
GAGE R. COON

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EDUCATION

The University of Tennessee, Knoxville

Degree: Bachelor of Science in Biological Sciences
Concentration: Microbiology, Minor: Hispanic Studies
GPA: 3.85/4.00, *summa cum laude*

Knoxville, TN

Expected: Dec. 2023

Leiden University

EuroScholars

Leiden, The Netherlands

August 2022 – January 2023

- Internship consisted of a research proposal, practical work, and a final report.
- Additional courses – Dutch I & Art, Ecology, Animal Rights.

RESEARCH EXPERIENCE

Undergraduate Research Assistant

Sept. 2020 – Present

The University of Tennessee, Knoxville

PI: Dr. Karen G. Lloyd

- Investigated microbial drivers of sulfate and methane cycling, linkage between hydrogen and labile organic matter, and simultaneous methanogenesis and sulfate reduction in coastal marine sediments.

Undergraduate Research Assistant

Aug. 2022 – Jan. 2023

Leiden University

PI: Dr. Sofia I. F. Gomes

- Collaborated on the Silva Nova project: <https://www.above-belowgroundinteractions.com/silva-nova>.
- Modeled plant-microbe responses to climate-induced temperature shifts. Emphasis on modeling microbial respiration rates of heat-stressed microcosms.

PEER-REVIEWED PUBLICATIONS

Gage R. Coon, Paul D. Duesing, Raegan Paul, Jennifer A. Baily, Karen G. Lloyd. Biological methane production and accumulation under sulfate-rich conditions at Cape Lookout Bight, NC. *Frontiers in Microbiology*. 2023. DOI: [10.3389/fmicb.2023.1268361](https://doi.org/10.3389/fmicb.2023.1268361)

RESEARCH GRANTS & FELLOWSHIPS

Grants

David White Travel Award – \$750 – May 2023

- Microbiology memorial award for attending SBS to present research.

Fellowships

Departmental Research Assistant Fellowship – \$1,750 – December 2022

- Microbiology departmental award for research in the Lloyd lab.

Other awards and merit-based scholarships

1st place Undergraduate Poster Award at SBS2023 – \$100

May 2023

EURēCA Award of Excellence – \$200

May 2023

- Symposium with more than 850 posters and 1200 students presenting.

CIE Study Abroad Scholarship – \$1,250

Aug. 2022

General Assembly Merit Scholarship – \$8,000

UT Volunteer Scholarship – \$32,000

Ned McWherter Scholarship – \$24,000

FIELD EXPEDITIONS

- Atlantic Continental Slope Aug. 2023 – Sept. 2023
Gathered sediment samples from the slope (200-550 meters deep) and water samples from the water column on the RV Savannah.
- Cape Lookout Bight, NC, USA Jun. 2023
Took cores of mud in an estuary to section off at a 2 cm resolution of metagenomic and geochemical data as a follow-up study to 2021's work.
- Haagse Bos, Den Haag, NL Oct. 2022
Collected 100L + of soil from an Oak and Birch Forest for geochemical, enzymatic, and plant performance measurements.
- Atlantic Continental Slope Jul. 2022
Gathered sediment samples from the slope (200-550 meters deep) and water samples from the water column on the RV Sharp.
- Cape Lookout Bight, NC, USA Jun. 2021
Took cores of mud in an estuary to section off at a 2 cm resolution of 16S and geochemical data.

PRESENTATIONS

* means award funded travel and ® means presentation received an award

- Gage R. Coon**, Leketha Williams, Roberto Diaz, Richard T. Kevorkian, Maureen Strauss, Douglas E. LaRowe, Laura L. Lapham, Karen G. Lloyd. "Organic carbon reactivity drives hydrogen concentrations in anoxic coastal sediment." Poster. *Gordon Research Conference*, forthcoming, January 14 – 19, 2024.
- Jennifer A. Baily, Zachary Hudspeth, Fumnanya Abuah, **Gage R. Coon**, Howard Mendlovitz, Carolyn Ruppel, Christopher S. Martens, Karen G. Lloyd. "Assessing the impact of methane seeps on the methane-oxidizing community in the overlying water column across a North Atlantic seep field." Poster. *Gordon Research Conference*, forthcoming, January 14 – 19, 2024.
- Gage R. Coon**, Leketha Williams, Roberto Diaz, Richard T. Kevorkian, Maureen Strauss, Laura L. Lapham, Karen G. Lloyd. "Labile organic matter can cause underestimated thermodynamic favorability via relatively low microbial hydrogen control in anoxic marine sediments." Poster. *American Society for Microbiology KT*, November 11, 2023.
- Gage R. Coon**, Paul Duesing, Raegan Paul, Jennifer A. Baily, Karen G. Lloyd. "Methane Production and Accumulation in Sulfate-rich Marine Sediments at Cape Lookout Bight." Poster. *Southeast Biogeochemistry Symposium*, May 13, 2023*®.
- Abuah, F., K. Sipes, R. Paul, **G. Coon**, W. Cyr, J. Boike, A. Abramov, A.D. Steen, T.A. Vishnivetskaya, K.G. Lloyd. Talk. "Investigating microbial communities in fastest thawing permafrost site in the world." *Southeast Biogeochemistry Symposium*.
- Gage R. Coon**, Paul Duesing, Raegan Paul, Jennifer A. Baily, Karen G. Lloyd. "Methane Production and Accumulation in Sulfate-rich Marine Sediments at Cape Lookout Bight." *EURēCA*, April 25, 2023®.
- Gage R. Coon**, Kostas Georgopoulos, Sofia I. F. Gomes. "Microbial stress response to temperature and its effect on Oak tree growth." Talk. *EuroScholars MidStay Program*, November 25, 2022.

Gage R. Coon, Jennifer Baily, Raegan Paul, Timothy J. Rogers, Karen G. Lloyd. "Comparison of Methane and Sulfur Cycling in Cape Lookout Bight and White Oak River Estuary." Talk. *Southeast Biogeochemistry Symposium*, April 30, 2022.

Jennifer A. Baily, Joshua L. Morningstar, Zachary W. Hudspeth, **Gage R. Coon**, Howard P. Mendlovitz, Christopher S. Martens, Karen G. Lloyd. "Characterization of the aerobic methane-oxidizing community of a methane-rich oceanic lagoon." Poster Presentation. *Southeast Biogeochemistry Symposium*, April 30, 2022.

Gage R. Coon, Jennifer Baily, Raegan Paul, Timothy J. Rogers, Karen G. Lloyd. "Comparison of Methane and Sulfur Cycling in Cape Lookout Bight and White Oak River Estuary." Poster Presentation. *EURēCA*, April 25, 2022

RELEVANT COURSEWORK

* means in progress Fall 2023

Biology & Microbiology

BIOL150 - Organismal and Ecological Biology
BIOL159 - Skills of Biological Investigation
BIOL160 - Cellular and Molecular Biology
BIOL220 - General Microbiology
BIOL229 - General Microbiology Laboratory
BIOL240 - General Genetics
MICR401 - Undergraduate Research in Microbiology
MICR402 - Undergraduate Research in Microbiology
MICR329 - Advanced Microbiology Lab
MICR470 - Microbial Ecology
MICR480 - Genomics and Bioinformatics
MICR321 - Advanced Microbiology
MICR411 - Microbial Genetics*

Chemistry

CHEM120 - General Chemistry I
CHEM130 - General Chemistry II
CHEM260 - Foundations of Organic Chemistry
CHEM269 - Foundations of Organic Chemistry Laboratory
CHEM359 - In-Depth Organic Chemistry Laboratory
CHEM360 - Organic Chemistry II
BCMB401 - Biochemistry I

Physics & Mathematics

MATH151 - Mathematics for the Life Sciences
MATH152 - Calculus for the Life Sciences
PHYS221 - Elements of Physics I
PHYS222 - Elements of Physics II

Currently enrolled in a Scuba Diving course.

LEADERSHIP & VOLUNTEER WORK

Chess Club

Co-President

Treasurer

Knoxville, TN

Aug. 2021 – Jan. 2023

Jan. 2023 – Present

- ☐ Coordinated bi-weekly tournaments, student organization traveling, and leaderboard standings.
- ☐ Grew an underdeveloped student organization into a traveling, competing, and popular organization with meetings having upwards of 50+ students.
- ☐ Hosted large chess tournaments like the TN Open and UT Open.

One for the World

Chapter Leader @UTK

Knoxville, TN

Dec. 2022 – May 2023

- ☐ Host seminars and challenge UTK students to pledge future income to combat world poverty.

OTHER EXPERIENCE

The University of Tennessee

Resident Assistant

Knoxville, TN

Aug. 2021 – May 2022

- ☐ Fostered the development of 40 first-year residents through creating, planning, and implementing educational, social, and recreational programs based on student needs.

- ☐ Respond to emergency situations while serving on and off a 12-hour weekly duty rotation.
- ☐ Worked with staff of 18 co-workers to provide quality customer service, assure student satisfaction, facility safety, and student wellness for 500+ residents.

NON-ACADEMIC HONORS & AWARDS

Discovery Living & Learning Community

Knoxville, TN

Ambassador

Aug. 2020 – May 2021

- ☐ Spokesperson for the first year living & learning community which focused on research seminars and promoting research opportunities for undergraduates.

Resident Assistant

Knoxville, TN

Rookie of the Year

May 2021

- ☐ Awarded for outstanding work during my first year in my position of Resident Assistant.

OUTREACH

Pre-professional panel

Nov. 2023

- ☐ Pre-professional mentorship for first-year biology majors in BIO100.

LABORATORY SKILLS

Molecular

- ☐ Nucleic acid extractions
- ☐ Real-time PCR (qPCR)
- ☐ Cell counts - fluorescent microscopy
- ☐ Enzymatic assays

Bioinformatics

- ☐ Network analysis - Cytoscape
- ☐ Coding - R-studio
- ☐ 16S rRNA gene analysis - dada2 pipeline
- ☐ CHONSZ – thermodynamic calculations

Geochemistry

- ☐ Geochemical and gas measurements (CH_4/CO_2 and stable isotopes, H_2 , SO_4^{2-} , H_2S , NO_3^- , NH_4^+ , PO_4^{3-} , organic and inorganic C/N composition of soil)
- ☐ Respiration rates and microbial biomass of soil (with and without selective inhibition)

REFERENCES

Dr. Karen G. Lloyd

Professor

Department of Microbiology

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Dr. Sofia F. Gomes

Associate Professor

Department of Plant Ecology

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3.5.07b

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Dr. Christopher S. Martens

Professor

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