Ubl's research was conducted under the direction of Major Professor Dr. Larry Stetler.

NOTICE OF THESIS DEFENSE

M.S. Candidate: Benjamin Zalneraitis

Program: Paleontology

Topic: Determining Risk of Fossil Loss Using Close-Range Photogrammetry in the Sharon Springs Formation of the Pierre Shale Group

When: Thursday, November 21, 2019 – 1:00 P.M.

Where: Surbeck Center – Bump Lounge

Benjamin's research was conducted under the direction of Major Professor Dr. Maribeth Price.

Spring 2020:

Notice of Thesis Defense

MS Candidate: Imren Yilmazgoz

Program: **Geology** and Geological Engineering

Title: Petrographic and Mineralogic Characterizations of Gold Mineralization with the Rochford Formation, Rochford District, Black Hills, South Dakota

When: Thursday April 2nd, 2020 9:00 AM

Where: Zoom video conference

Imren Yilmazgoz's research was conducted under the direction of Major Professor Dr. Nuri Uzunlar.



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Notice of Thesis Defense

M.S. Candidate: Todd Anderson

Program: Geology and **Geological Engineering**

Topic: Groundwater-flow Model and Simulation of Dewatering Scenarios of Alluvial Deposits, Northern Summerset, South Dakota

When: Friday April 17th, 2020- 3:00 P.M.

Where: Zoom video conference

Todd Anderson's research was conducted under the direction of Major Professor Dr. Liangping Li.

Notice of Thesis Defense

MS Candidate: Taran W. Bradley

Program: **Geology** and Geological Engineering

Title: Pressure and Bulk Composition Effects on Near Infrared Spectra of White Micas in High P/T Metamorphic Terranes: A Case Study in Northwest Turkey

When: Thursday April 16th, 2020 1:00 P.M.

Where: Zoom video conference

Taran W. Bradley's research was conducted under the direction of Major Professor Dr. Gokce Ustunisik.

Notice of Thesis Defense

MS Candidate: Kristen Lewis

Program: **Geology** and Geological Engineering

Title: Experimental Constraints on Homogenization of Plagioclase-Hosted Melt Inclusions from Plagioclase Ultraphyric Basalts

When: Tuesday April 14th, 2020 11:00 A.M.

Where: Zoom video conference

Kristen Lewis's research was conducted under the direction of Major Professor Dr. Gokce Ustunisik.



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Notice of Thesis Defense

MS Candidate: Ahmet Yilmazgoz

Program: **Geology** and Geological Engineering

Title: Structural Control on Gold Mineralization in Rochford Formation, Rochford District, Black Hills, South Dakota

When: Thursday April 16th, 2020

Where: Zoom video conference

Ahmet Yilmazgoz's research was conducted under the guidance of Major Professor Dr. Nuri Uzunlar.

Notice of Thesis Defense

MS Candidate: Disha Gupta

Program: **Geology** and Geological Engineering

Title: Assessment of tight oil in the Pierre Shale of South Dakota

When: Thursday April 16th, 2020 - 3:00 PM

Where: Zoom video conference

Disha Gupta's research was conducted under the direction of Major Professor Dr. Kurt Katzenstein.

Summer 2020:

Notice of Thesis Defense

MS Candidate: Jared Long-Fox

Program: **Geology** and Geological Engineering

Title: Integrating Interdisciplinary Data for Analyses of Volcano Deformation: Application to Okmok Volcano, Alaska

When: Monday July 6th, 2020 - 2:00 PM

Where: Zoom video conference

Jared's research was conducted under the direction of Major Professor Dr. Timothy Masterlark.



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Fall 2020:

Notice of Thesis Defense

MS Candidate: Michael Day

Program: **Geology** and Geological Engineering

Title: Near Infrared Spectroscopy of White Mica and Implications for Metamorphism in the Black Hills, South Dakota

When: Monday November 16th, 2020 - 2:00 PM

Where: Zoom video conference

Michael's research was conducted under the direction of Major Professor Dr. Edward Duke.

Spring 2021:

Notice of Dissertation Defense

PhD Candidate: Lilly Jones

Program: **Geology** and Geological Engineering

Title: Assessing Aquifer Vulnerability to Contamination on the Pine Ridge Indian Reservation in southwestern South Dakota

When: Thursday March 18th, 2021 - 8:00 AM

Where: Zoom video conference

Lilly's research was conducted under the direction of Major Professor Dr J. Foster Sawyer (Emeritus Professor, Fall 2021).

Notice of Thesis Defense

MS Candidate: Grace DeVault

Program: Paleontology

Title: Using fossil bone geochemistry and age reports to reconstruct diagenesis at the Pig Dig Site, Badlands National Park, SD

When: Wednesday April 7th, 2021 1:00 PM

Where: Zoom video conference

Grace's research was conducted under the guidance of Major Professor Dr. Sarah Keenan.



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Notice of Thesis Defense

MS Candidate: Gavin Davidson

Program: Paleontology

Title: A Taxonomic Review and Chronologic Correlation of the Fossil Assemblage from the Mission Pit Locality (Clarendonian), South Dakota

When: Wednesday April 7th, 2021 3:00 PM

Where: Zoom video conference

Gavin's research was conducted under the guidance of Major Professor Dr. Darrin Pagnac.

Notice of Thesis Defense

MS Candidate: Jichao Bao

Program: Geology and **Geological Engineering**

Title: Leveraging Deep Learning for Flow and Transport Data Assimilation in Complex Aquifers

When: Thursday April 8th, 2021 2:00 PM

Where: Zoom video conference

Jichao's research was conducted under the guidance of Major Professor Dr. Liangping Li.

Notice of Dissertation Defense

PhD Candidate: Jennifer Bednar

Program: **Geology** and Geological Engineering

Title: Current Limitations, Variability, and Role of Topography in Stream Base Flow in the Northern Great Plains of the United States

When: Tuesday April 13th, 2021 11:00 AM

Where: Zoom video conference

Jennifer's research was conducted under the guidance of Major Professor Dr. J. Foster Sawyer (Emeritus Professor, Fall 2021).

Notice of Thesis Defense

MS Candidate: Wyatt Tatge

Program: Geology and **Geological Engineering**

Title: Water-quality analysis to evaluate effects of salinity on irrigation water in the Heart River Basin, North Dakota

When: Tuesday April 13th, 2021 8:00 AM

Where: Zoom video conference

Wyatt's research was conducted under the guidance of Major Professor Dr. Larry Stetler.



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Notice of Thesis Defense

MS Candidate: Carson Reimers

Program: Geology and **Geological Engineering**

Title: Establishing methodology to generate three dimensional models of drilled core using close-range photogrammetry

When: Friday April 16th, 2021 12:30 PM

Where: Zoom video conference

Carson's research was conducted under the guidance of Major Professor Dr. Kurt Katzenstein.

Fall 2021:

Notice of Thesis Defense

MS Candidate: Mathew Weinberger

Program: **Geology** and Geological Engineering

Title: The Effect of Extensional Deformation on Gold Mineralization in the Fluorspar Canyon Region of Northern Bare Mountain, Nye County, Nevada, USA

When: Tuesday November 23rd, 2021 2:00 PM

Where: Zoom video conference

Mathew's research was conducted under the guidance of Major Professor Dr. Trevor Waldien

Spring 2022:

Notice of Thesis Defense

MS Candidate: Colleen Sullivan

Program: Paleontology

Title: Fossil Dissolution Rates at Varying pH: A Pilot Study

When: Friday March 11th, 2022 9:00 AM

Where: Room 161 – Paleontology Research Lab and Zoom video conference

Colleen's research was conducted under the guidance of Major Professor Dr. Sarah Keenan.



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Notice of Thesis Defense

MS Candidate: Stephanie Loose

Program: **Geology** and Geological Engineering

Title: Fault Zone Characteristics and Epigenetic Gold Potential of the Holy Terror Gold Project, Keystone, South Dakota

When: Thursday March 24th, 2022 10:00 AM

Where: Room 321 – Mineral Industries Building

Stephanie's research was conducted under the guidance of Major Professor Dr. Timothy Masterlark.

Notice of Thesis Defense

MS Candidate: Carolyn Kocken

Program: Paleontology

Title: Geographic and temporal variation in the morphology of diagnostic tooth characteristics in Mesohippus and Miohippus

When: Thursday March 31st, 2022 11:00 AM

Where: Room 328 – Mineral Industries Building and Zoom video conference

Colleen's research was conducted under the guidance of Major Professor Dr. Darrin Pagnac.

Notice of Dissertation Defense

PhD Candidate: Brooke Long-Fox

Program: **Geology** and Geological Engineering

Title: Environmental and Phylogenetic Controls on Shell Morphology in the Chemosymbiotic Lucinidae (Bivalvia)

When: Wednesday April 6th, 2022 12:00 PM

Where: Zoom video conference

Brooke's research was conducted under the guidance of Major Professor Dr. Laurie Anderson.



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Notice of Thesis Defense

MS Candidate: John Hewitt

Program: **Geology** and Geological Engineering

Title: Petrogenesis of Plagioclase Ultraphyric Basalts (PUB) from the Northeastern (NE) Pacific Ridge System: Evidence from Mineral Textures and Geochemical Characteristics

When: Monday April 11th, 2022 1:00 PM

Where: Bump Lounge – Surbeck Center and Zoom video conference

John's research was conducted under the guidance of Major Professor Dr. Gokce Ustunisik.

Notice of Dissertation Defense

PhD Candidate: Flefod Redoloza

Program: Geology and **Geological Engineering**

Title: The Use of Deep Learning for Hydrogeological Inverse Modeling in Channelized Aquifers

When: Tuesday April 12th, 2022 2:00 PM

Where: Dorr Room – Surbeck Center

Flefords's research was conducted under the guidance of Major Professor Dr. Liangping Li.

Notice of Thesis Defense

MS Candidate: Erica Cung

Program: **Geology** and Geological Engineering

Title: Quantitative Analysis of Trace Element Partitioning Data for Clinopyroxene, Garnet, and Amphibole Using Statistical Methods

When: Tuesday April 12th, 2022 11:00 AM

Where: Dorr Room – Surbeck Center and Zoom video conference

Erica's research was conducted under the guidance of Major Professor Dr. Gokce Ustunisik.

Notice of Thesis Defense

MS Candidate: Michael Cyrier

Program: Paleontology

Title: The Impact of Carbon Availability and Geochemical Variation on Habitability of Epigenic Cave Systems

When: Wednesday April 13th, 2022 12:00 PM

Where: Room 161 – Paleontology Research Laboratory and Zoom video conference

Michael's research was conducted under the guidance of Major Professor Dr. Sarah Keenan.



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Fall 2022:

Notice of Thesis Defense

MS Candidate: Rudolph R. Hummel

Program: Paleontology

Title: Modeling North American Miocene Habitat Turnover with Multivariate Ungulate Ecometrics

When: Thursday, November 17, 2022, at 2:00 pm

Where: Classroom Building, Room 107

Hummel's research was conducted under the guidance of Major Professor Dr. Darrin Pagnac

Notice of Thesis Defense

MS Candidate: Jessica O'Neill

Program: Paleontology

Title: Comparing the Accuracy and Precision of pXRF and ICP-MS in Determining Fossil Bone Geochemistry between Different Depositional Environments

When: Thursday, November 10, 2022 at 9:00 am

Where: Paleontology Research Laboratory, Room 161

O'Neill's research was conducted under the guidance of Major Professor Dr. Sarah Keenan.

Spring 2023:

Notice of Thesis Defense

MS Candidate: Andrew Rich

Program: Paleontology

Title: Lithological Influences on Mosasaur Fossil Taphonomy within the Pierre Shale Formation of South Dakota

When: Thursday, March 23, 2023 at 12:00 PM

Where: SC Bump Lounge, Surbeck Center

Rich's research was conducted under the guidance of Major Professor Dr. Sarah Keenan



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Notice of Thesis Defense

MS Candidate: Peter Daly

Program: Paleontology

Title: Paleocommunity Structure in Cretaceous Methane Seeps: Comparing Epeiric Sea Communities to those bordering the Global Ocean

When: Monday, March 27, 2023, at 1:00 PM

Where: Paleontology Research Laboratory, Room 161

Daly's research was conducted under the guidance of Major Professor Dr. Laurie Anderson

Notice of Thesis Defense

MS Candidate: Anthony Gordon

Program: Paleontology

Title: Assessment of Jacket Tensile & Flexural Strength for Some Common Plaster Jacketing Fabrics

When: Monday, March 27, 2023, at 8:00 AM

Where: Paleontology Research Laboratory, Room 161

Gordon's research was conducted under the guidance of Major Professor Dr. Darrin Pagnac

Notice of Thesis Defense

MS Candidate: Kelsey L. Mills

Program: Paleontology

Title: Estimating the Occurrence/Prevalence of Fossil Poaching in Fossil-Rich Geologic Units of the Northern Mid-Western States, USA

When: Monday, April 3, 2023, at 9:00 AM

Where: Paleontology Research Laboratory, Room 161

Mills's research was conducted under the guidance of Major Professor Dr. Darrin Pagnac



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Notice of Thesis Defense

MS Candidate: William Whittenberg

Program: Paleontology

Title: The Use of Medical-CT to Analyze Ammonoid Shell Thickness as a Potential Response to Predation

When: Wednesday, April 5, 2023, at 3:00 PM

Where: Mineral Industries Building, Room 328

Whittenberg's research was conducted under the guidance of Major Professor Dr. Sarah Keenan

Fall 2023:

Notice of Thesis Defense

MS Candidate: Spencer Larsen

Program: **Geology** and Geological Engineering

Title: Ambient Noise Tomography Analysis at the Cascadia Subduction Zone

When: Monday, November 13, 2023, at 11:00 AM

Where: Mineral Industries Building, Room 330

Larsen's research was conducted under the guidance of Major Professor Dr. Kevin Ward

Notice of Thesis Defense

MS Candidate: Edward Anokye

Program: Geology and **Geological Engineering**

Title: Evaluating Surface Deformation Caused by Coalbed Methane Production in the San Juan Basin Using Interferometric Synthetic Aperture Radar

When: Friday, November 17, 2023, at 2:00 PM

Where: Mineral Industries Building, Room 328

Anokye's research was conducted under the guidance of Major Professor Dr. Kurt Katzenstein