

YANG CHEN

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EDUCATION

B.S. Biology, GPA: 3.715

May 2019

University of Wisconsin – Madison

Madison, WI

Minors: Global Health, Gender and Women's Studies

RESEARCH EXPERIENCE

NIH Post-baccalaureate Intramural Training Award Research Fellow

Jun 2019 – Present

National Institutes of Health, National Institute of Allergy and Infectious Disease (NIAID)

Bethesda, MD

Molecular Parasitology Section; Supervisor: Michael E. Grigg, PhD

- **Role of recombination in the emergence and *in situ* evolution of SARS-CoV-2**

Mentor: Asis Khan, PhD

- Developing a bioinformatics pipeline with team to retrieve and analyze globally distributed whole genome sequences of human SARS-CoV-2 for evidence of recombination through molecular and phylogenetic analysis
- Initiating partnership with team to acquire SARS-CoV-2 samples from the Metropolitan Maryland, Virginia, and DC corridor to identify origins, mutations, and recombination patterns circulating locally
- Assisted mentor in preparing figures and slides for an oral presentation at the October 2020 NIH/FDA COVID-19 Virtual Research Symposium/Workshop

- **Novel *Sarcocystis canis*-variant infection in captive and free-ranging pinnipeds**

Mentor: Michael E. Grigg, PhD

- Analyzed sequence alignments and constructed phylogenetic trees of the evolutionary relationships facilitating the discovery of six distinct single nucleotide polymorphisms (SNPs) at the *ITS-1* marker, identifying a unique genetic signature of a novel *Sarcocystis canis* variant subspecies
- Wrote manuscript draft for peer-reviewed journal (publication in preparation)

- **Disease transmission from wildlife to livestock in the Fraser River Valley of British Columbia, Canada**

Mentor: Michael E. Grigg, PhD

- Ongoing project elucidating the transmission cycles of abortion-causing parasites, *Neospora caninum*, *Toxoplasma gondii*, and various *Sarcocystis spp.* to document incidence and economic impact in cattle, and coyotes' role as a reservoir species
- Independently completed extensive field work (British Columbia, Canada) acquiring cattle herd health data and specimens for diagnostic testing at NIH

Undergraduate Research Assistant, UW – Madison

Jan 2016 – Aug 2018

Department of Microbiology and Immunology; Supervisor: John Mansfield, PhD

Madison, WI

- **Verifying differentially expressed genes between low and high virulence strains of African Trypanosomes using qPCR to confirm RNAseq studies**

Mentor: John Barkei

- Completed undergraduate research thesis and poster presentation
- Optimized a sensitive quantitative PCR assay process to study the differential expression of genes at the transcriptional level in Trypanosomes
- Assisted team in cattle vaccination experiments facilitating a now completed study of infected livestock in Morocco
- Monitored the health of mouse colonies for immunological studies and assisted team in vaccination and challenge procedures in mice

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Undergraduate Research Assistant, UW – Madison

Departments of Bacteriology and Agronomy; Supervisor: Jean-Michel Ané, PhD

Jan – Aug 2016
Madison, WI

- **Plant-microbe symbiosis and HMGR1 mutant characterization**
 - Studied *HMGR1*, an essential gene involved in the signaling pathway regulating/promoting nitrogen fixation in *Medicago truncatula* roots

Research Apprentice, UW – Madison

Department of Genetics; Supervisor: Xuehua Zhong, PhD

Jan – Aug 2015
Madison, WI

- **Epigenetic regulation in plant growth and development**
 - Studied *Arabidopsis thaliana* leaf development and epigenetic markers

SCIENTIFIC PRESENTATIONS

Chen Y, Khan A, Brendan J, Quinones M, Grigg ME. SARS-CoV-2 Genome Evolution: Tracking Global Mutations and Recombinations. **November 2020**. NIH Post-bac Elevator Pitch Talk. Virtual. (Selected Oral).

Chen Y, Grigg ME, Raverty S, Dick J, Burns T, Ribble C. Epidemiological Monitoring of Coccidian Parasites in Cattle and Transmission from Canine and Feline Hosts in British Columbia, Canada. **April 2020**. NIH Post-bac Poster Day. Virtual. (Poster and Oral).

Chen Y, Grigg ME, Raverty S, Dick J, Burns T, Ribble C. Epidemiological Monitoring of Protozoan Parasites and their Definitive Hosts in the Fraser Valley of British Columbia, Canada. **November 2019**. NIH Post-bac Seminar Series. Bethesda, MD. (Selected Oral).

Chen Y, Haug M, Leissring M, Roth D. R99C Mutation Impairs Human LDH-A Activity. **May 2019**. UW – Madison College of Agricultural and Life Sciences Biology Major Capstone. Madison, WI. (Group Poster).

Chen Y, Barkei J, Mansfield J. Verifying Differentially Expressed Genes between High and Low Virulence Strains of African Trypanosomes using qPCR to confirm RNAseq studies. **May 2018**. UW – Madison Undergraduate Research Symposium. Madison, WI. (Poster).

PUBLICATIONS

Chen Y, St. Leger J, Sakamaki K, Mena L, Rotstein D, Grigg ME. Novel *Sarcocystis canis*-variant infection in captive and free ranging pinnipeds. (publication in late-stage preparation for submission spring 2021)

TEACHING EXPERIENCE

Organic Chemistry Tutor, University of Wisconsin – Madison

Drop-in tutor for undergraduate organic chemistry I and II students

Jan – May 2017
Madison, WI

LEADERSHIP AND SERVICE EXPERIENCE

Volunteer Co-coordinator, DC Central Kitchen

Co-leader of NIH post-bac group that cook meals and support a community kitchen

Jun 2020 – Present
Washington DC

President, Vice President and Treasurer, Naya Global Health

Led UW – Madison chapter of Naya Global Health, a national non-profit dedicated to promoting the well-being of West African Ebola survivors and to preventing future outbreaks

Jan 2017 – May 2019
Madison, WI

- Raised funds for employing Ebola survivors as first-responders and health educators in their communities

President and Philanthropic chair, Alpha Omega Epsilon

- Guided UW – Madison chapter of a Professional Engineering and Science Sorority
- Managed/balanced a budget of \$6,000 and led a fundraising project raising over \$900
- Engaged in science outreach activities with kids

2016 - 2018
Madison, WI

YANG CHEN

Volunteer, Heartland Hospice of South-Central Wisconsin Provided emotional support to a hospice patient	2017 – 2018 Madison, WI
Volunteer, SSM St. Mary's Hospital Emergency Department Assisted ER staff with facility's needs; cleaning/sanitizing, stocking, etc.	2017 – 2018 Madison, WI
Volunteer, The Open Seat: UW – Madison Student Food Pantry Assisted in operations of student food pantry	Jan – Aug 2016 Madison, WI

PROFESSIONAL SKILLS

Software and Bioinformatics

- Coding languages: R (intermediate); packages: ggplot2, ggtree, Python (beginner), Linux command line (beginner)
- Phylogenetic tree software: MEGA-X, R (ggtree), iTOL
- Proficient in FinchTV, Geneious Prime, and MEGAX
- Skilled with GraphPad Prism 8 and Microsoft Office Suite

Molecular Biology

- Culturing cell lines and parasite strains (HFFs, *T. gondii*, *N. caninum*)
- DNA/RNA/protein isolation
- PCR procedures and optimization (traditional/nested PCR, qPCR, RT-PCR)
- SDS-PAGE and native gel electrophoresis
- Sanger and Next-Generation Sequencing and analysis
- ELISA and optimization of antibody-based assays
- Microbiology techniques (bacterial culture, Gram stain, characterization tests)
- Mice experimentation (intraperitoneal injection, retroorbital bleeding, dissection)

LANGUAGES

English (primary language)

Mandarin (native speaker)

HONORS AND AWARDS

NIH Academy Certificate Recognition of completing a 10-month (35-hour) health disparities course at NIH	May 2020 Bethesda, MD
NIH Virtual Post-bac Poster Day Outstanding Poster Award Award from NIH-wide poster competition scoring within the top 20% of posters presented	April 2020 Bethesda, MD
NIH Intramural Research Training Award 2-year stipend awarded to post-baccalaureate research fellows	March 2020 Bethesda, MD
University of Wisconsin – Madison Scholarship Recipient Award based on academic excellence and leadership within the University	2016 – 2018 Madison, WI
Ferdinand Plaenert Scholarship, University of Wisconsin – Madison Award based on academic excellence and leadership within the College of Agricultural and Life Sciences at UW – Madison	Aug 2016 Madison, WI
Dean's List, University of Wisconsin – Madison Recognition of academic excellence by achieving above a 3.5 semester GPA (6 semesters)	2015 – 2019 Madison, WI
Youth Apprenticeship Program – Biotechnology Certificate Recognition of completing a two-year (900 hours) biotechnology training program	Jun 2015 Madison, WI