

BioPILOT

Laboratory Services & Scientific Expertise on Demand

In addition to memberships, the BioPILOT Lab supports life sciences companies through fee-for-service options. Whether you're an early-stage company proving out your technology or an established organization tackling new scientific challenges, we provide the laboratory equipment, expertise, and execution you need to advance your innovation on a flexible, contract basis. Our team delivers the scientific rigor and innovation of a leading research university with the speed, flexibility, and practical focus that companies demand.

Your Test Kitchen for Innovative Solutions

- **Access to specialized laboratory equipment and instrumentation** without the capital investment
- **Deep life sciences expertise** from leading university researchers in assay development, bioanalytical testing, and prototype validation, with additional capabilities in bioinformatics, machine learning, and AI-driven analysis
- **Opportunities to engage talented graduate students** who can contribute to your projects while gaining real-world experience
- **Fee-for-service engagement that protect your IP.** You retain complete ownership of your intellectual property
- **Protocol execution and validation** to support your regulatory pathways
- **Flexible retainer arrangements** for ongoing subject matter expertise and technical consultation

How We Work With You

Share your technical challenge with us. Together, we'll scope the issue, develop a targeted approach, and execute solutions that drive tangible business value while you retain complete ownership of all intellectual property. Projects are scoped with transparent pricing, detailed timelines, and clear deliverables. From one-time experiments to ongoing research partnerships, we customize to fit your needs.



Technical Lab Services

- Custom assay development and optimization
- Bench testing and validation
- Protocol execution and data generation
- Sample processing and analysis
- Method development and troubleshooting
- Quality control testing

Consulting Services

- Experimental design consultation
- Protocol optimization and review
- Technical troubleshooting support
- Data analysis and interpretation
- Literature research and review
- Regulatory and compliance guidance

Additional Partnership Opportunities

Funding support

Leverage our network to strengthen grant applications:

- SBIR/STTR proposal collaboration with faculty
- Grant writing support from experienced researchers
- Access to expertise across life sciences, engineering, and AI

Collaborative Research

Establish scientific credibility through academic partnerships:

- Joint publications in peer-reviewed journals
- White papers and technical reports
- Conference presentations
- Access to faculty scientific advisors

Roux Institute Network Access

Partnering with BioPILOT opens the door to world-class faculty, talented graduate students, and a thriving ecosystem of startups, mentors, and potential investors. Our ongoing events, workshops, and educational sessions create opportunities to learn, connect, and build relationships that accelerate your success.



Ready to accelerate your research?

biopilot@northeastern.edu | roux.northeastern.edu/biopilotlab

Meet our Expert Team

Experienced scientists with diverse expertise to support your research goals



Jennifer Fitz
*BioPILOT Lab Manager |
Cell & Molecular Biology
– Laboratory Operations*

Manages BioPILOT operations and provides consultation on experimental design and molecular techniques. Co-Founder and Director of Cell Therapy R&D at Maine biotech company with 11 years at IDEXX Laboratories. Six Sigma trained with expertise in regulated environments.

Key Expertise:

Early Discovery Research • Cell Therapy Development • Bioprocess Engineering • Cell Culture Systems • Analytical Methods • Diagnostic Assay Development • Quality Systems • Six Sigma



Logan Schwartz, PhD
*BioPILOT Industry Fellow |
Molecular & Cellular
Biology Research*

Provides consultation on experimental design, molecular techniques, and data analysis for BioPILOT members. PhD from Tufts/Jackson Lab in Genetics with NIDDK F31 award. Publications featured in Cancer Discovery and Nature Scientific Data, plus filed patent on therapeutic interventions.

Key Expertise:

CRISPR Screening & Cell Line Engineering • qPCR/dPCR • Flow Cytometry & FACS • Western Blotting • Primary Cell Culture • RNA-Seq Analysis • Bioinformatics • Assay Development • Stem Cell Biology



Candice Byers, PhD
*Research Scientist |
Stem Cell Biology, AI &
Cellular Imaging*

Provides consultation on mammalian cell culture and ML for cellular phenotyping. PhD in Genetics from Tufts/Jackson Lab. Publications featured in Cell Stem Cell, EMBO Journal, Nature Methods and Nature Communications. Trained at Northeastern's Institute for Experiential AI.

Key Expertise:

Stem Cell Biology • Cellular Differentiation • Predictive Modeling • Cellular Profiling using Imaging and Genomics • In Vitro Disease Modeling



Christopher Okonkwo, PhD
Assistant Teaching Professor & Faculty Lead/Coordinator | Bioprocess & Metabolic Engineering

Provides consultation on fermentation optimization, metabolic pathway design, and bioprocess scale-up for BioPILOT members. PhD from Ohio State. 30+ publications with secured NSF I-Corps and OARDC grants. Research focuses on bioremediation of agricultural waste and environmental contaminants into valuable bioproducts.

Key Expertise:

CRISPR • Metabolic Engineering • Fermentation Process Development • GC/HPLC Analysis • Microbial Strain Engineering • Bioreactor Design and Configuration



Michael Wilczek, PhD
Assistant Teaching Professor & Faculty Lead | Microbiology, Virology & Bioinformatics

Provides consultation on microbial systems, pathogen-host interactions, and computational biology for BioPILOT members. PhD from University of Maine, Faculty Lead for Biotechnology. 16 publications including Journal of Virology cover article. Secured and contributed to almost \$400,000 in Davis Family Foundation grants.

Key Expertise:

Microbiology • Virology • Pathogen-Host Interactions • Bioinformatics • Data Science • Computational Biology • Real-World Evidence • Statistical Modeling



Bill Lenart, PhD
*Polymer Science &
Sustainable Manufacturing*

Provides consultation on materials characterization, polymer processing, and sustainable manufacturing for BioPILOT members. PhD from Case Western Reserve. Publications featured in Journal of the American Chemical Society and Advanced Optical Materials. Research focuses on AI-driven design using Maine natural resources and biomaterials.

Key Expertise:

Polymer Science • AI/ML for Materials Design • Sustainable and Advanced Manufacturing • Process Optimization • Structure-Property-Processing Relationships

BUSINESS DEVELOPMENT & PARTNERSHIP SUPPORT ALSO AVAILABLE

Entrepreneurial Services & Research Partnerships



Elena Coronado
Director- Research Development: Computational Medicine & Life Sciences Focus
Elena leads partnership development at the Roux Institute with 7+ years of experience building strategic collaborations between industry, academia, and startups. She connects companies with funding opportunities, mentorship networks, and commercialization resources to accelerate innovation and translate research into market-ready solutions.

Key Expertise:

Research Partnerships • Business Development • Startup Strategy • Grant & Funding Resources • Industry Collaboration • Commercialization Support

Let's Discuss Your Project

Contact us to schedule a free consultation. We'll work with you to understand your research goals and connect you with the right expertise.

biopilot@northeastern.edu | roux.northeastern.edu/biopilotlab | 70 Falmouth Street, Portland, Maine