Jannine Forst

jannine.novak@gmail.com | 437 332 3596 | LinkedIn | Github
Bioinformatician | Next Generation Sequencing | Bench and Bioinformatics

COMPUTATIONAL SKILLS

Proficient in **Python**, **SQL**, **R**, **RegEx**, **Apache Beam**
Experience working with: **Google Cloud**, **AWS**, **JIRA**, **Git**, **Dataflow**, **R Shiny**
Experience with databases: **PostgreSQL**, **BigQuery**
Data analysis in unix/linux: **BWA**, **Samtools**, **Picard tools**, **BLAST**, **smartPCA**

LABORATORY SKILLS

Next Generation Sequencing, NGS library construction, target capture, quality control
DNA/RNA extraction, purification, primer design, PCR, qPCR, Sanger sequencing

COMMUNICATION SKILLS

Experienced with presentations for conferences, peers, across departments, to senior leadership. Mentoring experience with students from high school to graduate levels.

EXPERIENCE

Software Engineer 2 - Bioinformatics - *BenchSci, Toronto*
Sept 2022 - Jan 2024

- Ingestion, management, and maintenance of relational databases as well as ETL pipelines spanning diseases, species, chemicals, and drugs.
- Writing testable and scalable code to facilitate the analysis and visibility of data.
- Daily use of Python, SQL, RegEx, Apache Beam, JIRA, Git, Google Cloud, BigQuery

Bioinformatics Scientist - *Arc Bio LLC, Boston*
Jan 2021 - Sept 2022

- Development and implementation of necessary bioinformatics analyses towards product launch, proof of concept, and prototyping.
- Daily use of Python, SQL, R, RegEx, JIRA, AWS

Research Scientist - *Arc Bio LLC, California*
Jan 2019 - Dec 2020

- Assay research and development for next generation sequencing of infectious diseases.
- Daily application of DNA/RNA extraction, cDNA synthesis, NGS method development, target capture, Unix/linux, NGS analysis tools, Python, RegEx, R

Postdoctoral Scholar - *University of California, Santa Cruz*
Jan 2017 - Jan 2019

- Population genetics of Machu Picchu.
- Daily application of ancient DNA extraction to NGS, target capture, data analysis, Unix/Linux, NGS analysis tools, Python

Postdoctoral Scholar - *University of Manchester, UK*
Jan 2015 - Nov 2016

- The adaptation of cereals to new environments, establishment of agriculture in Europe.
- Daily application of ancient charred DNA extraction optimization, NGS, data analysis, Unix/Linux, NGS analysis tools

EDUCATION

University of Manchester, UK | *PhD in Paleogenetics* 2015

- Detecting and sequencing Mycobacterium tuberculosis ancient DNA from archaeological remains. Supervisor: Prof Terry Brown
- Investigative analysis of ancient DNA from various sources (pathogen, mammal, plant) with both established and emerging techniques

University of Toronto, Canada | *BSc in Archaeology and Genetics* 2011

PUBLICATIONS

Salazar, L., Burger, R., **Forst**, J., Barquera, R., Nesbitt, J., Calero, J., Washburn, E., Verano, J., Zhu, K., Sop, K., Kassadjikova, K., Asencios, B. I., Davidson, R., Bradley, B., Krause, J., & Fehren-Schmitz, L. (2023). Insights into the genetic histories and lifeways of Machu Picchu's occupants. *Science Advances*, *9*(30), eadg3377.

Nakatsuka, N., Lazaridis, I., Barbieri, C., Skoglund, P., Rohland, N., Mallick, S., Posth, C., Harkins-Kinkaid, K., Ferry, M., Harney, É., Michel, M., Stewardson, K., **Forst**, J., Capriles, J. M., Durruty, M. A., Álvarez, K. A., Beresford-Jones, D., Burger, R., Cadwallader, L., … Fehren-Schmitz, L. (2020). A Paleogenomic Reconstruction of the Deep Population History of the Andes. *Cell*, *181*(5), 1131–1145.e21.

Verdugo, C., Zhu, K., Kassadjikova, K., Berg, L., **Forst**, J., Galloway, A., Brady, J. E., & Fehren-Schmitz, L. (2020). An investigation of ancient Maya intentional dental modification practices at Midnight Terror Cave using anthroposcopic and paleogenomic methods. *Journal of Archaeological Science*, *115*, 105096.

Prieto, G., Verano, J. W., Goepfert, N., Kennett, D., Quilter, J., LeBlanc, S., Fehren-Schmitz, L., **Forst**, J., Lund, M., Dement, B., Dufour, E., Tombret, O., Calmon, M., Gadison, D., & Tschinkel, K. (2019). A mass sacrifice of children and camelids at the Huanchaquito-Las Llamas site, Moche Valley, Peru. *PLOS ONE*, *14*(3), 1–29.

Forst, J., & Brown, T. A. (2017). A Case Study: Was Private William Braine of the 1845 Franklin Expedition a Victim of Tuberculosis? *Arctic*, *70*(4), 381–388.

Forst, J., & Brown, T. A. (2016). Inability of 'Whole Genome Amplification' to Improve Success Rates for the Biomolecular Detection of Tuberculosis in Archaeological Samples. *PLOS ONE*, *11*(9), 1–15.