Jennifer L. Hofmann

Curriculum Vitae

EDUCATION &	Stanford University		
CREDENTIALS	Ph.D., Chemical Engineering M.S., Chemical Engineering – GPA 3.8/4.0	June 2023 June 2020	
	Massachusetts Institute of Technology		
	B.S., Chemical Engineering (Minor: Literature) – GPA 4.	8/5.0 June 2018	
RESEARCH EXPERIENCE	Genentech Prescient Design	May 2023 - Present	
	Senior Machine Learning Scientist		
	 Led cross-departmental research team in acquiring a foundational dataset for antibody developability – the largest on record Developed modeling learning and physics based mothed for mean strugged strugged and stru		
	 Developed machine learning and physics-based methods for property prediction and optimization of antibody therapeutics Applied state of the art computational methods to six large molecule partfolio projects 		
	• Applied state-of-the-art computational methods	to six large molecule portiono projects	
	Zia Group Stanford University Doctoral Candidate	September 2018 – May 2023	
	• Developed dynamic, parallelized computational methods to model interactions involved with intracellular processes (incl. whole-cell <i>E. coli</i> models) & antibody formulations		
	Fuller Lab Stanford University Graduate Research Rotation	January - March 2019	
	• Applied dynamic fluid-film interferometry and high-speed imaging to study the interfacial rheology of monoclonal antibody / surfactants solutions (collab. with GNE)		
	Novartis Institutes for BioMedical Research Chemical Biology & Therapeutics – Pre-Graduate Int	June - August 2018 tern	
	 Scaled up a high-throughput biochemical assay to test therapeutic small molecules targeting microRNAs processed by the Drosha/DGCR8 microprocessor complex 		
	Genentech Pharmaceutical Technical Operations Global Biologics MSAT Intern.	June - August 2017	
	 Developed global viral segregation procedures for biologics manufacturing facilities, aligned with regulatory guidance and FMEA 		
	Presented to technical council, who unanimously approved our proposed changes		
	Covaris, Inc. <i>Research & Development Intern</i>	May - August 2016	
	 Spearheaded initial experimental and process design for a novel microfluidic mycobacterial drug-resistance test 		
	Swan Group MIT Undergraduate Researcher	February 2015 - May 2017	
	• Developed computational methods to model transport properties of colloidal gels and antibody suspensions – the only such model to incorporate hydrodynamic interactions required for quantitative viscosity prediction (collab. with GNE)		
	National Cancer Institute Center for Cancer Researc Research Intern	h June 2013 - August 2014	
	 Designed, assembled, and characterized RNA-DNA nanoscaffolds for delivery of RNAi therapeutics into human cells 		
TEACHING &	Graduate Teaching Assistant Ma	urch – June 2020, March – August 2021	
MENTORSHIP	Department of Chemical Engineering, Stanford Univer-	ersity	
	• CHEMENG 120B - Energy & Mass Transport, spring 2020 & 2021 (undergrad. core)		

• CHEMENG 442 – Suspension Mechanics, summer 2021 (graduate core)

	Associate Advisor Department of Chemical Engineering, Massachusetts Institu	August 2017 - May 2018 ute of Technology
	Instructor & Mentor Global Teaching Labs, MIT & Universität Regensburg	January 2016
Community Service	Genentech gPRIDE – Leadership Team Women of gPRIDE co-chair, Internal Outreach committ	January 2024 – Presen
	Diversity, Equity, & Inclusion Committee Society of Rheology	March 2018 – November 202
	Managing Director, Project Mentor Leadership Training Institute, Massachusetts Institute of Te	September 2014 - May 2018 echnology
ACADEMIC AWARDS	ARCS Scholarship – Stanford; ARCS Foundation, Northern CA Justice, Equity, Diversity, & Inclusion Travel Award – Stanford Shirley Chan Student Travel Award – American Physical Socie Fletcher Jones Foundation NSF Graduate Fellowship – Stanford Graduate Research Fellowship – National Science Foundati Ellen Bowers Hofstead Scholarship – Kappa Alpha Theta Foundati	4 ChapterMay 2022dDecember 202dty, DBIODecember 2020dSeptember 2018fonApril 2018adationJune 2017
PUBLICATIONS	 [1] Frey NC*, Hotzel I*, Stanton SD*, Kelly RL*, Alberstein RG*,, Hofmann JL,, Marioni J, Regev A, Wu Y, Cho K, Bonneau R, Gligorijevic V. "Lab-in-the-loop therapeutic antibody design with deep learning", <i>bioRxiv</i> 2025 DOI: 2025.02.19.639050 [2] Lin JY*, Hofmann JH*,, Frey NC, "DyAb: sequence-based antibody design and property prediction in a low-data regime," <i>bioRxiv</i> 2025 DOI: 2025.01.28.635353 [3] Valverde-Mendez D*, Sunol AM*, Bratton BP, Delarue M, Hofmann JL,, Shaevitz JW, Zia RN. "Macromolecular interactions and geometrical confinement determine the 3D diffusion of ribosome-sized particles in live <i>Escherichia coli</i> cells," <i>PNAS</i> 2025 122 (4) [4] Hofmann JH, Yang TS, Sunol AM, Zia RN, "Pre-loading of translation molecules onto ribosomes speeds transport and protein synthesis in <i>Escherichia coli</i>," <i>bioRxiv</i> 2023 [5] Varga Z, Hofmann JL, Swan JW. "Modelling a hydrodynamic instability in freely settling colloidal gels," <i>Journal of Fluid Mechanics</i> [cover] 2018 856, pp. 1014-1044. [6] Wang,G, Varga Z, Hofmann JL, Zarraga IE, Swan JW. "Structure and relaxation in solutions of monoclonal antibodies," <i>Journal of Physical Chemistry B</i> 2018 122 (11). [7] Afonin KA, Viard M, Kagiampakis I, Case CL, Dobrovolskaia M, Hofmann JL, Vrzak A, Kireeva M, Kasprzak WK, KewalRamani VN, Shapiro BA. "Triggering of RNA interference with RNA-RNA, RNA-DNA, and DNA-RNA nanoparticles" <i>ACS Nano</i> 2015 (9) 1. 	
PRESENTATIONS	 Hofmann JL, PEGS Europe, November 2025 (invited) Zhang Y, Sinha I, Hofmann JH, Yang Y. "Unraveling host cell protein – antibody interactions with cross-linking mass spectrometry techniques" at BioProcess International, September 2024 Hofmann JL "An outlook on antibody high-concentration property prediction: from coarse-grained MD to machine learning" [3a] at 2nd Annual Prescient Design Workshop, September 2023. [3b] at Roche Developability Workshop, September 2023. Hofmann JL, Zia RN. "The roles of stoichiometric crowding and protein-protein interactions in accelerating translation elongation rates in <i>E. coli</i>," In <i>American Physical Society's Annual Meeting</i>, March 2022. Sunol AM, Ryu BK, Hofmann JL, Zia RN. "Colloidal hydrodynamics of the bacterial nucleoid and its impact on diffusion and spatial organization in the cytoplasm," In <i>American Physical Society's Annual Meeting</i>, March 2022. Hofmann JL, Zia RN. "The roles of patchy attractions and Brownian motion in fundamental biological processes in a model cell" [6a] In <i>American Physical Society's Annual March Meeting</i>, March 2021. [6b] In <i>Society of Rheology 91st Annual Meeting Poster Session</i>, October 2019. Hofmann JL, "Drevelopment of a Network-Aligned Viral Segregation Strategy for the Roche Biologics Manufacturing Network," In <i>Genentech Summer Poster Day</i>, 2017. Hofmann JL, "Triggering of RNA Interference with RNA-RNA, RNA-DNA, and DNA-RNA Nanoparticles," [8a] In <i>NIH Summer Poster Day</i>, 2014. [8b] In <i>National Interagency Confed. Bio. Research Spring Research Festival</i>, 2014. 	