Rohan Shah

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EDUCATION

Ph.D. Student June 2020 – Present
University of Chicago, *Chicago, IL*
Committee on Genetics, Genomics, and Systems Biology

M.D. Candidate August 2018 – Present
Pritzker School of Medicine, University of Chicago, *Chicago, IL*
Completed M1 and M2; entered Ph.D. Program after M2

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

HONORS AND AWARDS

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

RESEARCH EXPERIENCE

Student Researcher February 2015 – Present
Principal Investigator: Dr. Alexander J. Ruthenburg
Department of Molecular Genetics and Cell Biology, University of Chicago

- Developed a novel form of chromatin immunoprecipitation to assess and quantify internal histone modifications
- Served as systems administrator to manage and maintain lab servers and promote integration of computational resources with ongoing research projects throughout the lab
- Developed novel bioinformatic methods for genome-wide data analysis
- Worked in multiple ongoing collaborations on the roles of histone modifications as epigenetic regulators

Chart Abstracter May 2020 – Present
Principal Investigator: Dr. Renslow Sherer
Section of Infectious Diseases, University of Chicago

- Performed chart abstractions as part of a project characterizing natural history of the first 414 COVID-19 admissions to the University of Chicago Medical Center

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

- Trained researchers at Epicypher, Inc. on-site in Durham in methods and principles of calibrated chromatin immunoprecipitation, including methods for expanding the scope of the method
- Consulted on feasibility of simplification and consolidation of materials and procedures for commercialization
- Worked to prepare documentation and troubleshooting guides for calibrated chromatin immunoprecipitation kit

PRESENTATIONS AND PUBLICATIONS

Peer Reviewed Publications

Grzybowski AT*, **Shah RN***, Richter WF, Ruthenburg AJ. (2019). *Native internally calibrated chromatin immunoprecipitation for quantitative studies of histone post-translational modifications*. Nat. Protoc. *14*, 3275-3302. ***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. (2018). *Examining the roles of H3K4 methylation states with systematically characterized antibodies*. Mol. Cell *72*, 162-177.

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

Manuscripts Under Review

Grzybowski AT*, **Shah RN***, Elias J, Chen Z, Hattori T, Lechner CC, Lewis PW, Koide S, Fierz B, Ruthenburg AJ. *Calibrated quantitative measurements of H3K4me3 and H3K27me3 coexistence in embryonic stem cell chromatin redefine bivalency*. Under Review, Nat. Comm. ***Contributed equally.**

Richter WF, **Shah RN**, Ruthenburg AJ. *Non-canonical H3K79me2-dependent pathways promote the survival of MLL-rearranged leukemia*. Under Review, eLife. Preprint available on bioRxiv (doi: 10.1101/2020.12.04.411215).

Shah RN*, Ruthenburg AJ*. *Sequence deeper without sequencing more: Bayesian resolution of ambiguously mapped reads.* Under Review, PLOS Comp. Biol. ***Corresponding authors.**

Oral Presentations

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

Shah RN. *Quantitative Studies of Histone Modifications*. Keystone Symposia on Epigenetics and Human Disease at 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 at 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 at The University of Chicago, Chicago, IL. September 2015.

Poster Presentations

Shah RN, Grzybowski AT, Ruthenburg AJ. *Quantitative Studies of Histone Modifications*. Keystone Symposia on Epigenetics and Human Disease at 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 at The University of Chicago, Chicago, IL. October 2017.

Shah RN, Grzybowski AT, Ruthenburg AJ. *Quantifying Internal Histone Modifications*. National Cancer Institute Site Visit at 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 at 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 at The University of Chicago, Chicago, IL. October 2015.

TEACHING EXPERIENCE

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

- Volunteered in free clinic for underserved patients on the north side of Chicago by taking histories, conducting physical exams, and presenting to attending physicians

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

- Worked in Environmental Health and Safety to conduct data analysis and streamline processes
- Volunteered at nursing stations to assist clinical staff in their duties and help ensure patient comfort
- Over 1,300 total volunteer hours logged

CAMPUS INVOLVEMENT

Pritzker Class Technology Representative November 2018 – Present

- 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 committees 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 North America competed