Stephanie A. (Hansen) Bruggeman

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(605) 688-4047 E-mail: Stephanie.bruggeman@sdstate.edu

Appointments

Assistant Professor, Agronomy, Horticulture, & Plant Sci. Dept. SDSU Oct. 2017-Present

Visiting Instructor, Biology Department, Augustana University Spring 2017

Herbicide Degradation/Precision Ag Lab, Plant Science Dept. SDSU
- Research Associate III 2013-2017
- Drought Center Coordinator 2008-2013
- Research AssociateII 2008-2013

Molecular Biology Lab, Plant Science Dept. SDSU
- Research Associate II 2001-2008
- Research Associate I 1996-2001

Graduate Research Assistant, Biology and Microbiology, SDSU 1994-1996

Education

South Dakota State University, Plant Science PhD, August 2016
*Dissertation title:*Morphologic and transcriptomic response to weed pressure in multiple maize (*Zea mays* L.) selections and teosinte (*Zea mays* L. ssp*parviglumis*) lines
South Dakota State University, Biology M.S., 1996
South Dakota State University, Microbiology B.S., 1994

Teaching/Outreach:

Associate Editor - Agronomy Journal 2018 - Present
South Dakota Representative - Midwest Cover Crops Council 2018 - Present

Crop Production PS103L: Spring 2018 South Dakota State University
Visiting Instructor, Biology Dept., Augustana University:Present Introductory Biology Labs for biology majors and non-majors, Spring Semester 2017
Teaching assistant Weed Science PS 343 (2+ semesters), SDSU
Teaching assistant Microbiology MICRO 233 Lab (2 semesters), SDSU

Coordinator, Soy100 Regional Soybean Producer Meeting, SDSU, 2012-Present

Farm Show Outreach: GMO information booth, Watertown, SD Farm Show, 1999
Ag Outlook Graduate Student Poster Coordinator/Presenter, 2015, 2016

Workshops: Develop molecular biology workshops for high school teachers, students, and Master Gardener groups**,** 1998-2002
Graduate Student Grant Writing Workshop, SDSU, 2012

Research/Lab Management Experience

Project Subjects:

Land Management	Gene Expression	Genetic Markers
Precision Agriculture	Water Quality	Herbicide Degradation

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Skills:

Project/Lab Management	Budget/Grant/ Coordination
Personnel Management/Mentoring	Field/Agronomic Research
Molecular Biology Techniques/Analysis	Equipment Operation/Troubleshooting

Publications

Horvath, D.P., **S.A. Bruggeman**, J. Moriles-Miller, J.V. Anderson, M. Dogramaci, B. Scheffler, A. Hernandez, M.E. Foley, and S. Clay. 2018. Weed presence altered biotic stress and light signaling in maize even when weeds were removed early in the critical weed free period. Plant Direct 2018; Accepted; InPress.

Clay, S.A., and **S.A. Bruggeman**. 2018. E-Chapter: Site specific weed management. *In*Zimdahl, R.L. (ed), Integrated weed management for sustainable agriculture. Burleigh Dodds Science Publishing, Cambridge, UK http://dx.doi.org/10.19103/AS.2017.0025.09

Bruggeman, S.A., S.A. Clay, C.L. Reese, and C.G. Carlson. 2017. Chapter 13: Mathematics associated with seed emergence, plant population, stand uniformity, and harvest losses. *In* Clay. D.E., S.A. Clay, and S.A. Bruggeman (eds), Practical Mathematics and Agronomy for Precision Farming. American Society of Agronomy, Madison WI.

Clay, D.E., N.R. Kitchen, E. Byamukama, and **S.A Bruggeman**. 2017. Chapter 7: Calculations supporting management zones. *In*Clay. D.E., S.A. Clay, and S.A. Bruggeman (eds), Practical Mathematics and Agronomy for Precision Farming. American Society of Agronomy, Madison WI.

Graham, C., D.E. Clay., and **S.A. Bruggeman**. 2017. Chapter 15: Developing yield response curves for fertilizer and seeding rates. *In*Clay. D.E., S.A. Clay, and S.A. Bruggeman, Practical Mathematics and Agronomy for Precision Farming. American Society of Agronomy, Madison WI.

Clay, S.A., K. K. Krack, **S. A. Bruggeman**, S.K. Papiernik, and T.E. Schumacher. 2016. Maize, switchgrass, and ponderosa pine biochar added to soil increased herbicide sorption and decreased herbicide efficacy. J of EnviroSci and Health Pt B, May 2016. doi:10/1080/03601234.2016.1170540.

Clay, D.E., C. Reese, **S.A. Bruggeman**, J. Miller. 2016. The use of enriched and natural abundance nitrogen and carbon isotopes in soil fertility research. *In* A. Chatterjee and D. Clay (eds), Soil Fertility Management in Agroecosystems. ASA/Crop Science/SSSA digital library, Madison WI.

Clay, D.E., G. Reicks, J. Chang, T. Kharel, and **S.A. Bruggeman**. 2016. Assessing a fertilizer program: short and long-term approaches. *In* A. Chatterjee and D. Clay (eds), Soil Fertility Management in Agroecosystems. ASA/Crop Science/SSSA digital library, Madison WI.

Horvath, D.P., **S. A. Bruggeman**, J. Moriles Miller, and S.A. Clay. 2015. RNAseq reveals weed-induced PIF3-like as a candidate target to manipulate weed stress response in soybean. New Phytologist, 207(1):196-210.

Ayadi, F.Y., E.L. Cortus, D.E. Clay, and **S.A. Hansen**. 2015. Isotope ratio mass spectrometry monitoring of nitrogen volatilization from beef cattle feces and N15-labeled synthetic urine. Atmosphere.doi:10.3390/atmos60x000x

Reese, C.L., D.E. Clay, S.A. Clay, A.D. Bich, A.C. Kennedy, **S.A. Hansen**, and J. Miller. 2014. Winter cover crops impact on corn production in semiarid regions.Agron. J. 106:1479-1488.

Chang, J., D. Clay, **S. Hansen**, S. Clay, and T. Schumacher. 2014. Water stress impacts on transgenic corn in the Northern Great Plains. Agron. J. 106:125-130.

Hansen, S., S.A. Clay, D.E. Clay, C. G. Carlson, G. Reicks, Y. Jarachi, and D. Horvath. 2013. Landscape features impact on soil available water, corn biomass, and gene expression during the late vegetative stage. The Plant Genome. 6: doi:10.3835/plantgenome2012.11.00029.

Hansen, S., J. Narvel, J. Yates, M. Devries, B. Anderson, and G. Jiang. 2013. What's in the Genetic Pipeline.Chapter 7.*In* Clay, D.E., C.G. Carlson, S.A. Clay, L. Wagner, D. Deneke, and C. Hay (eds). iGROW Soybean: Best Management practices. South Dakota State University.

Moriles, J., **S. Hansen**, D.P. Horvath, G. Reicks, D.E. Clay and S.A. Clay. 2012. Microarray and growth analyses identify differences and similarities of early corn response to weeds, shade, and nitrogen stress. Weed Sci. 60:158-166. (Paper of the Year, Weed Science)

Clay, S.A., D.E. Clay, D.P. Horvath, J. Pullis, C.G. Carlson, **S. Hansen**, and G. Reicks. 2009. Corn response to competition: Growth alteration vs yield limiting factors. Agronomy J. 101:1-8

Publicationsas Co-Editor

Practical Agronomy and Mathematics for Precision Agriculture.2017. D.E. Clay, S.A. Clay, and **S.A Bruggeman**, eds. American Society of Agronomy, Madison, WI

Publications in Development

Bruggeman, S.A., S. A. Clay, D.P. Horvath, and D.E. Clay.Effect of weed stress on teosinte cultivars in a field environment.

Presentations

Bruggeman, S.A., S.A. Clay, and D.E. Clay. 2017. Everybody's gotta eat: addressing the misconceptions of non-bio majors. Oral paper at ASA/CSSA/SSSA International Annual Meeting, October, Tampa, FL.

Bruggeman, S.A. Clay, D.P. Horvath, D.E. Clay, and S. Flint-Garcia. 2017. Weed response genes in corn and teosinte. Invited speaker.Spring Seminar Series, SDSU Dept. of Agronomy, Horticulture, and Plant Science. January 23. Brookings, SD.

Bruggeman, S.A., S.A. Clay, D.P. Horvath, and S. Flint-Garcia. 2016. Differential Gene Expression in teosinte under weed stress. Oral paper at Weed Science Society of America International meeting, February, San Juan, Puerto Rico.

Bruggeman, S.A., D.E. Clay, S.A. Clay, J. Miller, and G. Reicks. 2015. High yield soybeans, how are plants responding? Poster at South Dakota Ag Outlook. Sioux Falls, SD, December 10.

Bruggeman, S.A., S.A. Clay, D.P. Horvath, S. Flint-Garcia. 2015. Differential gene expression of maize and teosinte varieties demonstrating differences in weed tolerance. Agronomy Society of America International Annual meeting, November, Minneapolis, MN.

Bruggeman, S.A., S.A. Clay, D.P. Horvath, S. Flint-Garcia. 2014. Identification of differential agronomic traits in early stage teosinte, flint, dent, and sugar (sweet) corn varieties in competition with weeds. Confernce paper abstract.South Dakota Academy of Science, Vol 93.

Hansen, S. A.2014.Organization of Data. Invited speaker.2014-15 SDSU BMGSA Seminar Series. Brookings, SD

Hansen, S. A. 2014. So you think you know about budgets. Invited speaker.2013-14 SDSU BMGSA Seminar Series. Brookings, SD

Hansen, S., S.A. Clay, D.P. Horvath, and B. Scheffler. 2013. Genes and processes differentially expressed in soybean and corn grown under weed stress at early growth stages. American Society of Agronomy International Annual Meeting, November. Tampa FL.

Hansen, S., D. Horvath, S. Clay and B. Scheffler.2012. RNA-Seq Identifies Genes and Processes That Are Differentially Expressed in Soybean Due to Weed Stress. ASA-CSSA-SSSA Annual Meeting, Cincinnati, OH

Hansen, S., S. A. Clay, D.E. Clay, D.P. Horvath, G. Reicks, J. Moriles, and Y. Jarachi. 2012. Drought VS. Weed Stress: Comparison of Corn (Zea Mays) Gene Expression at Midseason. WSSA Abstract Hawaii, February

Hansen, S., S. Clay, D. Clay, D. Horvath, G. Reicks, Y. Jarachi. 2011. Landscape position effects on water deficit, corn growth, and gene expression at late vegetative stage. ASA-CSSA-SSSA Annual Meeting, San Antonio, TX

Hansen, S.A., S. A. Clay, D. E. Clay, D. P. Horvath, and G. Reicks; 2011.Weed Stress Duration Effects on Soybean Gene Expression and Yield. WSSA Annual Meeting, Portland, OR

Hansen, S., S. Clay, J. Moriles and D. Horvath.2010. Transcriptome Analysis of Weed Competition and Reduced Light Quantity OnCorn Growth**.**ASA/CSSA/SSSA International Annual Meeting, Long Beach, CA

Hansen, S., S. Clay, J. Moriles and D. Horvath. 2010. Transcriptome analysis of corn in competition with canola or grown in shade or low nitrogen. WSSA Annual Meetings, Denver, CO

Clay, S.A., **S. Hansen**, J. Moriles, D. Clay, and D. Horvath.2009. Investigating Early Growth and Development Response of Corn to Weed Competition Using Transcriptome Analysis. ASA-CSSA-SSSA Annual Meeting, Pittsburgh, PA

Presentations as Contributing Author

Moriles, J.C., S.A. Clay, D.E. Clay, **S.A. Hansen**, D.P. Horvath, Y. Jarachi, and G. Reicks. 2013. Comparingdrought vs. weed stress during late vegetative corn growth stage. American Society of Agronomy International Annual Meeting, November, Tampa FL.

Bich, A., C. Reese, S.A. Clay, D.E. Clay, and **S. Hansen**. 2012. Impact of summer interseeded cover crops on corn yield, late season soil cover, and late season weed pressure in no-tillage systems. ASA/CSSA/SSSA national meeting, October 24, Cincinnati Ohio

J. Moriles, S. Clay, D. Clay, **S. Hansen**, D. Horvath, G. Reicks. 2010. Early corn growth and development in response to weed competition and altered light quantity and quality.WSSA Annual Meeting, Denver, CO

Clay, S.A., D.P. Horvath, **S.A. Hansen**, and J. Moriles. 2012. Differences in Corn and Soybean Responses to Weed Competition and Red Tarp Treatment. WSSA Abstract Hawaii, February.

Scholarships
Gene "Doc" Arnold Plant Science Graduate Student Scholarship 2015-2016 $1500

Awarded Grants

Detecting and monitoring brine spills in rangeland using remote sensing. L. Li, S.A. Bruggeman, J. J. Stone, H. Sieverding. $46,000.January 2018-September 2018. South Dakota NASA EPSCoR Program

Achieving 100 Bu/A soybean yields: on-farm research and sharing high yield protocols with South Dakota soybean producers.D.E. Clay et al. $283,478. July 2017-June 2018 (Co-PI) South Dakota Soybean Research and Promotion Council

Achieving 100 Bu/A soybean yields: developing, testing, and sharing high yield protocols with South Dakota soybean producers. D. E. Clay et al. $280,382. July 2016-June 2017 (Co-PI) South Dakota Soybean Research and Promotion Council

Influence of Agrisure Artesian water-optimization alleles on hybrid performance and response to excess soil moisture. Clay, D.E., G. Reicks, and S.A. Hansen.$32,125.February 2014-December 2015. Syngenta Seeds, Inc.

Sequencing of corn and teosinte samples in weed pressure studies.D.P. Horvath, S. A. Clay, and S.A. Hansen.2014. $50,000.USDA Program Leadership.

Identification of differential agronomic traits in early stage teosinte, flint, dent, and sugar (sweet) corn varieties in competition with weeds.Hansen, S.A. $4,000.May 2013-April 2014.South Dakota State University Center for Excellence in Drought Tolerance Research Excellence in Plant Stress Research Awards.

Identification of differential agronomic traits in early stage teosinte, flint, dent, and sugar (sweet) corn varieties in competition with weeds.Hansen, S.A. $7,400.April 1, 2013-March 30, 2014.South Dakota State University Research/Scholarship Support Fund 2013.

Drought tolerance in California studies. Clay, D.E., S.A. Clay, and S. Hansen. $28,676.March 2010-December 2010.

Grant Submissions not awarded

Experiential learning for undergraduate students interested in precision farm and ranch management.S.A. Bruggeman, et al. $297,000. Dec. 2017. USD-AFRI-Higher Ed-REU

Reducing erosion and increasing nutrient retention by integrating cover crops and manure after silage and low residue crop harvest. S.A. Bruggeman, D.E. Clay, & S.A. Clay. $80,000Nov. 2017.South Dakota Nutrient Research and Education Council.

Determining the genomic regions responsible for weed tolerance in maize and teosinte, the ancestor of maize.S.A. Clay and S.A. Hansen.$470,000. April, 2014 USDA-AFRI: Foundational.

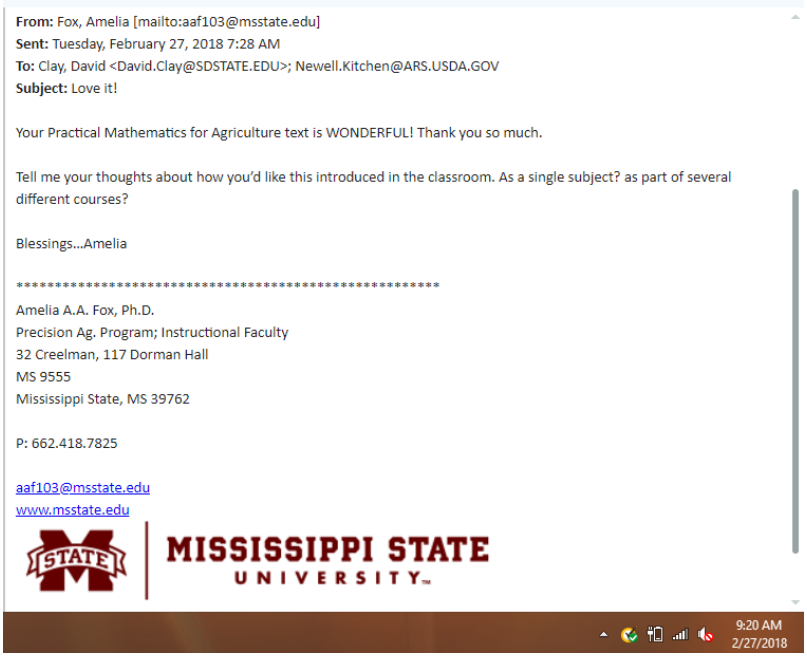
Planning Committees

Soy100, March 14, 2018, Brookings SD. Approximately 200 producers attended the meeting.
Soy100, March 15, 2017, Brookings SD. Approximately 200 producers attended the meeting.
Saline and Sodic Soil Management Workshop, July 7th, 2016. Mitchell, SD.

University, National, and International Service

Reviewer Agronomy Journal	2013-present
Chair or member of numerous search committees	2008-present
Women in Science Committee, ASA/CSSA/SSSA	2014-15
SDSU Plant Science Graduate School Booth at ASA/CSSA/SSSA	2014
Charter member of SDSU Plant Science Graduate Student Association	2013
Member Professional Staff Advisory Council, South Dakota State University	2012
Developed first shared-bicycle program for international students	2000

Other Items to Note



From: Fox, Amelia [mailto:aaf103@msstate.edu]
Sent: Tuesday, February 27, 2018 7:28 AM
To: Clay, David <David.Clay@SDSTATE.EDU>; Newell.Kitchen@ARS.USDA.GOV
Subject: Love it!

Your Practical Mathematics for Agriculture text is WONDERFUL! Thank you so much.

Tell me your thoughts about how you'd like this introduced in the classroom. As a single subject? as part of several different courses?

Blessings...Amelia

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