

Advanced Fellowship in Health Systems Engineering-2 Year (VERC)

1. FELLOWSHIP PURPOSE

The Advanced Fellowship in Health Systems Engineering-2 Year (VERC) is intended to allow mentored formal research, facilitate contributions to the health systems redesign literature, and promote the development of future leaders in the field. Post-residency trained physicians and appropriately prepared associated health professionals will be provided with in-depth preparation in clinical implementation, research, and leadership in health systems redesign for a period of two years. This program takes advantage of the wide variety of clinical, educational, and research resources available throughout VA healthcare facilities, in conjunction with VA's academic affiliates. Eligible fellows may be physicians, clinicians in associated health professions, or practitioners or scientists in non-clinical associated health professions. Because this is a program of the Office of Academic Affiliations, all participants shall be appointed as trainees. Only sites associated with VACO-designated VERCs are eligible to apply.

Program Announcement

This program announcement provides information, policies and application procedures to Department of Veterans Affairs (VA) facilities/systems regarding the Advanced Fellowship in Health Systems Engineering-2 Year that will be supported by the Office of Academic Affiliations (OAA) and Health Services Research and Development (HSR&D). Each trainee position awarded shall be for two years and shall be non-recurring.

Applications shall be judged on three principal factors: 1) the proposed site's capabilities to provide the specified training, 2) the proposed course of study and, 3) the participant's qualifications.

Applicants shall be eligible to participate in this program provided that they have completed all requirements needed to be a fully credentialed independent practitioner (or equivalent) in their field at a VA facility and meet other requirements specified below. Physicians must be either certified in a VA-recognized medical specialty or eligible and actively pursuing such certification. Professionals in clinical disciplines that do not require doctoral preparation must have completed at least a master's degree or equivalent. Non-clinician scientists with backgrounds in academic fields such as engineering, economics, sociology, non-clinical psychology, etc. must have a doctoral level degree to be eligible for participation in this program.

2. BACKGROUND

Building a Better Delivery System: A New Engineering/Health Care Partnership, a 2005 report by the National Academy of Engineering (NAE) and Institute of Medicine (IOM) of the National Academies, documented that the health care sector as a whole has been relatively slow to embrace Operational Systems Engineering (OSE) tools and techniques, which could help untangle the complexities and lead to a deeper understanding of the dynamics of health care systems and subsystems. This approach could be used to design and optimize system performance to meet specific quality goals (e.g., safety, patient centeredness, timeliness) and, at the same time, improve prediction, measurement, and management to meet other performance goals (e.g., cost, access, productivity).

Transformational advancements in the quality and productivity of VHA may require tools and techniques be developed as part of OSE, a family of disciplines that includes industrial engineering, operations research, human factors engineering, and financial engineering/risk analysis, as well as from computer science and engineering and the social and behavioral sciences. All of these engineering and science disciplines are integrally involved in the design, analysis, and control of complex processes and systems.

OSE, which combines science and mathematics to improve the operation of systems, has greatly benefited other enterprises by describing, analyzing, planning, designing, and integrating systems with complex interactions among people, processes, materials, equipment, and facilities using deterministic and probabilistic mathematics (called stochastic processes). The ultimate goal of OSE is to integrate all elements in the operations of a system to improve its efficiency and effectiveness.

VHA's journey in systems improvement using OSE began in 1999 with a national effort to adopt advanced access principles to improve Veteran care. Building from those early successes, VHA expanded those efforts to other clinical, business and administrative processes, and established a Systems Redesign (SR) Office, organized under VHA operations, to lead improvement efforts across VHA. This includes national collaboratives, national performance measures and monitors, improvement communities, and multiple educational and change events. Systems Redesign work is directed by a National Steering Committee and operationalized by VISN and Facility staff through a Point of Contact network. The work of SR is closely integrated with the Office of Quality and Performance (especially Utilization Management (UM)) and with Patient Care Services in VHA.

VHA seeks to accelerate improvement by incorporating OSE capability. The vision is that a never-done-before partnership between engineering expertise and healthcare will transform healthcare into a more highly-reliable patient-centered responsive system that works for Veterans and staff. VERCs will be national resources to provide the critical mass for these partnerships.

As this new structure evolves, there remains a great need for further research in the field. The Advanced Fellowship in Health Systems Engineering-2 Year (VERC) addresses this need by providing protected time, mentorship, and a clinical research environment to qualified candidates.

3. POLICIES

a. Governance

- (1) The Office of Academic Affiliations maintains overall responsibility for the administration of the Advanced Fellowship in Health Systems Engineering-2 Year (VERC).
- (2) The fellowship program for post-residency physicians is governed by M-8, Part II, Chapter 4, "Fellowship Programs for Physicians and Dentists" or subsequent handbooks that may supersede that section.
- (3) The fellowship program for associated health disciplines is governed by M-8, Part II, Chapter 2, "Associated Health Professions" or subsequent handbooks that may supersede that section.

b. Appointment and Compensation

(1) Physician Fellows

- (a) Appointments will be made under the authority of 38 U.S.C 7406 for two years. The PAID code will be provided in the memoranda notifying facilities of their selection as a training site.
- (b) The stipend rate will be based on years of previously completed ACGME accredited residency training and equivalent experiences as determined by OAA, index rates approved at the affiliated university and the respective VA facility. OAA reserves the right to use a different mechanism to determine fellow pay. Fellows shall be paid directly by the VA facility unless OAA provides written approval for another payment mechanism.
- (c) Stipend Supplementation- Fellows shall not receive additional revenue from any other source in compensation for their duties in this program.
- (d) Citizenship. U.S. citizens shall be given priority in selection. Non-U.S. citizen appointments are under the authority of Title 38 U.S.C 7407.

(2) Associated Health Fellows

- (a) Appointments for clinician associated health practitioners and non-clinician scientists will be made under 38 U.S.C. 7405 (a)(1)(D). The PAID codes will be provided in the memoranda notifying facilities of their selection as a fellowship site. Fellows will be appointed for a period not to exceed three years. Appointments will be terminated at the end of the specified training period. Fellows appointed for more than one year are eligible for health and life insurance benefits.

(b) Stipend rates will be determined by OAA, depending on the discipline and previous education of the trainee. Rates are reviewed biennially against national norms for the discipline. Current rates are listed on the OAA intranet web site at <http://vaww.va.gov/oaa> (then “Associated Health Stipend Rates” under the Reports section). OAA reserves the right to use a different mechanism to determine fellow pay. Fellows shall be paid directly by VA. For more information about health disciplines not listed in the table, contact OAA.

(c) Stipend Supplementation- Fellows shall not receive additional revenue from any other source in compensation for their duties in this program.

c. VACO Support

(1) OAA will provide funds to VA facilities for fellows’ stipends and fringe benefits.

(2) HSR&D will provide up to \$7,000/year per fellow to be used for research expenses or conference registration fees (these funds cannot be used for computing equipment or travel expenses).

d. Educational Details to Non-VA Sites

Fellows may be detailed to other educational institutions without loss of pay, but under no circumstances may the total time spent in non-VA institutions exceed one-sixth of the total hours a fellow is in a pay and training status with VA. Should a program wish to have fellows conduct clinical activities at non-VA sites, prior written approval from the Office of Academic Affiliations must be obtained.

e. Liability Protection

Fellows will be protected from personal liability while providing professional services as a trainee at a VA facility under the Federal Employees Liability Reform and Tort Compensation Act, 28 U.S.C. 2679(b)-(d). Should a program wish to have fellows conduct clinical activities at non-VA sites, an appropriate affiliation agreement must be completed and prior written approval from Office of Academic Affiliations must be obtained.

f. Expenses

Except as specified above, expenses connected to the fellows’ recruitment, educational activities, or research are not funded under this program. Transportation to the VA facility and housing arrangements are the sole responsibility of the fellow.

g. Service Obligation

There is no service obligation after completion of the fellowship program. However, fellows are encouraged to seek VA employment. Program faculty mentorship is expected to include career counseling, including assistance in obtaining VA employment.

h. Identification of Fellowship Status

(1) Fellows shall notify VA locally and nationally as required prior to any publication or presentation.

(2) Fellows shall also identify their VA support in all reports and presentations during the fellowship program and after the fellowship program if the report or presentation is related to activities conducted during the fellowship program. Failure to do so while in the fellowship program may result in termination of the fellowship.

i. Clinical Privileges/ Scope of Practice

(1) Physicians

Physician Advanced Fellows must have completed their primary specialty training in order to qualify for initial board certification. Subject to the policies and procedures of the appointing institution's medical staff bylaws, Advanced Fellows are to be privileged as licensed independent practitioners (LIPs) in the primary medical specialty in which they completed approved training. Exceptions to this requirement for LIP privileging are rare, and require written OAA approval. The assigned privileges as an independent practitioner shall be within the scope of practice for which the Advanced Fellow has been previously trained. A physician Advanced Fellow participating in courses of study that provides clinical training pertinent to the Advanced Fellowship shall be considered a dependent practitioner, subject to appropriate graduated supervision for such clinical care.

(2) Associated Health Professionals

Associated Health professionals in clinical fields shall either be privileged as licensed independent practitioners or boarded with a scope of practice consistent with their licensure and prior training. Associated Health practitioners participating in courses of study that provide clinical training pertinent to the Advanced Fellowship shall be considered dependent practitioners, subject to appropriate graduated supervision for such clinical care.

4. ELIGIBILITY CRITERIA

a. Facility Eligibility Criteria

(1) Every sponsoring VA facility must be affiliated with a medical school having an ACGME or AOA accredited residency program, irrespective of the profession of the proposed participant. In addition, the sponsoring VA facility is encouraged to have affiliations with appropriate school's programs for associated health disciplines recruited as fellows. If new affiliations are made to develop this relationship, a formal affiliation agreement must be executed. (Contact the Office of Academic Affiliations (14) for assistance). Affiliate- and VA-sponsored training programs must be accredited by the nationally recognized accrediting body for the profession.

(2) The Chief of Staff, Associate Chief of Staff for Research, and Designated Education Officer (e.g. the Associate Chief of Staff for Education) must support the application and endorse the potential contribution of the proposed project to the development of the applicant's academic or clinical career.

(3) The sponsoring VA facility must designate a well-qualified Fellowship Program Director as the primary mentor to guide the fellow's training.

(4) The sponsoring VA facility must have a process to assure that documents required for the appointment of Advanced Fellows have been verified and are in order.

b. Fellow Eligibility Criteria

(1) Physician Fellows

Prior to beginning the fellowship, a physician fellow must meet all of the following:

(a) Have completed a residency program accredited by the Accreditation Council for Graduate Medical Education (ACGME) or the Bureau of Professional Education (BPE) of the American Osteopathic Association.

(b) Not be enrolled simultaneously in any accredited physician residency or fellowship program.

(c) Have an active, unrestricted license to practice in the U.S.

(d) Be ABMS or AOA board certified or eligible, with demonstration of active pursuit of board certification.

(e) Be appropriately credentialed and privileged for clinical practice at the local VA facility.

(f) Be a U.S. citizen or possess a current visa suitable for participation in this paid educational activity. U.S. citizens shall be given priority in selection.

(g) If a graduate of a foreign medical school, must have evidence of Educational Commission for Foreign Medical Graduates (ECFMG) certification that is stamped "valid indefinitely."

(h) Demonstrate interest in pursuing a VA career with health systems engineering as a significant focus.

(2) Associated Health Fellows

Prior to beginning the fellowship, an associated health fellow must meet all of the following:

(a) Be a U.S. citizen.

(b) Be qualified in a health profession relevant to health systems engineering or associated fields.

(c) Clinician Associated Health Fellows- Prior to beginning the fellowship, a clinician associated health fellow must have completed all requirements to become a fully credentialed independent practitioner (or the equivalent for that profession) at a VA facility, and must have an active, unrestricted license to practice in the U.S., if such licenses are required for VA employment in the candidate's profession. Clinician Associated Health professionals must meet one of three eligibility categories (1.1-1.3) below:

(1.1.) Possess a doctoral degree (or demonstrate that all requirements for such a degree have been completed and award of the diploma is pending) from an accredited program as well as qualify as an independent practitioner in disciplines requiring a doctoral degree (e.g. DDS, DPM, OD, PhD). Psychology fellows must also have completed an APA accredited internship program.

(1.2.) Possess a Masters Degree (or demonstrate that all requirements for such a degree have been completed and award of the diploma is pending) from an accredited educational institution in disciplines requiring a masters degree (e.g. social work).

(1.3.) Clinical fields that recognize independent practitioners possessing degree levels below that of Master's Degree (e.g., Prosthetist, Registered Nurse or Registered Dietitian) must have completed a Master's Degree (or demonstrate that all requirements for such a degree have been completed and award of the diploma is pending).

(d) Non clinician scientists must possess a Ph.D. or other doctoral level degree (or demonstrate that all requirements for such a degree have been completed and award of the diploma is pending) from an accredited educational institution in fields that do not involve clinical certification or licensure, but that can be applicable to health systems engineering (e.g. engineering, research psychology, anthropology, sociology, computer science/medical informatics, business and management,, etc.).

(e) Demonstrate interest in pursuing a VA career with health systems engineering as a significant focus.

5. SELECTION CRITERIA

a. The Facility

(1) A facility must provide evidence of committed leadership, time, personnel, and equipment to support a culture of excellence in patient care related to the proposed course of study. The facility must demonstrate the following:

- (a) Designation as a Veterans Engineering Resource Center (VERC).
- (b) Adequate educational program to support the fellow's proposed activities. This must include experienced mentorship and supervision appropriate to the participant's professional field. The sponsoring VA facility must designate a well-qualified Fellowship Program Director as the primary mentor to guide the fellow's training.
- (c) Evidence of a strong partnership between the VA facility and its academic affiliate(s).
- (d) Strong interprofessional leadership by team members involved in relevant clinical care at the site.
- (e) Commitment to develop individualized learning programs for trainees.
- (f) VISN and facility commitment to build and sustain an outstanding learning environment.
- (g) Commitment to a process of disseminating educational material and promoting health systems engineering beyond the training site.
- (h) Evidence of sound evaluation strategies for programmatic and individual evaluation.

b. Program Director:

- (1) The Program Director serves as the primary mentor for the fellows and coordinates all aspects of the fellow's program. The Fellowship Program Director must be active in a field relevant to the proposed area of inquiry.
- (2) The Program Director must have a proven track record of basic science or clinical research with relevant publications, awards, current research projects, and current funding sources.
- (3) The Program Director must demonstrate experience as a successful mentor and have the local administrative resources in place to assure appropriate fellowship support.

c. Fellowship Plan

- (1) Each application shall describe a proposed course of study. Appropriate topics include inquiry into systems definition and operational behavior, assessment of systems resources and customers, systems modeling, and other areas for which an appropriate justification is provided in the application.

(2) The proposed course of study shall specify VA or other location(s) where the proposed activities shall take place and the care setting (e.g. inpatient, outpatient, home-based care, electronically mediated coordinated care, etc.). An expected outcome of the course of study shall be stated, with a description of the expected future practice that the participant might be expected to accomplish upon completion of the proposed course of study.

6. APPLICATION APPROVAL CRITERIA

Applications shall be judged on:

- a. Proposed research topic relevance to the broad topic of health systems redesign.
- b. Participant's demonstration of adequate preparation to participate in the proposed program (the proposed course of study must logically relate to the candidate's prior preparation).
- c. Institutional demonstration of expertise in the proposed area.
- d. Institutional demonstration of ability to provide outstanding educational environment for the proposed course of study.
- e. Program Director's demonstration of ability to supervise the proposed program.
- f. Suitable evaluation strategy.
- g. The value of the proposed area of inquiry to veterans and to VA.
- h. The likelihood of being able to achieve the stated fellowship goals.
- i. Sufficiency of support from applying facility.
- j. Extent of other Advanced Fellowship Support received by the applying facility.
- k. OAA's ability to provide requisite funding.

7. SUBMISSION INSTRUCTIONS

a. Due Date

Applications for participation for each Academic Year are accepted after October 1st. Applications intended to begin on July 1st must be received by close of business **May 28th**. See **Attachment A for application instructions**.

b. Application Transmittal

Please see OAA website for instructions on how to submit:

http://vawww.va.gov/oaa/fellowships/nomination_and_information.asp

8. OAA CONTACT PERSONS

For information or questions related to this fellowship program, please contact Ms. Deborah Ludke by email at deborah.ludke@va.gov or by phone at (562) 826-5492 or Dr. Stuart Gilman at stuart.gilman@va.gov or by phone at (562) 826-5323.

ATTACHMENT A APPLICATION INSTRUCTIONS

1. DUE DATE

Applications for each academic year are accepted on an ongoing basis.

2. APPLICATION PACKET

The application packet should be no longer than 20 pages total and must contain the following:

a. Transmittal letter from the VA facility Director endorsing the applicant. The letter must also contain the name, title, routing symbol, phone number, e-mail address, and fax number of the Fellowship Program Director.

b. Information from Applicant

(1) Curriculum vitae that summarizes prior education, clinical training, clinical experiences and other relevant employment, board and licensure status, relevant publications, and any other information relevant to participation in this program (Limit 3 pages).

(2) VA Application

All Advanced Fellow applicants shall complete the Application for Health Professions Trainees, VA Form 10-2850d. The form is available on VA's web site in the Publications area (<http://vawww.va.gov/oaa/Archive/10-2850Dre.pdf>).

c. Information from Program Director

(1) Statement accepting the role of primary mentor for the fellow's development and research, educational, and clinical progress.

(2) Commitment to work with the fellow and VA facility to develop an individualized educational plan and specific VA and VISN orientation for the fellow.

(3) Commitment to provide individual and programmatic evaluation.

(4) Brief curriculum vitae (Biosketch is acceptable) providing adequate information to demonstrate program director's qualifications in research and education. An example of the VA Biosketch may be found by clicking on the following link:

http://vaww.research.va.gov/funding/docs/SF424R-R_biosketchsample.doc

(5) Outline of mentoring experience.

- (6) Description of administrative infrastructure resources to provide fellowship support.
- (7) Description of the educational environment, including relationship of trainee to other investigators and clinicians in fields related to the applicant's proposed area of research.
- (8) Description of site characteristics: Document that your site is designated as a Veterans Engineering Resource Center (VERC).
- (9) Other relevant resources available to the fellow including laboratory and animal facilities, VA and other databases, computer support, statistical support, office space, and telephones.
- (10) Credential Verification Documents
 - (a) Physician Fellows:
 - (1.1) Fellows Credentials Verification Letter (FCVL) (Attachment A), and
 - (1.2) Fellows Credentials Verification Checklist (Attachment B)
 - (b) Associated Health Fellows:
 - (1.1) Fellows Credentials Verification Letter (FCVL) (Attachment C), and
 - (1.2) Fellows Credentials Verification Checklist (Attachment D)

d. Information jointly from Applicant and Program Director – Proposed Fellowship Plan

Proposed Fellowship Plan – a concise outline of the proposed plan for the program (it is expected that this plan will be more fully developed should the application be approved). Please address issues including:

- (1) Classroom - Outline the specific plan for didactic education related to the fellowship program to foster the fellow's skill development. (for example, where will they learn, what will they learn, and how will they learn?)
- (2) Clinical – Outline the specific plan for clinical education related to the fellowship program to foster the fellow's skill development (for example: where will they learn, what will they learn, and how will they learn?)
- (3) Research - Briefly describe the proposed research activity. Address the significance of the research area, and the relevance of the project to VA's mission. Include hypotheses, description of the research methods likely to be used, and anticipated data to be collected. Although the proposal should be developed in close collaboration with the

preceptor, the applicant should develop the proposal. Emphasize the potential value of the proposed areas of inquiry to veteran's health issues.

(4) Evaluation - Describe evaluation methods and milestones that will be used to determine the fellow's progress.