

Jo Lynne Rokita, Ph.D.

Cancer biologist with 15 years of research experience, 10 years of bioinformatics experience, and over 15 years of leadership experience.

CONTACT



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EDUCATION

- 2013 - Ph.D. **Pharmacology and Toxicology**, Virginia Commonwealth University
Dissertation: "Genetic Dissection of Behavioral Quantitative Trait Loci (QTL) for Substances of Abuse"
- 2008 - M.S. **Forensic Science**, Arcadia University
- 2005 - B.S. **Science**, Life Sciences Option, The Pennsylvania State University
Minor: Biology, Certificate: Information Sciences & Technology

PROFESSIONAL HISTORY [selected]

March 2019 – Present

Supervisory Bioinformatics Scientist

Children's Hospital of Philadelphia — Center for Data-Driven Discovery in Biomedicine (D3b)

Philadelphia, PA

Principal Investigator: Adam Resnick, Ph.D.

- Co-lead the Bioinformatics Unit, a team of data engineers and bioinformatics scientists focused on workflow development, harmonization, and analysis of large-scale pediatric cancer datasets, with a research focus on pediatric brain tumors.

Aug 2015 – March 2019

Research Scientist (computational biologist)

Children's Hospital of Philadelphia — Department of Pediatrics, Oncology Research Division

Philadelphia, PA

Principal Investigator: John Maris, M.D.

- Major research projects with integrative bench and computational aspects:
 - Defined the genomic landscape of 261 pediatric patient-derived xenograft models across 27 histologies (in collaboration with Alex's Lemonade Stand Foundation and the Pediatric Preclinical Testing Consortium)
 - Developed a targeted deep sequencing panel to characterization of the subclonal landscape of high-risk neuroblastoma
 - Elucidating epigenomic and noncoding gene regulatory mechanisms of neuroblastoma tumorigenesis
- Leadership roles:
 - Mentored two research technicians
 - Oversaw and supervised two bioinformaticians
 - Sudo user of Maris Lab cluster space; managed Maris Lab GitHub account
 - Routinely mentored Penn M.D., Ph.D., or M.D./Ph.D students (computational and bench)
 - Oversaw management of neuroblastoma cell bank
- Grant funding:
 - Over \$420,000 in private and government funding or in-kind donations acquired

Dec 2014 – July 2015

Research Collaborator (computational)

National Cancer Institute: Center for Cancer Research — Oncogenomics Section

Bethesda, MD

Sponsor: Javed Khan, M.D.

NIST Mentor: Justin Zook, Ph.D.

- Oncogenomics Section goal: to improve patient outcomes for neuroblastoma, rhabdomyosarcoma, and Ewing's sarcoma using next-generation sequencing approaches

- Tested and troubleshot a classifier to determine whether structural variants in select pediatric solid tumor datasets were likely true or false positives using the NIST-developed SVClassify perl algorithm
- Regularly used UNIX, perl, python, and R scripting, as well as open source tools for analysis of whole genome, exome, and transcriptome NGS datasets (Galaxy, UCSC, GATK, SAMtools, Plot.ly)

Sep 2013 – July 2015**Research Biologist (NRC Postdoctoral Research Associate)**

National Institute of Standards and Technology – Applied Genetics Group

Gaithersburg, MD

Group Leader: Peter M. Vallone, Ph.D.

- Applied Genetics Group goal: to serve the clinical genetics community through the advancement of measurement science, standard and technology
 - Designed, developed, and characterized candidate DNA Standard Reference Materials (SRMs) for BK and JC polyomaviruses using digital PCR (chamber and droplet) and next-generation sequencing (MiSeq).
 - Performed NGS virus genome data manipulation and variant calling using tools such as BWA, SAMtools, BEDtools, CLC Genomics Workbench
 - Developed R data analysis and graphing workflows from digital PCR instruments, BioRad QX200 and Fluidigm BioMark
 - Attended clinical molecular genetics meetings and interacted with customers to learn their needs for clinical standards and reference materials
 - Actively participated in NIST DNA Measurements Focus Group, the Advanced Virus Detection Technologies User Interest Group (AVDTUIG), and the international working group for the Standardization of Genomic Amplification Techniques (SoGAT)

Aug 2008 – Jul 2013**Predocorial Candidate**

Virginia Commonwealth University – Pharmacology and Toxicology Department

Richmond, VA

Advisor: Michael F. Miles, M.D., Ph.D.

- Miles Lab goal: to better understand the neurogenomic mechanisms underlying alcoholism and alcohol use disorders
 - Focused on identification and confirmation of genes underlying acute nicotine and alcohol phenotypes using mouse genetics and genomics
 - Performed RNA extraction and gene expression microarrays on mouse brain regions
 - Analyzed Affymetrix mouse microarray data using various R packages for normalization and calculation of fold-changes, eQTL analysis (R, GeneNetwork), genetic correlations (R), and PCA analysis (R)
 - Performed pathway (IPA, GeneMania) and gene ontology/enrichment (GO, ToppGene) analyses on microarray data
 - Visualized gene networks (Cytoscape, GeneMania)
 - Validated microarray gene expression data with q-RT-PCR and protein expression with immunoblotting
 - Analyzed Roche 454 pyrosequencing data for allele-specific expression

PUBLICATIONS

Dang, M.T., Gonzalez, M., Gaonkar, K.S., Rathi, K.S., Young, P., Arif, S., Zhai, L., Alam, M.Z., Devalaraja, S., To, T.K., Folkert, I.W., Raman, P., **Rokita, J.**, Martinez, D., Taroni, J.N., Shapiro, J., Greene, C.S., Savonen, C., Curran, T., Haldar, M. *Single-cell transcriptomic profile reveals macrophage heterogeneity in medulloblastoma and their distinct responses to different treatment modalities*. Preprint: <https://www.biorxiv.org/content/10.1101/2020.02.12.945642v1.full>

- Rathi, K.S., Arif, S., Naqvi, A.S., Koptyra, M., Taylor, D.M., Storm, P.B., Resnick, A.C., **Rokita, J.***, Raman, P.*. *A Transcriptome-based Classifier to Determine Molecular Subtypes in Medulloblastoma*. Submitted to *PLOS Computational Biology*, March 2020. (*co-last author)
- Petralia, F.,..., **Rokita, J.**,...Resnick, A.C., Storm, P.B., Rood, B.R., Wang, P., Children's Brain Tumor Tissue Consortium and Clinical Proteomic Tumor Analysis Consortium. *Integrated Proteogenomic Characterization across Major Histological types of Pediatric Brain Cancer*. (In revision at *Cell*, December 2019).
- Gaonkar, K.S., Rathi, K.S., Jain, P., Zhu, Y., Chomicles, N.A., Naqvi, A.S., Brown, M.A., Zhang, B., Raman, P., Storm, P.B., Maris, J.M., Resnick, A.C., Taroni, J.N.*, **Rokita, J.***. annoFuse: an R Package to annotate and prioritize putative oncogenic RNA fusions. BioRxiv preprint: <https://www.biorxiv.org/content/10.1101/839738v1>. Submitted to *BMC Bioinformatics*, May 2020. (*co-last author)
- Upton, K., Modi, A., Patel, K., Kendsersky, N.M., Conkrite, K.L., Sussman, R.T., Way, G.P., Sacks, G.I., Adams, R.N., Fortina, P., Diskin, S.J., Maris, J.M., **Rokita, J.** *Epigenomic profiling of neuroblastoma cell lines*. Sci Data. 2020 Apr 14;7(1):116. doi: 10.1038/s41597-020-0458-y. Methods: [dx.doi.org/10.17504/protocols.io.6r3hd8n](https://doi.org/10.17504/protocols.io.6r3hd8n) Preprint: <https://www.biorxiv.org/content/10.1101/829754v2>
- Sussman, R.T., **Rokita, J.**, Huang, K., Raman, P., Rathi, K.R., Martinez, D. Weiner, A.K., Bosse, K.R., Hart, L.S., Bhatti, T., Pawel, B., Maris, J.M. *CAMKV is a candidate immunotherapeutic target in MYCN-amplified neuroblastoma*. Front Oncol. 2020 Mar 6;10:302. doi: 10.3389/fonc.2020.00302. eCollection 2020.
- Healy, J.R., Hart, L.S., Shazad, A.L., Gagliardi, M.E., Tsang, M., Elias, J., Ruden, J., Farrel, A., **Rokita, J.**, Li, Y., Wyce, A., Barbash, O., Tummino, P., Batra, V., Samanta, M., Maris, J.M., Schnepf, R.W. *Limited Anti-Tumor Activity of Combined BET and MEK Inhibition in Neuroblastoma*. *Pediatr Blood Cancer*. 2020 Jun;67(6):e28267. doi: 10.1002/pbc.28267. Epub 2020 Apr 19.
- Koneru, B., Lopez, G., Farooqi, A., Conkrite, K.L., Nguyen, T., Macha, S., **Rokita, J.**, Urias, E., Raju, M., Hindle, A., Davidson, H., McCoy, K., Nance, J., Yezdani, V., Yang, S., Wheeler, D.A., Maris, J.M., Diskin, S.J., Reynolds, C.P. *Telomere maintenance mechanisms define clinical outcomes in high-risk neuroblastoma*. *Cancer Res*. 2020 Apr 14. pii: canres.3068.2019. doi: 10.1158/0008-5472.CAN-19-3068. [Epub ahead of print].
- Chen, D., Cox, J., Annam, J., Weingart, M., Essien, G., Rathi, K., Khurana, P., Cuya, S.M., **Rokita, J.**, Bosse, K.R., Pilgrim, A., Maris, J.M., Schnepf, R.W. *LIN28B-PDZ Binding Kinase Signaling Promotes Neuroblastoma Metastasis*. *Neoplasia*. 2020 Apr 24;22(6):231-241. doi: 10.1016/j.neo.2020.04.001. [Epub ahead of print]. Preprint: <https://www.biorxiv.org/content/10.1101/742262v1>
- Voeller, J., Erbe, A.K., Slowinski, J., Rasmussen, K., Carlson, P.M., Hoefges, A., VandenHeuvel, S., Stuckwisch, A., Wang, X., Gillies, S.D., Patel, R.B., Farrel, A., **Rokita, J.**, Maris, J.M., Hank, J.A., Morris, Z.S., Rakhmilevich, A.L., Sondel, P.M. *Combined Innate and Adaptive Immunotherapy Overcomes Resistance of Immunologically Cold Syngeneic Murine Neuroblastoma to Checkpoint Inhibition*. *J Immunother Cancer*. 2019 Dec 6;7(1):344. doi: 10.1186/s40425-019-0823-6.
- Wang, L., Tan, T.K., Durbin, A., Zimmerman, M.W., Abraham, B.J., Tan, S.H., Ngoc, P.C.T., Weichert, N., Akahane, K., Lawton, L.N., **Rokita, J.**, Maris, J.M., Young, R.A., Look, A.T., Sanda, T. *ASCL1 is a MYCN- and LMO1-dependent member of the neuroblastoma adrenergic core regulatory circuitry*. *Nat Commun*. 2019 Dec 9;10(1):5622. doi: 10.1038/s41467-019-13515-5.
- Ijaz, H., Koptra, M., Gaonkar, K.S., **Rokita, J.**, Baubet, V.P., Yauhid, L., Zhu, Y., Brown, M., Lopez, G., Zhang, B., Diskin, S.J., Vaksman, Z., Children's Brain Tumor Tissue Consortium, Mason, J.L., Appert, E., Lilly, J.V., Lulla, R., DeRaedt, T., Heath, A.P., Felmeister, A., Raman, P., Nazarian, J., Santi, M.R., Storm, P., Resnick, A., Waanders, A.J., Cole, K.A. *Pediatric High Grade Glioma Resources From The*

Children's Brain Tumor Tissue Consortium (CBTTC). Neuro Oncol. 2020 Jan 11;22(1):163-165. doi: 10.1093/neuonc/noz192. Preprint: <https://www.biorxiv.org/content/10.1101/656587v1>

Coggins, G.E., Farrel, A., Rathi, K.S., Hayes, C., Scolaro, L., **Rokita, J.**, Maris, J.M. *The hippo pathway effector protein YAP1 modulated resistance to MEK1/2 inhibition in neuroblastomas with hyperactivated RAS pathway signaling*. Cancer Research, 2019 Oct 31. pii: canres.1415.2019. doi: 10.1158/0008-5472.CAN-19-1415.

Rokita, J., Rathi, K.S., Cardenas, M.F., Upton, K.A., Jayaseelan, J., Cross, K.L., Pfeil, J., Egolf, L.E., Way G.P., Farrel, A., Kendsersky, N.M., Patel, K., Gaonkar, K.S., Modi, A., Berko, E.R., Lopez, G., Vaksman, Z., Mayoh, C., Nance, J., McCoy, K., Haber, M., Evans, K., McCalmont, H., Bendak, K., Böhm, J.W., Marshall, G.M., Tyrrell, V., Kalletta, K., Braun, F.K., Qi, L., Du, Y., Zhang, H., Lindsay, H.B., Zhao, S., Shu, J., Baxter, P., Morton, C., Kurmashev, D., Zheng, S., Chen, Y., Bowen, J., Bryan, A.C., Leraas, K.M., Coppens, S.E., Doddapaneni, H., Momin, H, Zhang, W., Sacks, G.I., Hart, L.S., Krytska, K., Mosse, Y.P., Gatto, G.J., Sanchez, Y., Greene, C.S., Diskin, S.J., Vaske O.M., Haussler, D., Gastier-Foster, J.M., Kolb, E.A., Gorlick, R., Li, X., Reynolds, C.P., Kurmasheva, R.T., Houghton, P.J., Smith, M.A., Lock, R.B., Raman, P., Wheeler, D.A., Maris, J.M. *Genomic profiling of childhood tumor patient-derived xenograft models to enable rational clinical trial design*. Cell Rep. 2019 Nov 5;29(6): 1675-1689.e9. doi: 10.1016/j.celrep.2019.09.071. Preprint: <https://doi.org/10.1101/566455v2>

Egolf, L.E., Vaksman, Z., Lopez, G., **Rokita, J.**, Modi, A., Hakonarson, H., Olshan, A.F., Diskin, S.J. *Identification of germline 16p11.2 microdeletion associated with neuroblastoma*. Am J Hum Genet. 2019 Sep 5;105(3):658-668. doi: 10.1016/j.ajhg.2019.07.020. Epub 2019 Aug 29.

Taylor, D.M., Aronow, B.J., Tan, K., Bernt, K., Salomonis, N., Greene, C.S., Frolova, A., Henrickson, S.E., Wells, A., Pei, L., Jaiswal, J.K., Whitsett, J., Hamilton, K.E., MacParland, S.A., Kelsen, J., Heuckeroth, R.O., Potter, S.S., Vella, L.A., Terry, N.A., Ghanem, L.R., Kennedy, B.C., Helbig, I., Sullivan, K.E., Castelo-Soccio, L., Kreigstein, A., Herse, F., Nawijn, M.C., Koppelman, G.H., Haendel, M., Harris, N.L., **Rokita, J.**, Zhang, Y., Regev, A., Rozenblatt-Rosen, O., Rood, J.E., Tickle, T.L., Vento-Tormo, R., Alimohamed, S., Lek, M., Mar, J.C., Loomes, K.M., Barrett, D.M., Uapinyoying, P., Beggs, A.H., Agrawal, P.B., Chen, Y., Muir, A.B., Garmire, L.X., Snapper, S.B., Nazarian, J., Seeholzer, S.H., Fazelinia, H., Singh, L.N., Faryabi, R.B., Raman, P., Dawany, N., Xie, H.M., Devkota, B., Diskin, S.J., Anderson, S.A., Rappaport, E.F., Peranteau, W., Wikenheiser-Brokamp, K.A., Teichmann, S., Wallace, D., Peng, T., Ding, Y., Kim, M.S., Xing, Y., Kong, S.W., Bönemann, C.G., Mandl, K.D., White, P.S.. *The Pediatric Cell Atlas: Defining the Growth Phase of Human Development at Single-Cell Resolution*. Developmental Cell, 2019. doi:10.1016/j.devcel.2019.03.001.

Rajjohandari, P., Lopez, G., Capdevila, C., Salvatori, B., Yu, J., Rodriguez-Barrueco, R., Martinez D., Yarmarkovich, M., Weichert-Leahey, N., Abraham, B.J., Alvarez, M.J., Iyer, A., **Harenza, J.**, Oldridge, D., De Preter, K., Koster, J., Asgharzadeh, S., Seeger, R.C., Wei, J.S., Khan, J., Vandesompele, J., Mestdagh, P., Versteeg, R., Look, A.T., Young, R.A., Iavarone, A., Lasorella, A., Silva, J.M., Maris, J.M., Califano, A. *Cross-Cohort Analysis Identifies a TEAD4-MYCN Positive Feedback Loop as the Core Regulatory Element of High-Risk Neuroblastoma*. Cancer Discovery. 2018 May;8(5):582-599. doi:10.1158/2159-8290.CD-16-0861. Epub 2018 Mar 6.

Bosse K.R., Raman P., Zhu Z., Lane M., Martinez D., Heitzeneder S., Rathi K.S., Kendsersky N.M., Randall M., Donovan L., Morrissy S., Sussman R.T., Zhelev D.V., Feng Y., Wang Y., Hwang J., Lopez G., **Harenza J.**, Wei J.S., Pawel B., Bhatti T., Santi M., Ganguly A., Khan J., Marra M.A., Taylor M.D., Dimitrov D.S., Mackall C.L., Maris J.M.. *Identification of GPC2 as an Oncoprotein and Candidate Immunotherapeutic Target in High-Risk Neuroblastoma*. Cancer Cell. 2017 Sep 11;32(3):295-309.e12. doi:10.1016/j.ccell.2017.08.003.

Harenza, J., Diamond, M.A., Adams, R.N., Song, M.M., Davidson, H.L., Hart, L.S., Dent, M.H., Fortina, P., Reynolds, C.P., Maris, J.M. *Transcriptomic profiling of 39 commonly-used neuroblastoma cell lines*. Scientific Data. 2017 Mar 28; 4:170033. doi:10.1038/sdata.2017.33.

Yoo, H., Park, S.R., Dong, L., Wang, J., Sui, Z., Milavec, M., Pavšič, J., Akgoz, M., Mozioglu, E., Corbisier, P., Matrai, J., Cosme, B., de Vasconcelos C., Janaina J., Flatshart, R., Burke, D., Forbes-Smith, M., McLaughlin, J., Emslie, K., Whale, A., Huggett, J., Kline, M., **Harenza, J.**, Vallone, P. *An International Comparison of Enumeration-based Quantification of DNA Copy-concentration Using Flow Cytometric Counting and Digital Polymerase Chain Reaction*. *Analytical Chemistry*. 2016 Dec 20; 88(24): 12169-12176. doi: 10.1021/acs.analchem.6b03076. [Epub 2016 Nov 10]

Putman, A.H. Wolen, A.R., **Harenza, J.**, Yordanova, R.K., Webb, B.T., Chesler, E.J., and Miles, M.F. *Identification of quantitative trait loci and candidate genes for an anxiolytic-like response to ethanol in BXD recombinant inbred strains*. *Genes, Brain, & Behavior*. 2016 Apr;15(4):367-81. doi:10.1111/gbb.12289. [Epub 2016 Mar 7].

Kline, M., **Harenza, J.**, Haynes, R.J., and Duewer, D.L. National Institute of Standards and Technology *Report of Analysis Number 14-645.06-008 — DNA: supercoiled pBR322 and linearized pBR322*. Internal NIST Publication. 2015 Feb 28.

Muldoon, P.P., Chen, J., **Harenza, J.**, Abdullah, R.A., Sim-Selley, L.J., Chen, X., Cravatt, B.F., Chen, X., Lichtman, A.H., and Damaj, M.I. *Inhibition of monoacylglycerol lipase reduces nicotine withdrawal in mice*. *British Journal of Pharmacology*. 2015 Feb;172(3):869-82. doi:10.1111/bph.12948.

Muldoon, P.P., Jackson, K.J., Perez, E., **Harenza, J.**, Molas, S., Rais, B., Anwar, H., Zaveri, N.T., Maldonado, R., Maskos, U, McIntosh, J.M., Dierssen, M., Miles, M.F., Chen, X., De Biasi, M., and Damaj, M.I. *The alpha3beta4* nicotinic acetylcholine receptor subtype mediates physical dependence to morphine: mouse and human studies*. *British Journal of Pharmacology*. 2014 Aug;171(16):3845-57. doi:10.1111/bph.12741.

Harenza, J., Muldoon, P.P., De Biasi, M., Miles, M.F., and Damaj, M.I. *Genetic variation within the Chrna7 gene modulates reward-like phenotypes in mice*. *Genes, Brain, and Behavior*. 2014 Feb; 13(2):213-25. doi:10.1111/gbb.12113. [Epub 2013 Dec 26].

Jackson, K.J., Chen, X., Miles, M.F., **Harenza, J.**, and Damaj, M.I. *The neuropeptide galanin and variants in the GalR1 gene are associated with nicotine dependence*. *Neuropsychopharmacology*, 2011 Oct; 36(11):2339-48. doi:10.1038/npp.2011.123. [Epub 2011 Jul 27].

Porcu, P., O'Buckley, T.K., Song, S.C., **Harenza, J.**, Lu, L., Wang, X., Williams, R.W., Miles, M.F., and Morrow, L.A. (2011). *Genetic analysis of the neurosteroid deoxycorticosterone and its relation to alcohol phenotypes: identification of QTLs and downstream gene regulation*. *PLoS one*, 6(4), e18405.

AWARDS AND HONORS

- 2019 **Early Career Investigator Travel Fellowship**, Tumor Heterogeneity Sohn Conference, (New York Academy of Sciences)
- 2018 **Early Career Investigator Travel Fellowship**, Pediatric Sohn Conference, (New York Academy of Sciences)
- 2017 **Scholar-in-Training Award**, American Association for Cancer Research, Pediatric Conference (Loxo Oncology)
- 2017 **Scholar-in-Training Award**, American Association for Cancer Research, Annual Meeting (Aflac, Inc.)
- 2017 **NCI Early Career Hill Day Attendee**, American Association for Cancer Research (AACR)
- 2016 Volunteer of the Year Award, Penn State Dance MaraTHON Alumni Interest Group
- 2011 Scholarship from VCU School of Medicine for Summit on Systems Biology: Networks and Disease, Virginia Commonwealth University
- 2011 Student Merit Award from Research Society on Alcoholism, Virginia Commonwealth University

- 2009 NIDA Travel Fellowship Award, 50th Annual Jackson Laboratory Short Course: Medical and Experimental Mammalian Genetics, Virginia Commonwealth University
- 2005 Dean's List, The Pennsylvania State University
- 2002-2003 Dean's List, The Pennsylvania State University

GRANTS AND FELLOWSHIPS RECEIVED

- 2019-2020 **Young Investigator Award**, Alex's Lemonade Stand Foundation
"Harnessing open-sourced data and crowd-sourced analyses to accelerate discovery of novel oncogenic mechanisms of pediatric brain tumors"
- 2018 **Alex's Lemonade Stand Foundation POST award**, PI for Wei Cheng
"Investigating the epigenomic effects of genetic alterations in high-risk neuroblastoma"
- 2017-2019 **NIH-NCI Pediatric Loan Repayment Program Awardee**
"Epigenomic mechanisms of neuroblastoma tumorigenesis"
- 2017-2019 **Young Investigator Award**, Alex's Lemonade Stand Foundation
"Epigenomic mechanisms of neuroblastoma tumorigenesis"
- 2017 **Young Investigator Award**, Alex's Lemonade Stand Foundation, PI transfer from Robyn Sussman, Ph.D.
"CAMKV as a Target for Immunotherapy in MYCN-Amplified Neuroblastoma"
- 2017-2018 **Postdoctoral Fellowship Award**, Rally Foundation and Bear Necessities
"Defining the subclonal landscape of high-risk neuroblastoma"
- 2013-2015 **NRC Postdoctoral Research Associateship**, National Institute of Standards and Technology, Gaithersburg, MD
"Design, development, and characterization of candidate DNA Standard Reference Materials (SRMs) for BK and JC polyomaviruses"
- 2010-2013 **T32 NIDA Training Grant Recipient** under Dr. William L. Dewey, T32DA007027, Virginia Commonwealth University
"Genetic Dissection of Behavioral Quantitative Trait Loci (QTL) for Substances of Abuse"

LEADERSHIP ROLES AND TRAINING [selected]

- 2019-2020 **Manager Effectiveness Series** at Children's Hospital of Philadelphia
- 2018-2019 **New Leader Development Series** at Children's Hospital of Philadelphia — curriculum includes: *Being a Leader at CHOP*, *New Leader Engagement*, *The Emotionally Intelligent Leader*, and *Leading Through Diversity and Inclusion*
- 2017-2018 **Research Scientist** at Children's Hospital of Philadelphia — serve as direct mentor for two bench technicians, two bioinformaticians, and indirect mentor/senior scientist for 15-20 laboratory staff/students; to-date, completed 3/5 in-person modules from CHOP Leadership Institute's New Leader Development Series
- 2016-2017 **Family Relations Committee Chair** for Emily Whitehead Foundation's inaugural Believe Ball which raised \$400,000 for pediatric cancer research — led a team of 9 to coordinate travel, accommodations, activities for > 20 families
- 2016-2017 **Secretary** of Penn State Dance Marathon Alumni Interest Group — Board Director who served the alumni community to raise pediatric cancer awareness and support THON
- 2016 **Team Captain** for Hope Express Blood and Guts Team — led fundraising efforts (> \$18,000) and organized relay run logistics for 16 team members; led 10th anniversary T-shirt fundraiser for > 60 runners and > 20 volunteers (\$4,000)
- 2013-2015 **Biologist** in the Applied Genetics Group at The National Institute of Standards and Technology — served as the Clinical Genetics Leader; met with and solicited feedback

- from the clinical genetics community regarding reference material needs; mentored two high school students (bench and computational) and a research technician
- 2014 **Co-organizer** for Reference Materials Forum at the Association for Molecular Pathology annual meeting, with Centers for Disease Control and Prevention (CDC)
- 2014 **Team Captain** for Hope Express Ragnar Relay team — led fundraising efforts (\$4,000) and organized relay run logistics for 12 team members
- 2014 **Family Relations Committee Chair** for Hope Express — led donor efforts and logistics for party for pediatric cancer patients
- 2010-2013 **Research Mentor** at Virginia Commonwealth University — supervised research for 5 students
- 2010-2011 **Chair** of Medical Sciences Section, Virginia Academy of Sciences — recruited scientific presenters from local colleges and led annual meeting proceedings
- 2009-2010 **Vice-Chair** of Medical Sciences Section, Virginia Academy of Sciences — recruited scientific presenters from local colleges and co-led annual meeting proceedings
- 2008-2009 **Communications Director** for Central VA Chapter of the PSU Alumni Association
- 2008 Head Team Leader at LeadAmerica (now, ENVISION Career and Leadership Programs) — led a team of 15-18 team leaders who each lead 20-25 high/middle school students through week-long science and leadership conferences
- 2007 **Research Mentor** at Forensic Mentors Institute—led a scientific research team of four
- 2005-2006 **Team Leader** at Target Corporation — oversaw Electronics and Seasonal departments and managed ~10-20 floor team members daily
- 2004 **Executive Intern** at Target Corporation — completed the executive management and leadership internship
- 2000-2001 **Front End Supervisor** at K-Mart Corporation — managed a team of 5-20 cashiers and service desk employees daily

INVITED TALKS

- 2017 “Defining the subclonal landscape of high-risk neuroblastoma” — Children’s Hospital of Philadelphia for the American Association for Cancer Research Minisymposium: *Predictors and Drivers of Pediatric Tumors*, Washington, DC, 2017
- 2017 “Defining the subclonal landscape of high-risk neuroblastoma” — Children’s Hospital of Philadelphia Genes, Genomes, and Pediatric Disease Affinity Group Seminar Series
- 2015 “Genetics and Genomics in Biomedical Research: Academic and Government Experiences” — National Institute of Standards and Technology for St. Vincent Biology Department Seminar Series, Latrobe, PA
- 2014 “Results of a NIST Clinical Reference Materials Survey.” – National Institute of Standards and Technology for CDC’s GeT-RM Meeting for the Association for Molecular Pathology, Washington, D.C.
- 2014 “An Update on DNA Standards for BK and JC viruses.” – National Institute of Standards and Technology for CDC’s GeT-RM Meeting for the Association for Molecular Pathology, Washington, D.C.
- 2014 “The use of microfluidic and droplet digital PCR platforms for genome copy number determination” – National Institute of Standards and Technology for Food and Drug Administration, Silver Spring, MD.
- 2014 “The use of microfluidic and droplet digital PCR platforms for the quantitation of DNA” – National Institute of Standards and Technology for Life Technologies. (teleconference/webinar)

- 2014 "An update on DNA viral reference materials at NIST" – National Institute of Standards and Technology for the Advanced Virus Detection Technologies User Interest Group Meeting. (teleconference/webinar)
- 2014 "The use of microfluidic and droplet digital PCR platforms for the quantitation of DNA" – National Institute of Standards and Technology for the Standardization of Genetic Amplification Techniques, Graz, Austria

CONFERENCE PARTICIPATION

Presentations

- Harenza-Rokita, J.**, Rathi, K.S., Cardenas, M., Upton, K.A., Jayaseelen, J., Cross, K.L., Pfiel, J., Way, G.P., Ritenour, L., Kendsersky, N., Patel, K., Vaksman, Z., Lopez, G., Mayoh, C., Haber, M., Evans, K., McCalmont, H., Bendak, K., Böhm, J.W., Marshall, G., Tyrrell, V., Kalletta, K., Zheng, S., Braun, F., Sacks, G.I., Bowen, J., Bryan, A., Leraas, K.M., Coppens, S.E., Kurmasheva, R., Gastier-Foster, J., Li, X., Reynolds, C.P., Gorlick, R., Houghton, P., Smith, M., Lock, R., Wheeler, D.A., Maris, J.M. "Genomic landscape of 264 patient-derived xenograft childhood tumor models" – Children's Hospital of Philadelphia for Alex's Lemonade Stand Foundation Young Investigator Summit, Milwaukee, WI, 2018 (poster)
- Harenza, J.**, Way, G.P., Chen, G., and Maris, J.M. "Characterization of somatically-acquired regulatory mutations in high-risk neuroblastoma" – Children's Hospital of Philadelphia for the American Association for Sohn Pediatric Conference, London, U.K., 2018 (poster)
- Harenza, J.**, Chen, G., and Maris, J.M. "Characterization of somatically-acquired regulatory mutations in high-risk neuroblastoma" – Children's Hospital of Philadelphia for the American Association for Cancer Research Pediatric Conference, Atlanta, GA, 2017 (poster)
- Harenza, J.**, Chen, G., and Maris, J.M. "Characterization of somatically-acquired regulatory mutations in high-risk neuroblastoma" – Children's Hospital of Philadelphia for the Mid-Atlantic Bioinformatics Conference, Philadelphia, PA, 2017 (poster)
- Harenza, J.**, Oldridge, D., Diamond, M.A., Padovan-Merhar, O., Raman, P., Mosse, Y.P., and Maris, J.M. "Development of a Targeted Sequencing Panel for Detection of Subclonal Mutations in Neuroblastoma at Diagnosis" – Children's Hospital of Philadelphia for the Advances in Neuroblastoma Association, Queensland, Australia, 2016 (poster)
- Harenza, J.**, Sussman, R., Oldridge, D., and Maris, J.M. "Genome-wide mapping of MYCN, MYC, and MAX protein binding across neuroblastoma cell lines". – Children's Hospital of Philadelphia for the American Association for Cancer Research, New Orleans, LA, 2016 (poster)
- Buck, J.A., Vallone, P.M., and **Harenza, J.** "Investigation of Reference Sequence and Variant Caller Effects on SNP Calls made across Six BK Virus Genotypes". NIST Summer High School Internship Program (Gaithersburg, MD). August 4, 2015. (poster) – Runner up for Best Student Poster
- Harenza, J.**, Parikh, H., Wen X., Patidar, R., Sindiri, S., Wei, J., Salit, M., Meltzer, P., Khan, J., Zook, J. Abstract 1077: "Use of the SVClassify algorithm to classify pediatric solid tumor translocation variant calls as likely true or false positives" – National Institute of Standards and Technology for the American Association for Cancer Research, Philadelphia, PA, 2015. (poster)
- Buck, J.A., Vallone, P.M., and **Harenza, J.** "Design and Optimization of Primer and Probe Sets for BK Virus Candidate SRM 2365". NIST Summer High School Internship Program (Gaithersburg, MD). August 5, 2014. (poster) – Runner up for Best Student Poster
- Harenza, J.**, Cook, L., and Vallone, P.M. "An Update on a Candidate BK Virus DNA Standard Reference Material." – National Institute of Standards and Technology for the American Association for Clinical Chemistry, Chicago, Illinois, 2014. (poster)

Park, S., Farris, S.P., **Harenza, J.**, and Miles, M.F. “*Ndr1* as an Ethanol-Responsive Myelin Gene Modulating Behavioral Responses to Ethanol” – Virginia Commonwealth University for Research Society on Alcoholism, Seattle, WA, 2014. (poster)

Harenza, J., Muldoon, P.P., De Biasi, M., Miles, M.F., and Damaj, M.I. “Genetic variation within the *Chrna7* gene modulates reward-like phenotypes in mice.” – Virginia Commonwealth University for Society for Neuroscience, San Diego, CA, 2013. (poster)

Harenza, J., Poe, M.M., Wang, Z., Cook, J.M., and Miles, M.F. “Genetic Dissection of Anxiolytic-like Behavioral Responses to Acute Ethanol” – Virginia Commonwealth University for Research Society on Alcoholism, Orlando, FL, 2013. (poster)

Park, S., Farris, S.P., **Harenza, J.**, and Miles, M.F. “Myelin Gene Expression as a Modulating Factor in Behavioral Responses to Ethanol” – Virginia Commonwealth University for Research Society on Alcoholism, Orlando, FL, 2013. (poster)

Harenza, J., Wolen, A.R., Putman, A.H., and Miles, M.F. “Genetic Dissection of the Ethanol-Induced Anxiolysis QTL (Etanq1)” – Virginia Commonwealth University for Research Society on Alcoholism, Atlanta, GA, 2011. (poster)

Harenza, J., Farris, S.P., Jackson, K.J, Damaj, M.I., and Miles, M.F. “Genetic Dissection of Nicotine Dependence Phenotypes” – Summit for Systems Biology, Richmond, VA, 2011. (poster)

Harenza, J., Damaj, M.I., and Miles, M.F. “Identification of Provisional QTL for Nicotine Dependence Phenotypes in the BXD Recombinant Inbred Panel” – Virginia Commonwealth University for 50th Annual Short Course on Experimental and Mammalian Genetics at Jackson Laboratory, Bar Harbor, ME, 2009. (poster)

Miranda, N., Alston, A., Musso, M, and **Harenza, J.** “Extraction of Sulfide Anions from Blood Utilizing a Kryptand, Kryptofix-222, and a Derivatizing Agent, Pentafluorobenzyl Bromide (PFBBR)” – Arcadia University for Forensic Mentors Institute, Willow Grove, PA, 2007. (poster)

Harenza J., Grove, M.J., Geib, S., and Hoover, K. “Short Term Starvation Effects on the Intrastadial Development of the Gypsy moth (*Lymantria dispar*) to LdMNPV” – The Pennsylvania State University for 38th Annual Meeting of the Society of Invertebrate Physiology, Anchorage, AK, 2005. (poster)

Conference Organization

2014 Co-organizer of Get-RM Reference Materials Forum, Washington, D.C.

TEACHING AND MENTORING EXPERIENCE

Sep 2015 – Present

Research Mentor/Supervisor

Children’s Hospital of Philadelphia
Philadelphia, PA

Mentor(ed) and devise(d) scientific research projects for:

- Gregory Way, University of Pennsylvania Genomics and Computational Biology Ph.D. student (past)
- Eric Sanford, University of Pennsylvania Genomics and Computational Biology M.D./Ph.D. student (past)
- Doug Russ, University of Pennsylvania Undergraduate (past)
- Justin Buck, University of Maryland Undergraduate, **St. Baldrick’s Summer Fellow** (past)
- Nathan Kendsersky, University of Pennsylvania Pharmacology Ph.D. student (past)
- Addys Bode-Hernandez, Commonwealth University medical student, **Alex’s Lemonade Stand Foundation POST Awardee** (past)
- Gregory Chen, University of Pennsylvania Genomics and Computational Biology M.D./Ph.D. student (past)

- Jonathan Peterson, University of Pennsylvania Cell and Molecular Biology M.D./Ph.D. student (past)
- Adarsh Bhatt, University of Pennsylvania, Wharton School, BIOL399 Independent Study Undergraduate (past)
- Alexandra Lee, University of Pennsylvania Genomics and Computational Biology student (past)
- Wei Cheng, Pennsylvania State University undergraduate computer engineering student, **Alex's Lemonade Stand Foundation POST Awardee** (past)
- Gregory Sacks, Research Technician III, direct report (past)
- Kristen Upton, Research Technician II, direct report (past)
- Khushbu Patel, Bioinformatics Scientist I, direct mentee (past)
- Shrivats Kannan, University of Pennsylvania Computer Science undergraduate (past)
- Kelsey Frieberg, University of Pennsylvania Biomedical engineering masters student (past)
- David Cowley, Temple University masters student (past)
- Komal Rathi, Bioinformatics Scientist II, direct mentee (current)
- Krutika Gaonkar, Bioinformatics Scientist II, direct mentee (current)
- Ammar Naqvi, Bioinformatics Scientist III, direct mentee (current)

May 2014 – July 2015**Research Mentor**

National Institute of Standards and Technology

Gaithersburg, MD

Mentor and devise scientific research projects for:

- Justin Buck, NIST SHIP (Summer High School Internship Program) Student, 2014–2015
- Jake Schlenoff, NIST High School Intern, 2014

Sep 2013 – June 2015**Private Tutor**

Chyten Premier Tutoring

Gaithersburg, MD

Tutored over 20 students in algebra I, chemistry, AP chemistry, SAT math preparation, ACT math and science preparation

Jun 2009 – Aug 2013**Research Mentor**

Virginia Commonwealth University

Richmond, VA

Mentored and devised scientific research projects for:

- So Hyun Park, VCU Laboratory Technician/Manager; current PhD. student at Rice University
- Sri Katuri, VCU HHMI Undergraduate, current medical student at VCU
- William Towne, VCU Post-Baccalaureate Student, current medical student at VCU
- Neel Bhattacharyya, VCU Undergraduate Student
- R. Allen Owens, VCU PhD rotation Student, Biomedical Sciences

Jan 2009 – Jun 2013**Private Tutor**

Sylvan Learning Center

Richmond, VA

Tutored over 15 students in physical science, algebra I, trigonometry, chemistry, AP chemistry, biology, SAT Math Prep, VCU general chemistry: CHEM101, CHEM102, CHEZ101, CHEZ102, introductory biology: BIO152

Summer 2007**Research Mentor**

Arcadia University

Glenside, PA

Mentored and devised scientific research projects for:

- Nina Miranda, Philadelphia city high school student
- Amber Alston, Philadelphia city high school student

PROGRAMMING SKILLS

Proficient in High Performance Computing using a Sun Grid Engine (SGE) Cluster

Proficient writing and developing pipelines using bash, R, and Perl
 Beginner competency in Python, AWS, CAVATICA

MOLECULAR BIOLOGY EXPERIENCE

- Endpoint PCR, long-range PCR, whole genome amplification, qPCR, qRT-PCR, droplet digital PCR using BioRad QX100, and chamber digital PCR using Fluidigm BioMark HD
- Immunoblotting, immunocytochemistry, immunohistochemistry, ELISAs, cloning, transformations, plasmid preparations, siRNA/shRNA/CRISPR/Cas design/transfection, production of lentivirus, viral transductions, protein purification
- Expression profiling using DNA oligonucleotide microarrays, copy number profiling using SNP arrays
- High throughput sequencing library preparations and bioinformatics analysis of: whole genome, whole exome, transcriptome, chromatin accessibility via ATAC, targeted DNA panel design and prep, histone/transcription factor ChIP-Seq

JOURNAL REVIEW EXPERIENCE

- 2019 Reviewer for Scientific Data
 2018 Reviewer for Journal of the National Cancer Institute (JNCI)
 2015 Reviewer for Biomicrofluidics
 2014-2015 Reviewer for Genome Scale Measurements Group manuscripts submitted through NIST's editorial review system

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- 2019-Present Society for Neuro-Oncology – Trainee Member
 2017-Present New York Academy of the Sciences – Associate Member
 2015-Present Association for Neuroblastoma Research – Associate Member
 2014-Present American Association for Cancer Research – Associate Member
 2005-present The Pennsylvania State University Alumni Association – Member
 2014-2015 Advanced Virus Detection Technologies User Interest Group (AVDTUIG) – Member
 2014-2015 Standardisation of Genome Amplification Techniques (SoGAT) – Member
 2014 Association for Molecular Pathology – Associate Member
 2008-2013 Central VA Chapter of the PSU Alumni Association – Alumni Member
 2011-2012 Central VA Chapter of the Society for Neuroscience – Student Member
 2010-2011 Virginia Academy of Sciences, Medical Sciences Section – Chair
 2009-2010 Virginia Academy of Sciences, Medical Sciences Section – Vice Chair
 2008-2010 Central VA Chapter of the PSU Alumni Association – Communications Chair
 2007-2008 Philadelphia Chapter of the PSU Alumni Association – Alumni Member
 2006-2008 American Academy of Forensic Sciences – Student Affiliate

ELECTED OFFICES

- 2016-2017 Penn State Dance Marathon Alumni Interest Group – **Secretary**
- As the face of organization, maintain communication and collaborative platforms, set conference calls and agendas, and maintain minutes and pertinent documentation for the board.
 - Coordinate efforts with Technology Chair to update and improve the website.
 - Assist Communications Director with regular e-newsletters and other member-targeted communications.
- 2010-2011 Virginia Academy of Sciences, Medical Sciences Section – **Chair**
- Led the Medical Sciences Section proceedings at the 2011 VAS annual meeting at the University of Richmond.
 - Maintained open communication with all section officers to ensure that the needs of the section were being met.
 - Led recruitment for new members and new officers to the section.
 - Encouraged section members, specifically students from the VCU Pharmacology and Toxicology department, to attend the annual meeting and to present research.

- 2009-2010 Virginia Academy of Sciences, Medical Sciences Section – **Vice Chair**
- Assisted in leading the Medical Sciences section proceedings at the 2010 VAS annual meeting at James Madison University.
 - Recruited new members and officers to the section; encouraged section members to attend the annual meeting and present research.
- 2008-2010 Central VA Chapter of the PSU Alumni Association – **Communications Director**
- Maintained the alumni email list; sent email blasts for all events.
 - Oversaw the newsletter and assisted in the recruitment of members.
 - Headed fundraising for the PSU Dance MaraTHON for pediatric cancer.

COMMUNITY AND VOLUNTEER SERVICE

- 2017 Early-Career Hill Day (AACR) — **Representative** of AACR and **Advocate** for sustained NIH Biomedical and Cancer Research Funding
- 2016-2017 Emily Whitehead Foundation — **Chair** of Believe Ball Family Relations Committee, Fundraiser
- 2016-2017 Penn State Dance Marathon Alumni Interest Group (DMAIG) — **Secretary**
- 2016 American Association for Cancer Research (AACR) — **AACR Runner for Research**
- 2016 Delaware Valley Science Fairs — **AACR Special Awards Judge**
- 2011-2016 Hope Express, 135 Mile Relay Benefitting the Four Diamonds Fund for pediatric cancer, Central PA – **Fundraiser, Moraler, Runner, Social Media Contact**
- 2014 CDC's Get-REM Molecular Oncology Reference Materials Project — **Member**
- 2014 Ragnar Relay Benefitting the Hope Express, Washington, D.C. — **Team Captain**
- 2014 Adventures in Science Day at NIST, Gaithersburg, MD – Scientific Session **Moderator**
- 2013 Metro Richmond STEM Fair, Richmond, VA – **Project Screener and Judge**
- 2012 St. Joseph's Villa for Autistic Children – **Volunteer**
- 2012 Chesterfield County STEM Fair, Chesterfield, VA – **Judge**
- 2012 Metro Richmond Science Fair, Richmond, VA – **Project Screener and Intel® ISEF (International Science & Engineering Fair) Finalist Judge**
- 2011 Metro Richmond Science Fair, Richmond, VA – **Project Screener and Judge**
- 2011 Central VA Chapter Society for Neuroscience – **Member**
- 2011 VCU/MCV Women in Science – **Fundraiser Volunteer**
- 2010-2011 Chesterfield County Science Fair, Midlothian, VA – **Judge**
- 2010-2011 Virginia Academy of Science, Medical Sciences Section – **Chair**
- 2009-2011 Virginia Commonwealth University Admissions – **Graduate Admissions Recruitment Volunteer**
- 2009-2011 Penn State University Alumni Admissions – **Undergraduate Admissions Recruitment Volunteer**
- 2009-2012 Penn State Central VA Student Sendoff Picnic – **Assistant Coordinator and Volunteer**
- 2009-2010 Virginia Academy of Science, Medical Sciences Section – **Vice Chair**
- 2009 Departmental Research Retreat for Pharmacology and Toxicology – **Entertainment Coordinator**
- 2009 VCU Pharmacology and Toxicology Student Organization – **Fundraiser Volunteer**
- 2009 Penn State Singing Lions Tour at Richmond Retirement Communities – **Volunteer**
- 2008-Present Dance MaraTHON Alumni Interest Group for Penn State Alumni – **Member**
- 2008-2009 VCU/MCV School of Pharmacy – **Proctor and Grader** for Exams
- 2008-2009 Central VA Chapter of the PSU Alumni Association – **Communications Director**
- 2008-2009 Penn State's Dance MaraTHON for pediatric cancer – **Head of Fundraising** for the Central VA Chapter of the PSU Alumni Association
- 2006-2009 American Academy of Forensic Sciences – **Student Affiliate Member**