Dear NBER Behavioral Macroeconomics Research Boot Camp Panel Members,

My name is Susannah Scanlan and I am a second-year Economics PhD student at Columbia University. I hope to attend the NBER Behavioral Macroeconomics Boot Camp in March 2020 in order to improve my understanding of research in behavioral macroeconomics and to develop research ideas. I graduated in 2014 with a bachelor's degree in Economics from Princeton University. Prior to starting graduate school, I worked at the Federal Reserve Bank of New York, and at the Council of Economic Advisers. Before turning my attention to economics I was an internationally competitive fencer, representing the U.S. for 7 years. I won a bronze medal at the 2012 Olympic Games.

After graduating from Princeton, I took a job as a Research Assistant at the Council of Economic Advisers. I worked primarily with Professors Maurice Obstfeld and Linda Tesar on macroeconomic policy issues; this included work on the public report "Long-Term Interest Rates: A Survey", which documents the decline in long-term interest rates and discusses possible reasons for it. Part of the downward trend in nominal interest rates over the last three decades reflects the decline in inflation expectations, something I would like to understand better. I also updated recurring macroeconomic memos and assisted in developing the economic forecast assumptions for the Administration budget proposal. As a result, I developed a coherent knowledge base of macroeconomic data trends and sources, as well as policy issues that affect potential output, such as the flattening of the Phillips Curve.

In the fall of 2015, I began working at the Federal Reserve Bank of New York on emerging market macroeconomic and financial policy issues. In my new role I had to follow financial market developments, and I became fascinated with the role that investor sentiment played in small open economy policy decisions. In 2016 I moved into the Research Group, where I worked with Dr. Jan Groen to rebuild the U.S. trade forecast. In doing so, I built a variety of time series models of short- and long-term forecasts in MATLAB and became more familiar and comfortable with the technical side of forecasting macroeconomic variables.

In 2018, I started as a graduate student at Columbia University, where I have thus far been successful. My performance in my first-year courses exempted me from taking qualifying exams. I am currently taking field courses for macroeconomics and econometrics and have proposed research on the expectations processes driving interest rates for my NSF Graduate Research Fellowship Program application earlier this year.

I hope to further my understanding of the behavioral forces driving macroeconomic variables by attending the Boot Camp in March 2020. My work and school experience have prepared me to be a successful Boot Camp participant. Professor Michael Woodford is submitting a recommendation letter on my behalf. I thank the committee for their consideration.

Sincerely,

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Susannah Scanlan

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Current Education: Columbia University

Sep. 2018 - Present **Ph.D. in Economics**.
GPA: 3.5/4.000
Have completed the first-year sequence in Microeconomics (Profs. Dean, Sadler, Che, and MacLeod), Macroeconomics (Profs. La'O, Afrouzi, Uribe, and Woodford), and Econometrics (Profs. Montiel Olea, Cox, Bai, and Lee), as well as Math Methods for Economists (Prof. Bai) and Perspectives on Economic Studies (Profs. Stiglitz and Naidu).
Currently enrolled: Macroeconometrics (Prof. Ng), Microeconometrics (Prof. Lee), Empirical Asset Pricing II (Prof. Van Nieuwerburgh, CBS), Macrofinance (Prof. Gomez). Teaching fellow for The American Economy (Undergraduate).
Spring 2020 semester: Adv. Macroeconomic Analysis II (Prof. Afrouzi), Adv. International Macroeconomics (Prof. Schmitt-Grohé), Computational Models of Perception and Choice. (Prof. Woodford). Teaching fellow for Macroeconomic Analysis II (Masters).

Previous Employment

Federal Reserve Bank of New York

Oct. 2015 - Jun. 2018 **International Economic Sr. Analyst**, *Integrated Policy Analysis Group, Research Group.*

- Rebuilt the FRBNY Trade Forecast of U.S. goods and services under the guidance of Dr. Jan Groen.
- Developed comprehensive macroeconomic and external sector forecasts for emerging market economies and wrote country briefings for inter-agency country risk meetings.
- Provided assistance to Senior Vice President Linda Goldberg on research concerning international capital flows.

Council of Economic Advisers

Jun. 2014 - Sept. 2015 **Research Assistant**, *Macroeconomics, International.*

- Provided research assistance to Chairman Jason Furman, Member Maurice Obstfeld, and Senior Economist Linda Tesar.
- Assisted in developing economic forecasts for the FY 2016 Administration Budget Proposal.
- Prepared language and figures for recurring economic memos, the macroeconomic chapter of the 2015 Economic Report of the President, and for "Long-Term Interest Rates: A Survey".

Previous Education

Princeton University

Sep. 2008 - Jun. 2014 **Bachelor of Arts: Economics with Honors**, Took two-year leave of absence to qualify for the 2012 Olympic Games.
GPA: 3.37/4.00 Overall, 3.65/4.00 Major (Self-Calculated)
Classes include: Topics in Macroeconomics, Financial Investments, Microeconomics / Macroeconomics: A Mathematical Approach, Economics of Development.

Senior Thesis **The Effect of a Free Lunch on the Academic Performance of Impoverished Children: Evidence from a Quasi-Randomized Intervention in Western Kenya**, *Adviser: Prof. Thomas Fujiwara.*

- Received grant from Princeton Economics Department to conduct research over the summer of 2013.
- Collected data on the test scores of students at a primary school in a rural village in western Kenya and implemented an entity fixed effects model to ascertain the effect of a feeding program for impoverished children on the grades of students in the program.
- Found that students who joined the program before the age of twelve demonstrated a weakly significant improvement in academic performance.

Junior Independent Work

The Effect of a Firm's Systematic Risk on Bond Yield Spreads, *Adviser: Prof. Yuliy Sannikov*.

- Investigated the link between the systematic risk of a firm and the yield of the firm's corporate bonds.

New York University

Feb. 2015 - Dec. 2017

Non-Degree, Mathematics.

Classes include: Intro to Math Analysis II (Measure and Integration Theory); Basic Probability (Probability Theory); Complex Variables I

Awards and Honors

2018-2019 **Columbia University**, *Provost's Diversity Fellowship*.

2018-2023 **Columbia University**, *Dean's Fellow*.

2014 **Princeton University**, *C. Otto von Kienbusch Award*.

Awarded annually to a graduating female Princeton senior woman of high scholastic rank who has demonstrated general proficiency in athletics and the qualities of a true sportswoman.

Publications

Feb. 21, 2018 **The Evolution of Mexico's Merchandise Trade Balance**, *with Thomas Klitgaard*, Liberty Street Economics.

`https://libertystreeteconomics.newyorkfed.org/2018/02/the-evolution-of-mexicos-merchandise-trade-balance.html`

Service

Nov. 22, 2019 **Diversity Donut Hour**, Co-Lead Diversity Workshop for Columbia Economics PhD Students.

Fall 2019 - Spring 2020 **Columbia University, Association for Women in Mathematics**, *Graduate Mentor*.

Athletic Achievements

2005-2014 **2012 Olympic Bronze Medalist, U.S. Fencing Team, Princeton Varsity Fencing Team**.

- Represented the U.S. at Junior World Fencing Championships, Senior World Fencing Championships, Pan American Championships, World University Games, and the 2012 Olympic Games.
- Fenced competitively between the ages of 14 and 24. Trained 20-35 hours a week and traveled to domestic and international competitions 10-15 times per year.
- Spent a total of over two years in more than twenty countries for tournaments and training camps.
- Fenced for Princeton Varsity Fencing Team; Women's Team Captain from fall 2013 to spring 2014.

Competition Highlights.

- 2012 Olympic Bronze Medalist, Team Women's Epee, London, United Kingdom
- 2014 Team NCAA Second Place; Individual Third Place
- 2013 Team NCAA Champion; Individual Runner-up
- 2012 Pan American Champion, Team Women's Epee, Cancun, Mexico
- 2011 Silver Medalist World University Games, Team Women's Epee, Shenzhen, China
- 2009 Individual U.S. National Champion
- 2008 Junior World Fencing Champion, Team Women's Epee, Acireale, Italy

Skills and Qualifications

- **Programming Languages:** Proficient in Stata and MATLAB. Working knowledge of Python and R.
- **Software:** Microsoft PowerPoint, Excel, Excel VBA.
- **Languages:** Proficient in French. Basic proficiency in Portuguese.

Essay – Susannah Scanlan

I am passionate about macroeconomic policy and research. In particular, I am interested in understanding how macroeconomic expectations are formed as well as how they affect the optimal implementation of macroeconomic policies. I would like to participate in the Behavioral Macroeconomics Research Boot Camp to learn more about this subject from the best in the field, translate nascent ideas into more substantive research proposals, and establish connections with other students who are interested in researching this area. As a second-year PhD student I believe I would particularly benefit from the Boot Camp as my research agenda is still being formed.

In my first year courses at Columbia University I studied the role of expectations in macroeconomics with Professor Woodford and Professor Afrouzi. I am interested in doing research in this area. In particular, I would like to know how the expectations formation processes of economic agents affect different macroeconomic variables and to better understand behavioral explanations. Currently, I am exploring research ideas on how expectations of different components of interest rates affect equilibrium credit allocation, in particular through reach-for-yield behavior by investors. I am also interested in studying how inflation expectations affect the Phillips Curve, and the implications for monetary policy.

Interest rates have unexpectedly trended downward in both nominal and real terms over the last few decades. Forecast errors of the long-term nominal interest rate have been consistently negative for decades (Coibion and Gorodnichenko, 2015). Yet individuals seemingly have not revised their expectations to account for these systematic errors. I am curious to know if the constant belief that long-term safe assets, 10-year Treasuries, would decrease in price led to more reach-for-yield behavior by investors who sought to achieve a specific return target. Ex-post returns on government debt were quite high, but ex-ante expectations might have driven more investors to purchase riskier corporate debt. This topic remains relevant, as official forecasts even in the last 5 years have been overly optimistic about the future change in long-term safe rates.

While expectations about long-term government debt seem to under-react to recent changes, expectations about credit spreads seem to follow a different process and over-react to recent news. The predictable cyclicality in the corporate credit market (Greenwood and Hanson, 2013) suggests individuals heavily weight the recent past - i.e. following episodes of low default rates investors become and remain overly optimistic about future returns on credit assets. Then, after an increase in default rates, investors become overly pessimistic about future default rates. This predictability in the reversal of credit spreads should not occur under rational expectations. Professor Shleifer's recent work (e.g. Bordalo et al. 2019) uses diagnostic expectations to model investor behavior, a phenomenon that I would like to better understand. The Behavioral Macroeconomics Research Boot Camp would give me an opportunity to learn from Professor Gorodnichenko and Professor Shleifer in person.

The decline in interest rates has also contributed to "reach-for-yield" behavior by investors, which may have contributed to a recent increase in financial vulnerabilities – corporate debt levels are at historically high levels. While reach-for-yield behavior has potential agency explanations (managers of pension funds do not see the downside of a risky investment doing poorly), there could also be behavioral explanations. I hope to combine the slow-moving risk-free rate and expectations processes and investor behavior into a workhorse macroeconomic model to assess equilibrium credit allocation. The drivers of the credit cycle are incredibly

important, as in downturns firms with higher leverage ratios are less likely to partake in "labor hoarding" and so lay off more workers (Giroud and Mueller, 2017).

While I do not have a specific paper idea concerning the Phillips Curve, I would also like to do research in this area. It is of deep concern to me that a substantial portion of macroeconomic policy, including most structural estimates of potential growth, is guided by this decades-old relationship. The link between unemployment and inflation has weakened in recent decades, implying that labor market data may no longer serve as the best indicator of potential growth in the economy. Recent work (Coibion et al. 2018) has documented that an inflation expectations-adjusted Phillips Curve better matches the data, such as the lack of disinflation during the Great Recession. At the Boot Camp I could both further my understanding of the role of expectations in the flattening of the Phillips Curve and begin to craft a feasible research idea.

Before starting graduate school, I worked in macroeconomic policy and research at the Council of Economic Advisers and the Federal Reserve Bank of New York. I have worked on both long- and short-term macroeconomic forecasts and am deeply familiar with macroeconomic data, particularly for the U.S., which allows me to quickly mentally map economic models to the data. At Columbia University I have excelled in my coursework and am well-prepared to take full advantage of an immersive training session in behavioral macroeconomics. At the Boot Camp, I would also meet other students who are interested in researching this field, who could potentially become coauthors. I hope to attend the NBER Behavioral Macroeconomics Research Boot Camp and I thank the committee for their consideration.

References

Bardalo, P., N. Gennaioli, A. Shleifer, S. Terry (2019): "Real Credit Cycles", Manuscript.

Coibion, O., Gorodnichenko, Y., Kamdar, R. (2018): "The Formation of Expectations, Inflation and the Phillips Curve," Journal of Economic Literature 56(2018): 1447-1491.

Coibion, O. and Y. Gorodnichenko (2015): "Information Rigidity and the Expectations Formation Process: A Simple Framework and New Facts", American Economic Review, 105(8): 2644-2678

Giroud, X., and H. M. Mueller (2017): "Firm Leverage, Consumer Demand, and Employment Losses during the Great Recession." The Quarterly Journal of Economics, Feb. 2017, 132(1): 271-316.

Greenwood, R. and S. G. Hanson (2013): "Issuer Quality and Corporate Bond Returns", The Review of Financial Studies, 26(6): 1483–1525.

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK
ECONOMICS

New York, NY 10027
December 8, 2019

Selection Committee
Behavioral Macroeconomics Bootcamp
National Bureau of Economic Research
Cambridge, Massachusetts

Dear colleagues,

I am writing to recommend Susannah Scanlan, a second-year PhD student in Economics here at Columbia, who would like to attend the Behavioral Macroeconomics Bootcamp in March 2020.

I first got to know Susannah as a prospective applicant to the Columbia PhD program, with whom I discussed graduate study at Columbia when she was a research assistant at the Federal Reserve Bank of New York, where I visit occasionally as a consultant. I got to know her better as a student in the first-year PhD sequence in macroeconomics, in which I taught one of the segments last spring. This year she has also been attending the Monetary Economics Colloquium (a seminar for the presentation of research in progress by dissertation writers) that I run with Jennifer La'O, and she has discussed her developing research interests with me. I think she is an excellent candidate to attend the Behavioral Macroeconomics Bootcamp.

Susannah came to our program after having graduated with honors in economics at Princeton, and then spent four years gaining valuable experience with the way that economics is used in shaping public policy, first as a research assistant at the Council of Economic Advisors and then as a research assistant at the New York Fed. She has had an opportunity to work under and be mentored by outstanding economists in both environments (as well as in her undergraduate study, of course), and comes to us not only with an unusually keen awareness of the way in which economic arguments can contribute to the policy process, but also of the way in which careful analysis helps to increase the impact of economic arguments. This gives her a clear vision of what she wants to achieve from her graduate education. She is highly motivated to succeed, and committed to putting her talents to work in public service. It is easy to imagine her making an important contribution to the improvement of U.S. policy with the skills that she acquires here. She has done well in our program thus far, and is ahead of most of her classmates in the degree to which she is already formulating research ideas.

Her proposed dissertation research topic is at an early stage of development (she is still taking her field classes in macroeconomics and finance this year), but she is clearly drawn to issues relating to the effect of behavioral biases and perceptual errors on

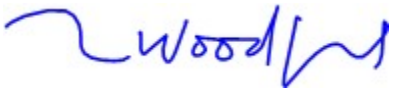
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macroeconomic dynamics. The issue that she is pursuing at present relates to an active topic of discussion in policy circles over the past decade, namely, the sources of the financial fragility that allowed the crisis of 2008 to occur, and more specifically an interest in the role that a sustained period of low interest rates might have played. She proposes to analyze this topic using ideas from the behavioral finance literature about the nature of "reaching for yield," and integrating them into a macroeconomic model.

This is a creative idea, that will require her to integrate styles of modeling that have represented largely non-overlapping literatures thus far, though she makes a persuasive case for wishing to combine them. (If the finance literature is right about the way decisions of investors are distorted in a low-interest-rate environment, then one should want to know what the consequences of such distortions are for overall market equilibrium and aggregate outcomes; but this requires building a macroeconomic model with a non-trivial financial sector.) While not a type of idea that has already been thoroughly explored, it is one that connects to many current developments in the field: for example, the great deal of recent progress in understanding how to incorporate more sophisticated financial structures into macroeconomic models, and the (relatively unrelated) recent interest in taking behavioral biases into account in macroeconomic analysis. This makes it in some ways a topic that is ripe to be pursued. It is also a topic on which she can expect to get good supervision at Columbia; ours is one of the faculties with the greatest interest in behavioral issues in macroeconomics (a concern of Hassan Afrouzi and myself in particular), in addition to our long-standing strength in monetary macroeconomics.

Susannah is talented and has a strong drive to contribute to the improvement of economics and of public policy. At the same time, she is still at an early stage in the formulation of her research ideas, and attending this workshop could have a transformative effect on the path of her future research. I strongly recommend her for participation in the NBER Behavioral Macroeconomics Bootcamp.

Sincerely,



Michael Woodford
John Bates Clark Professor
of Political Economy
Columbia University