

# Jonathan Hoggatt, PhD

AI-Enabled Drug Discovery & Development  
Platform Strategy, Translational Science



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## Professional Summary

Multidisciplinary biotech leader with 19+ years spanning translational science, drug discovery, early development, and enterprise AI integration. Senior Director at Moderna leading platform and portfolio strategy across delivery, chemistry, biology, and AI-enabled R&D, with direct responsibility for embedding AI into research and early development workflows, organizational decision-making, and cross-functional operating models. Scientific co-founder of Magenta Therapeutics and former Harvard Medical School faculty / NIH-funded PI, with a track record translating high-impact biology into clinical-stage innovation, venture-backed company building, and multidisciplinary team leadership. Recognized leader in non-viral delivery and gene therapy strategy (ASH/ASGCT), known for connecting scientific depth, platform vision, and executive judgment. Earlier public-sector leadership as a Police Commissioner and City Councilor brings experience in governance, budget discipline, and complex people leadership.

## AI Leadership Highlights

- Lead AI strategy and integration across research and early development at Moderna, connecting AI capability to scientific workflows and portfolio decisions.
- Built and scaled an automated wet lab platform integrating experimentation, data capture, and analysis for closed-loop lipid nanoparticle optimization.
- Deployed AI-enabled workflows to improve hypothesis generation, experimental design, biological interpretation, and target product profile (TPP) development; one such workflow was recognized by OpenAI as a 2025 enterprise AI case study.
- Served as primary scientific interface to the C-suite on research and early development AI strategy, deployment, and enterprise adoption.

## Moderna Therapeutics

### Senior Director, Platform & Program Strategy, AI Integration

*March 2025 – Present*

- Own scientific strategy and prioritization across platform sciences, including delivery, chemistry, biology, platform immunology, genomic sciences, and RNA sciences.
- Lead AI strategy and integration across research and early development organizations.
- Drive portfolio-level decisions that increase focus and efficiency while preserving innovation and biological breadth across cell types, disease areas, and mechanisms.
- Partner with executive leadership to translate biological & technology risk, mechanistic uncertainty, and pharmacologic feasibility into platform and portfolio strategy.
- Founded and now lead *mPossible*, an internal innovation incubator launching cross-functional teams in new therapeutic areas and modalities.
- Through *mPossible*, defined scientific hypotheses, target identification, and early validation strategies that influenced platform direction and prioritization.
- Direct competitive intelligence and external technology evaluation across emerging therapeutic platforms.

## **Senior Director, Rapid Discovery & AI Integration**

*June 2024 – March 2025*

- Scaled and led a multidisciplinary organization (~40 FTEs) spanning engineering, data science, delivery science, chemistry, biology, pharmacology, and statistics.
- Delivered a fully automated, end-to-end LNP manufacturing and analytics platform capable of producing and analyzing up to ~1,000 unique LNP formulations per day.
- Established the strategic vision for rapid discovery and AI-enabled experimentation across research and early development.
- Served as the first senior scientific leader outside the digital organization to lead AI integration across discovery and translational teams.
- Developed and deployed AI-enabled workflows to accelerate hypothesis testing, experimental design, and biological interpretation.
- Led training and enterprise adoption of AI approaches across research teams.
- Primary scientific interface to C-suite leadership on AI research strategy & deployment.
- Developed an AI-enabled workflow for target product profile creation, later highlighted by [OpenAI as a case study in its 2025 enterprise AI report](#).

## **Senior Director, Hematology & Immune Therapeutics**

*October 2023 – June 2024*

- Expanded hematology scope to include myeloid- and T-cell-targeted therapeutics.
- Led strategy and execution for programs addressing severe autoimmune and immune-mediated diseases.
- Integrated immunology, pharmacology, and delivery constraints into program design and prioritization.
- Interfaced with governance, portfolio review, and executive leadership.

## **Director, Hematology**

*March 2021 – October 2023*

- Built and scaled a new hematology therapeutic organization from inception
- Created foundational platform technologies; inventor on multiple platform IP filings
- Defined disease-area strategy, budget discipline, and cross-functional operating models
- Developed early target hypotheses and validation strategies in hematologic indications
- Established new disease models and immunologic and hematologic biomarker assays
- Integrated pharmacologic considerations early to guide modality and delivery choices
- Built and managed external academic and industry partnerships
- Drove alignment across discovery, delivery, translational science, and early development
- Delivered early discovery inflection points enabling portfolio expansion and promotion

## **Magenta Therapeutics**

### **Scientific Co-Founder; Clinical Advisory Board Member**

*2016 – 2021*

- Inventor on foundational platform intellectual property supporting hematopoietic stem cell mobilization, conditioning, and transplantation
- Co-developed the company's scientific vision, platform strategy, and portfolio direction
- Led translation of academic discoveries into a venture-backed biotechnology platform, culminating in a successful IPO
- Contributed to target selection, mechanism prioritization, and development strategy

- Supported IND-enabling activities and advancement of multiple programs into Phase 1 and Phase 2 clinical trials
- Advised on clinical strategy and trial design as a member of the Clinical Advisory Board
- Collaborated closely with executive leadership, investors, and external partners during company formation and growth

**Harvard Medical School / Harvard University**  
**Tenure Track Faculty, Medicine and Stem Cell Biology**

2014 – 2022

- Led an NIH-funded translational research program focused on hematopoietic stem cell biology, immunology, gene therapy, and regenerative medicine
- Principal Investigator on multiple NIH awards, including a multi-year R01
- Published high-impact translational research in *Nature*, *Cell*, *Nature Medicine*, *Blood*, *Nature Biotechnology*, and others.
- Discovered and advanced multiple therapeutic approaches subsequently translated into clinical development
- Served in national leadership roles across hematology and gene and cell therapy professional societies

**Professional Leadership and Scientific Service**

**American Society of Hematology (ASH)**

**Chair, Business of Innovation Task Force**

- Lead the Business of Innovation Task Force, shaping ASH strategy at the intersection of science, translation, and biotechnology
- Led ideation, development, and launch of the ASH IGNITE innovation platform to accelerate translational progress and industry engagement

**Spokesperson, Gene Therapy**

- Serve as ASH spokesperson for gene therapy, representing advances, challenges, and policy considerations to external audiences

**American Society of Gene and Cell Therapy (ASGCT)**

**Chair, Non-Viral Delivery Committee**

- Lead society efforts focused on non-viral delivery technologies for gene and cell therapy
- Guide scientific priorities, programming, and community engagement in emerging delivery modalities

**City of West Lafayette**

**Police Commissioner**

2006 – 2009

- Responsible for personnel governance, including hiring, firing, promotion, demotion and discipline of the city-wide force of uniformed officers (48 at the time)
- Provided civilian oversight and accountability for public safety operations
- Worked with city leadership on policy development, budgeting, and organizational governance

## **City of West Lafayette**

### **City Councilor**

2009 – 2011

- Participated in fiscal oversight and review of the municipal budget
- Collaborated with city departments and community stakeholders to maintain and improve public services
- Gained experience navigating governance, competing priorities, public accountability, and influencing diverse internal and external stakeholders

## **Selected Translational and Clinical Innovations**

### **Rapid Hematopoietic Stem Cell Mobilization (GRO- $\beta$ )**

- Developed a single-day hematopoietic stem cell mobilization regimen producing rapid, high-quality grafts superior to current standard of care ([Hoggatt et al., Cell, 2018](#))
- Led to licensed IP, company formation (Magenta Therapeutics), and multiple Phase 1/2 clinical trials, including sickle cell disease (e.g., NCT05445128).

### **NSAID-Enhanced Stem Cell Mobilization**

- Discovered and translated a prostaglandin-mediated mobilization strategy from rodent models through NHP to first-in-human proof ([Hoggatt et al., Nature, 2013](#))
- Advanced to Phase 2 randomized clinical trials and adopted as standard practice at multiple transplant centers worldwide

### **CD26-Regulated Stem Cell Niche**

- Co-discovered enzymatic regulation of growth factor signaling controlling stem cell trafficking and engraftment
- Findings translated into multiple clinical studies evaluating enhanced stem cell transplantation outcomes

### **Non-Genotoxic Conditioning via Antibody-Drug Conjugates**

- Co-developed an antibody–drug conjugate–based conditioning strategy enabling stem cell transplantation without chemotherapy
- Advanced to clinical evaluation as an alternative to cytotoxic conditioning

### **Stem Cell Graft Modulation to Improve Engraftment**

- Identified graft-intrinsic immune and cellular mechanisms regulating stem cell homing, persistence, and engraftment
- Advanced into clinical trials evaluating therapeutic strategies to improve cord blood stem cell engraftment efficiency and durability

### **Patents and Intellectual Property**

- Inventor on multiple issued and pending patents arising from innovations above, licensed and translated into clinical-stage, venture-backed biotechnology companies.

**Selected Publications** (*Full list of 57 available upon request*)

- Hoggatt J\*, et al. [Cell](#) (2018) - \* *Lead corresponding author*
- Hoggatt J, et al. [Nature](#) (2013)
- Broxmeyer HE\*, Hoggatt J\*, et al. [Nature Medicine](#) (2012) - \* *Co-first author*
- Palchaudhuri R, Saez B, Hoggatt J, et al. [Nature Biotechnology](#) (2016)
- Hoggatt J, et al. [Blood](#) (2009)
- Hoggatt J. [Cell](#) (2016) – *Invited commentary on gene therapy*

**Education**

PhD, Immunology – Indiana University School of Medicine

MS, Biology – Indiana University, Purdue University Indianapolis (IUPUI)

BS, Pharmaceutical Sciences – Purdue University