Cardiology Fellowship Manual

Goals & Objectives
-Research-

Pediatric Cardiology Fellowship

RESEARCH

Goals and Objectives

Introduction/Purpose

The goal of the research rotations is to provide fellows with the optimal opportunity to:

1) understand basics of research design, biostatistics, collaboration, mentorship; 2) engage in at least one project in which they develop a hypothesis and/or in a project of substantive scholarly exploration and analysis requiring critical thinking; 3) enable them to develop at least one project then carry it to fruition/completion at least by the end of their third fellowship year culminating in a presentation and submission to a peer reviewed journal for publication. Longer-term goal involves understanding the importance of developing lifelong learning and participation in research. By providing the fellows at total of 12 blocks (48 weeks) for research in the 3-year program, it is anticipated that ample time will allow fellows to meet all expectations and for successful completion of research goals.

Faculty Supervisor(s)/Preceptor(s): Cardiologist faculty: Anji Yetman, MD (all other cardiologists involved with research as well as the non-cardiologist research faculty involved will depend on the research topic(s) chosen by the individual fellow). The Program Director will be responsible for assuring the appointment of the Scholarship Oversight Committee (SOC), which takes final form as the fellow identifies a research mentor and identifies a research question suitable for a hypothesis driven research project.

Admin Assistant or Office Contact: Program Coordinator, Kristi Graybill; UNMC Administrator, Priscilla Phillips

Length of Rotation

- 1 month

Location:

- The lecture series will be held at the University of Nebraska Medical Center
- The location for the actual research project(s) for each fellow will depend on the faculty mentor, the respective research laboratory and office

Prerequisites

- The fellows will attend a lecture series (ten 2-hour sessions) conducted at the University of Nebraska Medical Center designed to teach them skills in biostatistics and study design
- Vacation / time off will be allowed during rotation. The fellow must submit the dates through the appropriate channels in accordance with the policies of the fellowship.

Fundamental to the rotation are responsibilities. These include (but are not limited to) the following *(Patient Care, PC; Interpersonal & Communication Skills, IPCS; Systems-Based Practice, SBP; Medical Knowledge, MK; Professionalism, P)*:

General Responsibilities and Expectations:

- Attend and participate in all prerequisite activities
- Understand all research expectations for each year and ultimately for the fellowship
- Understand that during research rotation, regular conference participation and on-call responsibilities will continue
- Each fellow will work closely with a mentor or mentors to carry out a hypothesis-driven research project and to learn relevant academic skills, including time management, oral presentations, poster presentations, manuscript, and grant writing. Research may be basic laboratory bench work or clinical research. Regardless of the type of research, the expectation is that it will be hypothesis driven and meet rigorous standards acceptable to the Scholarship Oversight Committee.

I. Research Training <u>Goals</u>:
   a. Learn to formulate a working hypothesis.
   b. Acquire skill in designing and performing appropriate experiments.
   c. Strengthen ability to critically assess data.
   d. Learn to formulate concise conclusions from complex problems.
   e. Learn how to analyze data using appropriate statistical tests.
   f. Develop presentation skills.
   g. Develop grant writing skills.

II. Research Training <u>Expectations</u>:
   a. Conduct laboratory-based or clinical hypothesis-or discovery-driven research project.
   b. Attend course on research ethics.
   c. Develop presentation skills.
      i. Present at local meetings
      ii. Present work at national meeting
      iii. Write at least one manuscript for submission to a peer-reviewed journal
   d. Learn the skills required for the fellow to succeed in an academic career

III. Research Training <u>Objectives:</u>
   a. Develop an appreciation for scientific inquiry.
   b. Develop a critical understanding of the current literature.
   c. Understand the principles of the scientific method.
   d. Understand basic statistical and power calculations.

e. Understand the concepts of research ethics.
f. Understand all aspects of Institutional Review Board application and activities.
g. Develop skills at oral and written presentation of scientific work.
h. Begin to learn the skills for grant preparation.

Educational Responsibilities and Expectations

- Participate in all prerequisite courses and obtain reading materials for those courses *(MK; SBP)*
- Obtain reading materials required for the research rotation. This will depend on the individual fellow's choice of research project(s) and will be directed by the respective faculty mentor (*MK; SBP; IPCS)*
- Complete and submit rotation experience and faculty evaluations. *(SBP; IPCS; P)*
- The research expectations for each year:

First year: Two blocks (4 weeks each) in first year. The blocks in first year will enable the fellow to explore resources, make appropriate contact with potential mentors and select a topic for research. These blocks also will allow for necessary literature search and learning background material for the project.

Second year: This year will involve 5 blocks (4 weeks each). The initial block in early part of the second year will allow the fellow to prepare and submit Institutional Review Board and grant applications. The expectation is that the research project will be started in the later rotations (4^{th} and 5^{th} blocks) of the second year

Third year: This year will involve 5 blocks (4 weeks each)**.** The schedule of the later second year and beginning of the third year blocks of rotations are designed to provide continuity. It is expected that the initial 2-3 blocks of the third years' research rotation will be used for the actual conduct of the study with data collection. The remaining 2-3 blocks are set aside to collate and analyze the data and allow the fellow to fulfill the expectation of preparing a manuscript for publication.

Measurement of Expectations:
A checklist of yearly expectations based upon the goals & objectives listed above will be provided to each fellow by the Program Director at the beginning of each year. This checklist will serve as a measurement tool to ensure all expectations will be met at the end of the first year before proceeding to the expectations checklist for the second year. Similarly, this measurement will be applied for the second year

towards advancement to the third year and finally at the end of the third year will serve as a total fellowship summary of the fellow's accomplishments in research.

Research Progress and Scholarship Oversight

A Scholarship Oversight Committee (SOC) will monitor the fellow's progress in research. It is the responsibility of the pediatric cardiology Program Director and Faculty Research Supervisor/Preceptor to organize individual SOC's from among the division faculty as well as relevant faculty from other divisions and departments within the College of Medicine. The SOC will meet the requirements of the American Board of Pediatrics and the ACGME. The members of the SOC will meet regularly with the fellow to provide guidance, and as a committee the SOC closely will monitor the academic progress of the fellow, provides career guidance, and certify that the fellow's research will meet the criteria assigned to allow the fellow to sit for the certifying sub board examination in Pediatric Cardiology. Fellows will be expected to meet with their SOC regularly throughout their training as directed by Dr. Yetman, minimal bi-annually. The SOC's role will be similar to that of a doctoral thesis committee. It will evaluate progress, provide guidance, and assure academic and scholarly rigor.