Fellows Handbook

2019-2020

Academic Primary Care Fellowship Program:
Family Medicine
General Internal Medicine
Pediatrics

Addiction Medicine Fellowship
Preventive Medicine Residency

Boston University School of Medicine/Boston Medical Center
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Welcome to Our Program!

Our program’s mission is to train highly motivated primary care physicians to serve medically under-served communities as educators and investigators. As you may know, BMC has over a 150-year history of caring for poor, urban, and immigrant patients, and we collaborate with the Boston VA medical centers, which also cares for underserved populations.

We have an exciting mix of educational opportunities in epidemiology and health services research, theoretical and practical training in medical education, and experiential learning opportunities in public health. Our program provides the tools for successful careers in academic medicine, medical education, and public health.

The fellowships are based at Boston University School of Medicine (BUSM), Boston Medical Center (BMC) and the VA Medical Center (Boston & Bedford). Academic fellowship training at includes both common and unique training experiences by encompassing academic fellowships in pediatrics, internal medicine, and family medicine; the preventive medicine residency; and the addiction medicine fellowship. This collective training has many important advantages; it is our strong belief that fellows’ experiences are significantly enhanced by working with an interdisciplinary group of fellows and faculty.

The fellowship is funded by a number of sources including both hospital based funding and external grant funding from federal and private grants. The federal research training grants from AHRQ and HRSA that support the fellowship require that academic generalist fellows devote the majority of effort to research and research training. We believe that research scholarship is most effective in shaping policy and practice when scientists are skilled not only as researchers, but also as educators, advocates, administrators, and leaders. Thus, our research curriculum includes the development of skills in these areas, as well as in research methods. Because fellows enter with different experiences, strengths, and interests, each fellow follows a unique curriculum of learning experiences and objectives. However, key common aspects of the curriculum include dedicated time for research, a Master degree at the BU School of Public Health, weekly seminars to provide training in research, teaching, and public health topics; and clinical care.

The purpose of this manual is to help each fellow become familiar with program resources and expectations so that s/he can create and pursue a professional development plan to meet institutional and personal goals.


2. Fellowship Executive Committee

The executive committee creates the fellowship curriculum and serves as a resource for fellows for their individual fellowship requirements and career advice. Additionally, each fellow meets regularly with a member of the executive committee he/she chooses as a primary mentor.

Jonathan Berz, MD, MSc: Director, Preventive Medicine Residency
Caroline Kistin, MD, MSc: Director General Pediatric Fellowship
Michael Paasche-Orlow, MD, MA, MPH: Director, General Internal Medicine Fellowship
Robert Saper, MD, MPH: Director, Family Medicine Research and Fellowship
Alexander Walley, MD, MSc: Director, Addiction Medicine Fellowship

Megan Bair-Merritt, MD, MSCE: Executive Director, Center for the Urban Child and Healthy Family, General Pediatrics Fellowship
Tracy Battaglia, MD, MSc: Co-Director, Women’s Health Fellowship, Director, Women’s Health Unit
Ann Borzechni, MD, MPH: Bedford VA Liaison
Pablo Buitron de la Vega, MD, MS: Associate Program Director, Preventive Medicine Residency
Mari-Lynn Drainoni, MEd, PhD: Director, Health Services & Systems Research, BU School of Public Health
Megan Gerber, MD, MPH: Director, Women’s Health Fellowship at Boston VA
Marc LaRochelle, MD, MPH: Associate Director, GIM Fellowship
Karen Lasser, MD, MPH: Academic Seminar leader
Amy Linsky, MD, MSc: Boston VA Liaison
Karsten Lunze, MD, MPH, DrPH, FAA: PhD Research Liaison
Shwetha Sequeira, MD, MSc: Director, Teaching Seminars
Jenny Siegel, MD: Primary Care Internal Medicine Residency Liaison
Jessica Taylor, MD: Primary Care Internal Medicine Residency Liaison
Zoe Weinstein, MD, MS: Associate Director, Addiction Medicine Fellowship

Fellowship Advisory Committee

The members of the fellowship advisory committee serve as an impartial, confidential resource for fellows to assist with any and all questions or concerns about any aspects of the fellowship.

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<tr>
<th>Jay Orlander, MD</th>
<th>Jenny Siegel, MD</th>
<th>Angela Jackson, MD</th>
<th>Suzanne Mitchell, MD</th>
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<td>Linda Neville</td>
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<td>Caroline Kistin</td>
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<td>Pablo Buitron de la Vega</td>
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<td>Ann Borzecki</td>
<td>200 Springs Road (152)</td>
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<td>Megan Gerber</td>
<td>Director, Women’s Health Fellowship at Boston VA</td>
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3. Problems, Issues, and Concerns

The Executive Committee is dedicated to the success of the fellows enrolled in the program. Should any problems arise you can speak with your program director. If you would feel more comfortable speaking with someone else, you can reach out to members of the advisory board, another program director, or the program manager. You can also reach out to the BU Office of the Ombuds at www.bu.edu/ombuds.

These conversations will be kept confidential. If you bring up a concern that involves conduct of a faculty member, or a program systems issue, it may need to be shared with the program director and/or other faculty. You are encouraged to clarify confidentiality expectations with the faculty. They will also be encouraged to clarify this with you.

The members of the fellowship advisory committee serve as an impartial, confidential resource for fellows to assist with any and all questions or concerns about any aspects of the fellowship.
4. Fellow Expectations

Fellowship training includes clinical care, coursework at the Boston University School of Public Health, administrative tasks, and research. These different components may have requirements that must be completed before starting fellowship in July. Please contact Linda Neville (linda.neville@bmc.org) with any questions. There is a general checklists for all fellows and then a second checklist by department (IM, Ped, FM, Preventive Medicine, Addiction Medicine).

**Before You Arrive**

- All providers must have a National Provider Identifier (NPI) number. If you are coming from out of state make sure to update the address on your NPI profile to Massachusetts. Also make sure that the “taxonomy code” is correct for your specialty. If you already have a login and forgot your password, then either ask the hospital administrative coordinator or reset your password. [https://nppes.cms.hhs.gov/NPPES/StaticForward.do?forward=static.npistart](https://nppes.cms.hhs.gov/NPPES/StaticForward.do?forward=static.npistart)
- Massachusetts License: There are MANY required documents to be sent along with the license application including (but are not limited to) examination scores, evaluations, and postgraduate verifications. **The process is also slow so start early.** Preventive Medicine Residents may opt for a limited license, which is covered by the GME office. (Note that pediatric fellows are required to have a full license before taking the Pediatrics Boards.)
- All clinicians with a full license must register with DEA. If already registered, please inform the DEA of your change of address through the Address Changes forms.
  - [www.deadiversion.usdoj.gov](http://www.deadiversion.usdoj.gov)
- After obtaining a DEA, you must apply for a Massachusetts Controlled Substance Registration. For field 5, use your BMC office address if you’re out of state. For Field 8, choose all schedules (II – VI).
- Decide which Master’s program to enroll in: Epi, HSSR, or Health Sciences Education. Talk to your program director for guidance. You will need to submit your transcripts as well as MCAT or GRE scores for the application.

**Epi & HSSR:** apply through SOPHAS express, you will receive an email in February with instructions.
**Health Sciences Education:** apply through BUSM Graduate Medical Sciences at [https://bu-gms liaisoncas.com/applicant-ux/](https://bu-gms liaisoncas.com/applicant-ux/)

Sign up for Fall introductory classes: HSSR: PH 717 “Quantitative methods for public health” or Epi: BS 700 “Essentials of Biostatistics”, OR Fellows entering an MS programs this fall can take the not-for-credit biostats course through the PHX summer institute (starting June 10). The fellow can just speak to the program director if interested. Here is the link: [https://populationhealthexchange.org/learning-opportunities/summer-institute/essentials-biostats-s19/](https://populationhealthexchange.org/learning-opportunities/summer-institute/essentials-biostats-s19/)

Refer to BUSPH book MS Epi/HSSR section AND the “when the classes are offered” booklet available from SPH. Remember to try to plan ahead because some classes are only offered once every 2 years. Talk to current/past fellows for “editorials” on helpful classes and good professors. Also, you can check for the SPH course evals here on this website that are done by students: [http://dccweb.bumc.edu/SPHCourseEvaluation/Reports/](http://dccweb.bumc.edu/SPHCourseEvaluation/Reports/)

- Class registration and financial information is on BU Student Link: [www.bu.edu/studentlink](http://www.bu.edu/studentlink)
- Class syllabi, lecture notes, grades and assignments are often posted on Blackboard: [https://learn.bu.edu](https://learn.bu.edu)

- Complete HIPPA Security and Privacy Training [http://www.bu.edu/link/bin/uiscgi_doc_e_signature.pl](http://www.bu.edu/link/bin/uiscgi_doc_e_signature.pl)
- Sign up for Responsible Conduct of Research courses. All research trainees at Boston University must take an online course and attend four 2-hour workshop sessions of the Responsible Conduct of Research (RCR) Seminar series [http://www.bu.edu/orc/training/responsible-conduct-of-research/](http://www.bu.edu/orc/training/responsible-conduct-of-research/)
- Complete Conflict of Interest Training at [http://www.bu.edu/orc/training/conflicts-of-interest/](http://www.bu.edu/orc/training/conflicts-of-interest/)

http://www.bu.edu/studentlink
The First Week

☐ Attend Fellowship orientation
☐ Attend New Employee orientation
☐ Attend Epic training
☐ ID Badge: you will need to obtain an ID (both BU and BMC IDs) through the BU Medical Campus Public Safety Department, 710 Albany Street room 102, Monday through Friday, 7:00 AM to 9:00 AM and 12:30 PM to 3:00 PM (closed 9:00 AM - 12:30 PM).
☐ See Linda to order business cards
☐ Transportation:
  - Obtain a Parking Permit: 710 Albany Street, 7 am to 5 pm. Applications online at http://www.bumc.bu.edu/parking/forms/
  - Obtain a Monthly MBTA passes can be paid through automatic deduction from paychecks at the Transportation Office at 710 Albany St.
  - Bike Cage Access - $20 annually for card access only bike parking in either the East Newton bike cage or the bike cage behind the 710 Albany Garage

The First Two Months

☐ Setup INSPIR account (the BUMC Institutional Review Board) http://www.bumc.bu.edu/inspir/
☐ Meet with various faculty members regarding research interests, they do not have to be in the same department that you are in.
☐ Attend bi-weekly lunch meeting to review the curriculum and discuss which mentors to meet with.
☐ Complete Responsible Conduct of research Training http://www.bu.edu/researchsupport/compliance/responsible-conduct-of-research/

Transition from residency to primary care fellowship is a big change, and you can feel simultaneously like you have tons of free time and no free time at all when you start. Summertime is also atypical for the fellowship because there are no regular Tuesday morning fellowship activities, grand rounds/case of the week, and many faculty/fellows are away on vacation. You are also studying for boards.

Here is a helpful guide of things that are good to work on during the first summer:
  o Take time to reflect on residency experiences, review the literature, and think about what research area/research questions you would like to explore
  o Meet with lots of people to hear about their research. Networking is key!
  o Install and become familiar with reference management software such as Zotero, EndNote or Mendeley (ask the Library if you need help)

Once You Have a Mentor

You will have both an overall fellowship mentor and a primary research mentor that you should identify by mid-September. Your overall mentor is a faculty member who serves as your overall guide to the fellowship (typically the program director or executive committee member). Sometimes your overall mentor is the same as your research mentor though they are often two different people. You should have a primary research mentor identified by mid-September, this person does not have to be in the same department as you are, and may change depending on the progress of your project(s).

☐ Schedule weekly meetings with your primary research mentor
☐ Schedule biannual scholarship oversight meetings to occur by December 15 and May 31st. Faculty and fellows use this time to discuss and document their perspectives on achievements, challenges, and strategies to address
them; and to keep track of progress toward post-fellowship and career goals. The meeting should include the fellowship director, primary research mentor, other research mentors, and SPH mentors.

☐ Complete the Individual Development Plan, this is a “living” document that you will use throughout your fellowship. A copy of the IDP must be submitted to Linda along with a copy of your updated CV.

**Yearly Responsibilities**

- Tuesday morning didactics (9-1). Fellows are expected to attend 80% of the sessions. We encourage you to be an active participant in these seminars. If you will not be at the didactics, email the program director and Linda. The “Tuesday” Fellows seminar is made up of multiple different components, including the following:

  1. **Work in Progress:** fellows will present at least 2x per year. The presentations can range from informal to gather information or feedback to a polished talk that the fellow wants to practice prior to a national meeting.
  2. **Journal Club:** Lead one journal club session each year
  3. **Prevention Didactic Seminars:** These are required for the PMRs, though all fellows are encouraged to attend.
  4. **Academic Seminars**
  5. **Innovations in Primary Care**
  6. **QI series**
  7. **Inter-professional Collaboration**
  8. **Teaching seminar**

- One 4 hour continuity clinic per week (minimum)
- Departmental Research in Progress (RIP): present at least once a year
- Biannual Scholarship Oversight meetings with mentors to review your Individual Development Plan
- AHRQ trainees must submit at least one abstract the AHRQ NRSA conference, all other trainees are encouraged to attend the meeting. This is held the day before the Academy of Health annual meeting [http://www.academyhealth.org/](http://www.academyhealth.org/)
- Attend one national conference a year
- Attend Orientation each year (right before or after July 4)
- Attend Graduation each year (first or second week of June)

**To be completed by Preventive Medicine and Addiction Medicine trainees**

- Complete at least one QI project (for ACGME fellows)
General Internal Medicine Fellowship

Before You Arrive

- BMC Onboarding (for training grant stipend)
  - The external link to apply for the fellowship is [http://bmc.org/about/careers.htm](http://bmc.org/about/careers.htm), we will send you the position number.
  - You will receive an email to give you access to the BMC Workday website for the onboarding documentation and benefit selection
  - You will also receive an email to give you access to the BMC credentialing process. Make sure to take a good look at the instructions section; this process can take many months so start early. [https://credential.bmc.org/practitionerhomepage/navigate_main.aspx](https://credential.bmc.org/practitionerhomepage/navigate_main.aspx)
  - There is an internal website that details onboarding. Please pay attention to the following [http://internal.bmc.org/hr/NewEmployees.htm](http://internal.bmc.org/hr/NewEmployees.htm). Please pay particular attention to the Employee Compliance Link.
  - Get your employee physical (bring your immunization records; you’ll need to do a two-step PPD, which requires two performed within at least 9 months of each other, and the second needs to be read prior to your starting work).

Paychex Onboarding (for clinical work)

- VA Onboarding: The credentialing process at the VA can takes 3-6 months, so get started as early as possible. If there is a delay with credentialing, fellows hired through the VA will not have health insurance and will not get paid until credentialing is complete.
  - Bedford: Work with Ionie Ponde about administrative details and training. You will also need to be research credentialed -this can also take a while and is a separate process. Contact in Boston: Mary Grace Carini 857-364-5544. Mary.carini@va.gov

The First Week


  VA employees [https://www.opm.gov/healthcare-insurance/](https://www.opm.gov/healthcare-insurance/)

  COBRA: There may be a gap between the end of residency and when your benefits kick in, you are allowed a two month gap before you are charged with the ACA tax penalty. [https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap](https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap)

The First Two Months

- Sign up for teaching: ICM and IP teaching in Fall or Winter sessions; email comes out in August to sign up.
  - Optional: inpatient co-attending, precepting residents and medical students

Yearly Responsibilities

- Present at 1 departmental Research in Progress meeting (job talk for 2nd/3rd year fellows), occurs every other Tuesday 12-1pm in Crosstown conference room (altanates with CREST noon conference)
General Academic Pediatric Fellowship

Before You Arrive

□ BMC Onboarding
- Here is the external link to apply for the fellowship (we will send you the position number)
- You will receive an email to give you access to the BMC Workday website for the onboarding documentation and benefit selection
- You will also receive an email to give you access to the BMC credentialing process. Make sure to take a good look at the instructions section; this process can take many months so start early.
  https://credential.bmc.org/practitionerhomepage/navigate_main.aspx
- There is an internal website that details onboarding. Please pay attention to the following
  http://internal.bmc.org/hr/NewEmployees.htm. Please pay particular attention to the Employee Compliance Link.
- Rachael Charles is your contact person for all credentialing questions. Please begin this early and respond to emails as the process takes many months.
- Get your employee physical (bring your immunization records; you’ll need to do a two-step PPD, which requires two performed within at least 9 months of each other, and the second needs to be read prior to your starting work).

□ Sign up for teaching, BMC Birth Place (newborn nursery): Fellows generally cover ~3 weekends of newborn nursery (with some exceptions when research fellows may serve as ward attending). During this time, they supervise residents and medical students.

The First Week

□ Sign up for health benefits
  COBRA: if you have a gap between fellowship and your next position, you are allowed a two month gap before you are charged with the ACA tax penalty. https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap

Yearly Responsibilities

- Present at 2 departmental Research in Progress meeting; occur every Monday 12:30-1:30pm in Vose Hall 3rd floor conference room
- Pediatric trainees are expected to apply for at least 1 grant over the course of the fellowship
Family Medicine Fellowship

Before You Arrive
- BU Onboarding: the administrator will contact you regarding the documents needed

The First Week
- Sign up for health benefits: BU employees [http://www.bu.edu/hr/health-wellness/](http://www.bu.edu/hr/health-wellness/)
  - COBRA: if you have a gap between fellowship and your next position, you are allowed a two month gap before you are charged with the ACA tax penalty. [https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap](https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap)

The First Two Months
- Sign up for teaching
  - First year: half day teaching (~40 sessions/yr.), IP& ICM fall or spring; FM clerkship: small group teaching, simulation, Geriatrics advanced care planning workshop
  - Second year: Half day precepting continuity clinic South Boston Health Center
  - Inpatient: 2 weeks rounding/team teaching, sometimes on PA teams
  - Optional: additional moonlighting shifts

Yearly Responsibilities
- Present at 1 departmental Research in Progress meeting, occur every Tuesday 3:30-4:30pm
ACGME Programs (Addiction & Prevention)

Before You Arrive
- BMC Onboarding: You will be hired through the Graduate Medical Education Office. You will receive a link to New Innovations with a checklist and timeline for all the required documents you need to complete. You may opt for a full license in order to moonlight at your own expense. Note that pediatricians are required to have a full license before taking the Pediatrics Boards. If you opt for a full license, you will be responsible for obtaining both the federal and state DEA prior to starting.
- Discuss with program director if you will have clinics at the VA. If so complete the VA onboarding paperwork.

Duty Hours
You must log and sign off on duty hours weekly on New Innovations https://www.new-innov.com/login/
- Linda will build your block schedules. You will need to sign off on hours by the end of the month, please make sure there are no short-break gaps or conflicts.
- If you have to change an entry, or manually log your time:
  - For classes and didactics and lectures log as Education
  - For clinics: log as patient care
  - For vacation: use the vacation logger tool
  - For everything else log as Research

The First Week
- Attend GME orientation
- Sign up for health benefits: http://www.bu.edu/hr/health-wellness/
  COBRA: if you have a gap between fellowship and your next position, you are allowed a two month gap before you are charged with the ACA tax penalty. https://www.healthcare.gov/exemptions-tool/#/results/2016/details/short-gap
ADDICTION MEDICINE

The First Two Months
- Review the list of addiction medicine faculty and their interests and schedule meetings with faculty you are interested in meeting or working with
- Meet with the program directors to choose and plan a scholarly project for the year

Yearly Responsibilities
- Present at 1 CARE Case Conference, and one CARE journal club; if enrolled for 2 years, also present 2-3 times at the Fellows Work in Progress
- Attend AMERSA & ASAM
- You will be required to take the In Service Exam
  - Do not study since it is meant to gauge your existing knowledge
  - Look for an email from Linda to set up taking the exam, it is done online and takes a few hours
- By the end of the year you must have completed the IHI patient safety, Opioid, and QI modules in New Innovations in order to graduate.

You are expected to become board certified in Addiction Medicine
- Register for the addiction medicine boards at https://www.theabpm.org/become-certified/subspecialties/addiction-medicine/
**PREVENTIVE MEDICINE**

**The First Two Months**
- If interested, sign up for teaching
- Review the list of clinical electives, you need 80 sessions per year. Work with Linda to schedule
- Start thinking about governmental public health agency practicum sites

By the end of the first year you must have completed the online IHI patient safety, Opioid, and QI modules in order to advance to the second year.

**Yearly Responsibilities**
- A continuity clinic or urgent care session per week plus electives to complete a total of 80 half-day clinical sessions/year. Of these 80 sessions you need 8 occupational health sessions, 10 integrative medicine sessions and present an integrative medicine case conference (counts as 3 sessions)
- Present at 1 departmental Research in Progress meeting (job talk for 2nd/3rd year fellows); pediatric residents present at 2 departmental RIP/year
- Pediatric trainees are expected to apply for at least 1 grant over the course of the fellowship
- American Cancer Society (ACS) designated fellow must participate in an ACS curriculum and take one cancer epidemiology class at the SPH
- Attend one Massachusetts Health Policy Forum in January
- Present one USPTF update at a Prevention Didactic Series session over the two years
- Attend the annual meeting of the American College of Preventive Medicine (ACPM) once and another national conference both at least once
- Each year of the fellowship, you will be required to take the Board In Service Exam in August
  - Do not study since it is meant to gauge your existing knowledge
  - Look for an email from Linda to set up taking the exam, it is done online and takes a few hours
- Online CDC modules in Outbreak Investigation and Surveillance

**To be completed within the two years**
- Participate in an Emergency Preparedness curriculum – includes planning sessions and a hospital drill OR take the Emergency Preparedness class 717 through BUSPH
- SPH course work in Environmental Health OR NextgenU.org course
- SPH course work - Introduction to Health Policy if an Epi major
- 320 hour governmental public health practicum and practicum presentation

**To be completed at the end of training**
**You are expected to become board certified in Preventive Medicine**

Documents and Verifications required:
- Medical License Verification (ABPM will confirm after application)
- Clinical Training Program, Internship, or PGY1 Certificate
- Graduate Coursework Transcript
- Residency Program Verification
- Clinical Training Verification
Handoff Policy & Transitions of Care: ISBAR

The method in which patient information is communicated between caregivers during a hand-off is vital to overall patient safety. An organizational structure that comprises a standardized patient hand-off process ensures that all pertinent information is communicated between caregivers at the time of patient transfer from one caregiver to another.

These handoffs or transfers of responsibility occur hospital-wide and include examples such as:

- Resident to Resident transfer of on-call responsibility
- Attending to Attending transfer of on-call responsibility
- Admission from ED to Medical/Surgical Physician Team
- Nurse to Nurse change of shift reports
- Transfers of patient from Unit to Unit
- Nurse to physician reports/hand-offs
- Transporter to Ancillary Services

In complying with The Joint Commission National Patient Safety Goal 2E, the following characteristics comprise effective hand-offs:

- Interactive and allow the opportunity for questioning between the caregivers (giver and receiver) of patient-related health information.
- Include accurate information regarding the patient’s care, treatment, services, condition, medical history, and anticipated changes.
- In an area where there are limited interruptions to ensure all information is communicated clearly.
- Include a process for verification of the information received such as repeat back.

Boston Medical Center has adopted “ISBAR”, which stands for Introduction, Situation, Background, Assessment, and Recommendation, as a method of standardized hand-off communication. ISBAR falls within the SBAR family of industry best practices. The format acts as an acronym for ensuring that all pertinent information is exchanged during the hand-off process. Guidelines include:

I (Introduction): Introduce the patient (ex. name, age, gender, communication limitations etc.).
S (Situation): State the patient’s present condition and any additional concerns.
B (Background): Provide any relevant background information on the patient.
R (Recommendations): Provide the receiving caregiver of recommendations you may have.

The final step in the process is the opportunity to ask and respond to questions.
# Suggested Timeline

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Required Activities

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<th>Academic Seminars</th>
<th>CREST seminars occur on the second and fourth Tuesday of each month during the academic year from 12pm-1pm (lunch is provided). All fellows are expected to attend. CREST sponsors a VERY useful full-day session each June by the Grant Writers’ Seminars and Workshops group. If you can’t make it, you can order the materials through the website.</th>
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| Research Projects:  
  • For primary care academic fellows, PMR, and addiction fellows doing a research year:  
    1) secondary data analysis or systematic review project AND  
    2) primary data collection project.  
  During the course of fellowship, most fellows do ~2 research projects. In general, it is good to have one primary data collection project (which is higher risk but valuable experience) and then either a systematic review or secondary data analysis project. All fellows conduct research and educational activities to develop their skills, a portfolio of evidence of their accomplishments, and preliminary work to serve as the foundation for future endeavors. Fellows are expected to work closely with their mentors to develop novel, feasible research questions and designs. A word of caution: research projects always take far longer than anticipated. Therefore, it is critically important to start thinking about deadlines and feasibility from the start of fellowship. It is often helpful to have very clear and specific small deadlines within the larger research project, and to be aware of deadlines to submit abstracts.  
  Expectations: In applying for post-fellowship faculty positions, publications are the ‘coin of the realm’ as evidence of a fellow’s potential as a researcher. It therefore is advisable to aim for manuscript submission during fellowship. Please give mentors/co-authors plenty of time to read these manuscripts prior to submission.  
  Research Projects Early in the Fellowship Program:  
    • Residency Program Research: We encourage physicians who enter our program shortly after completing residency training to submit manuscripts from their residency research project within the first few months of fellowship training.  
    • Involvement in Ongoing Research: Fellows can also join the investigative teams of ongoing research projects. In joining an ongoing project, it is essential to establish your role in the work, your role in authorship, and the expected timeline for publications. You need to focus on projects where your role can be clearly defined and where the plan is for you to be a co-author during the course of your fellowship. Consult with your program director in weighing the pros and cons of opportunities.  
  The Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC) is an interdisciplinary research and development organization with the goal of creating a learning healthcare system within VA through application of research resources and methodologies to important clinical problems.  
  The Center for Healthcare Organization& Implementation Research (CHOIR) program is an interdisciplinary research group at the VA focused on improving Veterans’ health outcomes by developing, studying, and applying evidence-based practices that will be widely implemented and sustained. |
• Early in fellowship, you will also develop your own questions and projects
• Design and conduct at least 2 of these projects
• Submit 1 manuscript by end of year 1
• Submit abstract in first year (fall/winter) of secondary data

Fellows Work in Progress

All fellows are expected to attend these sessions and present at least twice a year. You are not expected to present a finished work or a publication. Quite the opposite - it would be better to present a series of hypotheses and analysis plans than a published paper. Do not be worried that you will not have enough, because just about any idea is enough.

Suggested Activities

Grand Rounds/Case of the Week

• Generally, encouraged to attend to maintain clinical knowledge and can obtain CME credit. Grand rounds/case of the week follow the academic calendar (do not occur over the summer)
• Pediatrics: Grand Rounds Thursdays 8-9 am; Case of the Week Friday 8-9 am.
• GIM: Grand Rounds Wednesdays 8-9 am
• Family Medicine: Grand Rounds Tuesdays at 12 pm in the FGH building; Inpatient Conference Thursdays at 12 pm.

Attend grant writing course

Courses are offered through the Professional Development Office, the departments as well as CREST. Grant writing is also a requirement for some SPH courses.

Grant Applications

Fellows are encouraged to submit one grant proposal during the course of your fellowship. Before submitting a grant, it must first be sent to the departmental grant coordinator for review, as the grant and budget will have to be submitted to grants administration at least 7 days prior to its due date.

Below is a list of good grant opportunities for fellows.

BU resources:
http://www.bu.edu/research/information-for/researchers/funding-opportunities/pivot
http://catalyst.harvard.edu/services/sgws/

BMC grants development: Kirsten Hinsdale

Medicine and Public Health
http://www.massmed.org/Medical-Students/Scholarships-and-Financial-Resources/Massachusetts-Medical-Society-Scholarships-and-Grants/#.VsYwHrQrKUk

Depending on fellow's scope
http://www.mwhealth.org/Apply/Grants
http://fcd-us.org/our-work/young-scholars-program
https://www.aacc.org/community/grants/research
http://mass-oncologists.org
https://www.damonrunyon.org/for-scientists/application-guidelines/clinical-investigator

Pediatrics
http://www2.aap.org/sections/ypn/r/funding_awards/catch.html
http://www2.aap.org/catch/funding.htm
https://www2.aap.org/sections/ypn/r/resident/pdfs/sore_resources/SummaryGrantOpps.pdf
http://www2.aap.org/sections/ypn/r/funding_awards/research_grants.html
Personal and Professional Wellbeing

BMC has a number of initiatives which aim to address the learning and working environment in which our fellows train. There is a “hot button” on the intranet home page in which all resources available to trainees (emotional health, physical health, occupational health, financial health, etc) are centrally housed, two mental health providers who have particular expertise and significant experience in providing assistance to trainees, a CMO-resident led committee which has established a partnership to tackle inefficiencies in our operations and seeks to reduce the number of non-physician tasks performed by trainees across the campus, and a peer-peer support program in which individuals in many departments were trained to support their colleagues. On a smaller scale, there is a pharmacy delivery pilot in which medications are delivered directly to residents’ workplace (or their home) in cases in which getting to a pharmacy during working hours may be difficult, and a ‘resiliency training’ program which has been rolled out to several residency programs. In addition, the institution participates in a consortium of several academic medical centers (administered via Stanford) in which our trainees and faculty are surveyed on topics related to wellness, burnout, and resiliency.

A. Tools of self-assessment
In addition to the BMC survey described above, fellows are encouraged to use the Mayo Well-Being Index. At the beginning of the year you will receive an email with a unique invitation code. Your responses are not being collected by the program. The Well-Being Index is a series of 9 questions and your responses will be compared to other fellows. The website also provides a general overview of factors influencing their health and suggestions as to how to promote resiliency and reduce distress, as well as information about national resources and key publications.

B. Identification of burnout, depression & SUD
1. Fatigue and sleep deprivation
Facts:
- Individuals may vary somewhat in their tolerance to the effects of sleep loss, but are not able to accurately judge this themselves.
- Human beings need 8 hours of sleep to perform at an optimal level.
- Getting less than 8 hours of sleep starts to create a “sleep debt” which must be paid off.
- Sleep needs are genetically determined and cannot be changed.
- Human beings do not “adapt” to getting less sleep than they need.
- Although performance of tasks may improve somewhat with effort, optimal performance and consistency of performance do not!
- A decline in performance starts after about 15-16 hours of continued wakefulness.
- The period of lowest alertness after being up all night is between 6am and 11am (eg, morning rounds).
• Studies show that sleepy people underestimate their level of sleepiness and overestimate their alertness.
• The sleepier you are, the less accurate your perception of degree of impairment.
• You can fall asleep briefly (“microsleeps”) without knowing it!

Recognize the Warning Signs of Sleepiness
• Falling asleep in conferences or on rounds
• Feeling restless and irritable with staff, colleagues, family, and friends
• Having to check your work repeatedly
• Having difficulty focusing on the care of your patients
• Feeling like you really just don’t care

Alertness Management Strategies
• Some sleep is always better than no sleep.
• At what time and for how long you sleep are key to getting the most out of napping
• Napping Pros: temporarily improve alertness.
• Types: preventative (pre-call) operational (on the job)
• Length: short naps: no longer than 30 minutes to avoid the grogginess (“sleep inertia”) that occurs when you’re awakened from deep sleep; long naps: 2 hours (range 30 to 180 minutes)
• Timing:—if possible, take advantage of circadian” windows of opportunity” (2-5 am and 2-5 pm);—but if not, nap whenever you can!
• Cons: sleep inertia; allow adequate recovery time (15-30 minutes)
• Bottom line: Naps take the edge off but do not replace adequate sleep.
• Recovery from on-call sleep loss generally takes 2 nights of extended sleep to restore baseline alertness.
• Recovery sleep generally has a higher percentage of deep sleep, which is needed to counteract the effects of sleep loss.

Recognize Signs of Driving While Drowsy
• Trouble focusing on the road
• Difficulty keeping your eyes open
• Nodding
• Yawning repeatedly
• Drifting from your lane, missing signs or exits
• Not remembering driving the last few miles
• Closing your eyes at stoplights

For more information go to www.aasmnet.org/MEDSleepprogram.htm

2. Stress
Stress at tolerable levels can serve as a great motivator
• Responses to stress are highly individual
• Stress that exceeds the adaptive capacity of the individual becomes destructive
• What one physician experiences as stimulating, another can experience as overwhelming and intimidating • Fellows may be unable to use typical successful coping strategies (e.g., they may have moved to your community, leaving behind a network of family and friends; work schedules may interfere with exercise or a spiritual connection such as a temple, mosque, or church)
SIGN OF STRESS
Basic physical, emotional, and behavioral signs of stress signal that potentially severe problems may soon occur.
Obviously, no one person will manifest all the possible symptoms that indicate stress, nor is the list comprehensive. But two or three together may be enough to signal the need for intervention. Worse, in an attempt to cope with the effects of stress, fellows may turn to maladaptive behaviors. Unfortunately, maladaptive behaviors neither reduce the misery associated with stress nor resolve the stressful situation. In fact, they eventually may result in physician impairment due to the abuse of alcohol or other legal or illegal substances, any one of which is sufficient to hinder patient care.

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<td>• Muscle tension</td>
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<td>• Myalgia, neck pain</td>
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<td>• Cold/sweaty hands</td>
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<td>• Facial tics</td>
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<td>• Fatigue</td>
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<td>• Tension headaches</td>
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<td>• Indigestion</td>
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<td>• High blood pressure</td>
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<td>• Ulcers</td>
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<td>• Heart palpitations</td>
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<td>• Back or joint pain</td>
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<td>• Anxiety</td>
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<td>• Fear</td>
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<td>• Irritability</td>
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<td>• Hopelessness</td>
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<td>• Helplessness</td>
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<td>• Impatience</td>
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<td>• Depression</td>
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<td>• Nervousness</td>
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<td>• Guilt</td>
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<td><strong>Behavioral</strong></td>
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<td>• Change in appetite</td>
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<td>• Sleep disturbance</td>
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<td>• Forgetfulness</td>
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<td>• Angry outbursts</td>
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<td>• Aggression</td>
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<td>• Decline in productivity</td>
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<td>• Social withdrawal</td>
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<td>• Change in sexual interest</td>
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<td>• Increased use of caffeine, tobacco, alcohol, or drugs</td>
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<td>• Indecisiveness</td>
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<td>• Loss of concentration</td>
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Stress management techniques include:
- Exercise
- Relaxation
- Other Enjoyable Activities
- Supportive Relationships
- Emotional Expression

3. Depression
Depression is as common in physicians as it is in the rest of society. It is also a major risk factor for suicide. Physicians commit suicide at higher rates than the general population. Women physicians are at particular risk. Identifying or diagnosing depression is not always simple and, as a consequence, it often goes unrecognized. Certain factors can mask the clinical presentation. Depression can also hide behind physical symptoms. And, finally, it can cause social and sexual problems, sleep disturbance, and substance abuse. Except in an emergency, no physician should treat a colleague or family member, for depression or anything else. The criteria below are provided only to help recognize the signs and symptoms of depression.

1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful)
2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)
3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day
4. Insomnia or hypersomnia nearly every day
5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
6. Fatigue or loss of energy nearly every day
7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

4. Substance use disorders
Studies estimate that the prevalence of chemical and alcohol abuse for physicians in the US is similar to that of the general public. Alcohol is the number one substance abused by physicians, as it is in society as a whole. Alcohol is, followed by marijuana, opiates—mostly prescription opiates, stimulants, and cocaine. Unfortunately, early detection is difficult. Physicians with a SUD can continue to function at high levels for a long time, and problems are usually only identified at a late stage, when performance becomes markedly impaired. Work is usually the last area to suffer. Alcohol addiction is especially hard to determine. Not only is alcohol a legal substance, but its use is, generally, socially acceptable and even encouraged through medical traditions such as “liver rounds.” The difficulty resides in separating use from misuse or abuse. Risk factors include: stress at home and/or at work; emotional problems, self-treatment of pain, abnormal sleep patterns, and chronic fatigue; psychic stimulation; family history of substance use disorders. The signs and symptoms of SUD include:
- Isolation and withdrawal from family, friends, church, leisure activities
- Erratic or violent behavior in the home
- Sexual dysfunction and/or promiscuity
- Legal problems, especially driving convictions
- Separation or divorce from partner
- Compulsions (e.g., excessive spending, gambling)
- Inappropriate behavior at social functions
- Deterioration in personal hygiene, clothing, and dressing habits
- Accidents, falls, motor vehicle collisions
- Recurrent tardiness
- Rounds very early or very late (to avoid others and escape scrutiny)
- Behaves inappropriately during rounds
- Shows diminished performance (poor quality of presentations, charting, dictations)
- Absent, often without a viable excuse
- Alters behavior
- Becomes the subject of “hospital gossip”
- Has alcohol on breath
- Slurs speech and/or has pinpoint pupils

Adapted from www.lifecurriculum.info

5. Unprofessional behavior & confidential process for reporting and addressing concerns
The GME office had set up an anonymous reporting site https://www.bmc.org/medical-professionals/graduate-medical-education-gme/violation-reporting that allows anyone with concerns regarding the work or treatment of Boston Medical Center trainees. In addition to residents and fellows, any BMC employee or a resident’s family member can make the report. When this form is used, BMC guarantees that no demographic information such as IP address, workstation ID, or any other identifying information is captured, and the reporter will remain anonymous. The secure information provided in this form will be immediately routed to the Designated Institutional Official (DIO) Jeffrey Schneider, MD, for investigation and implementation of corrective action as warranted.
**Offboarding**

- Cancel MBTA pass by May 31
- Ensure all clinical notes are signed off
- Turn in pager
- Turn in keys
- Turn in ID badge
- BMC employees- email will be deactivated on the last day of work
- Update address in Workday, BU Works and New Innovations
5. Curriculum

Curriculum Requirements
Numerous federal training grants from the Agency for Healthcare Research and Quality (AHRQ) and from the Health Resources and Services Administration (HRSA), along with institutional funding, support the fellowship training program. The program is two to three years in length; a number of trainees stay in the program for three years. Eighty percent of our graduates go on to pursue careers in academia.

The AHRQ NRSA (T32HS022242) and HRSA NRSA (T32HP10028) training programs are similar but not identical (note: program requirements are particularly different for preventive medicine and addiction medicine because they are ACGME-accredited). Program directors in Peds, FM or GIM will occasionally reach out to you with program-specific requirements. Since the program is funded by grants, there may be changes in requirements that are not reflected in this handbook. The leadership will try to disseminate changes as soon as they are notified of any new awards. Any changes in the curriculum will support the competencies that are outlined here.

The fellowship program tracks (primary care academic fellowships, preventive medicine residency, and addiction medicine fellowships) have some differences in their requirements, based on accreditation status and funding sources for the fellowships. In general, we recommend becoming familiar with the key aspects of your specific training grant as these aspects can influence research projects, classwork and conference attendance.

The primary objective of the academic fellowship is to develop research competency, so that trainees can become successful independently supported physician-scientists; PMR fellows gain similar competency, but also gain skills in public health and population medicine; two-year Addiction Medicine fellows gain similar research competency, but also develop clinical competency in the first year that prepares them for Addiction Medicine Board certification. Clinical addiction medicine competency and leadership is the primary objective for one-year clinical Addiction fellows; a scholarly academic project, focused on research, quality improvement, or program or curricular innovation and implementation, is required during the first year as part of developing clinical and leadership competency. The development of research competency is accomplished through intensive mentoring and course work at either the Boston University School of Public Health in pursuit of a Master of Science of Epidemiology or Health Services and Systems Research, or the Boston University Graduate Medical Sciences Master of Health Sciences Education. Research seminars, academic seminars (CREST K30 BUSM training program), completion of both directed and independently developed research projects, teaching seminars, journal clubs and attendance at regional and national research/scientific meetings are also part of the core curriculum.

The competencies, goals and objectives listed below are what we believe all fellows should be exposed to and should be used as a roadmap to plan out your educational goals. Depending on your track and research projects, you may gain skills in one competency over another. Please review this list with your mentor and highlight the skills you would like to focus on during your fellowship. You will then review this document and your IDP during your scholarly oversight meeting to ensure you are meeting the goals you set at the start of fellowship.
Academic Primary Care Fellowship Competencies, Goals and Objectives

1. Research Skills
   a. Research design
   b. Clinical epidemiology and evidence-based medicine
   c. Statistical analysis
   d. Health services research
   e. Responsible conduct of research

2. Teaching Skills
   a. Techniques for teaching learners of different levels
   b. Evaluation of learners

3. Communication Skills
   a. Scientific communications
   b. Business communication
   c. Networking

4. Professionalism
   a. Habit of life-long learning
   b. Career planning
   c. Self-evaluation

5. Leadership and Management Skills
   a. Academic leadership and administration
   b. Health care organization and delivery
   c. Advocacy

Modified from:
http://academicpeds.org/aboutUs/about_AGPCFM
http://www.nationalpostdoc.org/?CoreCompetencies+
AHRQ LHS Competency Domains
Domain 1: Research Skills

A. Research Design

GOAL: Plan research projects that derive from testable research questions and/or hypotheses, and use sound methods for sampling, measurement, and analysis.

Objectives:
1. Formulate feasible research questions that are based in the literature and generate hypotheses appropriate to those questions.
2. Describe conceptual or theoretical framework that supports the research question.
3. Clearly define variables for each hypothesis, and identify those variables as independent variables, dependent variables, covariates, mediators, or effect modifiers.
4. Select a study design that is appropriate to answer the selected question.
5. Develop sampling and recruitment strategies for a specified study population.
6. Identify and use methods to maximize the reliability and validity of research measurements, including selection of appropriate types of variables, and use of methods to assess and enhance reliability and minimize bias.
7. Define the significance of study results, including statistical and clinical significance, and the likelihood that the study results represent the truth.
8. Demonstrate knowledge of the design and implementation of randomized controlled trials.
9. Demonstrate knowledge of the design and implementation of observational studies.
10. Describe problems with inferring causality from results of observational studies and methods to enhance causal inferences.
11. Identify common implementation issues in clinical studies, and describe the role of pilot testing and quality control in the implementation of research protocols.
12. Use research databases to collect study information, using appropriate designs, software applications, and methods to minimize error in data entry.

B. Clinical Epidemiology and Evidence-Based Medicine

GOAL: Use the principles of clinical epidemiology and evidence-based medicine to critically appraise the medical literature and inform study design.

Objectives:
1. Describe and define the principles of clinical epidemiology, including incidence, prevalence, risk, prevention, diagnosis, harm, and prognosis.
2. Assess the validity and strength of results of studies:
   - Interventions for therapy and prevention
   - Diagnostic tests
   - Meta-analysis and systematic reviews
   - Surveys
   - Observational Studies
   - Secondary databases (see Appendix A)
3. Describe the precision of estimates of results of studies, using p values and 95% confidence intervals.

C. Statistical Analyses

GOAL: Utilize statistical techniques to organize information and make valid inferences from the results of data collection.

Objectives:
1. Understand and apply fundamental biostatistical and epidemiological skills (see Appendix B).
2. Basic skills in statistical programing, ideally intermediate skills.
D. Health Services Research GOAL: Using principles of HSR and implementation science to design and interpret research studies in health care delivery.

Objectives:
1. Familiarity with the following key health services and outcomes research concepts:
   - Organization of health care in the US
   - Financing of health care in the US
   - Access to care
   - Quality of care
   - Cost of care
   - Outcomes
   - Insurance and benefits design
   - Health systems design
   - Vulnerable populations
   - Equity and disparities
   - Social and behavioral determinants of health
2. Evaluate the strengths and weakness of all of the following research designs and apply one or more of the following research designs:
   - Quasi experimental design
   - Qualitative research (see appendix B)
   - Implementation and dissemination science
   - Secondary databases (see appendix C)
3. Understand the structure and functions of complex healthcare systems:
   - Describe and give examples of key differences among health care service delivery models (e.g., HMO, Medicaid HMO, PPO, IPA).
   - Describe the concept of system integration, and define the roles of various components of the health care system (e.g., community health centers, academic health centers, private practices, home care agencies).

E. Responsible Conduct of Research. Conduct investigations and research-related activities that are professional; ethical; respect the rights, privacy and interests of human research subjects; and provide special protections for children and other vulnerable populations.

Objectives:
1. Acquire, manage, and share data collected for research purposes in a responsible and professional manner, maintaining high standards for protecting confidentiality, avoiding unjustified exclusions, sharing data, and adhering to copyright law.
2. Publish research findings in a responsible, collaborative, legal and ethical manner, assuring that published work is accurate, complete, clear, unbiased and free of misrepresentation; appropriately assigns authorship; fairly acknowledges the contributions of others; and clearly attribute words or ideas of others to the original authors.
3. Clearly communicate with collaborators about the shared research and terms of collaboration.
4. Conduct research involving human subjects in an ethical manner that includes respect for persons, beneficence and justice.
   - Treat individuals as autonomous agents and provide protection to those individuals with diminished autonomy.
   - Conduct research in such a way as to maximize possible benefits and minimize potential harm.
- Select research subjects in an unbiased manner, neither exploiting populations that may be easily available or compromised, nor excluding patients who may benefit.
- Obtain informed consent from research subjects that is given freely and is based on an understanding of risks and benefits.
- Maintain confidentiality and privacy of data and patient records.
- Describe the role of institutional review boards (IRBs), and properly prepare consent forms, applications, and protocol amendments to IRBs.

5. Provide special protections in research studies to vulnerable populations including children.
6. Define research misconduct and differentiate between error and misconduct; describe procedures that protect informants (“whistleblowers”) and subjects of allegations; and describe the responsibilities of research institutions and federal agencies in the inquiry, investigation and adjudication of alleged research misconduct.
7. Define conflict of interest, financial or other obligations, and describe requirements for reporting conflicts to institutional authorities.

Domain 2: Teaching Skills

A. Teaching GOALS: Effectively teach students, colleagues and other professionals, and lay groups, assessing learner needs, providing timely and constructive feedback, developing plans for improvement, and using sound evaluation tools and processes.

Objectives:
1. Apply principles of adult learning theory to meet the specific needs of individual learners or groups of learners as a routine part of the educational process. These include:
   - Assess the level of the learner
   - Actively involve learners in the learning process
   - Encourage mutual feedback
   - Teach information in the context within which it will be applied, emphasizing the application as much as the acquisition of knowledge
   - Encourage learners to be self-directed and to identify and pursue their own learning objectives
2. Describe one’s own preferred teaching/learning style and consider how this may affect learners with different learning styles; offer learners choices when possible, including active learning options.
3. Identify in each teaching encounter your educational objectives and the learner’s educational needs; use this information to direct your selection of content and teaching methods.
4. Develop a repertoire of teaching and supervision methods that enhance a learner’s knowledge base, clinical skills, and attitudes/behaviors, including:
   - Bedside teaching
   - Teaching during work rounds
   - Lectures or case-based discussions using multimedia presentation methods
   - Role modeling for learners, with articulation of thought processes
   - Written instruction
5. Provide learners with sensitive, timely, constructive and behaviorally specific feedback, and follow-up by helping them develop plans to improve in identified areas of weakness or concern.
6. Evaluate the performance of learners based on pre-defined criteria, using evaluation methods that match the performance task.

B. Evaluation of Learners GOAL: Develop and use sound methods and processes to evaluate learners, based on predefined learning goals and objectives.
Objectives:
1. Describe the typical effects of evaluation on the motivation and learning priorities of learners. Explain how learners benefit from knowing their learning goals at the start of an educational experience.
2. Define the primary qualities of sound learner evaluation methods, including validity, reliability, generalizability, feasibility, and usefulness to the learner.
3. Describe the key features of a sound evaluation form (e.g., specificity of content, explicit criteria for quality ratings, provision for written comments, and knowledgeable use by evaluators).
4. State the importance of feedback as an essential element of the evaluation process, explaining how frequent and timely formative evaluation and follow-up promote learners' success at the time of summative evaluation.

C. Curriculum Design GOALS: Develop a draft curriculum for either an educational program or to implement research findings.

Objectives:
1. Describe the six step process (Kern) of curriculum development.
2. Analyze the importance of the sequence when developing materials.
3. Write objectives to employ action verbs.

Domain 3: Communication Skills

A. Scientific Communication GOAL: Summarize, present, and publish the results of research, in order to communicate, teach, and disseminate knowledge, using standard oral and written formats.

Objectives:
1. Write and submit an abstract for presentation to a regional or national meeting.
2. Prepare and present research results for oral and poster presentations.
3. Prepare and submit a manuscript for publication in a medical journal or book.
   a. Identify the specific sections of a manuscript that is being prepared for publication in a medical journal, and describe the content of each section.
   b. Demonstrate the proper formatting of numerical results, including issues of numerical precision and methods of summarizing numerical data, reporting confidence intervals and p values, and reporting results of statistical analyses.
   c. Demonstrate the proper formatting of bibliographic information in a scientific manuscript.
   d. Choose the medical, psychological, or educational journal best suited for the publication of different types of research results.
4. Describe the uniform requirements for manuscripts submitted to medical journals and the specific requirements of common journals.
5. Describe how to address the concerns of journal reviewers and editors and to appropriately respond to their comments.
6. Identify funding priorities of private and government funding agencies and prepare and submit a grant proposal for funding.
7. Become skilled at using verbal and non-verbal communication skills to manage and motivate people and win their support for your agenda.

B. Business & Networking Communication GOALS: Use communication skills for advancement of career and organization.

Objectives:
1. Communicate your ideas effectively to a variety of audiences, including community-based organizations, legislators, the media, and other key stakeholders.
2. Explain how to translate the results of scientific studies for communications to lay audiences and the media.
3. Identify and develop a network of people who can help you to succeed, and whom you can help to succeed.

**Domain 4: Professionalism**

**A. Habit of life-long learning**
GOAL: Demonstrate a commitment to self-assessment and improvement, and proficiency in the development and pursuit of life-long learning plans.

Objectives:
1. Efficiently use effective approaches to acquiring needed information, and continually strive to integrate best evidence into one's daily practice.
2. Demonstrate a habit of critical thinking, evidence-based decision-making and continuous quality improvement.
3. Develop networks and cultivate information sources among professional colleagues.

**B. Career Planning**
GOAL: Formulate career plans to make the transition from training to independence in an academic or public health setting.

Objectives:
1. Identify one's personal and professional abilities and goals and assess how various career options will facilitate accomplishment of these goals.
2. Identify potential sources of mentorship, within and outside your institution, including membership in a professional society.
3. Identify and use one or more mentors for information and guidance in designing, implementing, and refining a career plan.
4. Solicit feedback as a mentee and a mentor.
5. Prepare an elevator speech and cover letters.
6. Identify realistic and aspirational goals for career next steps.

**C. Self-evaluation**
GOAL: Demonstrate a commitment to self-improvement.

Objectives:
1. Assess one's own strengths and weaknesses with respect to professional knowledge and skills, and identify a process to remediate or make allowance for them in information gathering, decision-making, and professional development.
2. Cultivate the habit of continuous inquiry to expand one's knowledge.
3. Seek and incorporate feedback and self-assessment into a plan for professional growth and provide constructive feedback to others.
4. Describe one's own style of learning, gathering and storing information, and decision-making, and translate this understanding into an approach to professional development.
5. Identify the environments and support systems needed to reach one’s potential.

**Domain 5: Leadership and Management Skills**

**A. Academic Leadership and Administration.**
Practice the skills required to be a successful leader in the academic setting, including visioning, management, finance, interpersonal skills, and negotiation.

Objectives:
1. Proactively manage your time, based on a balanced prioritization of activities that are important in the long term vs. urgent in the short term.
2. Distinguish the goals, methods, and styles of a leader, in contrast to a manager.
3. Develop skills in the management of personnel, including individuals with a variety of work styles and personality types.
4. Develop a repertoire of strategies to lead and motivate people.
5. Run meetings efficiently and get the job done with a minimum of interpersonal conflict.
6. Identify and practice strategies that physicians can employ in a managed care system to advocate for services for their patients.

C. Advocacy GOAL: Understand and apply the principles and methods of patient advocacy.

Objectives:
1. Educate learners to develop and support advocacy programs as part of their future careers, effectively role model advocacy activities, and mentor trainees who conduct advocacy projects.
2. Describe the essential qualities of community partnerships, including shared vision, complementary strengths, willingness to collaborate, and agreed-upon boundaries; work effectively with community partners/agencies and as a member of multidisciplinary teams.
3. Articulate the principles and use the methods of population-based health to assess the needs and evaluate the health outcomes of your practice and community.

D. Quality Improvement GOAL: Understand and apply the principles of quality improvement.

Objectives:
1. Understand the relationship between clinical practice and population health.
2. Understand how to leverage data to drive practice change.
## Map of Curriculum to Educational Goals

### Legend for Learning Activities
- CR - CREST
- IN - Innovations in Primary Care
- IPC - Inter-professional Communication
- JC - Journal Club
- MS - Master of Science
- PL - Prevention Lecture
- QI - Quality Improvement
- RIP - Research in Progress
- TS - Teaching Seminar

### Domain 1: Research Skills
<table>
<thead>
<tr>
<th>Principal Educational Goal</th>
<th>Learning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Research design</td>
<td>MS</td>
</tr>
<tr>
<td>B. Clinical epidemiology and evidence-based medicine</td>
<td>MS, CR</td>
</tr>
<tr>
<td>C. Statistical analysis</td>
<td>MS</td>
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<tr>
<td>D. Health services research</td>
<td>MS</td>
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<tr>
<td>E. Responsible conduct of research</td>
<td>MS, CR</td>
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### Domain 2: Teaching Skills
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<tr>
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<tbody>
<tr>
<td>A. Techniques for teaching learners of different levels</td>
<td>TS</td>
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<tr>
<td>B. Evaluation of learners</td>
<td>TS</td>
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<td>CR, JC, RIP</td>
</tr>
<tr>
<td>B. Business communication</td>
<td>CR, IPC, JC, RIP</td>
</tr>
<tr>
<td>C. Networking</td>
<td>CR</td>
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<td>IN, PL, QI</td>
</tr>
<tr>
<td>C. Advocacy</td>
<td>CR, PL</td>
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5a. Addiction Medicine

General Goals and Structure:
The mission of the Addiction Medicine Fellowship is to prepare physicians for clinical and academic careers in Addiction Medicine with a goal toward developing and enhancing addiction prevention and treatment services for patients vulnerable to health disparity by virtue of poverty, culture, age, gender, disability or stigmatizing illness. Fellows can complete a single clinical training year or the two years of combined longitudinal research and clinical training. Fellow experiences are tailored to the individual’s interests and fellows are guided by the interdisciplinary BUMC Addiction Medicine Fellowship faculty.

I. CLINICAL ADDICTION MEDICINE
The program’s goal is to give trainees a strong foundation in the components of clinical addiction prevention and treatment through a variety of supervised clinical experiences in a wide range of inpatient and outpatient settings, but grounded in a longitudinal experience caring for patients with substance use disorders. Goals & objectives for each rotation are in the Addiction Medicine Fellowship Program Manual and are also located in New Innovations.

II. ANALYTIC AND RESEARCH SKILLS ON ADDICTION EPIDEMIOLOGY AND HEALTH SERVICES DELIVERY
The research and analytic competencies are developed and solidified through individual mentored research projects.

III. LEADERSHIP, TEACHING, AND ADMINISTRATION SKILLS FOR ADDICTION MEDICINE
These skills are obtained by attending the Addiction Medicine - Addiction Psychiatry Lecture Series. Fellows also lead and teach residents and medical students who rotate on the Addiction Consult Service, serve as faculty on addiction education courses, including Screening Brief Intervention and Referral to Treatment with MABIRT, Buprenorphine Waiver Trainings with OBAT TTA, safe opioid prescribing with SCOPE for PAIN, and overdose prevention with the MDPH.

IV. IDENTITY AS AN ADDICTION MEDICINE PHYSICIAN
Identity as an addiction medicine physician is nurtured by the clinical addiction rotations, attendance at national meetings, and Board certification in general Addiction Medicine.

The program covers the cost of the following:
- American Society of Addiction Medicine annual meeting
- Association for Medical Education and Research in Substance Abuse annual meeting
- Immersion Training in Addiction Medicine
- In-service exam
- Pocket mask
- Principles of Addiction Medicine text

V. Addiction Medicine Fellowship Clinical Competencies

1. Patient Care: By the end of training, the Addiction Medicine Fellow will demonstrate competence in medical care of persons with SUD across a diverse spectrum of drugs, stages of use, and presentations, including care directed at reducing SUD-related harm. They shall be able to render patient care that is compassionate, appropriate, and effective for the prevention and treatment of problems related to the addiction disorders.

2. Knowledge: By the end of training, the Addiction Medicine Fellow will understand addiction as a chronic medical condition, and Substance Use Disorders (SUD) as important and prevalent public health issues. They will understand the established and evolving biomedical, clinical, and cognitive sciences and apply this knowledge to the care of patients with SUD.
3. Practice-based learning and improvement: The Addiction Medicine specialist will stay current with evolving science and clinical practice relevant to the prevention and management of SUD and complications. They will be a life-long learner of patient care and will be able to appraise and assimilates new scientific evidence in the care of patients.

4. Interpersonal skills and communication: The Addiction Medicine specialist will consistently use respectful and effective communication with SUD patients, their families and other health care professionals, in order to optimize medical care.

5. Professionalism: The Addiction Medicine specialist will engage in care of persons with SUD in a professional, health-oriented, responsible and proactive manner, in order to reduce substance-related harm, promote health and address co-existing medical problems. They will manifest a commitment to carrying out professional responsibilities, an adherence to ethical principles, and sensitivity to a diverse patient population.

6. Systems based practice: The Addiction Medicine specialist will demonstrate an awareness of and responsiveness to the larger context and system of health care. They will recognize the multi-dimensional components of the system required to reduce SUD. They will be able to effectively access, navigate and engage the system to optimize care.

VI. Boards

All fellows must apply for the Boards at www.theabpm.org. During the transition to ACGME accreditation there are two pathways for fellows. Applications open in March/April and close in July. The exams occur at Prometric sites the last two weeks of October.

The board requires the following documents:
- CV/Resume (non-accredited fellows only)
- Medical License Verification (ABPM will confirm after application)
- Board Certification Verification (ABPM will confirm after application)
- Fellowship Verification
- 1 Letter of Reference from a physician who is certified by the ABMS (non-accredited fellows only)

After you pass your boards, if you have another Board Certification (e.g. Peds, Medicine, Family Medicine) at this time the American Board of Medical Specialties has a reciprocal agreement so that Maintenance of Certification credits obtained in one specialty can be applied to the other specialties, check the ABPM website for details https://www.theabpm.org/moc/index_moc.cfm
Preventive Medicine is the specialty of medical practice that focuses on the health of individuals, communities, and defined populations. Its goal is to protect, promote, and maintain health and well-being and to prevent disease, disability, and death. (https://www.theabpm.org/aboutus.cfm). Preventive Medicine is its own separate board specialty certified by the American Board of Preventive Medicine (ABPM). Our program is for General Preventive Medicine and Public Health and is ACGME accredited. At BU/BMC all PMRs must have completed a primary clinical training program first, you are also considered either a General Pediatrics, General Internal Medicine or Family Medicine Fellow at the same time. Also, note at other institutions Preventive Medicine can be done without a clinical residency first. For this reason, when you go to National Meetings you may be considered a PGY2 (PGY4 at BMC) or PGY3 (PGY5 at BMC).

Required courses (in addition to Masters degree requirements) per ACGME:
- Emergency Preparedness or participate in the BMC Emergency Preparedness Training & Drill
- EH 730: Methods in Environmental Health Sciences, an equivalent or nextgenu.org course
- PH 719: Intro to Health Policy (for those in the epidemiology program)
- EP 734: Cancer Epidemiology (required for ACS funded fellows only)

Practicum requirement:
You must complete a 320 hour practicum experience in a governmental public health agency. It cannot be at a non-governmental organization (NGO). The 320 hours, which most fellows distribute as a half day or 1 day/week, but can be divided in any way and even encompass more than 1 practicum experience. The summer is the ideal time to have a condensed, full-time practicum experience. Networking is probably the best way to find a practicum, speak with Jonathan, Pablo, other faculty, SPH professors, and alumni for ideas. The SPH has an Office of Public Health Practice/Career Office and maintains a database on their website with a database of practicum positions http://www.bu.edu/sph/students/resources/courses-and-academic-resources/for-students/search-tools/ (you will need to be sure the position is government-related). The SPH Career Office sponsors a Practicum Fair and you can also contact the Practice Office directly for advice and set up a meeting though you will need to explain that your requirements are distinct from the MPH program.

Before starting the practicum, check with Linda to make sure a Memorandum of Understanding between BMC and your governmental agency is up to date and submit the signed practicum agreement to Linda.

Clinical Requirements:
PMR are required to have equivalent of 80 clinic sessions over the course of each academic year which averages to 2 half-day clinic sessions per week. At least one of your weekly clinic sessions must be a primary care/urgent care clinic. ACGME and ABPM also requires a rotation in Occupational and Environmental Medicine. This is precepted by Dr. John Burress, OccMedCIC, 30 Lancaster, 2nd Floor, Boston MA, 617-314-2018, http://www.occmedcic.com/home.html, jburress@occmedcic.com. Number of sessions required: 8

Optional elective rotations (work with Linda to schedule): weight management; TB clinic; STD Clinic; travel clinic; smoking cessation; addiction medicine; integrative medicine; breast clinic. Contact Jonathan Berz if you are interested in another clinic that is not on this list. All curriculum, goals and objectives are in the PMR Program Manual as well as in New Innovations.

Conferences:
Each year, PMRs attend their respective academic meetings (SGIM or PAS) and ACPM. PMRs must also attend the MA Student Health Policy Forum in January once: 2 day session on Massachusetts state health policy and opportunity to
meet with legislators and state administrators. There is formal application process, look out for Linda’s emails in the late Fall.

**Boards**

All fellows must apply for the Boards at [www.theabpm.org](http://www.theabpm.org) (strongly suggested after 2nd year of fellowship). Applications open in March/April and close in July. The exams occur at Prometric sites the last two weeks of October. The board requires the following documents:

- CV/Resume, if 24 months past residency completion date
- Medical License Verification, must have **FULL license** the ABPM will confirm
- Clinical Training Program, Internship, or PGY1 Certificate
- Graduate Coursework Transcript
- Residency Program Verification
- Clinical Training Verification
- 3 Letters of Reference (one from a physician who is certified by the ABMS) if 24 months past residency completion date

In the past, our program has done very well with passing the boards, with a 94% pass rate since 2000. After you pass your boards, if you have another Board Certification (e.g. Peds or Medicine) at this time the American Board of Medical Specialties has a reciprocal agreement so that Maintenance of Certification credits obtained in one specialty can be applied to the other specialties, check the ABPM website for details [https://www.theabpm.org/moc/index_moc.cfm](https://www.theabpm.org/moc/index_moc.cfm)
5c. Advantages of ACGME Training

PMR and Addiction Fellows are considered house staff and employees of BMC.

**Contracts and job appointments are valid July 1-June 30. Salary increases go up by the hospital fiscal year and are effective October 1 each year**

- You are paid weekly. Make sure to submit all time off requests to Linda at least 1 week in advance. She will enter these into New Innovations and Kronos.
- Paystubs and benefits and salary can be found online at Workday.
- Membership in the CIR-SEIU union (if you choose, though union dues will be collected from your check regardless if you join or not).
- As unionized, contracted employees you are entitled to:
  - 4 weeks’ vacation
  - Do not have to accrue time off before you are allowed to take leave
  - Sick days and personal days
- Hospital benefit package
  - Health insurance, Flex Spending etc.
  - Retirement (403b through TIAA-CREF); there is NO matching however
- Discounted resident parking rate for the BMC garages.
  - At this time: $84.46 per month for a monthly pass
  - Occasional parking: Can buy a book of 12 parking stickers for $84.46 per book. Limit of 4 books per year
- Discounted monthly T pass: taken out pre-tax from your check automatically if you enroll. You cannot get both a monthly parking pass and monthly T pass. Must choose one program. Note: must be cancelled 2 months prior if you want to discontinue after enrolling.
- Educational allowance
  - May be used for educational expenses such as books, conferences, membership fees, credentialing fees
  - For 2018-2019: amount $950 for academic year. This does not rollover year to year
  - Contact Linda for the form. Must have all itemized receipts
  - Talk with your program director to budget your funding accordingly. Each fellows is funded differently.
- Hospital benefit programs
  - LearnVest: free financial counseling service
  - Care.com: service that assists with a number of services including child care
  - Work Advantage program: discount program for movie tickets, plays, concerts, etc.

For a complete list visit this website: http://www.bmc.org/gme/housestaff/benefits.htm
5d. Teaching Opportunities

In addition to the lecture series, fellows may have other teaching requirements based on their discipline. Fellows should track their teaching experiences in the Individual Development Plan. There is no requirement for direct observation of teaching, however fellows are strongly encouraged to reach out to faculty or peers for feedback as this is very valuable in enhancing teaching skills.

Introduction to Clinical Medicine

ICM 1: course for second year medical students that runs in both the Fall and Spring semesters every other week from 1PM-4PM (at BMC or the VA). Invitations for participation usually go out by August. Contact Lorraine Stanfield who is the course director for questions.
- Teaching basic physical exam skills and each week focuses on a different organ system
- Fellows help by teaching and precepting sessions with groups of 2-6 students
- Breakout small group sessions where you teach the students and allow them practice on each other. These occur in the Simulation Center in the basement of the Evans building
- Practice on real patients in the hospital (time permitting)

ICM 2: course for second years that integrates history and physical exam, runs in January and February. Invitations for participation usually go out in August.
- Occurs over 4 sessions, approximately 2 hours each
- Your role is to give feedback on 2nd year med students’ presentations AND write ups of history and physical
- Teaching also includes bedside review of key findings on history and physical as a team
- Ratio is 1-2 preceptors in charge of 3 students

Integrated Problems

Integrated Problems 2A is a course in which students continue to systematically dissect clinical cases, building upon the skills developed during Integrated Problems IA and IB. In addition to the learning objectives in the first year, by the end of this semester students should be able to differentiate subjective and objective information, identify further clinical data needed to assess a clinical case, and develop assessments and plans for each case. Students are continually expected to act in a professional and respectful manner of their classmates and their facilitators.

Integrated Problems 2B continues to build on the skills and structure of Integrated Problems IA, IB, and 2A. During this semester, students will progress through cases more quickly and replace their independent research with research done during their group time.

Course Director: Megan Young, M.D.
Course Coordinators: Ginny Potter and Patricia Ward

Other Opportunities

Other opportunities exist for other teaching experiences, if interested, reach out to your program director.
- Co-teaching Ward month (and ADTC at the VAMC)
- Precepting Resident Clinic (min 6 mos. commitment)
- Facilitator for BUSM I or II integrative problems (IP) course (case-based basic science education)
- Physical Diagnosis rounds for MS-3 clerks
- Teaching students/residents clinical breast exam using standardized patients
- Precepting Primary Care morning reports. Happens during the Ambulatory blocks for Primary Care residents which are twice per year, act as faculty preceptor for resident presenting a case
- Precepting preclinic conference
- Working with medical students or public health students on research projects
6. CTSI Consults, Services and Tools
A complete list can be found at https://www.bu.edu/ctsi/

BU Bioinformatics Hub: The mission of the Hub from its inception has been to increase the bioinformatics profile at BU in four ways: through collaboration, education and outreach, mentorship, and as a research conduit.

Biomedical Bridge Builders: The initiative is designed to accelerate the commercialization of clinician-inspired medical device innovations by partnering with graduate engineering biodesign and product development teams.

Center for Regenerative Medicine: Induced Pluripotent Stem Cells (iPSCs) generated by forced overexpression of defined transcription factors in somatic cells hold great promise for human disease research and personalized medicine. The Center for Regenerative Medicine (CReM) iPSC Core was created to expedite the use of iPSC technology by providing essential services and support to on-campus investigators and the broader scientific community.

CRITIC: Clinical Research Informatics & Technology Consults: The CRITIC consultations help BMC/BU researchers identify, develop, and implement the effective and efficient use of information technology and informatics in their clinical studies. For a free One-on-One consultation contact Christopher Shanahan, MD, MPH

General Clinic Research Unit: The GCRU provides resources for protocol implementation across BUMC, BMC, BU and CRC. We will assist studies that may need support with inpatient participants. We offer clinical and non-clinical support, that may accommodate your participants by providing services in the ambulatory care setting or during an interview visit in your work space. If you also need assistance with recruitment, regulatory documents including IRB submissions, data entry, or any additional administrative support.

Contact us: 617-358-7558 or 617-414-1960. Let us assist you with implementing a productive and successful study outcome.

Grant Writing & Editing Services for BUSM and Non-BUSM Investigators: Non-BUSM Investigators: Grant writing, editing and formatting services for NIH and other federal applications are provided as part of a CTSI collaboration with Boston Medical Center’s Development Department.

i2B2: The BU i2b2 (Informatics for Integrating Biology and the Bedside) is an NIH-funded effort to provide a standardized data architecture and informatics capabilities to combine clinical patient data with demographic, biologic, and genomic data for use in clinical research projects. An easy-to-use aggregate data query tool, i2b is accessible via the internet using the i2b2 web client.

openSESAME: CTSI created openSESAME to identify relationships between datasets based on patterns of gene coexpression. The so-called "Search of Expression Signatures Across Many Experiments," allows the scientific community to apply this approach to what is currently about 75,000 Affymetrix human gene expression profiles obtained from the Gene Expression Omnibus (GEO) at the National Center for Biotechnology Information (NCBI).

Protocol Builder: is now available at Boston University. Protocol Builder is secure, cloud-based technology that provides step-by-step guidance for developing research protocols. This new protocol writing technology can help you write investigator-initiated protocols that adhere to IRB and regulatory standards in less time with less hassle. It provides organization, guidance, and collaboration tools for your observational or interventional research protocols. Protocol Builder is developed and hosted by BRANY (Biomedical Research Alliance of New York), and can be accessed via your computer or iPad app. Read more about Protocol Builder.

Research Job Connection: Connecting PI’s with clinical or epidemiological research professionals. We have created a pool of BMC/BU staff who are already familiar with systems/policies and have CITI/GCP credentials.

Research Networking Blog: If you are new to Research Networking then you might be interested to learn that Research Networking commonly employs online applications to discover and use research and scholarly information about people and resources.

Research Recruitment and Retention Program (R3): Delays in recruiting participants are a major barrier to progress in clinical and translational research. BU CTSI’s Research Recruitment and Retention Program (R3) exists to help researchers succeed in efficiently meeting participant recruitment goals for clinical and translational research studies, including randomized clinical trials. We assist both investigator-initiated and industry-sponsored research at BMC, BU, and our partner institutions. Services offered: Initial consultation, recruitment strategies, and monthly roundtable speakers.
**Trial Innovation Network:** (TIN) is a new collaborative initiative within the CTSA Program and is composed of three key organizational partners, the CTSA Program Hubs, the Trial Innovation Centers (TICs), and the Recruitment Innovation Center (RIC that seeks to address critical roadblocks in clinical trials and accelerate the translation of novel interventions into life-saving therapies).

**Trialspark:** Advanced clinical trial recruitment platform. Using machine learning and targeting approaches to engage the exact patients needed. Helping recruit faster and more efficiently for clinical trials. This is accomplished by directing qualified patient leads to you, but also by making sure that researchers and study coordinators can screen trial participants as effectively and efficiently as possible.
7. Master Degree Programs at BU SPH

Unless entering with a prior Masters degree, fellows will complete the Master of Science in Epidemiology, Health Services and Systems Research, or Health Sciences Education. Additional courses outside of the degree are required for PMR residents for PMR board certification. Fellows who enter fellowship with a prior Masters degree may still audit courses to enhance their research skills and/or public health knowledge. For questions regarding the degree programs refer to SPH’s website:

- HSSR program: http://www.bu.edu/sph/education/degrees-and-programs/ma-ms-programs/ms-hssr/
- Epi program: http://www.bu.edu/sph/education/degrees-and-programs/ma-ms-programs/ms-epi/

Each degree program gives students methodological skills to design and execute innovative research projects in a peer-review setting. The MS program is approximately two years and requires a major paper. Fellows are not permitted to take more than 11 credits per semester to maintain part-time status. Otherwise, scheduling classes is based on the requirements of the degree program, fellows’ other commitments, and fellows’ preferences. Oftentimes, the fellows’ courses are taught in the late afternoon and evening, permitting the fellows time during the day to be engaged in the other aspects of the fellowship, especially their research projects and seminars. All MS students will complete at least 32 credits and need to maintain a minimum grade point average of B (3.0) and grades of at least a B in all required courses. All fellows are expected to graduate within one year of leaving the fellowship.

Talk to your fellowship director, research mentors, SPH mentor, SPH curriculum coordinator, and past/upper-level fellows for advice about course selection. You can also email professors of potential courses to meet before the course starts if you have questions or to ask for the syllabus of the course. BU posts past evaluations of courses and professors on their website.

The fellowship program covers all costs associated with the SPH degree program, except for the $120 program fee each semester (except summer sessions). When you receive your SPH bill, simply pay the fee and forward the bill to Linda. (NOTE: You do NOT need to pay the entire bill and be reimbursed, the fellowship will directly pay the bill.) It is important to send the bill to Linda ASAP because it takes a while for the bill to be processed, and if not processed by a certain time, it can delay your ability to register for courses. Notify Linda if you receive any late notices.

All Masters candidates in the School of Public Health must submit a graduation application online. This form is available approximately three months before graduation each semester. Please make note of the date for graduation applications. Look out for notices from the Registrar’s Office or your curriculum office for details.

If there are changes in your coursework, or in discussions with your advisors your coursework will end in the fall of your second year and you will need additional credits for continuing study, please let Linda know as soon as possible so that we can budget for these changes. Before enrolling in a course not on the lists below, check with your SPH mentor for approval. Meet with your SPH mentor at least once each semester to check in regarding the progress to your degree.

- Class registration, financial information and bills, official grades are on BU Student Link: www.bu.edu/studentlink
- Class syllabi, lecture notes, readings, grades and assignments are often posted on Blackboard: https://learn.bu.edu
- Contact your course coordinator at SPH to create account
- Printing in Library
- As a BU student you get $12 per semester loaded on your Library copy card
  - To obtain, go to the Library on the 12th floor of the med school
- Show your BU student ID to get the card for the first time
- For PMRs: at GME orientation the CIR union gives you a separate copy card with $5 pre-loaded

**Important SPH contacts:**
- Registrar, sphregr@bu.edu
- Dr Sarah Lipson runs the MS in Health Services and Systems Research
- Dr Ann Aschengrau runs the MS in Epidemiology
- Your curriculum coordinator—valuable resource for everyday questions on your degree program
  - Health Services and Systems: Lunise Joseph, lunise@bu.edu
  - Epidemiology: Emily Katz, erkatz@bu.edu

## MS IN HSSR

### REQUIRED PRE-REQUISITE*

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 700: Essentials of Biostatistics (2)</td>
<td>Fall (offered in an intensive format in August, credits count towards fall)</td>
</tr>
<tr>
<td>BS 704: Essentials of Biostatistics (3)</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>PH 717: Quantitative Methods for Public Health (4)</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>Essentials of Biostatistics** (0)</td>
<td>Offered in an intensive 4-week format and taught online.</td>
</tr>
</tbody>
</table>

### REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH 842: Research Theory and Design (2)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; half of Fall</td>
</tr>
<tr>
<td>PH 843: Introduction to Quantitative Methods for Public Health and Health Services Research (2)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; half of Fall</td>
</tr>
<tr>
<td>PH 844: Introduction to Qualitative Analysis for Public Health and Health Services Research (2)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; half of Fall</td>
</tr>
<tr>
<td>PM 790: Pro-Seminar: Tools for Project Management, Communication and Budgeting (2)</td>
<td>Spring (last week of winter break; credits count towards spring)</td>
</tr>
<tr>
<td>PM 831: Implementation Science: Linking Research to Practice (2)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; half of Spring</td>
</tr>
<tr>
<td>PM 860: Contemporary Structures of Health Services (2)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; half of Fall</td>
</tr>
<tr>
<td>PM 862: Theory in the Analysis of Health Services (2)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; half of Fall</td>
</tr>
<tr>
<td>PM 950: Applied Studies in Health Services Research (4)**</td>
<td>Spring, Summer</td>
</tr>
</tbody>
</table>

### METHODS COURSEWORK

Students must complete at least one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM 821: Advanced Quantitative Methods for Health Services Research (4)</td>
<td>Spring</td>
</tr>
<tr>
<td>PM 828: Advanced Qualitative Methods for Health Services Research (4)</td>
<td>Spring</td>
</tr>
</tbody>
</table>

### POLICY COURSEWORK

Students must complete one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM 740: Comparative Health Systems and Policy in Industrialized and BRIC Countries (4)</td>
<td>Fall</td>
</tr>
</tbody>
</table>
**Approved Elective Courses** (Other elective/policy courses can be taken with prior approval).

- BS 723: Intro to Statistical Computing (4)
- BS 730: Introduction to R: Software for Statistical Computing (4)
- BS 750: Essentials of Quantitative Data Management (2)
- BS 775: Applications of Statistical Methods in Clinical Research (4)
- BS 810: Meta-Analysis for Public Health and Medical Research (4)
- PH 801: Community Engaged Research: Theory, Methods and Applications (4)
- PM 807: Introduction to Cost-effectiveness Analysis (2)
- PM 824: Theory and Research on Organizations (4)
- PM 826: Health, Illness and the Use of Health Services (4)
- PM 830: Developing Patient-Based Health Status and Outcomes Measures (4)
- PM 833: Health Economics (4)
- PM 837: Evaluating Health Care Quality (4)
- PM 842: Health Economics for Health Services Research (4)
- PM 855: Cost Effectiveness Analysis and Decision Analysis (4)
- QST OB 844: Managing Organizational Change (4)

**Approved Policy Courses**

- PM 740: Comparative Health Systems and Policy in Industrialized and BRIC Countries
- PM 760: Health Policy Making
- PM 834: Health Regulation and Planning
- PM 844: Health Policy and Policy-Making for Public Health Researchers

**MS in Epidemiology**

<table>
<thead>
<tr>
<th>Year 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall (10 credits)</td>
<td>Spring (8 credits)</td>
<td>Summer I/II</td>
</tr>
<tr>
<td>8/14-8/18 BS 700 (2) Essentials of Biostatistics M-F ALL DAY</td>
<td>BS 723 (4) Introduction to Statistical Computing</td>
<td>Elective credits from approved list (or PMR electives)</td>
</tr>
<tr>
<td>EP 714 (4) Introduction to Epidemiology</td>
<td>EP 813 (4) Intermediate Epidemiology</td>
<td></td>
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<tr>
<td>EP 749 (4) Applications of Introductory Epidemiology</td>
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</table>

<table>
<thead>
<tr>
<th>Year 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall (10 credits)</td>
<td>Spring (8 credits)</td>
<td>Summer I</td>
</tr>
<tr>
<td>EP 850 (4): Applications of Intermediate Epidemiology Electives (4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Approved Elective Courses** (Other elective courses can be taken with prior approval).

- EP 790 Epidemiology of Mental Health Disorders (2)
EP 730 Epidemiology of Vaccine Preventable Diseases (2)
EP 735 Cancer Epidemiology (2)
EP 740 Introduction to the Epidemiology of Aging (2)
EP 748 Drug Epidemiology (4)
EP 751 Cardiovascular Epidemiology (4)
EP 755 Infectious Disease Epidemiology (4)
EP 758 Nutritional Epidemiology (4)
EP 759 Reproductive Epidemiology (4)
EP 762 Clinical Epidemiology (4)
EP 763 Genetic Epidemiology (4)
EP 764 Epidemiology of HIV/AIDS (2)
EP 775 Social Epidemiology (4)
EP 784 Epidemiology of Tuberculosis (2)
EP 790 Mental Health Epidemiology (2)
EP 820 Perspectives on Epidemiologic Studies (2)
EP 858 Design and Conduct of Case-Control Studies (2)
BS 722 Design and Conduct of Clinical Trials (4)
BS 852 Statistical Methods for Epidemiology (4)
BS 805 Intermediate Statistical Computing (4)
BS 857 Categorical Data Analysis (4)
EH 757 Environmental Epidemiology (4)

(NOTE: For PMR fellows, additional required courses in Health Policy and Environmental Health do NOT count toward the MS Epi degree.)

Students will be required to give an oral presentation of their research project from EP 817 Guided Epidemiology Study or EP 912 Directed Research in Epidemiology to faculty members in the Department of Epidemiology and other interested parties. The presentation will be evaluated by faculty member(s) who supervised the research and the Director of the MS program.

MS in HSE

The new Health Sciences Education (HSE) program provides a wide range of practical training for health sciences educators in the principles of education and teaching applicable to their specific health sciences discipline. HSE is offered through the Division of Graduate Medical Sciences (GMS), in collaboration with the School of Education (SED). The HSE program aims to develop expertise in teaching and education, specifically in Health Sciences professions. The program prepares students to emerge as leaders in education in their health sciences field. Students develop advanced skills in curriculum development, classroom and clinical teaching, student and program evaluation and how to evaluate and apply the best available evidence to inform their educational practices.

Required Courses
GMS HS 701: Principles of Health Sciences Education 1
GMS HS 702: Principles of Health Sciences Education 2
SED CT 721: Analysis and Design of Curriculum
SED CT 750: Principles for Curriculum Design and Teaching
GMS HS 704: Fundamentals of Learning and Teaching Modalities in Health Sciences
GMS HS 706: Introduction to Research Methods in Health Sciences Education
Elective Courses
Electives can be taken from School of Medicine, GMS, SED or SPH based on student’s interest. MS HSE students must take a minimum of 8 elective credits.

Sample Electives:
- GMS MA 742: Med Anthro Design & Qualitative Data Analysis (3 cr)
- GMS MA 710: Med Anthro & Qualitative Res Method/ Design (3 cr)
- GMS MS 706: Intro Computer Appl in Healthcare/Biomedicine (4 cr)
- GMS MS 677: Stem Teaching (2 cr)
- SPH PM 811: Health Services Research and Methods (4 cr)
- SPH EP 721: Survey Methods for Public Health (4 cr)
- SED RS 751: Program Evaluation (4 cr)
- SED EM 680: Distance Ed Research & Development (4 cr)
### 8. Clinical Practice

#### Family Medicine

<table>
<thead>
<tr>
<th>Continuity Clinic</th>
<th>Fellows will participate in one half-day session per week in the Ambulatory Care Center, a community health center or another approved option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Rounding</td>
<td>Each fellow will do two weeks per year (24 hour on-call during rounding), working with a seasoned family medicine hospitalist</td>
</tr>
<tr>
<td>OB (optional)</td>
<td>Fellows will be paid for each 12-hour shift they cover on labor &amp; delivery</td>
</tr>
</tbody>
</table>

#### Internal Medicine

The sites in which GIM fellows participate in clinical work are dependent on funding and track. PMR residents complete 80 clinical sessions per year including urgent care sessions and Preventive Medicine clinical sessions. VA funded fellows see primary care patients at the Edith Nourse Rogers Bedford VA or the Boston VA Women’s Health clinic (WH fellows). BMC fellows generally have 1 clinical session per week in Shapiro Adult Medicine. Other fellows have made additional arrangements to do clinical work outside of BMC (e.g. at community health centers, Healthcare for the Homeless).

<table>
<thead>
<tr>
<th>Adult Medicine</th>
<th>Fellows participate in one half-day session per week in the primary care clinic on the 5th floor of the Shapiro building or the 6th floor of Crosstown.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shapiro Women’s Health</td>
<td>Fellows may choose to participate in one half-day session per week at the Women’s Health Group on Shapiro 5A. The multidisciplinary team approach emphasizes preventive care and emotional well-being. They serve women of all ethnic and socioeconomic backgrounds, focusing especially on the needs of women in Boston’s underserved communities.</td>
</tr>
<tr>
<td>VA Women’s Health</td>
<td>VA Women’s Health fellows have two ½ day clinics weekly: one is a primary care continuity clinic and the second is a dedicated teaching clinic. A fellow manages a 0.1 FTE panel (approximately 110 patients) as the PCP. Typically, fellows have seen patients in the Comprehensive Women’s Health Center (WHC) in Brockton, but some fellows have worked at the Brockton WHC in the past.</td>
</tr>
<tr>
<td>VA Bedford</td>
<td>Primary Care located in Building 78 provides preventive care services and disease management. Primary Care is provided through a Patient Aligned Care Team (PACT) partnership. The team includes Veterans, providers, nurses, and clerks to best meet the Veterans personal health care goals. Primary Care Behavioral Health (PCBH) and Primary Care at Bedford VAMC are co-located to support your same-day behavioral health needs.</td>
</tr>
</tbody>
</table>
Pediatrics
GAP fellows complete clinical requirements in the Yawkey urgent care clinic/medical student teaching clinic and newborn nursery OR inpatient wards. PMR residents complete 80 clinical sessions per year including urgent care sessions and Preventive Medicine clinical sessions. Examples of clinical sites for pediatric academic fellows are listed below.

| 1. BMC Birth Place* (newborn nursery) | The fellowship covers three 3-day weekend shifts per year in the BMC Birth Place (Menino 4W) from Friday at 8am to Monday at 8am (morning rounds and on-call overnight).
Bobbi Philipp is the Director of the Newborn Nursery. Generally, she creates the schedule in April and will reach out to you for specific weekends that will or will not work. Most nursery weekends begin on Friday at 8 am and conclude on Monday morning at 8 am. It is HIGHLY recommended that before your first weekend covering the NBN, you reach out to Bobbi and find a time that you can shadow to get a sense of how rounds work, etc. Prior to each weekend, Bobbi sends emails with reminders about protocols for the NBN. On the Thursday before your shift, you will receive sign out from the current attending, and you should send the Monday attending sign out on Sunday night/the day before your shift ends. Prior to each weekend, Bobbi will email you with all of the details about the nursery; please read these emails carefully. You generally will be scheduled to work with an experienced NP. |

| 2. Urgent Care Clinic | GAP fellows participate in one afternoon session a week. |

| 3. Outpatient pediatrics on Yawkey 5 | Outpatient pediatrics on Yawkey 6 at the present time includes: acute care shifts. All vacation requests MUST be made at least 90 days in advance with Rebekah Kahal. Note: Most GAP fellows will do a half day of clinic/week on Yawkey 6; PMR fellows will do ~2 half day clinics in their first year, and then will do ½ day + choices of Preventive Medicine clinics to fill the other ½ day during their second year |

**STARS Reporting**
Clinicians and other staff are highly encouraged to report any possible patient safety concerns through our online and confidential reporting platform, called STARS it can be accessed from terh QUICK LINKS tab at the top of the BMC Intranet homepage. A patient safety specialist is available by page 24/7 at 7233 (SAFE) for questions or assistance with serious patient safety issues.
### 9. Mentor List

<table>
<thead>
<tr>
<th>Mentor Name</th>
<th>Areas of Interest/Project Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Aschengrau, DSc</td>
<td>Investigating the impact of air and water pollution on health. Outcomes include adverse pregnancy, birth, mental health and other neurological outcomes.</td>
</tr>
<tr>
<td>Sarah Bagley, MD, MS</td>
<td>Areas of interest include: engagement of adolescents and young adults in care for opioid use disorder, integration of family into addiction care for adolescents and young adults, prevention of HIV in adolescents and young adults with substance use disorders, development of tailored addiction treatment for those affected by intimate partner violence or commercial sex work</td>
</tr>
<tr>
<td>Megan Bair-Merritt, MD, MSCE</td>
<td>1. Multicomponent, mixed methods evaluation of complete behavioral health integration into primary care pediatrics 2. Secondary data analysis focused on predictors and correlates of teen dating violence</td>
</tr>
</tbody>
</table>
| Tracy Battaglia, MD, MPH | 1. **Project SUPPORT** Socio-legal services for Underserved Populations thru Patient navigation to Optimize Resources during Treatment among newly diagnosed Breast & Lung cancer patients. To measure the impact of Medical Legal Partnership (MLP) enhanced patient navigation on: patient-reported outcomes: distress, needs and satisfaction and cancer treatment: timeliness & quality of care.  
   Project ideas:  
   1. I-HELP validation using the Level of Legal Needs form as “gold standard”  
   2. Factor analysis of modified CaNDI (without the suicidality question)  
   3. Stakeholder engagement papers  
   3a. Designing a community based research project  
   3b. Governance piece  
   2. **Boston Breast Cancer Equity Coalition**: In the City of Boston, inequities in breast cancer mortality persist among Black, non-Hispanic women. To date, the group has collected and analyzed available city and state data to help inform the understanding of the root causes of the inequity, researched other related initiatives like those in Chicago and Memphis, and held a panel on patient navigation that included navigators, patients and researchers. The coalition members have determined that the immediate next steps are additional data collection and analyses (a “deep dive” of the data) to more fully understand causes of these inequities. This information will be used to develop and implement strategies and interventions to achieve equity in breast cancer outcomes for Black, non-Hispanic women in Boston.  
   Project ideas:  
   2. Assist with primary data collection and analysis of patient navigation services provided breast cancer patients in the city of Boston. |
| Dan R. Berlowitz, MD, MPH | 1. Assessing and improving the quality of health care in both ambulatory and long-term care settings.  
   2. The management of chronic medical conditions such as diabetes and hypertension. |
<p>| Barbara Bokhour, PhD | An expert in the use of qualitative research methods for health services research, her research involves the practices of health professionals, patient-provider communication and the effect of culture on communication, racial and ethnic disparities in health, and the lives of individuals with chronic illness. In addition, |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Borzecki, MD, MPH</td>
<td>She has expertise in the use of qualitative methods in implementation research, leading the qualitative core of the HIV/Hepatitis Quality Enhancement Research Initiative at the Bedford VA.</td>
</tr>
<tr>
<td>Sarabeth Broder-Fingert, MD, MPH</td>
<td>Her research has focused on measuring the quality of and improving chronic disease care, especially of cardiovascular diseases such as hypertension. Recent work has also focused on how to measure and improve patient safety.</td>
</tr>
<tr>
<td>Martin Charns, DBA, MBA</td>
<td>The implementation of systems-based interventions to alleviate disparities for children with autism spectrum disorder.</td>
</tr>
<tr>
<td>Julien Dedier, MD, MPH</td>
<td>Research interests include organization design and change, implementation of evidence-based practices, coordination of care, quality improvement, systems redesign and patient safety.</td>
</tr>
</tbody>
</table>
| Mari-Lynn Drainoni, PhD   | Areas of interest are substance use, infectious diseases, implementation science, qualitative research methods. Current projects:  
  - Integrated Care for Addiction, HIV and HCV Research and Education (ICAHRE).  
  - CTN: 0064 – Project HOPE: HCV – Assessing Long-term CTN-0049 Outcomes, HCV Prevalence and Progression along the HCV Care Continuum among HIV/HCV Co-infected Substance Users in the U.S.  
  - Evaluating the Effectiveness of Alternative Implementation Strategies for Antibiotic Stewardship  
  - Improving Outcomes for Low-Income Mothers with Depression: A Comparative Effectiveness Trial of Two Care Coordination Systems in the Patient Centered Medical Home  
  - “WE CARE”: Reducing Socioeconomic Disparities in Health at Pediatric Visits  
  - Special Projects of National Significance Dissemination and Evaluation Center  
  - Improving Access to Care: Using Community Health Workers to Improve Linkage and Retention in HIV Care  
  - Improving Vaccine Communication Using a Performance Improvement Continuing Medical Education Intervention  
  - Veterans Justice Reentry Project  
  - Implementing an Intervention to Address Social Determinants of Health in Pediatric Practices.  
  - Uptake of Rapid Diagnostic Tests for Infectious Disease and Behavioral Factors Influencing Use: Development of a Behavioral Model  
  - Optimizing Bio-Behavioral HIV Prevention Approaches for People who Inject Drugs |
| Arvin Garg, MD, MPH        | His research focus is on addressing social determinants of health within the delivery of medical care. He has developed and tested a screening and referral mechanism “WE CARE” in the pediatric primary care setting and is currently working with GIM colleagues to adapt and test in the adult primary care setting. He has also assisted |
fellows and students conduct secondary data analyses on assessing disparities in the medical home based on income.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Megan Gerber, MD, MPH</td>
<td>Megan Gerber is Associate Professor of Medicine BU and Medical Director Women’s Health VA Boston. Her research interests include implementation of trauma informed care, medical outcomes after interpersonal trauma exposure, women Veterans health, and menopause and mental health. Dr. Gerber serves as the VA Boston site lead of the Women’s Health Practice Based Research Network which has paired women’s health fellows with health services researchers nationwide.</td>
</tr>
<tr>
<td>Allen Gifford, MD</td>
<td>Research interests include quality of healthcare for HIV and for Hepatitis, with special emphases on implementation of quality improvement measures, patient-centered care, and patient self-management.</td>
</tr>
<tr>
<td>Christine Gunn, PhD</td>
<td>Research focus on cancer prevention and control. In particular, how patients and providers negotiate the experience of being at risk for cancer and its impact on the utilization of health services. Dr. Gunn has extensive experience in qualitative research methods and uses a mixed methods approach to studying cancer risk and prevention behaviors.</td>
</tr>
<tr>
<td>Scott Hadland, MD, MPH, MS</td>
<td>I have subspecialty training in adolescent medicine, addiction medicine, and health services research. My current research focuses on opioid use disorder among adolescents and young adults, and my other areas of interest include drug policy, alcohol and marijuana use, HIV risk behaviors, and improving care for LGBTQ youth.</td>
</tr>
<tr>
<td>Brian Jack, MD</td>
<td>Current projects all of which have large data sets for analysis.</td>
</tr>
</tbody>
</table>

1. Project ACHIEVE (PCORI, Co-PI) Jan 2015 – December 2017. This is a subcontract to a 15 M dollar award to the University of Kentucky to investigate transitions of care from the patient perspective. We have qualitative data for over 200 patients and caregivers.
2. RED-D 1 R01 HS019700-01A1 (AHRQ, PI) Feb 2012- Jan 2017 entitled Reducing Hospital Readmission Among Medical Patient’s with Depressive Symptoms. This is a RCT where all subjects who screen positive for depressive symptoms receive the ReEngineered Discharge and those in the intervention group receive a post-discharge mental health intervention with all cause 30 day readmission rate as the outcome variable.
3. Gabby R01: MD 006213 - 01 A1 Using Innovative Communication Technology for the Health of Young AA Women January 2012- December 2017 National Institute on Minority Health and Health Disparities (NIMHD). This project builds on previous work to expand the web based health promotion program for young African American women using the embodied conversational agent called “Gabby” and to carry out a national multisite RCT.
4. Two supplemental awards to develop improvement in immunization rates and to do background work on male system
5. “Kellogg Gabby” P3024018 1/2014 – 12/2015 W. K. Kellogg Foundation - The Gabby Preconception Care System: The goal of this project is to review and revise current Gabby system content and add new content and features to prepare the system for national dissemination.
6. “Kellogg Gabe” July 2015 – June 2018 W. K. Kellogg Foundation (WKKF) This grant provides funds to develop and test the “Gabe” health IT system to help improve the health of young African American men.
7. Kirby Foundation – to assist in developing a strong family planning component to the Gabby health IT system.
| Theresa Kim, MD | 1. In a HIV population with substance dependence  
- polypharmacy and risk of falls/ fractures  
- the effect of alcohol and opioids on bone biomarkers  
2. For primary care patients with substance use, I am investigating  
- access to specialty addiction treatment  
- integration of addiction and medical care including hepatitis C treatment in office-based opioid treatment in primary care  
- primary care quality for patients who are homeless |
|---|---|
| Nancy Kressin, PhD | 1. External Determinants of Non-Elderly Veterans’ Demand of VA Health Care. We aim to develop a national model to estimate the sensitivity of VA demand of non-elderly Veterans to a range of external area-level factors categorized into four domains: public policy, non-VA out of pocket costs, economic environment, and non-VA provider availability, in order to evaluate the early impact of the ACA mandate and insurance expansion on VA enrollment and utilization.  
2. Center for Health Insurance Reform, Cardiovascular Outcomes, and Disparities. The specific aims of our Center are: 1) to conduct two research projects, by multidisciplinary teams, to evaluate the effects of health reform in MA, examining whether increased access to health care, through provision of insurance to a majority of state residents, leads to improved CV outcomes, and reduced disparities in them. We will focus on patients especially vulnerable to CV disease and poor access – low-income minority patients, 2) to complement and collaborate with other existing centers in CV outcomes research, and 3) to develop three Early Stage Investigators into seasoned CV outcomes researchers who are well versed in the issues, topics and methods in the field, and who, upon the completion of the center activities, will be poised to make substantial future contributions to the field of CV outcomes research.  
3. National Estimates for Inpatient Care, Outcomes & Hospital Effect among Hispanics. Due to poor identification of Hispanics in national inpatient care data sources little is known about the patterns of inpatient care access, quality and discharge outcomes for the national Hispanic population. Using comprehensive and reliable inpatient discharge data from 15 selected states, which together account for 87 percent of national Hispanic population, we will estimate risk-adjusted rates of admissions and patient outcomes (inpatient mortality, 30-day mortality and 30-day readmission) for selected admissions indicative of access and quality of care for Hispanics, non-Hispanic Blacks and non-Hispanic Whites.  
4. Insurance Instability and Disparities in Chronic Disease Outcomes. We aim to understand the effects of insurance instability in the era of health reform, by characterizing the associations of such instability with processes of chronic disease care and related clinical outcomes, for several common chronic conditions.  
5. Reducing Disparities in Undiagnosed Hypertension: A Digital Trial. Working closely with WebMD we propose a novel 21st century digital outreach approach to people at high risk of suspected hypertension (HT) which is complementary to other efforts. We propose to leverage the vast nationwide outreach of WebMD to: a) encourage WebMD users to self-screen for HT; and then b) depending on their HT risk level, employ a Direct to Consumer (DTC) approach to activate them to ask any primary care provider (PCP) to check their blood pressure (BP). |
<p>| Marc LaRochelle, MD, MPH | Interests: opioid prescribing for chronic pain, opioid use disorders, health services research, secondary data analysis. |</p>
<table>
<thead>
<tr>
<th>Current projects:</th>
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<tbody>
<tr>
<td>1. Development of an automated EMR-based methodology to identify unexpected urine drug test results.</td>
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<tr>
<td>2. Analysis of Massachusetts opioid overdose deaths using a large set of individually linked state-based data sets.</td>
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<tr>
<td>3. Identifying the association between receipt of opioids and patient experience scores in a large emergency department sample.</td>
</tr>
</tbody>
</table>

### Karen Lasser, MD, MPH

**Interests:** reducing health disparities, improving quality of care in primary care for underserved patient populations, analyzing publicly available large datasets

**Current projects:**

1) A pilot RCT of patient navigation and screening for social determinants of health to promote smoking cessation among recently hospitalized primary care smokers.

2) Research and evaluation of a safety-net hospital transformation to an accountable care organization.

3) Evaluation of the effectiveness and value of new medications for hereditary amyloidosis.

### Amy Linsky, MD, MSc

Adverse outcomes from inappropriate medication use, whether measured as adverse clinical events, increased health care costs or decreased quality of life, are pervasive, even within the VA. Clinicians lack evidence and clinical guidelines to indicate best practices for evaluating patients’ medication regimens to determine which drugs, if any, may safely be discontinued. While significant attention is given to medication reconciliation, there has been less focus on improving deprescribing of medications that may no longer be necessary or whose benefits no longer outweigh associated risks.

**Data available for projects:**

1) Results from the survey of primary care providers (clinicians’ perceptions of deprescribing, experiences with deprescribing)

2) Results from the survey of Veterans (patients’ perceptions of deprescribing, experiences with deprescribing)

3) Database of ~5 million Veterans with medications and utilization

4) Patient engagement as mechanism to promote deprescribing

### Karsten Lunze, MD, MPH, DrPH, FAA

1. Stigma and health outcomes among people who use drugs – cohort analysis in Russia and Ukraine

2. Drug policy, human rights and health in Russia or Malaysia – health policy analysis

3. Compulsory treatment of people who use drugs – global health policy analysis

4. Risk factors for non-communicable diseases in BRICS countries – analysis of existing, nationally representative data

5. Newborn care in rural Lufwanyama, Zambia – secondary qualitative and cohort analysis

6. Fever management in children under 5 in rural Southern Province, Zambia - qualitative analysis and clinical assessment

7. Delivery of integrated community case management (iCCM) in Eastern Province, Zambia - secondary data analysis

8. Capacity to address neonatal hypothermia in the Zambia Chlorhexidine Application Trial - secondary health facility analysis

### Rebecca Mishuris, MD, MPH

Research interests include pragmatic implementation and evaluation of health IT to support effective care delivery, particularly preventive care; integration of external health related data into the EHR; patient-facing technology (i.e. patient portals)
<table>
<thead>
<tr>
<th>Name</th>
<th>Research Interests/Projects</th>
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<tbody>
<tr>
<td>Joanne Murabito, MD, MSc</td>
<td>Research interests include examining the epidemiology and genetics of longevity and healthy aging and reproductive aging, and the epidemiology and genetics of peripheral artery disease.</td>
</tr>
</tbody>
</table>
| Timothy Naimi, MD, MPH        | 1. Relationships between alcohol policies and: youth drinking, suicide, homicide, fatal crashes  
                            | 2. Combined effects of marijuana and alcohol policies on marijuana and alcohol use by youth |
| Michael Paasche-Orlow, MD, MA, MPH | Research interests include the role of health literacy in health outcomes and health disparities, and health services interventions that improve communication, patients education, and empowerment; the potential for behavioral informatics to help people with limited health literacy. I have a lot going on – so, come around and let’s brainstorm ideas. |
| Christine Pace, MD MSc        | Research interests include identifying ways to improve care for patients with substance abuse and alcohol use disorders in primary care and other medical settings. |
| Lisa Quintiliani, PhD         | She designs (using qualitative methods) and evaluates health promotion interventions across a variety of behaviors (diet, physical activity, smoking) with and without the use of information technology. Her goal is to effectively design, implement, and evaluate computer-assisted approaches for behavioral risk reduction for the primary prevention of chronic diseases in multiple populations that face health disparities, in particular racial/ethnic minority groups. More recent projects are focused on cancer control and include examining advance care preferences among patients with advanced cancer and developing a mobile app for weight management among breast cancer survivors. |
| Vasan Ramachandran, MD, DM, FACC, FAHA | 1. Clinical and genetic epidemiology of congestive heart failure (CHF), including identifying risk factors for the disease, characterizing the subgroups with diastolic heart failure, asymptomatic LV systolic and diastolic dysfunction, and evaluating the role of LV remodeling; characterizing the genetic and clinical epidemiology of CHF and its subsets.  
                            | 2. Clinical and genetic epidemiology of population-based vascular testing and echocardiography, including identifying biological, environmental, and genetic determinants (correlates) of cardiac structure and function; normative standards; detailed assessment of biomarkers of the process of left ventricular (LV) remodeling, including but not limited to role of natriuretic peptides, insulin resistance, cardiac extracellular matrix markers, oxidative stress, inflammation, growth factors; heritability of echocardiographic measurements, and genetic linkage; genes involved in LV remodeling, left atrial and aortic structure identified via genome-wide association Studies (GWAS) and gene-environment interactions; brachial artery endothelial function, its correlates, and tonometric assessment of large artery function.  
                            | 3. Clinical and genetic epidemiology of cardiovascular risk factors, including high blood pressure, including characterizing the lifetime risk, rates of progression and risks associated with various degrees of elevation of CVD risk factors; large artery stiffness and function and role in systolic hypertension in the elderly; genetics of hypertension and large artery function. |
| Richard Saitz, MD, MPH, FACP, DFASAM | **Alcohol Disorder Hospital Treatment (ADOPT) Study**  
- ADOPT is an NIAAA-funded trial examining whether extended-release injectable naltrexone (XR-NTX) or oral tablet naltrexone (PO-NTX) is more effective at reducing alcohol use and re-hospitalization among people with alcohol use disorder who are hospitalized. Participants randomized to either of the intervention arms (XR-NTX or PO-NTX) will be prescribed the medication for 3 months and will receive their first dose at the end of their hospitalization.  
- The specific aims of this pragmatic (effectiveness, not efficacy) RCT are to compare initiating XR-NTX or PO-NTX at the time of discharge from a medical hospitalization for patients with an alcohol use disorder on: 1) alcohol consumption and consequences, and 2) acute healthcare utilization (including hospital readmission and emergency visits) and cost-effectiveness. 3) In a 3rd, exploratory aim, we will assess moderators of medication effects including demographic, behavioral, and genetic factors. Although the active ingredient is the same the medications differ in costs, mode of administration and dosing frequency, which will likely lead to different real world effectiveness and cost-effectiveness. |
| --- | --- |
| **Boston ARCH Cohort Study**  
- This project is a component of the Uganda Russia Boston Alcohol Network for Alcohol Research Collaboration on HIV/AIDS (URBAN ARCH) Consortium, a member of the National Institute on Alcohol Abuse and Alcoholism’s Consortiums for HIV/AIDS and Alcohol Research Translation (CHAART) Initiative, that requests establishment of a research framework of cohort studies that build on pre-existing cohorts, accurately characterize alcohol use and consequences in HIV-infected adults and test alcohol interventions. The central goal of the URBAN ARCH Consortium is to examine the consequences of alcohol on HIV disease and to mitigate its harmful effects. More information on the URBAN ARCH Consortium can be accessed here: [http://www.urbanarch.org/](http://www.urbanarch.org/).  
- The specific aims of the Boston ARCH Cohort study are to: (1) expand and continue a cohort of 250 HIV-infected adults affected by multiple substances to 400. They will have a spectrum of alcohol and other drug use, and (2) determine the effect of alcohol consumption and other substance use on falls prospectively in the Cohort. |
| Jeffrey Samet, MD, MA, MPH | His research focus includes the impact of alcohol use and illicit drugs on HIV-infected patients, integrating addiction treatment into medical care, HIV infection prevention and treatment in Russia, and addressing the HIV Care Cascade. He is Principal Investigator on several NIH grants including the NIAAA Alcohol-HIV Consortium URBAN ARCH and two NIDA R25 grants to advance physician addiction education and research. |
| Robert Saper, MD MPH | 1. Complementary and Integrative Medicine for Underserved Populations  
2. Yoga for Chronic Back Pain  
3. Heavy Metal Toxicity of Traditional Indian Medicines |
| Christopher W. Shanahan, MD, MPH | • Clinical & Research Medical Informatics & Information Technology  
• Substance Use Disorders and Chronic Pain; SUD Stigma, Relapse prevention, Community-based OBAT.  
• Community Medicine (Community-based care and collaboration with community-based organizations, clinicians, and patients).  

As Director of the Clinical Research Informatics and Technology Consultation (CRITC) Service he assists BU/BMC researchers with planning and use of IT and informatics to facilitate clinical studies. |
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<tr>
<td>Michael Silverstein, MD, MPH</td>
<td>Research interests include family-based mental health, specifically maternal depression, traumatic stress, and addiction in newborns and infants, among other topics that allow him to exercise his commitment to working with low-income and under-served children; improving access to and quality of care for disadvantaged populations.</td>
</tr>
<tr>
<td>Kaku So-Armah, PhD</td>
<td>I am interested in understanding why HIV infected people have more heart disease than HIV uninfected people. My background is in epidemiology and my research investigates the roles of liver disease, substance use, immune dysfunction and intestinal microbial composition in increasing heart disease risk among HIV infected and uninfected people.</td>
</tr>
</tbody>
</table>
| Alexander Walley, MD, MSc | Areas of interest include:  
- Fentanyl-related overdose  
- Overdose prevention education and naloxone rescue kits  
- Chapter 55 statewide individually-linked dataset to study Massachusetts overdose  
- Integrating addiction treatment and medical care and vice versa  
- Addiction and medical care for people who are HIV positive  
- Low barrier addiction treatment access programs  
- Inpatient addiction consult services |
| Zoe Weinstein, MD, MS | Areas of interest:  
- Integration of addiction treatment and primary care, including Office-based Addiction Treatment (OBAT)  
- Inpatient addiction consult services |
| **EDUCATION** |  
**Daniel Alford, MD, MPH** | Areas of interest include: Safe opioid prescribing for chronic pain clinical practice and education; Office-based opioid treatment for opioid use disorders  
Integration of screening, brief intervention and referral to treatment into general healthcare settings.  

Projects: Safe and competent opioid prescribing education programs; Office-Based Opioid Treatment program at BMC Adult Primary Care. |
| **Jonathan Berz MD, MSc** | 1. Area of interest/curriculum: diet and health- example project includes a regular 4th year medical student seminar on the topic and an implementation science project on system development to increase referral rates to community based diabetes prevention programs for patients with pre-diabetes  
2. Primary Care based topics and teaching of residents |
<p>| <strong>Deborah Dreyfus, MD, MSc</strong> | Areas of interest include: primary care for children and adults with Intellectual and Developmental Disabilities; prevention as well as transition from pediatric providers to adult care providers and providing appropriate tools for aiding transition from one provider to the next. |</p>
<table>
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<tr>
<th>Name</th>
<th>Areas of interest include:</th>
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<tbody>
<tr>
<td>Warren Hershman, MD, MPH</td>
<td>Teaching; Ambulatory teaching; Curriculum development; Clinical evaluation; Teaching EBM; Clinical reasoning; Communication skills.</td>
</tr>
<tr>
<td>Angela Jackson, MD</td>
<td>all aspects of medical education; professional development for medical students; career selection; mentoring skill development; helping to hone teaching skills for teachers – residents, chief residents and faculty; previous experience in curriculum development in Primary Care resident education, with special emphasis on creating curricula that will allow residents to develop the skills necessary to become leaders in the health care; leadership skills for physicians; patient advocacy; developing professional development plans as a resident or junior faculty.</td>
</tr>
<tr>
<td>Jeff Markuns, MD, MEd</td>
<td>medical education and primary care systems development; global health with special foci on primary health care measurement and Family Medicine development.</td>
</tr>
<tr>
<td>Jay D. Orlander, MD, MPH</td>
<td>My current scholarly work is focused on electronic consultation with in the VA regionally, and is not education related. We do have 1 current GIM fellow working with us. I am willing to work with GIM Fellows interested in their own educational related research projects but do not currently have such a project of my own</td>
</tr>
<tr>
<td>Catherine Rich, MD</td>
<td>Mental health integration in primary care, inter professional team work, education and medical ethics.</td>
</tr>
<tr>
<td>Benjamin Siegel, MD</td>
<td></td>
</tr>
</tbody>
</table>
| Jenny Siegel, MD      | 1. I direct the urban health and health equities pathway for residents interested in learning more about social determinants of health, health disparities, and health issues common to urban often marginalized populations (addiction, structural violence, food access issues, homelessness, social/systemic stressors, etc.). I would be eager to work with any fellows interested in curricular development, etc. here.  
  2. I am involved with a group of students/residents working on developing an elective in correctional medicine.  
  3. Catherine Rich and I are part of a multi-institution group grappling with improving education around social determinants of health.  
  4. I am working with a group of residents on systems transformation of the teaching clinic at Shapiro.  
  5. I have worked with a prior fellow on integration of social determinants of health into the existing resident QI curriculum. |
10. Library
The following items are available to borrow in the program office:

1. Laptop
2. Dictaphone
3. Video cameras
7. The ASAM Essentials of Addiction Medicine, Herron et al, 2nd ed.
8. ACPM Preventive Medicine Board Review Course 2014
9. ACPM Preventive Medicine Board Review Course 2015
10. ACPM Preventive Medicine Board Review Course 2016
11. Mayo Clinic Preventive Medicine and Public Health Board Review
12. Emergency Public Health Preparedness and Response

11. Other Information & FAQs

- Fellows are expected to attend academic national conferences each year and as such, are provided an allowance of ~$1500 for travel. Please discuss with your program director when planning what conferences to attend. Fellows on the AHRQ grant are expected to attend the AHRQ meeting.

  Travel
  - Make sure to save boarding passes and **itemized receipts** or you will not be able to get reimbursed. You will also need to submit proof of payment (credit card receipt and/or transaction summary) with all expenses
  - You can book your flights online and have the expense charged back to the grant. Set up a profile at [https://www.concursolutions.com/registration/register_form.asp?regcode=bostonmed123](https://www.concursolutions.com/registration/register_form.asp?regcode=bostonmed123) Check with Linda for the account number you should charge.

  Vacation
  - Fellows are expected to attend: division/department meetings, Academic conferences and Work in Progress (Tuesday 9-11:45), Grand Rounds, etc. If you have to miss a Division Meeting/Fellows Meeting—give your fellowship director notice in advance. Most people take off time in the summer, and time around Christmas/New Years is also fairly flexible. Note: any time off from clinic must be made 90 days in advance.

  Holidays
  - BUSPH calendar [http://www.bu.edu/sph/students/resources/academic-calendar/](http://www.bu.edu/sph/students/resources/academic-calendar/)
  - The Boston Medical Center holiday schedule [http://internal.bmc.org/resources.html](http://internal.bmc.org/resources.html)
The following holidays are recognized by BMC and the ambulatory clinics and administrative offices will be closed: New Year’s Day, Martin Luther King Day, President’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas

  Stipends
  - Stipends are set based on NIH PGY levels, with some Division-based supplementation. Talk to your fellowship director for more information.
Getting to Work

- **Red Line:**
  - Andrew Station: Bus connections
    - CT3 (weekdays only; does not run on weekends or holidays)
    - 10
    - Drop off: Albany and East Concord Street in front 710 Albany garage or East Newton building
    - Pick up: Crosstown building or 95 East Concord Street (in front of the new Moakley building extension)
  - Broadway station: Bus connection 47
    - Pick up: Albany and East Concord Street
    - Drop off: 88 East Newton (Newton Pavilion)

- **Silver Line** (either SL4 or SL5)
  - Drop off/pick up: Worcester Square or Mass Ave at Washington Street

- **Orange Line**
  - Mass. Ave Station: About 20-25 minute walk down Mass Ave to BMC (*hint walk a block to the east and then walk down Concord Street for a more scenic walk*)
  - Alternate: catch the 1 or CT1 (express) to Mass Ave and Albany or Harrison

- **Green Line**
  - E branch to Symphony
    - About 30-35 minute walk down Mass Ave to BMC
    - Alternate: catch the 1 to Mass Ave and Albany or Harrison
  - B, C, D branches to Hynes Convention Center
    - Catch the 1 to Mass Ave and Albany or Harrison

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**Evening Shuttles**

- Leaves from the front of the 710 Albany garage approximately once per hour and will bring you anywhere within a 1 mile radius
- Shuttle to Broadway Station (Red Line), Ruggles Station (Orange Line), Back Bay Station (Orange Line), Copley station (Green Line) and the South End neighborhood are within one mile of BMC.
- Call TranSComm at 617-638-7473 or email bumctranscomm@gmail.com

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**Computers on campus**

- BMC network computers: All computers in Crosstown floors 2 and 1, the hospital, clinics
  - Need BMC login
  - Contact BMC IT with issues: 617-414-4500
- BU network computers
  - Crosstown Floors 3 and 4
    - Med school, Talbot Hall
    - Use BU login
    - Contact BU IT with issues 617-638-5914
    - Office on 11th floor of med school
- File sharing
  - BMC computers block all file sharing. This includes DropBox, Google Drive, etc.
    - If you want to use a USB jump drive to save a file off of a BMC computer it must be encrypted but note once you do that you cannot use it on any other computer
    - If you plug it in for read only access and make sure to click NO when computer asks to encrypt
    - Best bet is to email needed documents (note there is max file size limit)
  - BU: You get access to a BU specific Google Drive with online storage space
  - All fellows will have access to the “FELLOWS” folder on the shared g drive, schedules, articles, and other documents are stored here.
- Wi-Fi
  - BU computers: login into the BU 802 network with your BU ID and password
- **BMC**
  - Use Guest network
  - If you want consistent access you have to use the BMC MDM network. Call the BMC IT Help Desk to have them walk you through the set up process (note this requires allowing BMC access to your phone and requires a strong passcode)

- **BMC Remote Access**
  - This will allow you access to Epic, Logician (read only), the paging system/BMC directory as well as other hospital resources on the Intranet page. You can also access your H:/ drive but you will not be able to save files to your local hard drive. You will need to call the BMC Help Desk (4-4500) to set it up.

- **BU Remote access**
  - You can access the Med School library resources through the library website at [http://medlib.bu.edu](http://medlib.bu.edu). Login with your BU login and password.

- **VA VPN**
  - Contact your administrative staff at the VA, you will need to get access from your Information Security Officer (ISO). If you have a VA outlook email account (different from internal VA mail in Boston CPRS GUI), remote access is possible through the VA intranet (using VA VPN) at [https://webmail.va.gov](https://webmail.va.gov)

**Email**

Every fellow will get both a BU address (affiliated with your school registration) and a BMC address.

- You can choose how you want to handle having two accounts. You can either forward one account to another or check 2 addresses

- **All fellowship meetings will be scheduled via BMC Outlook**

- The email distribution group only works from BMC Outlook (unless you are replying/forwarding)

- BMC may be more secure email with its firewall. Preferred for patient emails: using the word Secure in the subject encrypts the email

- Patient correspondence should go through “My Chart” in EPIC or secure messaging through MyHealtheVet at the VA, not via email

BU’s email has more space and you have to frequently clear out your Outlook on BMC. All Boston University alumni will have the option to retain theirlogin@bu.edu email address.

Alumni will automatically have on-going access to their account hosted on BU Google Apps after graduation. As needed, you can configure forwarding within BU Google Apps to an external email account. Alternatively, you can use the Email Forwarding System to set uplogin@bu.edu as an address that forwards to an external email account.

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**Where to grab lunch**

(a short list, many other options available)

- Cafeterias in Yawkey and Shapiro Buildings
- Chequers: basement of the medical school
- Blunch: baked goods and sandwiches
- Flour Bakery: baked goods and sandwiches
- Toro: tapas
- Food trucks: change daily. Located at the corner of Harrison and East Concord Street
FAQ’s

Q1 With whom do I have to meet during the summer and in what time frame?

In general, use your first two months to meet individually with members of the executive committee. A few ways to use these meetings:

1. Hear what other research is being done in the GIM, Family Medicine, and Pediatrics departments. Doing a brief literature search about the research is useful before the meeting.
2. Explore interesting projects you might like to join or start new. Don’t feel any need to commit to a project early on though.
3. Get suggestions for other people with whom you should meet.

Look for good mentors, advisors, and role models. Ask around about what a good mentor is.

Q2 How many projects do I need to do?

A: 1 -3 is the norm, depending on scale and time commitment. At least one needs to be an epi or health services research project to satisfy the thesis requirement. Additional projects are encouraged, although it is better to have fewer projects that are complete rather than more that are incomplete at the end of the fellowship. Recommend at least 1 project being a secondary database analysis.

Q3 How many mentors should I have?

A: No fixed number- it depends on your needs. Ideally, you should have one supervisor for each Project, a SPH advisor and one overall mentor who will oversee your progress in all aspects of the fellowship (and help you get a job). Your overall mentor should be someone in the Fellowship leadership so they can oversee your progress. Sometimes the same person fulfills those different roles and sometimes you can have a number of different faculty members in those roles. It may be a good idea if your overall fellowship mentor and your project mentor are different people - this allows them some degree of objectivity. On the other hand, working together on a project also allows a much more intimate relationship. Some faculty members have strong preferences for only mentoring those that they do projects with and other faculty will go either way.

Q4 How do I “fund” a research project?

Fellows are encouraged to submit an application for a grant, to gain experience with this important and ubiquitous process. Mentors can assist with choosing a grant that is most appropriate. There are small amounts of funding ($500-1500) associated with fellowship grants that fellows may access for assistance with research projects. The funding is limited so fellows are encouraged to choose projects that don’t need extra funding. These might include secondary analyses of already collected data. If a fellow needs funding for a project s/he will apply to the program director. Some motivated and entrepreneurial fellows have secured small grants or have hooked up with larger organizations that are already interested in conducting research in their field. For example, there are small intra-institutional grants (e.g. Risk Management) that 1st year fellows can apply for funding in their 2nd year. Your research supervisor may also have access to funds if it is part of a larger project.

Another good source for “funding” is taking advantage of a program funding first year medical students to do research in the summer between the 1st and 2nd year of medical school. The students are required to work for 8 weeks and to present a poster on their project at the beginning of January. In return they receive $2500 toward their medical school tuition. It is somewhat competitive to get these students because there are LOTS of faculty members who advertise for a student (through the student affairs office). However, students are often attracted to the kind of research that fellows/faculty in our departments conduct (real life issues and not lab work). To get a student, you have to advertise through the listing at the office of student affairs sometime between January and March. Post a position on the Med Student Summer Research Program.
Q5 Can I stay for a 3rd year and why would I want to?

A fellow may choose to stay for a 3rd year to help solidify research skills and projects. Sometimes a fellow has personal reasons that keep him/her in Boston for another year (e.g. spouse has another year of training and the family plans to relocate to another region after fellowship), and feels that doing another year of fellowship will help advance his/her research skills. The reason NOT to do a 3rd year is fear of not getting a job, and being unsure of what to do next. There are limited funds for 3rd year stipends, so a fellow who wants to do a third year should make this decision in the summer or fall of the 2nd year and petition the executive committee via their mentor or the program directors. For VA funded fellows, the VA faculty has to petition for these spots in November of the 2nd year in order to secure funding. Those interested in a 3rd year are expected to apply for a grant in July of the 2nd year.

Q6 What are some of the moonlighting activities available for fellows

A: The fellowship directors do not want fellows moonlighting during the day for a number of reasons, including restrictions by funding agencies on number of clinical hours during the week. There are a variety of options at BMC and outside BMC. BMC is self-insured so may limit your outside moonlighting. Internal moonlighting discuss with your department. Facilities such community health centers have their own insurance—called the FTCA system and the VA is self-insured. You are responsible for ensuring that you have proper malpractice with the moonlighting site.

Q7 What are some of the “perks” of fellowship

1. As a fellow can get trainee rates to join Mass Med Society, ACP, SGIM, APHA, and other professional associations. etc.
2. As a VA employee you can purchase T-passes through the VA
3. As fellows, our malpractice allows moonlighting at BMC approved practices as long we are doing what we're trained to do. Contact your program coordinator for details
4. As SPH students we can get SAS loaded on your computer as a BU student only if you are registered for the SAS class. Go the BU IT office on the 11th floor of the library
5. As SPH students, we can get discounted T-passes (but only during the academic years)
6. As SPH students: SPH holds a free dinner “get-together” about once/month as part of part of meetings with your concentration. See emails from your course coordinator for details
7. As graduate students, may defer student loans. Check with your loan servicer. If you need verification forms signed contact Linda
8. Printing in Library: As a BU student you get $12 per semester loaded on your Library copy card. To obtain, go to the Library on the 12th floor of the med school. Show your BU student ID to get the card for the first time. For PMRs: at GME orientation the CIR union gives you a separate copy card with $5 pre-loaded
9. As a BU student your student ID gets you student rates (or free admission) to many Boston museums
Q8 Who can I turn to if I have a project/fellowship/personal problem?

A: Depends on the problem. Ask your fellowship mentor, other faculty that you feel comfortable with, program directors, a member of the Advisory Board, or your co-fellows. There are professional counselors available as well as an ombudsperson. To maintain some anonymity, ask someone in the medicine residency office (638-6500) whom to contact.

BMC Employee Assistance Program: http://internal.bmc.org/hr/WorkLife/EAP.htm
BU Faculty & Staff Assistance Office: http://www.bu.edu/fsao/

Q9 Why be in the CREST Program?

A. The CREST Program is best viewed as an "add-on" to the Fellowship that can be of additional help to the Fellow who is open to pursuing a career oriented toward clinical research. BUMC fellows in the research track are expected (i.e. some of your funding depends on your participation so it is not really optional) to apply for the CLINICAL RESEARCH TRAINING (CREST) Program. It is designed for fellows who are doing clinical research, so those in the Med Ed and Prevention tracks do not generally apply. There are also restrictions re: visas. If you are at all unsure, be sure to ask your mentor early on. The program runs September through June of each calendar year but applications are due in October.

CREST also helps fund some of the education tuition, which supplements your grant funding.

All BU fellows (regardless of whether they are actually CREST fellows) are invited to attend all CREST lectures. They are generally interesting and worthwhile, and you get a free lunch! The benefits include the high quality CREST seminars themselves (which you could attend even without being a CREST fellow), some additional clinical research mentorship and advice from a seasoned and helpful clinical researcher an interesting opportunity to meet a number of clinical research fellows who are not in general internal medicine/pediatrics/family medicine, and an additional credential for your future CV’s "Training Section" which says "Completed Boston University’s NIH K30-funded 2-year Clinical Research Training Fellowship". The placement of "NIH K-30" on your CV will actually help explain your research background to non-general medicine reviewers at NIH itself (where the words "General Medicine Fellowship" don’t really mean anything), and to others in the clinical research world.

For more information, http://www.bu.edu/ctsi/programs/training-and-education/crest-program/

The requirements of the CREST program are
(a) Making it to 70% of the CREST Tuesday noontime seminars which all Fellows are expected to attend anyway (and where lunch is provided)
(b) Going to a few CREST-specific meetings with Dr. Felson or his designates,
(c) Keeping Dr. Felson’s office fully apprised of your progress through the fellowship, and your career plans
(d) Submitting an application.
(e) Making a 10 minute presentation of your research at the CREST seminar during your first year and a 1-hour presentation of your research at the CREST seminar during your second year.
(f) Participating in an IRB internship, which is an excellent opportunity albeit somewhat time consuming. The IRB internship consists of your attending four separate BMC IRB meetings, two hours each. You are an observer at two of them and at the other two you make a presentation of a study that has been submitted to the IRB that week.
Q10 Who and what do I need to know if I am going to be a fellow based at the Bedford VA (non-PMR)?

A: Ann Borzecki directs the VA fellowship at the Bedford VA and is very helpful in several areas. Until you are credentialed and have staff privileges at the VA, you have to schedule your clinic during the time that she is there. She will co-sign your notes. Once you are credentialed, your clinic schedule is up to you and the clinic staff.

The Ambulatory Care Clinic staff members are easy to work with. If you have not worked within the VA system before, make sure to ask staff about various support programs that are available for veterans.

At VA, you will have a "research fellow" position within CHOIR, however because you will be acting as a physician, you will have to remind human resources personnel that you will need physician privileges although your position within the VA is a researcher. Because you will not be at the VA all the time, it is advised to apply for remote access to patient data and telework. CHOIR is an underutilized resource at VA. Attending CHOIR fellow meetings will be helpful to expand your network and research skills as CHOIR fellows are all post docs and have higher level of expertise compared to clinical fellows.

Q11 What is Evans Day?

A. Evans' day is a multi-day research meeting for the Department of Medicine in the fall. It's a chance to give a poster presentation. There are awards for best posters. GIM fellows have won in the past. There is also a clinical professor expert who gives grand rounds.

Q12 What is the timing of abstract submissions (i.e. Evans Day, regional/national SGIM, etc.)?

A: The fellowship holds an abstract review Academic Seminar in the late fall.

For GIM fellows: Evans Day (Department of Medicine sponsored for GIM and subspecialties) is usually in November and the abstract is due in September. Regional and National SGIM abstracts are due in early January.

For FM fellows: The NAPCRG conference is in the fall and the submission deadline falls in April. STFM occurs in early May with submission deadline in early January.

For PEDS fellows: Pediatric abstracts for the Pediatric Academic Society (PAS) annual meeting are due in November (final projects, do not accept preliminary analyses) for the spring conference.

Q13 Should I join any professional societies?

A. At least join the Mass Med Society which is free for all fellows. It gives you the New England Journal AND free access to the Harvard (Countway) medical library. All fellows should check with Linda Neville as she may be able to register you. Call 781-893-4610 or http://www.massmed.org/. You may also wish to join the Society for General Internal Medicine (SGIM) (GIM fellows), Society for Teachers in Family Medicine (STFM) (FM fellows) or the Pediatric Academic Society (PAS) (Peds fellows), the fees for the annual meeting are cheaper, and you will likely be a life-long member if you remain in academic medicine.

For PM residents, you should join the American College of Preventive Medicine, which includes informative weekly emails and subscription to monthly Journal of Preventive Medicine along with discounted conference registration and discounted board review courses. You can use your BMC GME allowance for this registration fee. In addition,
the Association for Prevention, Teaching and Research (APTR) has a number of practicum and other opportunities and may be worth joining.

Academy Health has two different divisions: a policy focus and a research focus. If interested in joining the policy group, Professor David Jones in the HPM department at SPH is starting the chapter and can be contacted if interested at dkjones@bu.edu. The Academy Health Policy Conference is typically in early February and the research conference is in held in June.

Q14 What do I do in the "slow periods" between classes when there seems to be nothing to do
A: Explore in ways that ultimately will contribute to your work in the Fellowship, even if the specific "tasks" are not yet defined. Some useful explorations have included

1. Setting up meetings with various faculty in the Fellowship to discuss your interests and to learn about theirs. One fellow writes, "even with faculty members whose interests were not closely linked to my own (and where I did not foresee us working together), I asked them if they would be willing to listen and offer a few reflections on the issues I wished to explore."

2. Doing literature searches and reading articles that can introduce you to areas of research or education that are entirely new

3. Later in fellowship, you may plan major writing projects for the times between courses (Winter Break, Summer Break)

4. Meeting with research librarians in med library to learn how to perform literature searches efficiently. BU also holds helpful (free) courses in computer software (e.g. PowerPoint, Excel, etc.)

Q 15 To Whom should we ask more questions?
A: Clearly, any other current fellows (including others in your class) – one of us has probably “been there, done that” at some point. Other good general resources:

General Fellowship things or a good first step: Linda Neville
Preventive Medicine Residency: questions that you might not want to share with peers, academic questions, problems with mentors or faculty: Jonathan Berz/Pablo Buitron de la Vega
MS Epidemiology program at SPH: Ann Aschengrau.
MS Health Services and Systems Research program at SPH: Mari Lynn Drainoni
Anything: Your mentor. Remember, the mentors not only advise us on our projects and our lives, but also serve as liaisons for us to the Fellowship Directors. They also report on us at the executive committee meetings.

Q16 To whom do I give the paperwork to defer my loans.
A: Linda Neville

Also, note that BU will send (at an unpredictable time) notification to your loan servicer that you are a student, which will automatically place your loans in deferment. You will then need to sign a waiver of deferment if you do not want to defer your loans.
Q17 How am I getting paid and what kind of travel/expense allowance do I get?
A: Fellows are paid from different sources so the answer is different for everyone (and although that may not seem fair, that is the way it is). If you have questions about your pay, or benefits or travel, you can ask Linda Neville.

The Executive Committee has decided that all fellows get a travel stipend to attend at least 1 meeting per year (SGIM for GIM fellows, STFM for FM fellows, PAS for Ped fellows, AHRQ for fellows on the AHRQ grant). The specific amount of travel stipend per year depends on where the meetings will be held, but should cover registration at associate level, travel, shared hotel room and modest per diem for food. Fellows who are on special funding sources may have travel funds for other meetings.

All travel reimbursements require original itemized receipts along with the credit card transaction or statement as proof of payment. Submit all receipts to Linda for processing.

Q18 Where are the Boston VA hospitals?
A: The JP VA is in West Boston, near Longwood medical area and Brookline. For directions https://www.boston.va.gov/locations/Jamaica_Plain_.asp
The West Roxbury VA is farther west near Dedham, Needham, and Newton. For directions https://www.boston.va.gov/locations/directions.asp
The Bedford VA is farther north of Boston. For directions https://www.bedford.va.gov/locations/directions.asp

Q19 How do I dial in to the VA?
A: You can dial up the VA system using KEA! software which is available from the VA computer IT center. You can pick up a copy when they take their mandatory training classes.

Q20 How do I keep track of literature references in a project proposal?
A: Reference software
  - Reference management software is crucial for all of the types of writing you will be required to do throughout the fellowship and course work
  - Popular platforms include Zotero, EndNote, Refworks
  - As a BU student you are able to download and set up accounts with Zotero and Refworks for free
  - Note that some software will NOT work with BMC computers due to file sharing restrictions
  - Refworks is web-based so may be the most compatible for work between BMC and non-BMC computers
  - Contact the BU Med School Reference Librarians for advice on how to use the different platforms and vendors,
  - Contact BMC Help Desk (617-414-4500) to set up the plug-in for Microsoft Word to easily add references on BMC computers

Q21 With whom do I talk to renew ACLS-BLS-PALS?
A: All fellows have to maintain BLS certification.

For GIM fellows, the section offers recertification sessions twice a year during GIM Grand Rounds. Contact Jenay Nasif to schedule. If you cannot make one of these sessions email Jenay and Adam Blumenthal to schedule another
skills session. GIM fellows do NOT have to pay for BLS recertification. This is paid for by the section. You will need to do the online course in advance of the session (either Jenay or Amber Brown or Adam Blumenthal) will send this to you and then take the skills session.

In most cases ACLS is not required but BMC does offer classes. If you are a PMR or Addiction Fellow, you are employed by BMC and do not have to pay for the recertification. All other fellows have to pay for ACLS.

For PALS, email or call Adam Blumenthal for the schedule. Check with Pat Ciampa regarding whether or not the courses will be reimbursed.
Appendix A: Secondary Databases

Analyze large datasets to answer clinical, epidemiologic, policy and health finance questions, using appropriate sampling and statistical methodologies.

Objectives:
1. Describe the types of information collected in major existing cross-sectional and longitudinal national survey datasets, and the advantages and disadvantages of using such data to answer research questions.
2. Provide examples of clinical, epidemiologic, and policy questions that individual national datasets may be used to answer.
3. Demonstrate expertise in obtaining datasets and associated documentation.
4. Describe how multistage probability sampling methods are used to analyze large datasets, including the importance of population parameter estimates and standard error estimates of sample parameters.
5. Use statistical software to account for sampling weights and design in the analysis of large datasets.
6. Describe the characteristics of health plan administrative datasets available for research, including sources of data, types of informational files, types of payers and issues of validity of data.
7. Explain how epidemiologic questions concerning disease rates and distribution, as well as questions concerning use of resources and resulting costs, may be answered using health plan administrative datasets.
8. Describe what types of quality of care studies may be performed using health plan administrative datasets.
9. List the strengths and limitations of electronic medical records and disease registries for answering research questions.

Appendix B: Population Health

Objectives
1. Define the terms population and sample and describe how they differ.
2. Describe the difference between nominal, ordinal, interval, and ratio scales of data measurement, as well as the difference between discrete and continuous data variables.
3. Interpret the results of frequency distributions and graphs of those distributions.
4. Define measures of central tendency (mean, median, mode), as well as measures of dispersion or variability (variance, standard deviation, range), and choose measures that are appropriate for different types of measured data.
5. Define probability and describe its relationship to the normal and binomial distributions. Calculate z-scores and use the central limit theorem to describe the distribution of sample means.
6. Define the significance of study results and the likelihood that the study results represent the truth.
   • Describe the convention of hypothesis testing, null and alternative.
   • Define Type I and Type II error, p value and effect size.
   • Use considerations of Type I and Type II error to determine how to set the level of statistical significance, or the alpha level.
   • Understand how to modify the p value to correct for multiple comparisons.
   • Compare directional (one-tailed) to non-directional (two-tailed) hypothesis testing and justify their use.
   • Define power and estimate power and sample size for a research study.
   • Calculate and interpret 95% confidence intervals for commonly used statistics.
7. Describe methods of testing hypotheses involving two samples: the use of the t statistic.
8. Describe methods of testing hypotheses involving two or more samples: the use of analysis of variance (ANOVA) techniques (including post-hoc multiple comparisons and the use for ANOVA for repeated measures).
9. Define correlation and regression techniques and their use in measuring and describing the relationship between variables.
10. Describe statistical methods for testing hypotheses using data that measures categorical frequencies or proportions and interpret results from such analyses: chi-square tests and related statistics.
11. Describe statistical techniques for testing hypotheses of ordinal data and interpret results of such analyses: Mann-Whitney, Wilcoxon, and Kruskal-Wallis tests.

Appendix C: Qualitative Methods

Objectives
1. Describe the types of questions that qualitative methods are best suited to answer as compared to quantitative research, and how qualitative and quantitative methods may be combined to study a research question.
2. Define three ethnographic methods commonly used in qualitative research-participant observation, ethnographic interviewing, and focus groups and list the advantages and disadvantages of each.
3. Describe how audiotaping, videotaping, field notes, and unstructured or semi-structured interviews are used in ethnographic methods.
4. Describe the role of the facilitator, the note-taker, the transcriber, and the coder in focus group research.
5. Describe qualitative methods used to analyze documents such as essays, diaries, open-ended surveys, and medical records.
6. Explain how qualitative methods are useful in educational research and evaluation of educational programs.
7. Describe sampling methods in qualitative research and contrast them to sampling methods in quantitative research.
8. Describe the reduction of qualitative data to themes and abstract topics through a coding process, and explain how this fits into the iterative process of qualitative research; define and explain the importance of data saturation.
9. Explain how computer software programs facilitate the coding and organization of qualitative data.
10. Describe how the trustworthiness of qualitative research is verified through data, investigator, theory and method triangulation; respondent validation; and audit trails.
11. Describe the methods for effectively presenting qualitative research results, in contrast to methods typically used for quantitative data.
# Individual Development Plan:

Each fellow will fill in the form at the beginning of fellowship. The form will be updated in the fall and spring prior to the bi-annual meetings with the fellow, mentor and director. The fellow should schedule these meetings as soon as possible to ensure mentor availability.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
<th>Date Plan Created:</th>
<th>Mentor:</th>
</tr>
</thead>
</table>

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1. **Elevator Speech:**
A brief, persuasive speech that you use to spark interest in yourself. A good elevator pitch should last no longer than a short elevator ride of 20 to 30 seconds. It should be interesting, memorable, and succinct. It also needs to explain what makes you unique.

2. **Career Goals:**
Please describe the type of position (and geographical location) that you would like following fellowship. What steps have you taken to identify this type of position? What resources do you need from the fellowship program to be most successful?

---

## Projects

<table>
<thead>
<tr>
<th>Title and Mentor(s)</th>
<th>Status (What state is the project? Design, data collection, implementation, analysis, abstract, paper)</th>
<th>Resources needed (Manager coaching, other people, tools, funding)</th>
<th>Presentations (regional, national)</th>
<th>Publication Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Title:</td>
<td>Current:</td>
<td>□ Yes □ No □ Target Date</td>
<td>□ Study in process □ Preparation □ Submitted □ Published (cite below)</td>
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<tr>
<td>Mentor(s):</td>
<td>Next Steps:</td>
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<td>Target Date:</td>
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<td>2. Title:</td>
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<td>Next Steps:</td>
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<td>3. Title:</td>
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<td>□ Study in process □ Preparation □ Submitted □ Published (cite below)</td>
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<td>Mentor(s):</td>
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<td>Mentor(s):</td>
<td>Next Steps:</td>
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### BU Classes

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<th>Date enrolled</th>
<th>Grade</th>
<th>Date</th>
<th>Conference</th>
<th>Presentation</th>
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<tr>
<th>Course Title/number</th>
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<th>Grade</th>
<th>Date</th>
<th>Conference</th>
<th>Presentation</th>
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</table>

### CONFERENCES ATTENDED

- [ ] □ Poster
- [ ] □ Oral Presentation
- [ ] □ Workshop

### 3. Master’s Degree
(update where you are on your project and what needs to be done prior to graduation):

### 4. Publications
(in progress, accepted, submitted, abstracts presented at national meetings):

### 5. List all submitted, funded and in-progress grant support (do not include your AHRQ/NRSA research):

### Mentor Meeting Dates

<table>
<thead>
<tr>
<th>Mentor Meeting Dates</th>
<th>Scholarship Oversight Meeting Dates</th>
<th>Responsible Conduct in Research</th>
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<tbody>
<tr>
<td></td>
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<td>Course</td>
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<tr>
<td></td>
<td></td>
<td>Date completed</td>
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<tr>
<td></td>
<td></td>
<td>1. Introduction to RCR through Blackboard</td>
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<td></td>
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<td>2. Intermediate RCR through CITI</td>
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<tr>
<td></td>
<td></td>
<td>3. Workshop 1: DATA INTEGRITY: On Being a Scientist</td>
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<td>4. Workshop 2: COLLABORATIVE RESEARCH: On Team Membership, Mentoring and Shared Authorship</td>
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<td>5. Workshop 3: SCIENTIFIC PUBLICATION: On Accountability and Peer Review</td>
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<td>6. Workshop 4: OBJECTIVITY IN SCIENCE: Regulations on Conflicts of Interest and Research Misconduct</td>
</tr>
</tbody>
</table>

What are the three most important activities in the next six months to advance your career and help you to fulfill your career goals?
What barriers, if any, do you perceive in achieving these goals? How might they be overcome?

12. CLINICAL

List of clinical activities (including moonlighting) over the last 6 months:

Changes expected for next six months:

13. TEACHING

Please list current teaching activities for the prior 6 months, both clinical (if applicable) and non-clinical:

Expected Changes for Next Six Months:

14. MENTORING ACTIVITIES

<table>
<thead>
<tr>
<th>Mentee/year</th>
<th>Position</th>
<th>Topic (presentations and publications)</th>
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<tbody>
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</table>

15. MENTORSHIP

In what ways have your mentors been effective?

What could make them more effective? (i.e. areas for improvement)

How is your mentor group working for you?

What else do you want/need from your mentors?

<table>
<thead>
<tr>
<th>Date plan reviewed with mentor:</th>
<th>Notes from the conversation:</th>
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<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Next meeting with mentor:</th>
<th></th>
</tr>
</thead>
</table>
Instructions

The Individual development plan (IDP) is a tool for fellows to use to ensure their training goals are being met. This is a “living” document to be updated regularly. Schedule your oversight meeting early, they should occur in November and April. Invite your mentoring team and anyone else who you would like feedback from regarding your projects. Faculty and fellows use this time to discuss and document their perspectives on achievements, challenges, and strategies to address them; and to keep track of progress toward post-fellowship and career goals. The meeting should include the fellowship director, primary research mentor, other research mentors, and SPH mentors. A copy of the IDP must be submitted to Linda along with an updated CV.

1. **Elevator Speech:** a brief, persuasive speech that you use to spark interest in yourself. A good elevator pitch should last no longer than a short elevator ride of 20 to 30 seconds. It should be interesting, memorable, and succinct. It also needs to explain what makes you unique. The faculty will give you feedback on this (see attached guide)

2. **Career goals:**
   a) Describe the type of position and geographical location that you would like following fellowship.
   b) Identify any resources you need from the fellowship program to help you succeed.

3. **Projects:** list all projects you are involved in, the status of the project, resources needed and the target date for presentation & publication.

4. **Master’s Degree** - update where you are on your project and what needs to be done prior to graduation.

5. **Publications:** list in progress, submitted, accepted abstracts and papers.

6. **Grants:** list any research grants you have submitted

7. List BU classes taken.
8. List conferences attended and whether you presented your research.
9. List the dates you have met with your mentor as well as the scholarly oversight meetings.
10. Track your progress for the Responsible Conduct in Research courses **REQUIRED FOR ALL TRAINEES**
11. **Goals:** list the activities you will need to do in the next 6 months in order to achieve your goals. Include any barriers you identify.
12. **Clinical:** update the committee with your clinical activity (including moonlighting).
13. **Teaching:** list your teaching activities for the past six months and the plan for the next six months.
14. **Mentoring:** list any mentees you have worked with during fellowship.
15. **Mentorship:** describe how your mentors have been effective, and any areas for improvement.
16. **ACGME Requirements**
17. **Preventive Medicine Residents:** update the PMR requirements.
18. **Addiction Medicine Fellows:** update the rotations you have completed.
Developing and Delivering Your Elevator Pitch

1. **What is the purpose of an elevator pitch?**
   - Imagine you get on an elevator with an important person and you have just the elevator ride to pitch your work/project to him/her.
   - What is your objective?
   - What do you say?

2. **An elevator pitch must be clear, concise, and engaging so that the other person**
   - Understands the major concept behind your work
   - Becomes interested
   - Wants to hear more

3. **Why is perfecting your elevator pitch important?**
   - Sometimes the pitch is your only chance
   - The average investor listens for only 90 seconds
   - Going through the process forces you to clarify your concept, which helps you to understand it more clearly yourself

4. **How to develop an elevator pitch**
   - Describe the concept/project you want to pitch
   - Ask yourself what you want the other person to remember
   - Answer the key questions
     - What is the problem?
     - How will you solve it?
     - Can you do it?
     - How will they benefit by helping you?
   - Practice!!

5. **Key ingredients**
   - It is not just the words – don’t forget
     - Eye contact
     - Pace and voice
     - Body language
   - You want to convey confidence and passion
### Comparison of BMC Research Fellowship Training Programs

<table>
<thead>
<tr>
<th>Category</th>
<th>Primary Care Academic Generalist Fellowship (2013-2017)</th>
<th>AHRQ T32 Competitive Renewal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainees</td>
<td>Postdoctoral MDs</td>
<td>Predoctoral PhDs &amp; Postdoctoral MDs and PhDs</td>
</tr>
<tr>
<td># of fellows trained</td>
<td>15 fellows since 2013</td>
<td>Requested total of 16 trainees over 5 years</td>
</tr>
<tr>
<td>Focal area</td>
<td>Primary care innovation for vulnerable populations</td>
<td>Health care delivery, quality, safety and value within a Medicaid ACO and Learning Health System</td>
</tr>
<tr>
<td>Mentorship</td>
<td>Research and career mentors using IDPs</td>
<td>Research and career mentors and mentorship from hospital operational leader using IDPs</td>
</tr>
<tr>
<td>BUSPH</td>
<td>MS obtained in Epidemiology, Biostatistics, or Health Services Research</td>
<td>MS or PhD in Health Services research, with required courses focused on Implementation Science</td>
</tr>
<tr>
<td>Academic Seminars</td>
<td>Weekly academic seminar and Research-in-Progress; seminars on educating adult learners</td>
<td>Weekly academic seminar and Research-in-Progress + revised QI curriculum based on trainee feedback, delivered to predoctoral and postdoctoral trainees together</td>
</tr>
<tr>
<td>Research Projects</td>
<td>Research focused on primary care interventions, including consideration of pragmatic research approaches</td>
<td>Research focused on prevention, chronic disease management, team-based approaches to care delivery, and integration of physical and behavioral health in the context of a newly formed ACO</td>
</tr>
</tbody>
</table>

### Academic Primary Care Fellowship Program Grants

<table>
<thead>
<tr>
<th>Grant # &amp; Title</th>
<th>Program Start</th>
<th>Program End</th>
<th>Budget Start</th>
<th>Budget End</th>
<th>Fellow Appointments</th>
</tr>
</thead>
<tbody>
<tr>
<td>T32 HP10028: HRSA NRSA</td>
<td>7/1/2016</td>
<td>6/30/2021</td>
<td>7/1/2019</td>
<td>6/30/2020</td>
<td></td>
</tr>
<tr>
<td>T0B HP29986: Primary Care Training and Enhancement</td>
<td>7/1/2016</td>
<td>6/30/2021</td>
<td>7/1/2019</td>
<td>6/30/2020</td>
<td></td>
</tr>
<tr>
<td>PTAPM-16-220-20</td>
<td>1/1/2017</td>
<td>6/30/2021</td>
<td>1/1/2019</td>
<td>12/31/2019</td>
<td></td>
</tr>
<tr>
<td>MEASURABLE OBJECTIVE 1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>------------------------</td>
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<tr>
<td>Over the five-year grant period, we will recruit a high-quality, diverse group of predoctoral and postdoctoral trainees from clinical departments (Pediatrics, Family Medicine, and GIM) and BUSPH to complete our fellowship program.</td>
<td></td>
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<tr>
<td><strong>Activities:</strong></td>
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</tr>
<tr>
<td>Application materials posted online and actively distributed to potential applicants across the country; active recruitment at national meetings; maintenance of an alumni network; qualified and diverse fellows matriculate into our program and complete the full training.</td>
<td></td>
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<tr>
<td><strong>Anticipated Outputs and Outcomes:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Larger number of highly qualified applicants than open slots each year.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>• 100% of training slots filled each year.</td>
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</tr>
<tr>
<td>• &gt;25% slots filled by applicants from under-represented or disadvantaged groups.</td>
<td></td>
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</tr>
<tr>
<td>• &gt;95% of fellows complete the training program.</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEASURABLE OBJECTIVES 2 AND 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over the five-year grant period, we will deliver the core components of our research training program to integrated groups of predoctoral and postdoctoral trainees. Fellows will obtain comprehensive research skills training, including specific training in implementation science and QI, and will conduct at least one research project leveraging BMC’s clinical data infrastructure to answer a timely clinical or health delivery question. Fellows will obtain positions after graduation as researchers focused on health care quality, access, and delivery specific to low-income populations.</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
</tr>
<tr>
<td>We will provide high-quality, individualized mentoring with research and hospital operational leadership mentors; ensure mentors complete the Mentoring the Mentor course; use Individualized Development Plans (IDPs) for all trainees; deliver our public health courses, didactic curriculum and associated learning activities annually including implementation science and QI; and ensure our graduates are prepared for and secure health services research positions.</td>
</tr>
<tr>
<td><strong>Anticipated Outputs and Outcomes</strong></td>
</tr>
<tr>
<td><strong>Comprehensive Research Training</strong></td>
</tr>
<tr>
<td>• Fellows will maintain at least a B+ average as per transcripts;</td>
</tr>
<tr>
<td>• Each fellow will present at Research-in-Progress &gt; 2x/yr.;</td>
</tr>
<tr>
<td>• Fellows will perform ≥2 academic research projects with at least one leveraging BMC’s clinical data infrastructure to address a clinical or health delivery question;</td>
</tr>
<tr>
<td>• All fellows will have ≥2 abstracts accepted for presentation at national professional meetings; and</td>
</tr>
<tr>
<td>• All fellows will have ≥2 paper accepted in a refereed journal based on fellowship projects.</td>
</tr>
<tr>
<td><strong>Program Graduates</strong></td>
</tr>
<tr>
<td>• ≥85% of graduates enter research careers focused on improving the quality, access and delivery of health care systems;</td>
</tr>
<tr>
<td>• ≥70% of program graduates remain in health services research after 3 years of graduation;</td>
</tr>
<tr>
<td>• ≥50% of graduates lead efforts to implement new care models in settings that care for underserved populations by 5 years of graduation; and</td>
</tr>
<tr>
<td>• ≥50% of program graduates have ≥1 funded research project by 5 years of graduation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEASURABLE OBJECTIVE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over the grant period and beyond, we will evaluate our program in an iterative manner that allows for continuous improvement of the curriculum.</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
</tr>
<tr>
<td>We will collect data including the ratio of highly qualified applicants to available slots, filling the program each year (benchmark of 100%), number of trainees from underrepresented or disadvantaged groups (benchmark of 25%), and number of fellows who complete the program (benchmark of 95%), IDPs and records of</td>
</tr>
</tbody>
</table>
mentoring meetings, BUSPH transcripts, academic seminar attendance rosters and evaluations, self-assessment surveys, research products, feedback sessions, online surveys, CVs, and interviews.

**Anticipated Outputs and Outcomes:**
- Data will be analyzed, aggregated and presented to the Project Co-Directors
- Program improvements will be made iteratively to improve quality and effectiveness

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**T32 HP10028: HRSA NRSA- 7/1/2016-6/30/2021**

**RECRUITMENT**

**Objective 1:** Recruit and retain high quality candidates by attending professional conferences, maintaining an updated website, tapping into the network of program graduates, using current fellows as ambassadors

**Performance Indicators**

- Larger number of qualified applicants than open slots each year
- 100% of training slots filled
- 95% of fellows retained for full training period

**Data Sources**

- Applicant database
- Yearly HRSA progress reports

**Objective 2:** Recruit and retain a diverse group of fellows by mentoring BMC under-represented minority (URM) residents for careers in academic primary care, collaborating with Boston University School of Medicine (BUSM) designated recruiter for URM physicians/students, and reaching out to historically black Medical Schools, the National Medical Association, the National Hispanic Medical Association, and other groups focused on advancement of URM physicians

**Performance Indicators**

- >25% slots filled by qualified applicants from under-represented or disadvantaged groups
- 95% of fellows retained for full training period

**Data Sources**

- Applicant and fellow database

**Objective 3:** Recruit fellows who have interests in addressing primary care issues related to underserved and disadvantaged populations (e.g., health disparities, access to care, substance abuse, women's health, health literacy, medical decision-making, other behavioral risk factors for disease, homelessness, domestic violence and PTSD, other social and economic risk factors for disease, chronic disease and disability)

**Performance Indicators**

- >90% of fellows entering the program declare interest in careers in medically underserved communities (MUC)

**Data Sources**

- Personal statements on applications

**FELLOWSHIP RESEARCH TRAINING**

**Objective 4:** Provide longitudinal mentoring guided by individual development plans (IDP)

**Performance Indicators**

- Fellows meet with mentors weekly throughout fellowship
- Each fellow develops IDP which is used to guide mentoring
- Twice yearly group meeting with all mentors/supervisors to review progress and revise IDP at Scholarship Oversight Meetings

**Data Sources**

- Copy of IDP
- Meeting dates with mentors
- Dates of group meetings and written feedback to fellows following meetings

**Objective 5:** Fellows exhibit evidence of mastery of primary care research skills, with expertise in health care disparities research

**Performance Indicators**

- All fellows in the research track will:
  - Obtain a Master’s of Science (MS) in Epidemiology or Health Services Research
  - Complete ≥2 independent research projects (≥1 involving primary data collection)
  - Present research results of all projects at regional/national meetings
  - Submit at least one article per project for publication in a refereed journal within one year

**Data Sources**

- SPH diplomas
- CVs
- Fellow Portfolios
- Conference program
- Graduate survey
year of graduating
E. Perform at least one project related to interventions to reduce health care disparities
F. Participation in implementation science research project by attending meetings of existing projects or conducting own analysis on new or existing project

| Objective 6: The program will provide comprehensive training in primary care research, with an emphasis on quality improvement (QI) and pragmatic research in safety-net health institutions and with MUC |
|---|---|
| **Performance Indicators** | **Data Sources** |
| A. Interdisciplinary academic seminars on a two-year cycle including seminars on the mentor/mentee relationship, presentation skills, grant writing, health disparities, and research dissemination relevant to vulnerable populations, 10 sessions/year | -Conference schedule and attendance records |
| B. QI curriculum delivered in a 2 year cycle, including didactic lectures and hands-on QI projects | -Course enrollment |
| C. Training in pragmatic research via didactic presentations and hands-on workshops on implementation science methods, 4 seminars/year | -Topics and dates of research in progress faculty meetings |
| D. Research literature appraisal seminar, 10 sessions/year | -Titles of projects and meetings that fellows attend |
| E. Research-in-progress, 18 sessions/year | |
| F. Training in the Responsible Conduct of Research, set of 4 seminars/fellow plus IRB internship and online modules | |
| G. Exposure to implementation research projects by faculty via research in progress conferences in the individual departments, at least 6 times per year | |

| Objective 7: Seminars in the pedagogy of teaching and leadership, with an emphasis on dissemination to key stakeholders |
|---|---|
| **Performance Indicators** | **Data Sources** |
| A. Pedagogy of Teaching seminars, 6 sessions/year | -Conference schedules |
| B. Seminars on leadership and project management such as time management, email management, giving feedback, conflict management, >4 sessions/year | -Attendance sheets |
| C. Successfully manage research project - complete data collection, analysis and abstract submission prior to fellowship completion | -Trainee evaluations |
| | -Mentor evaluations |

| FELLOWSHIP GRADUATES |
|---|---|
| **Objective 8: Program graduates (from research track) will either conduct research on healthcare quality and health outcomes specific to low-income populations, or they will directly lead healthcare reform efforts** |
| **Performance Indicators** | **Data Sources** |
| A. Enter a post-fellowship position with protected time and mentoring for primary care research (>75% of graduates) | -CV at graduation |
| B. Clinical research on topics related to MUCs (>75%) | -Graduate survey with yearly CV updates |
| C. Obtain extramural funding for research by 5 years post fellowship (>75% of those in research positions) | -Internet and PubMed search |
| D. Evidence of his/her work’s impact in improving primary care access and/or quality, reducing health disparities, or improving health by 5 years post fellowship (100%) | -NIH Reporter |
| E. Achieve the rank of associate professor or comparable leadership position outside academia by 10 years post fellowship (>75%) | |

| Objective 9: Program graduates from all tracks will obtain post-fellowship positions with academic appointments in medical schools, free-standing residency training programs or public health agencies |
|---|---|
| **Performance Indicators** | **Data Sources** |
| F. Enter a post-fellowship position with academic appointment, or role in free-standing residency or in public health agency (>90%) | -Graduate survey with yearly CV updates |
| G. Remain in such a position at 5 years after fellowship (>80%) | -Internet search |
| H. Clinical practice in MUCs (>60%) | |
| I. Achieve a leadership role in his/her area of interest by 5 years post fellowship (100%) | |
## PROGRAM EVALUATION

### Objective 10: The program conducts comprehensive annual evaluation that is used to iteratively improve the fellowship

<table>
<thead>
<tr>
<th>Performance Indicators</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Bi-annual fellow survey of program</td>
<td>-Fellow and faculty survey results</td>
</tr>
<tr>
<td>B. Annual faculty survey of program</td>
<td>-Copy of Action Plan</td>
</tr>
<tr>
<td>C. Action plan to respond to critiques, annually</td>
<td>-Graduate survey results (both identifiable and anonymous)</td>
</tr>
<tr>
<td>D. Annual survey of graduates, at 1, 5 and 10 years after program completion for evidence of achievements (identifiable information) to assure program meeting its achievement goals</td>
<td>-Internet search</td>
</tr>
<tr>
<td>E. Annual anonymous survey of graduates to obtain feedback on fellowship from cohorts of prior three year graduates</td>
<td>-NIH Reporter</td>
</tr>
</tbody>
</table>

### Objective 11: Obtain accreditation from the Academic Pediatric Association

<table>
<thead>
<tr>
<th>Performance Indicators</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Self-study application in year 1</td>
<td>-Copy of application</td>
</tr>
<tr>
<td>B. Successful site visit by the end of year 2</td>
<td>-Dates of site visit</td>
</tr>
<tr>
<td>C. Designation by end of year 3</td>
<td>-Certificate of Accreditation</td>
</tr>
</tbody>
</table>

### Objective 12: Outside evaluation by successful program directors from similar programs to share best practices and improve program

<table>
<thead>
<tr>
<th>Performance Indicators</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Site visit by Dr. Ingrid Binswanger in year 4</td>
<td>-Dates of visits</td>
</tr>
<tr>
<td>B. Site visit by Program Director TBN of similar fellowship program in year 5</td>
<td>-Reports from evaluators</td>
</tr>
</tbody>
</table>
### Objective 1: Develop and finalize training curricula for learners across the training spectrum

1.1 Conduct twice-monthly meetings of Leadership Team to monitor progress toward Objective 1

1.2 Assemble team and complete *Transformative Innovation* curriculum

1.3 Assemble team and complete QI curriculum

1.4 Assemble team and complete pragmatic research curriculum

1.5 Complete pedagogy of teaching curriculum

1.6 Complete and distribute instructional guidelines for mentoring and experiential projects (junior faculty, fellows, social work staff)

1.7 Collaborate to develop a minimum of 12 to 15 new field placements

1.8 As appropriate, program and upload web-based course materials

1.9 Synthesize all material above into a single master curriculum for junior faculty, fellows and practicing social workers in BMC and the CHCs

1.10 Integrate change domains into BUSM *Essentials of Public Health* course

1.11 Distill a stand-alone educational module for residents modeled their existing QI project requirement

1.13 Work with Boston HealthNet medical directors to enhance clerkships offered to medical students in CHCs

### Objective 2: Recruit Candidates

2.1 Complete design and programming of online application guidelines and form for higher level learners applying to the PCTE program

2.2 Using existing channels (e.g., HealthNet Medical Directors’ monthly meetings, department meetings, email listservs, BUSSW faculty meetings), advertise PCTE program

2.3 Review submitted applications and select junior faculty/fellows and social workers to receive stipends; open curriculum to all interested parties from BMC, the CHCs and BUSSW.

2.4 Match mentors with learners; notify applicants

2.6-2.9 Repeat 2.1 through 2.4 for second cohort to begin curriculum in fall of 2016

2.10 Collaborate to place BUSSW MSW candidates in field placements in BMC and the CHCs

### Objective 3: Develop learners’ capacity to become primary care leaders. **

3.1 Oversee delivery of curriculum to junior faculty, fellows and social workers - including didactics, mentoring, and experiential projects

3.2 Oversee delivery of first iteration of resident educational modules

3.3 Oversee the delivery of the enhanced *Essentials of Public Health* to medical students

3.4 Deliver didactic curriculum for junior faculty, fellows and social workers

3.5 Provide mentoring and oversee experiential learning projects

3.6 Review and analyze student evaluations; initiate course revisions

### Objective 4: Program Evaluation, Sustaining and Dissemination

4.1 Finalize quantitative and qualitative evaluation measures and methods to assess program impact
<table>
<thead>
<tr>
<th>Goal</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Promote Careers in Cancer Prevention</td>
<td>2/3 PTAPM awardees include cancer prevention activities as part of job description (2 yrs post PMR)</td>
</tr>
</tbody>
</table>
| 2. Knowledge acquisition on cancer prevention and control | a. Complete course in cancer epidemiology or prevention*  
   b. Attend all preventive didactic series seminars (attendance is taken) |
| 3. Research Skills | Complete at least one abstract or publication accepted on cancer related research project |
| 4. Clinical Cancer Prevention Skills | a. Satisfactory completion of general ambulatory care clinic (includes cancer prevention activities)  
   b. 1 rotation in clinical cancer prevention and one presentation related to clinical cancer prevention at Preventive Medicine Lecture Series |
| 5. Teaching Skills | a. Completion of introduction to clinical teaching seminar series  
   b. 1 lay audience or external to program presentation related to clinical cancer prevention* |
| 6. Public Health Skills | a. Satisfactory ratings from practicum supervisor at governmental public health agency  
   b. Complete a discrete product (either publication or report) from practicum  
   c. Participate in Massachusetts Health Policy Forum** |
| 7. Local ACS involvement | Documented completion of volunteer experience at local ACS |
| 8. Quality Improvement Skills | a. Participation in the BMC Cancer Care Committee |
Primary Care Academic Fellowship and Preventive Medicine Residency

Mentor-Mentee Agreement

Fellow Name:

Faculty Name:

We agree to the following:

- Meet with mentor/mentee at weekly for the first three months, then twice a month or monthly for the rest of the fellowship/residency.
  - Mentee: responsible for asking for scheduling meetings including the biannual scholarship oversight committee meeting when the Individual Development Plan will be reviewed.
  - Mentor: responsible to make time to meet with mentee and help set up dates.
- Mentee will define and refine fellowship, research, and career goals. Mentor will help support the mentee throughout this process, offering guidance and keeping the fellow on track to accomplish these goals.
- Update Individual Development Plan including personal objective and goals, and educational activities twice every year.
- Participate in twice-yearly Scholarship Oversight Committee meetings to track fellow’s progress and discuss career development.
- Assess the mentor-mentee relationship at least twice yearly to determine if there are unmet needs that may require input or help.

Fellow Signature:
Date:

Faculty Signature:
Date:

Please send copy of this agreement to Linda Neville by October 1.