Adair L. Borges

Scientist | Technical Leader | Founder

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PROFESSIONAL SUMMARY

Scientist-entrepreneur driven by the real-world impact of science, with a proven track record of scientific strategy and team leadership.

SKILLS

Leadership: Team and project leadership (4–5 scientists), start-up creation, scientific strategy and focus area selection, funding acquisition, data-driven decision-making under uncertainty, cross-functional collaboration

Science: Comparative genomic, transcriptomic, and evolutionary analyses of hosts and parasites, protein function prediction, (meta)genome sequencing and mining, biochemical and cell-based functional assay development, isolation and culture of novel phages and microbes.

PROFESSIONAL EXPERIENCE

StealthCo — Oakland, CA

CEO and Co-founder — *May 2025 - present*

- Leading an immune target identification startup based on work matured by myself and my team at Arcadia

Arcadia Science — Emeryville, CA

Technical Program Lead, Translation — *Dec 2023 - May 2025*

- Established a research program using parasites to identify novel targets for inflammatory diseases
- Led a team of 4-5 scientists, supervising eight distinct pilot projects

Scientist II, Translation — *Jan 2023 - Nov 2023*

- Collaborated with leadership to develop pilot research framework to quickly de-risk or kill translational starting points for company creation
- Led three computational pilot projects across the nucleic acid delivery and dermatological disease space
- Established a translation-focused lunch seminar series “Biotech Bites”, hosting founders to present on their company creation journeys
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Scientist I, Translation — *Jan 2022 - Dec 2022*

- Established a research program using experimental and computational approaches to discover non-canonical DNA chemistries in bacteriophages and microbial communities

UC Berkeley

Berkeley, CA

Miller Postdoctoral Fellow — *June 2020 - Dec 2021*

- Proposed and led an independent research project mining animal and human metagenomes for bacteriophages that use alternative genetic codes, resulting in an in-depth evolutionary and mechanistic analysis over 600 bacteriophage genomes
- Collaborated with external labs on CRISPR-Cas tool development

Acrigen Biosciences

Berkeley, CA

Scientific Consultant — *Jan 2020 - June 2020*

- Establishment of cell-based and biochemical high-throughput screening platforms to test novel CRISPR systems and novel CRISPR-Cas inhibitors
- Advisement on the design of a bioinformatic pipeline to identify novel CRISPR-Cas inhibitors

University of California, San Francisco

Berkeley, CA

Graduate student researcher — *Aug 2014 - Jan 2020*

- Established a graduate research project studying bacteriophage inhibition of bacterial CRISPR-Cas immunity, resulting in fundamental discoveries in phage biology, the discovery of novel anti-CRISPRs, and a patent on anti-CRISPR inhibitors
- Hired, trained, and supervised two undergraduate researchers over four years
- Served on multiple university governance committees

University of Pittsburgh

Pittsburgh, PA

Undergraduate Researcher — *June 2012 - May 2014*

- Tested computational predictions about evolution and function of virulence factors in the parasite *Toxoplasma gondii* using *in vivo* and *in vitro* assays

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EDUCATION

UC San Francisco — *Aug 2014 - Feb 2020*
PhD, Biomedical Sciences

University of Pittsburgh — *Aug 2010 - May 2014*
BS, Microbiology
Minor: Spanish

PATENTS

Bondy-Denomy J, Borges A, Zhang JY, Osuna B, Stanley S, Davidson A. "Anti-crispr inhibitors." U.S. Patent Application US20220243213A1, filed August 4, 2022.

SELECT PUBLICATIONS

For full publication record, see Google Scholar

Avasthi P, Borges AL, Reiter T, Weiss ECP. (2025). **A method for computational discovery of viral structural mimics**. https://doi.org/10.57844/arcadia-1eu9-gcsx. *Authors in alphabetical order.*

- We built the first end-to-end pipeline to discover structural mimicry between hosts and parasites, and benchmarked it using known viral mimics.

Borges AL, Celebi FM, Poskanzer KE, Reiter T. (2023). **A capsid-based search recovers viral sequences from human brain sequencing data.** https://doi.org/10.57844/arcadia-4e3b-bbea. *Authors in alphabetical order.*

- We searched sequencing data from human brain tissue to identify viral capsids that could potentially cross the blood brain barrier.

Borges AL, Chou S, Patton AH, Reiter T, Weiss ECP, York R. (2025). **Comparative phylogenomic analysis of chelicerates points to gene families associated with long-term suppression of host detection.** https://doi.org/10.57844/arcadia-4e3b-bbea. *Authors in alphabetical order.*

- We analyzed the evolutionary signatures across thousands of parasite gene families, identifying 10 gene families in ticks predicted to suppress itch, pain, and inflammation.

Borges AL, Lou YC, Sachdeva R, Al-Shayeb B, Penev PI, Jaffe AL, Lei S, et al. (2022). **Widespread stop-codon recoding in bacteriophages may regulate translation of lytic genes.** https://doi.org/10.1038/s41564-022-01128-6

- We performed the first metagenomic survey of alternative genetic codes in bacteriophages, and proposed recoding as a novel translational regulatory mechanism.

Borges AL, Castro B, Govindarajan S, Solvik T, Escalante V, Bondy-Denomy J. (2020). **Bacterial alginate regulators and phage homologs repress CRISPR-Cas immunity.** https://doi.org/10.1038/s41564-020-0691-3

- We identified a bacterial pathway that regulates CRISPR-Cas activity, and discovered that phages hijack this pathway to repress CRISPR-Cas immunity themselves.

Marino ND*, Zhang JY*, Borges AL*, Sousa AA, Leon LM, Rauch BJ, Walton AR, et al. (2018). **Discovery of widespread type I and type V CRISPR-Cas inhibitors.** https://doi.org/10.1126/science.aau5174

**Authors contributed equally*

- We discovered and characterized novel CRISPR-Cas inhibitors, including the first inhibitors of therapeutically-relevant type V (Cas12a) systems.

Borges AL, Zhang JY, Rollins MCF, Osuna BA, Wiedenheft B, Davidson AR, Bondy-Denomy J. (2018) **Bacteriophage Cooperation Suppresses CRISPR-Cas3 and Cas9 Immunity.** https://doi.org/10.1016/j.cell.2018.06.013

- We discovered that bacteriophages cooperate to overcome bacterial immunity, the first example of altruistic behavior in viruses.

AWARDS

Miller Research Fellowship (2020)

- Internationally competitive fellowship to pursue independent post-doctoral research at UC-Berkeley, awarded to 10 recent graduates by the Miller Institute

Nat L. Sternberg Thesis Prize (2020)

- Internationally competitive award for best thesis in the field of bacterial molecular genetics, awarded two students by the Molecular Genetics of Bacteria and Phages Meeting

Chancellor's Award for LGBTQIA Leadership (2019)

- Peer-nominated UCSF award for leadership in service of the LGBTQIA community

Harold M. Weintraub Graduate Award (2019)

- Internationally competitive award for innovative, original, and significant graduate research, awarded to 13 students by the Fred Hutchinson Cancer Research Center

Dean's Award for Excellence in Mentoring (2019)

- Mentee-nominated UCSF award for excellence in mentoring

Graduate Research Fellowship Program - Honorable Mention (2016)

- Nationally competitive award from National Science Foundation, granted to ~15% of graduate student applicants

Goldwater Scholarship (2013)

- Nationally competitive award granted by the Barry M. Goldwater Scholarship Foundation to college students pursuing research careers in STEM