

JARED E. KNOWLES

(617) 600-1832 | jared@civilytics.com | @civilytics | @jknowles
28 Rangeley Rd., Watertown, MA 02472

SUMMARY

- Skilled in applying quantitative social science methods to public policy problems to help leaders and elected officials make change
- Skilled data communicator co-creating quantitative policy analysis with media, public officials, researchers, and the general public
- Over a decade of experience training analyst teams transitioning from proprietary data analysis tools to standardize on R

PROFESSIONAL EXPERIENCE

Civilytics Consulting

President, Founder, 2016 – Present

Selected Projects and Capabilities

- **Lead Innovative Analysis of Public School-based Arrest Data.** Co-PI for two-year American Educational Research Association – National Science Foundation research grant titled “Equity analysis at a large scale: Using small area estimation to get the most from the Civil Rights Data Collection (CRDC) school arrest data.”
- **Construct Interdisciplinary Data Files from Public Data.** Prepared analytic files for multiple large non-profit organizations combining public data from the CRDC, the Common Core of Data (CCD), Bureau of Labor Statistics (BLS), and the US Census using direct and spatial linkages across these sources.
- **Build Attendance and Enrollment Predictive Analytics Systems.** Built an enrollment forecasting model for the Pennsylvania State System of Higher Education (PASSHE) to provide weekly enrollment updates. Built a school attendance forecasting software package for Regional Education Laboratory Midwest providing school leaders weekly attendance forecasts. Developed an enrollment projection system for California school districts to inform long-term strategic planning for the Gates Foundation.
- **Conceptualize and Co-develop Equity Focused Data Dashboards.** Built a [district-level dashboard](#) for all public-school districts in the U.S. using CRDC data to analyze student arrests and referrals to law enforcement by race/ethnicity, gender, and state. Built a [national and state-level dashboard](#) using Census data to examine prison gerrymandering and the implications of mass incarceration for political power. Built a [public budgeting dashboard](#) exploring city and county budgets in-depth. Responsible for all aspects of dashboard design and execution, including accessing, preparing, and analyzing data and designing dashboard functionality.

EDUCATION

University of Wisconsin-Madison

Ph.D. in Political Science, 2015
M.A. in Political Science, 2009

Pacific University

B.A. in Politics and Government,
German Studies 2008

AWARDS

- AERA Research Grant, 2022-2024
- IES Pre-Doctoral Training Fellowship, 2009-2015
- The Lloyd D. Gladfelter Award for Government Innovation, 2015

TECHNICAL EXPERIENCE

- **Programming:** World-class expertise in programming statistical models in R and integrating them into operational data systems. Also fluent in: Shiny dashboards, Stan, Python, SQL/PostGIS
- **Data Sources:** IPEDS, National Student Clearinghouse, CCD, EdFacts, CRDC, ACS and Decennial Census products, FBI crime data
- **Analysis Methods:** Geospatial analysis, predictive modeling, deep learning, causal inference and quasi-experimental methods, Bayesian modeling and forecasting

- **Faculty for Statistical Computing for the Strategic Data Project at Harvard (2016-2023).** Curriculum designer and lead instructor for courses on predictive analytics, regression, data visualization, data preparation, and data governance to LEA, SEA, CMO, nonprofit, and higher education data staff. Advise various SDP capstone projects annually.
- **Analytics, Training, and Data Support for LEAs and SEAs.** Analyzed data on student homelessness and prepared report and presentation materials for Wisconsin Department of Public Information. Developed dashboard on student test participation for Boston Public Schools and trained analysts to maintain and enhance it. Developed a teacher workforce dashboard for the Connecticut Department of Education. Develop and lead R trainings ranging from introductory workshops to specialized topics on hierarchical linear modeling, machine learning, Bayesian estimation, and Shiny app development. Clients include Gwinnett County Public Schools, Leading Educators, Boston Public Schools and others.
- **Conduct Budget Analyses and Trainings.** Train grassroots organizations to read and engage with their local budgets. Analyze city, county, and state budgets, along with adjacent data like calls for service and daily population counts in prisons and jails. Prepare memos and visualizations for local groups to use in advocacy campaigns. Present to community groups, academic researchers, journalists, and local government officials about this work.
- **Serve in Various Advisory Roles:**
 - [National Student Attendance Engagement and Success Center](#) Data Expert, 2020-2023
 - [Urban Institute Education Data Portal](#) Advisory Board member, 2020-2024
 - [Tableau Racial Equity Data Hub](#) Advisory Board member, 2020-2024
 - IES Peer Review Panel Member, State Longitudinal Data Systems competition, 2019

Wisconsin Department of Public Instruction

Senior Research Analyst, 2013-2016, Policy Research Advisor, 2011-2013, Policy Analysis Intern, 2010-2011

- **Agency Representative and Project Director for SLDS Grant.** Lead grant writer and project directory for Wisconsin's winning 2015 Statewide Longitudinal Data System (SLDS) grant from the U.S. Department of Education (value: \$5.25M). Agency representative to the National Forum on Education Statistics (2011-16).
- **Developed and Deployed Statewide Early Warning System.** Developed, piloted, and deployed the Wisconsin Dropout Early Warning System (DEWS), an EWS still used across the state and built in close collaboration with educators. Awarded [The Lloyd D. Gladfelter Award for Government Innovation](#) from La Follette School of Public Affairs.
- **Integrated Education Data with Other State and Academic Data.** DPI liaison to Department of Children and Families, Wisconsin Center for Education Research, and Institute for Research on Poverty. State Superintendent's Wisconsin Education Research Advisory Council chair and organizer (2012-16). Responsible for building partnerships with external researchers to improve quality and timeliness of research for supporting agency decisions.
- **Grew State Government Employee Data Literacy and Statistical Computing.** Founded R User Group and taught [bootcamps on R](#) to transition agency analysis from Stata to R. Developed and led dozens of workshops on R, statistics, and data.
- **Supported Agency Policy and Budget Development and Advancement of State Superintendent's Agenda.** Analyzed statewide longitudinal student data and other available data to support evidence-based policymaking. Conducted quick turnaround and longer-term analyses of math and reading data, student absenteeism, English proficiency and bilingual and bicultural education programs, and many other topics. Developed interactive dashboards, data visualizations, and other methods for communicating analytics to practitioners and decision-makers at all levels of government. Supported agency's strategic goal-setting.

SELECTED PUBLICATIONS

- Geller, Wendy, Dorothyjean Cratty, and **Jared E. Knowles**. (2021). [*Education Data Done Right II: Building on Each Others' Work*](#). Leanpub.
- Ritchie, Andrea J. and **Jared E. Knowles**. (2021). [*Cops Don't Stop Violence: Combating Narratives Used to Defend Police Instead of Defunding Them*](#). Community Resource Hub.
- Community Resource Hub for Safety and Accountability and **Jared E. Knowles**. (2020). [*How to Take Back the Budget: A Guide to Reviewing and Changing the Police Budget in Your Community*](#). Community Resource Hub.
- Knowles, Jared E.** (2020). [*Policing the American University*](#). Boston, MA: Civilytics Consulting.
- Geller, Wendy, Dorothyjean Cratty, and **Jared E. Knowles**. (2019). [*Education Data Done Right: Lessons from the Trenches of Applied Data Science*](#). Leanpub.
- Carlson, Deven, and **Jared E. Knowles**. (2016). [*The Effect of English Language Learner Reclassification on Student ACT Scores, High School Graduation, and Postsecondary Enrollment: Regression Discontinuity Evidence from Wisconsin*](#). *Journal of Policy Analysis and Management*. 35:3, 559-586.
- Knowles, Jared E.** and Carl Frederick. (2015-2024). [*merTools: Tools for Analyzing Mixed Effect Regression Models*](#). R package version 0.6.1. <https://cran.r-project.org/web/packages/merTools>
- Knowles, Jared E.** (2015). [*Of Needles and Haystacks: Building an Accurate Statewide Dropout Early Warning System in Wisconsin*](#). *Journal of Educational Data Mining*. 7:3, 18-67.
- Knowles, Jared E.**, and Douglas White (2013). [*The Wisconsin Dropout Early Warning System \(DEWS\) Action Guide for Educators*](#). Madison, WI: Wisconsin Department of Public Instruction.

SELECTED PRESENTATIONS

- Caven, Meg, and **Jared E. Knowles**. (August 20, 2021). STATS-DC National Center for Education Statistics (NCES) Summer Data Conference. Online.
- Knowles, Jared E.** (June 23 and July 22, 2021). "Data Viz When Who Counts Matters Most." Summer Institute in Learning Analytics (SILA): The Center for Education Policy Research at Harvard University. Online.
- Knowles, Jared E.** (April 17, 2021). "Police Accountability from the Grassroots." University of California-Berkeley Conference on Analysis Pending Revolution. Online.
- Knowles, Jared E.** (March 11, 2021). "The Promise and Successes of Integrating Public Data with Education Data Systems." National Student Attendance Engagement and Success Center. Online.
- Knowles, Jared E.** (January 28, 2021). "Building a Data Culture." New Orleans Data Collaborative. Online.
- Geller, Wendy, and **Jared E. Knowles**. (February 19, 2020). "Doing Education Data Right." Winter 2020: Accountability Systems and Reporting Collaborative Meeting. Council of Chief State School Officers. New Orleans, LA.
- Knowles, Jared E.** (July 17, 2019). "Applying Predictive Analytics in Education Ethically." SILA: The Center for Education Policy Research at Harvard University. Cambridge, MA.
- Knowles, Jared E.** (May 23-24, 2018). "Open Analytics." Colloquium 2018: Reimagining Assessment and Accountability in an Open World. National Center for Innovation in Education Assessment. Ketchum, ID.

MEDIA APPEARANCES

- Analysis for article that appeared in [*USA Today*](#) and [*The Milwaukee Journal Sentinel*](#) on prison-based gerrymandering in Wisconsin
- Analysis and interview for *The Intercept* article "[*Schumer Amendment Shorts States \\$5 Billion in Covid-19 Relief Funding*](#)." June 30, 2021.
- Analysis for *The Crime Report* article "[*Campus Cops Need Closer Scrutiny*](#)." March 30, 2020.
- Analysis for *Reveal at The Center for Investigative Reporting* episode "[*Don't Count on the Census*](#)." Feb. 1, 2020.
- Interview for *Marketplace* episode "[*Using Data to Head Off Dropouts*](#)." Nov. 12, 2014.

Levesque, Karen, and **Jared E. Knowles**. (July 8, 2015). "Two Sides of the Same Coin: State Staff and Researcher Perspectives on State Longitudinal Data." STATS-DC NCES Summer Data Conference. Washington, D.C.

Knowles, Jared E. (July 31, 2014). "An Early Warning System for You: Wisconsin's Open Source Predictive Analytic Approach." STATS-DC NCES Summer Data Conference. Washington, D.C.

Reschovsky, Andrew, Lindsay Amiel, and **Jared E. Knowles**. (March 15, 2014). "The Political Economy of Voter Support for School Property Taxation." Association for Education Finance and Policy. San Antonio, TX.

Knowles, Jared E. (January 31, 2014). "Statistical Learning and Applied Modeling in Education: Examples and Concerns. Wisconsin Center for Education Research. Madison, WI.

Knowles, Jared E. (July 17, 2013). "Building and Deploying an Early Warning System: Lessons Learned from a Large Scale Pilot." STATS-DC NCES Summer Data Conference. Washington, D.C.

Knowles, Jared E. (June 13, 2012). "Using R for Policy Research in a State Education Agency." International useR! Conference 2012. Nashville, TN.

Knowles, Jared E. (January 20, 2012). "Policy Relevant Visualization and Analysis of Longitudinal Data Systems Data with Open Source Tools." 25th Annual Management and Information Systems (MIS) Conference. San Diego, CA.