

Benjamin Mark Lewis

Neuro-Data Scientist | Multi-Omic Discovery

LinkedIn: linkedin.com/in/benmarklewis | **GitHub:** github.com/gitbenlewis | **Website:** benjaminmarklewis.com

Professional Experience

Actio Biosciences – San Diego, CA

Senior Scientist - Bioinformatics, Research and Development

January 2026 – Present

Bioinformatics Scientist II, Research and Development

April 2024 – December 2025

- Promoted to Senior Scientist in January 2026 in recognition of scientific leadership and cross-program impact.
- Partnered with biology, translational, and executive stakeholders to guide data-driven portfolio decisions
- Led multi-omic biomarker discovery and novel target identification across therapeutic programs.
- Drove target identification efforts resulting in multiple assets advancing to nomination and portfolio prioritization.
- Scientific lead for single-cell and bulk transcriptomic strategy across multiple therapeutic programs.
- Designed and deployed production-grade RNA-seq pipeline (Nextflow, Python, AWS), reducing turnaround time from 2 weeks to <48 hours and standardizing analytics across R&D.

Scientist I, Research and Development – Aspen Neuroscience – San Diego, CA

March 2022 – March 2024

- Cross-functional single-cell and multiomic discovery supporting pipeline and IND-enabling programs.
- Single-cell transcriptomics/multiomics: project design and data analysis lead.
- Functional genomics for pipeline development: project design and data analysis lead.
- Contributed to preclinical and IND-enabling studies to support regulatory filings and clinical progression.

Research and Development Intern, Hardy Diagnostics, Santa Maria, CA

June 2013–December 2013

- Developed chromogenic diagnostic media formulations and authored protocols for 510(k) validation studies.

Education

Ph.D. in Molecular Biology

2022

University of California, San Diego, CA.

- Co-advisors: Dr. Tony Hunter and Dr. Gene Yeo.
- Thesis project focus: Bioinformatic analysis of RNA-binding proteins and mitochondrial biology.
- Micro-MBA program

M.S. in Biology, Specialization: Stem Cell Research and Technology

2015

B.S. in Biochemistry and Microbiology (Double Major)

2013

California Polytechnic State University, San Luis Obispo, CA

Key Qualifications and Skills

- Multiomic data analysis – Single cell multiomics | Transcriptomics, Proteomics, ATAC-seq, CLIP-seq.
- Biomarker assay analysis experience across Metabolon, SomaScan, Olink, and NULISA platforms.
- Bioinformatics and statistical analysis | Predictive machine learning model design and implementation.
- Coding skills – Python, pandas, matplotlib/seaborn, scikit-learn, scanpy/addata, scvi-tools, PyTorch.
 - Linux, AWS, Cloud/High-performance computing environments, GitHub, R.
 - IBM Data Science Professional Certificate | IBM AI Engineering Professional Certificate.
- Molecular Biology – Viral vector design/production | Gene cloning and DNA assembly techniques.
- Gene expression analysis – NGS/qPCR| RNA manipulation and analysis techniques | Immunoblotting .
- Cell Culture – CRISPR/Cas9 gene-editing in iPSCs & cell lines | Stem cell-based disease modeling.
- Cellular Analysis – Extracellular flux analysis | Flow cytometry techniques and analysis (FACS) | Live Cell imaging.
- Immunofluorescence microscopy – Confocal, Brightfield, Plate scanner.

Selected Publications

“*LARP4 Is an RNA-Binding Protein That Binds Nuclear-Encoded Mitochondrial mRNAs To Promote Mitochondrial Function*”

- **Journal:** RNA, November 2023 | **Authors:** Benjamin M. Lewis, Chae Yun Cho, Hsuan-Lin Her, Orel Mizrahi, Gene W. Yeo, Tony R. Hunter.

“*Autologous and Heterologous Cell Therapy for Hemophilia B toward Functional Restoration of Factor IX*”

- **Journal:** Cell Reports, May 2018 | **Authors:** S. Ramaswamy, T. Menon, Benjamin M. Lewis, ..., Inder M. Verma.

“*Functional Gene Correction for Cystic Fibrosis in Lung Epithelial Cells Generated from Patient iPSC*”

- **Journal:** Cell Reports, September 2015 | **Authors:** Amy L. Firth, Tushar Menon, GS. Parker, SJ. Qualls, Benjamin M. Lewis, ..., Fred H. Gage, Inder M. Verma.

Research Training

Ph.D. Student, UCSD Biology department

Summer 2015–March 2022

Laboratory of Tony Hunter (Co-Advisor) – Salk Institute, La Jolla, CA

Laboratory of Gene Yeo (Co-advisor) - University of California, San Diego, CA

- Ph.D. Project Focus: Post-transcriptional regulation of nuclear encoded mitochondrial mRNAs
- Analysis of CLIP data identified several RNA-binding proteins that bind nuclear encoded mitochondrial mRNAs
- Bioinformatic analysis to show LARP4 binds mRNAs encoding for OXPHOS and mito-ribosomal proteins
- Through quantitative proteomics showed that LARP4 depletion triggers reduction in protein levels of targets
- Functional cellular assays to demonstrate LARP4 contributes to mitochondrial function and homeostasis
- Developed methods to study localized translation at the surface of the mitochondria

CIRM Bridges to Stem Cell Research Intern

July 2014 – March 2015

Laboratory of Inder M. Verma - Salk Institute, La Jolla, CA

Mentor and supervisor: Dr. Tushar Menon, Postdoctoral Researcher

- Completed several CRISPR genome-editing projects in iPSC cell models and in-vivo models
- Generated novel CRISPR-corrected hemophilia B patient derived iPSC lines: Published in Cell Reports
- Designed and constructed the several HDR targeting vectors the in-vitro/in-vivo correction of hemophilia B

Undergraduate Student Research Assistant

January 2012–June 2013

Laboratory of Pat Fidopiastis- Cal Poly, San Luis Obispo, CA

Mentor and supervisor: Dr. Pat Fidopiastis, Professor

- Developed and performed agar plate based mucinase assay screens on a library of *V. fischeri* transposon mutants
- Performed bioinformatic screens secreted enzymes with potential activity on mucin molecules

Posters

“Proximity-labeling Based Methods for Studying Localized mRNA and Translation at the surface of the mitochondria”

- **Lewis BM**
- Poster presented at the 2018 UCSD Biology Department retreat, Lake Arrowhead, USA

“Genome Editing of Stem Cells to Brewing Yeast”

- **Lewis BM**, Menon T, Black M, and Verma IM
- Poster presented at the 2015 CIRM Bridges Meeting, San Francisco, USA

“Genomic Editing of Stem Cells for Modeling and Therapy of Monogenic Diseases”

- Menon T, Firth AL, Parker GS, Gilmore WB, **Lewis BM**, Qualls SJ, Scripture-Adams D, Zack JA, and Verma IM
- Poster presented at the 2014 Meeting on the Mesa, The Salk Institute, La Jolla, USA

Teaching Experience

Discussion Section Instructor - “Our Energy Future”

Spring 2019

Discussion Section Instructor - “Computational Neurobiology”

Spring 2018

Lab Instructor - “Biochemical Techniques”

Fall 2016

University of California, San Diego, CA

Lab Instructor - “Introduction to Cell and Molecular Biology”

Fall 2013

California Polytechnic State University, San Luis Obispo, CA

Volunteer Service

Science Fair Judge

2019, 2021

Greater San Diego Science and Engineering Fair

- Volunteer judge for middle school (grades 7–8) biology science fair projects

Science Fair Mentor

2015

San Luis Obispo Elementary Science Fair Mentor

- Volunteer mentor for 4th grade elementary student.