



ASHP Research and Education Foundation
Research Boot Camp

Application Policies and Guidelines

Administered by the American Society of Health-System Pharmacists Research and Education Foundation

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Please read the Application Policies and Guidelines THOROUGHLY. Applications that do not strictly comply with the instructions will be returned without review.



Program Description

The ASHP Research and Education Foundation’s Research Boot Camp is a research skills development program composed of distance education, experiential, and research conduct components. (See Figure 1.) The program aims to:

1. Foster the development of pharmacists with practice-based research skills;
2. Drive the advancement of translational research by providing clinicians with the expertise, tools and support to start a practice-based research program and answer practice-based research questions; and
3. Enhance safe and effective medication use by promoting evidence-based decision-making for individual patients and populations of patients.

Detailed learning objectives of the proposed curriculum are listed below in Table 1.

Figure 1. ASHP Foundation Research Boot Camp Structure

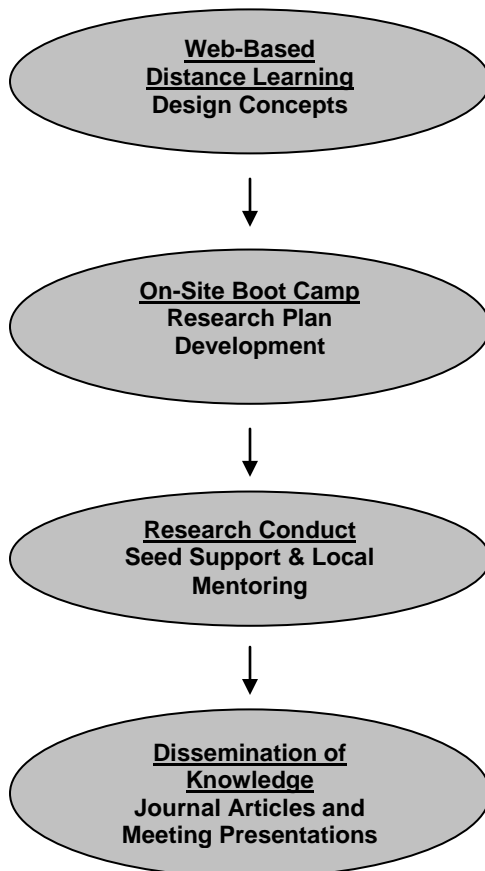




Table 1 – Research Boot Camp Learning Objectives

1. Generate an effectively worded, measurable research question(s) for a practice-based research study that can be conducted in a one to two-year timeframe.
2. Compose a persuasive and defensible introduction to a research plan that includes a review of the literature, a statement of the research problem, the rationale for conducting the proposed research, and a discussion of the significance of finding an answer to the research question.
3. When presented with a specific research question and pertinent information, select the study design most suitable for answering the research question given the research environment.
4. Accurately identify exposure and comparison groups for the research plan when required by the choice of study design.
5. Establish the study observation period required to answer a specific research question.
6. Identify the characteristics and number of research subjects that will meet the requirements of the research design for a specific research question.
7. For a specific research plan, define the research subjects such that the study results meet a balance of the requirements of internal and external validity.
8. For a specific research plan, define a feasible sampling framework for the research subjects that meets the requirements of internal and external validity.
9. Identify accessible resources for the calculation of power requirements for a specific research study.
10. Create a strategy for the identification and recruitment of subjects for a specific research study.
11. For a specific research plan, create a system of measurements that will accurately and precisely answer the study question(s).
12. For a particular research plan, identify and operationalize primary and secondary outcomes that are adequate to answer the research question.
13. When given a research plan, identify when the study design contains potential selection and/or measurement bias.
14. When given a particular research plan, operationalize the measurement of variables that could confound the research results.
15. When given a particular research plan in which there is potential for measurement bias in the study design, develop methods for avoiding it.
16. When designing a specific experimental research study, create a feasible, reproducible, and testable intervention.
17. When designing a specific experimental research study, create a practical and effective strategy to monitor compliance with the intervention.
18. When designing a specific research study plan, create a strategy to assess the effects of attrition bias.
19. When creating the plan for a specific quantitative research study, generate an appropriate strategy for the statistical analysis of the study's data.
20. Generate a plan for the implementation of a specific practice-based research study.
21. For a specific practice-based research study, create a timeline that includes significant milestones for the implementation of the study.
22. Identify resources required for the implementation of a specific practice-based research study.

The Research Boot Camp provides an opportunity for up-to nine new pharmacist researchers to participate in a comprehensive distance education and experiential program. Participants will develop a research idea into a well-structured research plan to be executed following program completion. Applicants to this program should demonstrate motivation to acquire research methods skills to conduct rigorous practice-based research and should include an initial research idea.



A. Distance Education

Participants will complete a sequence of pre-readings, thirteen (13) 1-hour Web-based lectures and email discussions in order to acquire comprehension level learning essential to completion of research plan development work required for the experiential phase *and* to enable development of the research plan during the experiential phase.

Topics covered will include:

1. Identifying a practice-based research topic and framing the research question
2. Conduct of a comprehensive literature search focused on the research question
3. Development of a research plan introduction
4. Choice of study designs (2 hours)
5. Issues in identifying subjects – generalizability
6. Consideration of bias in research design
7. Introduction to measurement (2 hours)
8. Design and implementation of interventions
9. Introduction to data management and analysis
10. Introduction to statistical analysis (2 hours)

Upon completion of the Distance Education Phase, participants will have developed a draft project plan that includes a background and rationale, research question, specific aims, research design, methods including an analytical plan, and a time table.

B. Experiential Education

Over a 3-day period (May 16 through May 18, 2012), at the ASHP Foundation offices in Bethesda, Maryland, participants will convene with three (3) experienced researchers to develop an executable research study plan. Work on the development of plans will be sequential with each new task introduced by a mini-lecture and a question-and-answer session to help participants recall previous learning and address outstanding questions. Participants will share each plan segment with members of their group, and revise the plan segment based on participant and faculty feedback until the plan is completed.

On-site training learning topics will include:

1. Development of the research question
2. Writing the introduction of the research plan
3. Identifying the study's design
4. Describing the study sample
5. Identifying study measurements
6. Describing study interventions
7. Identifying the study's analytic approach
8. Discussion of practical aspects of study completion



C. Research Conduct

Upon completion of the Distance Education and Experiential phases, participants must implement and complete the proposed research under the guidance of the local mentor. The participant's sponsoring institution must agree to provide adequate seed support and/or resources to enable completion of the proposed research. A final version of the research plan, formatted to meet ASHP Foundation research grant requirements, must be submitted to the Foundation within three (3) months of completion of the experiential program. Progress on completion of the study will be monitored through the established quarterly report process used by the ASHP Foundation to monitor all of its research grant programs. Within twenty-four (24) months of completion of the first two phases, participants will be required to submit the study findings to a national or international biomedical meeting and within six (6) months of study completion, they must submit a manuscript to a peer-reviewed scientific journal.

Eligibility

Successful applicants will be pharmacists with an active pharmacy practice who demonstrate motivation to acquire research methods skills to conduct rigorous practice-based research. Pharmacists with faculty appointments and non-academic pharmacists are encouraged to apply. Individuals will not be eligible if they have completed a formal education program that provided strong research training (e.g., M.S., Ph.D.). Applicants will be expected to document their mastery of the following research-related tasks prior to starting the Boot Camp program:

- Ability to conduct efficient and effective literature searches to respond to clinical questions;
- Critical literature appraisal as employed in routine clinical practice;
- Understanding of biostatistics when encountered in the review of research literature (this does not presume the ability to apply biostatistics in the conduct of research); and
- Documented completion of a program in research ethics.

Applicants will be required to submit an initial research idea pertinent to their clinical practice area. Support from the applicant's home institution and committed local mentoring are required. The local mentor must have the requisite research experiences to supervise the applicant's research. The mentor's track record will be evaluated based on formal research training, publication track record, and success in obtaining extramural grant support. In addition, the local mentor must plan to participate in a planning call with the Boot Camp participant and his/her assigned Boot Camp faculty member. The local mentor must commit in his/her letter of support to participate via teleconference in the Boot Camp participant's presentation of his/her research plan between 8am through 12pm ET on Friday, May 18, 2012. Other factors that will be considered in the application review process include: previous project management experience, demonstration of analytical and critical thinking skills, authorship of peer-reviewed publications (preferred), and existence of an established network of practitioners with a shared interest in conducting research. Applicants will be required to demonstrate these qualifications through a provision of specific professional experience information, a personal statement, and letters of support.



Application Process / Selection Criteria

Grant application reviewers will use the following criteria in evaluating applications:

Criterion	Points Possible
Practice Experience	10
Project Management Experience	10
Demonstration of Analytical and Critical Thinking Skills	10
Peer-Reviewed Publications	5
Applicant's Training Expectations	15
Local Mentoring	15
Evidence of Availability of Network of Researchers with Common Interest	10
Institutional Support	15
Research Idea	10
TOTAL	100

Itemized Instructions for Grant Application

I. Boot Camp Investigator

- a) Self-explanatory.
- b) Self-explanatory, if applicable.
- c) Degree(s)
- d) Position title, as well as department or division in which pharmacy resident is currently employed.
- e) Physical mailing address of place of employment, including institution name.
- f) Business number at place of employment.
- g) Email address that is most commonly used for frequent communication.

II. Local Mentor/Senior Investigator

- a) Self-explanatory. The research advisor must be committed to the applicant's development of research skills and should be willing to serve as advisor throughout the period of activity for the Research Boot Camp, including the period of activity for the research that emanates from the applicant's participation in the Research Boot Camp.
- b) Self-explanatory, if applicable.



- c) Degree(s)
- d) Position title, as well as department or division in which pharmacy resident is currently employed.
- e) Physical mailing address of place of employment, including institution name.
- f) Business number at place of employment.
- g) Email address that is most commonly used for frequent communication.

III. Pharmacist Licensure

Provide pharmacist licensure information for the applicant including jurisdiction, license number, and expiration date. **NOTE:** “See CV” is not an acceptable response for completion of this section.

IV. Education

In chronological order, list the name, degree awarded/major, and years of matriculation for all colleges and universities attended by the applicant. If a degree was not awarded, use N/A to indicate not applicable. **NOTE:** Individuals will not be eligible if they have completed a formal education program that provided strong research training (e.g., M.S., Ph.D.). “See CV” is not an acceptable response for completion of this section.

V. Residency/Fellowship Training

In chronological order, list the institution name, program type (e.g., pharmacy PGY2 oncology residency), and years of participation for all post-graduate, non-degree training programs participated in by the applicant. **NOTE:** “See CV” is not an acceptable response for completion of this section.

VI. Professional Experience

- A.** In reverse chronological order, list the institution name, position title, and years of service for the three (3) most recent pharmacist positions held by the applicant. Faculty appointments should be included in this section. **NOTE:** “See CV” is not an acceptable response for completion of this section.
- B.** In the sections provided, provide a brief statement that describe the applicant’s experience with:
 - Conducting literature searches to answer clinical questions;
 - Use of critically appraised literature in routine clinical practice;



- Interpreting and using statistical-based results encountered in the biomedical literature (i.e., courses taken, formal experience, etc.) (This does NOT necessarily mean that you have to know how to apply biostatistics when conducting research.)
- Project management and team collaboration
- Practicing according to HIPAA regulations

USE ONLY THE SPACE PROVIDED. DO NOT ATTACH ADDITIONAL PAGES TO COMPLETE RESPONSES.

Along with providing this statement, also evaluate the applicant's abilities in each of these areas using the following rating scale:

- 1 = No Experience
- 2 = Below Average
- 3 = Average
- 4 = Above Average
- 5 = Excellent

C. Provide a brief statement that addresses each of the following areas:

- Interest in and aptitude for conducting research
- Expectations of the Research Boot Camp
- Plans for application of research skills upon completion of the Research Boot Camp

USE ONLY THE SPACE PROVIDED. DO NOT ATTACH ADDITIONAL PAGES TO COMPLETE RESPONSES.

VII. Proposed Research Idea

- a) Self-explanatory
- b) Provide a brief statement of 200 words or less regarding the applicant's research idea. This should include a single statement of the main purpose of the research. **DO NOT ATTACH ADDITIONAL PAGES TO COMPLETE RESPONSE.**

VIII. Additional Application Documents Required

(a) COVER LETTER

(b) BIOGRAPHICAL DATA

Provide a biographical sketch for the boot camp investigator and for the local mentor/senior investigator. **Biographical sketches must be limited to 4 pages and must be submitted in the format provided in the PHS 398 form from the U.S. Department of Health and Human Services.**
[://www.grants.nih.gov/grants/funding/phs398/biosketchsample.](http://www.grants.nih.gov/grants/funding/phs398/biosketchsample;);



- (c) LETTER(S) OF SUPPORT FROM APPLICANT'S DEAN AND/OR PHARMACY DIRECTOR**
Along with providing support for the application and the applicant's ability to meet the entrance requirements, this letter should also indicate that the School/College of Pharmacy or Department of Pharmacy will provide seed funds and/or resources that will enable completion of the proposed research. The types of resources should be described completely.
- (d) LETTER OF SUPPORT FROM APPLICANT'S LOCAL MENTOR/SENIOR INVESTIGATOR**
This letter should address the mentor's commitment to the applicant's development as a researcher and execution of the proposed research. The mentor should also describe his/her ability to serve as senior investigator and attest to the applicant's ability to meet the entrance requirements;
- (e) DOCUMENTATION OF THE APPLICANT'S COMPLETION OF A RESEARCH ETHICS PROGRAM;**
- (f) A WRITING SAMPLE FOR WHICH THE APPLICANT WAS FIRST AUTHOR**
(Examples include: published articles, protocols or policies, formulary reviews, or detailed practice-related memoranda.)

IX. Certification and Acceptance

This "certification" must be signed by the boot camp investigator, the senior investigator, and the Dean or Pharmacy Director.

- (a)** The statements contained in this application are true and complete to the best of your knowledge;
- (b)** The local mentor/senior investigator is committed to the applicant's development of research skills and will serve as advisory throughout the period of activity for the Research Boot Camp, including the period of activity for the research that emanates from the applicant's participation in the Research Boot Camp;
- (c)** The applicant's sponsoring institution will provide seed funds or resources that will enable completion of the proposed research for a 24-month period after completion of the Research Boot Camp;
- (d)** Within 60 days of completion of the Research Boot Camp, the applicant will submit a research project plan that adheres to the ASHP Foundation's program instructions;
- (e)** The ASHP Foundation requires submission of the study results for presentation at a national or international scientific meeting;
- (f)** The ASHP Foundation requires submission of study results to a peer-reviewed scientific journal within six (6) months of study completion. If the study results are submitted to a pharmacy journal, the *American Journal of Health-System Pharmacy* retains the right of first refusal for publication;



- (g) All presentations, publications, and other communications regarding this study must include the following acknowledgement: “Completion of this study was supported by the ASHP Research and Education Foundation.” This **must** be stated in the body (i.e., in the author identification page) of all manuscripts submitted for publication; and
- (h) The recipient institution will inquire into and, if necessary, investigate and resolve promptly and fairly all instances of alleged or apparent research misconduct related to this ASHP Foundation-sponsored research in accordance with federal regulations on research misconduct.

X. Communications

Please select which ONE communication vehicle prompted you to apply for this program.

Program Administration

The Research Boot Camp program is administered by the ASHP Research and Education Foundation. The following reimbursement policies apply:

- The Boot Camp training opportunity is awarded to an individual participant;
- No stipend or honorarium will be awarded to the participant;
- The participant is responsible for providing his/her transportation and lodging to the experiential site;
- The ASHP Foundation will provide breakfast(s), lunch(es), and one (1) dinner; and
- No per diem payments will be provided by the ASHP Foundation.

Submission of Grant Application

All applications and attachments must be received by mail and uploaded to the ASHP Foundation FTP site as ONE PDF by Tuesday, November 1, 2011.

- By Tuesday, November 1, 2011, upload one (1) copy of the application and required documents to the ASHP Foundation FTP site as one PDF. (Instructions can be found below.) **The file must be saved using the following file name structure: Program Name_Year_Applicant’s Last Name.PDF** (Example: BootCamp_2011_Smith.PDF)
- Send one (1) original, completed application form via mail, with attachments, to arrive by 5:00p.m. ET on Tuesday, November 1, 2011 to the following address:



Uploading of test files will enable applicants to ensure that there are no institutional firewalls or other technology issues that will prevent application upload by the published application deadline date. If the applicant has difficulty with the upload of test files, the applicant should immediately contact their institutional information technology department to address any institutional FTP upload issues. Test files will be deleted by the ASHP Foundation.

Note 2:

After you upload your application, and if you refresh your Windows Explorer, your file will disappear from your view. You do not have read access; you only have access to write/upload.

Applicants should receive a receipt confirmation email from the ASHP Foundation within five (5) business days of application submission delivery date. If this email confirmation is not received, applicants should immediately contact the ASHP Foundation at foundation@ashp.org to verify that the application was received.