

Junior Faculty Mentoring in Aging Research

at the Indiana University School of Medicine
Center for Aging Research



SUMMARY

Target Audience

Junior faculty who devote 75% or more of their academic effort to aging research

Purpose

To provide a structured research mentorship program that facilitates academic success

Program

Research and professional development seminars; one-on-one mentoring

History

The program began in 2005

Operating Costs

Core faculty of 12 MD and PhD researchers; administrative staff time (up to 10%); 20-30% FTE for the mentored scientists

Outcomes

Three mentored scientists have completed K-series awards and have moved on to R01-type funding; four new trainees are in various stages of preparation or review of K-series awards

Available Materials

List of books used in professional development seminar; websites for the Center for Aging Research, Gero-informatics, and the Regenstrief Institute

For More Information

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Program Overview

Because geriatric medicine clinician-scientists are rare, the Indiana University Center of Excellence (CoE) makes every effort to ensure the long-term success of junior faculty members who have exhibited the passion and talent to pursue a career in aging research.

A successful academic research career is strongly dependent upon access to effective mentors. This structured research mentorship program aims to facilitate the academic success of junior faculty in aging research. Participation is limited to those who devote 75% or more of their academic effort to aging research. Each year, one new mentored clinician-scientist and one new PhD-scientist are selected, with a group of six to eight scientists active in the program at any given time.

While the program focuses on clinician-scientists (physicians, nurses, and other practitioners), the program also includes PhD faculty from multiple disciplines on a limited basis because interdisciplinary teams are the norm in aging research. A concerted effort is also made to improve the diversity of junior faculty researchers.

The program's four main objectives are:

- to increase the number and diversity of clinician-scientists in aging research at Indiana University
- to produce independent scientists who obtain R01-type funding as principle investigators
- to produce researchers who are collegial and who possess strong collaborative and teamwork skills
- to improve the career satisfaction and productivity of the senior faculty who serve as mentors.



Although the above objectives focus primarily on expanding Indiana's cadre of aging-related research scientists, these interests also serve the national need to increase the geriatric medicine knowledge base.

Program Operations

The mentoring program provides a highly individualized, hands-on research experience through one-on-one, face-to-face interactions with the mentor(s) and the practical design and conduct of a specific research project. This is the best mechanism to prepare the mentored scientists for an independent research career.

No two mentored scientists' experiences are the same because each individual enters the mentoring relationship with unique strengths and weaknesses. All mentored scientists require supervision and training in each of the following areas to some degree, but the amount of time in each area will vary:

- developing a realistic research agenda that is not fragmented or overly ambitious
- understanding research methodology (e.g., clinical trials) and biostatistics
- conducting research with human subjects
- preparing grant proposals
- strengthening basic writing skills
- time management
- developing interpersonal relationship skills.

Identifying Mentors

The first step is identifying the primary mentor and the members of the mentoring team. The primary mentor assumes overall responsibility for the mentored scientists' success.

Typically, there is a second mentor who provides content expertise and a third mentor who represents either content or methodological expertise or who may be an advocate representing the mentee's under-represented peer group. Secondary mentors also play a third-party role to ensure that the primary mentor does not abuse their privileged role as primary mentor.

The assignment of mentors is an active process. It must be spelled out in the candidate's offer letter for faculty appointment. A successful match must also take into account the interests of the mentor. Junior scientists entering the program from other schools, centers, or disciplines must have a mentor from both Indiana University's CoE and the scientists' home program. They must also provide evidence that their program is supporting them through a 75% effort commitment to research for at least three years.

Mentoring Interactions and Roles

While roles and relationships will vary among the mentored scientists, a mentoring relationship that is mutually beneficial and sustained over time will often require the following:

- **Supervision** of all phases of a research project: conception, literature reviews, design, human subjects, implementation, data analysis, manuscript preparation, and grant applications
- **Time and energy** dedicated to the mentored scientist's academic development
- **Access** to the local and national network of academic faculty, health advocates, and policymakers relevant to the mentored scientist's area of study
- **Feedback** on all aspects of the mentored scientist's career development in a timely and constructive fashion
- **Advocacy** with the mentored scientist's current and potential colleagues, supervisors, and other stakeholders to avoid overcommitment
- **Role modeling** for time management, organizational behavior, and family-career balance
- **Cheerleading** for risk taking, successes and failures, and managing interpersonal conflicts
- **Nurturing** a positive work environment and a creative esprit de corps
- **Attention** to communication skill development, including writing and oral presentations



- **Space** to allow the mentoring relationship to progress through developmental stages and to allow the mentee to eventually leave the umbrella of the mentor.

On a very practical level, mentors must also help the mentored scientists navigate the tenure and promotion process.

Program Components

Regular Meetings

Each mentored scientist has both scheduled and unscheduled time with his or her mentor. Informal, unscheduled meetings to facilitate progress are encouraged. Scheduled access for each mentored scientist includes a monthly one-hour mentoring meeting with all mentors (full panel), a weekly one-hour group meeting with all of the mentored scientists (the Professional Development Seminar, described below), and a biweekly, 30-minute meeting with the primary mentor. The mentored scientist must send each mentor an e-mail with the action plan that results from each full-panel meeting and from any other substantive meeting. This serves as a historical record and a time management/goal setting exercise.

Professional Development Seminar

This weekly group meeting is organized by one of the senior mentors but is run by the mentored scientists. The topics focus on professional and leadership development, time management, and organizational behavior. Participants include both clinician-educators in the Scholarly Activity Clinic and clinician-educators in the research mentorship program.

The meetings are organized around a series of books. Each week, one of the participants leads a discussion on a book chapter. Two to four books can be covered in an academic year. This forum also allows for sharing best practices, problem solving, and tips among the mentored scientists; it helps them appreciate the worldview and challenges of their colleagues in other roles and/or disciplines. Books covered are listed in *Available Materials*.

Research Specific Seminars

Mentored scientists also participate in two weekly research conferences, referred to locally as works in progress. The first work-in-progress is limited to approximately 20 faculty researchers with a special interest in aging research. The second work-in-progress is sponsored by the Regenstrief Institute and includes about 40 faculty scientists with an interest in outcomes research.

During a one-hour work-in-progress session, an individual scientist reports the prospects, challenges, and early results of his or her ongoing or recently completed research project. The goal is a two-way interaction in which the presenter receives feedback and suggestions and the audience learns about new research approaches. Mentored scientists typically first present at the aging work-in-progress and receive initial feedback in this smaller forum. They then present to the larger audience at the Regenstrief Institute work-in-progress.

All mentored scientists are required to attend and to actively participate in national meetings such as the American Geriatrics Society annual scientific meeting.

Expectations for Mentored Scientists

Each mentored scientist is expected to develop explicit career goals, a timeline for projects and milestones, and a list of expected products, all of which are presented in a written document. The document is an important tool for reaching mutually agreed upon expectations and goals, and serves as a guidepost for the entire mentoring panel as well as for colleagues. It is often valuable as a mechanism for saying no to competing demands for time and energy.

Each of the mentored scientists is expected to participate in service to the University. The service opportunities are matched to the mentored scientists' research interests or their clinical laboratories. Examples include the Institutional Review Board (IRB), the pharmacy and therapeutics committee, the ethics committee, and liaison roles to other



programs. The appropriate timing and duration of this service varies among the mentored scientists.

Staffing Requirements

The following personnel are needed:

- Successful senior faculty with an active program of supported research—three or more is ideal, but one is sufficient
- Masters-level data analysts to help support pilot projects and secondary analyses; FTE ranges from 0-30%, depending on the number and type of mentored scientists and their projects
- Staff with expertise in the practical navigation of the local research enterprise (e.g., IRB, sponsored research, budget administration, human resources).

Program Costs and Funding Sources

The cost for each mentored scientist is at least \$20,000 per year in addition to any salary support that he or she may receive.

The program is funded by the National Institutes of Health through K-series awards to mentors or mentored scientists, the Indiana University Roybal Center, endowed chairs, and the Hartford CoE, with supplemental support from institutional matches.

Process and Outcomes Data

The major outcome is the production, after three to five years, of an independent scientist who has strong research, collaborative, and interpersonal skills. Three mentored scientists have now completed or are nearing completion of their K-series awards and have moved on to R01-type funding.

Currently, four new trainees are in various stages of preparation or review of K-series awards.

The number of African-American and female trainees, as well as trainees from outside the School of Medicine, has increased.

Informal feedback from the participants is very important to continuous quality improvement, consistent with the ever-changing environment of clinical research.

Implementation Lessons

- Clear expectations agreed upon at the outset in writing by all of the stakeholders greatly increase the chances of success.
- Most mentored scientists need three to five years of a structured mentorship program.
- Missing early milestones is an important predictor of missing late milestones, and is thus a significant predictor of failure in achieving goals.
- Underdeveloped writing skills are endemic among junior clinician-investigators.
- The mentoring relationship must be mutually beneficial to be successful.
- A structured mentoring program requires considerable human and financial resources on an annual basis for as long as the program exists.
- Conflicts are expected and are part of professional development.
- Leadership skills can be taught.
- The origins for this geriatrics mentoring program are the research training programs in General Internal Medicine and the Regenstrief Institute at the Indiana University School of Medicine

Available Materials

Tools/Resources

- List of books used in the weekly Professional Development Seminar

Websites

The following websites include lists of publications and other information useful to aging research programs:

- Center for Aging Research:
<http://iucar.iu.edu/>
- Gero-informatics:
<http://iucar.iu.edu/gocar/>
- Regenstrief Institute:
<http://iucar.iu.edu/center/regen.html>



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This document is part of a compilation of approaches to geriatrics recruitment, career development, and programmatic expansion, based on the work of the John A. Hartford Foundation "Centers of Excellence in Geriatric Medicine and Training." For more information, visit www.afar.org/recruitment or www.jhartfound.org.

