

CHELSEY C. SPRIGGS

DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY • UNIVERSITY OF MICHIGAN MEDICAL SCHOOL
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EDUCATION

NORTHWESTERN UNIVERSITY (Chicago, IL)- September 2011- June 2017

- Driskill Graduate Program in Life Sciences, Feinberg School of Medicine
- Ph.D., Microbiology-Immunology
- Cumulative GPA- 3.778

MOREHOUSE SCHOOL OF MEDICINE (Atlanta, GA)- July 2010- October 2010

- MD/Ph.D. program
- Withdrew to pursue a Ph.D. at Northwestern University

MICHIGAN STATE UNIVERSITY (East Lansing, MI)- August 2006- May 2010

- B.S., Microbiology
- Honors College
- Cumulative GPA- 3.81, with Honors

RESEARCH EXPERIENCE

POSTDOCTORAL FELLOW- September 2017- Present

Department of Cell and Developmental Biology, University of Michigan (Ann Arbor, MI)

- Studying the role of host motor proteins in polyomavirus entry and infection. Specifically, utilizing biochemical and molecular biology techniques to understand the role of kinesin-1 and the dynein motor complex in Simian virus 40 (SV40) entry into the nucleus.
- Advisor- Billy Tsai, Ph.D.

GRADUATE RESEARCH- June 2012- August 2017

Department of Microbiology-Immunology, Northwestern University (Chicago, IL)

- Investigated the role of the Fanconi Anemia pathway and DNA damage response proteins in human papillomavirus (HPV) infection and tumorigenesis. Research techniques included cell culture, RNAi analysis, immunofluorescence microscopy and chromatin immunoprecipitation (ChIP) assays among others.
- Spearheaded a retrospective clinical study in collaboration with the Department of Pathology at Northwestern University to examine the correlation between DNA repair protein levels and cervical neoplasia progression.
- Advisor- Laimonis Laimins, Ph.D.

UNDERGRADUATE RESEARCH- October 2008- May 2011

Department of Microbiology and Molecular Genetics, Michigan State University (East Lansing, MI)

- Investigated the Middle T protein encoded by the mouse polyomavirus as a model for breast cancer progression. Worked on an independent project characterizing the oncogenic potential of Middle T through the use of mutant cell lines. Research techniques included cell culture, cloning, and *in vitro* functional assays.
- Advisor- Michele Fluck, Ph.D.

PROFESSORIAL ASSISTANTSHIP – September 2006- May 2008

Department of Fisheries and Wildlife, Michigan State University (East Lansing, MI)

- One of up to 100 incoming freshmen (top 1%) qualified based on academic records.
- Studied the impact of globalization on tropical biodiversity. Worked on a project characterizing the genetic diversity of poison dart frogs, *Oophaga (Dendrobates) pumilio*, from Panamanian and Nicaraguan rainforests.
- Advisor- Gerald Urquhart, Ph.D.

PUBLICATIONS

6. **Spriggs CC**, Badieyan S, Verhey KJ, Cianfrocco MA, Tsai B. 2020. Golgi-associated BICD adaptors couple ER membrane penetration and disassembly of a viral cargo. **J Cell Biol.** doi:10.1083/jcb.201908099. PMCID: PMC7199864.
5. **Spriggs CC***, Harwood MC*, Tsai B. 2019. How non-enveloped viruses hijack host machineries to cause infection. **Adv Virus Res.** 104:97-122. doi: 10.1016/bs.aivir.2019.05.002. PMCID: PMC6923802. (* co-first author)
4. Ravindran MS*, **Spriggs CC***, Verhey K, Tsai B. 2018. Dynein engages and disassembles cytosol-localized SV40 to promote infection. **J Virol.** doi: 10.1128/JVI.00353-18. PMCID: PMC5974495. Selected as spotlight article. (* co-first author)
3. **Spriggs CC**, Blanco LZ, Maniar KP, Laimins LA. 2019. Expression of HPV-Induced DNA Damage Repair Factors Correlates with CIN Progression. **Int J Gynecol Pathol.** doi:10.1097. PMCID: PMC6295252.
2. **Spriggs CC**, Laimins LA. 2017. Human Papillomavirus and the DNA Damage Response: Exploiting Host Repair Pathways for Viral Replication. **Viruses.** doi:10.3390/v9080232. PMCID: PMC5580489.
1. **Spriggs CC**, Laimins LA. 2017. FANCD2 binds human papillomavirus genomes and associates with a distinct set of DNA repair proteins to regulate viral replication. **mBio.** doi: 10.1128/mBio.02340-16. PMCID: PMC5312087.

GRANTS/FELLOWSHIPS

Burroughs Wellcome Fund Postdoctoral Enrichment Program Award- 2020-2023
 F32 National Research Service Award (NRSA)- 2019-2021
 T32 Molecular Mechanisms of Microbial Pathogenesis- 2018-2019
 F31 National Research Service Award (NRSA)- 2014-2017
 T32 Carcinogenesis Training Grant- 2013-2014
 T32 Immunology and Molecular Pathogenesis Training Grant- 2013 (Declined)
 Duvall Award- Undergraduate Research Fellowship- 2009-2010

HONORS AND AWARDS

Cornell Rising Stars Program- 2020
 Memorial Sloan Kettering Institute Academic Job Search Bootcamp, Selected Participant- 2020
 Bradley M. Patten Award for Excellence in Postdoctoral Research- 2019
 Boehringer Ingelheim Stiftung Travel Grant (GRC)- 2019
 University of Michigan Postdoctoral Travel Award- 2019
 Carl Storm Underrepresented Minority (CSURM) Fellowship- 2019
 Katten Muchin Rosenman Travel Scholarship Award- 2016
 Driskill Graduate Program Travel Award- 2016
 Golden Key International Honour Society- 2009
 Michigan State University Dean's List- 2006-2010
 Mowbray Scholars Program- 2006-2010
 Scholarship, Coca-Cola Scholars- 2006-2010
 Scholarship, National Merit Scholarship Program- 2006-2010
 Scholarship, General Motors Minority Dealers Association (GMMDA) Scholars Program- 2006-2010
 Scholarship, Toyota Community Scholars Program- 2006-2010
 Professorial Assistantship Program- 2006-2008
 Distinguished Freshman Scholarship- 2006-2010

SCIENTIFIC CONFERENCES AND SEMINARS

Spriggs CC, Tsai B. Department of Microbiology Seminar, UT Southwestern. *Zoom Seminar*. March 2021 (Invitation accepted).

Spriggs CC, Tsai B. Department of Molecular Cell and Developmental Biology Seminar, University of Michigan. *Zoom Seminar*. March 2021 (Invitation accepted).

Spriggs CC, Tsai B. Frontiers in Biochemistry Seminar/Discovery Science Emerging Scholars Lecture, Vanderbilt University. *Zoom Seminar*. December 2020 (Invitation accepted).

Spriggs CC, Badieyan S, Cianfrocco MA, Tsai B. “The BICD2-BICDR1 dynein cargo adaptors drive SV40 disassembly to promote viral entry”. Oral presentation. Viruses and Cells Gordon Research Conference. Barga, Italy. May 2019.

Spriggs CC, Tsai B. “The role of the cytoplasmic dynein motor complex in polyomavirus nuclear entry”. Oral presentation, Cell and Developmental Biology Colloquium. University of Michigan. Ann Arbor, MI. April 2019.

Spriggs CC, Tsai B. “The role of the cytoplasmic dynein motor complex in polyomavirus nuclear entry”. Oral presentation, Department of Microbiology, Micro 812 Seminar. University of Michigan. Ann Arbor, MI. September 2018.

Spriggs CC, Laimins LA. “FANCD2 in the HPV life cycle and pathogenesis”. Oral presentation. Molecular Biology of DNA Tumor Viruses Conference. Birmingham, United Kingdom. July 2017.

Spriggs CC, Laimins LA. “Regulation of HPV replication through FANCD2 recruitment to viral genomes”. Oral presentation. Molecular Biology of DNA Tumor Viruses Conference. Montreal, QC. July 2016.

Spriggs CC, Laimins LA. “Regulation of human papillomavirus replication by FANCD2 coordinated interactions”. Abstract for poster presentation, Molecular Biology of DNA Tumor Viruses Conference. Trieste, Italy. July 2015.

Spriggs CC, Laimins LA. “The role of the Fanconi Anemia pathway in human papillomavirus infection”. Oral presentation, Department of Microbiology and Immunology Seminar Series. Northwestern University. Chicago, IL. February 2015

Spriggs CC, Laimins LA. “Characterization of FANCD2, BRCA1 and other members of the DNA damage response pathway during the HPV life cycle”. Abstract for poster presentation, Molecular Biology of DNA Tumor Viruses Conference. University of Wisconsin. Madison, WI. July 2014.

Spriggs CC, Fluck MM. “Use of the Middle T Pathway to Understand the Role of Ap-1 in Tumor Progression”. University Undergraduate Research and Arts Forum (UURAF). Michigan State University. East Lansing, MI. April 2010.

COURSES AND PROFESSIONAL DEVELOPMENT

DIVERSITY, EQUITY AND INCLUSION (DEI) CERTIFICATE PROGRAM

University of Michigan (Ann Arbor, MI)- October 2019-present

- Aims to equip trainees with the skills and knowledge to work in a diverse environment. The program focuses on fostering a climate of inclusivity and intercultural awareness through discussion of anti-racism, bystander intervention and unconscious or implicit bias.

POSTDOCTORAL SHORT COURSE ON COLLEGE TEACHING IN SCIENCE AND ENGINEERING

University of Michigan (Ann Arbor, MI)- January 2019-April 2019

- 9-week certificate course designed to prepare postdoctoral scholars to teach effectively as future faculty members. The course covered topics such as course design, inclusive teaching, and incorporating active learning and group work into STEM classrooms.

LEADERSHIP EXPERIENCE

CO-SECTION EDITOR- Current Opinion in Virology, “Virus Entry” 2021 Special Issue- August 2020- Present

- Designing and organizing review topics, inviting authors and assessing the reviews for scope and accuracy.
- Writing a short editorial overview on virus entry.

BLACK IN MICROBIOLOGY, SPONSORSHIP LEAD- August 2020- Present

- Led sponsorship effort for the inaugural Black In Microbiology Week (Feat. in *New York Times*- “Black Microbiologists Push For Visibility Amid a Pandemic” (<https://www.nytimes.com/2020/09/28/science/black-microbiology-week.html>)).
- Oversaw financial planning, procurement and disbursement of sponsorship funds totaling \$50,000+.
- Coordinated communication between sponsorship and social media/web design teams regarding sponsor recognition and agreements.

CELL AND DEVELOPMENTAL BIOLOGY POSTDOC REPRESENTATIVE- University of Michigan (Ann Arbor, MI)- September 2019- Present

- Coordinate social, professional, and career development activities for CDB postdoctoral fellows.
- Represent and petition for the needs of CDB postdoctoral fellows at department faculty meetings.

AD HOC REVIEWER

- Proceedings of the National Academy of Sciences- 2020
- Journal of Biological Chemistry- 2019
- Journal of Virology- 2019

TEACHING/MENTORING EXPERIENCE

MOLECULAR BIOLOGY AND GENETICS TEACHING ASSISTANT

Northwestern University (Chicago, IL)- September 2013- December 2013

- Held weekly teaching sessions to discuss recent publications and important techniques used in the field as well as review sessions prior to each exam to go over lecture topics and questions.

NORTHWESTERN CLIMB TUTOR

Northwestern University (Chicago, IL)- September 2013- December 2013

- Held weekly tutoring sessions for the incoming cohort of CLIMB, a professional development program for diverse students in the biomedical sciences.

MICROBIOLOGY COURSE ASSISTANT

Michigan State University (East Lansing, MI)- January 2010- May 2010

- Held weekly office hours, proctored exams and quizzes, and held exam review sessions for the undergraduate introductory course on microbiology.

BIOCHEMISTRY COURSE ASSISTANT

Michigan State University (East Lansing, MI)- May 2009- August 2009

- Prepared and held biweekly review sessions as well as proctored and graded exams for an off-campus section of the introductory course on biochemistry.

ROTATION STUDENT MENTOR

Lily Hahn, Spring 2019- Graduate student in Cianfrocco/Weisman labs, University of Michigan

Madison Pletan, Fall 2018- Graduate student in Tsai Lab, University of Michigan

Natalie Gilbert, Spring 2016- Graduate student Blythe Lab, Northwestern University

OUTREACH AND SERVICE

PICTURE A SCIENTIST PANELIST- Office of Graduate and Postdoctoral Studies, University of Michigan (Ann Arbor, MI)- October 2020

- Participated in a panel following a screening of the “Picture a Scientist” film to discuss the need for DEI in science and how intersectionality shapes the experiences of women scientists.

FACULTY CORNER MODERATOR- Office of Graduate and Postdoctoral Studies, University of Michigan (Ann Arbor, MI)- March 2020

- Led an hour-long discussion with Dr. Nicole Koropatkin on “Mentoring Diverse Trainee Needs as a Faculty”

REBUILD DETROIT- University of Detroit Mercy (Detroit, MI)- July 2018

- Spoke with incoming college freshman from underrepresented backgrounds about my path to becoming a basic science researcher and the variety of career opportunities leading from it.

JUNIOR SCIENCE CAFÉ- Museum of Science and Industry (Chicago, IL)- February 2015- March 2017

- Exposed Chicagoland youth to career opportunities in STEM fields through interactive presentations and demonstrations.

SCIENCE CLUB MENTOR- Science and Society (Northwestern University)- September 2014- June 2016

- Partnered with the Boys & Girls Club of Chicago to expose underprivileged children to STEM education. Groups met weekly to explore hands-on curriculum in various disciplines.

BLACK GRADUATE STUDENT ASSOCIATION (BGSA) COMMUNITY OUTREACH CHAIR- Northwestern University (Evanston, IL)- September 2013- June 2014

- Organized and ran the community outreach committee. Planned community service events.

TUTOR CHICAGO- (Chicago, IL)- September 2012- June 2013

- Volunteered for one-on-one tutoring with economically disadvantaged elementary and middle school students in Chicago.