PhD Program in RNA Therapeutics and Biology (RTB)

RNA Therapeutics Institute (RTI), UMass Chan

Program Overview
The *RNA Therapeutics and Biology (RTB)* PhD program prepares the next generation of scientists to lead advances in RNA-based research and therapeutics. With the rapid evolution of RNA medicines, this interdisciplinary training program equips students with expertise in RNA biology, drug design, and translational science.

Key Features

- **Advanced Training** in RNA synthesis, modification, and delivery strategies
- **Integrated Curriculum** combining molecular biology, chemistry, and clinical medicine
    - **Program Course Requirements**
        - RNA Biology I *provides a foundational understanding of RNA chemistry, structure, and nuclear processing, with emphasis on transcription, splicing, modifications, and classical sequencing techniques.*
        - RNA Biology II (new course) *builds on foundational concepts to examine cytoplasmic RNA functions, emphasizing translational regulation, RNA-based therapeutics, immune signaling, and pathways such as CRISPR, siRNA, and miRNA in health and disease.*
- **Hands-On Research** with access to state-of-the-art labs and technologies
- **Technical Skill Development** in:
    - RNA sequencing & bioinformatics
    - Nanoparticle-based RNA delivery
    - CRISPR and RNA editing tools

Professional Development

- **Mentored Research Projects** with faculty leaders in RNA science
- **Workshops & Seminars** open to broader scientific communities
- **Industry Partnerships** providing exposure to real-world applications and career paths

Program Impact

- Enhances UMass Chan and RTI's leadership in RNA research and biotech innovation
- Attracts top-tier doctoral students and fosters interdisciplinary collaboration
- Prepares graduates for high-impact careers in academia, biotech, and pharma

Contact:
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