

**CURRICULUM VITAE****Kenneth A. Bollen****June 2021**

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**CURRENT POSITIONS**

- 2015- Henry Rudolph Immerwahr Distinguished Professor, Department of Psychology and Neuroscience & Department of Sociology, University of North Carolina at Chapel Hill (UNC-Chapel Hill).
- 2015- 2021 Chair of Methodology Unit, Carolina Population Center, UNC-Chapel Hill.
- 1995- Fellow, Carolina Population Center, UNC-Chapel Hill.
- 1980- Lecturer for Inter-university Consortium for Political and Social Research (ICPSR) Summer Training Program in Advanced Statistical Techniques. University of Michigan, Ann Arbor, MI.

**EDUCATION**

- 1977 Ph.D. in Sociology, Brown University, Providence, Rhode Island.
- 1975 M.A. in Sociology, Brown University, Providence, Rhode Island.
- 1973 B.A. Drew University, Madison, NJ  
Major: Sociology Minor: Mathematics

## HONORS, AWARDS, AND RECOGNITIONS

- 2019            *doctor honoris causa* (honorary doctorate), Uppsala University, Uppsala, Sweden.
- 2018            *Career Award for Lifetime Achievement*. Psychometric Society.
- 2017            Elected Fellow of the Association of Psychological Science.
- 2017            Visiting Scholar, Harvard University, Cambridge, MA.
- 2016-2018     Chair of National Science Foundation (NSF) Advisory Committee for Social, Behavioral and Economic Sciences (SBE).
- 2015            Awarded *Senior Visiting Fellowship* at the Institute of Advanced Studies of the University of Bologna, Bologna, Italy, August 28 – October 1, 2015.
- 2015            Elected President, Society of Multivariate Experimental Psychology (SMEP).
- 2014-2015     *Excellence in Teaching*, 2014-2015. Annual Award by Sociology Graduate Students, UNC-Chapel Hill.
- 2014-2015     *RTI Visiting Scholar Award*, RTI International, Research Triangle Park, NC.
- 2014            Elected Member, Society of Multivariate Experimental Psychology (SMEP).
- 2011            Elected Fellow, American Statistical Association.
- 2010-2012     Chair of the Section on Social, Economic, and Political Sciences of the American Association for the Advancement of Science.
- 2010            Visiting Fellow at the Institute of Education Sciences. University of California, Berkeley, April 2010.
- 2009            *Distinguished Teaching Award* for Post-Baccalaureate Instruction. University-wide competition. UNC-Chapel Hill.
- 2008            Elected Fellow, American Association for the Advancement of Science (AAAS).

- 2007 Perreria, Deeb-Sossa, Harris, K., & Bollen, K. A. (2005) Honorable Mention for the 2007 Best Publication in the Sociology of Mental Health by the Mental Health Section of the American Sociological Association.
- 2005 Bollen (1980), Bollen (1983), & Bollen and Phillips (1982) named as ASR Greatest Hits by Jerry Jacobs, editor of American Sociological Review (ASR). The list includes the most cited papers in the history of ASR since its inception in 1936. See Publication list below for complete citation.
- 2002 Named one of the World's Most Cited Authors in the General Social Science literature by the Institute for Scientific Information (ISI) for 1981-1999.
- 2002 Henry Rudolph Immerwahr Distinguished Professor, UNC-Chapel Hill.
- 2000 *Paul F. Lazarsfeld Memorial Award for Distinguished Contributions in the Field of Sociological Methodology*. August 2000. American Sociological Association (Methodology Section), Washington, DC.
- 1999-2000 *Mentoring Award*, 1999-2000. Sociology Graduate Student Association. UNC-Chapel Hill.
- 1996-2001 Zachary Smith Professorship, UNC-Chapel Hill.
- 1993-1994 Fellowship Award, Center for Advanced Study in the Behavioral Sciences. Stanford, California. Notification May 1990, Fellow 1993-1994.
- 1988-1989 *Excellence in Teaching*, 1988-89. Third Annual Award by Sociology Graduate Students, UNC-Chapel Hill.
- 1989- Sociological Research Association. Elected member.
- 1986-1987 *Excellence in Teaching*, 1986-87. Inaugural Annual Award by Sociology Graduate Students, UNC-Chapel Hill.

#### **CURRENT GRANT SUPPORT (past grants listed later)**

Bollen, K. A. (PI), K. M. Gates (PI). Measuring the individual: Personalized latent variable models from ecological momentary assessments. NIH National Institute of Mental Health (NIMH) from April 4, 2019 to February 28, 2022. (Award Number: 1R21MH119572-01: \$416,087).

Gates, K.M. (PI), K. A. Bollen (Co-Investigator). Network Connectivity Modeling of Heterogeneous Brain Data to Examine Ensembles of Activity Across Two Levels of Dimensionality. NIH National Institute of Biomedical Imaging and Bioengineering from September 27, 2016 to June 30, 2021. (Award Number: 1-R01-EB022904-01).

McLean, S. (PI), K.A. Bollen (Investigator). Longitudinal Assessment of Post-traumatic Syndromes. NIH National Institute of Mental Health (NIMH). September 23, 2016 to July 31, 2021 (5-U01-MH110925-04: \$5,432,897).

Harris, KM. (PI), K.A. Bollen (Investigator). The National Longitudinal Study of Adolescent to Adult Health. National Institute of Child Health and Human Development, Subproject III on Developmental Origins of Health and Disease Paradigm. July 16, 2014 to April 30, 2021 (2P01HD031921-16A1: \$26,512,883 [\$682,338 Subproject III]).

Frankenberg, E. (PI), K.A. Bollen (Key Participant). Carolina Population Center. NIH National Institute of Child Health and Human Development (NICHD). July 11, 2020 to February 28, 2025. (5-P2C-HD050924-16-17: \$766,127).

Frankenberg, E. (PI), K.A. Bollen (Key Participant). Carolina Center for Population Aging and Health. NIH National Institute on Aging (NIA). July 1, 2020 to June 30, 2025. (1-P30-AG066615-01: \$362,167).

Linnstaedt, S. (PI), K.A. Bollen (Advisor). Key molecular mechanisms of chronic pain vulnerability in women experiencing MVC. National Institute of Health (NIAMS). 2018 to 2022. (KAR071504: \$502,434).

## **OTHER PROFESSIONAL EXPERIENCE**

2020-2021 Co-Chair, Program on *Data Science in the Social and Behavioral Sciences*, National Science Foundation, The Statistical and Applied Mathematical Sciences Institute (SAMSI). University of North Carolina-Chapel Hill, Duke University, North Carolina State University.

Interdisciplinary program of national and international participants. Thirteen working groups regularly met to share knowledge across disciplines and to advance statistical and methodological work on network analysis, digital data problems, and causal modeling techniques.

- 2012-2015 Member of National Science Foundation (NSF) Advisory Committee for Social, Behavioral and Economic Sciences (SBE).  
Provides advice, recommendations, and oversight to the SBE Directorate on support for research, education, and human resources.
- 2013-2015 Appointed American Sociological Association (ASA) representative to the American Association for the Advancement of Science (AAAS).
- 2013-2015 Member of National Science Foundation (NSF) Advisory Committee for Cyberinfrastructure (ACCI).  
Provides advice, recommendations, and oversight to the NSF Office of Cyberinfrastructure on support for research, education, and human resources.
- 2002- 2014 Henry Rudolph Immerwahr Distinguished Professor, Department of Sociology, University of North Carolina, Chapel Hill, NC (UNC-Chapel Hill).
- 1993-2014 Member of Statistical Core, Carolina Population Center, UNC-Chapel Hill.
- 2012-2014 Member of Subcommittee for Support for the Statistical Sciences at NSF  
NSF Directorate for Mathematical and Physical Sciences committee that assessed and made recommendations for the statistical sciences at NSF.
- 2009-2014 Adjunct Professor of Statistics and Operations Research, UNC-Chapel Hill.  
(1996-2006)
- 2000-2010 Director, H.W. Odum Institute for Research in Social Science, UNC-Chapel Hill.  
Founded in 1924, the Odum Institute is the world's oldest multidisciplinary university institute for the social sciences. It provides training and consulting in statistics, survey methodology, and qualitative methods. It hosts one of largest social science data archives and provides external funding support.
- 2009-2014 Member of Advisory Board for the Penn State Social Science Research Institute (SSRI), Pennsylvania State University, University Park, Pennsylvania.
- 2008- 2016 Member of Board of Trustees of National Institute of Statistical Science (NISS), Research Triangle Park, North Carolina.

- 2006-2010 Member of Advisory Board for Social Science Research Institute, Duke University, Durham, North Carolina.
- 2004-2007 Electorate Nominating Committee of AAAS Section on Social, Economic, and Political Sciences (K).
- 2004-2005 Chair, Program on *Latent Variables in the Social Sciences*, The Statistical and Applied Mathematical Sciences Institute (SAMSI) National Institute of Statistical Sciences, Research Triangle Park, NC.
- Yearlong interdisciplinary program of national and international participants. Six working groups regularly met to share knowledge across disciplines and to advance statistical and methodological work on latent variable modeling.
- 2004 Founding member of core team of five who launched the Citizen-Soldier Support Program to help family and relatives of the National Guard and Reserve. Based at the Odum Institute for Research in Social Science at UNC-Chapel Hill.
- 2003 Co-founded the Certificate Program in Survey Methodology (CPSM) based at Odum Institute for Research in Social Science at UNC-Chapel Hill.
- 1997-2000 Director of Graduate Studies, Department of Sociology, UNC-Chapel Hill.
- 1996-2001 Zachary Smith Professor of Sociology, UNC-Chapel Hill.
- 1995-2000 Elected Term on Interuniversity Consortium for Political and Social Research (ICPSR) Council. University of Michigan, Ann Arbor, MI.
- Council represents over 300 university/college members of ICPSR.
- 1993-1995 Chair, Methodology Section, American Sociological Association.
- 1991-1993 Member of Sociology Panel, National Science Foundation, 1991-1993.
- 1991-1995 Social Science Analyst, EVALUATION Project - USAID, Carolina Population Center, UNC-Chapel Hill.
- 1989-96 Professor, Department of Sociology, UNC-Chapel Hill.
- 1989-1991 Member, Methodology Council, American Sociological Association.

- 1985-1989 Associate Professor, Department of Sociology, UNC-Chapel Hill.
- 1982-1985 Assistant Professor, Department of Sociology, Dartmouth College, Hanover, NH
- 1981, 1984, 1987, 1990- ICPSR Summer Training Program Planning Committee, University of Michigan.
- 1981-1985 Consultant for Institute of Gerontology, Wayne State University, Detroit, MI.
- 1981-1982 Staff Research Scientist. Societal Analysis Department, General Motors Research Laboratories, Warren, MI.
- Member of Interdisciplinary research group. Responsible for design and implementation of a number of projects.
- 1977-1981 Associate Senior to Senior Research Scientist, Societal Analysis Department, General Motors Research Laboratories. (See above)

## BOOKS

- Bollen, K.A.** and P. J. Curran. (2006). *Latent Curve Models: A Structural Equation Perspective*. Wiley Series in Probability and Mathematical Statistics. New York: Wiley, 285 pages.
- Bollen, K.A.** and J.S. Long (eds). (1993). *Testing Structural Equation Models*. Newbury Park, CA: Sage, 320 pages.
- Bollen, K. A.** (1989). *Structural Equations with Latent Variables*. Wiley Series in Probability and Mathematical Statistics. New York: Wiley, 514 pages.
- Bollen, K.A.** (2021) Chinese edition of *Structural Equations with Latent Variables*. Translated by Lianfei Zhao. Chongqing: Chongqing University Press.

## PUBLISHED PAPERS

- Bollen, K.A.**, Fisher, Z., Giordano, M.L., Lilly, A., Luo, Lan, Ye, A. (forthcoming). An Introduction to Model Implied Instrumental Variables using Two Stage Least Squares (MIIV-2SLS) in Structural Equation Models (SEMs). *Psychological Methods*.
- Bollen, K.A.** and Gutin, I. (forthcoming). Trajectories of Subjective Health: Testing Longitudinal Models for Self-rated Health from Adolescence to Midlife. *Demography*.

Fisher, Z. and **Bollen, K.A.** (2020). An instrumental variable estimator for mixed indicators: Analytic derivatives and alternative parameterizations. *Psychometrika*. 85(3), 660–683. <https://doi.org/10.1007/s11336-020-09721-6>

**Bollen, K.A.**, Gutin, I., Halpern, C.T., and Harris, K.M. (forthcoming). Subjective health in adolescence: comparing the reliability of contemporaneous, retrospective, and proxy reports of overall health. *Social Science Research*.

Jin, S., Yang-Wallentin, F., and **Bollen, K.A.** (forthcoming). A unified model-implied instrumental variable approach for structural equation modeling with mixed variables. *Psychometrika*.

Buchbinder M, Brassfield ER, Tungate AT, Witkemper KD, D’Anza T, Lechner M, Bell K, Black J, Buchanan J, Reese R, Ho J, Reed G, Platt M, Riviello R, Rossi C, Nouhan P, Phillips CA, Martin SL, Liberzon I, Rauch SAM, **Bollen KA**, McLean SA. (forthcoming). “I Still Feel So Lost”: Experiences of Women Receiving SANE Care during the Year after Sexual Assault. *JACEP Open*.

Short N.A., Tungate A.T., **Bollen K.A.**, Sullivan J., D’Anza T., Lechner M., Bell K., Black J., Buchanan, J., Reese R., Ho J., Reed G., Platt M., Riviello R., Rossi C., Martin S.L., Liberzon I., Rauch, S.A.M., Kessler R.C., Nugent N., McLean S.A. (forthcoming) Pain is common after sexual assault and posttraumatic arousal/reactivity symptoms mediate the development of new or worsening persistent pain. *PAIN*.

Lechner M., Bell K, Short N.A., Martin S.L., Black J., Buchanan J.A., Reese R., Ho J.D., Reed G.D., Platt M., Riviello R., Rossi C., Nouhan P., Phillips C., **Bollen K.A.**, McLean S.A. (forthcoming) The vast majority of women sexual assault survivors report that Sexual Assault Nurse Examiners (SANEs) provide high quality care: results of a large multisite prospective study. *Journal of Emergency Nursing*.

Harnett, N.G., van Rooij, S. J. H., Ely, T. D., Lebois, L. A. M., Murty, V. P., Jovanovic, T., Hill, S. B., Dumornay, N. M., Merker, J. B., Bruce, S. E., House, S. L., Beaudoin, F. L., An, X., Zeng, D., Neylan, T. C., Clifford, G. D., Linnstaedt, S., D., Germine, L. T., **Bollen, K. A.**, Rauch, S. L., Lewandowski, C., Hendry, P. L., Sheikh, S., Storrow., A.B., Musey Jr., P. I., Haran, J. P., Jones, C. W., Panches, B. E., Swor, R. A., McGrath, M. E., Pascual, J. L., Seamon, M. J., Mohiuddin, K., Chang, A. M., Pearson, C., Peak, D. A., Domeier, R. M., Rathlev, N. K., Sanchez, L. D., Pietzrak, R. H., Joorman, J., Barch, D. M., Pizzagalli, D. A., Sheridan, J. F., Harte, S. E., Elliott, J. M., Kessler, R. C., Koenen, K. C., McLean, S., Ressler, K. J. & Stevens, J. S., (forthcoming). Prognostic neuroimaging biomarkers of trauma-related psychopathology: Resting state fMRI shortly after trauma predicts future PTSD and depression symptoms in the AURORA study. *Neuropsychopharmacology*.

- Bollen, K.A.** (2020). When good loadings go bad: Robustness in factor analysis. *Structural Equation Modeling*. 27:4, 515-24.
- Brandt, H., Umbach, N., Kelava, A., & **Bollen, K. A.** (2020). Comparing estimators for latent interaction models under structural and distributional misspecifications. *Psychological Methods*. 25:3, 321-45, <http://dx.doi.org/10.1037/met0000231>
- Gates, K.M., Fisher, Z., and **Bollen, K. A.** (2020). Latent variable GIMME using model implied instrumental variables (MIIVs). *Psychological Methods* 25:2, 227-242  
<https://doi.org/10.1037/met0000229>.
- Short, N.A., Lechner, M., McLean, B.S., Tungate, A., Black, J., Buchanan, J., Reese, R., Ho, J., Reed, G., Platt, M., Riviello, R., Rossi, C., Nouhan, P., Phillips, C., Martin, S.L., Liberzon, I., Rauch, S.A.M., **Bollen, K.**, Kessler, R.C., McLean, S.A. (forthcoming) Health care utilization by women sexual assault survivors after emergency care: Results of a multisite prospective study. *Depress Anxiety*.
- McLean, S.A., Ressler, K.J., Koenen, K.C., Neylan, T.C., Germine, L., Jovanovic T., Clifford G.D., Zeng, D., An, X., Linnstaedt, S.D., Beaudoin, F.L., House, S.L., **Bollen, K.A.**, Musey, P.I., Hendry, P., Jones, C.W., Lewandowski, C., Swor, R., Datner, E., Mohiuddin, K., Stevens, J.S., Storrow, A.B., Kurz, M.C., McGrath, M., Fermann, G.J., Hudak, L., Gentile, N.T., Chang, A.M., Peak, D.A., Pascual, J.L., Seamon, M.J., Sergot, P., Peacock, W.F., Diercks, D.B., Sanchez, L.D., Rathlev, N.K., Domeier, R.M., Haran, J.P., Pearson, C., Murty, V.P., Insel, T.R., Dagum, P., Onnela, J.P., Bruce, S.E., Gaynes, B.N., Joormann, J., Miller, M.W., Pietrzak, R., Buysse, D.J., Pizzagalli, D.A., Rauch, S.L., Harte, S.E., Young, L.J., Barch, D.M., Lebois, L.A.M., van Rooij, S.J.H., Luna, B., Smoller, J.W., Dougherty, R.F., Pace, T.W., Binder, E.B., Sheridan, J.F., Elliott, J.M., Basu, A., Fromer, M., Parlikar, T., Zaslavsky, A.M., and Kessler, R.C. (2020). The AURORA Study: A Longitudinal, Multimodal Library of Brain Biology and Function after Traumatic Stress Exposure. *Molecular Psychiatry*. 25:283-296.
- Short NA, Sullivan J, Soward A, **Bollen K.A.**, Liberzon I, Martin SL, Rauch SAM, Bell K, Rossi C, Lechner M, Novak C, Witkemper KD, Kessler RC, McLean SA (2019). Protocol for the first large-scale emergency care-based longitudinal cohort study of recovery after sexual assault: The Women's Health Study. *BMJ Open*, 9(11), e031087.
- Bollen, K.A.** (2019). Model Implied Instrumental Variables (MIIVs): An alternative orientation to structural equation modeling. *Multivariate Behavioral Research* 54:1, 31-46, DOI: [10.1080/00273171.2018.1483224](https://doi.org/10.1080/00273171.2018.1483224).

- Fisher, Z., **Bollen, K. A.**, and K.M. Gates. (2019). A limited information estimator for dynamic factor models. *Multivariate Behavioral Research* 54:246-63.
- Guan, J., Cheng, H., **Bollen, K. A.**, Thomas, D. R. and Wang, L. (2019). Instrumental variable estimation in ordinal probit models with mismeasured predictors. *The Canadian Journal of Statistics* 47:653-667.
- Vuletich, H. A., Kurtz-Costes, B., **Bollen, K. A.**, and Rowley, S. J. (2019). A longitudinal study of the domain-generalizability of African American students' causal attributions for academic success. *Journal of Educational Psychology* 111:459-474.  
<http://dx.doi.org/10.1037/edu0000299>
- Bollen, K.A.**, Fisher, Z., and Gates, K. M. (2018). Robustness Conditions for MIIV-2SLS When the Latent Variable or Measurement Model is Structurally Misspecified. *Structural Equation Modeling* 25:6, 848-859, DOI: [10.1080/10705511.2018.1456341](https://doi.org/10.1080/10705511.2018.1456341).
- Bauldry, Shawn and **K. A. Bollen**. (2018). Nonlinear Autoregressive Latent Trajectory Models. *Sociological Methodology* 48(1) 269–302, DOI: 10.1177/0081175018789441.
- Bianconcini, Silvia and **K. A. Bollen**. (2018). The Latent Variable – Autoregressive Latent Trajectory (LV-ALT) Model: a General Framework for Longitudinal Data Analysis. *Structural Equation Modeling* 25:5, 791-808, DOI: [10.1080/10705511.2018.1426467](https://doi.org/10.1080/10705511.2018.1426467).
- Bollen, K.A.** and Adamantios Diamantopoulos. (2017). In Defense of Causal-Formative Indicators: A Minority Report. *Psychological Methods* 22:581-596.
- Benjamin, D. J., Berger, J. O., Johannesson, M., Nosek, B. A., Wagenmakers, E.-J., Berk, R., **Bollen, K. A.**, Brembs, B., Brown, L., Camerer, C., Cesarini, D., Chambers, C. D., Clyde, M., Cook, T. D., De Boeck, P., Dienes, Z., Dreber, A., Easwaran, K., Efferson, C., Fehr, E., Fidler, F., Field, A. P., Forster, M., George, E. I., Gonzalez, R., Goodman, S., Green, E., Green, D. P., Greenwald, A., Hadfield, J. D., Hedges, L. V., Held, L., Ho, T.-H., Hoijtink, H., Jones, J. H., Hruschka, D. J., Imai, K., Imbens, G., Ioannidis, J. P. A., Jeon, M., Kirchler, M., Laibson, D., List, J., Little, R., Lupia, A., Machery, E., Maxwell, S. E., McCarthy, M., Moore, D., Morgan, S. L., Munafó, M., Nakagawa, S., Nyhan, B., Parker, T. H., Pericchi, L., Perugini, M., Rouder, J., Rousseau, J., Savalei, V., Schönbrodt, F. D., Sellke, T., Sinclair, B., Tingley, D., Van Zandt, T., Vazire, S., Watts, D. J., Winship, C., Wolpert, R. L., Xie, Y., Young, C., Zinman, J., & Johnson, V. E. (2017). Redefine Statistical Significance. *Nature Human Behavior* 2:6-10.

Linnstaedt, SD, Hu, JunMei, Liu, AY, Soward AC, **Bollen, KA**, Wang HE, Hendry PL, Zimny E, Lewandowski C, Velilla MA, Damiron K, Pearson C, Domeier R, Kaushik S, Feldman J, Rosenberg M, Jones J, Swor R, Rathlev N, McLean SA. (2016). Methodology of the AA CRASH Prospective Observational Study Evaluating the Incidence and Pathogenesis of Chronic Pain and Adverse Psychological Outcomes in African Americans following Motor Vehicle Collision. *BMJ Open*. 2016;6:e012222. doi:10.1136/bmjopen-2016-012222.

Bauldry, Shawn and **K. A. Bollen**. (2016). tetrad: A Set of Stata Commands for Confirmatory Tetrad Analysis. *Structural Equation Modeling* 23:921-30.

Camerota, Marie E. and **K. A. Bollen**. (2016). Birth Weight, Birth Length, and Gestational Age as Indicators of Favorable Fetal Growth Conditions in a US Sample. *PLoS ONE* 11(4): e0153800. doi:10.1371/journal.pone.0153800

Manglos-Weber, Nicolette, Margarita Mooney, **K. A. Bollen**, and Micah Roos. (2016). Relationships with God among Young Adults: Validating a Measurement Model with Four Dimensions. *Sociology of Religion* 77:193-213.

**Bollen, K.A.**, Paul P. Biemer, Alan Karr, Stephen Tueller, and Marcus Berzofsky. (2016). Are Survey Weights Needed? A Review of Diagnostic Tests in Regression Analysis. *Annual Review of Statistics and Its Application* 3:375-92.

Arterberry, Brooke J., Ting-Huei Chen, Alvaro Verges, **K.A. Bollen**, and Matthew P. Martens. (2016). How Should Alcohol Problems be Conceptualized? Causal Indicators with the RAPI. *Evaluation and the Health Professions* 39:356-78.

**Bollen, K.A.** and Shawn Bauldry. (2015). Indicator: Methodology. Pages 750-54 in James D. Wright (editor-in-chief) *International Encyclopedia of the Social & Behavioral Sciences* Volume 11. Oxford: Elsevier.

Bauldry, Shawn, **K. A. Bollen**, and L. S. Adair. (2015). Evaluating Measurement Error Readings of Blood Pressure for Adolescents and Young Adults. *Blood Pressure* 24:96-102.

Bainter, Sierra and **K. A. Bollen**. (2014). Interpretational Confounding or Confounded Interpretations of Causal Indicators. Focus Article, *Measurement: Interdisciplinary Research & Perspectives* 12:125-140.

Shimizu, Shohei and **K. A. Bollen**. (2014). Bayesian Estimation of Causal Direction in Acyclic Structural Equation Models with Individual-specific Confounder Variables and non-Gaussian Distributions. *Journal of Machine Learning Research* 15:2629-2652.

- Bollen, K.A.**, Stanislav Kolenikov, and Shawn Bauldry. (2014). Model-Implied Instrumental Variables – Generalized Method of Moments (MIIV – GMM) Estimator of Latent Variable Models. *Psychometrika* 79:20-50.
- Bollen, K.A.**, Jeff Harden, Surajit Ray, and Jane Zavisca (2014). BIC and Alternative Bayesian Information Criteria in the Selection of Structural Equation Models. *Structural Equation Modeling* 21:1-19.
- Bollen, K.A.**, Mark Noble, and Linda Adair. (2013). Are Gestational Age, Birth Weight and Birth Length Indicators of Favorable Fetal Growth Conditions? A Structural Equation Analysis of Filipino Infants. *Statistics in Medicine* 32:2950-2961.
- Bollen, K. A.** and Judea Pearl. (2013). Eight Myths about Causality and Structural Equation Models. Pages 301-28 in Stephen L. Morgan (ed) *Handbook of Causal Analysis for Social Research*. Dordrecht, Netherlands: Springer.
- Guo, Shenyang and **K.A. Bollen**. (2013). Research Using Longitudinal Ratings Collected by Multiple Raters: One Methodological Problem and Approaches to Its Solution. *Social Work Research* 37:85-98.
- Bollen, K.A.** (2012). Instrumental Variables in Sociology and the Social Sciences. *Annual Review of Sociology* 38:37–72.
- Reprinted in *Fundamentals of Regression Modeling* Four-volume Set edited by Salvatore Babones (2014). Newbury, CA:Sage.
- Bollen, K.A.** and Rick H. Hoyle. (2012). Latent Variables in Structural Equation Models. Pages 56-67 in Rick H. Hoyle (ed) *Handbook of Structural Equation Modeling*. New York:Guilford Publications.
- Bollen, K.A.**, Surajit Ray, Jane Zavisca, and Jeffrey J. Harden. (2012). A Comparison of Bayes Factor Approximation Methods Including Two New Methods. *Sociological Methods and Research* 41: 294-324.
- Kolenikov, Stanislav and **K.A. Bollen**. (2012). Testing Negative Error Variances: Is a Heywood Case a Symptom of Misspecification? *Sociological Methods and Research* 41: 124-67.
- Grace, J.B., J. E. Keeley, D. J. Johnson, and **K. A. Bollen**. (2012). Structural Equation Modelling and the Analysis of Long-term Data. Pages 325-358 in R. A. Gitzen, A. B. Cooper, J. J. Millspaugh, and D. S. Litch (eds.) *Design and Analysis of Long-term Ecological Monitoring Studies*. Cambridge: Cambridge University Press.

- Bollen, K. A.** and M. Noble. (2011). Structural Equation Models and the Quantification of Behavior. *Proceedings of the National Academy of Sciences* 108 (suppl.3): 15639-15646. (Donald Pfaff (ed) Quantification of Behavior: Sackler Colloquium.)
- Bollen, K.A.** and S. Bauldry. (2011). Three Cs in Measurement Models: Causal Indicators, Composite Indicators, and Covariates. *Psychological Methods* 16(3):265-84.
- Bollen, K.A.** (2011). Evaluating Effect, Composite, and Causal Indicators in Structural Equation Models (SEMs). *Management Information Systems Quarterly (MISQ)* 35:359-72.
- Shimizu, S., T. Inazumi, Y. Sogawa, A. Hyvärinen, Y. Kawahara, T. Washio, P. O. Hoyer, **K. A. Bollen.** (2011) DirectLiNGAM: A Direct Method for Learning a Linear Non-Gaussian Structural Equation Model. *Journal of Machine Learning Research* 12:1225–1248.
- Bollen, K.A.** and J. Brand. (2010). A General Structural Equation Model for Panel Data with Random and Fixed Effects. *Social Forces* 89(1):1-34.
- Reprinted in *Fundamentals of Regression Modeling* Four-volume Set edited by Salvatore Babones (2014). Newbury, CA:Sage.
- Bollen, K.A.** and S. Bauldry. (2010). Model Identification and Computer Algebra. *Sociological Methods and Research* 39(2) 127–156.
- Bollen, K.A.** and C. Zimmer. (2010). An Overview of the Autoregressive Latent Trajectory (ALT) Model. Pages 153-176 in K. van Montfort, J. H. L. Oud, & A. Satorra (eds) *Longitudinal Research with Latent Variables*. New York: Springer-Verlag.
- Bollen, K. A.,** D. J. Bauer, S.L. Christ, & M. C. Edwards. (2010). An Overview of Structural Equations Models and Recent Extensions. Pages 37-79 in S. Kolenikov, D. Steinley, and L. Thombs. *Statistics in the Social Sciences: Current Methodological Developments*. Hoboken, NJ: Wiley.
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## ARCHIVE CONSTRUCTION AND DOCUMENTATION

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## COMMENTS, REPLIES, AND FOREWORDS

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**CONVENTION PAPERS AND INVITED PRESENTATIONS** (Partial Listing)

When Good Loadings Turn Bad: Robustness in Factor Analysis. International Meetings of the Psychometric Society, Santiago, Chile, 15-19 July 2019.

An Overview of Autoregressive, Latent Growth Curve, and ALT Models for Longitudinal Data. Invited presentation at the Measurement Error in Longitudinal Data Workshop, University of Manchester, UK, 19 June 2019.

An Overview of Autoregressive, Latent Growth Curve, and ALT Models for Longitudinal Data. Invited presentation at "It's About Time" Conference on Longitudinal Studies of the Life Course. Pennsylvania State University, 28-30 May 2019.

The Latent Variable – ALT (LV-ALT) Model: A General Framework for Longitudinal Data Analysis. Invited Keynote Address at the Measurement Error in Longitudinal Data Workshop, University of Manchester, UK, 21 June 2019.

Roadways and Obstacles to Robust and Reliable Sciences. Inaugural talk for The Odum Institute 95th Anniversary Speaker Series: Social Science Speaks. University of North Carolina, Chapel Hill, April 3, 2019.

A Novel Method for Testing Dimensionality of Measures Using Instrumental Variables. College of Social and Behavioral Sciences. University of Utah, April 1, 2019.

An Overview of Autoregressive, Latent Growth Curve, and ALT Models for Longitudinal Data. Duke University Population Research Institute Seminar Series, Durham, NC, February 21, 2019 *and* Carolina Population Center Seminar, University of North Carolina, Chapel Hill, February 15, 2019.

A Novel Method for Testing Dimensionality of Measures Using Instrumental Variables. *Honorary Doctorate Seminar*, Department of Statistics, Uppsala University, Uppsala, Sweden, January 24, 2019.

Specify Globally, Estimate, and Test Locally: A MIIV Approach to Structural Equation Models. *Career Award for Lifetime Achievement Address* presented at the International Meetings of the Psychometric Society, New York City, July 11, 2018.

Model Implied Instrumental Variables (MIIVs) using MIIVsem. Invited Workshop by GSERM and ICPSR held at University of St. Gallen, St. Gallen, Switzerland, June 5-6, 2018.

Longitudinal Structural Equation Models. Invited Workshop at SOCIUM, University of Bremen, Bremen, Germany, May 28-29, 2018.

Model Implied Instrumental Variables: An Alternative Orientation to Structural Equation Models. Presented at Applied Statistics Workshop, Harvard University, November 8, 2017.

Model Implied Instrumental Variables: An Alternative Orientation to Structural Equation Models. Presidential Address at Society of Multivariate Experimental Psychology (SMEP), October 6, 2017.

Model Implied Instrumental Variables: A New Orientation to Structural Equation Models. Keynote Address at Methods Section Meetings of German Psychological Society, University of Tübingen, Tübingen, Germany, September 20, 2017.

Model Implied Instrumental Variables: A New Orientation to Structural Equation Models. Invited Keynote Talk at 2017 Modern Modeling Methods Conference, University of Connecticut, Storrs, CN, May 22-25, 2017.

Myths about Measurement, Causality, and Structural Equation Models. Invited talk at Annenberg Public Policy Center, University of Pennsylvania, Philadelphia, PA, March 30, 2017.

Structural Equation Models. Invited seminar presentation at GESIS, Cologne, Germany, March 13-17, 2017.

Determining Factor Dimensionality using Model Implied Instrumental Variables (MIIVs). Presented at the ASA Methodology Section Midyear Meeting, Chicago, Illinois, April 26, 2017.

Latent Growth Curve Models for Longitudinal Data. Invited lectures at National Research University, Higher School of Economics, Moscow, Russia. August 1-5, 2016.

Are Survey Weights Needed? A Review of Weighting Tests in Regression Analysis. Presented at the Population Association of America Meetings, Washington, DC. March 31 – April 2, 2016.

Measurement Matters: Democracy, Distance, and Department Rankings. Invited presentation at the Institute for Advanced Studies of the University of Bologna, Bologna, Italy, 23 September 2015.

Social, Behavioral and Economic Sciences Perspectives on Robust and Reliable Science. Invited speaker at *NSF Director's Symposium on Robust and Reliable Science: The Path Forward*. National Science Foundation, Arlington, Virginia, 10 September, 2015.

The Latent Variable – ALT (LV-ALT) Model: A General Framework for Longitudinal Data Analysis. Presented at Duke Workshop on Sensing and Analysis of High-Dimensional Data. Duke University, Durham, North Carolina, 27-29 July 2015.

The Latent Variable – ALT (LV-ALT) Model: A General Framework for Longitudinal Data Analysis. Presented at Annual International Meeting of the Psychometric Society IMPS 2015, Beijing Normal University, China, 12-16 July 2015.

Are Survey Weights Needed? A Review of Diagnostic Tests in Regression Analysis. Presented at the ASA Methodology Section Mid-Year Meeting, San Diego, California, April 29, 2015. (Based on collaborative work with Paul Biemer, Alan Karr, Stephen Tueller, & Marcus Berzofsky, RTI International.)

Reflections on Causal Indicators in Structural Equation Models. Invited speaker, Department of Business Administration, Faculty of Business, Economics & Statistics, University of Vienna, Vienna, Austria, May 2014.

Measuring the Unmeasurable: Concepts and Latent Variables. Keynote speaker at Complex Causality in Structural Equation Modeling: Latent Variables & Nonrecursive Flows. QIPSR Miniconference. University of Kentucky, April 2014.

Measuring the Unmeasurable: Concepts and Latent Variables. Keynote speaker at Concepts as building Blocks of Theories workshop at Berlin Graduate School of Social Sciences at the Humboldt University and the Social Science Research Center Berlin, Berlin, Germany, July 2013.

Discussant for IRT Models for Aggregating V-Dem Data by D. Pemstein at Institute for Qualitative and Multimethod Research workshop. Maxwell School, Syracuse University, Syracuse, NY. June 2013.

An Overview of Structural Equation Models. at Robert Wood Johnson Foundation. New Connections: Increasing Diversity of RWJF Programming at Princeton University, Princeton, NJ. June 2013.

Longitudinal Structural Equation Models. Invited speaker at Graduate Methods Workshop at the Penn State Population Research Institute, State College, PA. June 2013.

Structural Equation Models Workshop sponsored by Biostatistics Group at University of Missouri, Columbia, Missouri. March 2013.

New Tests of the Number of Factors in Factor Analysis Using Instrumental Variables. Invited talk. Seminar series of the Department of Mathematics and Statistics, University of North Carolina at Greensboro, Greensboro, North Carolina. February 2013.

Model Implied Instrumental Variables (MIIVs)-Two Stage Least Squares (2SLS): An Alternative Approach to SEMs and Latent Growth Curve Models. Keynote Speaker at Structural Equation Modeling and Latent Variable Models Conference, University of Bologna, Bologna, Italy. September 2012.

A General Panel Model for Random and Fixed Effects Using Structural Equation Models. Invited Lecture at Center for Lifespan Psychology of the Max Planck Institute for Human Development, Berlin, Germany. September 2012.

What Are Latent Variable Structural Equation Models? Invited talk. Academy of Mathematics and System Sciences, Chinese Academy of Sciences. Beijing, China. July 2012.

Structural Equation Models Invited workshop. Peking University. Beijing, China. July 2012.

A General Panel Model for Random and Fixed Effects using Structural Equation Models. Invited talk. Department of Statistics, Chinese University of Hong Kong, Hong Kong, July 2012.

Determining the Number of Factors using Model Implied Instrumental Variables (MIIVs) Invited Talk. Association for Psychological Science Annual Convention. Washington, DC, May 2011.

An Overview of Latent Growth Curve Models. Invited Workshop. SMEP-APS Sponsored. Association for Psychological Science Annual Convention. Washington, DC, May 2011.

Model Implied Instrumental Variables (MIIVs)-Two Stage Least Squares (2SLS): An Alternative Approach to SEMs. Keynote Speaker. Modern Modeling Methods Conference. University of Connecticut, Storrs, CN, May 2011.

Advanced Topics in Structural Equation Models. Invited Workshop. SPIDA 2011, York University, Toronto, Ontario, Canada, May 2011.

Model Implied Instrumental Variables (MIIVs)-Two Stage Least Squares (2SLS): An Alternative Approach to SEMs. Invited talk. Department of Business Studies, Uppsala University, Uppsala, Sweden, May 2011.

Longitudinal Modeling with Structural Equation Models. Invited talks. Departments of Statistics & Business Studies, Uppsala University, Uppsala, Sweden, May 2011.

A General Panel Model with Random and Fixed Effects: A Structural Equations Approach. Colloquium, Department of Statistics, Pennsylvania State University, University Park, PA, November 2010.

Measuring the Unmeasurable: Democracy, Depression, and Distance. Invited Address, 2010 Clifford C. Clogg Memorial Lecture, Departments of Sociology & Statistics, Pennsylvania State University, University Park, PA, November 2010.

A General Panel Model with Random and Fixed Effects: A Structural Equations Approach. Demography Workshop, Population Center, University of Chicago, Chicago, IL, October 2010.

Measuring the Unmeasurable: Latent Variables and Structural Equation Models. Invited presentation at Quantification of Behavior, Arthur M. Sackler Colloquia of the National Academy of Sciences, Washington, D.C., June 2010.

Longitudinal Models with Structural Equation Models (SEMs). Invited presentations at Norwegian School of Management, Oslo, Norway, May-June 2010.

Visiting Fellow at the Institute of Education Sciences and BEAR seminar presentations on a variety of structural equation models topics. University of California, Berkeley, April 2010.

A General Panel Model with Fixed and Random Effects: A 'Cost of Motherhood' Example. Workshop in Methods. Indiana University, Bloomington, IN, April 2010.

Measuring the Unmeasurable: Depression, Democracy, and Distance. Karl S. Schuessler Lecture in Social Science Research. Indiana University, Bloomington, IN, April 2010.

A General Panel Model with Fixed and Random Effects: A 'Cost of Motherhood' Example. Office of Population Research, Princeton University, Princeton, NJ, February 2010.

Longitudinal Measurement of Patient Reported Outcomes: Latent Curve Models Using Structural Equation Models. Invited talk at 2009 Summer Program on Psychometrics, SAMSI Program at NISS, Research Triangle Park, NC, July 2009.

Fixed and Random Effects Models in Panel Data using Structural Equation Models. & An Overview of Latent Curve Models. Invited talks presented at the Swiss Foundation for Research in Social Sciences, University of Lausanne, Lausanne, Switzerland, September 2008.

An Overview of the Odum Institute for Research in Social Science. Invited talk presented at the Swiss Foundation for Research in Social Sciences, University of Lausanne, Lausanne, Switzerland, September 2008.

Fixed and Random Effects Models in Panel Data using Structural Equation Models. Invited talk presented at the California Center for Population Research and Department of Sociology, UCLA, February 2008.

Liberal Democracy Series I, 1972-1988: Definition, Measurement, And Trajectories. Invited talk presented at Producing Better Measures by Combining Data Cross-Temporally conference at University of Oxford, Oxford, England, November 2007.

Invited Speaker at the South African Statistical Association (SASA), Variety of topics and locations in South Africa. October - November 2007.

Structural Equation Models Lectures. Invited talk at the European Courses in Advance Statistics (ECAS) program of the European Union. Grenoble, France, September 2007.

Causality and Structural Equation Models. Invited talk at International Psychometric Society Meetings, Tokyo University, Tokyo, Japan, July 2007.

Topics in Random Effects Models for Longitudinal Data. Invited talk in SPIDA program at Institute for Social Research at York University, Toronto, Ontario, Canada, June 2007.

Latent Variable Models under Misspecification: Two Stage Least Squares (2SLS) and Maximum Likelihood (ML) Estimators. Invited talk at Department of Statistics, University of Chicago, April 2007.

Latent Variable Models. Invited talk at Second Annual Miami University CACR Symposium on State-of-the-Art Statistical Computing Methods for Social Science, Behavioral Science, and Business. Center for the Advancement of Computational Research, Miami University, Oxford, Ohio, March 2007.

Structural Equation Models (SEMs) for Pooled Time-Series and Cross-Sectional Data. Invited talk at Methods of Analysis Program in Social Sciences (MAPSS) Colloquium at Stanford University, January 2007.

Structural Equation Models and Recent Extensions. Invited Speaker at Winemiller (2006) Conference on Methodological Developments of Statistics in the Social Sciences. University of Missouri, Columbia, Missouri, October 2006.

Missing Data in Structural Equation Models and Growth Curve Models Invited Speaker at SPIDA 2006. York University. Toronto, Canada, May 2006.

Structural Equation Models (SEMs) for Pooling Cross-Sectional and Time-Series (Panel) Data. Keynote Speaker at Southampton Statistical Sciences Research Institute Symposium on the Convergence of Methods for the Analysis of Panel Data, University of Southampton, Southampton, UK, April 2006.

Latent Variable Models under Misspecification: Two Stage Least Squares (2SLS) and Maximum Likelihood Estimators. Department of Statistics, University of Missouri, Columbia, Missouri, October 2005.

Latent Variables in Psychology and the Social Sciences: A Sample Realization Definition. Invited Talk. Institute for Statistics and Decision Sciences, Duke University, Durham, North Carolina, September 2004.

Dissecting the Chi Square Test Statistic in Structural Equation Models. Invited talk at Model Selection Conference. University of Amsterdam, Netherlands, August 2004.

Polychoric Two-Stage Least Squares for Categorical Variables in Structural Equation Models. Keynote Speaker at the Society for Multivariate Analysis in the Behavioral and Social Sciences (SMABS) Conference, Jena, Germany, July 2004.

The Future of Social Science Data Archiving in the United States: A Discussion with Five Archive Directors IASSIST Conference, Madison, Wisconsin, May 2004.

Latent Variables in Psychology and the Social Sciences. Keynote Speaker at Congress on Methodology of Health and the Social Sciences, University of Valencia, Valencia, Spain, September 2003.

Latent Trajectory/Growth Curve Analysis. Invited Speaker at Congress on Methodology of Health and the Social Sciences, University of Valencia, Valencia, Spain, September 2003.

Latent Variable Models under Misspecification: A Comparison of Full Information Maximum Likelihood and Two Stage Least Squares (2SLS) Estimators. Invited Speaker at Research Methods 2003 Conference, Free University, Amsterdam, Netherlands, June 2003.

A Weightless Estimator for Categorical Variables in Structural Equation Models. Psychometric Society Annual Meeting, Chapel Hill, NC, June 2002.

A Tetrad Test for Categorical Variables in Structural Equation Models. (with John Hipp) Psychometric Society Annual Meeting, Chapel Hill, NC, June 2002.

An Evaluation of RMSEA Tests of 'Close Fit' and 'Not Close Fit' in Structural Equation Models. (with Curran, P.J., Chen, F., Paxton, P., & Kirby, J.B.) Psychometric Society Annual Meeting, Chapel Hill, NC, June 2002.

Economic Status and Fertility: Does the Measure Matter? Invited talk at the Office of Population Research, Princeton University, Princeton, NJ, September 2001.

Latent Trajectory/Growth Curve Analysis. Presented at the Methods Section Workshop of The American Sociological Association, Anaheim, California, August 2001.

Latent Variables in Psychology and the Social Sciences. Invited talk at the International Meeting of the Psychometric Society, Osaka, Japan, July 2001.

Growth Modeling using Structural Equation Models. Invited talk at Seminar in Recent Developments in Structural Equation Modeling. Norwegian School of Economics and Business Administration, Bergen, Norway, May 2001.

Interactions of Latent Variables in Structural Equation Models. Invited talk at Seminar in Recent Developments in Structural Equation Modeling. Norwegian School of Economics and Business Administration, Bergen, Norway, May 2001.

Two-stage Least Squares and Latent Variable Models: Simultaneous Estimation and Robustness to Misspecifications. Invited talk. International Symposium on Structural Equation Modeling, Chicago, IL, December 2001.

Causal Inferences in Structural Equation Models. Invited talk. Symposium on Causal Inferences, School of Public Health, Johns Hopkins University, Baltimore, MD, September 2000.

Structural Equation Models. Invited talk. Quantitative Methods Symposium. Institute for Social Research. York University, Toronto, Ontario, June 2000.

An Autoregressive Latent Trajectory Model: A Synthesis of Two Traditions. Paper presented at Factor Analysis and Structural Equation Modeling: Perspectives and Visions. An International Symposium honoring the Research of Karl G. Jöreskog, University of Uppsala, Uppsala, Sweden, March - April 2000.

An Empirical Deconstruction of Graduate School Ratings Using a Merit-Artifact Model. (with P. Paxton), American Sociological Association meetings. Chicago, IL, August 1999.

An Overview of Structural Equation Models. 1999 American Sociological Association Convention, Chicago, IL, August 1999.

Improper Solutions in Structural Equation Models: Causes, Consequences, and Strategies. Paper presented at the 1999 Annual Meeting Psychometric Society at the University of Kansas, Lawrence, Kansas, June 1999.

Latent Growth Curve Modeling. (with P. Curran) Invited presentation at the Second International Institute on Developmental Science, Stockholm, Sweden, May 1999.

An Autoregressive Latent Trajectory (ALT) Model: Synthesizing Two Traditions. (with P. Curran) Gertrude M. Cox Statistics Conference, RTI, Research Triangle Park, NC. September 1999. Also presented at Methodology Section Conference, American Sociological Association, Duke University, March 1999.

An Empirical Examination of the RMSEA for Assessing Fit in Structural Equation Modeling: Finite Sampling Properties and Statistical Power. (with P. Curran, P. Paxton, F. Chen, J. Kirby) Methodology Section Conference of the American Sociological Association, Duke University, March 1999.

A hybrid latent trajectory model of stability and change: Applications in developmental psychopathology. (with P. Curran) Biennial meeting of the Society for Research in Child Development, Albuquerque, NM, April 1999.

Toward Synthesizing Autoregressive and Latent Trajectory Models. (with P. Curran) APA: New Methods for the Analysis of Change conference hosted by Methodology Center, The Pennsylvania State University, University Park, PA, October 1998.

Structural Equation Models with Interactions of Latent Variables: A Two-Stage Least Squares Estimator. Invited presentation at Osaka University, Seventh Colloquium of Psychology and Behavioral Sciences, Osaka, Japan, September 1998.

Illiberal Democracies: Commonplace or Exceptional? Invited Lecture at Department of Sociology, Brown University, Providence, R.I., May 1998.

Change Scores, Fixed Effects, and Random Components in Longitudinal Models. Invited Lecture, Department of Sociology, University of Akron, Akron, Ohio, April 1998.

Does Liberal Democracy Matter? Invited Lecture at the Alpha Kappa Delta Banquet, University of Akron, Akron, Ohio, April 1998.

Structural Equation Modeling. Invited Lecture at Fourth Annual Population Research Institute Methodology Workshop. Pennsylvania State University, University Park, Pennsylvania, June 1997.

An Overview of Structural Equation Models. Invited Lecture at Workshop on Statistical Association Models with Latent Variables, Wiesbaden, Germany, July 1996.

Measurement Models. Invited Lecture at Nordic Conference on Scale Validation. University of Copenhagen, Denmark, May 1996.

An Introduction to Structural Equation Models. Invited Workshop at Swinburne University. Melbourne, Australia, November 1996.

Interactions of Latent Variables in Structural Equation Models. Social Science and Statistics Conference in Honor of Clifford C. Clogg. Pennsylvania State University, State College, PA, September 1996.

Subjective Measures of Democracy. (with Pamela Paxton). Presented at the 1996 American Sociological Association Convention. New York City, August 1996.

A Monte Carlo Study of the Instrumental Variables and Two Stage Least Squares Estimators in Confirmatory Factor Analysis. (with Andrey Lukashou). Presented at the 1996 American Sociological Association Convention. New York City, August 1996.

Family Planning Facilities in Tanzania: His and Her Perceptions of Distance and Time. Presented at 1996 Population Association of America Convention, New Orleans, Louisiana, May, 1996; Also presented at Population Seminar, Pennsylvania State University, State College, Pennsylvania, October 1995.

Ideas on Teaching Undergraduate Methodology Courses in Sociology. Invited presentation Pew Charitable Trust Program in Preparing Future Faculty, Department of Sociology, University of Washington, Seattle, Washington, January 1996.

Ideas on Teaching Graduate Methodology Courses in Sociology. (same as above).

The Measurement of Democracy. Invited presentation at 1996 Midwest Political Science Association Convention, Chicago, Illinois, April 1996.

Democracy Before Athens, (with Pamela Paxton). Inequality and Democracy Conference at Rutgers University, New Brunswick, New Jersey, February 1994.

A 2SLS Estimator for Latent Variable Models, Interdisciplinary Consortium for Statistical Applications at Indiana University, Bloomington & RMD Conference on Causal Modeling, Purdue University, West Lafayette, Indiana, March 1994.

Theoretical Frameworks for Democratic Political Development Assessments. National Academy of Science. Washington, D.C., January 1993.

Bootstrapping Goodness of Fit Measures in Structural Equation Models. (With R. Stine). 1992. Social Science Methodology Conference. ISA Trento, Italy. Also presented at Department of Economics, Universitat Pompeu Fabra, Barcelona, Spain, Summer, 1992.

Outliers and Residual Analysis. Keynote Speaker at Third National Symposium on Methodological Issues in Advanced Causal Modeling. Atlanta, GA, January 1992.

Indicators of Progress Toward Democracy Workshop. National Research Council. Washington, D.C., May 1991.

High Level Expert Group Meeting on Freedom and Development. United Nations Development Program. New York, NY, November 1991.

Confirmatory Tetrad Analysis. (With K. Ting). American Sociological Association, Cincinnati, Ohio, August 1991.

Observational Residuals in Factor Analysis (with G. Arminger) American Sociological Association, Washington, D.C., August 1990.

Perceived Cohesion: Its Dimensions and Measurement. (With R. Hoyle) American Sociological Association, New York, New York, August 1989.

Conventional Wisdom on Measurement: A Structural Equation Perspective. (with R. Lennox) American Sociological Association, New York, New York, August 1989.

Bootstrapping Structural Equation Models. (with R. Stine) American Sociological Association, Atlanta, Georgia, August 1988.

Political Democracy: Conceptual and Measurement Traps. Invited paper, The Measurement of Democracy, Hoover Institution, Stanford, California, May 1988.

A New Incremental Fit Index for General Structural Equation Models. Southern Sociological Society, Nashville, Tennessee, March 1988.

Structural Equation Approaches to Subjective Air Quality. Invited paper at the 350th Anniversary Symposium of the University of Utrecht, The Netherlands, Fall 1986.

Outliers and Improper Solutions in Structural Equation Models. American Sociological Association, New York, NY, August 1986.

Toward a model of Social Integration Among the Elderly. (with J. Liang) American Sociological Association, New York, NY, August 1986.

A Panel Analysis of the Philadelphia Geriatric Center Morale Scale (with J. Liang & R. Lawrence) The Gerontological Society of America's 39th Annual Scientific Meeting, 1986.

Structural Equation Models: Unresolved Problems and Neglected Issues. Roundtable Discussion Chair, American Sociological Association, Washington, D.C., August 1985.

World System Position, Democracy, and Inequality. (with R. Jackman), General Conference of the European Association of Development Research and Training Institutes, Madrid, Spain, Summer 1984.

A Note on 2SLS with Heteroskedastic and/or Autoregressive Disturbances. American Sociological Association, San Antonio, TX, August 1984.

Multiple Indicators: Internal Consistency or No Necessary Relationship? American Sociological Association, Detroit, Michigan, August 1983.

Noneconomic Determinants of Political Democracy (with Robert Jackman). American Sociological Association, Detroit, Michigan, August 1983.

Daily Temporal Variations in Mortality. Population Association of America, San Diego, CA, April 1982.

The Dimension(s) of Democracy. (with B. Grandjean), American Sociological Association, Toronto, Ontario, Canada, August 1981.

Ratio Variables in Social Science Research. Roundtable Discussion Chair, American Sociological Association, Toronto, Ontario, Canada, August 1981.

Ratio Variables in Correlation and Regression Analysis. Roundtable Discussion Chair, American Sociological Association, New York, NY, August 1980.

The Effects of Early and Late Development on Political Democracy. American Sociological Association, Boston, MA, August 1979.

Ratio Variables in Aggregate Data Analysis: Their Uses, Problems, and Alternatives. (with S. Ward), Population Association of America, Philadelphia, PA, April 1979.

A Comparative Analysis of Status Consistency. (with V. Covello), Eastern Sociological Association, Philadelphia, PA, Spring 1978.

#### **EDITORIAL BOARDS:**

American Sociological Review (2007-2010)

Journal of Causal Inference (2011-)

Journal of Statistical Theory and Practice (2008-)

Psychological Methodology (1997-2004; 2019-)

Multivariate Behavioral Research (1998-2015)

American Journal of Sociology (1997-1999)

Social Forces (1985-)

Contemporary Sociology (1987-1991)

Sage Quantitative Applications in the Social Science Series (1988-)

Sociological Methods & Research (1987-)

Sociological Methodology (1992-1995, 1998-2000, 2011-)

Studies in Comparative International Development (2000-2010)

Structural Equation Modeling: A Multidisciplinary Quarterly (1994-)

Journal of Educational and Behavioral Statistics (2008-2014)

#### **GRANT ACTIVITIES (Past Support)**

McLean, S. (PI), K.A. Bollen (Investigator). Influence of PTSD Symptoms on Chronic Pain Development after Sexual Assault. National Institute of Health from July 17, 2014 to June 30, 2020. (5-R01-AR064700-01-02: \$1,403,365).

- Fruehwirth, J. (PI), K.A. Bollen (Investigator). Tailoring Teaching to Fit the Class: Teaching Practice and Classroom Composition Under Random Assignment. US Department of Education (DOED) July 1, 2017 to June 30, 2020. (R305A170269: \$302, 164)
- Bollen, K.A. (PI). Advancing Structural Equation Modeling Methods and Their Application to the Natural Sciences. U.S. Geological Survey from September 1, 2016 to August 31, 2018. (Award Number: G16AC00422: \$270,000).
- McLean, S. (PI), K.A. Bollen (Investigator), and L. Diatchenko (Investigator). Applying Biopsychosocial Model to Post-MVC Pain Development in African Americans. National Institute of Health from September 15, 2011 to August 31, 2019 (1R01ARD60852-01A1: \$763,687).
- Bollen, K.A. (PI), Structural Equation Modeling for Complex Survey Data. Research Triangle Institute (RTI International) from April 1, 2014 to July 31, 2015. (C00600408: \$120,000).
- Bollen, K.A. (PI), A Virtue Ethics Perspective on Stress. Yale University and John Templeton Foundation from July 1, 2013 to June 30, 2015 (C14R11679: \$117,396).
- Mooney, Margarita (PI), K.A. Bollen (Investigator). A Virtue Ethics Perspective on Stress and Human Flourishing from Youth to Young Adulthood. John Templeton Foundation from July 1, 2012 to June 30, 2013 (A13-0085-001: \$603,650).
- McLean, S. (PI), K.A. Bollen (Investigator), and L. Diatchenko (Investigator). Applying Biopsychosocial Model to Post-MVC Pain Development in African Americans. National Institute of Health from September 15, 2011 to August 31, 2016 (1R01ARD60852-01A1: \$763,687).
- Adair, L. S. (PI), K.A. Bollen (Co-investigator), J. Brja, A. Feranil, C. Kuzawa, and T. McDade. Modeling the Developmental Origins of Adult Disease Risk Factors. National Institute of Health from April 1, 2008 to March 31, 2013 (1R01HD054501-01A1: \$2,545,893.00).
- Bollen, K. A. (PI). Structural Misspecification in Latent Variable Models: Symptoms, Consequences, and Diagnostic Tests. National Science Foundation Funded from September 15, 2006 to September 14, 2011 (SES-0617276: \$177,000).
- Curran, P.J. (PI) and K.A. Bollen (Co-PI). Measurement models in latent curve analysis. National Institute on Drug Abuse of NIH funded from July 1, 2005 to April 30, 2011 (DA013148-05A2: \$1,146,275). Effort: 25% per year.

- Bollen, K. A. (PI). Continuation Award Library of Congress National Digital Information Infrastructure and Preservation Program Award funded from September 1, 2007 to March 30, 2010. ( Subcontract # F011777: \$328,000) Effort: 10% per year.
- Bollen, K. A. (PI). Library of Congress National Digital Information Infrastructure and Preservation Program Award funded from September 1, 2004 to August 31, 2007 ( Subcontract # F011777: \$434,719) Effort: 10% per year.
- Frierson, H. (PI), K. A. Bollen (Co-PI), and L. Dykstra (Co-PI). SBE COLLABORATIVE RESEARCH: Atlantic Coast Social, Behavioral, and Economic Sciences Alliance, National Science Foundation (minority training grant) Funded from October 1, 2005 to September 30, 2007 (SES-0548858: \$541,406).
- Alan Karr (PI), K. A. Bollen (investigator). Dynamics for Social Networks Processes: Comparing Statistical Models with Intelligent Agents. National Science Foundation (DMS-0437183 and SES-0537239) 10/01/04-9/30/05, \$300,000.
- Bollen, K.A. (PI), Mark Montgomery, Jennifer Glanville, and Guy Stecklov. Socioeconomic Status in Population and Health Studies in Developing Countries MEASURE-USAID Grant funded July 1, 1998 to December 31, 2000, \$125,250.
- Curran, P. J. (PI) and K. A. Bollen (Co-PI). 1999. Innovative Latent Curve Models of Adolescent Drug Use. NIDA funded from July1, 1999 to June 30, 2004, \$923,420.
- Bollen, K.A. (PI) Democracy and Democratization: Social Conditions, Institutional Forms, Transitions. National Science Foundation Graduate Traineeship Award, September 1, 1995 to August 31, 2002, (GER-9554569), \$562,500.
- Bollen, K.A. (PI) Measures of Liberal Democracy, 1980-1991. National Science Foundation Award, May 1, 1992 to April 30, 1995.
- Bollen, K.A. (PI) Cross-National Measures of Political Democracy. National Science Foundation Award, July 1, 1989 to April 30, 1991.