

RESEARCH OBJECTIVES

MATERNAL-FETAL MEDICINE FELLOWSHIP

University of New Mexico

General Description: The UNM MFM fellows have a minimum of twelve months of protected research time during their fellowship. By the end of the first year of fellowship, the fellows identify a mentor and a thesis project. UNM provides fellows with a range of research opportunities including clinical research, basic research, translational research and outcomes research. Each fellow is expected to carry out one project in at least two areas, in order that he/she has a back-up thesis project available, in the event of unforeseen problems with the primary thesis project, such as insufficient recruitment.

1. Goals: During the minimum 12 months of the protected research time the fellow will be able to:
 - a. describe types of study design
 - Experimental: Randomized clinical trials
 - Observational: Prospective cohort, retrospective cohort, case-control
 - Cost-benefit and cost-effectiveness analysis
 - Decision analysis
 - Systematic review and meta-analysis
 - Appropriate conduct of a study, including:
 - Calculation of power
 - Calculation of sample size, understand power analysis
 - Case selection
 - Control selection
 - Randomization techniques
 - b. Differentiate between
 - i. Clinical research
 - ii. Basic research
 - iii. Translational research
 - iv. Outcomes research
 - c. Describe ethical conduct of research
 - a. Human subject
 - i. Discuss human subject research and vulnerable populations
 1. Ethical considerations pertaining to informed consent during pregnancy
 - b. Tissue and vertebrate animal
 - d. Describe and formulate a research study budget
 - e. Describe hypothesis driven research and hypothesis testing
 - P-values and confidence intervals
 - Types of non-parametric testing
 - Types of parametric testing

- Multivariable techniques
- f. Formulate and describe specific aims
- g. Understand and describe appropriate statistical tests to use in analysis of each type of data (i.e. continuous, categorical, etc.) – see above, hypothesis testing
- h. Describe principles of scientific integrity:
 - Responsible data acquisition and management
 - Responsible authorship and publication
 - Responsible peer review
 - Proper mentor-trainee relationship
 - Responsible collaborative research
 - Protection of human and animal subjects
 - Conflict of interest and commitment

2. Learning Objectives:

1. Learn about research study design and to attend a graduate level course in statistics
2. Gather in-depth insight into research develop through
 - a. IRB training
 - b. Grant writing
 - c. Statistical analysis
 - d. Study design
 - e. Scientific manuscripts preparation
 - f. Thesis presentation/defense
 - g. Manuscript submission and revision
3. Identify a research mentor and thesis project to undertake by the end of the first year
4. To conduct at least one perinatal project in laboratory research and in clinical research
5. To maximize the 12-month period dedicated for protected research
6. To design and complete a research thesis of such scientific quality as to be submitted for publication to a peer review journal before completion of fellowship training
7. To learn about grant writing and have the opportunity to apply for and obtain research support.

