

**UNIVERSITY OF UTAH SCHOOL OF MEDICINE
DEPARTMENT OF FAMILY AND PREVENTIVE MEDICINE**

**ROCKY MOUNTAIN CENTER
FOR
OCCUPATIONAL AND ENVIRONMENTAL HEALTH**

OEHS 6910 PROJECT RESEARCH

GOALS AND OBJECTIVES

COURSE DESCRIPTION:

OEHS 6910 Project Research (2 credits) Prerequisite: Occupational Medicine or Aerospace Medicine Resident, or permission of instructor.

This course consists of completing a research project that is mutually agreed upon. Students must contact the course section director 8-12 weeks in advance to plan the class and topic for research. It is expected that the student will develop the hypothesis in early November, the Introduction section by December 1 and the draft methods by January 1 to help set up the course. It is essential that students must have an agreed upon/testable hypothesis, completed the literature review, and synthesized the existing evidence prior to starting the Research Project.

OVERALL GOALS:

The goals of the RMCOEH Research Project are to provide resident with the opportunity to participate in new or ongoing occupational medicine, aerospace medicine, or epidemiological research projects. Residents are expected to gain experiences with data collection, input, data management and analyses to particularly appreciate strengths and weaknesses of published studies physicians will encounter throughout their careers.

SPECIFIC OBJECTIVES:

Objectives that are generally included in this course work are extensive. Depending on the length and specific interests of the student, the course may emphasize some goals more than others and these objectives may include:

1. Gain appreciation for properly conducted systematic reviews and potentially conduct a systematic scientific literature review to increase medical knowledge and systems based practices.

2. Experience structured occupational medicine, aerospace medicine, or epidemiological data gathering. This may involve work with a research team on an existing study.
3. Participate in data entry activities and understand criticality of thoughtful data quality management.
4. Experience data analyses.
5. Conduct statistical analyses under guidance of research team epidemiologist(s) and biostatistician(s).
6. Improve communication skills and professionalism with research team members.
7. Interpret statistical results.
8. Prepare a peer reviewed manuscript.
9. Develop practice-based learning skills for literature search, review, analysis and synthesis required for continuous improvement and advancement of a medical career.

The class is designed to be flexible to allow for tailoring to the needs of the student. It may be adjusted to include both the student's past experiences as well as future projected demands in the student's chosen medical field or area of interest.

In order to best incorporate the students' prior experiences and future anticipated work demands, contacting the course director by October prior to the Spring Semester of the course is needed to discuss these issues and provide adequate advance planning for the class. The prerequisites of graduate level epidemiology and biostatistics courses are not absolutes, however equivalency, concurrent registration in such course work, or substantive experiences such as prior research experience are required.

GENERAL APPROACH TO THIS CLASS:

The purpose of this class is to either begin to, or further develop knowledge and skills necessary for interpreting occupational medicine, aerospace medicine, or epidemiological data and publications the student anticipates reviewing in the remainder of his or her career. For some students, this also includes advancing skills anticipated for occupational medicine, aerospace medicine, or epidemiologically related research careers through immersion with an experienced research team.

RECOMMENDED READINGS:

Day RA, Gastel B. How to write and publish a scientific paper, 6th edition. Westport CT: Greenwood Press, 2006.

Hegmann KT and Oostema SJ. Chapter 3. Causal Associations and Determination of Work-Relatedness. In: Guides to the Evaluation of Disease and Injury Causation. Melhorn JM, Ackermann WE III (Eds). AMA Press, 2008.

Melhorn JM, Hegmann KT. Chapter 4. Methodology. In: Guides to the Evaluation of Disease and Injury Causation, 2nd Ed. Melhorn JM, Talmage JB, Ackermann WE III, Hyman MH (Eds). AMA Press, 2014.

ACOEM Occupational Medicine Practice Guidelines. (most recent revisions).

RMCOEH Writing Guidelines (see Residency Syllabus; OEH Handbook)

Additional Medical literature derived from computerized literature searches on case by case basis.

Research Statistical and Analytical Support:

Upon request, analytical research support may be available through faculty including Matt Thiese, Ph.D. Faculty may also direct support through the research team to help as Dr. Thiese delegates to those able to assist. Note a principle is that basic stats (e.g., t-tests, x-squares) are expected to be run by the student first before bringing them to others, as these types of tests are simple, computer support is well explained with basic internet search (i.e., "Google") and folks need to have that minimal skillset completing their training. Multivariate analyses may be another issue re. master's level training, as this may require more assistance.