

# Christopher M. Zarbock

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## EDUCATION AND TRAINING

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### Washington University School of Medicine

Fellow, Molecular Genetic Pathology and Clinical Informatics  
Department of Pathology and Immunology

July 2023 – Present

St. Louis, MO

### University of Minnesota

Resident, Clinical Pathology  
Department of Laboratory Medicine and Pathology

July 2020 – June 2023

Minneapolis, MN

### Maine Medical Center

Resident, Integrated Vascular Surgery Program  
Department of Vascular Surgery

July 2018 – June 2020

Portland, ME

### University of Wisconsin School of Medicine and Public Health

Doctor of Medicine

May 2018

Madison, WI

### Thayer School of Engineering at Dartmouth College

Bachelor of Engineering in Engineering Sciences  
Concentration in Biomedical Engineering

June 2012

Hanover, NH

### Dartmouth College

Bachelor of Arts in Biomedical Engineering Sciences  
Honors, *Magna Cum Laude*

June 2012

Hanover, NH

## BOARD CERTIFICATIONS

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### American Board of Pathology

Diplomate, Clinical Pathology

June 3, 2023 – Present

## MOLECULAR PATHOLOGY EXPERIENCE

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### Molecular evidence of differentiation syndrome following menin inhibitor treatment in a patient with relapsed acute myeloid leukemia

Case Study Presentation

Association for Molecular Pathology Annual Meeting

November 17, 2023

Advisors: Andrew Hughes, MD, PhD and Yi-Shan Lee, MD, PhD

Salt Lake City, UT

### Understanding the Next-Generation-Sequencing Bioinformatics Pipeline: A Hands-on Approach

Helped teach participants the basics of an NGS bioinformatics pipeline including troubleshooting command line issues.

Short Course 50

March 15, 2023

USCAP 112th Annual Meeting

New Orleans, LA

Advisors: Eduardo Castro-Echeverry, MD, Somak Roy, MD,  
and Kenneth Youens, MD, MBA

**Novel BRAF activating mutation in a case of hyalinizing trabecular tumor of the thyroid**  
Case Study Presentation

Association for Molecular Pathology Annual Meeting  
Advisors: Siddhartha Sen, MD, PhD and Emilian Racila, MD

November 4, 2022  
Phoenix, AZ

**Archer Fusion Panel Validation**

June 2021 – July 2021

Assisted in validation of this panel through checking for additional negative fusion partners as a part of the negative control.

**Worked on Indicator of CREB Activation due to Phosphorylation (ICAP) Sensor through use of Directed Evolution Techniques**

Updated sensor fluorophores and worked on development of high-throughput screen to process a large number of variants.

Fulbright Grant Research  
Max Planck Institute of Neurobiology  
Advisor: Oliver Griesbeck, PhD

September 2012 – June 2013  
Martinsried, Germany

**Optimizing Homologous Recombination in *T. saccharolyticum***

Explored one way of creating gene knockouts in an anaerobic bacterium. This knowledge could ultimately be used to explore gene function in this organism.

Honors Thesis  
Thayer School of Engineering at Dartmouth College  
Advisor: Lee R. Lynd, PhD

Winter 2012 – Spring 2012  
Hanover, NH

**Development of Improved Genetically Encoded Calcium Indicators**

Helped conduct directed evolution experiments to find improved variants of GECIs. These protein constructs exhibit a change in fluorescence when bound by calcium and enable the tracking of action potentials and other calcium-dependent events.

Max Planck Internship  
Max Planck Institute of Neurobiology  
Advisor: Oliver Griesbeck, PhD

Summer 2011  
Martinsried, Germany

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INFORMATICS EXPERIENCE

**Epic Physician Builder Basic and Advanced**

July 2023

**Epic Notecraft for Physicians**

July 2023

**Prevalence of Bacteremia Due to *Streptococcus*/*Enterococcus* Species at an Academic/Community Health System Over a Five Year Period**

Utilized the R programming language to analyze blood culture data for *Streptococcus* and *Enterococcus* species at M Health Fairview laboratories.

University of Minnesota Department of Laboratory Medicine  
and Pathology  
ACLPS 58th Annual Meeting Poster Presentation  
Advisor: Patricia Ferrieri, MD

Fall 2022 – Spring 2023  
Charlottesville, VA

### **Revising Molecular Care Testing Pathway**

March 2022 – Fall 2022

- Worked to help clarify current ordering practices for molecular testing
- Performed subanalysis of number of touch points and turn around time for a site within the M Health Fairview system

### **Roche Implementation Project**

March 2022 – Fall 2022

- Helped analyze the change in tests from the current system to the Roche system so as to identify which tests require new Epic codes

### **LIS Legacy Data Archiving Project**

Spring 2022 – Fall 2022

- Assisted in validating the search functionality through helping develop and then test various use cases

### **CAP Synoptic Update Testing Validation**

Spring 2022

- Aided in transitioning the AP Beaker implementation of the June 2021 CAP synoptic checklists

### **Digital Image Analysis Utilizing an Artificial Neural Network in the Quantification of Bone Marrow Fibrosis on Reticulin-Stained Trephine Core Biopsies**

Developed a digital image analysis algorithm using pixel classification trained via an artificial neural network emphasizing linear shapes for the quantification of bone marrow fibrosis.

University of Minnesota Department of Laboratory Medicine  
and Pathology

Fall 2021 – Winter 2022

USCAP 2022 111th Annual Meeting Poster Presentation

Los Angeles, CA

Advisor: Bartosz Grzywacz, MD

### **A Rapid Technique to Address Recall Bias Without a 2-Week Antegrade Washout Period in the Validation of Whole Slide Imaging for Histopathological Primary Diagnosis**

Helped to validate a technique which enabled rapid whole-slide imaging validation at the University of Minnesota.

University of Minnesota Department of Laboratory Medicine  
and Pathology

Fall 2020 – Winter 2021

USCAP 2021 110th Annual Meeting Poster Presentation

Virtual conference

Advisor: Oyedele Adeyi, MD

### **Updating Program Capability to Interface with New Data Format**

Revised MATLAB code to allow for processing of new high-density electroencephalogram data format.

Shapiro Summer Research Program

Summer 2015

Wisconsin Sleep Center

Madison, WI

Advisor: David Plante, MD, PhD

## ADDITIONAL RESEARCH EXPERIENCE

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### **Development of Brain Phantoms for Use in Merging Diffuse Optical Tomography with EEG, MEG, and MRI for Neurovascular Exams Project**

Attempted to develop a uniformly conductive graphite composite along with silicone molds which imitated the scattering and absorption properties of one's head.

Howard Hughes Medical Institute Fellow

Winter 2010

Thayer School of Engineering at Dartmouth College

Hanover, NH

Advisor: Solomon Diamond, PhD

## LEADERSHIP

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### **Management and Leadership Development Program, Dartmouth College**

Winter 2011

Continued developing leadership skills such as negotiation and motivating followers through attending workshops put on by different leaders.

### **United States Air Force Academy Cadet**

2008 – 2009

Learned about leadership through following others.

### **Senior Patrol Leader, Troop Guide (Boy Scouts of America)**

2006 – 2007

Devised and carried out scouting events. Supervised development of those in the troop.

## COMMUNITY INVOLVEMENT

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### **Wisconsin Health Literacy**

Spring 2017

Co-taught a course introducing non-native English speakers to prescription medications.

### **Blaine Center (Men's Homeless Shelter)**

November 2013 – March 2014

Served dinner to and conversed with homeless men from the Seattle community.

### **Dartmouth Cancer and Patient Services (CAPS)**

Spring '11 & '12, Winter '12

Helped a patient with yard work, assisted individuals in signing up for the bone marrow registry, and helped paint a residence for outpatients receiving care near Hanover, NH.

### **Students Fighting Hunger**

Fall 2011

Helped prepare meals for the underprivileged in the Hanover, NH area.

### **Chippewa Falls, WI Open Door Clinic**

Fall 2010

Registered new patients, updated patient records, and worked on updating drug database.

## AWARDS AND HONORS

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<b>USCAP 2022 Annual Meeting Pathologist-in-Training Travel Award</b>	2022
<b>Association for Pathology Informatics 2021 Summit Travel Award</b>	2021
<b>U.S. Student Fulbright Award</b>	2012 – 2013
U.S. Department of State award to expand perspectives through academic and professional advancement and cross-cultural dialogue. This award enabled me to conduct research at the Max Planck Institute for Neurobiology.	
<b>DAAD Graduate Scholarship Award</b>	2012 – 2013
Awarded, chose Fulbright grant.	
<b>Phi Beta Kappa</b>	2012
Academic honor society.	
<b>Tau Beta Pi</b>	2012
Engineering honor society.	
<b>Richard W. Olmsted 1932 (Thayer 1933) Prize</b>	2012
Awarded to a Dartmouth senior majoring in Engineering Sciences to recognize outstanding performance in the major.	
<b>E.A. Neufeld Endowed Scholar Recipient</b>	2010 – 2012
Awarded to a Dartmouth student, preferably from Wisconsin, who demonstrates personal and academic promise.	
<b>Presidential Scholar Research Assistantship at Dartmouth College</b>	Summer 2010, Winter 2011
<b>Howard Hughes Medical Institute Fellow</b>	Winter 2010
<b>Monroe Fellow (United States Air Force Academy)</b>	2009
Membership in this fellowship was awarded to approximately six cadets who excelled academically in my class of more than 1000. Its members shared an interest in learning for learning's sake and engaged in intellectual events such as book discussions.	
<b>Scholar Program Member (United States Air Force Academy)</b>	2009
Limited to roughly the top 60 cadets in academic standing in each class. Members may take special seminar sections of normal course offerings in which scholarly discussion is encouraged.	
<b>Two-Time Recipient of Superintendent's List Honor (United States Air Force Academy)</b>	2008 – 2009
Earned when one's grade point average, physical education average, and military performance average are greater than 3.0 at the United States Air Force Academy.	
<b>Eagle Scout Award</b>	2007