

Evonne McArthur

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EDUCATION

- 2016 - Present** **Vanderbilt University School of Medicine, Nashville, TN**
M.D. / Ph.D. Candidate with the Medical Scientist Training Program (MSTP), Current first year graduate student
Medical School:
USMLE Step 1: 258, 92nd percentile · USMLE Step 2 CK: 266, 91st percentile
Graduate School:
Ph.D. Program: Human Genetics · GPA: 4.0 · Advisor: John A. Capra
- 2011 - 2015** **University of North Carolina at Chapel Hill, Chapel Hill, NC**
B.S. Quantitative Biology · GPA: 3.951 · Highest Distinction · Honors Carolina Member
Double Minor: Chemistry & Computer Science
- 2013** **School for International Training, Study Abroad, New Delhi, India**
Program: India – Health and Human Rights · GPA: 4.0
- 2007 - 2011** **William G. Enloe Magnet High School, Raleigh, NC**
International Baccalaureate Diploma, July 2011

HONORS

- 2016 - Present** **Canby Robinson Society Scholarship**
Full-tuition 4-year merit scholarship to Vanderbilt University School of Medicine
- 2013** **Order of the Grail-Valkyries Inductee**
Recognized for outstanding character and significant contribution to UNC's intellectual climate
- 2013** **Phi Beta Kappa Inductee**
- 2013** **Phillips Ambassador Scholarship Awardee**
Selected to represent UNC as an ambassador to Asia (New Delhi, India)

RESEARCH

- 2018 - Present** **Graduate Student · Capra Lab, Vanderbilt Genetics Institute**
PI: John A. Capra, PhD
- Investigating the effects of genomic variation in different three-dimensional chromatin contexts on both rare and common complex human disease
- 2015 - 2016** **Research Technician & Programmer · Laederach Lab, UNC Department of Biology**
PI: Alain Laederach, PhD · Dr. Lela Lackey, PhD
- Investigated RNA structure's relationship with human disease through the development of computational tools to detect and classify riboSNitches
- 2014 - 2015** **Research Assistant · Innocenti Lab, UNC Eshelman School of Pharmacy**
PI: Dr. Federico Innocenti, MD, PhD · Mentor: Dr. Eric Seiser, PhD
- Investigated the accuracy of multiple CNV-calling algorithms and developed a pipeline for more sensitive CNV calling for use in pharmacogenomic association studies
- 2013** **Independent Study Research Project: Investigating the barriers to adequate tuberculosis treatment and diagnosis for women in Bhopal, Madhya Pradesh**
Mentors: Azim A. Khan, PhD · Surya Bali, MBBS, MHA, MD
- Utilized Indian governmental health records and personal interviews to investigate and report barriers to TB treatment and diagnosis for Bhopali women in conjunction with the the All India Institute of Medical Science (AIIMS) Bhopal
- 2013** **Conte Center for Computational Neuropsychiatric Genomics · REU Participant · University of Chicago**
PI: Nancy J. Cox, PhD · Mentor: Lea K. Davis, PhD
- Developed a queryable database which integrates copy-number variant data with exome sequence data to investigate autism spectrum disorder
- 2012 - 2013** **Research Assistant · ResultsSpace Project, UNC School of Information and Library Science**
PI: Gary Marchionini, PhD · Mentor: Robert Capra, PhD
- Ran participants in a series of experiments, coded responses, provided input for future experimental design, and statistically analyzed and reported results to investigate the effect of collaborative features on human interaction with search databases

PUBLICATIONS & PRESENTATIONS

PUBLICATIONS:

- PREPRINT: Rinker, D. C., Simonti, C., **McArthur, E.**, Shaw, D., Hodges, E., & Capra, J. A. (2019). Neanderthal introgression reintroduced functional alleles lost in the human out of Africa bottleneck. *BioRxiv*, 533257. (In submission to *Science Advances*)
- Lackey, L., Coria, A., Woods, C., **McArthur, E.**, & Laederach, A. (2018). Allele-specific SHAPE-MaP assessment of the effects of somatic variation and protein binding on mRNA structure. *RNA*, 24(4), 513–528.
- McArthur, E.**, Bali, S., Khan, A.A. (2016) Socio-cultural and knowledge-based barriers to Tuberculosis diagnosis for women in Bhopal, India. *Indian Journal of Community Medicine*. 41(1), 62-64.
- Lackey, L., **McArthur, E.**, Laederach, A. (2015). Alternative splicing leads to increased transcript complexity in genes associated with chronic obstructive pulmonary disease. *PLoS one*, 10(10), e0140885.
- Capra, R., Chen, A.T., **McArthur, E.**, Davis, N. (2013) Searcher Actions and Strategies in Asynchronous Collaborative Search. In *Proceedings of the American Society for Information Science and Technology (ASIST '13)*, Vol. 50.

POSTERS:

- Submitted to American Society of Human Genetics Meeting 2019: **McArthur, E.**, Capra, J.A. (2019, October). Heritability of common complex traits is enriched at topologically associating domain boundary regions.
- Soda, T., **McArthur, E.**, McGuire, P., Crowley, J., Hucks, D., Davis, L. (2019, May). Identification, validation, and characterization of obsessive disorder case samples in a large US Biobank. *American Psychiatric Association Annual Meeting*, San Francisco, CA.
- Lackey, L.L., Coria, A., Tolson, C., **McArthur, E.**, Laederach, A. (2017, April). Somatic and inherited riboSnitches in TPT1 and LCP1 mRNA secondary structures. *American Association for Cancer Research Proceedings*, Washington, DC.
- Lackey, L., **McArthur, E.**, Coria, A., Arend, K., Moorman, N., Laederach, A. (2015, October). The biological impacts of RiboSnitches: Linking RNA structural changes with molecular phenotypes. *North Carolina Symposium on RNA Biology XI*, Durham, NC.
- E. McArthur**, X. Zhang, E.R. Gamazon, J.S. Sutcliffe, E.H. Cook, L.K. Davis and N.J. Cox. (2014, May) Integration of Copy Number and Exome Sequence Data in a Queryable Database for the Investigation of ASDs. *International Meeting for Autism Research (IMFAR 2014)*, Atlanta, GA.

ORGANIZATIONS, ACTIVITIES, SERVICE, LEADERSHIP

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| | Vanderbilt School of Medicine Student Technology Committee |
| 2018 - 2019 | • Chair |
| 2016 - Present | • Member <ul style="list-style-type: none">- An official liaison between medical students, administration, and IT leaders with regard to all technologies related to Vanderbilt School of Medicine- Helping transition medical record systems and training all medical students for competency in effective medical record use- Organizing programming workshops for students and community-wide technology talks with invited speakers |
| 2019 - Present | Careers in Medicine Clinical Informatics Interest Group Co-Chair <ul style="list-style-type: none">- Co-founded and co-chaired the nation's first Clinical Informatics interest group at Vanderbilt- Organizing events to expose students to clinical informatics and biomedical informatics |
| 2018 - Present | Medical Scientist Training Program (MSTP) Website Committee Member <ul style="list-style-type: none">- Creating Vanderbilt MSTP's website to recruit new students and increase collaboration and resource sharing among current students |
| 2016 - Present | Shade Tree Clinic - Medical student-run clinic for the uninsured and underserved population of Nashville |
| 2018 - 2019 | • Clinical care provider volunteer and peer educator |
| | • Website master: For the 2019 Shade Tree Trot 5K run with 600+ participants which raised \$17,000+ for patients |
| 2016 - Present | Pre-medical and pre-MD/PhD student Mentor <ul style="list-style-type: none">- Mentored three underserved pre-medical students through Student National Medical Association (SNMA), one pre-MD/PhD student through Vanderbilt's Scientific Immersion & Mentorship (SIM) Program, and two pre-MD/PhD students through the MSTP Summer Research program |
| 2012 - 2015 | Scholars' Latino Initiative Mentor <ul style="list-style-type: none">- Mentor in a structured three-year college preparatory program to provide support for a Latina student from an under-resourced high school |
| 2007 - Present | Published Photography <ul style="list-style-type: none">- Cover of Dick's Sporting Goods Magazine and featured in many other publications from Vancouver, Warsaw, Finland, Malaysia, the UK, and the US News & World Report website- Created a two-month 30 photo exhibit exploring the diversity of India's life and landscape |

SKILLS

Software and Computer Language Knowledge:

- Python, R, MATLAB, Perl, Java, AWK, Linux Shell Scripting, Mathematica, MS Office, HTML, CSS, Git
- Web authoring tools such as Adobe Flash, Illustrator, Photoshop, and Lightroom

Language Knowledge:

- Moderate conversational Spanish
- Introductory conversational Hindi-Urdu, Proficiency in Devanagari and Nasta'liq Script