

Curriculum Vitae

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Medical Education

Saint Louis University School of Medicine, United States of America
08/2018 - 05/2022
M.D., 05/2022

Education

Undergraduate - Brigham Young University, Provo, Utah
Molecular Biology
09/2013 - 07/2018
B.S.; 07/2018

Medical School Awards

Distinction in Service Award (Saint Louis University Health Resource Center)

Certification/Licensure

BLS Certified, 02/01/2022

Volunteer Experience

04/2021 - 04/2021
Americorps, St. Louis, MO, United States of America
Vaccination Clinic Volunteer,

- Reviewed past medical history and side effects with patients before receiving their COVID-19 vaccines.

Total Time: 10 hours

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Volunteer Experience

10/2020 - 03/2021

Saint Louis University School of Medicine, St. Louis, MO, United States of America

IllScripts App Creator, Nora Porter, MD

- Built an application to help students understand disease hierarchy by building personal ontology maps of diseases.
- Piloted with our internal medicine clerkship program with several student cohorts.
- At <https://illscripts.jacobaclarke.com>.

Total Time: 120 hours

10/2020 - Present

Average Hours/Week: 3

Saint Louis University School of Medicine, St. Louis, MO, United States of America

SignupClinic App Creator, Sharon Frey, MD

- Developed software to manage more than 100 weekly volunteer sign-ups at our student-run clinic.
- This experience showcases my ability to build technical solutions for clinical problems.
- The clinic leadership created a new "Distinction in Service" award to recognize my unique contributions.
- Available at <https://signupclinic.jacobaclarke.com>.

06/2019 - Present

Average Hours/Week: 3

The Church of Jesus Christ of Latter-day Saints, St. Louis, MO, United States of America

Children's Choir Leader, Sarah Ostergar

- Taught weekly lessons for a choir of more than 20 children.
- Organized virtual and recorded meetings during the pandemic.
- Led two live performances and one virtual performance.
- Served families that experienced hardship by tutoring children, visiting their homes, and bringing holiday gifts.

08/2018 - Present

Multiple, St. Louis, MO, United States of America

Volunteer Pianist,

- Played piano at multiple locations, including [1] a memorial service for anatomy lab body donors, [2] Saint Louis University's hematology/oncology infusion center, and [3] church services.
- The piano is a creative outlet that helps me build resilience.

08/2018 - Present

Saint Louis University School of Medicine, St. Louis, MO, United States of America

Medical Education Volunteer,

Volunteered regularly to improve the curriculum by helping in multiple programs, including [1] the OBGYN unit review team, [2] mental health first aid training, and an [3] orientation lecture on vital sign measurement.

Total Time: 16 hours

01/2014 - 12/2015

Average Hours/Week: 60

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Volunteer Experience

The Church of Jesus Christ of Latter-day Saints, Berlin, Germany
 Missionary, Henry Kosak

- Taught classes about religion and participated in several service projects.
- Learned to speak advanced German through daily study and a commitment to speak only German from 9 AM to 9 PM each day.
- Hosted English and German courses for immigrants who were seeking work.

Work Experience

09/2021 - Present

Average Hours/Week: 8

Saint Louis University School of Medicine, St. Louis, MO, United States of America
 Survey Developer, Lauren Schwarz, Ph.D., ABPP

- After Saint Louis University experienced multiple suicides, I partnered with the Office of Student Affairs to build an early alert system that uses weekly SMS surveys to screen students for depression.
- Designed the system to provide resources to students and send emergency notifications to faculty when patients are flagged as high risk by the surveys.

12/2017 - 06/2018

Average Hours/Week: 12

Brigham Young University, Ballet Department, Provo, UT, United States of America
 Ballet Piano Accompanist, Daniel Fifield

- Worked as a ballet accompanist, playing for senior-level university courses.
- The ballet classes involved song improvisation and style adaptation; they required a non-repeating repertoire lasting up to five hours.

12/2017 - 06/2018

Average Hours/Week: 8

Provo Bicycle Collective, Provo, UT, United States of America
 Mechanic Certification Instructor, Kira Johnson

- Started as a volunteer by repairing used bikes to donate to the community.
- As an employee, I taught mechanic certification courses at the local juvenile detention center to improve their residents' chances of finding work after release.
- Led multiple volunteer nights at the bicycle shop.

08/2017 - 12/2017

Average Hours/Week: 10

Brigham Young University, Provo, UT, United States of America
 Teaching Assistant, Melissa Hansen

- Held weekly office hours to teach students.
- Taught multiple exam reviews.
- Developed a deeper interest in medical education.

Current/Prior Training

None

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Research Experience

09/2021 - Present

Average Hours/Week: 3

Saint Louis University School of Medicine, St. Louis, MO, United States of America
Research Assistant, Fred Buckhold, MD

- Under the supervision of the Saint Louis University internal medicine program director, I am designing a resident application ranking system.
- I am processing data from ERAS application packets to help identify unique applicants through natural language processing and machine learning.

05/2021 - Present

Average Hours/Week: 15

Saint Louis University School of Medicine, Wiemken, St. Louis, MO, United States of America
Research Assistant, Timothy L Wiemken, PhD MPH FAPIC FSHEA CIC

- Analyzed the Vaccine Adverse Events Reporting System (VAERS) with AI natural language processing.
- Created an AI deep learning model to predict vaccine type from symptom text with 82% accuracy (At <https://vaers.jacobclarke.com>).
- Research is ongoing, and I am currently preparing a manuscript submission.

01/2021 - 01/2021

Saint Louis University School of Medicine, St. Louis, MO, United States of America
Research Assistant, Georgios Alexopoulos, MD

- Performed statistical analysis on markers for ischemia after subarachnoid hemorrhage.

Total Time: 5 hours

01/2021 - Present

Saint Louis University School of Medicine, St. Louis, MO, United States of America
Research Assistant, Jose Greenspon, MD

- Reported as the first author on a case of pediatric congenital giant megaureter in a 16-year-old female.
- My manuscript is currently under review at Urology after the initial request for revisions.

Total Time: 20 hours

10/2020 - Present

Saint Louis University School of Medicine, St. Louis, MO, United States of America
Research Assistant, Taylor Gemperline, MD

- Reported on the potential benefits of earlier followup in patients with proliferative AMD after initiation of anti-VEGF therapy.
- Our manuscript is currently under review at the Journal of Vitreoretinal Disease.

Total Time: 12 hours

06/2019 - 03/2020

Washington University School of Medicine, Mazul, St. Louis, MO, United States of America

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Research Assistant, Angela L. Mazul, PhD, MPH

- Published a manuscript about cancer survival disparities by race and geographic location in an AACR journal (Cancer Epidemiology, Biomarkers & Prevention).
- Performed Kaplan Meier and Cox proportional hazard regression analyses using R and Python.
- Having witnessed healthcare disparities in St. Louis, I was proud to advocate for my patients through this research.

Total Time: 70 Hours

10/2018 - 05/2019

Average Hours/Week: 7

Washington University School of Medicine, St. Louis, MO, United States of America
Research Assistant, Jose P. Zevallos, MD, MPH, FACS

- Established a new immunohistochemical staining protocol.
- Used Python image processing to programmatically identify the number of positive staining cells per sample.
- Evaluator Feedback: "Jacob performed exceptionally well during his research rotation. He used his programming skills to help develop a novel algorithm for data analysis, and independently performed molecular biology experiments essential to our research."

08/2017 - 04/2018

Average Hours/Week: 10

Brigham Young University, Steffensen, Provo, UT, United States of America
Research Assistant, Scott Steffensen, PhD

- Troubleshoot a new protocol for isolation of microglia from the mouse brain.
- Trained other students in intracranial viral injections and transcardiac perfusions in rats and mice.
- Performed imaging on mice to check the response of dopamine neuron firing rates to alcohol incubation dose.

01/2016 - 01/2017

Average Hours/Week: 5

Brigham Young University, O'Neill, Provo, UT, United States of America
Research Assistant, Kim O'Neill, PhD

- Performed immunohistochemical staining, dot blot staining, and gold antibody labeling of cells.

Publications

Peer Reviewed Journal Articles/Abstracts

Clarke, J.A., & Despotis, A.M., & Ramirez, R.J., & Zevallos, J.P., & Mazul, A.L.. (2020, Oct). Head and Neck Cancer Survival Disparities by Race and Rural–Urban Context. *CANCER EPIDEMIOLOGY, BIOMARKERS & PREVENTION*, 29(10), 1955-1961. Cited in PubMed; PMID: 32727721. Pub Status: *Published*.

Clarke, J.A., & Despotis, J.A., & Zevallos, J.P., & Mazul, A.L.. (2020, Jun). Rural black cases have worsened outcomes in head and neck cancer. *Cancer Epidemiology, Biomarkers & Prevention*, 29(6), Abstract B099. Pub Status: *Published*.

Poster Presentation

Nelson, J.N., & Stapley, R.S., & Finuf, C.S., & Anderson, A., & Clarke, J.A., & Yorgason, J.T., & Steffensen, S.C.. (2018, December 04). *Effects of Cocaine on Spontaneous Dopamine Release Varies across Striatal Regions* [Poster presented]. Mary-Lou Fulton Conference/Provo, UT, USA.

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Zhang, J.K., & Patel, M., & Patel, N., & Clarke, J., & Almajali, M., & Alexopoulos, G.. (2021, January 13). *Clinical and Radiographic Biomarkers of Delayed Cerebral Ischemia following Aneurysmal Subarachnoid Hemorrhage* [Poster presented]. Weill Cornell Medicine Neurological Research Symposium/New York City, NY, USA.

Hobbies & Interests

- Running: I completed one marathon and two half marathons. I frequently trail run and hike with my wife.
- Team Sports: I participate in pickleball, soccer, or basketball weekly.
- Cycling: I organize regular group rides with friends. I enjoy repairing and assembling bicycles.
- Piano: I enjoy improvisation and classical piano music.

Language Fluency

Language	Language Proficiency	Proficiency Description
<i>German</i>	<i>Advanced</i>	<i>I speak very accurately, and I understand other speakers very accurately. Native speakers have no problem understanding me, but they probably perceive that I am not a native speaker.</i>
<i>Spanish/Spanish Creole</i>	<i>Basic</i>	<i>I speak the language imperfectly and only to a limited degree and in limited situations. I have difficulty in or understanding extended conversations.</i>

Other Awards/Accomplishments

Brigham Young Full Tuition Scholarship 2017 - 2018