



Research and Scholarship Certificate Program

MESSAGE FROM THE PROGRAM DIRECTOR

Congratulations on your decision to invest in developing your skills to create a stronger, evidence-based approach to evaluating clinical issues! Pharmacists equipped to apply science when addressing practice issues are essential. Many busy practitioners struggle to find the confidence and time to systematically establish a plan investigating the factors that affect patient outcomes. The ACCP Research and Scholarship Academy is designed to introduce members to information that will better equip them to use research in answering clinical questions.

The goal of the Research and Scholarship Academy is to provide fundamental skills that will facilitate your growth as a scholar. Our program is designed for residency-trained clinical pharmacists and practitioners interested in developing basic clinical research skills. The curricular concepts will be applied through your portfolio project and allow you to learn through a mentored system from others who have taken these steps and found success.

It is an exciting time to participate as the Program Director for the Research and Scholarship Academy. Our hope is that some of you will continue your professional development in research through the MERIT or the FIT program. These research programs are the next steps in acquiring skills for securing national competitive funds through grant applications. Regardless of your final “destination” on this scholarship journey, we are glad you decided to start! As a faculty team, we are invested in your success and want to help you make progress toward achieving your research and scholarship goals.

Sincerely,

Michael E. Ernst, Pharm.D., FCCP, BCGP
Research and Scholarship Certificate Program Director



CURRICULUM

The Research and Scholarship Certificate Program curriculum consists of 24 CPE hours. It includes 20 hours of required core content and 4 hours of elective programming in areas such as methodological approaches to studying medication safety, designing and conducting survey research, adding economic outcomes to a clinical study, special topics in translational research, team building in the academic scholarship venue and other specific research and scholarship needs of new and experienced clinical pharmacists. The core modules include:

- Prerequisite Module: Research Primer (4 hours)
- Module No. 1: Research Basics (4 hours)
- Module No. 2: Statistical Issues (4 hours)
- Module No. 3: Extending Your Research Tool Kit (4 hours)
- Module No. 4: Regulatory and Ethical Issues (4 hours)

Required Readings

Participants must complete the following required readings:

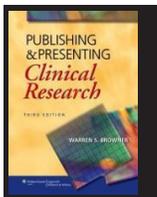


Designing Clinical Research, Fourth Edition

Stephen B. Hulley et al.

Available for purchase in the [ACCP Bookstore](#).

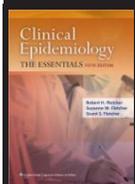
Recommended Readings



Publishing and Presenting Clinical Research

Warren S. Browner, M.D.

Available for purchase in the [ACCP Bookstore](#).



Clinical Epidemiology: The Essentials, Fifth Edition

Robert Fletcher, M.D., MSc and Suzanne W. Fletcher, M.D., MSc

Available for purchase in the [ACCP Bookstore](#).



Primer of Biostatistics, Seventh Edition

Stanton A. Glantz, Ph.D.

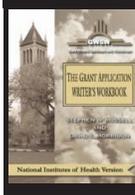
Available for purchase in the [ACCP Bookstore](#).



Grant Application Writer's Handbook, Fourth Edition

Liane Reif-Lehrer, Ph.D.; Tech-Write Consultants-Erimon Associates

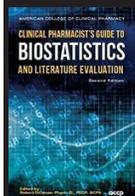
Available for purchase in the [ACCP Bookstore](#).



The Grant Application Writer's Workbook: National Institutes of Health

Stephen W. Russell, D.V.M, Ph.D. and David C. Morrison, Ph.D.

Available for purchase from [Grant Writers' Seminars and Workshops](#).



Clinical Pharmacist's Guide to Biostatistics and Literature Evaluation, Second Edition

Robert DiCenzo, Pharm.D.

Available for purchase in the [ACCP Bookstore](#).



Principles of Research Design and Drug Literature Evaluation

Rajender Aparasu and John Bentley

Available for purchase from [McGraw-Hill](#).

LEARNING OBJECTIVES

Prerequisite Course: Research Primer

Offered in conjunction with the ACCP Annual Meeting (Offered both live and virtually)

4.0 CPE/Academy Credits

At the end of this session and portfolio activities, the participant should be able to:

1. Describe the regulatory definitions of research, quality improvement, and expectations for IRB reviews.
2. Describe the steps in developing a study protocol for the research project.
3. Practice the iterative process of creating a defined and focused research question using PICO and FINER criteria.
4. Utilize publications to identify research questions, study designs, and methodologies.
5. Identify resources needed to conduct the research project and answer the research question.
6. Describe “best practices” for establishing and maintaining optimal relationships with your research mentor.

Pre-assignment:

1. In preparation for the session, please take the time to complete the following pre-reading assignment:
 - [A Critical Evaluation of Clinical Research Study Designs](#)
Bensen, J, Gan, SD. A Critical Evaluation of Clinical Research Study Designs. J Invest Derm. 2014; 134, e18. doi:10.1038/jid.2013.545
 - [A Roadmap for Educational Research in Pharmacy](#)
McLaughlin JE, Dean MJ, Mumper RJ, Blouin RA, Roth MT. A Roadmap for Educational Research in Pharmacy. American Journal of Pharmaceutical Education. 2013;77(10):218. doi:10.5688/ajpe7710218.
2. Bring at least one sample of your own research question with a research hypothesis or specific aims from a planned project, project under development, or a current project. Be prepared to work with other participants to discuss, revise, and improve research objectives and specific aims.

Module 1: Research Basics

Offered in conjunction with the ACCP Annual Meeting (offered both live and virtually)

4.0 CPE/Academy Credits

At the end of this session and portfolio activities, the participant should be able to:

1. Describe common study designs used in observational, educational, health-services and experimental projects.
2. Discuss the advantages and disadvantages of the various study designs.
3. Discuss the optimal approach and suggested study design for your defined research question.
4. Identify resources needed for your research question and ideas for securing support.
5. Identify resources for learning how to write grants and obtain funding support in your research area.
6. Define the next three steps to take in creating a research funding development plan of action for your idea.

Pre-assignment:

As assigned in the Research Primer.

Module 2: Statistical Issues

Offered during the Spring Academy programming (Virtually)

4.0 CPE/Academy Credits

At the end of this session and portfolio activities, the participant should be able to:

1. Describe commonly used descriptive statistics (means, medians, proportions) and appropriate methods to represent the results.
2. Describe how to interpret the confidence interval.

3. Define type I and type II error and determine the potential impact of Type I or Type II error in common clinical situations.
4. Describe the concept of statistical power and its role in research project planning and interpretation of study results.
5. Explain the use of the most common statistical tests used for hypothesis testing.
6. Identify the most appropriate statistical test for hypothesis testing (i.e. parametric and nonparametric tests).
7. Explain the role of correlation and linear regression analysis.
8. Describe commonly used multivariate regression models (multiple logistic and relative risk regression models).
9. Determine how multivariable regression models can be used to adjust for confounders in the analysis phase.
10. Identify instances when you are (or are not) competent to analyze your data.
11. Determine the value of working with a biostatistician in the proposing, designing, conducting, analyzing and reporting of research.
12. Implement a plan to locate, contract, and communicate with biostatisticians or data management personnel in order to facilitate data collection, analysis, and results reporting.

Pre-assignment:

Complete the Research Primer portfolio assignments within 60 days of completing the live program. Complete Module 1: Research Basics portfolio assignments within 90 days of completing the live program. Additional pre-assignments may be added prior to the meeting.

Module 3: Extending Your Research Tool Kit

Offered during the Spring Academy programming
4.0 CPE/Academy Credits

At the end of this session and portfolio activities, the participant should be able to:

1. Discuss the tools needed to conduct systematic reviews and meta-analyses.
2. Identify administrative data sets available for conducting research.
3. Discuss the steps required for conducting research using large data-sets.
4. Describe research participation, mentoring and scholarship opportunities available through the ACCP PBRN.
5. Identify how to use one of these approaches to strengthen your research portfolio and scholarship record.

Pre-assignments:

1. In preparation for the session, please take the time to complete the following pre-reading assignment:
 - [Characterizing the American College of Clinical Pharmacy Practice-Based Research Network](#)
2. Complete Research Primer and Module No. 1 portfolio assignments.

Module 4: Regulatory and Ethical Issues

Offered during the Spring Academy programming
4.0 CPE/Academy Credits

At the end of this session and portfolio activities, the participant should be able to:

1. Discuss updates in regulations over the last 2 years related to contemporary research
2. Describe different types of processes for obtaining Informed Consent based on the research design
3. Identify the reporting expectations for protocol deviations when using different research designs
4. Describe the ethical expectations of sharing research results, updates for participants and publication of projects.
5. List the roles and responsibilities of the principal investigator and other members of the research team.
6. Describe how to incorporate trainees into your research activities.
7. Describe the guidelines for authorship; as required by most journals.

8. Develop your strategy for securing successful research collaborators and managing your team.
9. Develop a guideline or algorithm for determining authorship within your research group.

Pre-assignment:

Complete Research Primer and Module No. 1 portfolio assignments. Participants will also be expected to have completed CITI training prior to participation. Additional pre-assignments may be added prior to the meeting.

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PROGRAM TIMELINE

To assist you through the program we have outlined a schedule of events and due dates:

September:	Fall edition of the Academy Newsletter.
October:	Attend ACCP Annual Meeting for Research Primer, Module 1, and two electives.
December:	Research Primer portfolio assignments due for review 60 days after the live session.
January:	Winter edition of the Research and Scholarship Newsletter; Module 1 portfolio assignments due for review 90 days after live session.
February:	Attend ACCP Winter Meeting to complete Modules 2, 3, and 4.
April:	Module 2 portfolio assignments due for review 60 days after the live session. Modules
May:	3 and 4 portfolio assignments due for review 90 days after the live session. Submit first
June:	draft of completed research abstract for faculty review. Abstracts must be submitted in the "R&S Academy" category prior to the deadline announced in the ACCP Annual Meeting Call for Abstracts.
July:	Revise abstract; summer edition of the Research and Scholarship Newsletter.
August:	Submit revised abstract for final review by Academy faculty.*

*R & S Academy participants are required to present completed research at either the Annual Meeting (if accepted) or virtual poster session during the spring. This may extend the timeline for graduation to the second year.



CONTINUING PHARMACY EDUCATION CREDIT

The American College of Clinical Pharmacy is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. To claim continuing pharmacy education (CPE) credit for any of the Research and Scholarship Certificate Program activities please go to www.accp.com/ce and sign-in, complete the relevant session evaluation, and claim your CPE.

ONLINE PORTFOLIO

Participants must assemble a formative portfolio containing a research or scholarly project, online assignments associated with each of the live sessions, and mentor assessments (optional). The electronic portfolio will serve as the guiding and monitoring tool for professional advancement over the course of the certificate program. Portfolio development will be initiated following the completion of the prerequisite module. Completion of the assigned portfolio activities will be required within the program timelines listed in the section above.

Accessing Your Portfolio

Accessing your portfolio is easy! First, sign into your ACCP Account.

On your **My Account** page, locate the **My Links** section. There will be a link to each ACCP Academy program that you are currently enrolled in. In this case you would select the Research and Scholarship Certificate Program link which will take you to the program's home page. Select the *Access Portfolio* link, located at the top of the page. This will take you into

your portfolio.

Progress Reports

Keep track of your progress in the ACCP Academy by accessing your progress report. Your progress report is located within the portfolio and is updated within 14 days of the conclusion of each ACCP meeting.

MENTORING

Participants are expected to recruit a mentor from their own institution to provide guidance and feedback for their portfolio. Mentors will assist each participant in applying the learned principles to the professional environment. Mentors will also meet regularly with protégés and provide opportunities for the protégé to observe and (if feasible) participate in the mentor's applicable roles and responsibilities. If you are unable to find a mentor in your institution, ACCP will provide a mentor from among some of the program's graduates. Please contact Jessie Culley at jculley@accp.com if you need assistance identifying a mentor.

NEWSLETTERS

The ACCP Academy Newsletter is a triannual electronic publication initiated to publicize ACCP Academy updates, provide resources and tips that can enhance learning, and serve as a means of exchange for those involved in the ACCP Academy Research and Scholarship Certificate Program. You are invited to contribute by suggesting ideas for content and providing short items of interest. Please send your suggestions and comments to Jessie Culley at jculley@accp.com.

ENROLLMENT AND PROGRAM COSTS

To apply for the ACCP Research and Scholarship Certificate Program, apply [online](#) or download the [application form](#). A one-time application fee of \$399.95 for members and \$699.95 for nonmembers (to offset expenses for online portfolio maintenance) will be charged upon enrollment in the certificate program. Other costs include registration fees Fall Annual Meetings if participants would like to attend and the cost of publications identified as required reading. Your enrollment fee covers all virtual programming associated with this program including all fall and spring virtual programming.

PROGRAM COMPLETION DEADLINE

The ACCP Academy requires all enrollees to complete the program within two years of attending the program's prerequisite module, the Research Primer.

ACCP ACADEMY GRADUATION

To be eligible for graduation, enrollees must complete the required modules and electives. In addition, all portfolio assignments and mentor feedback (where applicable), should be completed by August 1 of the year of graduation. If this is not possible, please contact Jessie Culley at jculley@accp.com to create a solution. Notifications for graduation and an invitation to attend the official ACCP Academy Graduation Ceremony held at the ACCP Annual Meeting, will be sent out to eligible graduates on or around August 15.