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FEDERAL RESERVE BANK OF PHILADELPHIA

**RESEARCH ASSISTANT OPPORTUNITIES
FOR COLLEGE GRADUATES**



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Welcome

I am pleased to have this opportunity to introduce the department and explain the opportunities you will have working with us as a research assistant.

Research assistants play a key role in our department. Whether it be helping economists prepare briefings on current monetary policy issues, working on the staff economic forecast, writing some of our newsletters on economic conditions, producing short-term economic analyses, or analyzing data for long-term research projects, research assistants are an essential part of the team, working with one another and with our economists. Our department prides itself on its collegial atmosphere. RAs help one another develop their statistical, data, and programming skills. By working with economists on research projects, RAs fully experience all stages of the economic research process. Our economists spend time collaborating on research with academic and central bank colleagues from around the world; as a result, so do our research assistants.

The assignments in the Research Department offer our RAs a number of ways to increase their knowledge of economics and their quantitative analysis skills. Moreover, RAs have access to a number of training opportunities, including classes on management, classes on specific computing issues, and undergraduate and graduate classes at area universities.

I believe you will find that working as a research assistant at the Philadelphia Fed will be a rewarding experience, whichever career path you ultimately choose to pursue. Some of our RAs have gone on to top graduate schools in economics or top law schools; some have found opportunities in other departments in the Bank; and others have taken on more responsibilities within the Research Department.

I invite you to take a closer look at the Philadelphia Fed and hope that you will consider joining our Research Department's team of talented research assistants.

Dr. Loretta J. Mester
Director of Research (2000–2014)



Functions of the Research Department

The Research Department is organized into four distinct sections: Banking, Macroeconomics, Regional/Microeconomics, and the Real-Time Data Research Center. Our team conducts innovative research on monetary policy, macroeconomics, banking and finance, financial services regulation, payments, regional and urban economics, and other aspects of central banking. The Research Department also provides the Bank's senior management and the board of directors with careful analyses of economic and financial conditions in the nation and the Third Federal Reserve District as well as insightful briefings on policy-related issues.

Macroeconomics Topics

- General Equilibrium
- International Finance and Trade
- Monetary Economics
- Monetary Policy

Recent Papers

- "The Perils of Nominal Targets" (2013)
- "Estimating Dynamic Equilibrium Models with Stochastic Volatility" (2013)
- "The Political Polarization Index" (2013)



"The Research Department at the Philadelphia Fed is a great place to learn and develop your skills for your future. My programming skills, for example, have improved immensely since I've been an RA. When I first started as an RA, I had only one or two semesters of STATA from my college econometrics class. During my time at the Philadelphia Fed, I have received outside training in STATA and MATLAB and worked on various projects using STATA. My programming skills have allowed me to study important issues in labor economics, such as using Current Population Survey data to examine the causes of the recent decline in the labor force participation rate and the cyclicity of job and worker flows."

– Lance Liu

Banking & Finance Topics

- Banking and Financial Institutions
 - Consumer Finance
 - Corporate Finance
 - Financial Markets
- **Recent Papers**
 - “Competing for Order Flow in OTC Markets” (2014)
 - “On the Inherent Instability of Private Money” (2014)
 - “Market Exposure and Endogenous Firm Volatility over the Business Cycle” (2014)

Regional & Microeconomics Topics

- Contracts
 - Industrial Organization
 - Labor Economics
 - Urban and Regional Economics
 - *Business Outlook Survey*
- **Recent Papers**
 - “Local Deficits and Local Jobs: Can U.S. States Stabilize Their Own Economies?” (2013)
 - “Natural Amenities, Neighborhood Dynamics, and Persistence in the Spatial Distribution of Income” (2013)
 - “Congestion, Agglomeration, and the Structure of Cities” (2013)

Real-Time Data Research Center Topics

- Aruoba-Diebold-Scotti Business Conditions Index
 - *Livingston Survey*
 - Real-Time Data Set for Macroeconomists
 - *Survey of Professional Forecasters*
- **Recent Papers**
 - “Expectations and Economic Fluctuations: An Analysis Using Survey Data” (2013)
 - “Nonlinear Adventures at the Zero Lower Bound” (2012)
 - “Forecast Bias in Two Dimensions” (2012)



Policy and FOMC

In addition to long-term research, economists and RAs are assigned policy work on a rotating schedule. To support our Bank's president and other senior management, we monitor the national and regional economy and also produce policy briefings before each FOMC and board of directors meeting. Our policy-related activities include:

- Developing and giving presentations on economic forecasts;
- Publishing newsletters and the *Business Review*, which explains important economic topics in an accessible way;
- Supporting our Bank's Supervision, Regulation & Credit Department by analyzing relevant financial issues, including changes in banking law and regulation and credit risk management; and
- Supporting the changes in banking law and the banking industry and the Board of Governor's Office of Financial Stability Policy and Research.



“The best way to discover if economic research is for you is to jump right in and start doing it. Being an RA at the Philadelphia Fed uniquely allows you to do this right out of college — giving you the opportunity to collaborate directly with economists on leading academic research and to work alongside other RAs with similar goals and interests. I have worked with an economist on an extensive project creating a novel data set of patent records that we hope will provide a new window into the innovation process. Additionally, as part of our RA Seminar Series I've tried my hand at presenting my own research ideas and received valuable feedback from my fellow RAs. In the fall, I'll be taking this research experience with me to an economics Ph.D. program.”

– Nick Reynolds





“For anyone who is interested in economic research, there is not a better job right out of college than one at the Fed. In addition to the research

you do every day for the economists and all that you gain from that, department staff members will go out of their way to help you improve your programming skills and encourage you to work independently on your own research and sign up for classes at a local university. Many RAs take math courses that they didn’t have the opportunity to take in college, which help them round out their transcripts before they apply to grad school. I myself am currently enrolled in a time series forecasting class, which, apart from being really interesting, will definitely help me after I leave the Fed and may even allow me to take on some new projects while I’m still here.”

– Ethan Haswell



How We Support Your Success

Training

RAs have access to a number of paid training opportunities. They can receive training on programs such as MATLAB, SAS, EViews, STATA, and ArcGIS and on how to use databases such as Bloomberg and Haver Analytics. The Research Department further helps RAs increase their skills by providing the time and funding to take one course at a local university each year. The Bank also offers tuition reimbursement for approved graduate degree programs. A flexible work schedule allows RAs to take advantage of these training and educational opportunities.

Courses taken by RAs include Probability, Mathematical Statistics, Stochastic Processes, Bayesian Statistics, Econometric Forecasting, Ordinary Differential Equations, Partial Differential Equations, Vector Calculus, Linear Algebra, Real Analysis, and Spatial Analysis.

Economic Seminars

The Bank regularly holds morning and lunchtime seminars in which visiting economists explain their research and receive feedback. These economists are from leading research universities and/or experts in their field of research. RAs are encouraged to attend the seminars in order to gain a broader exposure to economic research.

Library and Access to Large Databases

RAs can request books from other Federal Reserve Banks and universities and gain access to numerous subscription-only databases.

RA Presentations

RA presentations draw on the power of group learning. They provide a forum for RAs to improve their presentation skills and expose the RA group to the other areas of economic research.

Culture and Values

Our department prides itself on its collegial and social atmosphere and its diversity. RAs help one another develop their statistical, data, and programming skills.

Responsibilities of the Research Assistant

By working with economists on research projects, RAs fully experience all stages of the economic research process. Our economists spend time collaborating on research with academic and central bank colleagues from around the world; as a result, so do our RAs. The assignments in the Research Department offer our RAs a number of ways to increase their knowledge of economics and their analytical skills.

RAs are responsible for providing both short-term and long-term research support.

Short-term: Assisting economists with reports and presentations on current economic and financial conditions for pre-FOMC and board of directors meetings

RAs help economists analyze the state of the domestic and international economy through research on monetary policy, financial markets, payment systems, housing prices, inflation rates, and other economic indicators. The analysis is presented to the Bank's president and senior management.

Long-term: Assisting economists with statistical and econometric analyses for long-term, academically oriented research projects

RAs help economists on a wide range of applied and theoretical research topics. Long-term research culminates in a published paper, which the RA has the opportunity to contribute to and possibly coauthor.

On a day-to-day basis, RAs are expected to:

- Review, organize, and analyze economic and financial data;
- Write programs using statistical software such as SAS, STATA, MATLAB, and ArcGIS;
- Compile and assess information from academic journals, market sources, and government reports;
- Develop spreadsheets and macros to enhance data manipulation and analysis; and
- Prepare background materials for and assist in the formulation of senior management briefings.



Research Assistants at the Philadelphia Fed

Working as a research assistant at the Philadelphia Fed is a rewarding experience, whichever career path you ultimately choose to pursue. RAs typically work at the Philadelphia Fed for about two or three years before continuing on to graduate programs or other careers in economics or related fields.

Career paths of recent research assistants:

- Ph.D. in Economics at Princeton University
- Ph.D. in Economics at the University of Michigan
- Ph.D. in Economics at the University of Chicago
- Ph.D. in Biostatistics at the University of Pennsylvania
- J.D. at the University of California–Berkeley
- Master in Public Administration at Princeton University
- Master in Public Administration at Harvard University
- M.S. in Computer Science at Stanford University
- Economic Analyst in the Research Department at FRB Philadelphia
- Analyst in the Supervision, Regulation & Credit Department at FRB Philadelphia
- Senior Policy & Markets Analyst in the Markets Group at FRB New York



“In addition to the great economic research and education opportunities at the Federal Reserve Bank of Philadelphia, this institution also serves communities in the Third District as well as in the nation. Some important regional Bank products that the RAs work on include the state coincident and leading indexes, which are used by the public to gain insights about current and predicted economic activity in the states in our District. Another part of the RA’s job is to create documents used to support monetary policy. The RAs are exposed to what are important variables, data sources, and models that policymakers currently use. This policy work has helped me to better understand the abstract models that I learned in my undergraduate courses by tangibly showing how mathematics and data are used to answer economic questions.”

– Michelle Liu



For More Information

If you're interested in learning more about working as a research assistant at the Philadelphia Fed, please contact Brie Coellner, manager of research analytics, Research, at brie.coellner@phil.frb.org.





FEDERAL RESERVE BANK OF PHILADELPHIA

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