

# Allie Kreitman (she/her) - curriculum vitae

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## About Me

I am a second year medical student (MS2) in the University of Washington MD/PhD program. I aim to pursue translational research in evolutionary biology, cancer biology, and infectious diseases that bridges molecular biology, mathematical modeling, and medicine.

## Education

### **Colorado College, 2021**

Colorado Springs, CO

B.A

Major: Molecular Biology | Minor: Mathematical Biology

### **University of Chicago Laboratory Schools, 2017**

Chicago, IL

High school diploma

## Awards

### **NIH Postbac Poster Day Top 20% (2022)**

Awarded to top 20% of poster presenters at National Institutes of Health Postbac Poster Day

### **Mary Alice Hamilton Award in Molecular Biology (2021)**

Awarded to the top molecular biology major at Colorado College based on academic performance, research, and prospects for a successful career in biology

### **Barbara Whitten Prize for Women in the Natural Sciences (2021)**

Awarded to a woman student in the natural sciences at Colorado College who achieves personal scientific excellence while helping others do the same

### **Intramural NIAID Research Opportunities Trainee (2021)**

Awarded to 11 NIH Postbaccalaureates who show promise in the sciences and come from communities underrepresented in biomedical research

### **Goldwater Scholar (2020)**

Awarded to 396 college students in the US studying science and engineering

### **Colorado College Magnussen Gilmore Award Recipient (2020)**

Summer research funding for a molecular biology student at Colorado College selected by the department

### **Colorado College Dean's List (2018 - 2021)**

Awarded to students who attain a grade point average for the academic year of 3.75 or higher

### **2016-17 Illinois State Scholar (2016 - 2017)**

Awarded to high school seniors in Illinois for outstanding academic achievement

## **Daley Leadership in the Public Sphere Award (2016)**

Awarded to an Illinois state history fair project

## **Publications**

Brian Epling, Joseph M. Rocco, Kristin L. Boswell, Elizabeth Laidlaw, Frances Galindo, Anela Kellogg, Sanchita Das, Allison Roder, Elodie Ghedin, **Allie Kreitman**, Robin L. Dewar, Heather Kalish, Tauseef Rehman, Jeroen Highbarger, Adam Rupert, Gregory Kocher, Michael Holbrook, Andrea Lisco, Maura Manion, Richard Koup, Irini Sereti. Clinical course, immunologic response, and SARS-CoV-2 viability in patients with rebound of COVID-19 following nirmatrelvir/ritonavir. 2022, Clinical Infectious Disease. [Pubmed](#)

Kapil K. Saharia, Sabrina Ramelli, Sydney Stein, Allison E. Roder, **Allie Kreitman**, Stephanie Banakis, Joon-Yong Chung, Peter D. Burbelo, Manmeet Singh, Robert M. Reed, Vipul Patel, Joseph Rabin, Alexander S. Krupnick, Jeffrey I. Cohen, Emmie de Wit, Elodie Ghedin, Stephen M. Hewitt, Kevin M. Vannella, Daniel S. Chertow, Alison Grazioli. Successful lung transplantation using an allograft from a COVID-19 recovered donor. 2022, American Journal of Transplantation. [Full text link](#)

Roder, A., Johnson, K., Knoll, M., Khalfan, M., Wang, B., Banakis, S., **Kreitman, A.**, Mederos, C., Wang, W., Ruchnewitz, D., Samanovic, M., Mulligan, M., Lassig, M., Łuksza, M., Shultz-Cherry, S., Gresham, D., and Ghedin, E.. (2022). Optimized quantification of intra-host viral diversity in SARS-CoV-2 and influenza virus sequence data. mbio. [Pubmed](#)

Matthew Stier, Christopher Chapman, **Allie Kreitman**, John Hart, Shu Yuan Xiao, Uzma Siddiqui, and Irving Waxman. 2018. Dissection-enabled scaffold assisted resection (DeSCAR): a novel technique for resection of residual or non-lifting GI neoplasia of the colon. Gastrointestinal Endoscopy, 87: 843-851. [PubMed](#)

## **Posters & Presentations**

### **Surprising SARS-CoV-2 transmission dynamics in the Caribbean islands during the early COVID-19 Pandemic**

NIAID INRO Annual Symposium, 2023

### **Genomic Epidemiology of SARS-CoV-2 Spread in Haiti During the Early COVID-19 Pandemic**

NIAID/LPD weekly seminar, 2023

### **Using SARS-CoV-2 Surveillance Sequencing to Discover SARS-CoV-2 Lineage Emergence**

NIH-FDA COVID-19 Annual Workshop, 2022

### **Predicting COVID-19 Disease Severity using SARS-CoV-2 Single Nucleotide Polymorphisms**

NIH Postbac Poster Day, 2022

### **Epstein Barr Virus Latent Membrane Protein 1 Alters Expression of MCL1 and TSC1 in B cell Lymphomas**

Colorado College Senior Thesis Day, 2021

### **The Hallmarks of Cancer in Epstein Barr Virus Related B Cell Lymphomas**

Colorado College Summer Research Symposium, 2020

## **Professional Experiences**

### **Research**

#### **Metastatic Seeding of Bladder and Prostate Cancer**

*Ha Lab, Fred Hutchinson Cancer Research Center, 2024*

For my rotation project, I applied MACHINA metastatic seeding software to primary tumor and metastasis genomics data to better understand migration of metastatic clones and seeding of new metastasis.

#### **Characterizing SARS-CoV-2 Epidemic in Dominican Republic and Haiti**

*Ghedin Lab, National Institute of Allergy and Infectious Diseases, 2021-2022*

The goal of this work is to use tools of molecular epidemiology to understand the presence, transmission, and spread of SARS-CoV-2 in Haiti and the Dominican Republic in late 2020 and early 2021

### **Predicting COVID-19 Disease Severity using SARS-CoV-2 Single Nucleotide Variants**

*Ghedin Lab, National Institute of Allergy and Infectious Diseases, 2021-2022*

The goal of this work is to use whole genome sequencing data to develop a multivariate model to predict COVID-19 disease severity based on viral single nucleotide variants.

### **Literature Review on How EBV Causes B Cell Lymphomas**

*Hatton Lab, Colorado College, 2020*

The goal of this work was to produce a literature review of the mechanisms by which EBV can promote the hallmarks of cancer, as defined by Hanahan and Weinberg, in B cell lymphomas

### **Research Mechanisms of Epstein Barr Related B cell Lymphoma**

*Hatton Lab, Colorado College, 2020-2021*

The goal of this work was to determine whether the primary oncogene of Epstein Barr virus regulates the expression of a series of proteins related to cell cycle regulation and tumor suppression

### **The Bayesian Inference of HIV Selection Rate Under Different Drug Environments**

*Dwyer Lab, University of Chicago, 2018-2022*

The goal of this work was to estimate the selection pressure on HIV across changing drug treatment environments

### **Stochastic Modeling of HIV Mutation Rates**

*Dwyer Lab, University of Chicago, 2018*

The goal of this work was to analyze the effects of randomness with mutation rate and immune system strength in small populations of HIV particles

### **Rearing Tussock Moths for Field Experiments**

*Dwyer Lab, University of Chicago, 2018*

The goal of this work was to prepare for field experiments studying the spread of baculovirus on tree branches

## **Medical**

### **U-Test HIV Testing Volunteer (25 hours)**

*University of Washington, Seattle, WA, 2023-2024*

HIV testing volunteer through University of Washington School of Medicine where we provide free, rapid HIV tests at community centers and health fairs in Seattle.

### **Medical School Shadowing**

*University of Washington, Seattle, WA, 2023-2024*

Family Medicine (15 hours), HIV Clinic (8 hours), Women's Cancer Clinic (4 hours) , Pediatric Nephrology (10 hours)

### **Patient Support Services Volunteer (120 hours)**

*Inova Fairfax Hospital, Fairfax, VA, 2022 - 2023*

Discharge and escort patients around the hospital, make deliveries to inpatients. I have work with a particular focus on post-partum

### **HIV and COVID-19 Test Volunteer (80 Hours)**

*One Tent Health, Washington, D.C., 2021-2022*

Help people register for free COVID-19 testing and offer free HIV testing in DC

### **Shadowed Neurosciences and Interventional Radiology, Learning Link Career Observation Program (50+ hours)**

*Memorial Hospital, Colorado Springs, CO, 2019*

Shadowed nurses in the inpatient neuroscience unit and techs during surgery in interventional radiology

### **Shadowed GI surgeon, Dr. Irving Waxman (100+ hours)**

*University of Chicago, Chicago, IL, 2018*

Observed therapeutic endoscopic surgery and organized patient background information for clinical studies

### **AHA Certified CPR Instructor**

*Colorado College, Colorado Springs, CO, 2018-2021*

Teach AHA Heartsaver First Aid/ CPR/ AED classes to students, staff, and faculty

### **NOLS Wilderness First Responder**

Trained to provide first aid in the backcountry

## **Coursework**

### **Medical School**

- Core coursework:
  - Foundations of Medical Research
  - Infections and Immunity
  - Cancer, Hormones, and Blood
  - Muscles, Joints, Skin, and Bones
  - Cardiovascular
  - Respiratory and Renal
  - Head, Neck, and Gut
  - Mind, Health, and Society
  - Foundations of Clinical Medicine
- Elective coursework:
  - MSTP Journal Club
  - Introduction to Advocacy for the Health Professions
  - Tropical Medicine

### **Natural Science**

- Genetics
- Immunology
- Stem Cell Biology
- Genetics of Identity
- Introductory Cellular Biology Lecture
- Lab in Cellular Biology & Genetics
- Biology of Viruses & Epidemics
- General Chemistry
- Organic Chemistry
- Biochemistry
- Human Anatomy
- Head and Neck Anatomy
- Human Physiology
- Physical Geology

### **Math & Computer Science**

- Infectious Diseases, Immunology, and Within-Host Models
- Mathematical Modeling of Epidemics
- Mathematical Models in of Biological Systems
- Calculus (Differential, Integral, & Multivariable)
- Linear Algebra

- Ordinary Differential Equations
- Partial Differential Equations
- Probability & Statistics
- Introduction to R
- Introduction to Python

## Humanities

- Introductory Spanish
- Introduction to Feminist and Gender Studies
- Women and Goddesses in Hinduism
- Introduction to Poetry
- Introduction to Psychology

## Leadership & Extracurriculars

### Leadership Roles

#### **SPIN-Girls Pediatrician for a Day Organizer**

*University of Washington & SPIN Girls, Seattle, WA, 2024*

Co-leader for planning a workshop hosted by medical students in collaboration with SPIN Girls, an afterschool program for middle and high school girls to expose them to STEM fields. Role included communicating and planning with organization leaders, workshop development, medical-school outreach for volunteers, and organizing donations for goodie-bags.

#### **Pediatrics Interest Group Leader**

*University of Washington, Seattle, WA, 2024*

Student leader for the pediatrics interest group at the University of Washington. Responsibilities include hosting speaker events and co-organizing an outreach event with a Seattle after-school program aimed at increasing girls in STEM.

#### **Medical Research Interest Group Leader and Co-Founder**

*University of Washington, Seattle, WA, 2023-2024*

Student leader and co-founder of the medical research interest group at the University of Washington School of Medicine. Roles include leading the pre-physician scientist club mentoring program, developing research workshops to prepare medical students for summer research programs, and organizing lecture and journal clubs.

#### **MD/PhD Recruitment Committee**

*University of Washington, Seattle, WA, 2023-2024*

Student committee member for planning MD/PhD interviews and revisit events. Roles include leading student run information sessions, pre-interview outreach to applicants, and planning day of accepted students' weekend

## Mentoring

#### **Goldwater Society Peer Mentoring**

*Goldwater Foundation, across US, 2023-2024*

Mentor to two students applying to PhD or MD/PhD programs in the next few years. Role includes helping with editing grad school applications, advising on activities that could make their application stronger, and helping them navigate the next steps in their careers.

#### **University of Washington U-Prep Mentor**

*University of Washington, Seattle, WA, 2023-2024*

Mentor to two students applying to medical school through the University of Washington U-Prep club.

#### **University of Washington Pre-Physician Scientist Club Mentor**

*University of Washington, Seattle, WA, 2023-2024*

Co-Founder and mentor for the undergraduate pre-physician scientist club mentoring program, which connects undergraduate students interested in a physician-scientist career with medical or MD/PhD students at the University of Washington

**Medical Student Mentor for American Medical Student Association (AMSA) undergraduate club mentor**

*University of Washington, Seattle, WA, 2023-2024*

Mentor to two undergraduate students at the University of Washington interested in attending medical school through the University of Washington AMSA chapter

**Medical Student mentor for Alliance for Equal Representation in Medicine (AFERM)**

*University of Washington, Seattle, WA, 2023-2024*

Mentor to a University of Washington undergraduate interested in pursuing medicine through the AFERM program, which is dedicated to improving diversity in medical education

**Goldwater Ambassadors Mentor**

*Virtual, 2023*

Mentor college students who hope to pursue STEM careers through the Goldwater Scholars Network

**Quantitative Reasoning Center Tutor**

*Colorado College, Colorado Springs, CO, 2020-2021*

Tutored Colorado College Undergraduates in Molecular Biology, Chemistry, Math, and Anatomy. Run test review sessions for introductory classes, answer questions, and help with lab reports

**CREATE Mentor**

*Colorado College, Colorado Springs, CO, 2018-2020*

Mentored 8th grade girls from Mann Middle School (Colorado Springs, CO). Facilitated discussions about topics including body image, family, and online presence

**First-Year Orientation leader**

*Colorado College, Colorado Springs, CO, 2018-2020*

Led four-day camping and community service trips for incoming Colorado College students

**First Year Mentor for “Viruses: The Biology and Mathematical Modeling of Epidemics”**

*Colorado College, Colorado Springs, CO, 2018-2019*

Hosted events, helped with class registration, ran review sessions for this first-year only class in mathematics and molecular biology

**Additional Service Events**

**Teddy Bear Clinic Volunteer**

*April 2024, 5 hours*

Volunteer through Bellevue Children's Museum teddy bear clinic, leading medical stations for kids ages 4-10 to do a check-up on their stuffed animals.

**Colorado College Molecular Biology Alumni Panelist**

*March 2024, 2 hours*

Panel member for senior capstone class in molecular biology of recent alumni

**Doctor for a day volunteer**

*November 2023, 2 hours*

Volunteer at Seattle doctor for a day event, which brings over 200 local high school students to meet medical students, residents, and doctors to learn about a medical specialty and try hands-on activities in medicine.

**Colorado College Students in Medicine Panelist**

*May 2023, 2 hours*

Panel member for Colorado College pre-health club's applying to health professions programs

**Goldwater Scholars MD/PhD Application Panelist**

*May 2023, 3 hours*

Panel member to MD/PhD Application webinar for Goldwater Scholars applying to MD/PhD programs

**NIAID INRO Mentor for MD/PhD Applicants**

*Jan - April 2023, 10 hours*

Referred by NIAID postbac supervisor to serve as mentor in applying to MD/PhD programs for other NIAID trainees

**Rock Climbing****Head Route Setter**

*Ritt Kellogg Climbing Gym at Colorado College, Colorado Springs, CO, 2018-2021*

Set climbs, ran staff development clinics, organized events and competitions, lead new staff hiring and training, and built schedules

**Ranked within Top 10 Female Collegiate Climbers**

*USA Climbing's Rocky Mountain Region, 2017-2019*

**Co-Captain of the First Ascent Climbing Team**

*Chicago, IL, 2016-2017*

**Music****Member of Colorado College Chamber Orchestra & Bluegrass Ensemble**

*Colorado College, Colorado Springs, CO, 2017-2021*

**Top Tier Solo Performance in Cello**

*Illinois High School Association, 2015-2017*

Awarded to Illinois high school students on solo music performance

**National Phi Mu Alpha Sinfonia Award**

*French Woods Festival, 2015*

National award recognizing excellence in music