Andrea Loehr, Ph.D.

Barcelona, Spain

Phone: (+34) 686 281166 Email: loehran@gmail.com

PROFESSIONAL EXPERIENCE

AI Upskilling

- Course: AI Safety, Ethics and Society by the Center for AI Safety (May 2025)
- Project: "Exploring Gaps in Model Safety Evaluation: Red-Teaming the SALAD-Bench Benchmark for Large Language Models", https://anloehr.github.io/blog/projects/
- ChatGPT Prompt Engineering and Advanced Data Analysis (Coursera certificate 2023)

pharma&, Barcelona/San Francisco, *Consultant, Translational Medicine and Companion Diagnostics*, October 2024 – present

- pharma& acquired the PARPi rucaparib after the bankruptcy of Clovis Oncology and I am continuing to complete the mission we had started on at Clovis Oncoloy (see below):
  - Converting the accelerated approval of rucaparib in metastatic castration resistant prostate cancer to full approval based on the Phase 3 clinical trial

AstraZeneca, Barcelona, *Senior Director - Lead, Precision Medicine, Oncology,* April 2023- May 2024

- Global development of two companion diagnostics for Phase 2 and 3 non-small cell lung cancer studies
- Delivered global companion diagnostic strategy as precision medicine lead in the investment decision process to expand an antibody-drug conjugate into additional histologies

Clovis Oncology, San Francisco/Barcelona (2021-2023), *Senior Director, Translational Medicine and Molecular Diagnostics,* May 2015 – Jan 2023

- Responsible for all translational medicine and companion diagnostics (CDx) aspects in the development of the PARP inhibitor rucaparib in metastatic castration resistant prostate cancer (mCRPC, TRITON program), including regulatory filings, post-marketing commitments; scientific input into commercial, regulatory, publishing, operational strategies; representation at national and international conferences
  - Translational Medicine lead in cross-functional, global teams
  - Identified and integrated genomic biomarkers, patient screening, logistics and companion diagnostic strategies into Phase 2 and 3 clinical trials of rucaparib in mCRPC
  - Accomplished accelerated FDA approval of rucaparib for mCRPC patients based on a Phase2 study, successful confirmatory Phase 3 trial in process for sNDA filing
  - Achieved first FDA approval of a liquid biopsy based CDx in mCRPC
  - Leading and executing internal and external research projects, including joint combination trials with other pharma companies (nivolumab, ipatasertib), research collaborations and liasing with clinicians and key opinion leaders
  - Spearheading publication efforts leading to multiple (first author) peer reviewed manuscripts and conference presentations
- Biomarker lead in a Phase 2 trial of rucaparib in bladder cancer
  - Defined all translational aspects of the study: biomarker definition, patient selection, sample collection and testing, physician training and site education
- Performed high-throughput computational biomarker discovery and development effort using publicly available NGS data from the TCGA and EGA for expansion of the PARP inhibitor program
  - Identified histologies and patient populations with predicted PARP inhibitor sensitivity leading to a Phase 2 trial in bladder cancer
- Led translational medicine projects across different cancer types, several within the context of an investigator initiated-trial resulting in several peer-reviewed publications
- Promoted three times from Principal Scientist to Senior Director, each time taking on greater responsibilities in the implementation of TM/CDx strategies cross-functionally

Onyx Pharmaceuticals, San Francisco, *Senior Scientist I Translational Genomics,* May 2013 – April 2015

- Performed hypothesis-driven biomarker discovery and validation through analysis of RNASeq gene expression data of Phase 2 and Phase 3 trials of the proteasome inhibitor carfilzomib in multiple myeloma

- Applied machine learning techniques to gene expression profiles of tumors to discover biomarkers predictive of response

GigaGen Inc., San Francisco, *Sr. Bioinformatics Scientist,* May 2011 – May 2013
- Designed, developed and optimized custom alignment algorithm for GigaGen's T cell receptor repertoire from single cell sequencing
- Generated multi-variate simulation of microfluidics processes to optimize product design and minimize turn around time

Ion Torrent, San Francisco, *Software Engineer,* Aug. 2009 – Jan. 2011
- Conceptualized and established the Ion Torrent Personal Genome Machine™ sequence alignment pipeline: at each stage of product development identified and built appropriate software tools, defined quality metrics and graphs; developed and delivered sequence alignment pipeline through full software release life cycle from prototype to shipped production code

Harvard Medical School – George Church Lab, *Volunteer,* Oct. 2008 – Aug. 2009
- Performed data analysis for the Personal Genome Project PGP open source software 'Swift' which increased yield and reduced error rates
  - Compared commercial Illumina Genome Analyzer Pipeline 1.3.2 and 'Swift' to enable users to understand the primary data for the optimization and validity of their scientific work

Harvard-Smithsonian Center for Astrophysics, *Staff Scientist,* 2008 – Aug. 2009
- PISCO project: Developed and implemented novel algorithm for real-time, on-site processing and analysis of optical telescope data, which effectively reduces the observation time of galaxy clusters to maximize efficiency
- South Pole Telescope project: created IDL software tool to improve data quality and eliminate errors in time stream

Harvard-Smithsonian Center for Astrophysics, *Postdoctoral Fellow*, 2003 - 2008
- Scientific leader of South Pole winter-over team of three for the AST/RO project 2004-05. Defined scientific projects for the 2005 austral winter season
- Lived at geographic South Pole (Antarctica) for 13 months, operating astronomical observatory in extreme conditions (winter temperatures below -100 F); managed all aspects of site operation independently
- Obtained first ground based detection of N[II] (ionized nitrogen) emission line using the SPIFI interferometer

Software Engineer, *Consultant*, 2000 - 2003
- Pioneered signal extraction algorithm for customer (EADS)
- Method patented and applied as real-time noise filter (complexity *O(N)*) in naval radar systems

Max-Planck-Institute for Radioastronomy, Bonn, Germany, *Scientific Aid*, 1999 - 2000
- Obtained, processed, and analyzed radio-wavelength data from single dish telescopes (Effelsberg 100m telescope, Bonn, Germany; Heinrich-Hertz Telescope, Az, USA) and interferometer (VLA, NM, USA)

EDUCATION

- 2003: Ph.D. Physics (summa cum laude), University of Bonn, Germany

PATENTS

- WO2015021376A1 - Immunoglobulin Expression Levels as Biomarker for Proteasome Inhibitor (2016)
- DE 102 38 896 B4 - Method for the Analysis of Radar Data (2006)

AWARDS

- Antarctica Service Medal of the United States of America , 2005

TECHNICAL SKILLS

- R, Perl, bash, awk, Linux, Windows, google colab, AI-assisted: jupyter notebook, Python, C

LANGUAGES

- German (native)
- English (fluent)
- Spanish (B2)
- Catalan (A1/2)

CITIZENSHIP

- Germany, USA
- Legal right wo work in EU and USA
- Legal resident of Spain

PUBLICATIONS

- Chou J, et al., "Synthetic Lethal Targeting of CDK12-Deficient Prostate Cancer with PARP Inhibitors", *Clinical Cancer Research,* 2024
- Abida W, et al., "Rucaparib for the Treatment of Metastatic Castration-resistant Prostate Cancer Associated with a DNA Damage Repair Gene Alteration: Final Results from the Phase 2 TRITON2 Study", *Eur Urol.,* 2023
- Fizazi K, et al., "Rucaparib or Physician's Choice in Metastatic Prostate Cancer", *N Engl J Med.*, 2023
- Loehr A. et al., "Emergence of BRCA Reversion Mutations in Patients With Metastatic Castration-Resistant Prostate Cancer After Treatment With Rucaparib", *Eur Urol.*, 2022
- Fizazi K. et al., "Nivolumab plus rucaparib for metastatic castration-resistant prostate cancer: results from the phase 2 CheckMate 9KD trial", *J. Immunother Cancer*, 2022
- Petrylak D.P., Watkins S.P., Loehr A., "What Plasma Can Tell Us When Tissue Cannot: A Case Report of Genomic Testing in mCRPC and Clinical Response to Treatment With the PARP Inhibitor Rucaparib", *Frontiers in Oncology*, 2022
- Sautois B., Loehr A., Watkins S.P., Schroeder H., Abida W., "A Case Study of Clinical Response to Rucaparib in a Patient with Metastatic Castration-Resistant Prostate Cancer and a *RAD51B* Alteration", *Current Oncolog,* 2022
- Loehr A. et al, "Response to Rucaparib in BRCA-Mutant Metastatic Castration-Resistant Prostate Cancer Identified by Genomic Testing in the TRITON2 Study", *Clinical Cancer Research*, 2021
- Patsouris A., et al, "Rucaparib in patients presenting a metastatic breast cancer with homologous recombination deficiency, without germline BRCA1/2 mutation", *European Journal o Cancer*, 2021
- Grivas, P., Loriot, Y., Morales-Barrera, R. et al. Efficacy and safety of rucaparib in previously treated, locally advanced or metastatic urothelial carcinoma from a phase 2, open-label trial (ATLAS). *BMC Cancer*, 2021
- Tukachinsky H. et al, "Genomic analysis of circulating tumor DNA in 3,334 patients with advanced prostate cancer identifies targetable BRCA alterations and AR resistance mechanisms", *Clinical Cancer Research*, 2021
- Loehr A., "Liquid Biopsy Pre & Post Rucaparib: Patient Selection & Mechanisms of Resistance in BRCA+ mCRPC", *PARP & DDR Inhibitors Summit 2021*, oral presentation
- Abida W. et al., "Non-BRCA DNA Damage Repair Gene Alterations and Response to the PARP Inhibitor Rucaparib in Metastatic Castration-Resistant Prostate Cancer: analysis from the phase 2 TRITON2 study", *Clinical Cancer Research,* 2020
- Abida W. et al. "Rucaparib in men with metastatic castration-resistant prostate cancer harboring a *BRCA1* or *BRCA2* gene alteration". *Journal of Clinical Oncol*, 2020
- Gilson C. et al., "Genomic Profiles of De Novo High- and Low-Volume Metastatic Prostate Cancer: Results From a 2-Stage Feasibility and Prevalence Study in the STAMPEDE Trial", *JCO Precision Oncology,* 2020
- Pawlyn C., Loehr A., et al., "Loss of heterozygosity as a marker of homologous recombination deficiency in multiple myeloma: a role for PARP inhibition?", *Leukemia*, 2018

- Smyth E., Cafferkey C., Loehr A., et al., “Genomic Loss of heterozygosity and survival in the REAL3 trial”, *Oncotarget*, 2018
- Rodriguez, R.S., Pauli, M.L., Neuhaus, I.M., Yu, S.S., Aaron, S., Harris, H.W., Yang, S.H., Anthony, B.A., Sverdrup, F.M, Krow-Lucal, E., MacKenzie, T., Johnson, D.S., Meyer, E.H., Loehr, A., Abbas, A.K., Rosenblum, M.D., et al., "Memory Regulatory T cells Are a Unique Population Resident in Human Skin", *Journal of Clinical Investigation*, 2014
- Tuch, B.B., Loehr, A., Degenhardt, J.D., Kwei, K.A., Lowe, E., Keats, J.J., Kirk, C.J., "Expression of Immunoglobulin and its Receptor are Major Determinants of Multiple Myeloma Patient Sensitivity to Proteasome Inhibitors", *ASH* 2013
- Johnson D.S., Conant C.G., Withey G., Loehr A., Hsu A.R., Meyer E.H., "Repertoire-wide single-cell linked immunoglobulin DNA libraries" *Journal of Immunology*, 2013
- Johnson D.S., Conant C.G., Withey G., Loehr A., Hsu A.R., Meyer E.H., "Massively parallel phenotyping and clonotyping of single T cells" *Journal of Immunology*, 2013
- Meyer, E.H., Hsu, A.R., Liliental, J., Loehr, A., et al., “A Distinct Evolution of the T Cell Repertoire Categorizes Treatment Refractory Gastrointestinal Acute Graft-Versus-Host Disease”, *Blood*, 2013
- Oberst, T. E., Parshley, S. C., Nikola, T., Stacey, G. J., Loehr, A., Lane, A. P., Stark, A. A., Kamenetzky, J., “A 205 μm [N II] Map of the Carina Nebula”, *Astrophysical Journal*, 2011
- High, F. W., et al., “Optical Redshift and Richness Estimates for Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations”, *Astrophysical Journal*, 2010
- Vanderlinde, K., et al., “Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations”, *Astrophysical Journal*, 2010
- Whiteford, N., Skelly, T., Curtis, C., Ritchie, M., Loehr, A., Zaranek, A.W., Abnizove, I., Brown, C., 2009, “Swift: Primary Data Analysis for the Illumina Solexa Sequencing Platform”, *Bioinformatics*, 2009
- Staniszewski, Z., et al., “Galaxy Clusters Discovered with a Sunyaev-Zel'dovich Effect Survey”, *Astrophysical Journal,* 2009
- Tothill, N. F. H., Loehr, A., Parshley, S. C., Stark, A. A., Lane, A. P., Harnett, J. I., Wright, G. A., Walker, C. K., Bourke, T. L., Myers, P. C., ”Large-Scale CO Maps of the Lupus Molecular Cloud Complex”, *Astrophysical Journal Supplement Series*, 2009
- Loehr, A., Bourke, T. L., Stark, A. A., Lane, A. P., Myers, P. C., Parshley, S. C., Tothill, N. F. H., “AST/RO ^{13}CO(J=2→1) and ^{12}CO(J=4→3) Mapping of Spitzer c2d Small Clouds and Cores”, *Astrophysical Journal Supplement Series*, 2007
- Tothill, N. F., Loehr, A., Parshley, S., AST/RO Team, “Degree-Scale Submillimeter CO Maps of Lupus”, *Bulletin of the American Astronomical Society*, 2006
- Oberst, T. E., Parshley, S. C., Stacey, G. J., Nikola, T., Loehr, A., Harnett, J. I., Tothill, N. F. H., Lane, A. P., Stark, A. A., Tucker, C., E., “Detection of the 205 μ [NII] Line from the Carina Nebula”, Astrophysical Journal, 2006
- Krause, M., Loehr, A., “The Magnetic Field along the Jets of NGC 4258 as Deduced from High Frequency Radio Observations”, *Astronomy & Astrophysics*, 2004
- Loehr, A., Schrodi, W., “New Approaches to Tracking, Track Initialization and Tracking in Clutter Areas”, Proceedings of the German Radar Symposium, 2002