

# Stella Coker Watson Self

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## Education

**Clemson University:** 2016-2019  
Ph.D. Mathematical Sciences (emphasis statistics): 2019  
Dissertation Advisor: Dr. Christopher McMahan  
GPA: 4.0/4.0

**Clemson University:** 2014-2016  
M.S. Mathematical Sciences (emphasis statistics): 2016  
Thesis Advisor: Dr. Christopher McMahan  
GPA: 4.0/4.0

**Furman University:** 2010-2014  
B.S. Mathematics: 2014  
GPA 4.0/4.0  
Graduated Summa Cum Laude

## Professional Experience

**University of South Carolina:** 2019-present  
Assistant Professor, Department of Epidemiology and Biostatistics, Arnold School of Public Health

**University of South Carolina School of Medicine Greenville:** 2020-present  
Adjunct Assistant Professor, Department of Biomedical Sciences

**Clemson University:** 2022-present  
Graduate Faculty, Department of Forestry and Environmental Conservation, College of Agriculture, Forestry and Life Sciences

**Clemson University:** 2016 - 2019 (Fall and Spring Semesters)  
Graduate Research Assistant funded by the Companion Animal Parasite Council

**Clemson University:** Summer 2018  
Data Science Core Research Associate for the Greenville Health System

**Clemson University:** 2014-2015 (Year Round), 2016-2017 (Summer Semesters)  
Graduate Teaching Assistant

**Furman University:** Summer 2012 & Summer 2013  
Undergraduate Research Assistant

## Current Research Interests

Bayesian statistics, random effects models, spatio-temporal models, spatial clustering methods, Markov chain Monte Carlo methods, infectious disease forecasting

## Publications

\*Names students supervised are underlined.

### Peer-Reviewed Journal Articles

Sellers S., Gosnell E., Bryant D., Belmonte S., McCarter M., **Self S.**, Kennedy K., and Norman S. Building-level Wastewater Surveillance of SARS-CoV-2 is Associated with Transmission and Variant Trends in a University Setting. *Environmental Research*, under review.

Dye-Braumuller C. K., Lynn M. K., Cornejo Rivas P. M., Rodriguez Aquino M. S., Chandler J. G., Trout Fryxell R. T., **Self S.**, Kanyangarara M., Lee C., Valafar H., Nolan M. S. First Report of Multiple *Rickettsia* spp., *Anaplasma* spp., and *Ehrlichia* spp. in El Salvador: Global Implications for Underdiagnosis of Neglected Bacterial Pathogens in Low-and-Middle Income Countries. *Medical and Veterinary Entomology*, under review.

Hill K., Ohning A., Mallory J., **Self S.**, Schammel C., Meredith J., Reddic J., Kent P., Knight J. Comparing Efficacies of Various Invasive and Non-invasive *H. pylori* Detection Methods. *Journal of Clinical Gastroenterology*, under review.

Gormley M., Zhang W., **Self S.**, Ewing J., Heo M., Roth P., Pericot-Valverde I., Rennert R., Akiyama M., Norton B, and Litwin A. Influence of polysubstance use on the health-related quality of life among people who inject drugs undergoing opioid agonist treatment following treatment for hepatitis C virus. *Substance Use and Misuse*, under review.

Vidanapathirana, N., Wang Y., McLain A., and **Self S.** Cluster Detection Capabilities of the Average Nearest Neighbor Ratio and Ripley's K Function on Areal Data: an Empirical Assessment. *Transactions in GIS*, under review.

**Self S.**, Overby A., Zgodic A., White D., McLain A., and Dyckman C. A Generalization of Ripley's K Function for the Detection of Spatial Clustering in Areal Data. *Spatial Statistics*, under review.

Dyckman C., **Self S.**, Lauria M., White D., Fouch N., Ogletree S., Overby A., and Baldwin R. The spatial geography of conservation easements in twelve U.S. exurban counties. *International Regional Science Review*, under review.

Cochrane C., Batson R., Aragon M., Bedenbaugh M., **Self S.**, Isham K., and Eichelberger K. The impact of the "39 week rule" on maternal outcomes: A statewide analysis. *American Journal of Obstetrics and Gynecology, Maternal-Fetal Medicine* under review.

Cochrane C., Batson R., Aragon M., Bedenbaugh M., **Self S.**, Eichelberger K., and Isham K. The impact of the "39 week rule" on neonatal outcomes: A statewide analysis. *American Journal of Obstetrics and Gynecology, Maternal-Fetal Medicine* under review.

Able W., Pike J., Seckel T., **Self S.**, Schammel C., Schammel D. and Trocha S. Gastrointestinal Stromal Tumors: Comprehensive evaluation of surgical approaches from a single institution. *Journal of Gastrointestinal Surgery*, under review.

Gupta D., **Self S.**, Thomas D., Eicken M., Supra J., and Rudisill C. Using a Novel Digital Platform to Examine Resource Utilization of Social Determinants of Health Screening within a Large Healthcare System. *Medical Care*, accepted.

**Self S.**, Huang R., Amin S., Ewing J., Rudisill C., and McLain A. A Bayesian susceptible-infectious-hospitalized-ventilated-recovered model to predict demand for COVID-19 inpatient care in a large healthcare system. *PLOS ONE*, accepted.

Dye-Braumuller C. K., Rodriguez Aquino M. S., **Self S.**, Kanyangarara M., Nolan M. S. Spotted Fever Group Rickettsioses in Select Central American Countries: A Review of Tick-Borne Disease Research from a Socio-Economic Perspective. (2022) *Insects* 13(8) <https://doi.org/10.3390/insects13080674>.

**Self S.**, McMahan C., and Mokalled S. Capturing the pool dilution effect in group testing regression: A Bayesian approach. (2022) *Statistics in Medicine*. <https://doi.org/10.1002/sim.9532>

Nolan M., Daguise V., Davis M., Duwve J., Sherrill W., Heo M., Litwin A., Mufaro K., **Self S.**, Huang R., Eberth J., Gonzalez L., Lynn M., and Korte J. SARS-CoV-2 Viral Incidence, Antibody Point Prevalence, Associated Population Characteristics and Vaccine Attitudes- South Carolina, February 2021. (2022) *Public Health Reports*, 10.1177/00333549221081128.

Schammel N., Vandearer T., **Self S.**, Wilson C., Schammel C., Cowley R., Gault D., and Madeline L. Obstructive sleep apnea and white matter hyperintensities: Correlation or causation? (2022) *Brain Imaging and Behavior*, 10.1007/s11682-022-00642-9

Gual-Gonzalez K., McCarter M., Dye-Braumuller K., **Self S.**, Ross C., Rodriguez-Ramos C., Daguise V., Nolan M. Determinants of COVID-19 vaccinations among a state-wide year-long surveillance initiative in a conservative Southern state. (2022) *Vaccines*, 3(10), <https://doi.org/10.3390/vaccines10030412>

McMahan S., **Self S.**, Rennert L., Kalbaugh C., Kriebel D., Graves D., Colby, C., Deaver J., Popat S., Karanfil T., and Freedman D. COVID-19 wastewater epidemiology: A model to estimate infected populations. (2021) *The Lancet Planetary Health*, 5(12), [https://doi.org/10.1016/S2542-5196\(21\)00230-8](https://doi.org/10.1016/S2542-5196(21)00230-8).

**Self S.**, McMahan C., and Russell B. Identifying meteorological drivers of PM<sub>2.5</sub> levels via a Bayesian spatial quantile regression. (2021) *Environmetrics*, 32, doi: <https://doi.org/10.1002/env.2669>.

Perregaux S., **Self S.**, Collins J., Renfro S., VanHale C., Ansari A., McKinley B., Rippon M., Schammel D., and Schammel C. Breast cancer prevalence and management in Hispanic women: Comparison to black and white women at a regional medical center. (2021) *Archives of Breast Cancer*, 8(2), doi: <https://doi.org/10.32768/abc.202182127-136>.

Gettings J., **Self S.**, McMahan C., Brown D. A., Nordone S., and Yabsley M. Regional and local temporal trends of *Borrelia burgdorferi* and *Anaplasma* spp. seroprevalence in domestic dogs: Contiguous United States 2012-2019. (2020) *Frontiers in Veterinary Science*, 7, doi: 10.3389/fvets.2020.561592.

Fredrick A., Lorenz W., **Self S.**, Schammel C., Bolton W., Stephenson J., and Ben-or S. Delayed gastric emptying post-esophagectomy: A single institution experience. (2020) *Innovations: Technology and Techniques in Cardiothoracic and Vascular Surgery*, 15(6), doi: 10.1177/1556984520961079.

Gettings J., **Self S.**, McMahan C., Brown D., Nordone S., and Yabsley M. Regional and local temporal trends of canine *Ehrlichia* species seroprevalence in the United States, 2012-2018. (2020) *Parasites & Vectors*, 13(153), doi: 10.1186/s13071-020-04022-4.

Dertien J., **Self S.**, Baldwin R., Ross B., and Barrett K. The relationship between biodiversity and wetland cover varies across regions of the conterminous United States. (2020) *PLOS ONE* 15(5), <https://doi.org/10.1371/journal.pone.0232052>.

**Self S.**, Liu Y., Nordone S., Yabsley M., Walden H., Lund R., Bowman D., Carpenter C., McMahan C., and Gettings, R. Canine vector-borne disease: Mapping and the accuracy of forecasting using big data from the veterinary community. (2019) *Animal Health Research Reviews*, 20(1), doi:10.1017/S1466252319000045.

**Self S.**, Pulaski C., McMahan C., Brown D., Yabsley M., and Gettings J. Regional and local temporal trends in the prevalence of canine heartworm infection: 2012-2018. (2019) *Parasites & Vectors*, 12(1), doi:10.1186/s13071-019-3633-2.

Brown D., McMahan C., and **Watson S.** Sampling strategies for fast updating of Gaussian Markov random fields. (2019) *The American Statistician*, doi:10.1080/00031305.2019.1595144.

**Self, S.**, McMahan C., Brown D., Lund R., Gettings J., and Yabsley M. A large scale spatio-temporal binomial regression model for estimating seroprevalence trends. (2018) *Environmetrics*, 29, doi:10.1002/env.2538.

**Watson S.**, Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. A Bayesian spatio-temporal model for forecasting the prevalence of antibodies to *Borrelia burgdorferi*, causative agent of Lyme disease, in domestic dogs within the contiguous United States. (2017) *PLOS ONE*, 12(5), doi:10.1371/journal.pone.0174428.

Liu Y., **Watson S.**, Lund R., Gettings J., Nordone S., Yabsley M., and McMahan C. A Bayesian spatio-temporal model for forecasting *Anaplasma* species seroprevalence in domestic dogs within the contiguous United States. (2017) *PLOS ONE*, 12(7), doi:10.1371/journal.pone.0182028.

Farnsworth J., Isaac R., and **Watson S.** The geometry of the Narayana fractal. (2013) *SIAM Undergraduate Research Online*, 6, doi:10.1137/13S012303.

### *Policy Briefs*

Zahnd W., Silverman A., **Self S.**, Hung P., Natafqi N., Adams S., Merrell M., Owens O., Crouch E., Eberth J. The impact of the COVID-19 pandemic on rural health clinics' operations and cancer prevention and control efforts. Federal Office of Rural Health Policy Findings Brief. Under review.

### *Submitted Abstracts*

Exurban Conservation Easements' Import with Climate Change. Association of Collegiate Schools of Planning 62nd Annual Conference (July 2022). Dyckman C, Overby A, White D, **Self S**, Lauria M, Baldwin R. Accepted for oral presentation.

Emergency Medical Technicians Can Administer Nitrous Oxide for Effective Analgesia in an Urban Tiered-Response EMS System. American College of Emergency Physicians 2022 Scientific Assembly (October 2022). Costilla E, Teasley B, Zhao X, Gormley M, Schwerin D, Troise M, Lutz M, Cobb M, **Self S**. Accepted for oral presentation.

### *Invited Presentations*

Conservation Easements in Exurban Areas Across the US, South Carolina Land Trust Network Summer Meeting (July 2022). Dyckman C., White D., **Self, S.**, Overby A.

Harnessing the power of big data analytics for promoting pet health: A look at CAPC's monthly pet parasite forecasts, Companion Animal Parasite Council Spring Board Meeting, Dallas-Fort Worth TX & virtual (February 2022). **Self, S.**

Big Data Health Science Fellow Experience, University of South Carolina Big Data Health Science Center Conference, Columbia SC & virtual (February 2022). **Self, S.**

Using Prisma Health Data to Predict the Demand for COVID-19 Inpatient Care, School of Mathematical and Statistical Sciences Seminar, Clemson University, Virtual due to COVID-19 pandemic (April, 2021). **Self S.**

### *Contributed Presentations*

Granular Cell Tumors of the GI Tract, University of South Carolina School of Medicine Greenville Summer Research Symposium (July 2022). Warren A., **Self S.**, Schammel C.M.G., Yurko Y., Schammel, D.P. Poster Presentation.

Pleomorphic Lobular Carcinoma in situ, University of South Carolina School of Medicine Greenville Summer Research Symposium (July 2022). Billing D., **Self S.**, Schammel C.M.G., McKinley B., Scop-teuolo A., and Schammel D. Poster Presentation.

Splenic Artery Embolism: A Non-Invasive Intervention for Blunt Splenic Injury, 2022 American Roentgen Ray Society Spring Meeting (May 2022). Prescott M., Eagar R., Corso O., **Self S.**, Cull J., Schammel C., Devane A. Poster presentation.

Connections between Social Determinants of Health Screening Via an Electronic Health Records-Based Platform and Healthcare Utilization: An Observational Study Based on a Pilot Implementation in a Large Health System in South Carolina, Academy Health Annual Meeting (June 2022). Gupta D., **Self S.**, Thomas D., Eicken M., Supra J., and Rudisill C. Poster presentation.

Cancer Prevention Activities in RHCs: Impacts of COVID-19, Annual Rural Health Conference (May 2022). Whitney Z., Silverman A., **Self, S.**, Hung P., Natafagi N., Adams S., Merrell M., Owens O., Crouch E., Eberth J. Oral presentation.

Evaluating Postpartum Bleeding in Patients with Immediate Postpartum Long-Acting Reversible Contraceptives (LARCs). CM Easley 29th Annual Symposium and Resident Research Day, Greenville SC and virtual (April, 2022). Cacciatore V, Snell A, Weisberg M, Thomas J, **Self, S**, Hufford J, and Carlson L. Oral presentation.

Patient and Provider Satisfaction with Integration of Telehealth into Prenatal Care. CM Easley 29th Annual Symposium and Resident Research Day, Greenville SC and virtual (April, 2022). Martin K., Lambert S, **Self, S**, Hufford J, and Carlson L. Oral presentation.

Capturing the Pool Dilution Effect in Group Testing Regression: A Bayesian Approach, Eastern North American Region International Biometric Society Spring Meeting, Houston TX and virtual (March, 2022). **Self S.**, McMahan C., and Mokalled S. Oral presentation.

Implementing a Social Determinants of Health Screening and Electronic Health Records-Based Platform to Assess Healthcare Utilization and Community Health Resource Use: An Observational Study Based in a Large Health System in South Carolina, University of South Carolina Big Data Health Science Center Conference, Columbia SA (February 2022). Gupta D., **Self S.**, Thomas D., Eicken M., Supra J., and Rudisill C.

A Comparison of H. Pylori Detection Methods, American Society for Microbiology South Carolina Annual Meeting (October 2021). Hill K., Ohning A., Mallory J., **Self S.**, Schammel C., Meredith J., Reddic J., Knight J. Oral presentation and winner of best medical student presentation award.

Landowners' Incentives to Place Conservation Easements in Exurban Areas, Association of Collegiate Schools of Planning 61st Annual Conference, Miami, FL (October 2021). Dyckman C., Overby A., White D., Lauria M., Baldwin R., McMahan C., **Self S.**, and Fouch N.

Using a Novel Digital Platform to Examine Resource Utilization of Social Determinants of Health Screening within a Large Healthcare System, American Public Health Association's (APHA) 2021 Annual Meeting and Expo, Denver CO (October 2021). Gupta D., **Self S.**, Thomas D., Eicken M., Supra J., and Rudisill C. Oral presentation.

Error Occurrence in Death Certification: A Single Health System Based Review. Health Sciences Center Prisma Health Research Symposium, Greenville SC (October 2021). Marler A., Logan C., **Self S.**, Schammel C.M., Ward M., Fulcher J., and Dukes G.

A Comparison of H. Pylori Detection Methods. Health Sciences Center Prisma Health Research Symposium, Greenville SC (October 2021). Hill K.L., Ohning A.V., Mallory J.P., **Self S.**, Schammel C.M., Meredith J., Reddic J., and Knight J.B. Poster presentation.

Evaluation of the 2016 Grading System of Post-operative Pancreatic Fistulas: A Single Institution Review of Definition Relevancy. Health Sciences Center Prisma Health Research Symposium, Greenville SC (October 2021). Tedeschi T., Balcázar A., **Self S.**, Schammel C.M., Devane A.M., Scholer A., and Trocha S. Poster presentation.

Splenic Artery Embolism: A Non-Invasive Intervention for Blunt Splenic Injury, Health Sciences Center Prisma Health Research Symposium, Greenville SC (October 2021). Prescott M., Eagar R., Corso O., **Self S.**, Cull J., Schammel C., Devane A. Poster presentation.

Error Occurrence in Death Certification: Improving Accuracy with Educational Intervention, 2021 American Medical Association Research Challenge, virtual due to COVID-19 pandemic (October 2021). Logan C., Marler A., **Self S.**, Schammel C.M., Ward M., Fulcher J., and Dukes G. Poster presentation.

Non-alcoholic Steatohepatitis (NASH) Elastography versus Liver Biopsy, 2021 American Medical Association Research Challenge, virtual due to COVID-19 pandemic (October 2021). Wilson C., Hall R., **Self S.**, Schammel D.P., Schammel C.M., and Devane A.M. Poster presentation.

Error Occurrence in Death Certification: Improving Accuracy with Educational Intervention, South Carolina Chapter of the American College of Physicians Meeting, Charleston SC (October 2021). Logan C., Marler A., **Self S.**, Schammel C.M., Ward M., Fulcher J., and Dukes G. Poster presentation and winner of the best student presentation award and the best student research project award.

Robotic vs. Laparoscopic Excision of Gastrointestinal Stromal Tumors: A Single Surgeon's Experience at a Regional Institution, South Carolina Chapter of the American College of Physicians Meeting, Charleston SC (October 2021). Warren W., Duke K., Stephenson S., **Self S.**, Schammel C., Trocha S. Poster presentation

Predicting Local Demand for COVID-19 Inpatient Care with a Bayesian Susceptible-Infectious-Hospitalized-Ventilated-Recovered Model, Joint Statistical Meetings 2021, Virtual Meeting due to COVID-19 pandemic (August, 2021). **Self S.** (presenter), Huang R., Amin S., Ewing A., Rudisill C., and McLain A. Oral presentation.

Non-alcoholic Steatohepatitis (NASH) Elastography versus Liver Biopsy, USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Wilson C., Hall R., **Self S.**, Schammel D.P., Schammel C.M., and Devane A.M. Oral presentation.

Error Occurrence in Death Certification: Improving Accuracy with Educational Intervention, USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Logan C., Marler A., **Self S.**, Schammel C.M., Ward M., Fulcher J., and Dukes G. Poster presentation.

Error Occurrence in Death Certification: A Single Health System Based Review. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Marler A., Logan C., **Self S.**, Schammel C.M., Ward M., Fulcher J., and Dukes G. Poster presentation.

Evaluation of the 2016 Grading System of Post-operative Pancreatic Fistulas: Literature vs Clinical Disparity. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Balcázar A., Tedeschi T., **Self S.**, Schammel C.M., Devane A.M., Scholer A., and Trocha S. Poster presentation.

Post-operative Pancreatic Fistulas: A single institution review of definition relevancy. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Tedeschi T., Balcázar A., **Self S.**, Schammel C.M., Devane A.M., Scholer A., and Trocha S. Poster presentation.

Splenic Artery Embolism. Prescott M., Eagar R., Corso O., **Self S.**, Cull J., Schammel C.M., and Devane A.M. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Poster Presentation.

Spyglass vs. Brush Biopsy. Singletary T., Grasso L., **Self S.**, Schammel D.P., Schammel C.M., Jones W., and Devane A.M. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Poster presentation.

A Comparison of H. Pylori Detection Methods. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Hill K.L., Ohning A.V., Mallory J.P., **Self S.**, Schammel C.M., Meredith J., Reddic J., and Knight J.B. Poster presentation.

Resolution of Symptoms Following Surgical Resection of Meningioma. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Rodriguez G., Teran S., Schammel N., **Self S.**, Schammel C.M., and Lynn M. Poster presentation.

Influential Factors for Meningioma Recurrence. USCSOMG Soaring Summer Research Symposium, Greenville SC (July, 2021). Teran S., Rodriguez G., Schammel N., **Self S.**, Schammel C.M., and Lynn M. Poster presentation.

Breast Cancer Diagnosed on GI Biopsy. Discover UofSC, virtual due to COVID-19 pandemic (April 2021). Suchy C., **Self S.**, Schammel C., and Schammel D.P. Poster Presentation.

Factors Influencing Discharge Location following Ischemic Stroke. Discover UofSC, virtual due to COVID-19 pandemic (April 2021). Durbin L., Edenfield J., **Self S.**, Schammel C.M.G, and Kopera K. Poster Presentation

Orofacial Clefts: An Evaluation of Diagnosis, Treatment and Compliance at at Regional Medical Center, Discover UofSC, Virtual meeting due to COVID-19 pandemic (April, 2021). Lucas C., Perregeaux S., Angermayer M., Conrad H., Nye A., **Self S.**, Schammel C., DeBrux C., and Amati B. Poster Presentation.

Associations Between Food Insecurity and Pregnancy Outcomes in a Low-Income Population, Discover UofSC, Virtual meeting due to COVID-19 pandemic (April, 2021). Huang R. (presenter), **Self S.**, Britt J., and Crockett A. Poster presentation, awarded best abstract in the Maternal Child Health Catalyst Program Abstract Competition.

Atypical Lobular Hyperplasia and Lobular Carcinoma In-situ: To Upgrade or Not to Upgrade? Discover UofSC, Virtual meeting due to COVID-19 pandemic (April 2021). Krachman H, Bland S., Russell N., **Self S.**, Schammel C., Cornett W., Rippon M., and Schammel D. Poster Presentation.

Atypical Ductal Hyperplasia. Discover UofSC, Virtual meeting due to COVID-19 pandemic (April 2021). Bland S., Krachman H., **Self S.**, Schammel C.M.G., and Schammel D.P. Poster Presentation

Atypical ductal hyperplasia: To Upgrade or Not to Upgrade? South Carolina Upstate Research Symposium, Virtual Meeting due to COVID-19 pandemic (April 2021). Krachman H, Bland S., Russell N., **Self S.**, Schammel C., Cornett W., Rippon M., Schammel D. Poster Presentation.

Atypical Lobular Hyperplasia and Lobular Carcinoma In-situ: To Upgrade or Not to Upgrade? South Carolina Upstate Research Symposium, Virtual Meeting due to COVID-19 pandemic (April 2021). Krachman H, Bland S., Russell N., **Self S**, Schammel C., Cornett W., Rippon M., Schammel D. Poster Presentation.

Accurate Diagnosis of B Cell ALL Mutations Using Karyotyping and Fluorescence In-Situ Hybridization (FISH) in Adolescent/Young Adult and Adult Populations. South Carolina Upstate Research Symposium, Virtual Meeting due to COVID-19 pandemic (April 2021). Zhou E., **Self S**, Schammel C., Knight J. Poster Presentation.

A Bayesian Susceptible-Infectious-Hospitalized-Ventilated-Recovered Model to Predict Demand for COVID-19 Inpatient Care, Eastern North American Region, International Biometric Society Spring Meeting, Virtual Meeting due to COVID-19 pandemic (March 2021). **Self S**. (presenter), Huang R., Amin S., Ewing A., Rudisill C., and McLain A.

Evaluating a technology and EMR-based strategy to intervene on social determinants of health in a large health system, Big Data Health Science Center Conference, Virtual Meeting due to COVID-19 pandemic (February 2021). Rudisill C., **Self S**., Thomas D., Gupta D., and Eicken M. Oral presentation.

Induction of labor versus planned Cesarean section for women with body mass index  $\geq 45$ , Society of Maternal-Fetal Medicine, 41st Annual Pregnancy Meeting, Virtual Meeting due to COVID-19 pandemic (February 2021). Deighan T., **Self S.**, Huang R., and Crockett A. Poster presentation.

Conservation easement characteristics in exurban areas, Association of Collegiate Schools of Planning 60th Annual Conference, Virtual due to COVID-19 pandemic (November 2020). Dyckman C. (presenter), White D., Baldwin R., Lauria M., McMahan C., Overby A., **Self S.**, and Fouch N. Oral Presentation.

Identifying meteorological drivers of PM<sub>2.5</sub> levels via a Bayesian spatial quantile regression, Joint Statistical Meetings 2020, Virtual due to COVID-19 pandemic, (August 2020). **Self S**. (presenter), McMahan C., and Russell, B. Oral Presentation.

Does surgical approach effect outcomes in treatment of rectal cancer? American Society of Colorectal Surgeons Annual Scientific Meeting, Virtual due to COVID-19 pandemic (June, 2020). Yurko Y., Schammel D., Schammel C., Bynarowica T., McGill W., and **Self S**. Poster Presentation.

A Comparative Assessment of Systematic & Coordinated Conservation Planning in Exurban Ecoregions, 2020 International Symposium for Society & Resource Management, Virtual due to COVID-19 pandemic (June 2020). Dyckman C. (presenter), Overby A., Lauria M., White D., Baldwin R., Fouch N., **Self S.**, and McMahan C. Oral Presentation.

Induction of labor versus planned Cesarean section for women with body mass index of  $\geq 45$ , C.M. Easley 28th Symposium and Resident Research Day, Greenville SC (May 2020). Deighan, T. (presenter), **Self S.**, Huang R., and Crockett A. Oral Presentation.

An evaluation of breast cancer in Hispanic women at a single tertiary medical center. Health Sciences Center Research Showcase, Virtual due to COVID-19 pandemic (April 2020). Perregeaux S., **Self S.**, Collins J., Renfro S., VanHale S., Ansari A., Rippen M., Schammel C., and Schammel D. Oral Presentation.

Atypical lobular hyperplasia and lobular carcinoma insitu: to upgrade or not to upgrade? Health Sciences Center Research Showcase, Virtual due to COVID-19 pandemic (April 2020). Krachman H., Russel N., Bland S., **Self S.**, Schammel C., Cornett W., Rippon M., and Schammel D. Poster Presentation.



Prostatic embolization as an alternative treatment for benign prostatic hyperplasia. Health Sciences Center Research Showcase, Virtual due to COVID-19 pandemic (April 2020). Pike J., Sekel T., Abel W., **Self S.**, Schammel C., Devane M. Poster Presentation.

Outcomes of surgical and non-surgical management of gastric carcinomas at Greenville Memorial Hospital. Health Sciences Center Research Showcase, Greenville SC Virtual due to COVID-19 pandemic (April 2020). Seckel T., Pike J., Abel W., Hernandez V., **Self S.**, Schammel C., Schammel D., Trocha S. Poster Presentation.

Assessing meteorological drivers of air pollution in the Eastern United States via a Bayesian quantile regression model with spatially varying coefficients, Eastern North American Region (ENAR) International Biometric Society 2020 Spring Meeting, Virtual Meeting due to COVID-19 Pandemic (March 2020). **Self S.** (presenter), McMahan C., Russell B., and Brown D. Oral Presentation.

Impact of the "39-week rule" on adverse maternal outcomes: A statewide analysis, Society for Maternal-Fetal Medicine, 40th Annual Pregnancy Meeting, Grapevine TX (February 2020). Cochrane A. C. (presenter), Batson R., Aragon M., Bedenbaugh M., **Self S.**, Isham K., and Eichelberger K. Oral Presentation.

Impact of the "39 week Rule" on adverse neonatal outcomes: A statewide analysis, Society for Maternal-Fetal Medicine, 40th Annual Pregnancy Meeting, Grapevine TX (February 2020). Batson R. (presenter), Cochrane A., Aragon M., **Self S.**, Eichelberger K., and Isham K. Poster Presentation.

Identifying meteorological variables associated with high PM<sub>2.5</sub> levels through Bayesian spatial quantile Regression. University of South Carolina-Epidemiology and Biostatistics Departmental Seminar, Columbia SC (November 2019). **Self S.** (presenter), McMahan C., Russell, B., and Brown D. Oral Presentation.

The spatial geography of exurban conservation easements in twelve counties across the U.S. International Symposium on Society and Resource Management, Oshkosh WI (June 2019). Dyckman C. (presenter), Lauria M., White D., Baldwin R., Fouch N., Overby A. T., Ogletree S., and **Self S.** Oral Presentation.

Persisting dilemma: is GCT benign disease or potentially malignant. Ashmore Conference, Greenville SC (May 2019). Stafford S. (presenter), Frederick A., Lorenz W, **Self S.**, Schammel D., Schammel C., and Yurko Y.

Delayed gastric emptying post esophagectomy: A single institution experience. Ashmore Conference, Greenville SC (May 2019). Frederick A. (presenter), Lorenz W., **Self S.**, Schammel C., Bolton W. Stephenson J., and Ben-Or S.

Obstructive sleep apnea and white matter hyperintensities: Correlation or causation? American Society of Neuroradiology Spring Meeting, Boston MA (May 2019). Vandewater T., Schammel N., Wilson C., **Self S.**, Schammel C., Cowley R., Gault D., and Madeline L.

Impact of hospital type and provider profession on beliefs about elective induction in nulliparous women. 2019 C. M. Easley Symposium and Resident Research Day, Greenville SC (May 2019). Aragon M. (presenter), Cochrane A., Batson R., **Self S.**, Thorp J., Isham K., and Eichelberger K. Oral Presentation.

Impact of the "39-week rule" on adverse maternal outcomes: A statewide analysis. 2019 C. M. Easley Symposium and Resident Research Day, Greenville SC (May 2019). Cochrane, A. (presenter), Batson R., Aragon M., Bedenbaugh M., **Self S.**, Isham K., and Eichelberger K. Oral Presentation.

Impact of the "39-week Rule" on adverse neonatal outcomes: A statewide analysis. 2019 C. M. Easley Symposium and Resident Research Day, Greenville SC (May 2019). Batson R. (presenter), Cochrane A., Aragon M., **Self S.**, Eichelberger K. and Isham K. Oral Presentation.

Obstructive sleep apnea and white matter hyperintensities: Correlation or causation? Greenville Health System Symposium, Greenville SC (April 2019). Vandewater T., Schammel N., Wilson C., **Self S.**, Schammel C., Cowley R., Gault D., and Madeline L.

Delayed gastric emptying post esophagectomy: A single institution experience. Greenville Health System Symposium, Greenville SC (April 2019). Frederick A., Lorenz W., **Self S.**, Schammel C., Bolton W., Stephenson J., and Ben-Or, S.

Obstructive sleep apnea and white matter hyperintensities: Correlation or causation? Wallace R. Roy Functional Radiology Symposium, Greenville SC (March 2019). Vandewater T., Schammel N., Wilson C., **Self S.**, Schammel C., Cowley R., Gault D., and Madeline L.

Ticks and tick-borne diseases: Tracking an invasive tick and modeling efforts for tick-borne pathogens. Shelter Medicine Symposium, Athens GA (February 2019). Yabsley M., Gettings J., McMahan C., Lund R., Liu Y., Nordone S., and **Self S.**

The rising seroprevalence of *Borrelia burgdorferi* in domestic dogs. Georgia Veterinary Medical Association One Health Symposium, Athens GA (January 2019). **Watson S.**, Nordone, S., Yabsley M., Lund R., McMahan C. S., and Gettings J. (presenter).

Companion Animal Parasite Council: One Health in Practice. Georgia Veterinary Medical Association One Health Symposium, Athens GA (January 2019). Yabsley, M., **Watson, S.**, Lund R., McMahan C., and Gettings, J.

A Bayesian multidimensional trend filter. Georgia Statistics Day, Athens GA (October 2018). **Watson S.** (presenter), McMahan C., Russell B., and Brown D.

Delayed gastric emptying post esophagectomy: A single institution experience, Eastern Cardiothoracic Surgical Society Annual Meeting, Clearwater Beach FL (October 2018). Fredrick A., Lorenz W., **Self S.**, Ben-Or S., and Schammel C.

A Bayesian multidimensional trend filter. South Carolina Chapter of the American Statistical Association: South Carolina Statistics Consortium, Clemson SC (October 2018). **Watson S.** (presenter), McMahan C., Russell B., and Brown,D.

Identifying regions with increasing Lyme disease risk using a Bayesian spatio-temporal model. Clemson University College of Science Donor Celebration, Clemson SC (April 2018). **Watson S.** (presenter), Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. Oral Presentation.

A Bayesian GLMM for modeling spatially varying trends in disease prevalence with an application to Lyme disease. ENAR 2018 Spring Meeting, Atlanta GA (March 2018). **Watson S.** (presenter), Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. Poster Presentation.

A Bayesian spatio-temporal model for identifying regions experiencing increasing disease risk. South Carolina Chapter of the American Statistical Association Palmetto Symposium, Columbia SC (March, 2018). **Watson S.** (presenter), Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. Oral Presentation.

A Bayesian binomial GLMM for modeling spatially varying trends in large datasets with a computationally efficient model fitting procedure. Clemson-UGA Joint Seminar, Athens GA (March 2018). **Watson S.** (presenter), Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. Poster Presentation.

Using Bayesian statistics and MCMC methods to model disease prevalence. Graduate Student Seminar, Clemson SC, (November 2017). **Watson S.** (presenter). Oral Presentation.

A Bayesian spatio-temporal model for forecasting the prevalence of antibodies to *Borrelia burgdorferi*, causative agent of Lyme disease, in domestic dogs within the contiguous United States. South Carolina Chapter of the American Statistical Association Palmetto Symposium, Columbia SC (March 2017). **Watson S.** (presenter), Liu Y., Lund R., Gettings J., Nordone S., McMahan C., and Yabsley M. Oral Presentation.

A Model for forecasting flea activity. Companion Animal Parasite Council Summer Board Meeting. Atlanta GA (June 2016). **Watson S.** (presenter), and McMahan C. Oral Presentation.

Fighting fires with fighters: a version of the firefighter problem in which the fighter walks a continuous path on a square graph. MAA Southeastern Section Annual Meeting. Cookeville TN (March 2014). **Watson S.** (presenter), Lewis W., Isaac R., and Lewis T. Oral Presentation.

The Narayana numbers modulo 2: a discrete fractal. MAA Southeastern Section Annual Meeting. Rock Hill SC (March 2013). **Watson S.** (presenter), Isacc R., Farnsworth J., and Lewis T. Oral Presentation.

## Funded Research

### *Pending*

CAREER: Novel Statistical Methods for the Detection of Spatial Patterns Relative to a Non-Homogenous Null Distribution and Extensions to the Bayesian Spatial Scan Statistic

Source: NSF

PI: **Stella Self**

Period: 2023-2027

Novel Surveillance Strategies for Vector-Borne Disease which Reduce Cost and Improve Accuracy (resubmission)

Source: NIH (R01)

PI: **Stella Self**

Period: 2023-2027

Utilizing Prisma Health's PLACES (Providing Linkages and Connections to External Social Support Services) Hub to Improve Health in Communities

Source: Duke Endowment

PI: Caroline Rudisill

Period: 2023-2025

Southeastern Public Health Pathogen Genomic Center of Excellence

Source: Centers for Disease Control and Prevention

PI: Melissa Nolan

Period: 2022-2027

Microbiome Targeted Oral Butyrate Therapy in Gulf War Multisymptom Illness

Source: VA

PI: Saurabh Chatterjee

Period: 2022-2025

Role: Co-I

## Ongoing

CAPC 2021 University of South Carolina Parasite Forecasting

Source: The Companion Animal Parasite Council (CAPC)

PI: **Stella Self**

Period: 2021-2022

Role: PI (3% Effort)

Recipient of Big Data Health Science Fellow

Source: NIAID R25 via the Big Data Health Sciences Center at University of South Carolina

PI: Xiaoming Li

Period: 2021-2021

Role: Trainee (25% Effort)

Improving mosquito control methodologies through development of technology-driven traps and artificial intelligence guided detection of mosquito breeding habitats

Source: NIAID R01

PI: Melissa Nolan

Period: 2021-2026

Role: Co-I (5 % Effort)

Mitigating Injurious Falls in Older Adults Through Non-Injurious Fall and Gait Analysis From Floor Vibrations: Phase 2

Source: NIH (STTR)

PI: Stacy Fritz

Period: 2021 - 2023

Role: Co-I (10% Effort)

South Carolina's Initiative to Address COVID-19 Health Disparities Among Populations at High-Risk and Underserved, Including Racial and Ethnic Minority Populations and Rural Communities

Source: CDC

PI: Melissa Nolan

Period: 2021-2023

Role: Co-I (20% Effort)

Research Center for Child Well-Being

Source: NIH COBRE Phase I

PI: Ron Prinz

Period: 2020-2024

Role: Core Scientist, Statistical and Data Management Core (20% Effort)

Modeling Small Area Estimates of Indicators of Children's Mental Health and Mental Disorders Using National Survey Data

Source: CDC

PI: Jan Eberth

Period: 2020-2022

Role: Co-I

Using Data to Drive Implementation- Stakeholder Perspectives on Screening and Addressing Social Determinants of Health at Prisma Health

Source: Health Sciences Center at Prisma Health

Period 2022-2023

Role: Co-I (in-kind)

Bringing Together Research and Operational Priorities- Evaluation of Technology and EMR-Based Strategy to Screen for Social Determinants of Health (SDoH)-Related Needs at Prisma Health

Source: Health Sciences Center at Prisma Health

PI: Caroline Rudisill

Period: 2021-2022

Role: Co-I (in-kind)

### *Completed*

A Data-Driven Model to Predict Demand for COVID-19 Care in the Prisma Health System

Source: Health Sciences Center, Prisma Health

PI: **Stella Self**

Period: 2020-2021

Role: PI

SARS-CoV-2 Antibody Statewide Surveillance

Source: South Carolina Department of Health and Environmental Control

PI: Melissa Nolan

Period: 2020-2021

Role: Co-I

Evaluating a Technology and EMR-based Strategy to Intervene on Social Determinants of Health-Related Needs in a Large Health System

Source: University of South Carolina Big Data Health Science Center

PI: Caroline Rudisill

Period: 2020-2021

Role: Co-I

McLeod Health COVID-19 Data Analysis

Source: McLeod Health

PI: **Stella Self**

Period: 2020

Role: PI

Access and Utilization of Colonoscopy: A Spatial Perspective

Source: American Cancer Society Mentored Research Scholar Grant

PI: Jan Eberth

Role: Co-I Period: 2016-2020

### *Not Funded*

Examining the Effect of HIV and Trauma on Cognitive Impairment and Alzheimer's Disease Risk

Source: NIH

PI: Monique Brown

Period: 2022-2024

Universalizing primary health care among low-income African Americans and a practical, life-friendly knowledge resource bank for diabetes and hypertension self-management

Source: NIH RO1

PI: Sudha Xirasagar

Period: 2022-2026

Role: Co-I

Novel Surveillance Strategies for Vector-Borne Disease which Reduce Cost and Improve Accuracy

Source: NIH (R01)

PI: **Stella Self**

Role: PI

Impact Score: 42

Developing a Statistical Model for Passive COVID-19 Surveillance using the Amount of SARS-CoV-2 RNA in Wastewater and the Reported Number of Positive SARS-CoV-2 Viral Tests

Source: NIH (R21)

PI: **Stella Self**

Role: PI

Impact Score: 47

Elucidation of Factors that Mediate Outcomes in Racially or Ethnically Diverse Geriatric patients with SARS-CoV-2 Infection in Urban and Rural Long-Term Care Settings

Source: NIH (R01)

PI: Thomas Nathaniel

Role: Co-I

Let's Talk About Sleep: Development of a mHealth Technology Sleep Function to Improve the Clinical Management of Rheumatoid Arthritis

Source: Health Science Center, Prisma Health

PI: Melanie Cozad

Role: Co-I

Joining the Dots between Food Insecurity, Multimorbidity, Cognition, and Race among Older Adults

Source: NIH (R21)

PI: Anwar Merchant

Role: Co-I

South Carolina Clinical and Translational Research Center (SC-CTRC) (Resubmission)

Source: NIH

PI: Xiaoming Li

Role: Co-I

Mitigating Injurious Falls in Older Adults Through Non-Injurious Fall and Gait Analysis From Floor Vibrations: Phase 2

Source: NIH (STTR)

PI: Stacy Fritz

Role: Co-I

Impact Score: 41

Lung Cancer Screening to Treatment Pathways for Rural Patients

Source: NIH

Period 2020 - 2025

PI: Jan Eberth

Role: Co-I

Assessing Trends in Lyme Disease Risk by Integrating Data from Multiple Sources into a Bayesian Spatio-Temporal Model

Source: University of South Carolina Big Data Health Sciences Center

Role: PI

A Retrospective Analysis to Investigate the Association between Coinfection with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* during Pregnancy and Adverse Neonatal Outcomes

Source: Transformative Research Seed Grant: Health Sciences Center, Prisma Health

Role: PI

Online Mindfulness Intervention to Reduce Stress among Diabetes Patients

Source: Transformative Research Seed Grant: Health Sciences Center, Prisma Health

PI: Sara Wagner Robb and Jessica Odom

Role: Co-I

## Teaching Experience

### *University of South Carolina*

BIOS 746 Introduction to Complex Survey Data Analysis: Spring 2022

BIOS 745 Seminar in Biostatistics: Fall 2021

BIOS J711 Introduction to R Programming: Fall 2021

BIOS J757 Intermediate Biostatistics: Spring 2020, Spring 2021

BIOS 760 Biostatistical Methods for Clinical Trials: Fall 2020 , Fall 2022

BIOS 890 Consulting Practicum (Independent Study): Fall 2020, Fall 2021, Spring 2022

### *Clemson University*

Statistics Preliminary Exam Review Course: Summer 2017 (Instructor)

MATH 1020: Business Calculus I: Summer 2015 (Teaching Assistant)

MATH 1040: Precalculus and Introductory Differential Calculus: Fall 2015 (Instructor)

MATH 1051: Precalculus Laboratory: Fall 2014 (Teaching Assistant)

MATH 1060: Calculus of One Variable I: Spring 2015, Summer 2016 (Teaching Assistant)

MATH 1070: Differential and Integral Calculus: Spring 2015 (Teaching Assistant)

MATH 1991: Problem Solving in Mathematics Laboratory: Fall 2014 (Teaching Assistant)

## Mentoring

### *Ongoing: UofSC*

Xingpei Zhao: PhD Biostatistics, Committee Chair

Reid DeMass: MS Biostatistics, Committee Chair

Laasya Velamakanni: MS Biostatistics, Committee Chair

Rongjie Huang: PhD Biostatistics, Committee Chair

Chung-Li Wu: PhD Biostatistics, Committee Member

Katie Lynn: PhD Epidemiology, Committee Member

Jameson Sofge: PhD Epidemiology, Committee Member

Gabriel Benavidez: PhD Epidemiology, Committee Member

Deja Best: MS Environmental Health Sciences, Committee Member

### *Completed: UofSC*

Nyrobi Tyson: MPH Epidemiology, Committee Member

*Association between postpartum weight retention and the dietary inflammatory index, 2022*

Kyndall Braumuller: PhD Epidemiology, Committee Member

*Unearthing an emerging neglected bacterial disease: Evidence of spotted fever group Rickettsioses in El Salvador, 2022*

Danielle Johnson: MPH Epidemiology, Committee Member

*Utilization of Remote Sensing to Analyze Aedes mosquito egg abundance with combined weather variables in two southeastern coastal cities, 2022*

Nadeesha Vidanapathirana: MSPH Biostatistics, Committee Chair

*A comparison of spatial clustering assessment methods, 2021*

Nicole Nasrallah: MSPH Biostatistics, Committee Member

*Correcting for measurement error in the outcome when estimating the distribution of time to pregnancy with the current duration approach, 2021*

Michael Stutz: PhD Statistics, Committee Member

*Regression methods for group testing data, 2021*

Ummay Anika: MSPH Biostatistics, Committee Member

*A simulation-based study of location-shift models under non-normal conditions, 2020*

### *Ongoing: Clemson University*

Nakisa Fouch: PhD Wildlife and Fisheries Biology, Committee Member

## **Professional Involvement**

### *External Service*

President of the South Carolina Chapter of the American Statistical Association: 2022-present

Vice President of the South Carolina Chapter of the American Statistical Association: 2021-2022

Treasurer of the South Carolina Chapter of the American Statistical Association: 2019-2021

Member of the American Statistical Association

Member of the American Mathematical Society

Member of the South Carolina ArcGIS Society



### *Institutional Service*

Assistant Professor of Biostatistics Position Search Committee Member: 2021- 2022, 2022-2023

Co-organizer of the departmental seminar for Epidemiology and Biostatistics : 2020-2022

Member of the Biostatistics Admissions Committee: 2019-present.

Secretary of the Clemson Chapter of the Association for Women in Mathematics: 2016-2017.

Co-Treasurer of the Clemson Chapter of the Association for Women in Mathematics: 2015-2016.

## **Honors and Awards**

Certificate of Meritorious Service, University of South Carolina, 2020

Outstanding Graduate in Discovery Award, College of Science, Clemson University, April 2019.

Outstanding Graduate Research Award, School of Mathematical and Statistical Sciences, Clemson University, April 2019.

Georgia Statistics Day: Outstanding Student Poster Award, Honorable Mention, October 2018.

American Statistical Association South Carolina Chapter Outstanding Presentation Award, SCASA, March 2018.

Personal Enrichment Grant, The Graduate School, Clemson University, November 2017.

Outstanding MS Student Award, Clemson University, 2016.

R.C. Edwards Fellowship, The Graduate School, Clemson University, 2014.

Furman University Scholarship Cup, Furman University, 2014.

DeLany Medal in Mathematics, Mathematics Department, Furman University, 2014.

Mathematics Faculty Award for Excellence, Mathematics Department, Furman University, 2014.

Member of Phi Beta Kappa Honors Society, Gamma Chapter, Furman University, 2013-2014.

Best Student Presentation Award, MAA: Southeastern Section, 2014.

## **Media Interviews**

*SC likely to exceed coronavirus projections by Saturday. Here's Why.* The Island Packet. Print Interview, April 8, 2020.

*Is SC's curve plateauing? It's too early to tell, but masks help.* WIS News Columbia. Print Interview, August 1, 2020.

*Experts say SC COVID-19 cases may be on decline, but school starting could set us back.* WIS News Columbia. Print Interview, August 12, 2020.

*The fall surge has definitely started: Hospitals prepare for increase in COVID-19 cases.* WIS News Columbia. TV Interview, November 11, 2020.