

# Marie Davidian

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## Degrees

- 1980 B.S., Applied Mathematics, University of Virginia School of Engineering and Applied Science  
1981 M.S., Applied Mathematics, University of Virginia School of Engineering and Applied Science  
1987 Ph.D., Statistics, University of North Carolina at Chapel Hill

## Experience

- 2017– **J. Stuart Hunter Distinguished Professor of Statistics**, College of Sciences,  
North Carolina State University
- 2012– **Cluster Coordinator**, Precision Medicine Discovery Faculty Cluster,  
North Carolina State University
- 2007–2013 **Director**, Center for Quantitative Sciences in Biomedicine,  
North Carolina State University
- 2006– **Member**, Comparative Medicine Institute,  
North Carolina State University
- 2005–2017 **William Neal Reynolds Professor of Statistics**, College of Agriculture  
and Life Sciences, North Carolina State University
- 2003– **Associate Faculty Member**, Center for Research in Scientific Computation,  
North Carolina State University
- 2001– **Adjunct Professor**, Department of Biostatistics and Bioinformatics, Duke University
- 1998– **Professor**, Department of Statistics, North Carolina State University
- 1996–1998 **Associate Professor**, Department of Statistics, North Carolina State University
- 1994–1996 **Associate Professor**, Department of Biostatistics, Harvard School of Public Health
- 1993–1994 **Associate Professor**, Department of Statistics, North Carolina State University
- 1987–1993 **Assistant Professor**, Department of Statistics, North Carolina State University
- 1987 **Visiting Lecturer**, Department of Statistics, University of North Carolina at Chapel Hill
- 1985 **Research Assistant**, Statistics and Biomathematics Branch, National Institute of  
Environmental Health Sciences, Research Triangle Park, North Carolina
- 1982–1986 **Graduate Teaching Assistant**, Department of Statistics, University of North Carolina  
at Chapel Hill
- 1981–1982 **Consultant**, Booz, Allen, and Hamilton, Inc., Bethesda, Maryland

**Professional and honor societies**

American Statistical Association (ASA)  
Institute of Mathematical Statistics (IMS)  
The International Biometric Society (IBS), Eastern North American Region (ENAR)  
International Statistical Institute (ISI)  
American Association for the Advancement of Science (AAAS)  
International Chinese Statistical Association (ICSA)  
International Indian Statistical Association (IISA)  
Tau Beta Pi  
Sigma Xi

**Honors and distinctions**

1993 American Statistical Association Award for Outstanding Statistical Application  
1994 Elected Ordinary Member, International Statistical Institute  
1998 Fellow, American Statistical Association  
2002 George Challis Distinguished Lectureship in Biostatistics, University of Florida  
2003 Alumni Distinguished Graduate Professor, North Carolina State University  
2003 Myrto Lefkopoulou Distinguished Lectureship, Harvard School of Public Health  
2005 Alumni Outstanding Research Award, North Carolina State University  
2005 William Neal Reynolds Professor of Statistics, North Carolina State University  
2006 Bernard Greenberg Distinguished Lecturer, Department of Biostatistics, University of North Carolina at Chapel Hill  
2006 Fellow, Institute of Mathematical Statistics  
2006 Fellow, American Association for the Advancement of Science  
2007 Janet L. Norwood Award for Outstanding Achievement by a Woman in the Statistical Sciences  
2009 George W. Snedecor Award, Committee of Presidents of Statistical Societies  
2010 Institute of Mathematical Statistics Medallion Lecturer  
2010 Alexander Quarles Holladay Medal for Excellence, North Carolina State University  
2011 Florence Nightingale David Award, Committee of Presidents of Statistical Societies  
2012 Presidential Invited Address, Spring Meeting, Eastern North American Region of the International Biometric Society  
2012 D.D. Mason Award, Department of Statistics, North Carolina State University  
2012 International Biometric Society Award for Outstanding Contribution to the Development of the IBS  
2015 Charles L. Odoroff Memorial Lectureship, University of Rochester  
2016 Alumni Outstanding Research Award, North Carolina State University  
2016 Research Leadership Academy, North Carolina State University  
2017 J. Stuart Hunter Distinguished Professor of Statistics, North Carolina State University  
2017 Donna J. Brogan Lecturer, Emory University  
2018 Honorary Life Membership, International Biometric Society  
2018 Founders Award, American Statistical Association  
2019 Snedecor Lecture, Iowa State University

**Editorial boards**

- 1992–1999 Editorial Advisory Board, *Chemometrics and Intelligent Laboratory Systems*  
 1995–2001 Associate Editor, *Journal of the American Statistical Association*  
 1997–2000 Associate Editor, *Biometrics*  
 2000–2002 Coordinating Editor, *Biometrics*  
 2003–2005 Associate Editor, *Statistica Sinica*  
 2006–2011 Editorial Board, ASA-SIAM Series on Statistics and Applied Probability  
 2006–2017 Executive Editor, *Biometrics*  
 2016–2017 Co-Editor, *Wiley StatsRef: Statistics Reference Online*

**Selected professional activities**Professional society involvement

- At-large Representative, Treasurer, President, North Carolina Chapter of ASA, 1989–1991  
 ASA General Methodology Section Program Chair, 1994 Joint Statistical Meetings  
 ENAR/WNAR (Western North American Region) of the IBS representative to the Biological Sciences Section of AAAS, 1996–2001  
 ENAR Program Chair, 1998 Joint Statistical Meetings  
 Regional Committee, ENAR, 1999–2001  
 Program Committee, 2000 ENAR Spring Meetings  
 Co-Organizer, Workshop for Junior Researchers, ENAR, 2001, 2002  
 Program Committee, International Biometric Conference (IBC) 2002  
 Program Committee, IBC 2004  
 Chair, IBS Ad Hoc Committee on Electronic Publication of *Biometrics*, 2001–2002  
 Co-Chair, IBS Ad Hoc Committee on Print and Electronic Publication of *Biometrics*, 2002  
 Co-Chair, IBS Strategic Planning Committee, 2002–2005  
 IBS Executive Committee (Editorial Representative), 2002–2003  
 IBS Council, 2002–2009  
 President-Elect, ENAR, 2003; President, ENAR, 2004  
 Member, Committee of Presidents of Statistical Societies (COPSS), 2003–2005  
 Chair-Elect, Biometrics Section, ASA, 2004; Chair, Biometrics Section, ASA, 2005  
 Chair, IBS Editorial Advisory Committee, 2004–2007  
 Co-Organizer, Atlantic Coast Symposium on the Mathematical Sciences in Biology and Biomedicine, Raleigh, North Carolina, 2008  
 Program Committee, 30th Annual Conference of the International Society of Clinical Biostatistics, 2009  
 IMS Program Chair, 2010 ENAR Spring Meeting  
 IMS Council, 2009–2012  
 President-Elect, ASA, 2012; President, ASA, 2013  
 Member, Committee of Presidents of Statistical Societies (COPSS), 2012–2014  
 Member, AAAS Annual Meeting Scientific Program Committee, 2015–2019  
 Conference Co-Chair, Trends and Innovations in Clinical Trial Statistics, May 2014, 2016 (with Quintiles)  
 Program Committee, 38th Annual Conference of the International Society of Clinical Biostatistics, 2017

Scientific activities

- U.S. Food and Drug Administration (FDA) Advisory Committee for Pharmaceutical Science, 1994-1997
- NIH Center for Scientific Review (CSR) AIDS and Related Research (6) (AARR-6) Study Section, 1998-2001
- NIH CSR Social Sciences, Nursing, Epidemiology and Methods (5) (SNEM-5) Study Section, 2000-2003
- NIH CSR Biostatistical Methods and Research Design (BMRD) Study Section, 2003-2006
- Co-Organizer, AMS-IMS-SIAM Summer Research Conference, "Emerging Issues in Longitudinal Data Analysis," Mount Holyoke College, 2002
- Program Leader, Program on Inverse Problem Methodology in Complex Stochastic Models, and Local Development Committee, Statistical and Applied Mathematical Sciences Institute (SAMSI), 2002
- Guest Editor, *Statistica Sinica*, Special Issue on Emerging Issues in Longitudinal Data Analysis, 2003
- U.S. FDA Clinical Pharmacology Subcommittee of the Advisory Committee for Pharmaceutical Science, 2003-2006
- Chair, NIH CSR Biostatistical Methods and Research Design (BMRD) Study Section, 2004-2006
- Scientific Advisory Committee, Johns Hopkins Particulate Matter Research Center 2006-2008
- Consultant, U.S. FDA Clinical Pharmacology Subcommittee of the Advisory Committee for Pharmaceutical Science, 2006-2010
- Program Co-Leader, SAMSI 2007 Summer Program on Dynamic Treatment Regimes and Multi-stage Decision-Making
- NIH CSR AIDS Clinical Studies and Epidemiology (ACE) Study Section, 2007-2011
- U.S. Environmental Protection Agency Science Advisory Board Exposure and Human Health Committee, 2009-2012
- Mentor, Interdisciplinary Approaches to Biomedical Data Science Challenges: SAMSI Innovations Lab, July 2015
- Program Co-Leader, SAMSI 2016 Workshop on Methodology for Precision Medicine: Integrating Statistical and Mathematical Approaches, April 2016
- Scientific Advisory Committee, Canadian Statistical Sciences Institute (CANSSI), 2016-2017
- Guest Co-Editor, *Statistical Methods in Medical Research* Special Issue on Optimal Dynamic Treatment Regimes, 2017
- Local Scientific Coordinator, 2018-2019 SAMSI Year-Long Program on Statistical, Mathematical, and Computational Methods for Precision Medicine (PMED)

Selection committees

- IMS Nominating Committee, 1999
- Search Committee, *Journal of the American Statistical Association (JASA)* Applications and Case Studies Editor, 2001
- Search Committee, Co-Editor, *Biometrics*, 2000, 2002, 2004-2017 (Chair),
- COPSS Snedecor Award Selection Committee (IMS representative), 2002-2006
- ASA Wilks Medal Committee, 2003-2007 (Chair 2007)
- Mortimer Spiegelman Award Committee, American Public Health Association, 2003-2006, 2008
- Search Committee, Editor, *Biometric Bulletin*, 2004 (Chair)
- Search Committee, Book Review Editor, *Biometrics*, 2005 (Chair)
- Search Committee for the *JASA* Theory and Methods Editor, 2006-2007

ASA Committee on Nominations, 2006–2007 (Chair 2006)  
 Member, Electorate Nominating Committee, Section on Statistics, AAAS, 2010–2013  
 IMS Nominating Committee, 2016–2017  
 COPSS Florence Nightingale David Award Committee, 2016–2018

**Major administrative responsibilities**

Department Committees, North Carolina State University:

1989-1992, 1999	Admissions Committee
1991	Leadership Review Committee
1988-1991, 1997	Basic Exam Committee
1992-1993	Preliminary Written Exam Committee
1989-1990	Organizer, Tuesday Seminar Series
1997	Search Committee
1998	Biomathematics Search Committee
1998–	Course and Curriculum Committee
1998-2010	Organizer, Biomedical Statistics Working Group
1999-2000	Bioinformatics Search Committee
2002	Co-Organizer, Department of Statistics Retreat
2001	Search Committee
2001, 2005	Ph.D. Qualifying Exam Committee
2002	Search Committee (Chair)
2002, 2009	Ph.D. Written Exam Committee
2003	Search Committee (Chair)
2005	Search Committee
2006-2007	Master's Exam Committee
2006-2007	Web Committee
2007	Bioinformatics Search Committee
2007	Search Committee
2011–	Awards Nomination Committee
2012	Search Committee
2015–	Faculty Grants Director
2018	Search Committee

University Committees, North Carolina State University:

1989-1991	University Courses and Curricula Committee
1997-2000	College of Agriculture and Life Sciences Research Committee
1998	College of Physical and Mathematical Sciences Applied Science Building Committee
1999-2000	Search Committee, Dean of College of Physical and Mathematical Sciences
2004	Selection Committee, Alumni Distinguished Graduate Professors
2006, 2011, 2012	Holladay Medal Selection Committee
2006	Keller Dissertation Award Selection Committee
2006	Alumni Outstanding Research Award Selection Committee
2006	Search Committee, Director, Center for Comparative Medicine and Translational Research
2007-2008	Scholarly Publications Repository Advisory Council
2010-2012	University Research Committee
2010-2012	College of Physical and Mathematical Sciences Research Advisory Committee
2010	Comprehensiveness and Interdisciplinarity Strategic Planning Task Force
2011	Academic Science Program Task Force
2014-2016	Faculty Senate
2015-2016	Faculty Senate Executive Committee
2016	Task Force for Interdisciplinary and Joint Review Processes
2016-2018	Electronic Research Administration (eRA) System Steering Committee
2018-	College of Sciences Reappointment, Promotion, and Tenure Committee
2018-2019	College of Sciences Assistant Director for Research Development Search Committee

Other Activities, North Carolina State University:

2006-2011	Executive Committee, Center for Comparative Medicine and Translational Research
2007- 2013	Director, Center for Quantitative Sciences in Biomedicine
2012-	Cluster Coordinator, Precision Medicine Discovery Faculty Cluster

Department Committees, Harvard School of Public Health:

1994-1995	Curriculum Committee
1994-1995	Seminar Committee (Chair)
1994-1995	Student Advising Committee
1995-1996	Admissions Committee (Chair)
1995-1996	Committee on Curriculum and Qualifying Exam Reform

**Teaching/Course development**

1982-86	Introduction to Statistics, University of North Carolina at Chapel Hill
1987	Introduction to Probability and Distribution Theory, North Carolina State University
1988-93, 1996	Experimental Statistics for the Biological Sciences I, North Carolina State University
1987-93	Statistical Consulting, North Carolina State University
1988	Introduction to Heteroscedastic Regression Models, North Carolina State University
1990	Statistical Consulting, North Carolina State University
1989-93	Experimental Statistics for the Biological Sciences II, North Carolina State University
1992	Topics in Nonlinear Regression, North Carolina State University
1995	Generalized (Non)linear Models, Harvard School of Public Health
1995	Nonlinear Repeated Measurement Models, Harvard School of Public Health
1996-2005, 2007, 2009	Nonlinear Statistical Models, North Carolina State University
1998-2002, 2005, 2007	Applied Longitudinal Data Analysis, North Carolina State University
1998-99, 2003-05 2002	Preparation for Statistical Research, North Carolina State University Inverse Problems in Complex Stochastic Models, North Carolina State University/SAMSI
2009	Mathematical-Statistical Modeling and Analysis of Complex Systems North Carolina State University
2015, 2017	Statistical Methods for Analysis with Missing Data, North Carolina State University
2016-19	Longitudinal Data Analysis, North Carolina State University
2019	Introduction to Dynamic Treatment Regimes, North Carolina State University/SAMSI

**Major grants – Principal Investigator unless noted**

- 1990-1993 National Science Foundation DMS 9003176, Estimation in Nonlinear Heteroscedastic Regression Models (\$27,250)
- 1996-2000 National Institutes of Health R01 AI41214, Statistical Methods for Repeated Measures Data in AIDS (\$375,207, 40% effort)
- 2000-2003 National Institutes of Health R01 CA085848, Flexible Methods for Correlated Biomedical Data (\$539,312, 30% effort)
- 2003-2007 National Institutes of Health R01 CA085848, Flexible Statistical Methods for Biomedical data (\$865,421, 30% effort)
- 2000-2003 National Institutes of Health R01 AI031789, Statistical Methods for AIDS Clinical Trials (PI A. Tsiatis, Department of Statistics, NCSU, \$756,616, 30% effort)
- 2003-2008 National Institutes of Health R37 AI031789, Statistical Methods for AIDS Clinical Trials (PI A. Tsiatis, Department of Statistics, NCSU, \$1,456,343, 40% effort)
- 2000-2008 National Institutes of Health R13 CA090250, Workshop for Junior Biostatisticians in Cancer Research (Co-PI with X. Lin, Department of Biostatistics, Harvard School of Public Health, on behalf of ENAR, \$250,000, 0% effort)
- 2002-2006 National Institutes of Health R01 GM067299, Modeling, Estimation, and Control in HIV Dynamics (PI H.T. Banks, Center for Research in Scientific Computation, NCSU, \$1,535,216, 11.1% effort)
- 2003-2007 National Institutes of Health T15 HL075859, Engaging the Next Generation of Biostatisticians (Co-PI with D. Boos, Department of Statistics, NCSU, \$809,714, 2.5% effort)
- 2004-2007 National Institutes of Health R21 DA019800, Methodology for Adaptive Treatment Strategies (PI S.A. Murphy, Department of Statistics, University of Michigan, \$223,670, 5% effort)
- 2005-2006 National Institutes of Health P01 AI64518, Center for AIDS Research Biostatistics and Computational Biology Core (PI T. Kepler, Department of Biostatistics and Bioinformatics, Duke University, \$142,092, 5% effort)
- 2006-2011 National Institutes of Health T32 HL079896, Integrated Biostatistical Training for CVD Research (\$661,340, 10% effort)
- 2006-2013 National Institutes of Health R01 AI071915, HIV Mathematical/statistical Modeling to Inform Design of HIV Clinical Trials (PI H.T. Banks, Center for Research in Scientific Computation, NCSU, \$3,495,847, 1.0 calendar months effort)
- 2007-2010 National Institutes of Health T15 HL075859, Engaging the Next Generation of Biostatisticians (Co-PI with D. Boos, Department of Statistics, NCSU, \$758,328, 5% effort)

- 2007–2009 Morris Animal Foundation, Methylprednisolone Sodium Succinate and Polyethylene Glycol in Canine Spinal Cord Injury (PI N. Olby, Department of Clinical Sciences, NCSU College of Veterinary Medicine, \$79,920, 0.0 person months effort)
- 2007–2011 National Institutes of Health R01 CA085848, Flexible Statistical Methods for Biomedical Data (\$1,155,549, 1.8 calendar months effort)
- 2008–2013 National Institutes of Health R37 AI031789, Statistical Methods for AIDS Clinical Trials (PI A. Tsiatis, Department of Statistics, NCSU, \$1,797,850, 2.7 calendar months effort; five year MERIT award extension)
- 2008–2013 National Institutes of Health UL1 RR025747, UNC Clinical and Translational Science Award (PI: M.S. Runge, School of Medicine, UNC-Chapel Hill, \$346,375 for NCSU subcontract, 0.3 calendar months effort)
- 2009–2012 National Institutes of Health T15 HL097621, Engaging, Inspiring, and Preparing the Next Generation of Biostatisticians (\$755,078, 0.38 calendar months effort)
- 2009–2012 National Institutes of Health NIAAA Contract 275200900019C-2-0-1, Mechanisms of Behavior Change Initiation (MOBCI) for Drinking Behavior (PI, J. Morgenstern, Research Foundation, for Mental Hygiene, Inc., Columbia University, \$1,622,412, 0.05 calendar months effort)
- 2010–2015 National Institutes of Health P01 CA142538, Statistical Methods for Cancer Clinical Trials (PIs: M. Davidian; M. Kosorok, Department of Biostatistics, UNC-Chapel Hill; and S. George, Department of Biostatistics and Bioinformatics, Duke University, \$12,197,205, 4.5 calendar months effort)
- 2011–2017 National Institutes of Health T32 HL079896, Integrated Biostatistical Training for CVD Research (\$1,046,495, 0.9 calendar months effort)
- 2011–2016 National Institutes of Health R01 CA085848, Flexible Statistical Methods for Biomedical Data (\$1,022,876, 1.8 calendar months effort)
- 2013–2016 National Institutes of Health T15 HL097621, Engaging, Inspiring, and Preparing the Next Generation of Biostatisticians (\$777,484, 0.6 calendar months effort)
- 2013–2017 National Institutes of Health R01 HL118336, Statistical Methods for Complex Data in Cardiovascular Disease (PIs: A. Tsiatis, Department of Statistics, NCSU, and S. O'Brien, Department of Biostatistics and Bioinformatics, Duke University, \$1,500,011, 2.0 calendar months effort)
- 2013–2018 National Institutes of Health UL1 TR001111, North Carolina Translational and Clinical Sciences Institute (PI: M.S. Runge, School of Medicine, UNC-Chapel Hill, \$224,210 subcontract, 0.3 calendar months effort)
- 2015–2020 National Institutes of Health P01 CA142538, Statistical Methods for Cancer Clinical Trials (PIs: M. Davidian; M. Kosorok, Department of Biostatistics, UNC-Chapel Hill; and K. Owzar, Department of Biostatistics and Bioinformatics, Duke University, \$10,328,845, 3.84 calendar months effort)

- 2016–2019 National Institutes of Health R25 HL131490, Engaging, Inspiring, and Preparing the Next Generation of Biostatisticians (PIs: M. Davidian and E.R. DeLong, Department of Biostatistics and Bioinformatics, Duke University, \$722,036, 0.4 calendar months effort)
- 2016–2021 National Institutes of Health R01 CA202779, Optimizing Delivery of a Behavioral Cancer Pain Intervention Using a SMART (PI: T. Somers, Duke University, \$108,658 subcontract, 0.6 calendar months effort)
- 2016–2021 National Institutes of Health U01 MD011281, A Pragmatic Trial of an Adaptive eHealth Prevention Program for Diverse Adolescent MSM (PI: B. Mustanski, Northwestern University, \$191,201 subcontract, 0.6 calendar months effort)
- 2016–2019 American Institutes for Research (from Institute of Education Sciences), Impact Evaluation of Parent Messaging Strategies on Student Attendance (PI: Anja Kurki, \$292,561 subcontract, 1.2 calendar months effort)
- 2016–2021 National Institutes of Health R01 CA207689, A Patient-Centered Intervention Using Virtual Technology to Reduce Colorectal Cancer Disparities in Primary Care (PI: J. Krieger, University of Florida, \$181,500 subcontract, 0.6 calendar months effort)
- 2016–2019 Game-Changing Research Incentive Program (GRIP), The NCSU/RTI Program in Genetic Discovery and Prediction (PGDP) (PI: Fred Wright, Department of Statistics, NCSU, \$573,769, 0.0 calendar months effort)
- 2017–2022 National Institutes of Health T32 HL079986, Integrated Biostatistical Training for CVD Research (PIs: M. Davidian and E.R. DeLong, Department of Biostatistics and Bioinformatics, Duke University, \$1,474,577, 1.2 calendar months effort)
- 2017–2022 National Institutes of Health P01 CA210961, I SPY 2+: Evolving the ISPY 2 Trial to Include MRI-directed, Adaptive Sequential Treatment to Optimize Breast Cancer Outcomes (PI: L. Esserman, University of California, San Francisco, \$137,698 subcontract, 0.6 calendar months effort)
- 2018–2023 National Institutes of Health R01 HD092336A1, Fostering Medication Adherence in Children with Epilepsy Using mHealth Technology (PI: A. Modi, Cincinnati Children’s Hospital Medical Center, \$164,931 subcontract, 0.9 calendar months effort)
- 2018–2021 National Institutes of Health R34 MH118058, A Sequential Multiple-Assignment Randomization Trial to Evaluate AllyQuest: A Gamified Social Support App for Optimizing Medication Adherence and Care Outcomes Among HIV-positive Young MSM (PI: K. Muessig, University of North Carolina, Chapel Hill, \$72,960 subcontract, 0.3 calendar months effort)

**Pending grants – Principal Investigator unless noted**

- 2020–2025 National Institutes of Health P01 CA142538, Statistical Methods for Cancer Clinical Trials (PIs: M. Davidian; M. Kosorok, Department of Biostatistics, UNC-Chapel Hill; and K. Owzar, Department of Biostatistics and Bioinformatics, Duke University, \$12,784,901, 3.6 calendar months effort)

**Doctoral theses directed**

1. Bruce Belanger (Ph.D., September 1994, N.C. State University)  
(Dr. Belanger won one of the top three student prizes awarded by ENAR for a paper from his dissertation, 1994)
2. Qi Zeng (Sc.D., June 1996, HSPH)  
(Dr. Zeng won the David P. Byar Young Investigator Award given by the Biometrics Section of ASA, a student travel award from ENAR, and a student paper award from the Biopharmaceutical Section of ASA for papers from her dissertation, 1996)
3. Karen Higgins (Sc.D., July 1996, HSPH)  
(Dr. Higgins won a student paper award from the Biopharmaceutical Section of ASA for a paper from her dissertation, 1996)
4. Beow Yeap (Sc.D., August 1998, HSPH)  
(Dr. Yeap won the John Van Ryzin Award given by ENAR for the top student paper for a paper from her dissertation, 1998)
5. Ann Oberg (Ph.D. August 1999, N.C. State University)  
(Dr. Oberg won a student travel award from ENAR for a paper from her dissertation, 1999)
6. John Szumiloski (Ph.D. October 1999, N.C. State University)
7. Hyejin Ko (Ph.D. December 1999, N.C. State University)  
(Dr. Ko won a student travel award from ENAR for a paper from her dissertation, 1999)
8. Alan Hartford (Joint with John Monahan) (Ph.D. April 2000, N.C. State University)
9. Jared Lunceford (Joint with Anastasios Tsiatis) (Ph.D. August 2001, N.C. State University)  
(Dr. Lunceford won a student travel award from the Biometrics Section of ASA for a paper from his dissertation, 2001, and the John Van Ryzin Award given by ENAR for the top student paper for a paper from his dissertation, 2002)
10. Junliang Chen (Joint with Daowen Zhang) (Ph.D. December 2001, N.C. State University)
11. Xiao Song (Joint with Anastasios Tsiatis) (Ph.D. May 2002, N.C. State University) (Dr. Song won a student travel award from the Biopharmaceutical Section of ASA for a paper from her dissertation, 2001)
12. Selene Leon (Joint with Anastasios Tsiatis) (Ph.D. August 2003, N.C. State University)
13. Erning Li (Joint with Daowen Zhang) (Ph.D. August 2004, N.C. State University) (Dr. Li won a student travel award from ENAR for a paper from her dissertation, 2003)
14. Jiang Lin (Joint with Daowen Zhang) (Ph.D. December 2004, N.C. State University)
15. Xianzheng Huang (Joint with Leonard Stefanski) (Ph.D. August 2006, N.C. State University)  
(Dr. Huang won a student travel award from ENAR for a paper from her dissertation, 2005)

16. Kirsten Doehler (Ph.D. August 2006, N.C. State University)
17. Mandy Bergquist (Ph.D. December 2006, N.C. State University)
18. Lihua Tang (Ph.D. May 2008, N.C. State University)
19. Min Zhang (Joint with Anastasios Tsiatis) (Ph.D. May 2008, N.C. State University) (Dr. Zhang won a student travel award from ENAR for a paper from her dissertation, 2008)
20. Laine Elliott Thomas (Joint with Leonard Stefanski) (Ph.D. August 2009, N.C. State University)
21. Weihua Cao (Joint with Anastasios Tsiatis) (Ph.D. December 2009, N.C. State University)
22. Phillip Schulte (Joint with Anastasios Tsiatis) (Ph.D. May 2012, N.C. State University)
23. Shuai Yuan (Joint with Hao Helen Zhang) (Ph.D. May 2012, N.C. State University)
24. Baqun Zhang (Joint with Anastasios Tsiatis) (Ph.D. August 2012, N.C. State University)
25. David Vock (Joint with Anastasios Tsiatis) (Ph.D. August 2012, N.C. State University) (Dr. Vock won the student paper award from the Biopharmaceutical Section of ASA for a paper from his dissertation, 2011)
26. Rebecca Hager (Joint with Anastasios Tsiatis) (Ph.D. December 2016, N.C. State University)
27. Dana Johnson (Joint with Wenbin Lu) (Ph.D. expected May 2020, N. C. State University)

## Bibliography

### Books and monographs

1. Davidian, M. and Giltinan, D.M. (1995) *Nonlinear Models for Repeated Measurement Data*. London: Chapman & Hall.
2. Fitzmaurice, G., Davidian, M., Verbeke, G., and Molenberghs, G. (2009) *Longitudinal Data Analysis*. Boca Raton: Chapman & Hall/CRC Press.
3. Davidian, M., Lin, X., Morris, J., and Stefanski, L.A. (2014). *The Work of Raymond J. Carroll: The Impact and Influence of a Statistician*. New York: Springer.
4. Tsiatis, A.A., Davidian, M., Laber, E.B., and Holloway, S.T. (2020). *Introduction to Dynamic Treatment Regimes: Statistical Methods for Precision Medicine*. Boca Raton: Chapman & Hall/CRC Press (under contract/in progress).

### Peer-reviewed publications

1. Davidian, M. and Carroll, R.J. (1987). Variance function estimation. *Journal of the American Statistical Association* **82**, 1079–1091.
2. Davidian, M. and Carroll, R.J. (1988). A note on extended quasi-likelihood. *Journal of the Royal Statistical Society, Series B* **50**, 74–82.

3. Davidian, M., Carroll, R.J., and Smith, W. (1988). Variance functions and the minimum detectable concentration in assays. *Biometrika* **75**, 549–556.
4. Davidian, M. (1990). Estimation of variance functions in assays with possibly unequal replication and nonnormal data. *Biometrika* **77**, 43–54.
5. Davidian, M. and Haaland, P. (1990). Regression and calibration with nonconstant error variance. *Chemometrics and Intelligent Laboratory Systems* **9**, 231–248.
6. Davidian, M. and Gupta, B.S. (1991). The use of regression analysis in nonwovens research. *Proceedings of the TAPPI 1991 Nonwovens Conference*, Atlanta, Georgia: TAPPI Press, 27–33.
7. Rives, D.V., Davidian, M., and Ley, D.H. (1991). Infectious bursal disease virus titers may be misleading. *Breakthrough, North Carolina Cooperative Extension Service* **15**:2.
8. Davidian, M. and Gallant, A.R. (1992). Smooth nonparametric maximum likelihood for population pharmacokinetics, with application to quinidine. *Journal of Pharmacokinetics and Biopharmaceutics* **20**, 529–556.
9. Davidian, M. and Giltinan, D.M. (1993). Some general estimation methods for nonlinear mixed effects models. *Journal of Biopharmaceutical Statistics* **3**, 23–55.
10. Davidian, M. and Giltinan, D.M. (1993). Some simple methods for estimating intraindividual variability in nonlinear mixed effects models. *Biometrics* **49**, 59–73.
11. Davidian, M. and Giltinan, D.M. (1993). Analysis of repeated measurement data using the nonlinear mixed effects model. *Chemometrics and Intelligent Laboratory Systems* **20**, 1–24.
12. Davidian, M. and Gallant, A.R. (1993). The nonlinear mixed effects model with a smooth random effects density. *Biometrika* **80**, 475–488.
13. Giltinan, D.M. and Davidian, M. (1994). Assays for recombinant proteins: A problem in nonlinear calibration. *Statistics in Medicine*, **13**, 1165–1179.
14. Yuh, L., Beal, S.L., Davidian, M., Harrison, F., Hester, A., Kowalski, K., Lindstrom, M., Vonesh, E., and Wolfinger, R. (1994). Population pharmacokinetic/pharmacodynamic methodology and applications: a bibliography. *Biometrics* **50**, 566–575.
15. Noga, E.J., Engel, D.P., Arroll, T.W., McKenna, S., and Davidian, M. (1994). Low serum antibacterial activity coincides with increased prevalence of shell disease in blue crabs *Callinectes sapidus*. *Diseases of Aquatic Organisms* **19**, 121–128.
16. Nelson, P.R., Sellon, R., Novotney, C., Devera, C., Davidian, M., English, R., Tompkins, M., and Tompkins, W. (1995). Therapeutic effects of diethylcabamazine and 3'-azido-3'-deoxythmidine on feline leukemia virus lymphoma formation. *Veterinary Immunology and Immunopathology* **46**, 181–194.
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1. Rose, E.J., Laber, E.B., Davidian, M., Tsiatis, A.A., Zhao, Y. and Korosork, M.R. (2019). Sample size calculations for SMARTs. Submitted.

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6. Neumann, A.U., Lam, N.P., Davidian, M, Dahari, H., Wiley, T.W., Perelson, A.S., and Layden T.J. (1999). Differences in hepatitis C virus (HCV) dynamics between HCV of genotype 1 and genotype 2. *Hepatology* **3** (4), Part 2, Suppl. S., 121
7. Bodnar, L., Davidian, M., Siega-Riz A., and Tsiatis A. (2002). Marginal structural models for estimating the causal effect of prenatal iron supplementation on risk of postpartum anemia. *American Journal of Epidemiology* **155** (11), Suppl. S., 263.
8. Davidian, M. (2003). Review of *Hierarchical Linear Models: Applications and Data Analysis Methods (2nd ed.)* by S.W. Raudenbush and A.S. Byrk, *Journal of the American Statistical Association* **98**, 767–768.

9. Davidian, M., Diggle, P., Follmann, D., Louis, T.A., Taylor, J., and Zeger, S. (2004). General discussion of joint modeling longitudinal and survival data. *Statistica Sinica* **14**, 621–624.
10. Davidian, M. (2006). Introduction to statistical population modeling and analysis for pharmacokinetic data. Invited white paper for the International Workshop on Uncertainty and Variability in Physiologically Based Pharmacokinetic (PBPK) Models, <http://www.epa.gov/ncct/uvpkm/>.
11. Davidian, M. (2010). Nonlinear mixed effects models. *International Encyclopedia of Statistical Science*, M. Lovric (ed). New York: Springer.
12. Davidian, M. (2012). Emerging trends in biostatistics. Invited article for the AAAS “Cutting Edge,” <http://www.membercentral.aaas.org/articles/emerging-trends-biostatistics>.
13. Davidian, M. (2013). 2013: The International Year of... Statistics. *Huffington Post* blog entry, February 12, 2013.
14. Davidian, M. (2013). The International Year of Statistics: A celebration and a call to action. 2013 ASA Presidential Address. *Journal of the American Statistical Association*, **108**, 1141–1146.
15. Davidian, M. and Kutal, C. (2013). Collaboration to meet the statistical needs in the chemistry curriculum. *Journal of Chemical Education*, **91**, 12.
16. Davidian, M. (2014). The International Year of Statistics, the American Statistical Association, and a new collaboration. *Investigación Operacional*, **35**, 1–7.
17. Davidian, M. (2014). Publishing without perishing and other career advice. In *Past, Present and Future of Statistical Science*. (COPSS 50th Anniversary Book Project), X. Lin, D. Banks, C. Genest, G. Molenberghs, D. Scott, J.-L. Wang (eds). Boca Raton: Taylor and Francis.
18. Davidian, M., Tsiatis, A.A., and Laber, E.B. (2016). Optimal dynamic treatment regimes. *Wiley StatsRef: Statistics Reference Online*. doi: 10.1002/9781118445112.stat07895.
19. Laber, E.B., Rose, E.J., Davidian, M., and Tsiatis A.A. (2018). Q-Learning. *Wiley StatsRef: Statistics Reference Online*. doi: 10.1002/9781118445112.stat07998.
20. Thompson, E.A., Davidian, M., and Buckland, S. (2017). Biometrics, JABES and the International Biometric Society. *Biometrics* **73**, 723–724.

#### Major invited presentations

1. Variance function estimation in heteroscedastic regression models. Spring Meeting of the Institute of Mathematical Statistics, Dallas, Texas, March 1987.
2. Variance function estimation in heteroscedastic regression, with application to the analysis of assay data. Department of Statistics, North Carolina State University, March 1988.
3. Recent developments in estimation for heteroscedastic regression models. Departments of Economics, Finance, and Applied Legal Studies, Mathematics, and Agricultural Economics, Mississippi State University, April 1988.
4. Variance function estimation in heteroscedastic regression, with application to the analysis of assay data. Pre-Clinical Statistics Group, Lederle Laboratories, Pearl River, New York, April 1988.

5. Variance function estimation and transformations in regression: an overview. Southeast Regional Conference of Statisticians in the Health Care Industry, Glaxo, Inc., Research Triangle Park, North Carolina, November 1988.
6. An introduction to regression methods for censored normal data. Department of Statistics, North Carolina State University, September 1989.
7. Issues in regression analysis. Burroughs Wellcome Co., Research Triangle Park, North Carolina, December 1989.
8. Estimation of intraindividual variability in pharmacokinetic and assay data analysis. North Carolina Chapter of the American Statistical Association, March 1990.
9. Estimation of intraindividual variability in nonlinear random effects models. Department of Biostatistics, University of North Carolina at Chapel Hill, January 1991.
10. Estimation of intraindividual variability in nonlinear random effects models. Department of Mathematics, University of North Carolina at Charlotte, January 1991.
11. Estimation of intraindividual variability in nonlinear random effects models. Department of Mathematics, University of Virginia, January 1991.
12. Estimation of intraindividual variability in nonlinear random effects models. Department of Statistics, North Carolina State University, January 1991.
13. Variance function estimation in nonlinear regression, with application to calibration, Genentech, Inc., South San Francisco, California, March 1991.
14. The use of regression analysis in nonwovens research. TAPPI Nonwovens Conference, Marco Island, Florida, May 1991.
15. Issues in estimation for nonlinear mixed effects models (with application to population pharmacokinetic modeling). Midwest Biopharmaceutical Statistics Workshop, Muncie, Indiana, May 1991.
16. Some general methods for estimation in nonlinear mixed effects models. Joint Statistical Meetings, August 1991.
17. Estimation in pharmacokinetic data analysis – an overview. Glaxo, Inc., Research Triangle Park, North Carolina, September 1991.
18. The nonlinear mixed effects model with a smooth random effects density. Genentech, Inc., South San Francisco, California, December 1991.
19. The nonlinear mixed effects model with a smooth random effects density. Department of Biostatistics, University of California, San Francisco. December 1991.
20. The nonlinear mixed effects model with a smooth random effects density. Department of Statistics, North Carolina State University, January 1992.
21. The nonlinear mixed effects model with a smooth random effects density. Division of Biometry and Medical Informatics, Duke University Medical Center, Durham, North Carolina, January 1992.
22. The nonlinear mixed effects model with a smooth random effects density. Eli Lilly and Co., Indianapolis, Indiana, May 1992.

23. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Joint Statistical Meetings, August, 1992.
24. The nonlinear mixed effects model with a smooth random effects density. CIBA-GEIGY, Summit, New Jersey, August 1992.
25. The nonlinear mixed effects model with a smooth random effects density. Department of Biostatistics, University of North Carolina at Chapel Hill, September 1992.
26. The nonlinear mixed effects model with a smooth random effects density. Department of Biostatistics, University of Michigan, Ann Arbor, October 1992.
27. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Pharmacokinetics and Pharmacodynamics Section, St. Jude Children's Research Hospital, Memphis, Tennessee, December 1992.
28. Alternative approaches to estimation in population pharmacokinetics. Centennial International Industrial Pharmacy Conference, College of Pharmacy, University of Texas at Austin, February 1993.
29. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Department of Mathematics, University of Virginia, February, 1993.
30. The nonlinear mixed effects model with a smooth random effects density. Department of Biostatistics, Harvard School of Public Health, March 1993.
31. Alternative approaches to estimation in population pharmacokinetics. 94th Annual Meeting of the American Society of Clinical Pharmacology and Therapeutics, Honolulu, Hawaii, March 1993.
32. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Department of Statistics, University of Chicago, April 1993.
33. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Department of Biostatistics, University of California, Berkeley, May 1993.
34. Smooth nonparametric maximum likelihood estimation in population pharmacokinetics. Biostatistics, Limburgs Universitair Centrum, Belgium, June 1993.
35. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Glaxo, Inc., Research Triangle Park, North Carolina, June 1993.
36. Smooth nonparametric maximum likelihood estimation for population pharmacokinetics. Population PK/PD Symposium, 1993 American Association of Pharmaceutical Scientists Annual Meeting, Orlando, Florida, November 1993.
37. The hierarchical nonlinear model in population pharmacokinetic analysis – an overview. International Society for Clinical Biostatistics 15th Meeting, Basel, Switzerland, July 1994.
38. A simple method for handling time-dependent covariates in the nonlinear mixed effects model, with application to pharmacokinetics. Invited paper, Joint Statistical Meetings, August, 1994.
39. The hierarchical nonlinear model in population pharmacokinetic analysis – an overview. Schering-Plough Research Institute, Kenilworth, New Jersey, November 1994.
40. Phase I issues in the statistical literature. Pediatric AIDS Clinical Trials Group Leadership Retreat, Washington, DC, December 1994.

41. Statistical issues in assay development and analysis. Center for Biologics Evaluation and Research, U.S. Food and Drug Administration, Rockville, Maryland, February 1995.
42. Application of semiparametric methods to analysis of the simulated quinidine data. Joint Statistical Meetings, August, 1995.
43. Bootstrap confidence intervals for immunoassay. Biomathematics Department, M.D. Anderson Cancer Center, Houston, Texas, April 1996.
44. Bootstrap confidence intervals for immunoassay. Department of Statistics, Texas A & M University, April 1996.
45. Nonlinear models for repeated measurements—an overview. North Carolina Chapter of the American Statistical Association, December 1996.
46. Nonlinear models for repeated measurements—an overview. SAS Institute, Cary, North Carolina, February 1997.
47. The effects of covariate measurement error in nonlinear mixed effects models. ENAR Spring Meeting, March 1997.
48. Bootstrap confidence intervals for immunoassay. Fred Hutchison Cancer Center, University of Washington, Seattle, May 1997.
49. Invited discussant, 4th Workshop on Bayesian Case Studies, Carnegie-Mellon University, Pittsburgh, September 1997.
50. Bootstrap confidence intervals for immunoassay. Department of Statistics, University of Iowa, October 1997.
51. Covariate measurement error in nonlinear mixed effects models: An overview. Invited paper, Statistics for correlated data: A conference marking the 50th anniversary of the Department of Statistics at Iowa State University, Ames, Iowa, October 1997.
52. Bootstrap confidence intervals for immunoassay. Department of Biostatistics, University of Michigan, Ann Arbor, November 1997.
53. Relaxing the normality assumption on the random effects in nonlinear mixed effects models. Frontier Science and Technology Research Foundation, Chestnut Hill, Massachusetts. December 1997.
54. Covariate measurement error in nonlinear mixed effects models: Two practical problems and practical solutions, Texas A&M University, April 1998.
55. A statistician's view of the draft population pharmacokinetics guidance. Public Discussion on FDA guidances on population PK/PD modeling, Center for Drug Development Science, Georgetown University, April 1998.
56. Analysis of HIV dynamic data using hierarchical nonlinear models. Theoretical Biology and Biophysics Group, Los Alamos National Laboratory, Los Alamos, New Mexico, July 1998.
57. Population and individual bioequivalence: A view from the Pharmaceutical Science Advisory committee. Joint Statistical Meetings, Dallas, Texas, August 1998.
58. Bootstrap confidence intervals for immunoassay. Department of Biostatistics, University of North Carolina at Chapel Hill, September 1998.

59. Modeling of the pathogenesis of HIV and HCV and the selection of surrogate endpoints (with A.S. Perelson), Research Needs for the Design and Analysis of Surrogate Endpoints in Clinical Trials, Workshop sponsored by Office of Science Policy, National Institutes of Health, Potomac, Maryland, December, 1998.
60. Nonlinear models for repeated measurements – A review. New Jersey Chapter of the American Statistical Association, February, 1999.
61. Statistical methods for pharmacokinetic analysis. Biometrics Unit, Cornell University, May, 1999.
62. Nonlinear models for repeated measurements - A review. Invited talk, Gertrude M. Cox Statistics Conference, September, 1999.
63. Statistical modeling of pharmacokinetics (and pharmacodynamics) - an overview. Biostatistics retreat, Robert Wood Johnson Pharmaceutical Research Institute, November, 1999.
64. A semiparametric estimator for the proportional hazards model with longitudinal covariates measured with error. Institute of Statistics and Decision Sciences, Duke University, March, 2000.
65. A semiparametric estimator for the proportional hazards model with longitudinal covariates measured with error. Joint Statistical Meetings, Indianapolis, Indiana, August 2000.
66. A semiparametric estimator for the proportional hazards model with longitudinal covariates measured with error. Department of Biostatistics, University of Rochester, Rochester, New York, April 2001.
67. A semiparametric estimator for the proportional hazards model with longitudinal covariates measured with error. Department of Biostatistics, University of North Carolina at Chapel Hill, September 2001.
68. An introduction to causal inference. Department of Biostatistics and Bioinformatics, Duke University, November 2001.
69. Adjustment for confounding in observational studies – causal inference perspective. Department of Biostatistics and Bioinformatics, Duke University, January 2002.
70. A semiparametric likelihood approach for linear mixed, generalized linear mixed, and joint longitudinal-survival models with flexible random effects distribution. International Conference on Current Advances and Trends in Nonparametric Statistics, Hersonissos, Crete, Greece, July 2002.
71. “Semiparametric” approaches for inference in joint models for longitudinal and time-to-event data. Department of Statistics, University of Florida, November 2002.
72. As time goes by: An introduction to methods for analysis of longitudinal data. Challis Distinguished Lecture, Department of Statistics, University of Florida, November 2002.
73. “Semiparametric” approaches for inference in joint models for longitudinal and time-to-event data. 18th International Workshop on Statistical Modelling, Leuven, Belgium, July 2003.
74. Introductory Overview Lecture on Longitudinal Data Analysis, Institute of Mathematical Statistics, Joint Statistical Meetings, San Francisco, California, August 2003.

75. What's in between dose and response? Pharmacokinetics, pharmacodynamics, and statistics. Myrto Lefkopoulou Distinguished Lecture, Department of Biostatistics, Harvard School of Public Health, September 2003.
76. Joint modeling of longitudinal and primary endpoint data. Department of Psychology, University of North Carolina at Chapel Hill, December 2003.
77. What's in between dose and response? Pharmacokinetics, pharmacodynamics, and statistics. Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, March 2004.
78. Nonlinear mixed effects models: An overview and update. *JABES* Editor's Invited Session, International Biometric Conference, Cairns, Australia, July 2004.
79. Introduction to nonlinear mixed effects models. Statistics Conference, GlaxoSmithKline, Research Triangle Park, North Carolina, October 2004.
80. What's in between dose and response? Pharmacokinetics, pharmacodynamics, and statistics. Departments of Statistics and Biostatistics, University of Michigan, October 2004.
81. Semiparametric estimation of treatment effect in a pretest-posttest study. Seventh Annual Winter Workshop (Longitudinal Data Analysis), Department of Statistics, University of Florida, January 2005.
82. Semiparametric estimation of treatment effect in a pretest-posttest study. Department of Biostatistics and Bioinformatics, Duke University Medical Center, January 2005.
83. Semiparametric estimation of treatment effect in a pretest-posttest study. National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, September 2005.
84. Adaptive treatment strategies in cancer research. Symposium on Causal Inference, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, January 2006.
85. Introduction to modeling and analysis of longitudinal data. Introductory Lecture, ENAR Spring Meeting, Tampa, Florida, March 2006.
86. What's in between dose and response? Pharmacokinetics, pharmacodynamics, and statistics. Bernard Greenberg Lecture, Department of Biostatistics, University of North Carolina at Chapel Hill, May 2006.
87. Semiparametric estimation of treatment effect in a pretest-posttest study. Bernard Greenberg Lecture, Department of Biostatistics, University of North Carolina at Chapel Hill, May 2006.
88. Inference for dynamic treatment regimes for two-stage clinical trials (and more generally). Bernard Greenberg Lecture, Department of Biostatistics, University of North Carolina at Chapel Hill, May 2006.
89. Some new methods for latent variable models and survival analysis. Bernard Greenberg Lecture, Department of Biostatistics, University of North Carolina at Chapel Hill, May 2006.
90. Invited discussion of papers on "Handling Covariates Measured with Error," International Biometric Conference, Montreal, Canada, July 2006.
91. Inference for dynamic treatment regimes for two-stage clinical trials (and more generally). Institute of Statistics and Decision Sciences, Duke University, September, 2006.

92. Statistical population modeling and analysis of PK data: An introduction. International Workshop on Uncertainty and Variability in Physiologically Based Pharmacokinetic (PBPK) Models, US Environmental Protection Agency, Research Triangle Park, North Carolina, November 2006.
93. Inference for dynamic treatment regimes for two-stage (cancer) clinical trials. Department of Biostatistics and Bioinformatics, Duke University, November 2006.
94. An introduction to dynamic treatment regimes. ENAR Spring Meeting, Atlanta, Georgia, March 2007.
95. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. Statistics Group, RAND, Pittsburgh, Pennsylvania, May 2007.
96. The role of statistical principles in biomedical modeling. Plenary lecture, Atlantic Coast Conference on Mathematics in the Life and Biological Sciences, Virginia Tech, Blacksburg, Virginia, May 2007.
97. An introduction to dynamic treatment regimes. International Society for Clinical Biostatistics 28th Annual Conference, Alexandroupolis, Greece, August 2007.
98. Novel study designs for treatment strategies that reflect actual clinical practice: Issues they raise regarding implementation and analysis. Duke Clinical Research Institute Research Conference, Duke University, August 2007.
99. Toward individualizing treatment to the patient: An introduction to dynamic treatment regimes. Janet L. Norwood Award Lecture, University of Alabama at Birmingham, Birmingham, Alabama, September 2007.
100. Using mathematical-statistical modeling to inform the design of HIV treatment strategies and clinical trials. 2007 FDA/Industry Statistics Workshop, "Translating Innovation into Practice through Effective Partnerships," Arlington, Virginia, September 2007.
101. An introduction to dynamic treatment regimes. Edward P. Fitts Department of Industrial and Systems Engineering Healthcare Engineering Seminar Series, North Carolina State University, November 2007.
102. Using mathematical-statistical modeling to inform the design of HIV treatment strategies and clinical trials (with E.S. Rosenberg). ENAR Spring Meeting, Crystal City, Virginia, March 2008.
103. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. Department of Biostatistics, Emory University, March 2008.
104. An introduction to dynamic treatment regimes. Georgia Chapter of the American Statistical Association, Atlanta, Georgia, March 2008.
105. The role of statistical principles in biomedical modeling. Biomathematics Seminar, North Carolina State University, April 2008.
106. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. North Carolina Chapter of the American Statistical Association, Research Triangle Park, North Carolina, May 2008.

107. Using mathematical-statistical modeling to inform the design of HIV treatment strategies and clinical trials (with E.S. Rosenberg). Division of AIDS, National Institute of Allergy and Infectious Diseases, Rockville, Maryland, January 2009.
108. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. Biostatistics Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute, Rockville, Maryland, April 2009.
109. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. Society for Clinical Trials 30th Annual Meeting, Atlanta, Georgia, May 2009.
110. Mathematical-statistical modeling to inform the design of HIV treatment strategies and clinical trials. 5th Conference of the Eastern Mediterranean Region of the International Biometric Society (EMR-IBS), Istanbul, Turkey, May 2009.
111. Quantitative modeling for design of treatment strategies and clinical trials. Biostatistics Seminar Series for Clinical and Translational Science Investigators, University of North Carolina at Chapel Hill, November 2009.
112. An introduction to dynamic treatment regimes. The 8th International Conference on Health Policy Statistics, Washington, DC, January 2010.
113. A statistician's adventures in collaboration: Designing better treatment strategies. IMS Medalion Lecture, ENAR Spring Meeting, New Orleans, Louisiana, March 2010.
114. Improving efficiency of inferences in randomized clinical trials using auxiliary covariates. Department of Biostatistics, Boston University, April 2010.
115. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Department of Biostatistics, University of Washington, April 2010.
116. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Department of Statistics, Rutgers University, October 2010.
117. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Office of Biostatistics, National Heart, Lung, and Blood Institute, January 2011.
118. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Department of Statistics, George Mason University, February 2011.
119. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Washington Statistical Society, April 2011.
120. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. Department of Statistics, Colorado State University, April 2011.
121. Designing better treatment strategies via mathematical-statistical modeling. NC Symposium for Women in Mathematics and Statistics, North Carolina State University, April 2011.

122. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. 5th Annual Probability and Statistics Day, Departments of Mathematics and Statistics, University of Maryland, Baltimore County, April 2011.
123. Inference on treatment effects from a randomized clinical trial in the presence of premature treatment discontinuation: The SYNERGY trial. 2011 International Indian Statistical Association Conference on Probability, Statistics, and Data Analysis, Raleigh, North Carolina, April 2011.
124. More robust doubly robust estimators. 6th Conference of the Eastern Mediterranean Region of the International Biometric Society (EMR-IBS), Hersonissos, Crete, Greece, May 2011.
125. A sampling of IMPACT research: Methods for analysis with dropout and identifying optimal treatment regimes. Southern Regional Council on Statistics (SRCOS) Summer Research Conference, McCormick, South Carolina, June 2011.
126. More robust doubly robust estimators. Department of Biostatistics, University at Buffalo, SUNY, and Buffalo-Niagra Chapter of the ASA, September 2011.
127. More robust doubly robust estimators. Department of Statistics, University of Florida, September 2011.
128. A robust method for estimating optimal treatment regimes. First Annual IMPACT Symposium, "New Paradigms in Clinical Trial Methodology," Research Triangle Park, North Carolina, November 2011.
129. Engaging, inspiring, and training the next generation: Past successes, future challenges and opportunities. Presidential Invited Address, ENAR Spring Meeting, Washington DC, April 2012.
130. More robust doubly robust estimators. Myra Samuels Memorial Lecture. Department of Statistics, Purdue University, April 2012.
131. Partnerships to engage and train the next generation: Challenges and opportunities. Joint Statistical Meetings, San Diego, California, July 2012.
132. More robust doubly robust estimators. Plenary lecture, International Conference on Interdisciplinary Statistics and Combinatorics, Greensboro, North Carolina, October 2012.
133. A robust method for estimating optimal treatment regimes. Department of Statistics, North Carolina State University, October 2012.
134. Personalized medicine: The right treatment for the right patient. Voices of Discovery Lecture, Elon University, November 2012.
135. Statistics: The key to navigating a data-centric world. The International Year of Statistics Kickoff Day, Hasselt University, Diepenbeek, Belgium, January 2013.
136. Personalized medicine: The right treatment for the right patient. The International Year of Statistics Kickoff Day, Hasselt University, Diepenbeek, Belgium, January 2013.
137. A robust method for estimating optimal treatment regimes. Department of Biostatistics and Bioinformatics, Duke University, March 2013.

138. A robust method for estimating optimal treatment regimes. Clemson University Department of Mathematical Sciences-University of Georgia Department of Statistics Joint Colloquium, March 2013.
139. A robust method for estimating optimal treatment regimes. Department of Biostatistics, Columbia University Mailman School of Public Health, April 2013.
140. Statistics: The key to navigating a data-centric world. University of Kansas Women in Medicine and Science, April 2013.
141. Enhancing the visibility of statistical science: The International Year of Statistics, the ASA, and you. ASA Presidential Address, 6th Annual Innovations in Design, Analysis and Dissemination: Frontiers in Biostatistical Methods Conference, sponsored by Cerner Corporation, the Kansas-Western Missouri Chapter of the American Statistical Association and the University of Kansas Medical Center Department of Biostatistics, April 2013.
142. The right treatment for the right patient (at the right time): Personalized medicine and statistics. National Institute of Environmental Health Sciences Distinguished Lecture Series, Research Triangle Park, North Carolina, May 2013.
143. Enhancing the visibility of the statistics profession: The International Year of Statistics and you. Keynote address, International Chinese Statistical Association Applied Statistics Symposium, Bethesda, Maryland, June 2013.
144. The International Year of Statistics: A celebration and a call to action . ASA Presidential Address, Joint Statistical Meetings, Montreal, Quebec, Canada, August 2013.
145. A robust method for estimating optimal treatment regimes. Department of Statistics, Virginia Polytechnic Institute and State University, September 2013.
146. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Department of Statistics, Oregon State University, October 2013.
147. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Oregon Chapter Of the American Statistical Association, October 2013.
148. Enhancing the visibility of statistical science: The International Year of Statistics, the ASA, and you. Keynote address, Nonclinical Biostatistics Conference, Villanova University, October 2013.
149. The right treatment for the right patient at the right time: An introduction to optimal dynamic treatment regimes. Fall Technical Conference, ASA Section on Physical and Engineering Sciences, San Antonio, Texas, October 2013.
150. A robust method for estimating optimal treatment regimes. Department of Statistics, Wharton School, University of Pennsylvania, October 2013.
151. Enhancing the visibility of statistical science: The International Year of Statistics, the ASA, and you. Office of Biostatistics, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, Maryland, November 2013.
152. The right treatment for the right patient (at the right time). Keynote address, Drug Information Association-Food and Drug Administration Statistics Forum, Bethesda, Maryland. April 2014.

153. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Parsons Lecture, University of North Carolina Asheville, April 2014.
154. Achieving personalized medicine: An introduction to optimal treatment regimes. Department of Mathematics, University of North Carolina Asheville, April 2014.
155. The right treatment for the right patient (at the right time): Personalized medicine and statistics. IBM Lecture, Wittenberg University, Springfield, Ohio, April 2014.
156. Achieving personalized medicine: An introduction to optimal treatment regimes. Department of Mathematics and Statistics, Wittenberg University, Springfield, Ohio, April 2014.
157. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Department of Statistics, Miami University. Oxford, Ohio, April 2014.
158. Implementing personalized medicine: Estimating optimal treatment regimes. Trends and Innovations in Clinical Trial Statistics Conference, Durham, North Carolina, April 2014.
159. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Grand Rounds, Department of Population Health, New York University, May 2014.
160. Implementing personalized medicine: Estimating optimal treatment regimes. National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, May 2014.
161. Introduction to dynamic treatment regimes. Southern Regional Council on Statistics Summer Research Conference, Galveston, Texas, June 2014.
162. The present and future of statistics: Challenges and opportunities. Joint Statistical Meetings, Boston, Massachusetts, August 2014.
163. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Department of Biostatistics, MD Anderson Cancer Center, Houston, Texas, October 2014.
164. Implementing personalized medicine: Estimation of optimal dynamic treatment regimes. Part I: Statistical framework and regression-based estimators. Plenary lecture, International Conference on Interdisciplinary Statistics and Combinatorics, Greensboro, North Carolina, October 2014.
165. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Keynote lecture, North Carolina State Friends of the Library Fall Luncheon, October 2014.
166. The right treatment for the right patient (at the right time): Personalized medicine and statistics. Department of Biostatistics, Bioinformatics, and Biomathematics, Georgetown University, Washington, DC, March 2015.
167. The right treatment for the right patient (at the right time): Personalized medicine and dynamic treatment regimes. Keynote lecture, Joint Case Western Reserve University, Ohio State University, Cleveland Clinic Foundation Biostatistics Symposium. Case Western Reserve University, Cleveland, Ohio, April 2015.
168. The right treatment for the right patient (at the right time): Personalized medicine and dynamic treatment regimes. Odoroff Lecture, Department of Biostatistics and Computational Biology, University of Rochester, Rochester, New York, April 2015.

169. The nonlinear mixed effects model: 20 years later. Population Approach Group Europe (PAGE) 2015 Conference, Hersonissos, Crete, Greece, June 2015.
170. The right treatment for the right patient at the right time: A perspective on personalized cancer medicine. Keynote lecture, North American Association of Central Cancer Registries Annual Meeting, Charlotte, North Carolina, June 2015.
171. Random effects, causal effects, and the Louis Effect. Statistics Making a Difference – A Conference in Honor of Tom Louis, Johns Hopkins University Bloomberg School of Public Health, Baltimore, Maryland, October 2015.
172. The right treatment for the right patient at the right time: Statistical methods for personalized medicine. Office of Biostatistics, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, Maryland, December 2015.
173. An overview of dynamic treatment regimes and sequential, multiple assignment randomized trials. Alliance for Clinical Trials in Oncology Statistics and Data Center, Durham, North Carolina, February 2016.
174. The right treatment for the right patient (at the right time): Statistical methods for personalized medicine. Department of Statistics, George Washington University, February 2016.
175. Women and the sciences: How we have and must continue to lead. SAMSI 2016 Spring Opportunities Workshop for Women in Math Sciences, Research Triangle Park, North Carolina, April 2016.
176. An overview of dynamic treatment regimes and sequential, multiple assignment randomized trials. NHLBI Workshop on Recent Advances and Challenges in Statistical Methods: Innovative Methods for Complex Data Analysis and Study Designs, Bethesda, Maryland, September 2016.
177. The right treatment for the right patient (at the right time): Precision medicine through treatment regimes and SMARTs. Donna J. Brogan Lecture, Department of Biostatistics and Bioinformatics, Emory University, April 2017.
178. SMARTs in practice: Case studies in design and analysis. Duke Industry Statistics Symposium 2017, September 2017.
179. Estimation of optimal dynamic treatment regimes via machine learning. Triangle Machine Learning Day 2018, Duke University, April 2018.
180. The right treatment for the right patient (at the right time): Precision medicine through treatment regimes and SMARTs. Snedecor Lecture, Department of Statistics, Iowa State University, April 2019.
181. Modernizing statistics through treatment regimes: A review. Keynote lecture, International Chinese Statistical Association Applied Statistics Symposium, Raleigh, North Carolina, June 2019.

#### Shortcourses, Workshops, and Tutorials

1. Biostatistical applications of nonlinear mixed effects modeling (with D. Giltinan; 1 day short-course). Joint Statistical Meetings, Orlando, Florida, August 1995.
2. An introduction to nonlinear mixed effects modeling (1 day shortcourse). Wyeth-Ayerst Research, Pearl River, New York, November 1995.

3. Extending the linear mixed effects model (with D. Giltinan; 2 day shortcourse). WNAR, Pullman, Washington, June 1996.
4. An introduction to nonlinear mixed effects modeling (1 day shortcourse). Procter and Gamble, Cincinnati, Ohio, October 1996.
5. Nonlinear mixed models for repeated measurement data (with D. Giltinan and E. Vonesh; 3 day shortcourse). Biopharmaceutical Applied Statistics Symposium. San Diego, California, December 1996.
6. Nonlinear mixed models for repeated measurement data (2 1/2 day shortcourse). University of South Florida, Tampa, March 1997.
7. An introduction to mixed effects models (2 day shortcourse). Duke University Medical Center, Durham, North Carolina, May 1998.
8. Statistics for geneticists II (3 day shortcourse) as part of the Summer Institute in Statistical Genetics, North Carolina State University, Raleigh, North Carolina, June 1997–2000.
9. Statistical modeling of pharmacokinetics – An overview (1 day short course). Sanofi-Synthelabo Research, Malvern, Pennsylvania, August 2000.
10. An introduction to nonlinear mixed-effects models (1/2 day shortcourse). Non-Clinical Statistics Symposium, Leuven, Belgium, September 2008.
11. An introduction to nonlinear mixed effects models and PK/PD analysis (2 hour webinar). ASA Biopharmaceutical Section, April 2010.
12. Essentials for success in research: Everything you ever wanted to know about NIH grants and publishing in biostatistical journals (Tutorial). ENAR Spring Meeting, Miami, Florida, March 2011.
13. Personalized medicine and dynamic treatment regimes (with M. Kosorok, E. Laber, A. Tsiatis; 1/2 day shortcourse). Second IMPACT Symposium, Raleigh, North Carolina. November 2012.
14. Personalized medicine and dynamic treatment regimes (with A. Tsiatis; 1/2 day shortcourse). Trends and Innovations in Clinical Trial Statistics Conference, Durham, North Carolina. April 2014.
15. An introduction to dynamic treatment regimes and SMARTs (2 hour webinar). ENAR, December 2014.
16. Personalized medicine and dynamic treatment regimes (with A. Tsiatis; 1/2 day shortcourse). ENAR Spring Meeting, Miami, Florida, March 2015.
17. An introduction to precision medicine through treatment regimes and sequential, multiple assignment, randomized trials (SMARTs) (with E. Laber; 1/2 day workshop). School of Nursing, Duke University, October 2016.
18. An introduction to dynamic treatment regimes. (with A. Tsiatis, S. Holloway, 1 day short-course). Atlantic Causal Inference Conference, Chapel Hill, North Carolina, May 2017.
19. Precision medicine through optimal treatment regimes (with E. Laber, S. Holloway, A. Tsiatis, 1 day shortcourse). Joint Statistical Meetings, Baltimore, Maryland, August 2017.