

Steven Pennock, PhD

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Executive Summary

Visionary scientific leader with 15+ years of experience advancing **gene and cell therapies for retinal and neurological disease**, spanning discovery through IND and clinical development. Proven record in **AAV and non-viral delivery platforms, cell-based therapeutic development (RPE, iPSCs, multiple neuronal lineages)**, and **IND-enabling translational and regulatory strategies**. Experienced with both in vitro and in vivo **CAR-T technologies**. Skilled at building and leading cross-functional teams, integrating **CMC and GMP** considerations early, and forging strategic partnerships with academia, biotech, and pharma. Recognized for driving innovation in ocular gene therapy and retinal disease research, with demonstrated success representing science to **executive leadership, boards, investors, and regulators**.

Leadership Experience

Johnson & Johnson Innovative Medicine – South San Francisco & San Diego, CA

Director, RNA, Gene Therapy & Delivery (2023–2024)

Director, Gene Therapy Discovery Emerging Platforms (2021–2023)

- Advanced multiple ocular and neurodegenerative gene therapy programs from initiation through preclinical IND-enabling studies; supported two clinical-stage assets.
- Built integrated AAV vector production/analytics platforms in-house, aligning with CMC/GMP standards.
- Partnered with Cell Therapy group on in vivo CAR-T and iPSC-based approaches.
- Represented J&J's gene therapy platform to executive leadership and external partners.
- Established external collaborations and key scientific partnerships driving innovation and portfolio growth.

Applied Genetic Technologies Corporation (AGTC) – Cambridge, MA

Director, Gene Therapy R&D (2020–2021) | Assoc. Director (2020) | Asst. Director (2017–2020)

- Led discovery research across ophthalmology, neurology, and otology fields, supporting two clinical-stage retinal programs.
- Directed capsid and payload engineering yielding novel vectors and patents.
- Represented AGTC in external collaborations with academia, KOLs, and partnered biotechs.
- Managed mid-sized R&D team and small biotech operations (vector design, translational studies, CRO/CMO management).

Regeneron Pharmaceuticals – Tarrytown, NY

Staff Scientist, Ophthalmology Group & Viral Vector Technologies (2016–2017)

Scientist, Ophthalmology Group (2014–2016)

- Engineered novel AAV capsids for targeted ocular delivery and immune evasion.
- Designed scalable AAV production and QC platforms, contributing to early-stage CMC development.
- Led pharmacokinetic and biodistribution studies, bridging preclinical findings toward clinical programs.

Massachusetts Eye & Ear Infirmary, Harvard Medical School – Boston, MA

Instructor, Dept. of Ophthalmology / Investigator (2013–2014)

Postdoctoral Fellow, Schepens Eye Research Institute (2008–2013)

- Discovered therapeutic strategies for proliferative vitreoretinopathy (PVR) and advanced therapies toward clinical trial readiness.
- Collaborated with clinicians to transition preclinical ocular therapies into early clinical testing.

Core Scientific Expertise

- **Gene Therapy:** AAV (capsid/payload engineering), lentiviral, adenoviral, non-viral (LNP, RNA).
- **Cell Therapy:** preclinical support for in vivo and in vitro CAR-T via lentivirus; iPSC and MSC maintenance, reprogramming, and assay development, RPE gene editing.

- **Regulatory / IND:** Pre-IND/IND submissions, FDA/EMA engagement, IND-enabling studies (toxicology, PK/PD).
 - **CMC/GMP:** Early integration of analytical development, process optimization, quality/regulatory compliance.
 - **Ocular & Retinal Disease:** Translational research in IRDs, PVR, retinopathies, AMD.
 - **External Leadership:** SAB participation, investor presentations, cross-sector collaborations, IP development.
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Education

PhD, Cell Biology – University of Alberta, Canada

BSc (Specialization), Biochemistry – University of Alberta

BSc, General Science – University of Alberta

Publications & Patents

- 20+ peer-reviewed publications in ocular biology, gene/cell therapy, and molecular signaling (full list available).
 - Patents granted in **AAV capsid engineering and vector design**.
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Awards & Leadership

- **Johnson & Johnson Innovation Leadership Award** – For establishing next-generation AAV production platforms.
- **Center for Creative Leadership Development Program** – Immersive executive training, concept-to-IND drug development simulation.
- SAB/Committee Memberships: ARVO, ASGCT, institutional safety committees.