Helena (Nellie) Kolon

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Summary

Scientist and technical leader who brings deep lab and engineering expertise to AI-driven health products. Five-plus years of assay development and high-throughput experimentation across pharma (Eli Lilly, Takeda), academia (Georgia Tech), and a health AI startup, where I lead R&D, manage a team, and partner with ML engineers to turn biological data into models.

Education

Georgia Institute of Technology – M.S. Biomedical Engineering — Aug '24 – Dec '25

Northeastern University – B.S. Biochemistry, Magna Cum Laude — Sep '17 – May '21

Skills

AI and data: AI-assisted experimental design and optimization, human-in-the-loop workflows, data quality and ground-truth generation for ML models, domain expertise for model design, Design of Experiments (DoE)

Leadership: hiring, training, and managing research interns, setting technical roadmaps and priorities, cross-functional collaboration with ML and engineering, external partnerships, scientific presentations

Lab and instrumentation: CE-LIF, microfluidics, HPLC/MS, high-throughput screening and liquid handling, tangential flow filtration, ELISA, in vitro and in vivo assays, bioconjugation, nanoparticle formulation and scale-up

Experience

Deleon Technologies – Atlanta, GA — Sep '25 – Present

Founding Engineer

- Lead R&D for an at-home metabolic health platform, owning the lab roadmap from assay design to AI-ready data.
- Hired, trained, and manage two research interns; set priorities, design experiments, and review all data they generate.
- Domain expert for the ML team, translating metabolic pathways and kidney physiology into model features.
- Built a human-in-the-loop, AI-assisted workflow to optimize the core assay, with AI choosing each next run.
- Lead development of a microfluidic capillary electrophoresis (CE-LIF) assay generating quantitative data for ML.
- Present the company's technology and scientific strategy to external research partners and potential collaborators.

Georgia Institute of Technology: Ackun-Farmmer Lab – Atlanta, GA — Aug '24 – May '25

Graduate Student Researcher

- Designed a library of peptide-targeted nanoparticles to reprogram T cell responses, plus an assay for biodegradability.
- Optimized a polymer nanoparticle synthesis process, cutting synthesis time 20-fold, from 10 hours to 30 minutes.
- Mentored and supervised an undergraduate researcher on an independent antigen-loading nanoparticle project.

Eli Lilly and Company: Genetic Medicine – Cambridge, MA — May '21 – May '24

Senior Research Associate

- Built a high-throughput screening platform to formulate and characterize 100+ lipid nanoparticles per week.
- Used Design of Experiments to map the formulation space for nucleic acid delivery to the brain, in vitro and in vivo.
- Developed lipid nanoparticle scale-up methods using microfluidic mixing and tangential flow filtration.
- Coordinated with cross-departmental teams and external partners; presented results at internal scientific poster sessions.

Takeda Pharmaceuticals: Oncology Drug Discovery – Cambridge, MA — Jul '19 – Dec '19

Analytical Chemistry Co-op

- Ran purity, stability, and solubility assays on drug candidates; presented an in vivo ELISA study to 50+ scientists.

Publications and Presentations

Hengen, A.C.; **Kolon, H.**; Ackun-Farmmer, M.A. "Biomaterial-mediated immunomodulation of regulatory T cells in cancer." *Biomaterials Science* 2026, 14, 4567–4593. DOI: 10.1039/d6bm00653a

Kolon, H.; Mabrouk, P.A. "How Participation in a Research Experiences for Undergraduates Program (REU) Transforms Chemistry and Biochemistry Majors' Understanding of Research and Scientific Inquiry." *Journal of Chemical Education* 2022, 99, 2493. DOI: 10.1021/acs.jchemed.1c00999

Kolon, H.; Zhang, C. "Lipid Nanoparticles for Direct-to-CNS Delivery." *Internal Eli Lilly Poster Session*, Dec 2023.

Zhang, C.; **Kolon, H.** "A High-Throughput Screening Platform for Lipid Nanoparticle Formulation." *Internal Eli Lilly Poster Session*, Dec 2022.