

# JACQUELINE R.M.A. MAASCH

in jmaasch — ✉ jmaasch@seas.upenn.edu — 🌐 jmaasch

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## EDUCATION

2019 – Present	<b>Master of Computer &amp; Information Technology</b> <b>University of Pennsylvania</b> , Philadelphia, PA, USA Department of Computer & Information Science School of Engineering & Applied Science GPA 4.0/4.0
2016	<b>Bachelor of Arts</b> <b>Smith College</b> , Northampton, MA, USA Major Anthropology, Minor Environmental Science & Policy GPA 3.97/4.0 — Summa Cum Laude — Phi Beta Kappa — Sigma Xi

## KNOWLEDGE & SKILLS


*Frequently using* 📄 Java; 📄 R; 📄 Excel; 📄 L<sup>A</sup>T<sub>E</sub>X. *Actively learning* 📄 C; 📄 Assembly; 📄 JavaScript.  
*R projects* **sanzo** CRAN package 📄 – Rectal swabs for *Giardia* D<sub>x</sub> 📄 – *Giardia* epi in rural Niger 📄

*Coursework (G)* Intro Software Development; Mathematical Foundations of Computer Science; Intro Computer Systems. *(UG)* Human Genetics; Primate Evolution; Molecular Biosciences; Statistics.

*Research skills* Data management, analysis, and visualization; manuscript writing; technical writing (SOPs, laboratory training manuals); reports to funders; project management; Biosafety Level 2.

## RESEARCH EXPERIENCE

10.2017 – 07.2019	<b>Research Associate &amp; Project Lead</b> <b>Soil-Transmitted Helminth Research Group</b> <b>Smith College Department of Biological Sciences</b> , Northampton, MA <i>PI: Dr. Steven A. Williams.</i> Gates Foundation reference laboratory investigating the molecular biology of agents causing neglected tropical diseases (NTDs).  * <b>Analyzed</b> and visualized qPCR and geospatial data in R using tidyverse and epiR packages. * <b>Generated</b> and managed large qPCR datasets to inform WHO NTD diagnostic guidelines. * <b>Directed</b> lab trainings in Bangladesh and Uganda on behalf of the Task Force for Global Health. * <b>Validated</b> <i>Ascaris lumbricoides</i> qPCR diagnostic of ~3,100-fold greater sensitivity than prior assays.
11.2016 – 05.2017	<b>Next-Generation Sequencing Technician</b> <b>Biology Research &amp; Development Team</b> <b>PathoQuest</b> , Paris, France <i>PI: Dr. Éric Cabannes.</i> Institut Pasteur spin-out developing blood-based metagenomic NGS diagnostics for infectious disease.  * <b>Validated</b> Illumina Propel-certified diagnostic assay using febrile patient blood samples. * <b>Optimized</b> assay via investigation of viral nucleic acid stability across sample storage conditions. * <b>Performed</b> all stages of manual DNA library preparation and quality control for shotgun NGS. * <b>Authored</b> experimental procedure documents and translated protocols from French to English.

02.2016 – 09.2017	<p><b>Molecular Diagnostic Technician</b>  <b>Massachusetts General Hospital Human Genetics Unit</b>  <b>Laboratory for Molecular Medicine</b>, Cambridge, MA, USA  <i>PI: Dr. Heidi Rehm.</i> Harvard-affiliated CLIA laboratory providing clinical diagnostics for genetic diseases and clinical research support.</p> <p><b>*Performed</b> high-throughput Sanger sequencing for the clinical diagnosis of genetic illnesses.  <b>*Sequenced</b> DNA for longitudinal personalized medicine research led by the Broad Institute.  <b>*Reviewed</b> Sanger traces for quality and called pathogenic variants using Mutation Surveyor.  <b>*Managed</b> cardiomyopathy case logs and contributed to Sanger Standard Operating Procedures.</p>
06.2014 – 12.2015	<p><b>Undergraduate Research Assistant</b>  <b>Cornell University Department of Plant Breeding &amp; Genetics</b>  <b>Collaborative Crop Research Program</b>, Ithaca, NY, USA  <i>PI: Dr. Rebecca Nelson.</i> Gates and McKnight Foundation funded laboratory investigating plant pathology, plant genetics, and agroecology.</p> <p><b>*Refined</b> soil active carbon and microbial respiration assay protocols for field applications.  <b>*Inoculated</b> maize trial fields with northern corn leaf blight for disease resistance research.  <b>*Assisted</b> PhD candidates with background prep for molecular genetic and microbiological assays.  <b>*Reviewed</b> and managed literature for workshops, agroecology databases, and manuscripts. <a href="#"></a></p>

## HONORS & GRANTS

- 2016** Summa Cum Laude, Smith College
- 2015** Phi Beta Kappa, Junior Inductee
- 2014** Schulz Foundation Travel Grant for Student Research, Biological Sciences
- 2014** Margaret A. Walsh Grantham Research Fellowship, Biological Sciences

## SELECT MANUSCRIPTS & PRESENTATIONS

- 2020** Hasegawa M, Pilotte N, Kikuchi M, Means AR, Papaiaikovou M, Gonzalez AM, **Maasch J**, Ikuno H, Sunahara T, Ásbjörnsdóttir K, Walson JL, et al. What does soil-transmitted helminth elimination look like? Results from a targeted molecular detection survey in Japan. *Parasites and Vectors* 13(6). [!\[\]\(cf5be311f7b2821912d8009884508fa2\_img.jpg\)](#)
- 2019** Pilotte N, **Maasch J**, Easton AV, Dahlstrom E, Nutman TB, Williams SA. Targeting a highly repeated embryonic DNA sequence for improved real-time PCR-based detection of *Ascaris* infection in human stool. *PLOS Neglected Tropical Diseases* 13(7): e0007593. [!\[\]\(9804e70d96ff9fe9899b264c06a33cd7\_img.jpg\)](#)
- 2019** Benjamin-Chung J, Pilotte N, Ercumen A, Grant JR, **Maasch J**, Gonzalez AM, Abrams BP, Ester AC, Arnold BF, Rahman M, Haque R, Hubbard AE, Luby SP, Williams S, Colford JM. Comparison of multi-parallel qPCR and Kato-Katz for detection of soil-transmitted helminth infection among children in rural Bangladesh. Under review: *PLOS Neglected Tropical Diseases*. [!\[\]\(4f49380f3d6bce047bc47b2072cc076f\_img.jpg\)](#)
- 2019** **Maasch J**, Arzika AM, Cook C, Lebas E, Pilotte N, Grant JR, Williams SA, Keenan JD, Lietman TM, Aiemojoy K (presenter). Rectal swabs for molecular detection of *Giardia duodenalis*. *Proceedings from the Annual Meeting of the American Society of Tropical Medicine and Hygiene*. National Harbor, MD.
- 2018** Pilotte N (presenter), **Maasch J**, Easton AV, Dahlstrom E, Nutman TB, Williams SA. Improved molecular detection of *Ascaris lumbricoides* utilizing an embryonic sequence for assay design. *Proceedings from the Annual Meeting of the American Society of Tropical Medicine and Hygiene*. New Orleans, LA.