VA BOSTON

Medical Informatics
Postdoctoral Research Fellowship

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Since 1995, the VA Boston Healthcare System Medical Informatics Research Fellowship has been training postdoctoral fellows in medical informatics for careers as researchers, data scientists, and informatics-trained clinicians within government, academia, and industry. Fellows will work alongside research mentors and clinical stakeholders investigating diverse medical informatics applications in one of two tracks. Fellows from behavioral science backgrounds often focus on the use of technology mediated communication to improve the health of patients. Fellows can be involved in developing, implementing and evaluating the efficacy of technology enabled behavioral interventions and monitoring, including wearable technologies, mobile apps and web-based programs. Fellows in the computational informatics track will have the opportunity to participate in a range of projects that include analyzing datasets from the largest consolidated healthcare system in the United States, developing clinical decision support systems and using techniques that include machine learning, natural language processing, and data visualization.

The fellowship consists of two main tracks:

1. **Behavioral informatics**: Behavioral informatics is the study of the use of computers and other information technologies in behavioral medicine. Research projects include the development and evaluation of a wide range of behavioral interventions through the use of information technology that promote health behavior change and improved patient self-care across a range of behaviors including smoking cessation, nutrition, physical activity, and weight.

2. **Computational informatics**: Computational informatics in medicine includes the application, development, and evaluation of machine learning and other data science techniques to improve clinical operations and clinical decision making. Research projects include the computational analysis of electronic health records and development of predictive analytic algorithms to improve patient care and clinical operations as well as the development and implementation of appropriate interfaces for end users.

Goals of the fellowship include:

- Train fellows in the application of the principles and methods of medical informatics
• Provide opportunities for the development of more focused areas of informatics expertise through the conduct of one or more supervised research projects
• Develop expertise in the development and implementation of IT based behavioral interventions
• Enhance skills in other research areas that complement informatics and non-research areas that enhance fellows’ project management and leadership skills
• Develop skills in the management and implementation of VA clinical information systems at the medical center and network level

COMPONENTS

Components of the fellowship include:

• Research project supervision of two to three projects by an experienced researcher in informatics-based knowledge discovery and/or health intervention research
• Program and career mentoring by senior academic informatics researchers at the VA Boston Healthcare System, Boston University, and other academic institutions
• Research skills training through program seminars (research-in-progress; research literature appraisal; current topics in informatics research)
• Introduction to the VA Boston Healthcare System and the National VA Healthcare System including research groups, available datasets, data access routes, grant funding, and career opportunities
• Attendance at the American Medical Informatics Association (AMIA) Annual Symposium as well as other local medical informatics conferences
• Optional enrollment in the AMIA 10x10 courses or other relevant training courses

APPLICATION INSTRUCTIONS

• The VA Boston Healthcare System is seeking applications for a two-year post-doctoral VA Special Fellowship in Medical Informatics beginning in July to September of 2018.
• US citizenship and a PhD, MD or equivalent degree are required.
• For the behavioral informatics track, a background in experimental or clinical psychology, experimental design, a strong interest in and some experience with information technology are desirable. Individuals with an interest in behavioral
medical and health psychology, lifestyle behavior change and health communications are especially desirable. Medical knowledge is a plus, although not required.

- For the **computational informatics** track, programming skills (e.g. R, Python, C++, Java, etc.) and an interest in medical informatics applications are required. A background in data science, machine learning, or other data analytic field is desirable. Experience with electronic health record data is a plus, but not required.

- To start the application process, please send a statement of interest and a CV to Stephan.Gaehde@va.gov

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**FACULTY**

### Executive Leadership

Stephan Gaehde, M.D., M.P.H., Fellowship Director  
**Clinical Expertise:** Internal Medicine/Emergency Medicine  
**Research Interest:** Design and evaluation of computer technology to promote adherence to treatment regimens, monitor chronic disease and support patient in self-treatment behaviors.

DeAnna Mori, Ph.D.  
**Clinical Expertise:** Behavioral Medicine/Clinical Psychology  
**Research Interest:** Developing telehealth interventions that promote healthy behaviors and medical adherence in medical populations. A particular focus on promoting physical activity using technology.

Lisa Quintiliani, Ph.D.  
**Clinical Expertise:** Nutrition  
**Research Interest:** Design, implementation, and evaluation of health behavior interventions for chronic disease prevention and control using m-Health and e-Health technologies

Haley Hunter-Zinck, Ph.D.  
Health Science Specialist  
**Research Interests:** development and application of machine learning and visualization tools for clinical data, especially in the emergency department and to improve patient flow; clinical decision support; natural language processing

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**Potential Collaborating Partners**
Amy Rubin, Ph.D.

Clinical Expertise: Psychology
Research Interests: Addictive behaviors, particularly alcohol screening, assessment, intervention and treatment research; computerized interventions for health behavior change; substance abuse.

Julien Dedier, M.D., M.P.H.

Clinical Expertise: Primary care clinician, Health disparity populations
Research Interests: 1. The influence of ethnic, cultural and environmental factors on risk-related behaviors for cardiovascular disease and cancer among underprivileged urban minority groups. 2. Application of computer-assisted communication technologies to create behavioral interventions tailored to the ethnic, cultural and contextual characteristics of urban minorities of low socioeconomic status.

Timothy Bickmore Ph.D. and Stephen Intille, Ph.D.

Personal Health Informatics: an Interdisciplinary program of the College of Computer and Information Science and Bouvé College of Health Sciences
http://www.ccis.northeastern.edu/research-area/personal-health-informatics/

Boston University, Mobile and Electronic Health Affinity Research Collaborative (ME-ARC)

Director: Belinda Borrelli, Ph.D. and Co-Directors: Lisa Quintiliani, Ph.D. and Julie Keysor, Ph.D.

Marilyn Moy, M.D.

Director of Pulmonary Rehabilitation, VA Boston Healthcare Center
Associate Professor, Harvard Medical School
Research Interests: Internet mediated interventions to promote physical activity in individuals with COPD

Jennifer Joe, M.D.

Physician Digital Health Entrepreneur
Chief, Executive Officer and Cofounder Medstro
MedTech Boston Editor-in-Chief
linkedin https://www.linkedin.com/in/jenniferjoemd/

Steven Simon, MD, MPH

Associate Chief of Staff, Brockton Campus, and Chief, Geriatrics and Extended Care Service, VA Boston Healthcare System, and Associate Professor of Medicine, Harvard Medical School.
**Research Interests:** The evaluation of health information technology to improve patient safety and the quality of health care. Dr. Simon has expertise in the adoption of health information technology, the use of health information technology to improve the delivery of health care, especially the use of medications and the care of chronic illness. 

LinkedIn: [https://www.linkedin.com/in/stevenrsimon/](https://www.linkedin.com/in/stevenrsimon/)

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Abu S Abdullah, MBBS (MD), MPH., PhD.
Associate Professor of Medicine, Department of Medicine at Boston University Medical Center, and Professor of Global Health at Duke Global Health Institute at Duke University

**Clinical Expertise:** Medical Epidemiologist, Behavioral Scientist

**Research Interests:**
1) Prevention and control of chronic non communicable diseases (NCDs) and common NCD risk factors (i.e. tobacco use, alcohol misuse, unhealthy diet, physical inactivity, and overweight/obesity) in low and middle income countries and among disadvantaged population in the United States. 2). Use of mHealth tools (i.e. Embodied Conversational Agent, ECA) for behavior change intervention and the delivery of health care.

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**RECENT PUBLICATIONS AND PRESENTATIONS**

(Fellows in Bold)


Johnson, E., Niles, B., Mori, D., & Busby, A. (April, 2012). The use of accelerometers for the measurement of physical activity in sedentary veterans with Type 2 diabetes: Lessons learned from analysis and interpretation of data. Presented at the Annual Meeting for the Society of Behavioral Medicine, New Orleans, LA.

