

Contact

www.linkedin.com/in/nicolepaulk
(LinkedIn)

Top Skills

Molecular Biology
In Vivo
Gene Therapy

Languages

English (Native or Bilingual)

Certifications

Center for Faculty Educators
General Teaching Certificate
2023 Life Science Track Cohort
Company
TechStars Venture Deals Spring
Course
CERSI Immersion Course in Drug
Discovery, Drug Development, and
Regulation
Startup 101 Entrepreneurship
Certification

Honors-Awards

Young Investigator Award Grant
\$25K
NIH K01 Career Transition Award
Charles Epstein Trainee Award
for Excellence in Human Genetics
Research – Semifinalist \$750
Mass Spectrometry Seed Grant
\$8,000
UCSF Liver Center Annual
Symposium Best Presentation \$300

Publications

Ochronosis in a murine model of
alkaptonuria is synonymous to that in
the human condition.
Adeno-associated virus gene
repair corrects a mouse model of
hereditary tyrosinemia in vivo.

Nicole K. Paulk, PhD

CEO & Founder of Siren Biotechnology
San Francisco, California, United States

Summary

As a trailblazer in AAV gene therapy, and now AAV immuno-gene therapy, I push the boundaries of science to revolutionize the way we think about treating disease. I thrive on turning ambitious visions into tangible reality.

Experience

Siren Biotechnology
CEO, Founder, President
September 2021 - Present (3 years 7 months)
San Francisco Bay Area

University of California, San Francisco
8 years

Assistant Professor, Affiliate
2022 - Present (3 years)
San Francisco Bay Area
Associate Member in Neurologic Oncology (<https://cancer.ucsf.edu/people/paulk.nicole>)
UCSF Helen Diller Family Comprehensive Cancer Center Member

Assistant Adj Professor
2017 - 2022 (5 years)
San Francisco Bay Area
Department of Biochemistry and Biophysics
Associate Member in Neurologic Oncology (<https://cancer.ucsf.edu/people/paulk.nicole>)
UCSF Helen Diller Family Comprehensive Cancer Center Member
UCSF Glioblastoma Precision Medicine Program PI Member
UCSF Liver Center Member

Metagenomi
Scientific Advisory Board Member
2023 - Present (2 years)

An orange calcium-modulated bioluminescent indicator for non-invasive activity imaging.

Methods Matter -- Standard Production Platforms for Recombinant AAV Produce Chemically and Functionally Distinct Vectors

Bioengineered viral platform for intramuscular passive vaccine delivery to human skeletal muscle

Patents

Novel recombinant adeno-associated virus capsids with enhanced human skeletal muscle tropism.

Novel recombinant adeno-associated virus capsids resistant to pre-existing human neutralizing antibodies.

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Novel recombinant adeno-associated virus capsids resistant to pre-existing human neutralizing antibodies

GRO Biosciences

Scientific Advisory Board Member
2022 - Present (3 years)

Dyno Therapeutics

Scientific Advisory Board Member
2021 - Present (4 years)

Phacilitate

Advisory Board Member
2022 - Present (3 years)

Astellas Gene Therapies

Scientific Advisory Board Member
2022 - Present (3 years)

Johns Hopkins Medicine

Scientific Advisory Board Member, Neurofibromatosis Gene Therapy Initiative
2021 - Present (4 years)

Cytiva

Scientific Advisory Board Member (CEVEC)
2021 - Present (4 years)

Excision BioTherapeutics

Scientific Advisory Board Member
2021 - Present (4 years)

WhiteLab Genomics

Scientific Advisory Board Member
2021 - Present (4 years)

Sarepta Therapeutics

Scientific Advisory Board Member
2020 - Present (5 years)

Hanson Wade

Scientific Advisory Board, Gene Therapy for Rare Disorders Searchlight Program
January 2022 - February 2024 (2 years 2 months)

CZ Biohub

Visiting Scientist, Genome Engineering

2017 - 2018 (1 year)

San Francisco Bay Area

Stanford University School of Medicine

5 years

Instructor

2016 - 2017 (1 year)

Stanford, CA, USA

Department of Pediatrics

-Developed enabling technologies in host-virus interactions, viral gene therapy, and preclinical therapeutic development.

-Published 2 papers, NIDDK K01 Grant, 2 Young Investigator Grants.

Postdoctoral Research Fellow

2012 - 2016 (4 years)

Stanford, CA, USA

Departments of Pediatrics and Genetics

-Directed evolution screens to evolve AAV capsids that evade the immune system for durability in treating liver diseases (AAV-NP40; AAV-NP59). Shared with 13 companies and academic labs.

-Engineered passive HIV vaccine vectors (AAV-NP22; AAV-NP66) for Bill & Melinda Gates Foundation. Shared with 9 companies and academic labs.

-Co-developed viral genome editing system to integrate transgenes without viral promoters or nucleases to prevent oncogenic events. Spun out into LogicBio Therapeutics.

-Published 6 papers, 2 patents, NHLBI F32 Fellowship, 5 honors, 4 travel awards.

Oregon Health & Science University, Oregon Stem Cell Center

6 years

Graduate Student

2007 - 2012 (5 years)

Portland, OR, USA

Department of Cell & Developmental Biology

- Utilized mouse models of hereditary tyrosinemia type I to demonstrate that AAV can be engineered to correct disease-causing mutations in patients in vivo via homologous recombination.

- Established that transient inhibition of NHEJ increases genome editing via homologous recombination. First demonstration of sexually dimorphic AAV-based genome editing in livers of adult and neonatal mice.

- Restored liver enzymatic function in genetic mouse models through paired hepatocyte replacement and small molecule administration to transiently apply positive selection for transplanted hepatocytes.

- Published 6 papers, NCI F31 Fellowship, 5 scholarships, 5 travel awards, Valedictorian.

Research Assistant

2006 - 2007 (1 year)

Portland, OR, USA

- Co-developed the leading humanized liver xenotransplantation mouse model for studying human drug metabolism, hepatotropic viral replication, human liver cancer, and mass-producing human hepatocytes. Spun out into Yecuris.

Central Washington University, Department of Chemistry

Research Assistant

2003 - 2006 (3 years)

Ellensburg, WA, USA

- Photochemical modeling studies with atmospheric sulfinic acid and iron oxyhydroxide compounds to establish the potential effectiveness of stimulating large oceanic algal blooms as a CO₂ sink for mediating global warming.

- Published 1 paper, 7 scholarships, awarded 2 NSF Grants, led an NSF ScienceQuest program.

Education

Stanford University School of Medicine

Postdoctoral Fellow, Human Gene Therapy Program · (2012 - 2016)

Oregon Health and Science University

Doctor of Philosophy (PhD), AAV Gene Therapy and Regenerative
Medicine · (2007 - 2012)

Central Washington University

Bachelor of Science (BS), Medical Microbiology, Chemistry
Minor · (2002 - 2006)