

I am a second-year medical student at the University of Arizona College of Medicine – Tucson. I am passionate about science communication and providing mentorship to nontraditional students. I have teaching experience as a science museum educator and previously guest lectured a college-level course. As a physician-scientist, my goal is contributing research toward novel neurological treatments.

EDUCATION

MD-PhD (expected completion 2026)

SINCE

University of Arizona College of Medicine – Tucson in Tucson, Arizona

JULY 2019

- 2019– President of the American Medical Women’s Association (AMWA)
 - 2019– Co-Director of MedPride
 - 2019– Vice President of the Medical Ethics Reality Forum (MERF)
 - 2019– Rural Health Professionals Program (RHPP)
 - 2019– Leadership and Innovation in Healthcare Distinction Track (LIHDT)
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BS Biology

2013 – 2016

Portland State University in Portland, Oregon

GPA 3.82 *Magna cum laude*

- Honors Research Thesis in Dr. Stedman’s Virology Laboratory *Gone Sour: Exploring Host Range and Virus/Host Interactions using SSV1 Mutants*
 - 2015–2016 President of the Neuroscience Club
 - 2013–2015 Science Officer of the Neuroscience Club
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AS Transfer Program

2011 – 2013

Portland Community College in Portland, Oregon

RESEARCH LABORATORY EXPERIENCES

Lab Manager / Research Assistant II

Dr. David Ellison’s Nephrology and Hypertension Laboratory

Oregon Health and Science University in Portland, Oregon

MAY 2017 –

- Highly skilled in cell culture, transfection, RNAi, preparation of frozen tissue, immunofluorescence microscopy, Western blot, and small rodent surgery
 - Transgenic mouse colony management (2018 interim colony manager)
 - Trained in shipping of hazardous goods and biological materials
 - Established and standardized protocols, overseen requisitions and lab safety
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JULY 2019

Undergraduate Honors Researcher

JAN 2016 –

Dr. Kenneth Stedman’s Extreme Virology Laboratory

AUG 2017

Portland State University Center for Life in Extreme Environments in Portland, Oregon

- Completed independent thesis project of host-range expansion by mutations of *sulfolobus spindle-shaped virus 1* while learning virological techniques such as plaque assays, halo assays, and extremophile archaea culture
- Field sampled for viruses and hosts in Lassen, CA in hot spring environment

TEACHING / MENTORSHIP / HIGHER EDUCATION EXPERIENCES

Mentor for Premedical Students with Disabilities – volunteer SINCE
JUNE 2020
Future Docs with Disabilities (online)

- Guide premedical students with disabilities in overcoming unique barriers to entering medical school through weekly mentorship and advice
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Mentor for Premedical Students – volunteer SINCE
MAY 2020
Prescribe it Forward (online)

- Provide direct mentorship to premedical students by helping them identify career goals, navigate interviews, and maintain wellness as they apply to medical school
-

Mentor for K-12 with Learning Differences – volunteer SINCE
SEP 2019
Eye to Eye University of Arizona Chapter in Tucson, Arizona

- Help students with learning differences strategize ways to fulfill academic challenges, increase self-esteem, and build resilience through art room activities
-

Mentor for Aspiring Physician-Scientist College Students – volunteer SINCE
NOV 2019
American Physician Scientist Association (APSA) (online)

- Advise aspiring physician-scientists who are pursuing MD or MD-PhD degrees about the process of seeking research opportunities and medical school
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Guest Lecturer on Gut/Brain Axis for Microbes for Social Equity (HC 441H) – invited JULY 3
2019
Oregon State University in Corvallis, Oregon

- Presented introductory virology concepts and gut/brain axis research to students enrolled in Biology and the Built Environment taught by Dr. Sue Ishaq
 - Acknowledged in the publication '*Framing the discussion of microorganisms as a facet of social equity in human health*' by Ishaq et al. 2019 in PLOS Biology {<https://doi.org/10.1371/journal.pbio.3000536>}
-

OMSI: After Dark Science Educator & OMSI Chemistry Lab Volunteer – intern MAY 2015 –
AUG 2017
Oregon Museum of Science and Industry (OMSI) in Portland, Oregon

- Wrote, constructed, and performed scientific demonstrations at OMSI: After Dark events for adults 21+ following monthly science themes
- Assisted with prototype design, set-up, and troubleshooting
- Facilitated learning experiences with informal interactions, stage demonstrations, and lab activities
- Designed trivia games and other interactive creations

Library Technician – employee JAN 2014 –
Portland Community College Library in Hillsboro, Oregon and Portland, Oregon DEC 2017

- Designed themed book displays for historical events and awareness months
- Directly supervised student workers and upheld library stack maintenance
- Facilitated access to library materials and assisted community college students in navigating databases and research
- Responsible for full operation of the library on weekends

CLINICAL EXPERIENCES

Donor Monitor & Blood Drive Promotions – volunteer MAR 2017 –
Bloodworks NW in Portland, Oregon and Vancouver, Washington OCT 2017

- Observed donors for adverse reactions after donation and alerted medical staff immediately if adverse reactions occurred
- Ensured that donors hydrated and replenished themselves after blood donation
- Helped plan local blood drives with community connections

JUL 2018 –
 JUL 2019

Medical Scribe: Dermatology – employee APR 2017 –
Scribe America in Portland, Oregon JUN 2017

- Presented patient history to attending physician before appointments
- Collected medical data and entered data into electronic health record
- Recorded daily surgical notes

RESEARCH PUBLICATIONS

Gratrek, B.D.K.*, Swanson, E.A.*, Lazelle, R.A.*, Jelen, S.K. Hoenderop, J, Bindels, R.J., Yang, C.L, & Ellison, D.H. (2020). Tacrolimus-induced hypomagnesemia and hypercalciuria requires FKBP12 suggesting a role for calcineurin. *Physiological Reports*, 8, e14316.
<https://doi.org/10.14814/phy2.14316> *co-first authorship

Ferdaus, M.Z., **Gratrek, B.D.K.**, Miller, L., Si, J., McCormick, J.A., Yang, C.L., Ellison, D.H., & Terker, A.S. (2019). WNK4 limits distal calcium losses following acute furosemide treatment. *Physiological Reports*. <https://doi.org/10.14814/phy2.14195>

Cornelius, R.J., Si, J., Cuevas, C.A., Nelson, J.W., **Gratrek, B.D.K.**, Pardi, R., Yang, C.L, & Ellison, D.H. (2018). Renal COP9 signalosome deficiency alters CUL3-KLHL3-WNK signaling pathway. *Journal of the American Society of Nephrology*. <https://doi.org/10.1681/ASN.2018030333>

CONFERENCE POSTERS

Gratrek, B.D.K., Sandoval, A.R., Pickard, K.D., Atluri, S. & Hall, C.M. (2020). The 1974 stadium law: How an Arizona stadium renovation bill has impeded medical education on reproductive health for nearly 50 years. Presented virtually at the 105th American Medical Women's Association Annual Meeting on March 26-29, 2020 by Brittany D.K. Gratrek and Alicia R. Sandoval.
<http://doi.org/10.5281/zenodo.3731669>

Gratreack, B.D.K., Swanson, E.A., Lazelle, R.A., Jelen, S.K., Yang, C.L., Hoenderop, J., Bindels, R.J., & Ellison, D.H. (2019). Calcineurin in the distal convoluted tubule plays a key role in tacrolimus-induced hypomagnesemia and hypercalciuria. Presented at Oregon Health and Science University (OHSU) Research Week on May 13, 2019. {<http://doi.org/10.5281/zenodo.2726959>}

Palmer, A.V., **Gratreack, B.D.K.**, Mukherjee, A., Ellison, D.H. (2019). Inhibition of CTDSP1 with rabeprazole poses potential effects in the kidney. Presented at Oregon Health and Science University (OHSU) Research Week on May 13, 2019 by Ashley V. Palmer.

Gratreack, B.D.K., Martindale, R.G. (2019). Mind the microbiome: Dietary intervention and mental health outcomes of homeless adults. Presented at NW Microbiome Mixer in Portland, Oregon on March 16, 2019. {<https://doi.org/10.5281/zenodo.2653311>}

Gratreack, B.D.K., Stippich, K., Madison, T., Kunz, A., Alexander, R., Acott, J., Clark, A., Hill, R., Parker, G., Whittaker, A., Schoen, J., Howard, A., Voigt, A., Hootan, K. (2016). Neuroscience Club at Portland State University: Creating a multidisciplinary neuroscience community for students, teachers, and local community members. Presented at Society for Neuroscience Oregon Chapter Meeting on May 13, 2016.

ORAL PRESENTATIONS & PUBLIC SPEAKING HISTORY (EVENTS NOT DESCRIBED ELSEWHERE)

MD-PhD Student Panelist for *MedForward* Panel for Premedical Students on August 15, 2020. (virtual)

Student Representative for *UA Honors College MedCat Early Assurance Program* on August 5, 2020. (virtual)

Student Representative for *UA-COMT Student Diversity Advisory Committee (SDAC) Affinity Group Fair* on July 16, 2020. (virtual)

MD-PhD Student Panelist for *First-Generation Low Income (FGLI) Medical Association MD-PhD Panel* for Premedical Students on July 28, 2020. (virtual)

Diversity Panelist for *UA-COMT Office of Admissions* for Second Look on April 24, 2020. (virtual)

Medical Student Panelist for *UA-COMT American Medical Women's Association (AMWA) Medical School Panel* for Premedical Students on February 26, 2020.

Presented '*Professionalism (or not?): The Power of Dorky Emails*' to undergraduate students at the *Neuroscience Club at Portland State University Winter Symposium* on February 28, 2019.

Founder and Host of the Research in Review Journal Club at the *Neuroscience Club at Portland State University*. Sessions: 1-8, 10-12, and 14-16 from 2014-2016.

OTHER WORKS

- Gratrek, B.D.K.** (July 21, 2020) Navigating trauma in your personal statement for medical school. Featured opinion published by *in-Training*. {<https://in-training.org/navigating-trauma-in-your-personal-statement-for-medical-school-19973>}
- Gratrek, B.D.K.* & Sandoval, A.R.*** (April 30, 2020) Women's professional groups must include all women and forgo the family planning pitfall. *Medium*. *authors contributed equally to this work
- Gratrek, B.D.K.** (April 23, 2020) Student guest column: ways to help during the pandemic if you can't be on the front lines. Published by *UA Health Sciences Connect*. {<https://healthsciences.arizona.edu/connect/features/student-guest-column-ways-help-during-pandemic-if-you-cant-be-front-lines>}
- Rashid, A.* & **Gratrek, B.D.K.***. (March 24, 2020) Women share visions of equality: UA medical students empower their community on International Women's Day. *Medium*. *authors contributed equally to this work
- Gratrek, B.D.K.** (2020). Logo design and illustration for the University of Arizona College of Medicine - Tucson (UA-COMT) American Medical Women's Association (AMWA) branch. {<https://doi.org/10.5281/zenodo.3731671>}
- Gratrek, B.D.K.** (2014). Logo design and illustration for the Neuroscience Club at Portland State University.

COMMITTEES

- | | |
|---|-------------------|
| Transparency & Accountability Committee Member (chaired by Dr. Kadian McIntosh)
<i>UACOM-T Anti-Racism in Medicine Initiative</i> in Tucson, Arizona | SINCE
AUG 2020 |
| <ul style="list-style-type: none">• To select and analyze meaningful metrics; determine/implement an accountability process that ensures transparency across the work of the workgroup.• Promote transparency in URM COMT class profile, resident and faculty profiles.• Work with ODEI to develop and implement a system to hold departments and offices accountable for promoting diversity, equity and inclusion.• Work with other subcommittees to determine metrics or KPIs to assess progress towards goal(s). | |

NOTABLE UNDERGRADUATE COURSEWORK PROJECTS

- Gratrek, B.D.K., Lind, A., & Sutton, L.** (2016) Redefining drugs using common dietary compounds: exploring possible neuroprotective effects of caffeinated coffee & tea. Poster presentation at *Portland Community College Chemistry Fair* as part of the Organic Chemistry (CH 332) course taught by Dr. Gabriele Backes.
- Gratrek, B.D.K., Hirsch, T., Roth, B.** (2015). Antagonistic pleiotropy and cognition: early benefits of apolipoprotein E4. Poster and oral presentation at *Portland State University* as part of the Evolutionary Medicine (BI 410) course taught by Dr. Susan Masta.
- Gratrek, B.D.K.** (2015). Zebrafish: group dynamics on individual behavior. Independent animal behavior field project at *Portland State University* as part of the Animal Behavior. (BI 412) course taught by Dr. Randy Zelick.

ACHIEVEMENTS

ScrubCaps for a Cause Scholarship August 2020 (ScrubCaps for a Cause)

American Medical Women's Association Medical Education Scholarship January 2020 (AMWA)

Jim Heller Annual Meeting Travel Grant Recipient December 2020 (AMWA)

** rescinded due to COVID-19 travel cancellation*

Student Poster Presentation Award May 2016 (Society for Neuroscience, Oregon Chapter)

Leadership Fellows Award: Community Engagement 2015-2016 (Portland State University)

Student Organization of the Year Award 2014 (Neuroscience Club, Portland State University)

Leadership Fellows Award: Consciousness of Self 2014-2015 (Portland State University)
