Jason M. Bryer, Ph.D.

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github.com/jbryer/CV

Professional Interests

Teaching and research within K-12 and higher education. Specific areas of interest include the use of technology (e.g. R and LaTeX) for reproducible research; academic self-regulated learning; issues of social justice and equity in education; and methodological and statistical topics, particularly propensity score analysis and modern graphics.

Education

2014 **Ph.D.**, *University at Albany*, Albany, NY.
Educational Psychology & Methodology

2009 **M.S.**, *University at Albany*, Albany, NY.
Educational Psychology & Methodology

2004-2005 **Coursework Completed**, *The College of Saint Rose Graduate School*, Albany, NY.
Adolescent Eduction in Mathematics

1999 **B.A.**, *The College of Saint Rose*, Albany, NY.
Mathematics major; Computer Information Systems minor

Dissertation

Title *A National Study Comparing Charter and Traditional Public Schools Using Propensity Score Analysis*

Committee Robert M. Pruzek (chair), Bruce Dudek (co-chair), Heidi Andrade, Kathryn S. Schiller

Website `https://github.com/jbryer/Dissertation`

Professional Experiences

2012-present **Director of Research & Project Evaluation**, *Excelsior College, Office of Grants & Research*, Albany, NY.
Assist the College in seeking external grants and provide research support for existing grants. Recent activities include:
○ **Principal Investigator** for a grant proposal to develop a Diagnostic Assessment of College Skills (currently internally funded).
○ **Principal Investigator** for a Gates Foundation funded grant ($168,572) on the use of adaptive learning technology in Biology and Mathematics.
○ **Lead Evaluator** for New York State Higher Education Services Corporation (HESC) grant ($449,438) for the expansion of the Online Writing Lab to NYS Community Colleges.

2015-present **Adjunct Associate Professor**, *CUNY Graduate Center*, New York, NY.
Courses taught: IS 606 Statistics & Probability for Data Analytics (Summer 2015, Fall 2015)

2009-present **Adjunct Instructor**, *University at Albany, Division of Educational Psychology & Methodology*, Albany, NY.
Courses taught: EPSY 420 Child & Adolescent Development (Fall 2008, Spring 2009), EPSY 530 Statistics I (Fall 2013, Summer 2014, Fall 2014, Summer 2015), EPSY 887 Computational Statistics (Spring 2013), EPSY 887 Data Science Institute (Fall 2014)

2008-2014 **Senior Research Analyst**, *Excelsior College, Office of Institutional Research*, Albany, NY.
Conducted research and data analysis related to the College's mission. This includes developing, administering, and analyzing surveys; analyzing data from the college's student information system; and consulting with individual schools to develop specific measures. I also provided substantial support and training for other Research Analysts within the Office covering topics such as methodology, statistics, and reproducible research.

2008-2010 **Research Assistant**, *Head Start University Partnership for Classroom Quality*, Albany, NY.
Assisted with data collection, entry, maintenance, and analysis to evaluate the effectiveness of behavioral (Positive Behavior Support [PBS]) and literacy interventions using the Response-to-Intervention (RTI) model.
Principal investigators: Kevin P. Quinn & Frank R. Vellutino

2008-2011 **Webmaster**, *University at Albany, School of Education*, Albany, NY.
Developed and maintained all School of Education websites.

2006-2007 **Graduate Assistant**, *Teaching Mathematics for Understanding, University at Albany*, Albany, NY.
Developed and led planning sessions with K-8 mathematics teachers in urban school districts on social justice topics in the mathematics curriculum. Assisted in other areas of the project including data collection, conference planning, and development of online professional development courses.
Principal Investigators: Abbe Herzig & Vicky Kouba

2006-2008 **Senior Applications Developer**, *Excelsior College*, Albany, NY.
Developed Java applications for distance learning and student management systems.

2004-2006 **Senior Software Engineer**, *State University of New York*, Albany, NY.
Developed web based applications in Java and related technologies as part of a state wide financial and human resource systems.

1999-2004 **Software Engineer**, *MapInfo*, Troy, NY.
Contributed key features as part of a geographic information system (GIS) server application (MapXtreme Java) including API for reading and writing binary GIS data, framework for web based applications, and data binding.

1997-1999 **Web Developer**, *Office of the Attorney General*, Albany, NY.
Software developer and website designer for the New York State Attorney General's Website.

Teaching Experiences

Summer 2015
Fall 2014
Summer 2014
Fall 2013

EPSY 530 Statistics I (University at Albany)

Descriptive statistics including measures of central tendency and variability, correlation and regression. Introduction to statistical inference, including sampling distributions, significance tests, confidence intervals, and power of tests of significance.

Course website: `http://epsy530.bryer.org`

Summer 2015

IS 606 Statistics and Probability for Data Analytics (CUNY School of Professional Studies)

This course covers basic techniques in probability and statistics that are important in the field of data analytics. Discrete probability models, sampling from infinite and finite populations, statistical distributions, basic Bayesian statistics, and non-parametric statistical techniques for categorical data are covered in this course. Each of these statistical concepts will be applied in a variety of real-world scenarios through the use of case studies and customized data sets.

Course page: `http://sps.cuny.edu/courses/is_606`

Fall 2014

EPSY 887 Data Science Institute (University at Albany)

Data Science is the intersection of statistics, computer science, and research. This seminar will introduce the key concepts of data science with an emphasis on data science in education. We will cover the important statistical and programming concepts necessary for conducting reproducible research on large datasets. The open source program R will be used throughout the course. No programming experience is required but at least two semesters of graduate statistics is highly recommended.

Course website: `https://github.com/jbryer/EPSY887DataScience`

April/May 2014

Applied Propensity Score Analysis with R (Workshop given at the University at Albany)

This two day workshop provided an introduction to propensity score methods using R as well as more advanced topics including multilevel PSA, non-binary treatment matching, and bootstrapping.

Workshop website: `http://psa.bryer.org`

Spring 2013

EPSY 887 Institute in Education: Computational Statistics (University at Albany)

This seminar will provide an introduction to statistical programming for data analysis with an emphasis on the analysis of large datasets. With the increased availability of large national and international datasets (e.g. PISA, TIMMS, NAEP, ECLS) there is a great opportunity and potential for researchers to address important questions. However, the analysis of large datasets requires special analytical procedures not found in commercial statistics software. Utilizing the open source statistical software R, students will be introduced to the tools and procedures for analyzing large datasets with an emphasis on conducting transparent and reproducible research.

Course website: `https://github.com/jbryer/CompStats`

July 2013

Introduction to Propensity Score Methods with R (useR! 2013 Pre-Conference Workshop)

This workshop will provide participants with a theoretical overview of propensity score methods as well as illustrations and discussion of PSA applications using R.

Fall 2013 Fall 2012 Fall 2011	**Introduction to R and LaTeX for Institutional Research** (Workshop given at the Northeast Association for Institutional Research) This workshop provides an overview as well as hands-on exercises for using R and LaTeX to perform data analysis and report generation. Participants learn to perform basic statistical analyses in R and to generate reports with LaTeX in spreadsheet, presentation, and document formats.
Spring 2009 Fall 2008	**EPSY 420 Child & Adolescent Development** (University at Albany) This course covers theory and research in social, emotional, physical, and intellectual development and its application to instruction with an emphasis on late childhood through middle adolescence.
2007-2012 Fall Semesters	Assisted in teaching the online section of Statistics I (EPSY 530) including the installation and management of the Moodle Content Management System (moodle.bryer.org).

Service Positions

2014-present	Founding Organizer of the Albany R Users Group Website: `http://www.meetup.com/Albany-R-Users-Group`

Excelsior College

2014-present	Chair, Technology Advisory Subcommittee
2014-present	Committee Member, Information Technology Committee
2013-2014	Committee Member, Persistence Measure Task Force
2010-2014	Committee Member, Student Learning Support Services Committee
2010-2014	Committee Member, Data Definitions & Quality
2010-2013	Committee Member, Information Technology Operations & Security Committee
2011-2012	Committee Member, Search Committee for Assistant Provost
2009-2010	Committee Member, Early Alert System for Identifying Non-Persistent Students
2009	Chair, Task Force on a Library of Model Courses
2009-2010	Committee Member, System for Storing Information at Excelsior College

City School District of Albany

2011-2012	Committee Member, Grade Configuration Committee; Chair of the Accountability Subcommittee

American Educational Research Association

2009-2011	Treasurer, Studying and Self-Regulated Learning Special Interest Group
2009-2010	Committee Member, Division D Membership Committee

University at Albany, Division of Educational Psychology & Methodology

2007-2008	Treasurer, Graduate Student Organization

Professional Memberships

AERA	American Educational Research Association
AIR	Association for Institutional Research
ASA	American Statistical Association

NEAIR   North East Association for Institutional Research

Awards & Grants

2013-2015   **Principal Investigator** for a Bill & Melinda Gates Foundation funded grant ($168,572) on the use of adaptive learning technology in introductory Biology and Mathematics courses

2014-2016   **Lead Evaluator** for a New York State Higher Education Services Corporation (HESC) grant ($449,438) for the expansion of the Online Writing Lab to NYS Community Colleges.

2013   North East Association for Institutional Research (NEAIR) Ambassador Grant ($800)

2013   Excelsior College, Employee Recognition Award for Excellence in Innovation

2011, 2012   The Society of Multivariate Experimental Psychology (SMEP), Workshop Travel Award (three separate awards of $1,000 each)

2011   National Center for Educational Statistics Workshop Travel Award (~$800)

2009   Association for Institutional Research (AIR) & National Center for Educational Statistics (NCES), Travel Grant ($330)

2009   National Science Foundation, Travel/Research Grant ($1,000)

2009   University at Albany Graduate Student Organization, Travel/Research Grant ($320.00)

2001   Award for Outstanding Performance, MapInfo.

1999   Sister Noel Marie Cronin Award for excellence in Mathematics, College of Saint Rose.

1999   Outstanding Senior Award for Mathematics/Computer Information Systems, College of Saint Rose.

1998, 1999   Service and Appreciation Award, College of Saint Rose.

Unpublished Papers in Preparation

Bryer, J. M. (In preparation). TriMatch: An R package for propensity score analysis of non-binary treatments. *Journal of Statistical Software*.

Bryer, J. M. and Pruzek, R. M. (In preparation). multilevelPSA: An R package for estimating and visualizing multilevel propensity score models. *Journal of Statistical Software*.

Bryer, J. M. (In preparation). PSAboot: An R package for bootstrapping propensity score analysis. *Journal of Statistical Software*.

Bryer, J. M. and Speershneider, K. (In preparation). The visual display of Likert data with the `likert` package. *The R Journal*.

Published or Submitted

Anderson, K., Scanlon, D. M., Goatley, V., Gelzheiser, L. M., and Bryer, J. (In review). Impact of changes in literacy course content in teacher education programs on preservice teachers' knowledge. *Teaching and Teaching Education*.

Bryer, J. M. (In revision). makeR: An R package for managing document building and versioning. *The R Journal*.

Nagelsmith, L., Bryer, J. M., and Yan, Z. (2012). Measuring motivation & volition of nursing students in non-traditional learning environments. *Journal of Nursing Measurement*, 20(2).

Bryer, J. M. and Pruzek, R. M. (2011). An international comparison of private and public schools using multilevel propensity score methods and graphics (abstract). *Multivariate Behavior Research*, 46(6):1010–1011.

Bryer, J., Daniels, L., Norwood, E., and Applegarth, E. (2010, 2011, 2012, 2013, 2014). *Excelsior College Fact Book*. Excelsior College Office of Institutional Research.

Presentations

Bryer, J. (2015). Propensity score matching with three groups. Poster presented at the Atlantic Causal Inference Conference. Philadelphia, PA.

Bryer, J., Choens, A., Corey, M., Goldhirsh, M., and Jurkat, A. (2015). Data science panel. Panelist at the University at Albany's Open Source Festival, `http://ualbanyasist.com/open-source-festival/osf-2015/`.

Bryer, J. M., Mumma, P., Hyman, R., Dhyr, B., Cohen, P., Howard, M., and Hammang, J. M. (2014). Exploring better learning: Three campuses, two disciplines, and one learning platform. Panelist at the American Association of State Colleges and Universities. Ft Lauderdale, FL.

Bryer, J. M. (2014). PSAboot: An R package for bootstrapping propensity score analysis. Paper presented at the useR! Conference. Los Angeles, CA.

Bryer, J. M. and Speerschneider, K. (2013). TriMatch: An R package for propensity score matching of non-binary treatments. Paper presented at the useR! Conference. Albacete, Spain.

Speerschneider, K. and Bryer, J. M. (2013). `likert`: An R package for visualizing and analyzing likert-based items. Paper presented at the useR! Conference. Albacete, Spain.

Bryer, J. M. (2012b). Using the makeR package for managing document building and versioning. Paper presented at the useR! Conference. Nashville, TN.

Bryer, J. M. (2012a). Comparing charter and traditional public schools using propensity score analysis. Paper presented at the American Educational Research Association Annual Conference. Vancouver, British Columbia, Canada.

Bryer, J. M. and Pruzek, R. M. (2012). Moodle: An open way of delivering online courses. Invited talk given to the School of Education, University at Albany. Albany, NY.

Bryer, J. M. and Daniels, L. (2011). Measuring all students: An alternative method for retention and completion rates. Paper presented at the North East Association for Institutional Research 28th Annual Conference. Boston, MA `http://www.neair.org/resource/resmgr/confpapers2011/tues1_paper_camBryerDaniels.pdf`.

Bryer, J. M. and Pruzek, R. (2011). An international comparison of private and public schools using multilevel propensity score methods and graphics. Paper presented at the Society of Multivariate Experimental Psychology (SMEP). Norman, OK.

Pruzek, R., Danielak, B., Bryer, J., and Doane, W. (2011). Some new developments in graphics for comparing groups. Paper presented at the Society of Multivariate Experimental Psychology (SMEP). Norman, OK.

Bryer, J. M. (2011f). Visualizing multilevel propensity score analysis. Paper presented at the useR! Conference. Coventry, UK.

Bryer, J. M. (2011e). Introducing the IPEDS package for R. Presentation given at the Association for Institutional Research 51st Annual Forum. Toronto, Canada.

Bryer, J. M. (2011d). Software design principles for reproducible research. Presentation given at the Technologies in Education Conference. Albany, NY.

Bryer, J. M. (2011c). Comparing private and public schools: An international perspective using multilevel propensity score analysis. Poster presented at the annual meeting of the University at Albany Division of Educational Psychology & Methodology. Albany, NY.

Bryer, J. M. (2011b). Moodle: An open way of delivering online courses. Invited Brown Bag talk given to the Division of Educational Psychology & Methodology. Albany, NY.

Bryer, J. M. (2011a). Using R and latex to create the excelsior college fact book. Presentation given to the Excelsior College community. Albany, NY.

Bryer, J. M. (2010). Using r and latex for automating reporting. Paper presented at North East Association for Institutional Research 27th Annual Conference. Saratoga, NY.

Scanlon, D., Anderson, K., Gelzheiser, L., Goatley, V., Vellutino, F., and Bryer, J. M. (2010). Enhancing knowledge related to research-based early literacy instruction among pre-service teachers (year 3). Poster presented at the Institute of Education Sciences Principal Investigators conference, Washington, D.C.

Bryer, J. M. (2010). Introduction to r and latex for institutional research. Invited presentation at the Association for Institutional Research 50th Annual Forum. Chicago, IL.

Bryer, J. M., Ochal, B., and Wescott, K. (2010). Comparing charter and public schools with multilevel models. Poster presented at the annual meeting of the University at Albany Division of Educational Psychology & Methodology. Albany, NY.

Bryer, J. M. (2009b). Locating students: GIS applications for institutional research. Paper presented at North East Association for Institutional Research 36th Annual Conference. Baltimore, MD http://www.neair2.org/members/Proceedings/2009/proceedings/Monday/11am-12pm/Bryer.LocatingStudents.Paper.pdf.

Bryer, J. M. (2009a). The reliability and validity of the social skills improvement system for head start students. Paper presented at Northeastern Educational Research Association 40th Annual Conference. Rocky Hill, CT.

Bryer, J. M., Ochal, B., and Westcott, K. (2009). Accessing the effects of early entry to head start using propensity score analysis. Paper presented at Northeastern Educational Research Association 40th Annual Conference. Rocky Hill, CT.

Bryer, J. M. (2009). Using open source software for the management of large datasets. Paper presented at Directions in Statistical Computing, A Meeting on the Future of Statistical Computing. Copenhagen, Denmark.

Bryer, J. M., Hoss, K., and LaFave, M. (2009). Using factor analysis to test the reliability and validity of the social skills improvement system for head start students. Poster presented at the annual meeting of the University at Albany Division of Educational Psychology & Methodology. Albany, NY.

Bryer, J. M. and Nagelsmith, L. (2009). Using structural equation modeling to explore motivation and volition for nurses in nontraditional learning environments. Paper presented at American Educational Research Association Annual Conference. San Diego, CA.

Bryer, J. M. and Nagelsmith, L. (2008). Exploring motivation & volition for adults in non-traditional learning environments. Paper presented at Northeastern Educational Research Association 39th Annual Conference. Rocky Hill, CT.

Nagelsmith, L. and Bryer, J. M. (2008). Exploring motivation & volition for adults in non-traditional learning environments. Paper presented at Albany Consortium for Research in Instructional Design & Theory. Albany, NY.

Bryer, J. M. (2007b). Using bibliographic software to assist research. Paper presented at Brown Bag series for the Division of Educational Psychology. Albany, NY.

Bryer, J. M. (2007a). Math anxiety in pre-service teachers. Poster presented at the annual meeting of the University at Albany Division of Educational Psychology & Methodology. Albany, NY.

Bryer, J. M. (1998). Those complicated complex roots. Paper presented at the Hudson River Undergraduate Mathematics Conference. Union College, Schenectady, NY.

Bryer, J. M. (1997). Computer applications in chaotic dynamical systems. Paper presented at the Hudson River Undergraduate Mathematics Conference. Williams College, Williamstown, MA.

Software

Bryer, J. M. (2014). *PSAboot: R package for bootstrapping propensity score analysis*. Available from `http://github.com/jbryer/PSAboot`.

Bryer, J. M. (2013e). *TriMatch: R package for propensity score analysis of non-binary treatments*. Available from `http://github.com/jbryer/TriMatch`.

Bryer, J. M. (2013d). *multilevelPSA: R package for estimating and visualizing multilevel propensity score analysis*. Available from `http://github.com/jbryer/multilevelPSA`.

Bryer, J. M. (2013c). *likert: R package to analyze likert based items*. Available from `http://github.com/jbryer/likert`.

Bryer, J. M. (2013b). *sqlutils: R Package for managing a library of SQ files*. Available from `http://github.com/jbryer/sqlutils`.

Bryer, J. M. (2013a). *naep: R Package for the National Assessment of Educational Progress*. Available from `http://github.com/jbryer/naep`.

Bryer, J. M. (2012). *makeR: An R package for managing document templates and versions*. Available from `http://github.com/jbryer/makeR`.

Bryer, J. M. (2011b). *irutils: R Package for Institutional Research*. Available from `http://github.com/jbryer/irutils`.

Bryer, J. M. (2011a). *ruca: R package for estimating urbanicity*. Available from `http://github.com/jbryer/ruca`.

Bryer, J. M. (2010). *ipeds. R package for interfacing with the Integrated Postsecondary Education Data System*. Available from `http://github.com/jbryer/ipeds`.

Bryer, J. M. (2011). *qualtrics. R package for interfacing with the Qualtrics.com survey system*. Available from `http://github.com/jbryer/qualtrics`.

Bryer, J. M. (2004). *FractalJ. Application to support the teaching of chaotic dynamical systems*. Available from `http://fractalj.sourceforge.net`.

Professional Development Coursework

2015	Targeted Learning, Sherri Rose, Atlantic Causal Inference Conference short course.
2014	Applied Predictive Modeling in R, Max Kuhn, useR! Pre-Conference workshop.
2013	Using Spatial Data, Roger Bivand, useR! Pre-Conference workshop.
2012	Statistical Modeling in the R Context, Bill Venables, useR! Pre-Conference workshop.
2012	Geospatial Data in R and Beyond, Barry Rowlingson, useR! Pre-conference workshop.
2012	Building R Web Applications with Rook, Jeffry Horner, useR! Pre-conference workshop.
2012	Using the School Attendance Boundary Information System (SABINS), Salvatore Saporito and David Van Riper, AERA Mini-Course.
2011	R Development Master Class, Hadley Wickham
2011	Fitting and Evaluating Mixed Models using `lme4`, Douglas Bates.
2011	National Assessment of Educational Progress (NAEP) Database training, National Center for Educational Statistics.
2011	Presenting Data and Information, Edward Tufte.
2010	Handling missing data in R with MICE, Karin Groothuis-Oudshoorn and Stef van Buuren, useR!
2010	Elastic-R, a google docs-like portal for data analysis in the cloud, Karim Chine, useR!
2009	Using IPEDS Data for Institutional Effectiveness, Mary Ann Coughlin, NEAIR Workshop.
2009	Accessing and Analyzing National Databases in Secondary and Higher Education, Terrell L. Strayhorn, AERA Extended Course.
2009	An Introduction to Hierarchical Linear Modeling with R, J. Kyle Roberts, AERA Mini-Course.
2008	An Introduction to Propensity Score Analysis, Robert M. Pruzek, University at Albany.
2008	An Introduction to GIS for Educational Researchers, Mark Hogrebe, Courtney A. Bell, & Charisse A. Gulosino, AERA Mini-Course.
2008	Foregrounding Issues of Equity and Diversity in Mathematics Education Research: Implications for Research Methods and Teacher Development, Ban Battey, et al., AERA Mini-Course.
2008	A "Gentle" Introduction to Statistical Analysis and Teaching with R, Brandon K. Vaughn, AERA Mini-Course.

Graduate Coursework

Completed at the University at Albany

EPSY 522	Adolescent Development
EPSY 530	Statistical Methods I
EPSY 540	Assessment in Education
EPSY 610	Advanced Educational Psychology: Learning & Instruction
EPSY 623	Advanced Developmental Psychology
EPSY 630	Statistical Methods II
EPSY 640	Educational & Psychological Measurement
EPSY 687	Institute in Education: Item Response Theory
EPSY 713	Self-Regulated Learning
EPSY 721	Comparative Theories in Human Development
EPSY 725	Seminar in Human Development: Language Development
ECPY 725	Multivariate Applications in Counseling Psychology
ECPY 726	Analysis of Covariance Structures
EPSY 735	Seminar in Statistics (PSA, bootstrapping, factor analysis)
EPSY 761	History & Issues in Special Education
EAPS 762	Seminar in Advanced Research Methods for Educational Leadership (HLM)
EPSY 780	Seminar in the Profession of Educational Psychology
ETAP 850	Equity, Diversity, & Social Justice in Mathematics & Science Education
EPSY 887	Institute in Education: The Use of R in Educational Psychology
EPSY 887	Institute in Education: Modern Graphics for Social Science Research

Completed at the College of Saint Rose

EDU 506	Educational Foundations
EDU 530	Middle School Education: Theory & Practice
EDU 590	Research Seminar
EPY 500	Educational Research
EPY 502	Survey of Educational Psychology
SEC 515	Curriculum & Instruction in Secondary Schools
SEC 518	Literacy Improvement in Secondary Schools
SEC 522	Methods of Teaching Math in Secondary Schools

References

Bruce Dudek, Ph.D.

Professor, Division of Educational Psychology & Methodology

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University at Albany
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Albany, NY 12222

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Albany, NY 12203-5159

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