525 W 120th Street
New York, New York 10027

TEL: (917) 698 7686
yp2266@tc.columbia.edu

Yilin Pan

Education

2016 PhD in Economics and Education, Teachers College, Columbia University, New York, U.S.A.

- Title: *Essays on Applying Bayesian Data Analysis to Improve Evidence-based Decision-making in Education.*
- Committee members: Henry Levin (sponsor), Alex Bowers, Andrew Gelman, Mun C. Tsang, and Peter Bergman.

2010 Master of Arts in Higher Education, Tsinghua University, Beijing, P. R. China

2007 Bachelor of Arts in English Literature and Linguistics, Tsinghua University, Beijing, P. R. China

Employment

2017-2019 Post-doctoral researcher jointly hired by the Department of Educational Policy and Social Analysis and the Department of Organization Leadership, Teachers College Columbia University, New York, New York, U.S.A.

2016-2017 Consultant, Education Global Practice, World Bank, Washington D.C., U.S.A.

2012-2016 Research Assistant in Center for Benefit-Cost Studies of Education (CBCSE), Teachers College Columbia University, New York, New York, U.S.A.

Research statement

I am an applied quantitative researcher interested in economics of education and education leadership data analytics. My research aims to improve the methodology and practice of evidence-based decision-making in educational resource allocation. My work includes applying Bayesian statistics to improve the methodologies that generate research evidence, collaborating with schools, districts and state departments of education to produce and utilize evidence in real practice, design online tools to facilitate research use and building courses to strengthen the data and research literacy of educational leaders. Research methods strengths include economic evaluation (i.e., cost-effectiveness, cost-benefit and cost-utility analysis), Bayesian data analysis, causal inference, text mining, and large-scale state and international assessments.

Teaching statement

Economics and education, resource allocation and education finance, research methods, statistics, and evidence-based improvement cycles in schools.

Grant Awards

2018 Hollands, F. M., Dossett, D., Shand, R., & **Pan, Y.** (Co-PI) "Exploring Academic Returns on Investment as a Metric to Direct District-level Funding towards Programs that Improve Student Outcomes", U.S. Department of Education's Institute of Education Sciences (Grant ID #R305H180003, $205,902).

2017 Hollands, F. M., Levin, H. M., **Pan, Y.** (Project Director) & Corter, J. E. "A cost-utility framework to facilitate evidence-based decision-making in schools", William. T. Grant Foundation (Grant ID #187095, $839,616).

2016 **Pan, Y.** "Applying Bayesian data analysis to improve evidence-based decision-making in education", Provost Doctoral Dissertation Grant, Teachers College, Columbia University ($7,750).

Fellowships

2016-2017 International Scholarship (Teachers College, Columbia University, New York, New York, U.S.A.)

2013-2016 TC General Scholarship (Teachers College, Columbia University, New York, New York, U.S.A.)

2013-2015 EPSA Department Scholarship (Teachers College, Columbia University, New York, New York, U.S.A.)

2013-2014 Provost Office Doctoral Fellow (Teachers College, Columbia University, New York, New York, U.S.A.)

2012-2014 International Scholarship (Teachers College, Columbia University, New York, New York, U.S.A.)

2007-2008 First Prize for Comprehensive Excellence Scholarship (Tsinghua University, Beijing, P. R. China)

2006-2007 German Scholarship (Tsinghua University, Beijing, P. R. China)

2005-2006 Exchange Scholarship (Baylor University, Waco, Texas, U.S.A.)

2003-2005 First Prize for Comprehensive Excellence Scholarship (Tsinghua University, Beijing, P. R. China)

2010 Graduate of Honor (Institute of Education, Tsinghua University, Beijing, P. R. China)

2007 Graduate of Honor (Tsinghua University, Beijing, P. R. China)

Peer-reviewed Journal Articles

[1] Hollands, F. M. & **Pan, Y.** (2018). Evaluating Digital Math Tools in the Field. Middle Grades Review, 4(1), 1-16. Available at: https://scholarworks.uvm.edu/mgreview/vol4/iss1/8

[2] Jacob, R., Armstrong, C., Bowden, A. B., **Pan, Y.** (2016). Leveraging volunteers: An experiment evaluation of a tutoring program for struggling readers. *Journal of Research on Educational Effectiveness,* 9(1), 67-92. doi: 10.1080/19345747.2016.1138560.

[3] Hollands, F. M., Kieffer, M., Shand, R., **Pan, Y.**, Cheng, H., and Levin, H. M. (2016). Cost-effectiveness analysis of early reading programs: A demonstration with recommendations for future research. *Journal of Research on Educational Effectiveness*, 9(1), 30-53. doi:10.1080/19345747.2015.1055639.

[4] Hollands, F. M., Bowden, A. B., Belfield, C., Levin, H. M., Cheng, H., Shand, R., **Pan, Y.**, & Hanisch-Cerda, B. (2014). Cost-effectiveness analysis in practice: Interventions to improve high school completion. *Educational Evaluation and Policy Analysis*, 36(3), 307-326. doi: 10.3102/0162373713511850.

[5] **Pan, Y.**, Zheng, P., & Xu, T. (2009). A predictive effectiveness evaluation of tuition-free normal education policy: With special reference to teacher supply in rural areas. *Tsinghua Journal of Education*, 2009 (6), 79-83. (in Chinese).

[6] Yuan, B., & **Pan, Y.** (2009). Internationalization and the construction of world class universities: A case study of Tsinghua University. *Journal of Higher Education*, 2009(9), 23-28. (in Chinese).

Papers Under Review

[1] Hollands, F., **Pan, Y.** & Escueta, M. (2018). What is the Potential for Applying Cost-utility Analysis to Facilitate Evidence-Based Decision-Making in Schools? Revise and resubmit to *Educational Researcher*.

Working Papers

[1] **Pan, Y.** Understanding the uncertainty of the effectiveness-cost ratio in educational resource allocation: A Bayesian approach.

[2] **Pan, Y.** & Bowers, A. Bayesian decision theory guiding educational decision-making: Theories, models and application.

[3] **Pan, Y.** Extrapolation of effectiveness and cost from evaluations to a decision-making context: A Bayesian hierarchical model (accepted by 2017 AEFP).

[4] Goodrich, B. & **Pan, Y.** Multiple imputation for large-scale educational assessments: A full Bayesian approach using Stan (accepted by 2017 AEFP).

[5] **Pan, Y.** Reducing the Double Counting of Benefits: A Bayesian Approach to Model Multiple Outcomes in Education Evaluations (accepted by 2017 SBCA).

[6] **Pan, Y.** Research findings and decision-making in educational resource allocation: Evidence from a pilot randomized trial (A new round of data collection).

[7] Ni, X., Bowers, A. J., & **Pan, Y.** Forecasting potential school district effectiveness trends in Ohio state: Using Bayesian hierarchical longitudinal model to inform policy decision-making (accepted by 2017 MMM).

Reports

[1] Jacob, R., Armstrong, C., Willard, J., Bowden, A. B., & **Pan, Y.** (2015). *Mobilizing volunteer tutors to improve student literacy: Implementation, impacts, and costs of the Reading Partners program*. New York, NY: MDRC.

[2] Hollands, F. M., **Pan, Y.**, Shand, R., Cheng, H., Levin, H. M., Belfield, C. R., Kieffer, M. A., Bowden, B. & Hanisch-Cerda, B. (2013). *Improving early literacy: Cost-effectiveness analysis of effective reading programs*. New York, NY: Teachers College Columbia University.

[3] Levin, H. M., Belfield, C., Hollands, F. M., Bowden, A. B., Cheng, H., Shand, R., **Pan, Y.**, & Hanisch-Cerda, B. (2012). *Cost-effectiveness analysis of interventions that improve high school completion*. New York, NY: Teachers College Columbia University.

Evaluation Reports for School Districts

[1] Hollands, F. & **Pan, Y.** (2016). IXL use and math achievement in Grades 4 and 6.

[2] Hollands, F. & **Pan, Y.** (2015). Teacher feedback on student essays written with and without Google Docs.

Services

2018 Co-Chair, SIG for Districts in Research & Reform, American Educational Research Association (AERA)

Conference Presentations

2017 American Educational Research Association (AERA)

2017 The Association for Education Finance and Policy (AEFP), The Society for Research on Educational Effectiveness (SREE), Society for Benefit-Cost Analysis (SBCA), and Modern Modeling Methods Conference (MMM).

2016 American Educational Research Association (AERA), The Association for Education Finance and Policy (AEFP), The Society for Research on Educational Effectiveness (SREE) and Society for Benefit-Cost Analysis (SBCA)

2013 The Association for Education Finance and Policy (AEFP) and American Educational Research Association (AERA)

Invited Presentations

2018 Michigan State University, "Advancing Evidence-based Decision-making in Educational Resource Allocation Using Bayesian Decision Theory".

Invited Workshops

2016 Improvement Analytics Data Sprint. Summit Public Schools, SRI International, and Teachers College, Columbia University. Menlo Park, CA.

2016 BIG Ideas Doctoral Workshop, Harvard Business School.

2013 Innovative Financing for Education, Central European University.

Teaching Experience

2018 Teachers College, Columbia University

- Online course coordiantor for *Leading with Evidence in Schools: Data and Research Literacy*, Alex Bowers (Summer and Fall 2018).

2016-2018 Summer Principals Academy, Teachers College, Columbia University

- Instructor for *Ecology of Data Driven Leadership*, with Jared Boyce (Summer 2019);
- Instructional Assistant for *Ecology of Data Driven Leadership*, Alex Bowers and Jared Boyce (Summer 2016);
- Guest Instructor on *Evidence-based Decision-making* for *New School Designs*, Nicole Limperopulos (Summer 2016, Spring 2017, Spring 2018).

2016 IES Methods Training Program on Cost-Effectiveness and Cost-Benefit Analysis, Teachers College, Columbia University

- Instructor on *Pricing Ingredients* and *CBCSE Cost Toolkit* (May & June 2016).

2013-2015 Department of Educational Policy and Social Analysis, Teachers College, Columbia University

- Course assistant for *Evaluating Education Policies and Program*, Sarah Cohodes (Fall 2015);
- Co-instructor for *Economics and Education*, Henry Levin (Fall 2014);
- Senior teaching assistant for *Economics and Education*, Henry Levin (Fall 2013).

2013-2016 Graduate School of Arts and Sciences, Columbia University

- Teaching Assistant for *Bayesian Statistics for Social Sciences*, Ben Goodrich (Spring 2016);
- Teaching Assistant for *Data Analysis for Social Sciences*, Ben Goodrich (Spring 2014);
- Teaching Assistant for *Data Analysis-Missing Data*, Ben Goodrich (Spring 2013).

Software and Tools

[1] Hollands, F. M., Hanisch-Cerda, B., Levin, H. M., Belfield, C. R., Menon, A., Shand, R., **Pan, Y.**, Bakir, I., & Cheng, H. (2015). *CostOut - the CBCSE Cost Tool Kit*. Center for Benefit-Cost Studies of Education, Teachers College, Columbia University. Accessed 1-22-16 from: http://www.cbcsecosttoolkit.org/

[2] DecisionMaker (2019) - the CBCSE Cost-Utility Tool Kit (under development).