

Ryan Daniel Cordner

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Education

- Cedars-Sinai Medical Center, PhD 2016
- Biomedical Sciences and Translational Medicine
 - Dissertation: "The role of *CD8 T cell sialylation in glioma immunity and neurodegeneration*"
- Brigham Young University, BS 2010
- Major: Clinical Laboratory Science

Professional Experience

- Brigham Young University, Associate Teaching Professor 2023-Present
- Brigham Young University Medical Laboratory Science Program Director 2022-Present
- Brigham Young University, Assistant Teaching Professor 2016-2023

Teaching

Courses Taught

MMBIO 102 – Introduction to Clinical Laboratory Techniques
MMBIO 294R – Mentored Research
MMBIO 392 – Hematology
MMBIO 393 – Immunohematology and Coagulation Theory
MMBIO 394 – Practical Hematology
MMBIO 395 – Practical Immunohematology and Coagulation
MMBIO 406 – Clinical Chemistry
MMBio 407 – Clinical Microbiology
MMBIO 409 - Hematology
MMBIO 410 – Hematology Laboratory
MMBIO 411 – Molecular Diagnostics
MMBIO 422 – Pathophysiology and Laboratory Diagnostics in Clinical Chemistry
MMBIO 423 – Pathophysiology and Laboratory Diagnostics in Clinical Chemistry and Molecular Biology
MMBIO 424 – Diagnostic Techniques in Clinical Chemistry
MMBIO 425 – Diagnostic Techniques in Clinical Chemistry and Molecular Biology
MMBIO 491 – Applications in Laboratory Medicine

MMBIO 496R – Clinical Experience

MMBIO 551R – Current Topics in Microbiology and Molecular Biology

NURS 505 – Interprofessional Education for Health Professionals

Clinical

Brigham Young University Student Health Center, COVID-19 Lab Supervisor 2020-2022

- Help set up and operate the high complexity CLIA laboratory
- Oversee and train students performing COVID-19 qPCR testing
- Interpret and report qPCR results
- Perform Proficiency Testing

Primary Children's Medical Center, Medical Laboratory Scientist 2010-2011

- Performed analysis of clinical specimens in the areas of hematology and clinical chemistry.
- Assisted with interim quality assurance laboratory inspections.
- Performed preventative maintenance and quality control testing on clinical analyzers.

Student Mentoring

Graduate Student Committees

Jennifer Brereton – MS Student

-MS Thesis: "Is Urinary Ferritin a Valid Surrogate for Serum Ferritin in a Newborn Intensive Care Neonate? A Pilot Study"

Undergraduate Students Mentored

Research

Henry Tullis – Fractal Fibrin Patterns in Factor Deficiencies (Honors Student)

Abigail Gordhamer – Chromatin Pattern Analysis in Blasts

Paul Young – Chromatin Pattern Analysis in White Blood Cells

Kirsten Van Dam – Causes of White Blood Cell Misidentification

Alexandra "Xan" Allen – White Blood Cell Identification Model

Jane Whiting – White Blood Cell Identification Model

Austin Snow – Whole Blood Fibrin Pattern Analysis

Dylan Tanner – White Blood Cell Identification Model

Audrey Memmott – White Blood Cell Identification Model

Kristen Skinner – Fibrin Pattern Analysis in Factor Deficiencies

Chandler Hatch – Differential Eosinophil Granulation

Sarah Hegerhorst – Differential Eosinophil Granulation

Austin Ralphs – Decision Based Learning Model for White Blood Cell Identification

Lauren Brooksby – Decision Based Learning Model for White Blood Cell Identification

Jemma Skabelund – Decision Based Learning Model for White Blood Cell Identification

Tara Blanc – Decision Based Learning Model for White Blood Cell Identification

Joshua Adams – The Education Gap in Medical Laboratory Science

Celeste Dunn – The Education Gap in Medical Laboratory Science

Caixa Blau – The Education Gap in Medical Laboratory Science
Mekeli Nelson – The Education Gap in Medical Laboratory Science

Senior Capstone Project

Brett Andersen
Emma Christensen
Hannah Crawford
Kaytee Crook
Courtney Hall
Lauren Holmstead
Elli Keister
Heemin Lee
Jessica Long
Johanna Lockett
Elza Otani
Rylee Petersen
Aleksi Solorio
Kalie Sorenson
Kyler Wade
Trina Yeo

Clinical – COVID-19 PCR Lab

Maddie Gardner
Ashley Sweetnam
Emili Hartwell
Evan Jalaty
Cassidy Swain
Cassie Child
Rachel Brown
Andrew Sheffield
Thomas Klingonsmith
Alice Gunn
Chandler Hatch
Sarah Hegerhorst
Jen Dacayanan
Brianna Thomas Saxey
Mariah May
Hoi Kiu Woo

Abstracts, Publications and Presentations

Abstracts

1. Gordhamer A, Young P, **Cordner** R. Distinguishing Leukemic Cells Using Fractal Chromatin Patterns and Machine Learning. Abstract for poster presentation, Undergraduate Research Symposium, Brigham Young University, Provo, UT. 2024

2. Gordhamer A, Young P, **Cordner R**. Distinguishing Leukemic Cells Using Fractal Chromatin Patterns and Machine Learning. Abstract for poster presentation, Roseman University Research Symposium, South Jordan, UT. 2024
3. Young P, Gordhamer A, **Cordner R**. Chromatin Pattern Quantification for the Differentiation of White Blood Cells. Abstract for poster presentation, Roseman University Research Symposium, South Jordan, UT. 2024.
4. Van Dam K, **Cordner R**. Factors leading to White Blood Cell Misidentification. Abstract for poster presentation, Roseman University Research Symposium, South Jordan, UT. 2024.
5. Memmott A, Tanner D, **Cordner R**. Improving White Blood Cell Morphology Education Through Standardized Questions. Abstract for poster presentation, American Physiology Summit, 2023, Long Beach, CA. 2023.
6. Snow A, **Cordner R**. Glucose Induced Alterations in Fractal Fibrin Patterns. Abstract for poster presentation, American Physiology Summit, 2023, Long Beach, CA. 2023.
7. Skinner K, **Cordner R**. Detecting Alterations in Fractal Fibrin Patterns Using Light Microscopy. Abstract for poster presentation, Experimental Biology 2022, Philadelphia, PA. 2022.
8. **Cordner R**, Dunn C, Davis M. The Education Gap in Clinical Microbiology. Abstract for poster presentation, American Society for Clinical Laboratory Science Annual Meeting, San Diego, CA. 2018.
9. Adams J, Davis M, **Cordner R**. Evaluating the Gap between Training Programs and Hospitals in Medical Laboratory Science Chemistry Testing. Abstract for poster presentation, American Society for Clinical Laboratory Science Annual Meeting, San Diego, CA. 2018.
10. **Cordner R**, Jhun M, Panwar A, Wang H, Yeager N, Murali R, McAbee J, Mardiros A, Takei A, Fan X, Jouanneau E, Black K, Wheeler C. IDH1 Modulates the CD8 T cell Response to Glioma. Abstract for oral and poster presentation, St. Jude National Graduate Student Symposium, Memphis, TN. 2016.
11. **Cordner R**, Jhun M, Panwar A, Wang H, Yeager N, Butte P, McAbee J, Mardiros A, Takei A, Fan X, Jouanneau E, Black K, Wheeler CJ. IDH1 Modulates the Immune Response to Glioblastoma. Abstract for oral presentation, Immunology LA 2014, Los Angeles, CA. 2013.
12. **Cordner R**, Jhun M, Panwar A, Wang H, Yeager N, Butte P, McAbee J, Mardiros A, Takei A, Fan X, Jouanneau E, Black K, Wheeler C. IDH1 Modulates the Immune Response to Glioblastoma. Abstract for poster presentation, Society for Neuroscience Annual Meeting, San Diego, CA. 2013.
13. **Cordner R**, Jhun M, Panwar A, Wang H, Yeager N, McAbee J, Mardiros A, Takei A, Fan X, Jouanneau E, Black K, Wheeler C. IDH1 Modulates the Immune Response to Glioblastoma. Abstract for poster presentation, AACR Annual Meeting, Washington D.C. 2013.

14. **Cordner** R, Ventura JS, Blickenstaff JW, Walther CK, Mayo JL, Felin JE, Andreason B, Wallace NB, Barrow JR, Edwards JG, Capecchi MR, Bridgewater LC. Mice Bearing a Targeted Mutation of nBmp2 Display Decreased Memory Capabilities. Abstract for poster presentation, Experimental Biology, Anaheim, CA. 2010.
15. **Cordner** R, Karyampudi L, Knutson KL. Efficacy of PD-1 Blockade in a Breast Cancer Vaccine Model. Abstract for Oral Presentation, Mayo Clinic, Rochester, MN. 2009.
16. **Cordner** R, Loos TJ, McCune BC, Bridgewater LC. ROC1 and ROC2: Interactions with the Nuclear Variant of Bmp4. Abstract for poster presentation, Experimental Biology, New Orleans, LA. 2009.
17. **Cordner** R, Loos TJ, Bridgewater LC. ROC1 and ROC2: Interactions with the Nuclear Variant of Bmp4. Abstract for poster presentation, Utah Conference of Undergraduate Research, Salt Lake City, UT. 2009.

Publications

1. Memmott A, Tanner D, **Cordner** R. A Seven Parameter Approach to White Blood Cell Identification. 2024. *Clinical Laboratory Science*. Accepted for publication.
2. Panwar A, Rentsendorj A, Jhun M, Cohen RM, **Cordner** R, Gull N, Pechnick RN, Duvall G, Madiros A, Golchian D, Schubloom H, Jin L, Van Dam D, Vermeriren Y, De Reu H, De Deyn PP, Raskatov JA, Black KL, Irvin DK, Williams BA, Wheeler CJ. Antigen-Specific Age-Related Memory CD8 T Cells Induce and Track Alzheimer's-Like Neurodegeneration. 2024. *PNAS* 121 (29) e2401420121.
3. **Cordner** R, Jhun M, Panwar A, Wang H, Gull N, Murali R, McAbee JH, Madiros A, Sanchez-Takei A, Mazer MW, Fan X, Jouanneau E, Yu JS, Black KL, Wheeler CJ. Glioma Immunotherapy Enhancement and CD8-specific Sialic Acid Cleavage by Isocitrate Dehydrogenase (IDH)-1. 2023. *OncoGene* 42(25):2088-2098.
4. Jhun M, Panwar A, **Cordner** R, Irvin DK, Veiga L, Yeager N, Pechnick R, Schubloom H, Black KL, Wheeler CJ. CD103 Deficiency Promotes Autism (ASD) and Attention-Deficit Hyperactivity Disorder (ADHD) Behavioral Spectra and Reduces Age-Related Cognitive Decline. 2020. *Frontiers in Neurology* 11:557269.
5. Panwar A, Jhun M, Rentsendorj A, Madiros A, **Cordner** R, Birch K, Yeager N, Duvall G, Koronyo-Hamaoui M, Cohen RM, Ley E, Black KL, Wheeler CJ. Functional recreation of age-related CD8 T cells in young mice identifies drivers of aging- and human-specific tissue pathology. 2020. *Mechanisms of Ageing and Development* 191:111351.
6. **Cordner** RD, Friend LN, Mayo JL, Badgley C, Wallmann A, Stallings CN, Young PL, Miles DR, Edwards JG, Bridgewater LC. The BMP2 nuclear variant, nBMP2, is expressed in mouse hippocampus and impacts memory. 2017. *Scientific Reports* 7:46464.
7. Junes-Gill KS, Lawrence CE, Wheeler CJ, **Cordner** R, Gill TG, Mar V, Shiri L, Basile LA. Human hematopoietic signal peptide-containing secreted 1 (hHSS1) modulates genes and pathways in glioma: implications for the regulation of tumorigenicity and angiogenesis. 2014. *BMC Cancer* 14:1920.

8. Jouanneau E, Black KL, Veiga L, **Cordner** R, Goverdhana S, Zhai Y, Zhang X, Panwar A, Mardiros A, Wang H, Gragg A, Zandian M, Irvin DK, Wheeler CJ. Intrinsically de-sialyated CD103⁺ CD8 T cells mediate beneficial anti-glioma immune responses. 2014. *Cancer Immunology and Immunotherapy*. 63(9):911-24.
9. **Cordner** R, Black KL, Wheeler CW. The Exploitation of Adaptive Evolution in Glioma Treatment. 2013. *CNS Oncology* 2(2), 171-179.

Presentations

1. Brigham Young University College of Life Sciences Faith and Science Seminar, September 2023.
2. Innovations in Medical Laboratory Science Education. BYU MMBio Seminary Series, October 2022.
3. Online Analyzers for Online Internships. Clinical Laboratory Educators' Conference, February 2021.
4. Improving Educational Practices in Medical Laboratory Science Courses. BYU MMBio Seminar Series, March 2020.
5. Using and Creating Open Educational Resources for MLS/MLT Programs. Medical Laboratory Educators Network Symposium, May 2019.
6. Molecular Diagnostics in the BYU MLS Program. Medical Laboratory Educators Network Symposium, November 2018.
7. Clinical Internship Site Location and Recruitment in the BYU MLS Program. Medical Laboratory Educators Network Symposium, November 2018.
8. White Blood Cell Morphology and Clinical Laboratory Centralization. BYU MMBio Seminar Series, October 2018.

Grants

1. Teaching Development Grant, College of Life Sciences, Brigham Young University, 2022 Innovative approach to nucleated blood cell identification using standardized questions and Bayesian probability. \$9,600

Committees

College and Department Committees

MMBio Executive Committee, Member – 2022 - Present
 MMBio Faculty Search Committee, Member – 2022 - 2023
 MLS Faculty Search Committee, Chair – 2021 – 2022
 Department Strategic Planning Committee, Member – 2021
 Ad Hoc CURA Grant Review Committee, Member – 2021
 College of Life Sciences Curriculum Committee, Member – 2020 – Present
 MMBio Undergraduate Curriculum Committee, Member – 2020 – Present
 Ad Hoc MMBio 122 Course Design and Implementation Committee, Member – 2019
 Department Awards and Resources Committee, Member – 2018 – 2020
 Medical Laboratory Educators Network Symposium Planning Committee – 2018 – 2019
 College of Life Sciences Career Advisement Coordinating Council – 2017 – 2018

Meeting Planning Committees

Medical Laboratory Educators Network Symposium Planning Committee, Member - 2018
 Medical Laboratory Educators Network Symposium Planning Committee, Member - 2019

Certifications

Certified Medical Laboratory Scientist by the American Society for Clinical Pathology	2011
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Society Memberships

American Society for Clinical Pathology	2020 - Present
American Physiology Society	2022 - 2023
American Society for Clinical Laboratory Science	2017 - 2021

Society Leadership

ASCLS – Utah Treasurer	2018-2021
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Awards

Early Career Teaching Award, Brigham Young University	2023
Spiritually Strengthening Faculty Award, College of Life Sciences	2022