

## Rodney X. Sturdivant, Ph.D.

Colonel (Retired), U.S. Army  
Associate Professor and Director of the Statistical Consulting Center  
Department of Statistical Science, Baylor University  
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### Education

<b>Ph.D., Biostatistics</b> , <i>University of Massachusetts – Amherst</i>	2005
<b>M.S., Statistics</b> , <i>Stanford University</i>	1995
<b>M.S. (with Distinction), Operations Research</b> , <i>Stanford University</i>	1995
<b>B.S. (Distinguished Cadet)</b> , <i>United States Military Academy, West Point</i>	1986

### Academic Experience

<b>Associate Professor and Director of the Statistical Consulting Center</b>	2020-present
<i>Department of Statistical Science, Baylor University</i>	
<b>Research Biostatistician and Adjunct Professor</b>	2019-2020
<i>Henry M. Jackson Foundation (HJF) for the Advancement of Military Medicine supporting the Health Services Research Program (HSRP) Uniformed Services University of the Health Sciences (USUHS)</i>	
<b>Program Director, M.S. in Applied Statistics and Analytics</b>	2016-2019
<i>Department of Mathematics, Physics, and Statistics, Azusa Pacific University</i>	
<b>Professor of Applied Statistics</b>	2016-2019
<b>Program Director, M.S. in Applied Statistics and Analytics</b>	
<i>Department of Mathematics, Physics, and Statistics, Azusa Pacific University</i>	
<b>Chair, Division of Biostatistics</b>	2015-2016
<b>Associate Professor of Clinical Public Health, Division of Biostatistics</b>	2013-2016
<i>College of Public Health, The Ohio State University</i>	
<b>Professor of Applied Statistics</b>	2013
<b>Associate and Academy Professor, Department of Mathematical Sciences</b>	2003 – 2012
<b>Core Mathematics Program Director</b>	2011 – 2013
<b>Program Director, Probability and Statistics</b>	2007 – 2010
<b>Program Director, Differential Calculus</b>	2004 – 2007
<b>Director and Founder, Center for Data Analysis and Statistics (CDAS)</b>	2004 – 2013
<i>Department of Mathematical Sciences, United States Military Academy, West Point</i>	
<b>Visiting Associate Professor, Division of Biostatistics</b>	2010 – 2011
<i>College of Public Health, The Ohio State University</i>	

**Instructor and Assistant Professor**

1995 – 1998

**Course Director**, *MA103 Discrete Dynamical Systems*

**Assistant Director**, *Math Faculty Development Workshop (FDW)*

*Department of Mathematical Sciences, United States Military Academy, West Point*

## **Academic Awards**

3<sup>rd</sup> place poster award at SURF 2020 conference (2<sup>nd</sup> author).

Excellence in Teaching Award, College of Public Health, The Ohio State University, 2016

The Dexter C. Whittinghill III Outstanding Contributed Paper Award in Statistics Education  
(2<sup>nd</sup> author, Joint Mathematics Meetings, Baltimore, Maryland), 2014

Second runner-up, Journal of Athletic Training Kenneth L. Knight Award for Outstanding  
Research Manuscript (co-author), 2012

The Dexter C. Whittinghill III Outstanding Contributed Paper Award in Statistics Education  
(Sole author, Joint Mathematics Meetings, San Diego, California), 2009

Delta Omega Honorary Society, University of Massachusetts-Amherst, 2005

Graduate School Fellowship, University of Massachusetts-Amherst, *Declined* 2001

Pi Mu Epsilon Honor Society, 1996

M.S. with Distinction in Operations Research, Stanford, 1995

Distinguished Cadet (top 5% of class), USMA 1986

Robert E. Lee Award, (4 core math courses required of all 1013 students), USMA 1986

Phi Kappa Phi Honor Society, 1985

## **Educational Activities**

### **Program Development and Leadership**

#### **Azusa Pacific University (2016 – 2019)**

Created and launched (sole author) M.S. in Applied Statistics and Analytics, Department of  
Mathematics, Physics, and Statistics

Author of new minor in Statistics, Department of Mathematics, Physics, and Statistics,

Program Director, M.S. in Applied Statistics and Analytics, Department of Mathematics,  
Physics, and Statistics

#### **West Point**

Director, Core Mathematics, Department of Mathematical Sciences. (6 programs, > 50  
faculty per semester)

Program Director, Probability and Statistics, Department of Mathematical Sciences. (>45  
sections, >20 faculty per semester)

Author of new minor in Statistics (3<sup>rd</sup> minor approved at West Point), Department of  
Mathematical Sciences. (2008)

Program Director, Calculus, Department of Mathematical Sciences. (>50 sections, >25  
faculty per semester)

### **Course Teaching and Development:**

**Azusa Pacific University, 2016 – 2019**

Course	Semesters Taught	Students (approx.)	Developed
<i>Undergraduate</i>			
MATH 130 – Introduction to Statistics	4	120	
MATH 162 – Calculus II	4	120	
MATH 250 – Data Analysis	1	30	Yes
MATH 361 – Probability and Statistics I	3	75	
MATH 362 – Probability and Statistics II	1	15	Yes
<i>Graduate</i>			
STAT 501 – Intro to Modeling with Prob	1	21	Yes
STAT 502 – Mathematical Statistics	1	16	Yes
STAT 511 – Applied Regression Analysis	1	15	Yes
STAT 521 – Statistical Computing	1	21	Yes

### The Ohio State University, 2010, 2013 – 2016

Course/Semesters	Semesters Taught	Students (approx.)	Developed
<i>Undergraduate</i>			
PUBH-BIO 2210 – Biostatistics for Public Health Research	4	120	
PUBH-BIO 2210H – Honors Biostatistics for Public Health Research	2	30	Yes
PUBH-BIO 3193 – Independent Study in Public Health	2	1	Yes
<i>Graduate</i>			
PUBH-BIO 601 – Statistical Methods for Public Health Practice I	2	50	
PUBH-BIO 726 – Advanced Longitudinal Data Analysis	1	20	Yes
PUBH-BIO 799 – Independent Study (Hierarchical Models)	1	1	Yes
PUBH-BIO 6200 – Statistical Methods for Public Health Practice I			
PUBH-BIO 6211 – Design and Analysis of Studies in Health Sciences II	2	80	
PUBH-BIO 7235 – Applied Survival Analysis	1	11	Yes
PUBH-BIO 7194 – Group Studies in Biostatistics (Survival/Logistic)	2	30	Yes
PUBH-BIO 8235 – Regression Modeling of Time-to-Event Data	1	10	Yes

### West Point

Course	Semesters Taught*	Developed
<i>Undergraduate</i>		
MA103 – Problem Solving and Intro to Calculus	6	
MA153 – Advanced Multivariable Calc	4	
MA104 – Differential Calculus	10	
MA205 – Integral Calculus	2	
MA206 – Probability and Statistics	10	
MA371 – Linear Algebra	2	
MA376 – Applied Statistics	4	Yes
MA385 – Chaos and Fractals	1	Yes
MA476 – Mathematical Statistics	2	Yes
MA488 – Sabermetrics	4	

\* estimated, does not include teaching multiple sections in a semester

### Textbooks

Belanger, J., Sturdivant, R. X., Libertini, J., Beecher, A., Coronges, K., Ge, T., and Wang, J. (2018). *Mathematical Modeling for the MCM/ICM Contests, Volume 3*. Higher Education Press, COMAP Press.

Sturdivant, R. X., Pardoe, I., Berrier, J., and Watts, K. (2016). *Statistics for Data Analytics*. Additional contributors: Vahid, F., Chan, C., and Nestler, S. Zyante, Inc. (zyBooks.com).

Pardoe, I., Sturdivant, R. X., Berrier, J., Nestler, S. and Watts, K. (2016). *Fundamentals of Data Analytics*. Additional contributors: Vahid, F. and Chan, C. Zyante, Inc. (zyBooks.com).

Belanger, J., Sturdivant, R. X., Hartley, T., Beecher, A., Wang, J. (2016). *Mathematical Modeling for the MCM/ICM Contests, Volume 2*. Higher Education Press, COMAP Press.

Hosmer, D. W., Lemeshow, S., and Sturdivant R. X. (2013). *Applied Logistic Regression, Third Edition*, Wiley, Inc., New Jersey.  
**Over 60,000 citations (Google Scholar)**

### **Textbook Chapters**

Hartley, T. and Sturdivant, R. (2014). Judges Reflections on the ICM. In *ICM The Interdisciplinary Contest in Modeling: Culturing Interdisciplinary Problem Solving* Edited by Arney, C. and Campbell, P. J. Comap, Inc., Bedford, Massachusetts.

### **Refereed Publications**

Thomas, D.M., Sturdivant, R., Dhurandhar, N.V., Debroy, S., and Clark, N. (2020). A primer on COVID-19 Mathematical Models. *Obesity* **28**(8), 1375-1377, doi:10.1002/oby.22881.

Cameron, K.L., Tennent, D., Sturdivant, R.X., Posner, M.A., Peck, K.Y., Campbell, S.E., Westrick, R.B, and Owens, B.D. (2019). Increased Glenoid Retroversion is Associated with Increased Rotator Cuff Strength in the Shoulder. *The American Journal of Sports Medicine* **47**(8), 1893-1900.

Cameron, K.L., Sturdivant, R.X., and Baker, S.P. (2019). Trends in the Incidence of Physician-Diagnosed Post Traumatic Stress Disorder Among Active Duty U.S. Military Personnel between 1999 and 2008. *Military Medical Research* **6**(1). doi: <https://doi.org/10.1186/s40779-019-0198-5>

Özkale, M.R., Lemeshow, S., and Sturdivant, R. (2018). Logistic regression diagnostics in ridge regression. *Computational Statistics* **33**(2): 563 – 593. doi: <https://doi.org/10.1007/s00180-017-0755-x>

Breathett, K., Maffett, S., Foraker, R.E., Sturdivant, R., Moon, K., Hasan, A., Franco, V., Smith, S., Lampert, B.C., Emani, S., Haas, G., Kahwash, R., Hershberger, R.E., Binkley, P.F., Helmkamp, L., Colborn, K., Peterson, P.N., Sweitzer, N., William T.

- Abraham, W.T. (2018). Pilot Randomized Controlled Trial to Reduce Readmission for Heart Failure Using Novel Tablet and Nurse Practitioner Education. *The American Journal of Medicine* **131**(8), 974-978. doi:<https://doi.org/10.1016/j.amjmed.2018.02.017>
- Breathett, K., D'Amico, R., Adesanya, A., Hatfield, S., Willis, S., Sturdivant, R., Foraker, R., Smith, S., Binkley, P., Abraham, W. and Peterson, P. (2017). Patient Perceptions on Facilitating Follow -up After Heart Failure Hospitalization. *Circulation: Heart Failure* **10**(6), doi: <https://doi.org/10.1161/CIRCHEARTFAILURE.117.004099>
- Kuiper, S. and Sturdivant, R. (2015). Using Online Game-Based Simulations to Strengthen Students' Understanding of Practical Statistical Issues in Real-Word Data Analysis. *The American Statistician*, doi: 10.1080/00031305.2015.1075421
- Breathett, K., Sturdivant, R., Carpenter, D., Foraker, R., Binkley, P., and Abraham, W. (2014). High dose guideline directed medical therapy for heart failure at discharge improves 1-year mortality in African-Americans but not hypertensive patients. *Circulation: Heart Failure* **130**(suppl\_2)
- Kuiper, S. and Sturdivant, R. (2014). Games as a locus of self-empowered collaborative learning. Proceedings of the 9<sup>th</sup> *International Conference on Teaching Statistics (ICOTS)*. Available at [http://icots.info/9/proceedings/pdfs/ICOTS9\\_C117\\_KUIPER.pdf](http://icots.info/9/proceedings/pdfs/ICOTS9_C117_KUIPER.pdf).
- Cameron, K., Marshall, S., Sturdivant, R., and Lincoln, A. (2012). Trends in the incidence of physician-diagnosed mild traumatic brain Injury among active duty US military personnel between 1997 and 2007. *The Journal of Neurotrauma* **29**(7), 1313-1321.
- Cummiskey, K., Kuiper, S., and Sturdivant, R. (2012). Using classroom data to teach students about data cleaning and testing assumptions. *Frontiers in Quantitative Psychology and Measurement*, **3**(354), doi: 10.3589/fpsyg.2012.00354.
- Kane, J., Steinbach, S., Sturdivant, R. and Burks, R. (2012). Sex-associated effects on hematological and serum chemistry analytes in sand rats. *Journal of the American Association for Laboratory Animal Science*, **51**(6), 1-6.
- Jones, J., Burks, R., Owens, B., Sturdivant, R., Svoboda, S., and Cameron, K. (2012). Incidence and risk factors associated with meniscus injuries among active-duty U.S. military service members. *Journal of Athletic Training*, **47**(1), 67–73. **Second runner-up, 2012 Journal of Athletic Training Kenneth L. Knight Award for Outstanding Research Manuscript.**
- Macdonald, F., Lennon, C., and Sturdivant, R. (2012). Evaluating NHL goalies, skaters, and teams using weighted shots. *arXiv:1205.1746*.
- Sturdivant, R. and Souhan, B. (2011). Peer to peer teaching using multi-disciplinary applications as topics. *PRIMUS*, **21**(3), 283–293.

- Wolf, J., Mountcastle, S., Burks, R., Sturdivant, R., and Owens, B. (2010). Epidemiology of lateral and medial epicondylitis in a military population. *Military Medicine*, **175**(5), 336–339.
- Hsiao, M., Owens, B., Burks, R., Sturdivant, R., and Cameron, K. (2010). Incidence of acute traumatic patellar dislocation among active duty U.S. military service members. *The American Journal of Sports Medicine*, **38**(12), 1997–2004.
- Lugo-Roman, L., Rico, P., Sturdivant, R., Burks, R., and Settle, T. (2010). Effects of serial anesthesia using ketamine or ketamine/medetomidine on hematology and serum biochemistry values in rhesus macaques (*Macaca Mulatta*). *Journal of Medical Primatology*, **39**(1), 41–49.
- Sturdivant, R. and Watts, K. (2010). Modeling an outbreak of anthrax. *PRIMUS*, **20**(4), 344–361.
- Huber, M. and Sturdivant, R. (2010). Building a model for scoring 20 or more runs in a baseball game. *The Annals of Applied Statistics*, **4**(2), 791–804.
- Scher, D., Owens, B., Sturdivant, R., and Wolf, J. (2010). Incidence of joint hypermobility syndrome in a military population: impact of gender and race. *Clinical Orthopaedics and Related Research*, **468**(7), 1790–1795.
- Taylor, D., DeBerardino, T., Nelson, B., Duffey, M., Tenuta, J., Stoneman, P., Sturdivant, R., and Mountcastle, S. (2009). Patellar tendon versus hamstring tendon autografts for anterior cruciate ligament reconstruction. *The American Journal of Sports Medicine*, **37**, 1946–1957.
- Sturdivant, R., Dunham, P., and Jardine, R. (2009). Preparing mathematics teachers for technology-rich environments. *PRIMUS*, **19**(2), 161–173.
- Wolf, J., Sturdivant, R., and Owens, B. (2009). Incidence of De Quervain's Tenosynovitis in a young, active population. *Journal of Hand Surgery*, **34**(1), 112–115.
- Sturdivant, R., Rotella, J., and Russell, R. (2008). A smoothed residual based goodness-of-fit statistic for nest-survival models. *Studies in Avian Biology*, **34**, 45–54.
- Bean, K., Nemelka, K., Canchola, P., Hacker, S., Sturdivant, R., and Rico, P. (2008). Effects of housing density on Long Evans and Fischer 344 rats. *LabAnimal*, **37**(9).
- Nemelka, K., Bean, K., Sturdivant, R., and Rico, P. (2008). Effects of high density housing on behavioral and physiologic parameters in F344 rats and Long Evans rats (*rattus norvegicus*). *Online Journal of Veterinary Research*, **12**(1), 28–38.

Crowder, T., Beekley, M., Sturdivant, R., Johnson, C., and Lumpkin, A. (2007). Metabolic effects of soldier simulated graded road march while wearing two functionally equivalent military ensembles. *Military Medicine*, **172**(6), 596–602.

Sturdivant, R. and Hosmer, D. (2007). A smoothed residual based goodness-of-fit statistic for logistic hierarchical regression models. *Computational Statistics and Data Analysis*, **51**(8), 3898–3912.

Sturdivant, R. (1997). Uncle Euler games. *PRIMUS*, **7**(4), 329–333.

## **Other Publications**

Arney, C., Coronges, K., Hartley, T., Sturdivant, R. and Ulman, R. (2015). Judges' commentary: managing human capital in organizations. *The UMAP Journal*, **36**(2), 137–149.

Sturdivant, R. (2013). Review: Riffenburgh, R. (2012) *Statistics in Medicine*, Third Edition. *Mathematics and Computer Education*, **47**(1), 77–79.

Kobza, J. and Sturdivant, R. (2011). Judges' commentary: the outstanding electric car papers. *The UMAP Journal*, **32**(2), 179–184.

Sturdivant, R. (2010). Judges' commentary: the outstanding marine pollution papers. *The UMAP Journal*, **31**(2), 183–188.

Piantanida, A., Fields, K.B., and Sturdivant, R. (2010). Application of Pneumatic Pressure in Lower Extremity Pain Improvement and Eradication (APPLE PIE). *Unpublished article*.

Miller, S., Garren, M., and Sturdivant, R. (2009). Judges' commentary: the outstanding coral reef papers. *The UMAP Journal*, **30**(2), 163–178.

Jones, J., Burks, R., Owens, B., DeBerardino, T., Sturdivant, R., and Cameron, K. (2009). Incidence of meniscal injuries in the U.S. military: demographic and occupational risk factors in a high risk population. Abstract in *Journal of Athletic Training*, **44**(3), S25.

Root, S., Sturdivant, R., and Wattenberg, F. (2008). Judges' commentary for ICM 2008: the outstanding health care papers. *The UMAP Journal*, **29**(2), 169–174.

Heidenberg, A. and Sturdivant, R. (2006). Don't forget to make connections. *Vision-Potential Newsletter of the HBCU College Algebra Reform Consortium*, **68**.

DeRosset, W. and Sturdivant, R. (2005). Patterned Armor Performance Against Multiple Impacts. *Army Research Laboratory (ARL) Technical Report*, ARL-TR-3623. (Classified, could not submit to a refereed journal).

Sturdivant, R., Melendez, B., Froyd, J., Heidenberg, A., and Picciuto, J. (2004). Assessment: working group report. *Generating a Vision for Undergraduate Mathematics (GVUM) Proceedings*, West Point, New York.

Olwell, D. and Sturdivant, R. (1997). Grand tours: a useful tool for preliminary data exploration and modeling. *PHALANX*, **30**, 1–32.

### ***Tutorials, Workshops and Courses***

Sturdivant, R. (2017). Binary Data Analysis. Invited short course for the *United State Army Evaluation Center*, Aberdeen Proving Ground, Maryland.

Sturdivant, R. (2015). Applied Logistic Regression. Invited selection to the *Faculty Research Participation Program, Oak Ridge Institute for Science and Education*, Air Force Institute of Technology, Dayton, Ohio.

Sturdivant, R. (2015). Applied Survival Analysis. Invited short course for the *Boston Area SAS User's Group (BASUG)*, Boston, Massachusetts.

Sturdivant, R. (2015). Applied Logistic Regression. Invited *American Statistical Association (ASA) Council of Chapters Travelling Course*, Cleveland, Ohio.

Sturdivant, R. and Kuiper, S. (2015). Using Games in an Introductory Statistics Course. MAA Minicourse at the *Joint Mathematics Meetings (JMM)*, San Antonio, Texas.

Sturdivant, R. (2015). Applied Logistic Regression. Invited *American Statistical Association (ASA) Council of Chapters Travelling Course*, San Antonio, Texas.

Sturdivant, R. (2015). Applied Logistic Regression. Invited *American Statistical Association (ASA) Council of Chapters Travelling Course*, Houston, Texas.

Sturdivant, R. (2014). Advanced Topics in Logistic Regression. Invited *American Statistical Association (ASA) Council of Chapters Travelling Course*, Indianapolis, Indiana.

Kuiper, S. and Sturdivant, R. (2014). Using Fun and Games to Engage Real-World Learning. Workshop at the *Electronic Conference on Teaching Statistics (eCOTS)*, <https://www.causeweb.org/ecots/ecots14/>.

Kuiper, S. and Sturdivant, R. (2013). Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics. Pre-Conference Workshop at the *United States Conference on Teaching Statistics (USCOTS)*, Cary, North Carolina.

Kuiper, S. and Sturdivant, R. (2013). Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics. MAA Ancillary Workshop at the *Joint Mathematics Meetings (JMM)*, San Diego, California.



Sturdivant, R. (2011). Applied Logistic Regression. Invited two day tutorial for the *Army Conference on Applied Statistics (ACAS)*, Annapolis, Maryland.

Sturdivant, R. (2010). Logistic Regression. Invited short course for the *Boston Area SAS User's Group (BASUG)*, Boston, Massachusetts.

Horton, S. and Sturdivant, R. (2006). Discrete Dynamical Systems and Problem Solving. MAA Minicourse at the *Joint Mathematics Meetings (JMM)*, San Antonio, Texas.

## Presentations

Lee, M., Sturdivant, R., Forbes, W., Rittel, A., Wardian, J., and Colburn, J. (2020). Gotta LADA? Identifying Differences in Adults with Latent Autoimmune Diabetes and Type 2 Diabetes to Improve Screening and Diagnosis. Poster presentation at the (virtual) *SURF 2020 Conference*, San Antonio, Texas. **Awarded 3<sup>rd</sup> place outstanding poster.**

Lee, M., Sturdivant, R., Forbes, W., Rittel, A., Wardian, J., and Colburn, J. (2020). Gotta LADA? Identifying Differences in Adults with Latent Autoimmune Diabetes and Type 2 Diabetes to Improve Screening and Diagnosis. Poster presentation at the (virtual) *American Diabetes Association (ADA) 80<sup>th</sup> Scientific Sessions – Virtual*.

Sturdivant, R.X. and Burks, R.E. (2020). Data Driven Mathematical Modeling. Invited presentation at the *Joint Mathematics Meetings (JMM)*, Denver, Colorado.

Breathett, K., Maffett, S., Foraker, R., Sturdivant, R., Moon, K., Hasan, A., Franco, V., Smith, S., Lampert, B., Emani, S., Haas, G., Kahwash, R., Hershberger, R., Binkley, P., Helmkamp, L., Colborn, K., Peterson, P., Sweitzer, N., Abraham, W. (2018) Pilot Randomized Controlled Trial to Reduce Readmission for Heart Failure Using Novel Tablet and Nurse Practitioner Education. Poster presented at the *International Society for Heart and Lung Transplantation 38<sup>th</sup> Annual Meeting*, Nice, France.

Sturdivant, R.X. (2017). Structural Equation Modeling in Obesity. Invited presentation at the *4<sup>th</sup> Short Course on Mathematical Sciences in Obesity Research*, Birmingham, Alabama.

Breathett, K., D'Amico, R., Adesanya, T., Hatfield, S., Willis, S., Sturdivant, R., Foraker, R.E., Binkley, P., Abraham, W.T., Peterson, P. (2016). Patient perceptions on improving follow-up after heart failure hospitalization. Paper presented at the *American Heart Association (AHA) Scientific Sessions 2016*, New Orleans, Louisiana.

Sturdivant, R.X. and Andridge, R. R. (2016). A “hybrid flipped” introduction to biostatistics to promote research-like experiences. Presentation at the *Joint Mathematics Meetings (JMM)*, Seattle, Washington.

- Sturdivant, R. and Huber, M. (2015). A High Scoring Introduction to Survival Analysis Models. Invited presentation for the *Boston Area SAS User's Group (BASUG)*, Boston, Massachusetts.
- Sturdivant, R. (2015). A Statistical Smorgasboard. Invited presentation at Azusa Pacific University, Azusa, California.
- Sturdivant, R. (2015). A Hall of Fame Introduction to Logistic Regression. Invited presentation at The College of Wooster, Wooster, Ohio.
- Kuiper, S., and Sturdivant, R. (2015). Playing with statistics. Poster presentation at the *Joint Mathematics Meetings (JMM)*, San Antonio, Texas.
- Sturdivant, R., and Kuiper, S. (2015). Playing games with a purpose: A New Approach to Teaching and Learning Statistics. Poster presentation at the *Joint Mathematics Meetings (JMM)*, San Antonio, Texas.
- Breathett, K., Sturdivant, R., Carpenter, D., Foraker, R., Binkley, P., Abraham, W.T. (2014). High dose guideline directed medical therapy for heart failure at discharge improves 1-year mortality in African-Americans but not hypertensive patients. Poster presentation at the *American Heart Association (AHA) Scientific Sessions 2014*, Chicago, Illinois.
- Andridge, R. R. and Sturdivant, R.X. (2014). Active learning in a flipped biostatistics classroom. Presentation at the *Undergraduate Education for Public Health Summit*, New Orleans, Louisiana.
- Sturdivant, R., Kuiper, S., and Cummiskey, K. (2014). Playing and getting “messy” with data. Invited presentation at the *Joint Statistics Meetings (JSM)*, Boston, Massachusetts.
- Kuiper, S., and Sturdivant, R. (2014). Games as a locus of self-empowered collaborative learning. Presentation at the *9<sup>th</sup> International Conference on Teaching Statistics (ICOTS)*, Flagstaff, Arizona.
- Kuiper, S., Sturdivant, R., Kaczynski, B., Jackson, J., and Cummiskey, K. (2014). Playing games with a purpose: A New Approach to Teaching and Learning Statistics. Presentation at the *Joint Mathematics Meetings (JMM)*, Baltimore, Maryland. ***Outstanding Contributed Paper in Statistics Education.***
- Sturdivant, R., Kuiper, S., and Cummiskey, K. (2014). Playing and getting “messy” with data. Presentation at the *Joint Mathematics Meetings (JMM)*, Baltimore, Maryland.
- Kuiper, S., and Sturdivant, R. (2014). Playing games with a purpose: A New Approach to Teaching and Learning Statistics. Poster presentation at the *Joint Mathematics Meetings (JMM)*, Baltimore, Maryland.

- Sturdivant, R., Cummiskey, K. and Jackson, J. (2013). TigerStat: An Immersive 3-D Game for Statistics Classes. Cause Activity Webinar, <https://www.causeweb.org/webinar/activity/>.
- Sturdivant, R. (2013). Playing Games with a Purpose: A New Approach to Teaching and Learning Statistics. Poster presentation at the *Transforming Undergraduate Education in STEM (TUES) Conference*, Washington, D.C.
- Heidenberg, A., Kobylski, G., and Sturdivant, R. (2013). Assessment 2.0: SAUM meets accreditation. Presentation at the *Joint Mathematics Meetings (JMM)*, San Diego, California.
- Sturdivant, R. (2012). A New Approach to Teaching and Learning Statistics. Invited presentation at The Ohio State University, Columbus, Ohio.
- Sturdivant, R., Heidenberg, A., and Burks, R. (2012). Playing games with a purpose: Classroom labs. Poster presentation at the *Joint Statistics Meetings (JSM)*, San Diego, California.
- MacDonald, B., Sturdivant, R., and Lennon, C. (2012). Predicting goal scoring in hockey. Poster presentation at the *Joint Statistics Meetings (JSM)*, San Diego, California.
- Sturdivant, R. (2012). Euler games for differential equations. Invited presentation at the *Joint Mathematics Meetings (JMM)*, Boston, Massachusetts.
- Sturdivant, R., Kuiper, S., Kaczynski, B., Jackson, J., and Cummiskey, K. (2012). Playing games with a purpose: a new approach to teaching and learning statistics. Poster presentation at the *Joint Mathematics Meetings (JMM)*, Boston, Massachusetts.
- Cameron, K., Marshall, S., Sturdivant, R., and Lincoln, A., (2011). Incidence rates for mild traumatic brain injury among active duty US military personnel between 1997 and 2007. Presentation at the *American Public Health Association Annual Meeting*, Washington, D.C.
- Cameron, K., Sturdivant, R., Marshall, S., and Lincoln, A., (2011). Trends in the incidence of persistent postconcussion syndrome among active duty US military personnel between 1997 and 2007. Presentation at the *American Public Health Association Annual Meeting*, Washington, D.C.
- Cameron, K., Marshall, S., Lincoln, A., and Sturdivant, R., (2011). Trends in the incidence of traumatic brain injury and related conditions among active duty U.S. service members between 1997 and 2007. Presentation at the *Army Conference on Applied Statistics*, Annapolis, Maryland.
- Sturdivant, R. (2010). SASabermetrics: PROC logistic in the Hall of Fame. Invited presentation for the *Boston Area SAS User's Group (BASUG)*, Boston, Massachusetts.

- Cameron, K., Sturdivant, R., Marshall, S., and Lincoln, A. (2010). Trends in the incidence of persistent postconcussion syndrome among active duty U.S. service members between 1997 and 2007. Presentation at the *Force Health Protection Conference*, Phoenix, Arizona.
- Huber, M. and Sturdivant, R. (2010). Building a model for scoring 20 or more runs in a baseball game. Invited presentation at the *Regional Hot Stove Meeting of the Connie Mack Chapter of the Society of American Baseball Research*, Philadelphia, Pennsylvania.
- Huber, M. and Sturdivant, R. (2010). A model for scoring 20+ runs in a baseball game. Invited presentation at the *MAA New Jersey Section Meeting*, Middlesex County College, Edison, New Jersey.
- Wattenberg, F., Wright, A., Sturdivant, R., and Davis, N. (2009). TigerSTAT: A first person shooter game for statistics education. Presentation at the *Joint Statistical Meetings (JSM)*, Washington, D.C.
- Cameron, K., Sturdivant, R., Marshall, S., DeBerardino, T., and Lincoln, A. (2009). Incidence of traumatic brain injury, mild traumatic brain injury and postconcussion syndrome among U.S. service members between 1997 and 2007. Presentation at the *Military Health Research Forum*, Kansas City, Missouri.
- Sturdivant, R., Burks, R., Owens, B., Wolf, J., and Cameron, K. (2009). Epidemiological studies in the military. Presentation at the *Joint Statistics Meetings (JSM)*, Washington, D.C.
- Jones, J., Burks, R., Owens, B., DeBerardino, T., Sturdivant R., and Cameron, K. (2009). Incidence of meniscal injuries in the U.S. military: Demographic and occupational risk factors in a high risk population. Paper presented at the *NATA Annual Meeting and Clinical Symposium*, San Antonio, Texas.
- Helms, J. and Sturdivant, R. (2009). An interdisciplinary project for statistics and physics. Presentation at the *Joint Mathematics Meetings (JMM)*, Washington, D.C.
- Helms, J., Sturdivant, R., and Wattenberg, F. (2009). Developing a video tutorial library to service upper level MSE courses. Presentation (listed under Smith, C.) at the *Joint Mathematics Meetings (JMM)*, Washington, D.C.
- Sturdivant, R. and Watts, K. (2008). Modeling West Point graduates retention. Invited presentation for the *BAAFEX (British, Australian and American Forecasting Exchange) Conference*, West Point, New York.
- Sturdivant, R. and Watts, K. (2008). Studies in military medicine from the Center for Data Analysis and Statistics (CDAS) at West Point. Invited presentation for the *Washington*

*Statistical Society (American Statistical Association, ASA) Seminar Series*, Washington, D.C.

- Sturdivant, R. (2008). Anthrax, killer bees and murder to motivate statistics. Presentation at the *Joint Mathematics Meetings (JMM)*, San Diego, California. ***Outstanding Contributed Paper in Statistics Education.***
- Sturdivant, R. and Watts, K. (2007). Studies in military medicine from the Center for Data Analysis and Statistics (CDAS) at West Point. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Rice University, Houston, Texas.
- Watts, K., Sturdivant, R., Piantanida, N., and Phillips, G. (2007). Use of a lumbar support in relieving lower back pain in helicopter crews. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Rice University, Houston, Texas.
- Burks, R., Sturdivant, R., Cameron, K., and Watts, K. (2007). Shoulder dislocation in active duty U.S. military personnel. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Rice University, Houston, Texas. (*Presenting author*)
- Crowder, T., Vanderburgh, P., Sturdivant, R., Johnson, C., Leth, A., Gelineau, J., Newsom, J., Daniels, G., and Schaefer, S. (2007). Creation of a correction factor via allometry to eliminate body mass influence on the Army's physical fitness test. Poster at the *54<sup>th</sup> Annual American College of Sports Medicine Conference*, New Orleans, Louisiana.
- Souhan, B., Sturdivant, R., and Burks, R. (2007). Involving students in their own learning: a follow-up. Presentation at the *Joint Mathematics Meetings (JMM)*, New Orleans, Louisiana.
- Sturdivant, R. (2007). Center for Data Analysis and Statistics. Poster at the *Joint Mathematics Meetings (JMM)*, New Orleans, Louisiana.
- DeRosset, W. and Sturdivant, R. (2006). Patterned armor performance against multiple impacts. Presented (as poster) paper at the *25<sup>th</sup> Annual Army Science Conference (ASC)*, Orlando, Florida.
- Watts, K. and Sturdivant, R. (2006). Value added outcomes in military service educational programs: Comparing new and old technologies and methods. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Research Triangle, North Carolina.
- Sturdivant, R., Heidenberg, A., and Souhan, B. (2006). Involving students in their own learning. Presentation at the *Joint Mathematics Meetings (JMM)*, San Antonio, Texas.
- Sturdivant, R., Melendez, B., and Glen, A. (2005). Do we have to change? Isn't math just math? Presentation at the *TALENT Conference*, West Point, New York.

Krahn, G., Small, D., Sturdivant, R., Melendez, B., and Glen, A. (2005). *An Institutional Case Study*. Invited session and presentation at the *Project Kaleidoscope (PKAL) Leadership Initiative Seminar*, West Point, New York.

Sturdivant, R., Somers, B., Kasube, H., and Hastings, N. (2005). First semester calculus, meeting the needs of our students. Panel discussion at the *Joint Mathematics Meetings (JMM)*, Atlanta, Georgia.

DeRosset, W. and Sturdivant, R. (2004). Investigation of multiple hits on light armor. Presented paper at the *ARL/USMA Technical Symposium*, Aberdeen Proving Ground, Maryland.

Sturdivant, R. (2004). Establishing the Center for Data Analysis and Statistics (CDAS) at the United States Military Academy. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Atlanta, Georgia.

Sturdivant, R. (2004). Residual based goodness-of-fit statistics for logistic hierarchical regression models. Paper presented at the *Army Conference on Applied Statistics (ACAS)*, Atlanta, Georgia.

Sturdivant, R. (2003). Logistic hierarchical models: An introduction. Invited talk for the *Department of Mathematical Sciences Colloquium*, Keene State University, Keene, New Hampshire.

Sturdivant, R. (1996). Nonparametric methods for multivariate analysis using statistically equivalent blocks. Paper presented at the *ARL/USMA Technical Symposium*, Aberdeen Proving Ground, Maryland.

### ***Funded Proposals, Awards and Collaborations***

Kuiper, S. and Sturdivant, R. (2017). Student Engagement in Statistics Using Technology: Making Data Based Decisions. *National Science Foundation (NSF) Grant*, 2017–2021.

Sturdivant, R. (2015). Academic Enrichment Grant: PUBHBIO 2210H: Honors Biostatistics for Public Health. *The Ohio State University Honors and Scholars Center*, 2014-2016.

P50-CA-180908-01(PIs Shields and Wewers) 09/2013-08/2018  
NIH/FDA Tobacco Centers of Regulatory Science (TCORS): OSU Center of Excellence in Regulatory Tobacco Science (OSU-CERTS) 8%, Role: Biostatistics and Data Resources Core co-investigator, and project 2 biostatistician

Tietronix Software (2014). Consultant for: Playing with Statistics. *National Science Foundation (NSF) Grant*.

Kuiper, S. and Sturdivant, R. (2011). Playing games with a purpose: A new approach to statistics education. *National Science Foundation (NSF) Grant*, 2011–2014.

Sturdivant, R. (2009). *General Omar N. Bradley Research Fellowship in Mathematics*.

Sturdivant, R. (2009). Center for Data Analysis and Statistics research. *Army Research Office (ARO)*.

Sturdivant, R. (2008). Real Data: the Art of Statistical Analysis. *Army Research Office (ARO)*.

Cameron, K., Sturdivant, R., Marshall, S., and Lincoln, A. (2008). Incidence of traumatic brain injury, mild traumatic brain injury and postconcussion syndrome among US service members between 1997 and 2007. *Congressionally Directed Medical Research Program (CDMRP) Grant*, 2008–2011.

Sturdivant, R. (2007). *General Omar N. Bradley Research Fellowship in Mathematics*.

Sturdivant, R. (2007). Goodness of fit in hierarchical logistic regression models. *Dean's Faculty Development and Research Fund*.

Sturdivant, R. (2007). Supporting the Center for Data Analysis and Statistics. *Army Research Office (ARO)*.

Sturdivant, R. (2006). Founding the Center for Data Analysis and Statistics. *Army Research Office (ARO)*.

Sturdivant, R. (2005). Goodness of fit in hierarchical logistic regression models. *Dean's Faculty Development and Research Fund*.

### **Statistical Consulting Activity**

Founder/Director, Center for Data Analysis and Statistics (CDAS), 2004–2013.

Clients (partial list): West Point academic departments (12), Director of Admissions, Keller Army Community Hospital (several clinics including physical therapy, optometry, ophthalmology, orthopedic surgery), Walter Reed Army Institute of Research, Army Staff and several Army Agencies.

Faculty involvement: over 20 faculty participants, activities including consulting and attending CDAS sponsored workshops and seminars.

### **Student Research**

Advisor, Honors Thesis (2016). Asad, S. Maternal Characteristics and Fetal-Infant Mortality in Franklin County, The Ohio State University.

Advisor, Honors Thesis (2016). Venkat-Ramani, T. Curbing Infant Mortality in the Near East Side of Columbus, The Ohio State University.

Second Reader, Honors Thesis (2016). Figas, H. Low-Calorie Sweetened Beverage Consumption and Weight-Related Effects: A Systematic Review, The Ohio State University.

Committee Member, MPH (2015). Sharova, A.V. Prevalence of Staphylococcus aureus in Swine Exhibited at Five Agricultural Fairs in Ohio: Estimating the Public Health Risk, The Ohio State University.

Second Reader, MPH Project (2014). Husk, J. Longitudinal and Survival Analysis Approaches to Longitudinal Survey Data, The Ohio State University.

Examiner, Ph.D. Thesis (2013). Canary, J., A comparison of three goodness-of-fit statistics for binary regression models, University of Tasmania.

Co-Advisor, Cadet Senior Honors Thesis (2013), 1 student.

Committee member, Doctor of Science (D.Sc.) in Physical Therapy, Baylor University (2011), 5 students.

Committee member, Doctor of Science (D.Sc.) in Physical Therapy, Baylor University (2009), 4 students.

Co-Advisor, Cadet Senior Honors Thesis (2009), 1 student.

Committee member, Doctor of Science (D.Sc.) in Physical Therapy, Baylor University (2007), 3 students.

Advisor, Cadet Senior Honors Thesis (2007), 3 students.

Committee member, Doctor of Science (D.Sc.) in Physical Therapy, Baylor University (2006), 4 students.

Advisor, Cadet Senior Thesis (2005), 2 students.

### ***Professional Service***

Faculty Promotion Reviewer, Associate Professor position, West Point, 2020.

Faculty Promotion Reviewer, Professor position, AFIT, 2019.

Mathematical Contest in Modeling (MCM), Final Judging, 2016–present.

Mathematical Contest in Modeling (MCM), Triage Judging, 2016–present.

External Reviewer, University of Kentucky EPB Program Review Self Study, 2016

Promotion and Tenure Outside Reviewer, Flinders University (Australia), 2015.

Interdisciplinary Contest in Modeling (ICM), Final Judging, 2008–2016.

Promotion and Tenure Outside Reviewer, West Point, 2014.

Session Chair Topic-Contributed Poster Presentations Section on Statistical Education, Joint Statistical Meetings, San Diego, 2012.

Independent Data Monitoring Biostatistician (IDMB), Ft. Benning MRSA prevention clinical trial, 2011.

Scientific Reviewer, IDCRP, USUHS/Ft. Benning, 2012.

Executive Board, Army Conference on Applied Statistics (ACAS), 2004–present.

Government Steering Committee, four MURI's, Army Research Office, 2007–2013.

Adjunct Professor Appointment, Baylor University Graduate School, supporting the Baylor-West Point physical therapy D.Sc. program, 2005–2013.

Statistical Consultant, Department of Defense (DoD) Leishmania PCR Diagnostic Device FDA approval validation plans and studies, Walter Reed Army Institute of Research (WRAIR), 2004–2010.

Army Research Office (ARO) Strategic Planning Committee, 2008.

Interdisciplinary Contest in Modeling (ICM), Associate Director, 2008–2012.



Interdisciplinary Contest in Modeling (ICM), Triage judging 1996–1998, 2004–2012.  
Session Chair and Organizer, Army Conference on Applied Statistics (ACAS), 2005–2011.  
AP Statistics Examination Reader, 2005–2008.  
Steering Committee, ARO Language for Intelligent Machines (LIMES) Workshop, West Point, New York, 2006.  
Leadership team, Project Kaleidoscope (PKAL) Leadership Initiative Seminar, West Point, New York, 2005.

### **Azusa Pacific University Service**

Chair, Masters Admissions Committee, M.S. in Applied Statistics and Analytics  
Program Directors Council, College of Liberal Arts and Sciences  
Statistics Faculty Search Committee (2 searches)  
Poster Judge, Association of Christian Schools (ACSI) Science Fair  
Executive Committee, Big Data Summit Conference  
Data Science Consortium Committee

Program Review Committee, Department of Mathematics, Physics, and Statistics  
Academic advising, undergraduate mathematics students (6 – 10 per year)  
Academic advising, M.S. in applied statistics and analytics students (21)

### **The Ohio State University Service**

Executive Committee, College of Public Health, 2015-2016  
Undergraduate Studies Committee, 2014 – 2016  
Masters Admissions Committee – Biostatistics, 2013 – 2016  
Masters Admissions Committee – Program for Experienced Professionals MPH, 2013 – 2016  
Qualifying Examination Committee Member (Ph.D. in biostatistics), 2014 – 2015  
MPH-PEP and HSMP Ad Hoc Curricula Committee, 2013 – 2015.  
Academic Advisor M.S. in Biostatistics, 2 students, 2014 – 2016.  
Academic Advisor MPH, 1 student, 2013 – 2015.

### **United States Military Academy Service**

Center for Teaching Excellence (CTE) Advisory Committee, 2011–2013.  
Math, Science and Engineering (MSE) Goal Team, Assessment Steering Committee, 2011–2013.  
Engineering and Technology Goal Team, Assessment Steering Committee, 2011–2013.  
Faculty Council, 2004–2013.  
Author of new minor in Statistics (3<sup>rd</sup> minor approved at West Point), 2008.  
Member of Academy Professor Search Committee (Department of Civil and Mechanical Engineering), 2008.  
Scholarship Committee, United States Military Academy, 2006–2013.  
Institutional Review Board (IRB), United States Military Academy, 2005–2013.  
Admissions Committee, United States Military Academy, 2006–2010.  
Teaching Committee, United States Military Academy, 2006–2009.  
Creativity Goal Team, United States Military Academy, 2007–2010.  
Mathematical Sciences Rotating M.S. Selection committee member, 2005, 2009, 2010.

Lead organizer for “Real Data: the Art of Statistical Analysis”, West Point, April 2008.  
Steering Committee, Faculty Development Workshop Conference, West Point, 2007.  
Dept. of Mathematical Sciences Rotating Ph.D. Selection committee co-chair, 2006–2013.  
Planning Committee, Biology & Mathematics Conference/Workshop, West Point,, 2006.  
Lead organizer for the “CDAS Conference on Statistical Consulting”, October 2005.  
Liaison Professor for North Carolina State M.S. students from USMA, 2006–2009.  
Liaison Professor for USMA math department with Department of Geography and  
Environmental Engineering, 2005–2010.  
Selection Committee member, Hollis Award (best cadet research project), 2006–2010.  
Co-Chair, Calculus textbook search committee, 2005.  
Member, Differential Equations textbook search committee, 2004.

### ***Reviews and Referee Activity***

Computational and Mathematical Methods in Medicine (2020)  
Preventive Medicine (2018)  
Biometrical Journal (2018)  
Defense Analytics and Logistics (2018)  
Statistics in Medicine  
Journal of Applied Statistics  
Biometrika  
Military Operations Research  
Journal of Wildlife Management  
Journal of Field Ornithology  
Circulation (the Journal of the American Heart Association)  
Problems, Resources, and Issues in Mathematics Undergraduate Studies (PRIMUS).  
Army Research Office (ARO) – numerous proposals (approx. 25, 2005-2015)

### ***Memberships***

American Statistical Association (ASA)  
Mathematical Association of America (MAA)

### ***Student Development Service***

Officer Representative, West Point String Ensemble Club, 2011–2013.  
Officer Representative, West Point Cadet Glee Club, 2011–2013.  
Head Officer in Charge and founder, West Point String Ensemble Club, 2005–2010.  
Head Officer in Charge, West Point Cadet Glee Club, 2006–2011.  
Head Officer in Charge, Officer Christian Fellowship (OCF) Club, 2009–2010.  
Officer Representative, Officer Christian Fellowship (OCF) Club, 2007–2013.  
Officer Representative/class leader, Officer Christian Fellowship (OCF) Club, 2003–2007.  
Cadet Academic Counselor (CAC), Cadet Company G-1/B-2, 2005–2010.  
Officer Representative, Army Volleyball team, 1995–1998.  
Cadet Honor Education Team (CHET) member, Cadet Company H-3, 1995–1997.

### ***Community Service***

Church activities (partial list) – musician (violin), worship team leader/singer, choir, Sunday school teaching, lay pastor, usher.

Member, Central Ohio Symphony Orchestra, 2014-2016.

### ***Selected Military Experience***

- **Branch Chief, Planning and Analysis Branch, Total Army Personnel Command,** *managed a \$500 million dollar budget for soldier moves, analysis of distribution of over 400,000 enlisted soldiers, presented results to senior army leaders to include the Chief of Staff of the Army*
- **Company Commander, A Company 143<sup>rd</sup> Maintenance Company, Edgewood Arsenal** *with over 300 soldiers and equipment*
- **Action Officer, Ordnance Corps Combat Developments, Aberdeen Proving Ground, Maryland** *–artificial intelligence project named outstanding Department of Defense AI project in 1994*
- **Shop Officer, Executive Officer and Platoon Leader, B Company, 64<sup>th</sup> Ordnance, Fort Carson, Colorado**
- **Battalion Maintenance Officer, 104<sup>th</sup> Military Intelligence, Fort Carson, Colorado**

### ***Military Awards***

Legion of Merit

Superior Unit Citation (2 awards)

Meritorious Service Medal (3 awards)

Army Commendation Medal (3 awards)

Army Achievement Medal

Distinguished Graduate, Ordnance Officer Advanced Course, 1991

Heiser Award, Ordnance Officer Advanced Course, 1991

Honor Graduate, Ordnance Officer Basic Course, 1986

Honor Graduate, USAFA Survival Evasion Resistance and Escape (SERE) School, 1984