

FRANK P. LEU, Ph.D.

Pharmacologist · Biotechnology Entrepreneur · Life Sciences Advisor & Educator

Metuchen, NJ 08840 · (646) 275-9002 · frankpleu@gmail.com

frankleu.com · [linkedin.com/in/fleu](https://www.linkedin.com/in/fleu)

PROFESSIONAL SUMMARY

Pharmacologist, molecular biologist and biotechnology entrepreneur with more than 20 years of experience spanning drug discovery, preclinical development, start-up leadership, sponsored research and science education. Founded and led a University of Pennsylvania spin-out developing a small-molecule therapy for diabetes, secured NIH/NIDDK SBIR funding, and built laboratory operations at the Pennovation Center. Recognized international speaker and conference chair on artificial intelligence, machine learning and blockchain in drug development and clinical supply, with 100+ invited presentations. Currently teaching biomedical science at PCTI STEM Academy and serving as adjunct graduate faculty at Jefferson.

AREAS OF EXPERTISE

Science & drug development

- Molecular biology, enzymology and pharmacology
- Drug discovery and development
- Membrane receptor (GPCR) mechanism of action and therapeutics
- Antibody and biologic drug design; recombinant protein production
- Preclinical development: in vitro, cell-based, animal models, DMPK
- Cancer biology and metabolic disease

Business & partnerships

- Start-up formation, fundraising and investor presentations
- Intellectual property, patents, licensing and technology transfer
- Strategic partnerships, CRO selection and vendor oversight
- Academic–industry and public–private collaboration

Technology & innovation

- AI and machine learning in biotech and pharma R&D
- Blockchain applications in drug development and clinical supply
- Innovative technologies in clinical operations

Research administration & education

- SBIR and federal/foundation grant writing and compliance
- Sponsored research administration and proposal budgeting
- Laboratory operations, SOP development and OSHA compliance
- Secondary, graduate and faculty teaching and mentoring

EDUCATION

2001

Ph.D., Pharmacology

Weill Cornell Graduate School of Medical Sciences, joint program with the Memorial Sloan Kettering Cancer Center Graduate School, New York, NY

Dissertation research on DNA replication enzymology at The Rockefeller University / Howard Hughes Medical Institute.

1994

B.S., Biology and B.A., Biophysics, with Honors

Binghamton University, State University of New York (SUNY), Binghamton, NY

Honors thesis completed, written and defended.

PROFESSIONAL EXPERIENCE

- 2026–present **Biomedical Science Instructor**
PCTI STEM Academy, Wayne, NJ
- Instructor for Biotechnology 3, a career and technical education (CTE) college-credit course.
- 2026–present **Life Sciences Labs and Operations Advisor-in-Residence**
University Place Associates, 3.0 University Place, Philadelphia, PA
- Advise the senior management team on laboratory operations, SOP development and execution, OSHA compliance, and planning and running the bio-labs.
- 2017–present **Adjunct Professor**
Jefferson College of Biomedical Sciences, Thomas Jefferson University, Philadelphia, PA
- Teach “Biotechnology Venture Management,” a graduate-level course.
- 2016–present **Advisor, Pennovation Center Bio-Labs**
University of Pennsylvania, Philadelphia, PA (on demand)
- Advise on starting, building and running bio-lab facilities in a technology incubator, including SOPs, OSHA compliance and planning.
- 2011–present **Founder and Managing Member**
BioPharMatrix LLC, Metuchen, NJ
- Provide expertise in life-sciences innovation, including laboratory operations, preclinical and clinical operations, and data intelligence.
 - Develop content on blockchain and intelligence applications across drug development, from fundraising and discovery to preclinical studies and clinical trials.
- 2011–present **Co-Founder and CEO (2011–2019); Managing Member (2019–present)**
Novapeutics LLC, Philadelphia, PA and Metuchen, NJ
- Co-founded a joint venture spun out of the University of Pennsylvania to develop a small-molecule curative therapy for diabetes.
 - Wrote SBIR grant applications and won funding from NIH/NIDDK.
 - Negotiated and executed technology-transfer agreements with the University and companies, and stakeholder agreements with CROs and accounting, consulting and law firms.
 - Prepared technology patents; developed business plans, executive summaries and pitch decks for investors and pharmaceutical partners.
 - Established and built a research laboratory on the Pennovation Works campus; forged strategic alliances with CROs along the preclinical-to-clinical path.
- 2022–present **Insight Expert (on demand)**
Gerson Lehrman Group (GLG) Network and Guidepoint Global
- 2019–2020 **Advisor / Associate**
Rutgers University / Mito Biopharma LLC, Piscataway, NJ
- Provided technology and grant consulting on (1) a novel CRISPR gene-editing technology for diseases such as Duchenne muscular dystrophy and Alzheimer’s disease; (2) targeting mitochondrial uncoupling to treat cancer, diabetes and nonalcoholic steatohepatitis; and (3) a novel therapeutic for SARS-CoV-2 / COVID-19.
- 2002–2010 **Principal Research Scientist**
Verto Institute LLC, New Brunswick, NJ
- Led an antibody therapeutics program creating humanized antibodies, from discovery onward, to treat neuroendocrine cancers and tumors.

- Reviewed and recommended grant projects and investment opportunities for institute funding; evaluated in- and out-licensing opportunities.
- Wrote and prepared patents and peer-reviewed publications; prepared animal-use and human-sample protocols for institutional review.

2002–2010

Adjunct Instructor

University of Medicine and Dentistry of New Jersey (UMDNJ), New Brunswick, NJ

RESEARCH EXPERIENCE

2001–2002

Postdoctoral Fellow

The Rockefeller University / Howard Hughes Medical Institute, New York, NY

Studied the DNA replicase machinery and the enzymatic mechanisms of DNA replication.

1996–2001

Graduate Research Fellow

The Rockefeller University / Howard Hughes Medical Institute, New York, NY

Elucidated the structure and function of DNA replication components using biochemistry, molecular biology and enzymology.

1992–1994

Research Assistant, Dioxin Research

SUNY Upstate Medical University, Binghamton, NY

Assisted Dr. Arnold Schecter's team on epidemiological research from Vietnam on dioxin, the toxic contaminant of Agent Orange, and its links to cancer, birth defects, and immune, endocrine, neurological and reproductive harm.

1990–1994

Undergraduate Independent Research

Binghamton University, Binghamton, NY

Studied circadian-rhythm changes in the tobacco hornworm (*Manduca sexta*) in response to the tobacco phytochemical rutin, which extended larval lifespan by 20%. Resulted in an acknowledged publication and an honors thesis.

PROFESSIONAL CERTIFICATIONS

2019

Blockchain Fundamentals Professional Certificate, University of California, Berkeley

Courses: Bitcoin and Cryptocurrencies; Blockchain Technology

2018

Blockchain: Understanding Its Uses and Implications, Professional Certificate, The Linux Foundation

Course: Blockchain for Business – An Introduction to Hyperledger Technologies

2018

Blockchain for Business, Professional Certificate, The Linux Foundation

Course: Blockchain – Understanding Its Uses and Applications

LANGUAGES

English, Chinese and Taiwanese

HONORS AND AWARDS

2018

Novapeutics nominated for the Enterprise Awards (Healthcare Startup), PACT – Philadelphia Alliance for Capital and Technologies

2016

Runner-up, "Beyond the A Round" pitch competition, Pharmaceutical Consulting Consortium International (PCCI)

2016

Novapeutics nominated for the Enterprise Awards (Emerging Life Sciences), PACT

2015–2016	Selected as mentor to project teams, University of Pennsylvania Consulting Group
2014	Selected as mentor, Case Competitions, Penn Graduate Consulting Club (PGCC)
2013	Small Business Innovation Research (SBIR) Award, National Institutes of Health / National Institute of Diabetes and Digestive and Kidney Diseases (NIH/NIDDK), for a novel diabetes cure
2013	TechConnect National Innovation Award
2008	Best Research Award, North American Neuroendocrine Tumor Society (NANETS)
1994–1996	NIH Graduate Fellowship
1993	Harpur College Scientific Reagent Award, Binghamton University
1993	Howard Hughes Medical Institute Summer Research Fellow
1991	Harpur College Scholarship Award, Binghamton University
1990	NIH Summer Research Fellow

CONFERENCE LEADERSHIP

2024	Chairperson, 15th Drug Discovery – Strategic Summit 2024, Agile Falcon Strategic Group, Boston, MA, May 8–9, 2024
2020	Chairperson, Clinical Trial Supply Southern California, San Diego, CA, June 23–24, 2020
2019	Conference Organizing Advisor, Opening Speaker and Chair of the August 8 morning plenaries, T3: Trials, Tech and Transformation 2019, Knect365, Philadelphia, PA, August 8–9, 2019
2019	Organizing Committee, Stem Cell, Tissue Engineering and Regenerative Medicine, Amsterdam, Netherlands, March 25–26, 2019
2019	Conference Chairperson, CRO Partnerships and Oversight Excellence, CBI (a division of UBM Americas), Boston, MA, March 7–8, 2019
2018	Panel Chairperson, “Strategic Partnership & Outsourcing,” B2B Biology Strategy Meeting USA East Coast, Boston, MA, November 14, 2018
2018	Conference Organization Advisor, T3: Trials, Tech and Transformation 2018, Knect365, Raleigh, NC, May 30–31, 2018
2018	Conference Organization Advisor and Keynote Speaker, 2nd Clinical Trials Nexus, Procurement Direct, Boston, MA, May 14–15, 2018
2017	Head of Organizing Committee, panel “Seed Money and Beyond: Improving the Flow of Investment Funds to Our Regions,” 4th Annual Life Science Collaborative Conference, Philadelphia, PA, March 7, 2017
2016	Conference Chair, Preclinical Development Operations Summit 2016, Arena International, Boston, MA, November 15–16, 2016

INVITED PRESENTATIONS AND PANELS

115 presentations as keynote speaker, speaker, chair, moderator, panelist or facilitator, 2003–2026.

2026	“AI and Blockchain in Smarter Clinical Supply: Controlled Automation, Evidence and Human Accountability.” IRT & RTSM Conference, Hyatt Regency, New Brunswick, NJ, October 7–8, 2026. Speaker. “Debating the AI Hype: What’s Really Happening on the Ground.” Outsourcing in Clinical Trials East Coast, Hyatt Regency, New Brunswick, NJ, May 12–13, 2026. Panelist.
------	---

- 2025 “The Role of AI and Leveraging Blockchain in Emerging BioPharma Trials.” Clinical Operations & Clinical Trial Supply Chain Strategy Meeting East Coast USA, Proventa International, Hyatt Regency Princeton, Princeton, NJ, May 15, 2025. [Facilitator](#).
- 2024 “Decentralized Trials Under Rapidly Evolving Standards Require Disruptive Tech Adoption.” Clinical Operations & Clinical Trial Supply Chain Strategy Meeting East Coast USA, November 14, 2024. [Facilitator](#).
- “Innovative Processes to Propel Clinical Studies into the Future.” 17th Annual Clinical Trial Supply West Coast, San Francisco, CA, September 17–18, 2024. [Speaker](#).
- “Disruptive Techs: Blockchain, Artificial Intelligence, Machine Learning and Drug Design and Synthesis.” Medicinal Chemistry Strategy Meeting East Coast US, Proventa International, Princeton, NJ, May 15, 2024. [Facilitator](#).
- “Current Adoption and Best Use of Disruptive Techs (Blockchain, AI and ML) in Drug Discovery and Development.” Drug Discovery, Biology and Bioinformatics Strategy Meeting East Coast USA, Proventa International, Princeton, NJ, May 14, 2024. [Facilitator](#).
- “Strategic Partnerships, Investment & Collaborations in Drug Development.” Drug Discovery, Biology and Bioinformatics Strategy Meeting East Coast USA, Proventa International, Princeton, NJ, May 14, 2024. [Facilitator](#).
- “Blockchain Is Mandatory for High-Fidelity Utilization of Downstream Disruptive Technologies, Such as Artificial Intelligence.” 15th Drug Discovery – Strategic Summit, Agile Falcon Strategic Group, Boston, MA, May 8–9, 2024. [Speaker](#).
- 2023 “Blockchain Comes Before Artificial Intelligence: Exploring the Implications for the Future.” Outsourcing in Clinical Trials, Arena & GlobalData, King of Prussia, PA, May 24, 2023. [Speaker](#).
- “Assessing the Value of Partnership with Vendors in Terms of Cost, Efficiency and Service Quality (Disruptive Technologies: Blockchain, ML and AI).” 8th Meridian Clinical Trials, Continuum Globe, May 18, 2023. [Speaker](#).
- 2022 “Blockchain Use in Drug Development.” 7th Meridian Clinical Trials & Outsourcing, Boston, MA, November 7–8, 2022. [Speaker](#).
- “76 Forward / Pennovation Center Science Round Table.” Philadelphia, PA, August 9, 2022. [Moderator](#).
- “76 Forward / Pennovation Center Science Round Table.” Philadelphia, PA, June 28, 2022. [Moderator](#).
- “CTS Strategy Meeting, Q2.” Boston, MA, May 19, 2022. [Facilitator](#).
- “Blockchain Use in Clinical Trial Supply Chain Management.” Outsourcing in Clinical Trials West Coast, Burlingame, CA, April 13–14, 2022. [Speaker](#).
- “76 Forward / Pennovation Center Science Round Table.” Philadelphia, PA, March 30, 2022. [Panelist](#).
- “Using Blockchains to Improve Life Science Innovations at All Phases.” Outsourcing in Clinical Trials Southeast, Cary, NC, March 29–30, 2022. [Speaker](#).
- “Using Blockchain in Supply Chain Management to Reduce Cost and Increase Efficiency.” Clinical Trial Supply New England, Arena International, March 8–9, 2022. [Closing Keynote Speaker](#).
- “Non-Academic Career Track: Entrepreneurship and Venture Capital.” Jefferson Business and Biotechnology Group (BizBio), February 28, 2022. [Panelist](#).
- 2021 “Blockchain Technology in Clinical Trials.” Clinical Trials Virtual West Coast, Procurement Direct, November 22–23, 2021. [Speaker](#).
- “Future Is Now: Using Blockchain Technology to Power Clinical Trials.” Pharma Supplies and Logistics Nexus, Procurement Direct, November 19, 2021. [Keynote Speaker](#).

“Blockchain and AI in the Drug Development Supply Chain.” 3rd Meridian Drug Discovery Program, Vaccines Virtual Conference, November 18–19, 2021. [Speaker](#).

“Blockchain in Clinical Trials.” 6th Annual Clinical Trials Summit, November 4, 2021. [Speaker](#).

“The Blockchain Conundrum: How Can It (Not) Benefit the Industry.” Clinical Trial Supply East Coast, October 20, 2021. [Speaker](#).

“Blockchain in Vaccine Development: Constructing a Decentralized and Immutable Data Chain.” Vaccines Virtual Conference, Procurement Direct, August 5, 2021. [Speaker](#).

“Blockchain in Clinical Trials.” Outsourcing in Clinical Trials & Clinical Trial Supply Asia, June 29–30, 2021. [Speaker](#).

“Decentralized Clinical Trials Using Decentralized Hyperledger Data-Blocks Blockchain.” Fierce Pharma Supply Chain Transformation Summit, June 29–30, 2021. [Speaker](#).

“AI & Disruptive Technology: Blockchain, Data Mining, AI and Disruptive Technologies.” Clinical Operations Strategy Meeting, Proventa International, Princeton, NJ, June 15, 2021. [Moderator and Panel Facilitator](#).

“Implementing Blockchain to Power Hyper-Efficient Drug Development.” 6th Clinical Trials Strategic Summit, June 9, 2021. [Keynote Speaker](#).

“Blockchain: Exploring the Implications for the Future.” Outsourcing in Clinical Trials East Coast (online), May 25–26, 2021. [Speaker](#).

“What Are the Best Machine Learning and Artificial Intelligence Applications to Enhance Collaborative Database Sharing for Rapid and Effective Drug Target Discovery?” Structural Biology Round Table, Biology Strategy Meeting East Coast USA, Hyatt Regency, Princeton, NJ, May 17, 2021. [Session Chair](#).

“Digital Innovation and Transforming Pharma and Biotech Supply Chains.” Temperature Control & Logistics, AMG World, April 28, 2021. [Moderator](#).

“Blockchain Is a Foundational Disruptive Technology Required in Propelling Drug Development Forward.” Outsourcing in Clinical Trials Southeast (virtual), Arena International, March 30–31, 2021. [Speaker](#).

“New Technology for Temperature-Controlled Logistics: How AI and Blockchain Can Support the Industry.” Temperature Controlled Logistics in Biopharmaceuticals (virtual), Arena International, March 24–25, 2021. [Speaker](#).

“IoT, Digitalization and Data-Driven Technologies for Temperature-Controlled Logistics.” Temperature Controlled Logistics in Biopharmaceuticals (virtual), Arena International, March 24–25, 2021. [Panelist](#).

“Entrenching Trust in a Rapidly Decentralized Drug Development Landscape Using Blockchain Technology.” 2nd Virtual Digital Transformation, Lockdown and E-Clinical Services, Platinum Global Solutions, February 23, 2021. [Speaker](#).

2020

“Disruptive Technologies Implementation in Drug Development Is Required and NOT an Option.” Online Clinical Trial Supply Chain Strategy Meeting, Proventa International, November 18, 2020. [Speaker and Round Table Facilitator](#).

“Blockchain in Clinical Trials.” Outsourcing in Clinical Trials Southeast, Durham, NC, November 17–18, 2020. [Speaker](#).

“Adopting Disruptive Technologies in Drug Development Is Not Optional for Survival.” Online Clinical Operations Strategy Meeting, Proventa International, November 16, 2020. [Speaker and Round Table Facilitator](#).

“AI and the Drug Discovery Industry.” 4th Drug Discovery Summit (online), Platinum Global Solutions Ltd., November 12, 2020. [Speaker and Panelist](#).

“Clinical Data in Serial Blocks (Blockchain) That Are Immutable and Trustless.” 3rd Meridian Clinical Trials Summit, November 2–3, 2020. [Speaker](#).

“Educational Outreach: Opportunities in Biotech.” MAPS Biotech Roundtable, Focus on Pharmacology Virtual Series, American Society for Pharmacology and Experimental Therapeutics, October 30, 2020. [Speaker and Panelist](#).

“Entrenching Trust in a Rapidly Decentralized Drug Development Landscape Using Blockchain Technology.” Clinical Innovation & Supply Chain Management, Informa Connect, Philadelphia Marriott Downtown, Philadelphia, PA, October 27–30, 2020. [Speaker](#).

“Direct to Patient.” Clinical Innovation & Supply Chain Management, Informa Connect, Philadelphia, PA, October 27–30, 2020. [Session Chair](#).

“Envisioning Drug Development in a Hyperledger Ecosystem: One Block(chain) at a Time.” Outsourcing in Clinical Trials Europe (virtual), Arena International, October 26–27, 2020. [Keynote Speaker](#).

“Disrupt or Be Disrupted: Technological Advancements Are Not Optional.” Clinical Trial Supply East Coast (virtual), Arena International, October 14–15, 2020. [Speaker](#).

“Envisioning Drug Development in a Hyperledger Ecosystem: One Block(chain) at a Time.” Precision in Clinical Trials Summit, Precision Evolution Global, Boston, MA, October 13–14, 2020. [Keynote Speaker](#).

“Contextual Framework for Using Blockchain in Clinical Trials.” Outsourcing in Clinical Trials USA (virtual), Arena International, September 30–October 1, 2020. [Speaker](#).

“How Has COVID-19 Affected Your Trial and What Impact Has It Had on Your Partnerships?” Outsourcing in Clinical Trials USA (virtual), Arena International, September 30–October 1, 2020. [Session Chair](#).

“Q&A on Innovations and Data Management in Monitoring the Temperature of Your Product.” Clinical Trial Supply Midwest, Chicago, IL, September 23–24, 2020. [Session Chair](#).

“Benefits and Advantages of Using Blockchain to Conduct Decentralized Clinical Trials During and Beyond the COVID-19 Pandemic.” Vaccines 2020 Virtual Conference, Arena International, August 12, 2020. [Speaker](#).

“Benefits and Advantages of Using Blockchain to Conduct Decentralized Clinical Trials During and Beyond the COVID-19 Pandemic.” Direct to Patient and Virtual Clinical Trials, Arena International, July 9, 2020. [Speaker](#).

“The New Normal: Will Decentralized Trials Be the Future of Clinical Trials?” Direct to Patient and Virtual Clinical Trials, Arena International, July 9, 2020. [Closing Keynote](#).

“Innovations and Data Management in Monitoring the Temperature of Your Product.” Clinical Trial Supply Southern California, San Diego, CA, June 23–24, 2020. [Keynote Speaker](#).

“Blockchain, Machine Learning and Artificial Intelligence in Clinical Trials.” Clinical Online Strategy Meeting, Proventa International, June 3, 2020. [Facilitator](#).

“Contextual Framework for Using Blockchain in Clinical Trials.” Outsourcing in Clinical Trials Virtual Experience, May 27, 2020. [Speaker](#).

“Hyper-Immutable Data (Blockchain) Application in Clinical Trials.” 5th Clinical Trials Virtual Nexus USA, Procurement Direct, April 23–24, 2020. [Keynote Speaker](#).

“Where Is the Industry Headed?” Temperature Controlled Logistics in Biopharmaceuticals (virtual), Arena International, April 8, 2020. [Opening Keynote Speaker](#).

- 2019
- “Blockchain in Clinical Trials.” 8th Annual Clinical Trial Supply New England, Arena International, Boston, MA, March 24–25, 2020. [Speaker](#).
 - “Artificial Intelligence in Clinical Trials.” 8th Annual Clinical Trial Supply New England, Arena International, Boston, MA, March 24–25, 2020. [Roundtable Leader](#).
 - “How Blockchain Could Revolutionize Clinical Operations.” B2B 7th Clinical Operations Strategy Meeting, Proventa International, Boston, MA, November 19, 2019. [Moderator, Thought Leader and Roundtable Facilitator](#).
 - “Blockchain Applications in Clinical Trials.” Clinical Trials Midwest, Chicago, IL, October 29–30, 2019. [Roundtable Facilitator](#).
 - “Blockchain: Providing the Contextual Framework.” Clinical Trial Supply Southeast, Raleigh-Durham, NC, October 2–3, 2019. [Speaker](#).
 - “Blockchain for Clinical Trials: The Who, the What, the How.” T3: Trials, Tech and Transformation, Knect365, Philadelphia, PA, August 8–9, 2019. [Speaker](#).
 - “Keynote Presentation.” Clinical Trial Supply Chain Strategy Meeting, Boston, MA, June 13, 2019. [Keynote Speaker](#).
 - “Strategic Partnering Through Blockchain Technology.” Clinical Trial Supply Chain Strategy Meeting, Boston, MA, June 13, 2019. [Roundtable Facilitator](#).
 - “Is Blockchain an Overkill Solution for the Power and Distribution of Data, or Will It Revolutionize Clinical Trials?” Outsourcing in Clinical Trials, King of Prussia, PA, May 21–22, 2019. [Speaker](#).
 - “Restoring Beta Cells in Diabetes Using a Small-Molecule Curative.” Stem Cell, Tissue Engineering and Regenerative Medicine, Amsterdam, Netherlands, March 25–26, 2019. [Speaker](#).
 - “Identifying the Right CRO Partner for Your Organization and Key Projects Through Blockchain Technology.” CRO Partnerships and Oversight Excellence, CBI (a division of UBM Americas), Boston, MA, March 7–8, 2019. [Speaker](#).
- 2018
- “Optimizing Drug Development Cost and Efficiency from Biology to Patient.” B2B Biology Strategy Meeting USA East Coast, Boston, MA, November 14, 2018. [Speaker and Content Contributor](#).
 - “Designing and Engineering Antibody Therapeutics for Difficult-to-Target Proteins.” B2B Biology Strategy Meeting USA East Coast, Boston, MA, November 14, 2018. [Moderator](#).
 - “How Blockchain Technologies Can Revolutionize the Clinical Trial Supply Chain.” Clinical Trial Supply East Coast, King of Prussia, PA, October 16–17, 2018. [Speaker](#).
 - “Leveraging Forecasting and Planning Tools and Strategies to Accurately Plan Your Clinical Trials, Avoid Disruption, Overages and Shortage.” Clinical Trial Supply East Coast, King of Prussia, PA, October 16–17, 2018. [Panelist](#).
 - “The Intelligent Trial: Preparing for the Future – Is Artificial Intelligence Taking Over?” Clinical Trial Supply Conference, Durham, NC, October 3–4, 2018. [Panelist](#).
 - “Partnerships: Making the Most Out of Collaborations.” Clinical Trial Supply Conference, Durham, NC, October 3–4, 2018. [Speaker](#).
 - “Blockchain and the Clinical Supply Chain: Great Promises Ahead When Two Chains Link as One.” Clinical Trial Supply Midwest, Chicago, IL, September 13–14, 2018. [Speaker](#).
 - “How Will Technologies Reshape End-to-End Clinical Supply Chain Management to Improve Quality and Efficiency and Create Value for Customers?” 4th Clinical Trial Supply Chain Strategy Meeting, Proventa International, Boston, MA, June 13, 2018. [Speaker](#).
 - “Partnerships and Collaboration.” T3: Trials, Tech and Transformation, Knect365, Raleigh, NC, May 30–31, 2018. [Speaker, Moderator and Panelist](#).

	"Defining a Good Collaborative Model Among Stakeholders to Drive Pharmaceutical Innovation." 2nd Clinical Trials Nexus, Procurement Direct, Boston, MA, May 14–15, 2018. Invited Keynote Speaker (Innovation Track) and Panelist. "Technologies Used to Shape the End-to-End Clinical Supply Chain." Clinical Trial Supply New England, Boston, MA, March 7–8, 2018. Speaker.
2017	"Restoring Pancreatic Islets to Reverse Diabetes." Life Sciences Pennsylvania, Wayne, PA, November 14, 2017. Speaker. "Restoring Pancreatic Islets to Reverse Diabetes." PACT Philadelphia Capital Conference, Philadelphia, PA, November 3, 2017. Speaker. "Temperature Maintenance Through the Adoption and Utilization of the Latest Technology." 15th Clinical Trial Supply East Coast, Arena International, Princeton, NJ, October 18–19, 2017. Speaker. "Key Aspects for a Start-Up Moving from Preclinical to Clinical: Making the Transition as Smooth as Possible." Outsourcing in Clinical Trials East Coast, King of Prussia, PA, May 23–24, 2017. Speaker. "Temperature Controlled Logistics in Biopharmaceuticals." Outsourcing in Clinical Trials East Coast, Princeton, NJ, May 16–17, 2017. Speaker. "Innovations in Drug Development." Trials, Tech and Transformation, Orlando, FL, May 11–12, 2017. Speaker.
2016	"Beyond the A Round." Annual Conference, Pharmaceutical Consulting Consortium International (PCCI), Wayne, PA, December 12, 2016. Pitch Speaker. "Evaluating the Changing Preclinical Development Landscape to Determine Consequences and Opportunities for Sponsor Companies and Vendors." Preclinical Development Operations Summit, Boston, MA, November 15–16, 2016. Panelist. "Best Practices for Finding Reliable Service Providers to Ensure Preclinical Studies Meet Quality Standards for Emerging Companies." Preclinical Development Operations Summit, Boston, MA, November 15–16, 2016. Speaker. "Improving Relationships with Start-Up CROs to Ensure Both Get the Most Out of the Partnership." Preclinical Development Operations Summit, Boston, MA, October 31–November 1, 2016. Speaker. "Biotech Round Table: Paths to Biotech." Mid-Atlantic Pharmacology Society, Philadelphia, PA, October 27, 2016. Speaker and Panelist. "Highlighting Technological Advancements in Clinical Trial Supply to Increase Efficiency and Stay Ahead of the Curve." 14th Annual Clinical Trial Supply East Coast, October 20, 2016. Speaker. "Managing Your Temperature Maintenance Through the Adoption and Utilization of the Latest Technology." 14th Annual Clinical Trial Supply East Coast, October 20, 2016. Panel Moderator. "Constructing a "Qualified Provider Model" to Reduce Time Spent in Vendor Sourcing and Selection." 7th Annual Outsourcing in Clinical Trials East Coast, Philadelphia, PA, May 26, 2016. Speaker. "Trials and Tribulations: Mitigating the Risk in Clinical Research." 8th Annual American Clinical Research Professionals, Conshohocken, PA, March 31, 2016. Speaker.
2015	"Restoring Pancreatic Beta Cells Using a Small-Molecule Curative for Type 2 Diabetes." Development Center for Biotechnology, Taiwan. Speaker.
2014	"Annual Case Competitions." Penn Graduate Consulting Club (PGCC), University of Pennsylvania, Philadelphia, PA. Speaker. "University of Pennsylvania Entrepreneur Forum." Philadelphia, PA. Table Presentation.
2013	"PA Bio." Philadelphia, PA. Table Presentation. "TechConnect National Meeting." Washington, DC. Pitch Session Speaker.

2012	"PA Bio." Philadelphia, PA. Poster Presentation .
2011	"PA Bio Venture Meeting." Philadelphia, PA. Speaker .
2010	"Neuroendocrine Tumor Meeting." Boston, MA. Speaker . "AACR 101st Annual Meeting." Washington, DC. Poster Presentation .
2009	"AACR Frontiers in Basic Cancer Research." Boston, MA. Poster Presentation . "North American Neuroendocrine Tumor Society (NANETS) Meeting." Charlotte, NC. Poster Presentation . "Scaling Up Recombinant Monoclonal Antibody Production in Bioreactors." CESCO Bioengineering Co., Ltd., Taiwan. Speaker .
2008–2009	"Annual Cancer Genomics Meeting." The Cancer Institute of New Jersey, NJ. Speaker .
2008	"North American Neuroendocrine Tumor Society (NANETS) Meeting." Bermuda. Speaker . "Epithelial–Mesenchymal Transition Meeting." Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. Speaker .
2007–2009	"Annual Cancer Institute of New Jersey Retreat." Piscataway, NJ. Speaker .
2005	"Keystone Symposium: G-Protein Coupled Receptors." Keystone, CO. Poster Presentation .
2004–2006	"Annual Cancer Institute of New Jersey Retreat." Princeton, NJ. Poster Presentation .
2003–2006	"Annual Neuroendocrine Tumor Meeting." Banbury Center, Cold Spring Harbor, NY. Speaker .

PUBLICATIONS

Peer-Reviewed Articles

1. **Leu FP**, Nandi M. GPCR somatostatin receptor extracellular loop 2 is a key ectodomain for making subtype-selective antibodies with agonist-like activities in the pancreatic neuroendocrine tumor BON cell line. *Pancreas*. 2010 Nov;39(8):1155–66. PMID: 20531241.
2. **Leu FP**, Nandi M, Wong C. Somatostatin receptor activation by agonist-like antibodies can reverse miR-200c/ZEB1-dependent cell dedifferentiation and increase cell death in neuroendocrine tumor cells [abstract]. *Pancreas*. 2010 Mar;39(2):274.
3. **Leu FP**, Niu C, Nandi M. The effect of transforming growth factor beta on human neuroendocrine tumor BON cell proliferation and differentiation is mediated through somatostatin signaling. *Mol Cancer Res*. 2008 Jun;6(6):1029–42. PMID: 18567806.
4. Lopez de Saro F, Georgescu RE, **Leu F**, O'Donnell M. Protein trafficking on sliding clamps. *Philos Trans R Soc Lond B Biol Sci*. 2004 Jan 29;359(1441):25–30. PMID: 15065653.
5. **Leu FP**, Georgescu R, O'Donnell M. Mechanism of the E. coli tau processivity switch during lagging-strand synthesis. *Mol Cell*. 2003 Feb;11(2):315–27. PMID: 12620221.
6. **Leu FP**, O'Donnell M. Interplay of clamp loader subunits in opening the beta sliding clamp of Escherichia coli DNA polymerase III holoenzyme. *J Biol Chem*. 2001 Dec 14;276(50):47185–94.
7. **Leu FP**, Hingorani MM, Turner J, O'Donnell M. The delta subunit of DNA polymerase III holoenzyme serves as a sliding clamp unloader in Escherichia coli. *J Biol Chem*. 2000 Nov 3;275(44):34609–18.
8. Yao N, **Leu FP**, Anjelkovic J, Turner J, O'Donnell M. DNA structure requirements for the Escherichia coli gamma complex clamp loader and DNA polymerase III holoenzyme. *J Biol Chem*. 2000 Apr 14;275(15):11440–50.

Patents and Patent Applications

1. **Leu FP**, Sielecki T, Vacca J. Menin inhibitors and methods of beta cell regeneration. U.S. provisional application, filed May 19, 2018.

2. **Leu FP.** Monoclonal antibodies to human somatostatin receptor and methods of use. U.S. Patent Application Publication 20090016989, 2009.
3. **Leu FP.** Polyclonal antibodies to human somatostatin receptor and methods of use. International Publication WO2008134538A2, 2008.

Industry Publications and Interviews

1. **Leu FP.** Humanising artificial intelligence in biopharma and healthcare. *Pharma Focus Asia*. 2025;(59). Published online June 12, 2025.
2. **Leu FP.** Top use cases for artificial intelligence, machine learning, and blockchain within drug development. *Pharma Focus Asia*. 2024;(55):58–59.
3. **Leu FP.** Powering decentralized drug development: enabling downstream disruptive technologies to generate high-fidelity output. *Pharma Focus Asia*. 2023;(53):26–28.
4. **Leu FP.** Blockchain is mandatory in constructing a high-fidelity database readying for downstream disruptive technologies, such as artificial intelligence training. *Pharma Focus Asia*. 2023;(51).
5. Di Salvo C. Emerging disruptive technologies in the pharmaceutical industry: an interview with Frank Leu, Novapeutics. *Pharma Features*. September 24, 2021.
6. **Leu FP.** Blockchain and drug supply chain. In: *H1 Virtual Events – Reviews and Summary Handbook: Blockchain*. Arena International Events Group; 2021:33–35.
7. **Leu FP.** Blockchain immutable database architecture enables machine learning and artificial intelligence to drive a hyper-efficient clinical trial. *Oncology Handbook*. Arena International. December 2020.
8. **Leu FP.** Blockchain application in the global clinical trial supply chain. *Outsourcing in Clinical Trials Handbook*. Arena International. 2020.
9. **Leu FP.** Market analysis report on stem cells. 3rd Global Conference on Tissue Engineering and Regenerative Medicine, Stem Cell Research, June 29–30, 2020. *J Cell Sci Ther*. 12(2).
10. **Leu FP.** Blockchain enables machine learning and AI to drive a hyper-efficient trial. *Clinical Trials Features*. Arena International Events Group. June 16, 2020.
11. **Leu FP.** Blockchain and drug development. *Clinical Trial Supply Handbook, Summer Edition*. Arena International. June 2020.
12. **Leu FP.** Time to get hyper(ledger). *Clinical Trial Supply Handbook*. January 2020:34–36.
13. **Leu FP.** Partnerships: how blockchain can make the most out of collaborations. *Arena Clinical Trials Yearbook (Clinical Trial Supply Southeast)*. 2019.
14. **Leu FP, Tsingas M.** 2017 highlight: future challenges and innovative solutions presented at the 15th Clinical Trial Supply East Coast Conference. *Clinical Trials Arena*. December 2017.
15. **Leu FP.** Regulatory challenges facing the clinical supply chain. *Clinical Supply Handbook*. December 2017.
16. **Leu FP, Gonzalez E.** Trials, Tech, and Transformation: a conference for clinical trial innovators. *Knect365*. June 30, 2017.
17. **Leu FP.** A win-win sponsor and vendor relationship in today's drug development. *Arena Clinical Trials Yearbook*. 2016.
18. **Leu FP.** Can Rule 506(c) raise early-stage companies out of the “valley of death”? *The Sarian Biotech Bulletin*. Fall 2015.

EDITORIAL SERVICE

Peer reviewer: *Cancer Chemotherapy and Pharmacology; Novel Concepts in Cancer Metastasis; Endocrine-Related Cancer; Pancreas*

PROFESSIONAL MEMBERSHIPS AND COMMITTEES

2013–present	American Diabetes Association (ADA)
2014–present	American Association of Diabetes Educators
2014–present	Laboratory Robotics Interest Group (LRIG); Steering Committee, 2016–2018
2014–present	Life Sciences Collaborative: Member; Advisory Board, 2014–2017; Event Planning Committee, 2014–2018; Future Investors Outreach Committee, 2014–2017
2010–present	The Science Advisory Board
2009–present	The Epithelial–Mesenchymal Transition International Association (TEMtIA)
2009–2022	American Association for Cancer Research (AACR), Active Member
2017–2020	Cornell Club, New York, NY
2016–2017	Women in Bio, Boardroom Ready Coach
2014–2016	American College of Sports Medicine
2012–2020	Life Sciences Pennsylvania
2008–2011	North American Neuroendocrine Tumor Society (NANETS)
2004–2020	American Association for the Advancement of Science (AAAS)
2004–2020	New York Academy of Sciences (NYAS)

COMMUNITY SERVICE

2025–2026	Coach, Odyssey of the Mind, Division III, Problem 4 (high school), Wardlaw + Hartridge School, Edison, NJ
2024–2025	Coach, Odyssey of the Mind, Division III, Problem 2 (high school), Guru Ram Dass, Edison, NJ Class Parent, Fourth Grade, Wardlaw + Hartridge Lower School, Edison, NJ