Rohan Shah

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EDUCATION

Doctor of Medicine Candidate — August 2018 – June 2024 (anticipated)
Pritzker School of Medicine, University of Chicago, *Chicago, IL* — USMLE Step 1: 262 (May 2020)
Hiatus to pursue Ph.D. between M2 and M3.

Doctor of Philosophy and Master of Science — June 2020 – June 2022
University of Chicago, *Chicago, IL* — GPA: 4.000/4.000
Committee on Genetics, Genomics, and Systems Biology — Advisor: Alexander J. Ruthenburg, Ph.D.
Thesis: "Quantitative Studies of Histone Modifications: Methods and Applications of Chromatin Immunoprecipitation and Next-Generation Sequencing"

Bachelor of Science with Honors — September 2014 – June 2018
University of Chicago, *Chicago, IL* — Dean's List: 2014-2017
Majors: Biological Chemistry, Chemistry, and Biological Sciences — GPA: 3.900/4.000

RESEARCH EXPERIENCE

Graduate and Undergraduate Researcher — February 2015 – Present
Principal Investigator: Alexander J. Ruthenburg, Ph.D.
Department of Molecular Genetics and Cell Biology, University of Chicago

- Developed novel forms of calibrated chromatin immunoprecipitation to quantify histone modifications
- Developed methods for Bayesian reallocation of ambiguously mapped next-generation sequencing reads
- Served as systems administrator to manage and maintain lab servers

Chart Abstracter — May 2020 – September 2020
Principal Investigator: Renslow Sherer, M.D.
Section of Infectious Diseases, University of Chicago

- Performed chart abstractions of first 414 COVID-19 admissions to the University of Chicago Medical Center
- Worked on subgroup study examining risk factors and outcomes of COVID-19 patients with coinfections

Research Consultant — March 2017 – April 2018
EpiCypher, Inc.
Durham, North Carolina, USA

- Trained researchers at EpiCypher, Inc. on-site in Durham in calibrated chromatin immunoprecipitation
- Consulted on feasibility of simplification and consolidation of materials and procedures for commercialization

HONORS AND AWARDS

Best Talk, UChicago Molecular Biosciences Retreat, *University of Chicago* — October 2021

Growth, Development and Disabilities Training Program Appointee, *University of Chicago* — April 2020

Ting-Wa Wong MD, PhD Scholarship, *University of Chicago* — April 2020

Summer Research Program Overall Excellence in Basic Sciences, *University of Chicago* — August 2019

Keystone Symposia Scholarship Awardee, *Keystone Symposia Foundation* — December 2018

Frances E. Knock Prize for Outst. Acad. Achievement in Chemistry, *University of Chicago* — May 2018

Phi Beta Kappa Honor Society, Chapter Beta of Illinois, *University of Chicago* — May 2017

University of Chicago Student Marshal, *University of Chicago* — April 2017

Katen Scholar, *University of Chicago* — Summer 2016

Beatrice G. and Nate H. Sherman Fellowship, *University of Chicago* — May 2015

PRESENTATIONS AND PUBLICATIONS

PEER REVIEWED PUBLICATIONS

Richter WF, **Shah RN**, Ruthenburg AJ. Non-canonical H3K79me2-dependent pathways promote the survival of MLL-rearranged leukemia. *eLife.*10, e64960 (2021).

Shah RN*, Ruthenburg AJ*. Sequence deeper without sequencing more: Bayesian resolution of ambiguously mapped reads. *PLOS Comput. Biol.* 17(4), e1008926 (2021). ***Corresponding authors.**

Grzybowski AT*, **Shah RN***, Richter WF, Ruthenburg AJ. Native internally calibrated chromatin immunoprecipitation for quantitative studies of histone post-translational modifications. *Nat. Protoc.* 14, 3275-3302 (2019). ***Contributed equally.**

Shah RN, Grzybowski AT, Cornett EM, Johnstone AL, Dickson BM, Boone BA, Cheek MA, Cowles MW, Maryanski D, Meiners MJ, Tiedemann RL, Vaughan RM, Arora N, Sun ZW, Rothbart SB, Keogh MC, Ruthenburg AJ. Examining the roles of H3K4 methylation states with systematically characterized antibodies. *Mol. Cell* 72, 162-177 (2018).

Werner MS, Sullivan MA, **Shah RN**, Nadadur R, Grzybowski AT, Galat V, Moskowitz I, Ruthenburg AJ. Chromatin-enriched lncRNAs are cell-type specific enhancers for proximal genes. *Nat. Struct. Mol. Biol.* 24, 596-603 (2017).

PREPRINTS AND MANUSCRIPTS UNDER REVIEW

Shah RN*, Grzybowski AT*, Elias J*, Chen Z, Hattori T, Lechner CC, Lewis PW, Koide S, Fierz B, Ruthenburg AJ. Re-evaluating the role of nucleosomal bivalency in early development. Preprint available at *bioRxiv*, doi: 10.1101/2021.09.09.458948 (2021). ***Contributed equally.** *Under review.*

PLATFORM PRESENTATIONS

Shah RN. Rethinking Bivalency in Early Differentiation. Epicypher 2021: Biological and Clinical Frontiers in Epigenetics. Clearwater Beach, FL. November 2021.

Shah RN. Rethinking Bivalency in Early Differentiation. UChicago Molecular Biosciences Retreat. The University of Chicago, Chicago, IL. October 2021.

Shah RN. Quantitative Studies of Histone Modifications. Pritzker School of Medicine Summer Research Program Symposium. The University of Chicago, Chicago, IL. August 2019.

Shah RN. Quantitative Studies of Histone Modifications. Keystone Symposia on Epigenetics and Human Disease. Banff, Alberta, Canada. March 2019.

Shah RN, Grzybowski AT, Ruthenburg AJ. Quantifying Internal Histone Modifications. Midstates Consortium for Math and Science Undergraduate Research Symposium in the Biological Sciences and Psychology. The University of Chicago, Chicago, IL. November 2016.

Shah RN, Grzybowski AT, Ruthenburg AJ. Developing Calibrated Chromatin Immunoprecipitation for Internal Modifications. Biological Sciences Collegiate Division Summer Fellowship Symposium. The University of Chicago, Chicago, IL. September 2015.

POSTER PRESENTATIONS

Shah RN, Grzybowski AT, Elias J, Chen Z, Hattori T, Lechner CC, Lewis PW, Koide S, Fierz B, Ruthenburg AJ. Re-evaluating the role of nucleosomal bivalency in early development. Epicypher 2021: Biological and Clinical Frontiers in Epigenetics. Clearwater Beach, FL. November 2021.

Shah RN, Grzybowski AT, Ruthenburg AJ. Quantitative Studies of Histone Modifications. Keystone Symposia on Epigenetics and Human Disease. Banff, Alberta, Canada. March 2019.

Shah RN, Grzybowski AT, Cornett EM, Johnstone AL, Cheek MA, Meiners MJ, Rothbart SB, Keogh M-C, Ruthenburg AJ. Probing H3K4 Methylform Specificity. Undergraduate Research Symposium. The University of Chicago, Chicago, IL. October 2017.

PRESENTATIONS AND PUBLICATIONS (continued)

POSTER PRESENTATIONS (CONTINUED)

Shah RN, Grzybowski AT, Ruthenburg AJ. Quantifying Internal Histone Modifications. National Cancer Institute Site Visit. Northwestern University Physical Sciences – Oncology Center, Evanston, IL. November 2016.

Shah RN, Grzybowski AT, Ruthenburg AJ. Denaturative Internally Calibrated Chromatin Immunoprecipitation to Quantify Internal Histone Modifications. Katen Scholars/Potter Fellows Research Symposium. The University of Chicago, Chicago, IL. August 2016.

Shah RN, Grzybowski AT, Ruthenburg AJ. Denaturative Internally Calibrated Chromatin Immunoprecipitation Can Quantify Internal Histone Modifications. Undergraduate Research Symposium. The University of Chicago, Chicago, IL. October 2015.

OTHER CONFERENCE ABSTRACTS

Lehmann CJ, **Shah RN**, Zhu M, Petit NN, Ridgway JP, Sherer R. Identifying Predictors of Coinfection in COVID-19: Making a Difficult Diagnosis. Infectious Diseases Society of America IDWeek 2021. Virtual. October 2021.

TEACHING EXPERIENCE

Lead Instructor, Genetics and Molecular Evolution Workshop May 2022
University of Chicago

Teaching Assistant, Biological Dynamics Spring 2021
University of Chicago

Teaching Assistant, Molecular Biology of the Cell Fall 2020
University of Chicago

Peer Educator, The Human Body Fall 2019
University of Chicago

Teaching Assistant, Biological Dynamics Spring 2018
University of Chicago

Teaching Assistant, Principles of Physiology Fall 2017
University of Chicago

Teaching Assistant, Katen Scholars Program Summer 2017
University of Chicago

Teaching Assistant, Biological Dynamics Spring 2017
University of Chicago

Teaching Assistant, Molecular Biology of the Cell Fall 2016
University of Chicago

Teaching Assistant, Biological Dynamics Spring 2016
University of Chicago

VOLUNTEER EXPERIENCE

New Life Volunteering Society, *Chicago, IL* September 2018 – Present

- Clinical volunteering in free primary care clinic for underserved patients on the north side of Chicago

University of Chicago Medical Center, *Chicago, IL* April 2015 – October 2017

- Volunteered in Emergency Room, NICU waiting room, and Hematology-Oncology Outpatient Clinic

NorthShore University HealthSystem, Glenbrook Hospital, *Glenview, IL* June 2012 – December 2016

- Volunteered at Environmental Health and Safety in data analysis and at nursing stations to help clinical staff
- Over 1,300 total volunteer hours logged

CAMPUS INVOLVEMENT

Pritzker Dean's Council Representative October 2020 – June 2022

- Representative of the Growth, Development, and Disabilities Training Program (GDDTP) to the Pritzker School of Medicine Dean's Council, working with administration to express the views of the GDDTP MD/PhD students

Pritzker Class Technology Representative November 2018 – June 2020

- Technology representative for Pritzker Class of 2022, working with administration to promote more effective use of technology in the medical school and to provide feedback on implementations therein

Model United Nations of the University of Chicago (MUNUC) October 2014 – February 2018

- Served on thirteen-person Executive Committee to organize Model United Nations conference for over 2,700 high school students with the aim of teaching speaking and writing skills and fostering awareness of global issues
- Served as Under-Secretary-General, directly leading five committee chairs as they developed their Model United Nations committees, trained staff, and operated their respective committees for over 650 high school students

University of Chicago Model United Nations Team October 2014 – April 2018

- Competed as part of the top-ranked University of Chicago Model United Nations Team in several competitions across North America, winning several awards
- Helped teach new team members the speaking and writing skills needed for competitive success
- Successfully operated several committees in which college students from around the world competed