Syllabus

This syllabus lists all course lectures and provides the link to each faculty member's bio. To access the lecture videos, please open each week of the course, and click on the links to the videos.

Week 1: Overview of the Course and Introduction to Translational Science

- Introduction to MEDI 501 Principles of Preclinical Translational Science: A Case Study from Cancer Drug Discovery and Development (Amanda Vogel and Jessica Faupel-Badger)
- Translational Science: Maximizing the Success of Translational Research (Joni Rutter)
- Translational Science Principles (Amanda Vogel)
- Challenges in Development of Selective Anti-Metastasis Therapies in Today's Cancer Treatment Landscape (Udo Rudloff)
- Pursuing Novelty to Accelerate Innovation in Translational Research (Juan Marugan)

Week 2: Optimizing Efficiency and Effectiveness in Translational Research: Infrastructure, Teams and Partnerships, and Scientific Approaches

- Collaborative Discovery at NCATS Early Translation Branch (ETB) Part 1 (Matt Hall)
- Collaborative Discovery at NCATS Early Translation Branch (ETB) Part 2 (Matt Hall)
- The Division of Preclinical Innovation (DPI) Systems Approach to Creating and Sustaining a Team Science Environment (Ann Knebel)
- Identification of a phenotypic marker for selective anti-metastasis drug development (Sui Huang)
- In vitro Assays for Drug Discovery and Development: Towards Better Clinical Predictability (Marc Ferrer)
- Using Phenotypic-Based Drug Discovery Approaches to Discover Anti-Metastatic Drugs (Marc Ferrer)

Week 3: The Role of Chemistry in Drug Discovery and Development, and Cross-Agency Partnerships

- Medicinal Chemistry in the Preclinical Translational Research Team (Sam Patnaik)
- Medicinal Chemistry Approaches in the Metarrestin Project (Sam Patnaik)
- Partnering for Success, Part 1: Principles and Management of Intellectual Property (Rebecca Erwin-Cohen)
- Partnering for Success, Part 2: Approaches for Effective Collaboration (Rebecca Erwin-Cohen)

Week 4: Evidence-Based Practices to Enhance Team-based Collaboration, Creativity, and Innovation in Translational Research

- Enhancing Team Based Collaboration (Amanda Vogel)
- Strategies for Effective Team Interactions: Evidence Based Practices from the Science of Team Science Field (Amanda Vogel)
- Planning for Success in Team Science (Amanda Vogel)

- Team Science in the Metarrestin Project: Group Interview (Amanda Vogel)
- Creativity in Science Teams: What is it, and how do you achieve it? (Roni Reiter-Palmon)
- Fostering Innovation in Science Teams: Team and Organization Conditions (Roni Reiter-Palmon)

Week 5: Advancing Along the Translational Spectrum: Predictive Models in Drug Development; Pharmacology and Toxicology Testing in the Preclinical Research Project

- Uses, Strengths, and Limitations of Preclinical Cancer Models, Including Animal Models, for Predicting Future Response in Humans (Udo Rudloff)
- Pancreatic Cancer Overview and Aligning Animal Models with Clinical Needs for the Metarrestin Project (Udo Rudloff)
- Dr. Jessica Faupel-Badger Interviews Dr. Phil Sanderson about Transitioning from Discovery Research to IND Enabling Studies (Jessica Faupel-Badger and Phil Sanderson)
- Application of Pharmacokinetics in Preclinical Translational Research (Xin Xu)
- The Role of Toxicology Data in Filing for an Investigational New Drug (IND) (Pramod Terse)

Week 6: Target Identification and Clinical Trials

- Principles for Target Identification in Phenotypic Drug Discovery Efforts (Juan Marugan)
- Principles for Target Identification in the Metarrestin Project (Juan Marugan)
- Clinical Trials Goals, Design and Implementation, Part 1 (Elizabeth Ness)
- Clinical Trials Goals, Design and Implementation, Part 2 (Elizabeth Ness)

Week 7: Latest Developments in the Project and Course Conclusion

- Update on Current State of Metarrestin Clinical Trials (Udo Rudloff)
- Course Conclusion and Additional Resources (Amanda Vogel and Jessica Faupel-Badger)