Jannine Forst

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Bioinformatician | Next Generation Sequencing | Data Science

COMPUTATIONAL SKILLS

Proficient in **Python**, **SQL**, **R**, **RegEx**, **Apache Beam**

Experience working with: **Google Cloud**, **Amazon Web Services (AWS)**, **JIRA**, **Git**

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

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 with Prof Terry Brown

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.