Megan R. Majocha

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EDUCATION

2015 - 2018 **B.S. Gallaudet University,** Washington, DC
Summa Cum Laude, Honors in Biology

2019 - 2024 **Ph.D. Georgetown University,** Washington DC
National Institutes of Health Graduate Partnership Program
Georgetown Biomedical Graduate Education, Tumor Biology

RESEARCH AND PROFESSIONAL EXPERIENCE

Postdoctoral Fellowship March 2024-present
Laboratory of Cancer Biology and Genetics, National Cancer Institute, NIH
Mentor: Dr. Kent Hunter

- Identify the binding partners and localization of RESF1 and investigate its association with G4 quadruplexes
- Techniques utilizing: CRISPR, BioTAP XL, RIP-sequencing, CUT & TAG, Immunoprecipitation Mass Spectrometry

Dissertation Research July 2020-March 2024
Laboratory of Cancer Biology and Genetics, National Cancer Institute, NIH
Mentor: Dr. Kent Hunter

- Investigated *Shc1* P561X as a potential metastasis-driver mutation using a series of mouse models
- Characterized the role of metastasis susceptibility gene *Resf1* in ER-negative breast cancer
- Techniques utilized: western blot, co-immunoprecipitation, CRISPR, mammary fat pad injections, genotyping, Gateway cloning, immunofluorescence, RNA FISH, Confocal microscopy, circular dichroism

Graduate Student Rotation August 2019-July 2020
Lombardi Comprehensive Cancer Center, Georgetown University, Washington, D.C.
Mentor: Dr. Rebecca Riggins

- Investigated Estrogen-related receptor beta splice variant function in glioblastoma
- Techniques utilized: luciferase assay, western blot, migration assay, crystal violet assay, cell culture

Post-Baccalaureate Fellowship August 2018-August 2019
Laboratory of Cancer Biology and Genetics, National Cancer Institute, NIH
Mentors: Dr. Kent Hunter and Dr. Christina Ross

- Participated in two research projects investigating metastasis-driven mutations in mice and assessing the development of a nucleolar stress biosensor.
- Performed procedures using PCR, CRISPR, electrophoresis, DNA extraction, western blotting, Gateway cloning, and bacterial transformation.
- Presented data during weekly lab meetings and attended weekly seminars.

Research Assistant January 2018-May 2018
Department of Science, Technology, and Mathematics, Gallaudet University, Washington, DC
Mentor: Dr. Cara Gormally

- Investigated deaf biology students' attitudes toward science and their science identities.
- Used qualitative research methods to interview participants and code procedures to identify themes.

Research Student May 2017-May 2018
Gallaudet University Honors Program, Washington, District of Columbia
Honors Capstone Research Project (Thesis)
Primary and Secondary Readers: Dr. Derek Braun and Dr. Cara Gormally

- Explored the various personality traits of deaf scientists to determine which may have allowed them to maintain success in STEM careers.
- Recruited and surveyed 100+ deaf individuals in STEM programs using the Big Five Inventory.
- Analyzed results utilizing SPSS and discovered statistically significant trait measurements among deaf scientists.

Research Intern September 2016-May 2017
Department of Science, Technology, and Mathematics, Gallaudet University, Washington, DC
Mentors: Dr. Cara Gormally and Dr. Derek Braun

- Discovered novel techniques and incorporated best practices in the instruction of science-related topics to deaf students.
- Examined multiple processes to improve internship experiences for deaf and hard-of-hearing students.
- Authored two publications as a lead author and co-author.

Research Intern May 2016-July 2016
Department of Reproductive Science, Magee-Womens Research Institute, Pittsburgh, Pennsylvania
Mentors: Dr. Gerald Schatten and Dr. Calvin Simerly

- Investigated centriole fate in male mouse reproductive tracts during aging to determine whether the advanced age of men influences the health of subsequent generations.

- Performed procedures using immunocytochemistry, cryostat sectioning, and confocal microscopy.
- Assembled information and interpreted results using T-test.

CERTIFICATIONS AND WORKSHOPS

Microsoft May 2020
R for Data Science

Georgetown University April 2024
Academy for Transferable Management Skills - Project Management

National Institutes of Health 2020
Becoming a Resilient Scientist workshop - Office of Intramural Training and Education, NIH

AWARDS AND HONORS

2022	Genetics Society of America Award for an Outstanding Presentation
2022	Lorraine Flaherty Award for an Outstanding Presentation - International Mammalian Genome Society
2022	NIH Fellows Award for Research Excellence
2022	International Mammalian Genome Society Travel Scholarship
2021	Clarity in Science Award
2019 - 2024	National Cancer Institute CRTA Pre-Doctoral Fellowship
2018 - 2019	National Cancer Institute CRTA Post-Baccalaureate Fellowship
2015 - 2018	Provost's Excellence Scholarship
2015 - 2018	National Science Foundation S-STEM Scholarship
2018	Walter Krug Award
2017	Gallaudet University Honors Capstone Project Grant
2017	Phi Kappa Zeta Sorority Scholarship
2016	Agatha Tiegel Hanson Award

PROFESSIONAL MEMBERSHIPS

2020 - present	American Association for Cancer Research
2021 - present	Metastasis Research Society
2022 - present	International Mammalian Genome Society

SERVICE AND LEADERSHIP ACTIVITIES

2016 - 2017	Peer Mentor - Student Success, Gallaudet University

2017 - 2018	Biology Tutor - Tutorial & Instructional Programs, Gallaudet University
2018	Panelist - Female in STEM at Western Pennsylvania School for the Deaf, Pittsburgh, PA
2018 - present	ASL instructor at Laboratory of Cancer Biology and Genetics, NIH
2019	Volunteered for STEM Day at Kendall Demonstration Elementary School
2020	Science Fair Judge at Two Rivers Public Charter School
2020	Genetics Online Educator at Thinking Hands
2021	Panelist - Deaf Women In Science panel discussion at Model Secondary School for the Deaf and Kendall Demonstration Elementary School
2022-2023	Author and editor for OncoBites
2022	Served on the NIH/NCI/LCBG Seminar series committee
2022	Panelist - Gallaudet PhD panel
2022	Served on the CCR Outstanding Mentor Awards review committee
2022-2023	Mentored a post-baccalaureate fellow in the lab
2023-2024	Social Media Chair - Georgetown Women In Science and Education executive board member
2023	Judge for NIH Fellows Award for Research Excellence 2024
2023	Panelist - Accessible and Inclusive Biomedical Informatics and Data Science Program, University of Pittsburgh/Gallaudet
2023	Panelist - Zero Barriers in STEM Education Summit, Smithsonian Science Education Center
2023	Panelist - Center for Cancer Research-Office of Equity & Inclusion's Seminar Panel
2024	Panelist - Access Your Future Transition, Pittsburgh OVR Early Reach/AIU

GRANT SUPPORT

National Cancer Institute

2020 - present	All support comes from the NCI intramural research program

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PUBLICATIONS

Peer-Reviewed

1. **Majocha, M. R.**, Jackson, D. E., Ha, N., Amin, R., Pangracova, M., Ross, C. R., Yang, H. H., Lee, M. P., Hunter, K. W. (2024) Resf1 is a compound G4 quadruplex-associated tumor suppressor for triple negative breast cancer. *PLoS Genet 20*(5): e1011236. doi:10.1371/journal.pgen.1011236
2. Ross, C., Gong, L., Jenkins, L. M., Ha, N., **Majocha, M.**, Hunter, K. (2024) SMARCD1 is a "Goldilocks" metastasis modifier. *biorxiv*, doi: 10.1101/2024.01.24.577061

3. Braun, D., **Majocha, M.** (2023). Investigating Cancer Genetics Through Quantitative Trait Locus (QTL) Mapping and an Interview with a Deaf Graduate Student. BioGraphI FMN Fall 2022, QUBES Educational Resources. doi:10.25334/CM7A-HA10
4. **Majocha, M.**, Davenport, Z., Braun, D.C., Gormally, C. (2018) "Everyone was nice…but I was still left out": An interview study about deaf interns' research experiences in STEM. *Journal of Microbiology and Biology Education, 19*(1), 1-7. doi:10.1128/jmbe.v19i1.1381
5. Gormally, C., Clark, M.D., Marchut, A.E., Solomon, C.M., **Majocha, M.**, Davenport, Z., Kushalnagar, R.S., Listman, J., Hauser, P.C., Braun, D.C. (2018) Increasing the Number of Deaf Scientists: Recommendations for University Science Education. *CBE-Life Sciences Education, 17*(10), 1-8. doi:10.1187/cbe.17-05-0081

Commentary and Blogs

1. **Majocha, M.** (2022), Advocating for specialized STEM interpreters for Deaf scientists. Immunol Cell Biol. https://doi.org/10.1111/imcb.12583
2. **Majocha, M.** Science in ASL is a whole different language: Interpreters in STEM. The Mind Hears, 2022. https://themindhears.org/2022/07/14/science-in-asl-is-a-whole-different-language-interpretersin-stem/
3. **Majocha, M**. Understanding Tumor Cell Evolution to Target Metastasis. OncoBites, 2023. https://oncobites.blog/2023/02/01/understanding-tumor-cell-evolution-to-target-metastasis/
4. **Majocha, M.** Complexities in Metastasis Research. OncoBites, 2023. https://oncobites.blog/2023/05/17/complexities-in-metastasis-research/

PRESENTATIONS

Posters

2017 **Majocha, M.** and Gormally, C. *Increasing the Number of Deaf Scientists: Recommendations for Better Research Internship Experiences.* Gallaudet University Research Expo, Washington, D.C.

2018 **Majocha, M.** *Three Personality Traits of Deaf Scientists: Openness, Extraversion, and—uniquely—Agreeableness.* Gallaudet University Honors Capstone Presentations, Washington, D.C.

2019 Gormally, C., R. Inghram*, and **Majocha, M**. *"Like a scientist with training wheels:" Students describe their science identities.* Society for the Advancement of Biology Education Research, Minneapolis, Minnesota.

2019 Gormally, C., R. Inghram*, and **Majocha, M**. *Understanding Students' Science Identities.* Gallaudet University Research Expo, Washington, D.C.

2021 **Majocha, M.**, Hunter, K., and Ross, C. *Shc1 as a potential metastasis driver gene of breast cancer.* AACR Annual Meeting 2021, Philadelphia, PA.

2021 **Majocha, M.**, Hunter, K., and Ross, C. *Shc1 as a potential metastasis driver gene of breast cancer.* 18th Biennial Congress of the Metastasis Research Society 2021, Virtual Conference.

2022 **Majocha, M.,** Hunter, K. *Metastasis susceptibility gene RESF1 inverses metastatic phenotype in ER- breast cancer.* NIH 18th Annual Graduate Student Research Symposium 2022, Virtual.

2022 **Majocha, M.**, Jackson, D., Ha, N., Hunter, K. *Metastasis susceptibility gene RESF1 inverses metastatic phenotype in ER- breast cancer.* Lombardi Research Week, Georgetown, Washington DC

2022 **Majocha, M.**, Kamra, A., Hunter, K. *Deletion of metastasis susceptibility gene RESF1 occurs in primary mammary tumors and metastases of MMTV-PyMT mice.* International Mammalian Genome Society Conference, Vancouver, Canada

2023 **Majocha, M.**, Jackson, D., Pangracova, M., Amin, R., Ha, NH., Ross, C., and Hunter, K. *Resf1 is a tumor suppressor and metastasis-associated gene in ER-negative breast cancer.* NIH 19th Annual Graduate Student Research Symposium 2023, Bethesda, MD.

2023 **Majocha, M.**, Jackson, D., Pangracova, M., Amin, R., Ha, NH., Ross, C., and Hunter, K. *Resf1 is a G4-quadruplex-associated tumor suppressor for triple negative breast cancer.* Metastatic Breast Cancer Research Conference 2023, Park City, Utah

2023 **Majocha, M.**, Jackson, D., Pangracova, M., Amin, R., Ha, NH., Ross, C., and Hunter, K. *Resf1 is a G4-quadruplex-associated tumor suppressor for triple negative breast cancer.* Georgetown Tumor Biology poster session, Washington, DC

2024 **Majocha, M.**, Jackson, D., Pangracova, M., Amin, R., Ha, NH., Ross, C., and Hunter, K. *Resf1 is a tandem G4-associated tumor suppressor in triple negative breast cancer.* NIH 20th Annual Graduate Student Research Symposium 2024, Bethesda, MD.

2024 **Majocha, M.**, Jackson, D., Pangracova, M., Amin, R., Ha, NH., Ross, C., and Hunter, K. *Resf1 is a tandem G4 quadruplex-associated tumor suppressor for triple negative breast cancer.* The Allied Genetics Conference, National Harbor, MD

Oral presentations

2016 **Majocha, M.** Fate of Centrioles in Aged Male Mouse Sperm Post-Testicular Release. Magee-Womens Research Institute Internship Presentations, Pittsburgh, PA

2022 **Majocha, M.**, Kamra, A., Hunter, K. *Deletion of metastasis susceptibility gene RESF1 occurs in primary mammary tumors and metastases of MMTV-PyMT mice.* International Mammalian Genome Society Conference, Vancouver, Canada

Invited talks

2022	Wilmont Cancer Institute-Rochester School for the Deaf Summer Internship Program for Deaf High School Students
2022	Gallaudet S-STEM scholars
2022	Meet a Deaf Professional Webinar at Tennessee School for the Deaf
2023	Wilmont Cancer Institute-Rochester School for the Deaf Summer Internship Program for Deaf High School Students
2023	Georgetown Board's Committee on Medical Center Affairs Meeting
2024	TAPDINTO-STEM seminar at Gallaudet University