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Education

Connecticut College, New London, CT	Zoology/Field Biology	B.A., 1979
University of Connecticut	Plant Ecology	Ph.D., 1992
Ecosystem Center, Marine Biol. Lab.	Post-doctoral Associate	1992-1995

Appointments

2015-present Professor, Division of Biology, Kansas State University
2003-present Co-Director, Ecological Genomics Institute, www.ecogen.ksu.edu
2002- 2015 Associate Professor, Division of Biology, Kansas State University,
1995- 2002 Assistant Professor, Division of Biology, Kansas State University, Manhattan, KS
1992-1995 Postdoctoral Fellowship, Ecosystems, Marine Biological Lab, Woods Hole, MA
1991-1992 Lectureship, University of Connecticut
1987-1990 Graduate Teaching Assistant, University of Connecticut
1985-1986 Fulbright and American Scandinavian Fellowships, University of Lund, Sweden

Synergistic Activities

- *Gordon conference chair 2011, Ecological and Evolutionary Functional Genomics, Biddeford Maine, Vice chair, 2009, Tilton NH*
- *Director of the KSU Dept of Education GAANN Fellowship Program in Ecology, Evolution, and Genomics (www.ksu.edu/eeg)*
- *Co-Director, KSU Ecological Genomics Institute.* The institute (www.ecogen.ksu.edu) is a broad interdisciplinary center that provides a fertile intellectual environment, state-of-the-art facilities and develops the technical expertise necessary to allow Ecological Genomic research to flourish at KSU. This interdisciplinary EG Institute now involves over 26 faculty, post-docs, and students in five departments and three colleges at KSU. Goals and activities of the Ecological Genomics Institute include providing funding for research through seed grants, support to hire three new tenure-track EG faculty, facilitating the development of infrastructure to enhance EG activities, continuing the annual “Genes in Ecology, Ecology in Genes” Symposium, developing an interdisciplinary curriculum in EG, establishing technical and synthesis workshops, and the initiation of visiting scholar, seminar, and international collaborative programs.
- *Spearheaded international reciprocal graduate student exchange in EcoGenomics between Dutch universities as well as new European Union EcoGenomics and ConGenomics Initiatives.*
- *NSF Workshop on Biological Tool Development for the 21st Century.* Convened by Gene Robinson, Mar 2009.
- *NSF Ecosystems Panel, 2002-2006, NSF-IOS Panel, 2009,2011*

Collaborators and other affiliations

Collaborators (past four years) Akhunov Eduard (Kansas State University); Akhnuova, Alina (Kansas State University); Baer, Sara (Southern Illinois University); Bello, Nora (Kansas State University); Brown Sue (Kansas State University); Bryant Johnny (Kansas State University); Chepailla Sanjay (Kansas State University); Clark James (Kansas State University); Coles Jan (Kansas State University); Edwards, Scott (Harvard); Feder Martin (Chicago); Gan Jin (Kansas State University); Garrett Karen (Kansas State University); Giblin Anne (Marine Biological Lab); Gibson David (Southern Illinois University); Gray Miranda (Kansas State University); Herman Michael (Kansas State University); Jeannotte Richard (UC

Davis); Jumponnen, Ari (Kansas State University); Kammenga Jan (Wageningen) ; Knapp Mary (Kansas State University), Kumar Sanjay (Kansas State University); Loya Wendy (Kansas State University); Maricle, Brian (Fort Hays State University) ; Morgan Ted (Kansas State University); Nadelhoffer Knute (Univ of Michigan); Nelson Richard (Kansas State University); Nikolau Basil (Iowa State); Ouborg Joop (Raboud); Olsen Jake (Fort Hays State University); Price Kevin (Kansas State University); Patankar Aparna Kansas State University; Ravenek Janneke (University of Amsterdam); Robinson Gene (Illinois); Samarkoon Thilani Kansas State University; Schrick Kathrin (Kansas State University); Schulz, Jack (University of Missouri); Song, Zhihong (Iowa State) ; Shaver, Gus (Marine Biological Lab); Shelton, Jennifer (Kansas State University); Smith Dixie (Pittsburg State); St Amand, Paul (Kansas State University); Surabhi (Kansas State University); Tetreau Hannah (Kansas State University); Ungerer, Mark (Kansas State University); Wang Donghai (Kansas State University); Welte Ruth (Kansas State University); Yuan Wengao (North Carolina State) ; Zhang Ke (Kansas State University)

Graduate Advisor and Postdoctoral Sponsor: John Silander (University of Connecticut) and Gus Shaver (Marine Biological Laboratory), Anne Giblin (Marine Biological Laboratory), Knute Nadelhoffer (University of Michigan)

Thesis Advisor and Postgraduate-Scholar Sponsor: Dixie Smith (PhD 2002), Wendy Loya (PhD 2002), Jim Clark MS, 2004), Miranda Gray (MS 2012), Hannah Tetreault, Jennifer Shelton (MS 2012), Janneke Ravenek-exchange student-Amsterdam, Jacob Alsdurf (current), Matt Galliard (current), Samantha Sharpe (current), Postdoctoral Fellows: J. Coles (1996-1998), Fagan (2001-2005), Bill (2005-2006), Patankar (2003-2005), Kumar (2006) Surabhi (2007-2009).

Publications

Laurel R. Wilson, David J. Gibson, Sara G. Baer, Loretta C. Johnson. Plant community response to regional sources of dominant grasses in grasslands restored across a longitudinal gradient. *Ecosphere*. In Press

Mendola, M, S G Baer, LC Johnson and BR Maricle. 2015. The role of ecotypic variation and the environment on biomass and nitrogen in a dominant prairie grass. *Ecology*. 96:2433-2445.

Johnson Loretta, Olsen Jacob T, Tetreault Hannah, DeLaCruz Angel, Bryant John, Morgan Ted, Knapp Mary, Bello Nora, Baer Sara, Maricle Brian R. Intraspecific variation of a dominant grass and local adaptation in reciprocal garden communities along a US Great Plains' precipitation gradient: implications for grassland restoration with climate change *Evolutionary Applications*. 8 (2015) 705–723

Seth Raithel; Loretta Johnson; Mathew Galliard; Susan Brown; Jennifer Shelton; Nicolae Herndon; Nora M Bello Inferential considerations for low-count RNA-seq transcripts: a case study on an edaphic subspecies of dominant prairie grass *Andropogon gerardii* *BMC Genomics*. In revision.

Ke Zhang, Loretta Johnson, P.V. Vara Prasad, Zhijian Pei, Wenqiao Yuan, Donghai Wang . 2015. Comparison of big bluestem with other native grasses: Chemical composition and biofuel yield *Energy* 83 (2015) 358-36

Ke Zhang, Loretta Johnson, P.V. Vara Prasad, Zhijian Pei, Donghai Wang 2015. Big bluestem as a bioenergy crop: A review *Renewable and Sustainable Energy Reviews* 52 (2015) 740–756

Gray MM, St. Amand P, Akhunov ED, Knapp M, Garrett KA, Morgan TJ, Baer SG, Maricle BR, Johnson LC*. 2014. Ecotypes of an ecologically dominant grass (*Andropogon gerardii*) exhibit genetic divergence across the U.S. Midwest environmental gradient. *Molecular Ecology*. 23, 6011–6028

- Caudle, K.L., L.C. Johnson, S.G. Baer, and B.R. Maricle*. 2014. A comparison of seasonal foliar chlorophyll change among ecotypes and cultivars of *Andropogon gerardii* (Poaceae) by using non-destructive and destructive methods. Manuscript in press: *Photosynthetica* 1-8.
- K. Zhang, L. Johnson, R. Nelson, W. Yuan, Z.J. Pei, and D. Wang. 2014. Thermal properties of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains. *Energy* 64(2014) 164-171, 2014.
- Zhang K.; Johnson L.; Yuan W.; Pei Z.; and Wang D. 2014. Glucan yield from enzymatic hydrolysis of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains *BioEnergy Research* 1-12..
- Zhiyong Yang, Zhengxing Shen, Hannah Tetreault, Loretta Johnson, Bernd Friebe, Taylor Frazier, Lin-kai Huang, Bin Xu, Caitlin Burklew, Xin-Quan Zhang, Bingyu Zhao*, 2013. Production of autopolyploid lowland switchgrass lines through in vitro chromosome doubling. *Bioenergy Research* 7(1):232-242.
- Jacob T. Olsen, Keri L. Caudle, Loretta C. Johnson, Sara G. Baer, Brian R. Maricle* 2013. Variation in leaf anatomy among populations of *Andropogon gerardii* along a precipitation gradient. *American Journal of Botany* 100(10):1957.
- Gibson, D.J., Sandor, G., Donatelli, J., Baer, S.G., Johnson, L. Reproductive effort of *Andropogon gerardii* ecotypes in an Illinois common garden. 2013. *Torrey Botanical Club Journal*. 140(3):269
- Gan Jing, Wenqiao Yuan*, Loretta Johnson, Donghai Wang, Richard Nelson, Ke Zhang. 2012 Hydrothermal conversion of big bluestem for bio-oil production: The effect of ecotype and planting location. *Bioresource Technology* 116 (2012) 413–420.
- Zhang, Ke Loretta Johnson, Richard Nelson, Wenqiao Yuan, Zhijian. Pei, and Donghai Wang*. 2012. Chemical and elemental composition of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains. *Industrial Crops and Products* 40: 210–218.
- G. E. Robinson, J. A. Banks, D. K. Padilla, W. W. Burggren, C. S. Cohen, C. F. Delwiche, V. Funk, H. E. Hoekstra, E. D. Jarvis, L. Johnson, M. Q. Martindale, C. Martinez del Rio, M. Medina, D. E. Salt, S. Sinha, C. Specht, A. C. Spradling, K. Strange, J. E. Strassmann, B. J. Swalla, L. Tomanek. 2010. Empowering 21 Century Biology. *Bioscience* 60 (11):923-930.
- Walker, J, M Bill, L. Johnson, N Simpson, A Jumponnen, 2010. Application of fungistatics in soil reduces N uptake by an arctic ericoid shrub (*Vaccinium vitis-idaea*)" *Mycologia*. 102(4):822.
- M. Ungerer, L. Johnson and M. Herman*. Ecological genomics: finding gene functions in the natural environment. 2008. Special ecological genomics issue of *Heredity*. *Heredity*. 1-6.
- McKinley, D.C., M.D. Norris, L.C. Johnson, and J.M. Blair. 2008. Biogeochemical changes associated with *Juniperus virginiana* encroachment into grasslands. Pages 170-187 In *Ecological Studies Series 196 - Western North American Juniperus Communities: A Dynamic Vegetation Type* (O.W. Van Auken ed.), Springer-Verlag, NY.
- J. Kammenga, M. Herman, J. Ouborg, L. Johnson, and R. Breitling. 2007. Microarray challenges in ecology *Trends in Ecology and Evolution*. 22: 273-279. 97(6):1177.

Norris, M.A., J.M. Blair* and L.C. Johnson. 2007. Altered ecosystem nitrogen dynamics as a consequence of land cover change in tallgrass prairie. *American Midland Naturalist* 158:432-445.

Jumpponen, A. and Johnson, L.C. 2005. Can rDNA analysis of diverse fungal communities in soil and roots detect effects of environmental manipulations—a case study from tallgrass prairie. *Mycologia*. 97(6): 1177-1194.

Jumpponen, A. Trowbridge, J., Mandyam, K.G. and Johnson, L.C. 2005. Nitrogen deposition affects AM root colonization minimally but shifts community structure. *Biology and Fertility of Soils*. 41:217-224.

Craine, J., B. Lee, L. Johnson, W. Bond, W.D. Williams. 2005. Roots of the world. *Ecology*. 86:12-19.

Loya, W., L.C. Johnson, K. Nadelhoffer (2004). Annual dynamics of leaf and root derived carbon in arctic tundra soils. *Soil Biology and Biochemistry* 36(4):655-666..

Smith, D.L. and L.C. Johnson. 2004. Changes in soil carbon cycling as forests expand into grassland: Vegetation-mediated changes in microclimate reduces soil respiration. *Ecology*. 85 (12): 3348-3361.

Smith, D.L. and L.C. Johnson (2003). Expansion of *Juniperus virginiana* in the Great Plains: Changes in Soil Organic Carbon Dynamics. *Global Biogeochemical Cycles* 17(2):1-12.

McKane, R., L.C. Johnson, B. Fry, G. Shaver, K. Nadelhoffer, E. Rastetter, B. Fry, A. Giblin, K. Kielland, B. Kwaitkowski, J. Laundre, and G. Murray (2002). Resource-based niches provide a basis for species diversity and dominance in an arctic plant community. *Nature* 415:68-71.

Loya, W., L. C. Johnson, K. Nadelhoffer, G. Kling, J. King, W. Reeburgh (2002). Pulse-labeling studies of carbon cycling in Arctic tundra ecosystems: the contribution of photosynthate to soil organic matter. *Global Biogeochemical Cycles*. 16(4).

K.J. Nadelhoffer, L.C. Johnson, J. Laundre, A. Giblin. and G. Shaver. 2002. Fine root production and nutrient use in wet and moist arctic tundras as influenced by chronic fertilization. *Plant and Soil*. 242 (1): 107-113.

following *Juniperus* expansion into grasslands. *Can. J. Forestry Research* 31:1940-1946..

King, J., W. Reeburgh, K. Nadelhoffer, G. Kling, W. Loya, and L.C. Johnson (2002). Contribution of photosynthate of methane emission in tundra: A ¹⁴C labeling approach. *Global Biogeochemical Cycles* 4 (doi: 10.1029/2001GB001456).

Hoch, G., J. Briggs, and L. Johnson (2002). Assessing the rate, mechanisms, and consequences of conversion of tallgrass prairie to *Juniperus virginiana* forest. *Ecosystems* 5:578-586.

Wessman, C., S.A. Archer, L.C. Johnson, and G. Asner. Woodland expansion in US Grassland: Assessing Land cover Change and Biogeochemical Impacts. Peer-reviewed Book Chapter. *Land Use and Land Cover Change*. Kluwer Publishing. All authors contributed equally. LJ 25%.

L. C. Johnson and J.R. Matchett. 2001. Fire and grazing regulate belowground processes in tallgrass prairie. *Ecology*. 82(12):3377-3389

M. Norris, J. Blair, and L.C. Johnson. 2001. Land cover change in eastern Kansas: litter dynamics of closed-canopy eastern redcedar forests in tallgrass prairie. *Can. J. Botany*. 79:214-222.

Johnson, L.C., G. Shaver, D. Cades, A. Stanley, K. Nadelhoffer, A. Giblin. 2000. Plant carbon- nutrient interactions control CO₂ exchange in Alaskan wet sedge tundra ecosystems. *Ecology* 81:453-469.

A.K. Knapp, J.M. Blair, J.M. Briggs, S.L. Collins, D.C. Hartnett, L.C. Johnson, and E.G. Towne. 1999. The keystone role of bison in North American tallgrass prairie. *Bioscience* 49: 39-50.

David U. Hooper and L.C. Johnson. 1999. Nitrogen limitation in arid and semi-arid ecosystems: Response to geographic and temporal variation in precipitation.. *Biogeochemistry* 46:247-293.

Shaver, G. R., L.C. Johnson, D.H. Cades, G. Murray, J.A. Laundre, E.B. Rastetter, K. J. Nadelhoffer, and A.E. Giblin. 1998. Biomass and CO₂ flux in wet sedge tundras: Responses to nutrients, temperature, and light. *Ecological Monographs* 68(1): 75-92.)

Williams, M, E. B. Rastetter, D. N. Fernandez, M. Goulden, L. C. Johnson, G. R. Shaver. 1997. Predicting gross primary productivity in terrestrial ecosystems. *Ecological Applications* 7(3): 882-894.

Johnson, L.C., G.R. Shaver, K.J. Nadelhoffer, A. E. Giblin, E.B. Rastetter, J.A. Laundre, G.L. Murray. 1996. The effects of enhanced drainage and elevated temperature on carbon balance in tussock tundra microcosms. *Oecologia* 108: 737-748.

Nadelhoffer, K., G. R. Shaver, B. Fry, A. Giblin, L. Johnson, and R. McKane. 1996. Variation in ¹⁵N natural abundance in arctic tundra as an indicator of plant species N-use patterns *Oecologia* 107: 386-394.

L Johnson and A Damman. 1993. Decay and its regulation in Sphagnum peatlands. *Advances in Bryology* 5:249-296.

L Johnson and A Damman. 1991. Species-controlled Sphagnum decay on a South Swedish Raised bog. *Oikos*, 234-242.

L Johnson and A Damman., N Malmer. 1990. Sphagnum macrostructure as an indicator of decay and compaction in peat cores from an ombrotrophic south Swedish peat-bog. *Journal of Ecology*. 633-647.

Invited Presentations

International Switchgrass Genomics Meeting. Adaptive genetic differentiation and local adaptation of dominant prairie grass *Andropogon gerardii* along the precipitation gradient of the Midwest: Implications for climate change Loretta Johnson, Gailliart, Matt; St Amand, Paul; Brown, Susan J, Poland, Jesse, Bello, Nora; Baer, Sara; Maricle, Brian **Knoxville, Tennessee Oct 2015.**

Ecological Genomics Symposium. Adaptive ecotypic variation and genetic divergence of a widespread grass *Andropogon gerardii* across the Great Plains' climate gradient. **Gailliart, M.**; Poland, J.; St. Amand, P.; Bello, N.; Morgan, T.; Knapp, M.; Baer, S.; Gibson, D.; Maricle, B.; Jonson, L. Invited Poster Abstract Talk. November 2015

Plant Animal Genome meeting, Conservation and population genomics Workshop, Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse , Garrett, Karen; Akhunov,

Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian Genetic differentiation, transcriptome variation, and local adaptation of dominant prairie grass *Andropogon gerardii* along the climate gradient of the US Midwest: Implications for climate change and restoration. **Jan, 2015. San Diego.**

Adaptation Genomics Satellite Meeting of SMBE, Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian Genetic differentiation, transcriptome variation, and local adaptation of dominant prairie grass *Andropogon gerardii* along the precipitation gradient of the US Midwest: Implications for climate change. **Montpellier, France, May, 2015.**

Ecological Society of America. Organized Session in Adaptation to Climate Change. Loretta Johnson. Genetic differentiation and local adaptation of dominant prairie grass *Andropogon gerardii* along the climate gradient of the US Midwest: Implications for climate change **Baltimore, Aug, 2015.**

Ecological Society of America. Organized Session in Ecological Genomics. Loretta Johnson. Linking ecology and genomics: Phenotypic differentiation, genetic diversity, and transcriptome variation of an ecologically dominant prairie grass *Andropogon gerardii* along the Great Plains' climate gradient. **Sacramento, Aug, 2014.**

Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian **Argonne National Laboratory.** Linking ecology and genomics: Phenotypic differentiation, genetic diversity, and transcriptome variation of an ecologically dominant prairie grass *Andropogon gerardii* along the Great Plains' climate gradient. Feb.4, 2014

Loretta C Johnson, Miranda Gray, Alina Akhunova, Susan J. Brown, Sanjay Chellapilla, Theodore Morgan, Karen Garrett, Hanquan Liang and Eduard Akhunov, Transcriptome variation in xeric and mesic ecotypes of a dominant biofuel and forage grass big bluestem *Andropogon gerardii*. **Plant Animal Genome meeting, Jan 14, 2014.**

Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian Linking ecology and genomics: Phenotypic differentiation, genetic diversity, and transcriptome variation of an ecologically dominant prairie grass *Andropogon gerardii* along the Great Plains' climate gradient. **Ecology and Evolutionary Biology, University of Chicago Nov 4, 2013**

Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian Linking ecology and genomics: Phenotypic differentiation, genetic diversity, and transcriptome variation of an ecologically dominant prairie grass *Andropogon gerardii* along the Great Plains' climate gradient. **Biological Engineering, Northwestern University Nov 3, 2013**

Baer, S.G., B.R. Maricle, N. Bello, K.L. Caudle, M. Gailliart, D.J. Gibson, M. Gray, R.K. Goad, E. McCrea, M.L. Mendola, J.T. Olsen, S. Sabates, H. Tetreault, L. Wilson, and L.C. Johnson. Discerning the presence and ecological consequence of ecotypic variation: A dilemma for restoration. Invited presentation at the symposium, "Changing prairies: science and practice in grassland restoration and reconstruction," at the **5th World Conference of Ecological Restoration, Madison, WI, October 2013**

Switchgrass Genomics Conference. Johnson, L, S.G. Baer, B.R. Maricle, M. Gray[†], H. Tetreault[†], N. Bello, S. Brown, T. Morgan, J. Shelton[†], and S. Chellapilla. Genetic differentiation, transcriptome variation, and local adaptation of an ecologically dominant prairie grass *Andropogon gerardii* (big

bluestem) occurring along the climate gradient in Midwest U.S. grasslands. **Madison, WI, Sept 9-10, 2013**

Johnson, L, M. Gray, H. Tetreault, K. Garrett, E. Akhunov, P. St. Amand, N. Bello, J. Bryant, N. An, B.R. Maricle, J. Olsen, S.G. Baer, R.K. Goad, A. De La Cruz, T. Morgan, and M. Knapp. Ecotypic variation in drought tolerance and genetic diversity of the ecologically dominant grass big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient: Implications for climate change and restoration. **Presented at the “America’s Grasslands” national meeting, Manhattan, KS, August 2013**

Loretta Johnson, Biology Dr. Wengao Yuan, Biol. and Ag. Engineering Dr. Donghai Wang, Biol. and Ag. Engineering Dr. Richard Nelson, Center for Sustainable Energy. Big bluestem as a potential bioenergy grass. **Energy Sustainability Conference. KSU April 2013**

Johnson, L.C., S.G. Baer, and B.R. Maricle. Ecotypic and genetic variation in a dominant prairie grass: Implications for grassland conservation in a changing climate. Invited presentation at the **European Science Federation ConGenOmics Network Programme, Seville, Spain, February 2012**

Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian Phenotypic and genetic variation in an ecologically dominant grass *Andropogon gerardii* along the Great Plains’ precipitation gradient: A reciprocal garden approach. Invited Speaker for **Switchgrass Workshop, Nobel Foundation, Ardmore, OK. April 2012.**

Loretta Johnson. Phenotypic and genetic variation in an ecologically dominant grass *Andropogon gerardii* along the Great Plains’ precipitation gradient: A reciprocal garden approach **Invited Speaker, Plant Pathology Department, KSU, Feb 2012.**

Loretta Johnson. Phenotypic and genetic variation in an ecologically dominant grass *Andropogon gerardii* along the Great Plains’ precipitation gradient: A reciprocal garden approach. Invited Speaker for the annual USDA project directors meeting: May 2012 but cancelled due to flight cancellation

Loretta Johnson, Invited Speaker, Loretta Johnson, Gray, Miranda; St Amand Paul; Gailliart, Matt; Susan J Brown, Poland, Jesse, Garrett, Karen; Akhunov, Eduard; Bello, Nora; Morgan, Ted; Baer, Sara; Maricle, Brian **Ecological Genomics Symposium, Oct 26-28, 2012. KC.** Phenotypic and genetic variation in an ecologically dominant grass *Andropogon gerardii* along the Great Plains’ precipitation gradient: A reciprocal garden approach.

Loretta Johnson, Wengao Yuan, Donghai Wang, Richard Nelson, Center for Sustainable Energy. Midwest Grasslands and Biofuels. **Energy Sustainability Conference. KSU. April, 2011.**

Loretta Johnson. Ecological Genomics: Theory and Practice. **Plenary Speaker, Mount Desert Island Biological Laboratory-Course in Ecological Genomics. Aug 19-25, 2011.**

Loretta Johnson¹, Jennifer Shelton¹, Richard Jeannotte, Janneke Ravenek, Zhihong Song, Basil Nikolau, and Marek Domin, P. Roxanne Steele. **Functional Genomics Consortium, KSU**, Phenotypic divergence of cuticle chemistry, leaf morphology, and physiology of big bluestem and sand bluestem: A model system for the study of plant adaptation. April, 2011

Janneke Ravenek, L.C Johnson, and Jennifer Shelton. **Ecology and Evolutionary Biology seminar, KSU**. September 2010. The ultimate ecotype: Morphological and functional differences between big bluestem and sand bluestem

Loretta Johnson **Ecology and Evolutionary Biology seminar, KSU**. September 2010. -Ecotypic variation in big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient.

Loretta Johnson. **Science café, Public talk, Hays Kansas**. Jun 16, 2010. Big Bluestem Research: Making a Difference in Conservation and Climate Change

Loretta Johnson. **Haskell Tribal University, Lawrence KS**. .Ecotypes of the dominant prairie big bluestem across the natural precipitation gradient of the Great Plains and under simulated rainfall: genetic and ecological response to climate change Nov 4, 2009

Mike Herman and Loretta Johnson. Ecological Genomics Institute at KSU: Building partnerships with **Black Hills State University** , Feb 12, 2008. 2 day visit to meet with faculty and students on building a collaboration in Integrative Genomics with BHSU

Loretta Johnson, Mike, Herman, Steve Welch. Ecological Genomics: Extending the genome revolution to the environment around us. **Merrill Series on the Research Mission of the Public Universities. Invited by the Merrill Advanced Studies Center, Merrill Research Retreat, June 11 2007.**

Overview of Ecological Genomics at KSU. L. Johnson and M. Herman.: **KSU-NL EcoGenomics Workshop. Souterbeck, NL Sept 28-Oct 2, 2006.**

Sanjay Kumar, Aparna Patankar, Tyler Suelter, Loretta Johnson, Jyoti Shah. Environmental Influences on Root Productivity in Tallgrass Prairie: Genomic and Molecular Approaches. **KSU-NL EcoGenomics Workshop. Souterbeck, NL Sept 28-Oct 2, 2006**

Johnson Declined invitation (due to scheduling conflict) to participate in DOE's Ecotoxicogenomics workshop at Oak Ridge. 2006

Genomic approaches to study organismal response to global environmental change. **Kansas EPScoR Meeting, Speakers, Michael Herman and Loretta Johnson 2003.**

Ecological Genomics: What is it, why should we do it? Kansas State University, **Division of Biology, Speakers, Michael Herman and Loretta Johnson 2003**

Ecological Genomics: What is it, why should we do it? University of Kansas, **Department of Molecular Biosciences, Speakers, Michael Herman and Loretta Johnson 2003**

Ecological Genomics: What is it, why should we do it? **University of Kansas, Department of Ecology and Evolutionary Biology, Speakers, Michael Herman and Loretta Johnson 2003**

Ecological Genomics: What is it, why should we do it? **Kansas State University, Department of Plant Pathology, Speakers, Michael Herman and Loretta Johnson 2003**

Ecological Genomics: What is it, why should we do it? Kansas State University, Agricultural Products Utilization Forum, Speakers, Michael Herman and Loretta Johnson 2003

Genomic approaches to study organismal response to global environmental change. **Netherlands Institute of Ecology, Speakers, Michael Herman and Loretta Johnson 2003**

Genomic approaches to study organismal response to global environmental change. **Wageningen University, Graduate School of Production Ecology**, Speakers, Michael Herman and Loretta Johnson 2003

Loretta Johnson. Controls over belowground processes in tallgrass prairie. **Seminar-Univ NE, Lincoln, Dept of Nat. Res. Nov. 2002**

Loretta Johnson Controls over belowground processes in tallgrass prairie. **Seminar-Univ NE, Omaha, Dept of Biology. Nov. 2002**

Recent Contributed Presentations (Oral and Poster)

America's Grasslands Conference. Genetic differentiation and local adaptation of dominant prairie grass *Andropogon gerardii* along the climate gradient of the US Midwest: Modeling shifts in distribution of ecotypes with climate change*Jacob Alsdurf, Jacob Alsdurf, Johnson , Loretta; Smith, Adam; Bello, Nora; Knapp, Mary; St. Amand, Paul; Gray, Miranda; Galliard, Matt; Poland, Jesse; Baer, Sara; Maricle, Brian., Ft. Collins, CO. September 29 - October 1 2015

Sigma Xi National Meeting, REPRODUCTIVE TRAIT VARIATION IN BIG BLUESTEM (*ANDROPOGON GERARDII*) ECOTYPES ACROSS THE GREAT PLAINS: A MULTI-YEAR RECIPROCAL GARDEN STUDY Parrish, O.¹; McChesney, A.¹; Galliard, Matthew¹; Baer, Sara²; Bello, Nora¹; Caudle, Keri³; Maricle, Brian³; McCrea, Evan²; Sabates, Sofia¹; Gibson, David²; Wilson, Laurel², and Johnson, Loretta¹ **Oct 2015.**

Sigma Xi National Meeting, Genetic differentiation and local adaptation of dominant prairie grass *Andropogon gerardii* along the climate gradient of the US Midwest: Modeling shifts in distribution of ecotypes with climate change*Jacob Alsdurf, Jacob Alsdurf, Johnson , Loretta; Smith, Adam; Bello, Nora; Knapp, Mary; St. Amand, Paul; Gray, Miranda; Galliard, Matt; Poland, Jesse; Baer, Sara; Maricle, Brian., KC Missouri, Oct 2015.

Sigma Xi National Meeting Adaptive ecotypic variation and genetic divergence of a widespread grass *Andropogon gerardii* across the Great Plains' climate gradient. **Galliard, M.**; Poland, J.; St. Amand, P.; Bello, N.; Morgan, T.; Knapp, M.; Baer, S.; Gibson, D.; Maricle, B.; Jonson, L. Poster. KC Missouri, Oct 2015.

Ecological Genomics Symposium Loretta Johnson¹; Jennifer Shelton³; Nora M. Bello²; Seth Raithel²; Matthew Galliard¹; Susan J Brown³; Nicolae Herndon³; Ruth Welti¹; Basil Nikolau⁴; Thilani Samarakoon¹; Zhihong Song⁴; Richard Jeannotte⁵ **Divergent epicuticular wax and transcriptomes of edaphically differentiated *Andropogon* grasses in US Midwest prairies** Manhattan KS Nov 2015

Ecological Genomics Symposium. Genetic differentiation and local adaptation of dominant prairie grass *Andropogon gerardii* along the climate gradient of the US Midwest: Modeling shifts in distribution of ecotypes with climate change*Jacob Alsdurf, Jacob Alsdurf, Johnson , Loretta; Smith, Adam; Bello, Nora; Knapp, Mary; St. Amand, Paul; Gray, Miranda; Galliard, Matt; Poland, Jesse; Baer, Sara; Maricle, Brian., Manhattan KS Nov 2015

Ecological Genomics Symposium. Adaptive ecotypic variation and genetic divergence of a widespread grass *Andropogon gerardii* across the Great Plains' climate gradient. **Galliard, M.**; Poland, J.; St. Amand, P.; Bello, N.; Morgan, T.; Knapp, M.; Baer, S.; Gibson, D.; Maricle, B.; Jonson, L. Poster. Manhattan KS Nov 2015

Ecological Genomics Symposium. REPRODUCTIVE TRAIT VARIATION IN BIG BLUESTEM (*ANDROPOGON GERARDII*) ECOTYPES ACROSS THE GREAT PLAINS: A MULTI-YEAR RECIPROCAL GARDEN STUDY Parrish, O.¹; McChesney, A.¹; Galliard, Matthew¹; Baer, Sara²; Bello, Nora¹; Caudle, Keri³; Maricle, Brian³; McCrea, Evan²; Sabates, Sofia¹; Gibson, David²; Wilson, Laurel², and Johnson, Loretta¹ Manhattan KS Nov 2015

Loretta Johnson¹, Gray, Miranda¹; St Amand Paul²; Gailliart, Matt; Susan J Brown¹, Poland, Jesse³, Garrett, Karen³; Akhunov, Eduard³; Bello, Nora⁴; Morgan, Ted¹; Baer, Sara⁵; Maricle, Brian⁶ Genetic differentiation, transcriptome variation, and local adaptation of dominant prairie grass *Andropogon gerardii* along the precipitation gradient of the US Midwest: Implications for climate change. **SMBE meeting, Vienna, July 2015 (poster)**

Matthew Galliard¹, Paul St Amand², Jesse Poland³, Nora M. Bello⁴ Sofia Sabates¹, Hannah Tetreault¹, Angel DeLaCruz¹, Johnny Bryant¹, Theodore J. Morgan¹, Mary Knapp⁵, Sara G. Baer⁶, David Gibson⁶, Laurel Wilson⁶, Brian R. Maricle⁷, Loretta Johnson¹ Adaptive Trait Variation and Genetic Divergence of a Widespread Grass *Andropogon gerardii* across a Great Plains' Climate Gradient. **Evolution Meeting, Brazil, June 2015 (oral)**

Matthew Galliard¹, Paul St Amand², Jesse Poland³, Nora M. Bello⁴ Sofia Sabates¹, Hannah Tetreault¹, Angel DeLaCruz¹, Johnny Bryant¹, Theodore J. Morgan¹, Mary Knapp⁵, Sara G. Baer⁶, David Gibson⁶, Laurel Wilson⁶, Brian R. Maricle⁷, Loretta Johnson¹ Adaptive Trait Variation and Genetic Divergence of a Widespread Grass *Andropogon gerardii* across a Great Plains' Climate Gradient. **ASPB, Minneapolis, MN, July, 2015 (poster)**

Conference on Applied Statistics in Agriculture. Manhattan, KS *Raithell, S.; Johnson, L.; Galliard, M.; Brown, S.; Shelton, J.; Herndon, N.; Bello, N. A plasmid-based approach to inform inference on low-count RNA-seq transcripts of an edaphic subspecies of dominant prairie grass *Andropogon gerardii*. Poster Presentation. April 2015

Matthew Galliard¹, Paul St Amand², Jesse Poland³, Nora M. Bello⁴ Sofia Sabates¹, Hannah Tetreault¹, Angel DeLaCruz¹, Johnny Bryant¹, Theodore J. Morgan¹, Mary Knapp⁵, Sara G. Baer⁶, David Gibson⁶, Laurel Wilson⁶, Brian R. Maricle⁷ Loretta Johnson¹ Adaptive Trait Variation and Genetic Divergence of a Widespread Grass *Andropogon gerardii* across a Great Plains' Climate Gradient. **Plant Animal Genome, San Diego, Jan 2015.**

Loretta Johnson; Jennifer Shelton; Nora M. Bello; Seth Raithel; Matthew Galliard; Susan J Brown; Nicolae Herndon; Ruth Welti; Basil Nikolau; Thilani Samarakoon; Zhihong Song; Richard Jeannotte Divergent epicuticular wax and transcriptomes of edaphically differentiated *Andropogon* grasses in US Midwest prairies. **Plant Animal Genome, San Diego, Jan 2015.**

Matthew Galliard¹, Paul St Amand², Jesse Poland³, Nora M. Bello⁴ Sofia Sabates¹, Hannah Tetreault¹, Angel DeLaCruz¹, Johnny Bryant¹, Theodore J. Morgan¹, Mary Knapp⁵, Sara G. Baer⁶, David Gibson⁶, Laurel Wilson⁶, Brian R. Maricle⁷, Loretta Johnson¹ Adaptive Trait Variation and Genetic Divergence of a Widespread Grass *Andropogon gerardii* across a Great Plains' Climate Gradient. **Ecological Genomics Symposium, Kansas City, Nov 2014 (poster).**

Seth Raithel^{1*}; Loretta Johnson²; Matthew Galliert²; Sue Brown²; Jennifer Shelton² and Nora M. Bello¹
Assessing gene filtering strategies in RNA-Seq differential expression analysis of an edaphic subspecies of dominant prairie grass *Andropogon gerardii*. Ecological Genomics Symposium, Kansas City, Nov 2014. (poster).

Maricle, B.R., K.L. Caudle*, J.T. Olsen, J. Bryant, A. de la Cruz, A. Jensen*, S.G. Baer, N.M. Bello, and L.C. Johnson. A possible mechanism for increased performance of a xeric adapted big bluestem (*Andropogon gerardii*) ecotype: Photosynthesis, nitrogen, and chlorophyll concentration of leaves in reciprocal gardens across the Great Plains. **Presented at the Botanical Society of America Annual Meeting, Boise, ID, July 2014 (oral)**

Galliert, M.*; L. Johnson, S. Sabates, H. Tetreault, A. DeLaCruz, J. Bryant, T.J. Morgan, M. Knapp, N.M. Bello, S.G. Baer, D. Gibson, L. Wilson, K.L. Caudle, and B.R. Maricle. Adaptive potential and trait variation of a widespread grass *Andropogon gerardii* across Great Plains climate gradient: Implications for climate change. Presented at the Botanical Society of America Annual Meeting, Boise, ID, July 2014 (oral)

Gaffney, J.; *Galliert, M.; Sabates, S.; Baer, S.; Maricle, B.; McCrea, E.; Bello, N.; Johnson, L..
Variations in polyploidy in Big Bluestem (*Andropogon gerardii*) ecotypes across the Great Plains.
Botanical Society of America Conference. Boise, ID. Poster Presentation. July 2014

Galliert, M.*; L. Johnson, N.M. Bello, S.G. Baer, B.R. Maricle, D. Gibson, H. Tetreault, and S. Sabates. Adaptive potential and trait variation of a widespread grass *Andropogon gerardii* across a Great Plains climate gradient: Implications for climate change. **Presented at the Evolution 2014 Conference, Raleigh, NC, June 2014(oral)**

Galliert, M.*; L. Johnson, S. Sabates, H. Tetreault, A. DeLaCruz, J. Bryant, T.J. Morgan, M. Knapp, N.M. Bello, S.G. Baer, D. Gibson, L. Wilson[†], K.L. Caudle, and B.R. Maricle. Adaptive potential and trait variation of a widespread grass *Andropogon gerardii* across a Great Plains climate gradient: Implications for climate change. **Presented at the Kansas Academy of Science Annual Meeting, Emporia, KS, April 2014(oral)**

Johnson, L, M. Gray, H. Tetreault, K. Garrett, E. Akhunov, P. St. Amand, N. Bello, J. Bryant, N. An, B.R. Maricle, J. Olsen, S.G. Baer, R.K. Goad, A. De La Cruz, T. Morgan, and M. Knapp. Ecotypic variation in drought tolerance and genetic diversity of the ecologically dominant grass big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient: Implications for climate change and restoration. **Presented at America's Grasslands meeting, Manhattan, KS, August 2013(oral)**

Johnson, L, S.G. Baer, B.R. Maricle, M. Gray, H. Tetreault, N. Bello, S. Brown, T. Morgan, J. Shelton, and S. Chellapilla. Genetic differentiation, transcriptome variation, and local adaptation of an ecologically dominant prairie grass *Andropogon gerardii* (big bluestem) occurring along the climate gradient in Midwest U.S. grasslands. **Presented at the Evolution 2013 Meeting, Snowbird, UT, June 2013 (oral)**

Maricle, B.R., K.L. Caudle*, K.J. Lindsey[†], S.G. Baer, and L.C. Johnson. Effects of extreme drought on photosynthesis and water potential of *Andropogon gerardii* (big bluestem) ecotypes in common gardens across Kansas. **Presented at the Kansas Academy of Science Annual Meeting, Overland Park, KS, April 2013(oral)**

*Galliert, M.; Sabates, S.; Baer, S.; Bello, N.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; and Johnson, L. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **America's Grasslands Conference. Manhattan, KS Poster Presentation. August 2013**

*Galliart, M.; Sabates, S.; Baer, S.; Bello, N.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; and Johnson, L. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **K-State Biology REU/URM Research Symposium. Manhattan, KS Poster Presentation. August 2013**

*Galliart, M.; Sabates, S.; Baer, S.; Bello, N.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; and Johnson, L. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **K-State Joint REU Poster Session. Manhattan, KS. Poster Presentation. August 2013**

*Galliart, M.; Sabates, S.; Baer, S.; Bello, N.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; and Johnson, L. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **Botanical Society of America Conference. New Orleans, LA. Poster Presentation. July 2013**

*Galliart, M.; Sabates, S.; Baer, S.; Bello, N.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; and Johnson, L. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **Evolution Conference. Snowbird, UT. Poster Presentation. June 2013**

*Sabates, S.; *Galliart, M.; Baer, S.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; Johnson, L. Phenology and fitness in Big Bluestem (*Andropogon gerardii*) ecotypes in Great Plains reciprocal gardens: the role of site and ecotype. **K-State Research Forum. Manhattan, KS. Poster Presentation. March 2013**

*Sabates, S.; *Galliart, M.; Baer, S.; Caudle, K.; Maricle, B.; McCrea, E.; Gibson, D.; Wilson, L.; Johnson, L. Phenology and fitness in Big Bluestem (*Andropogon gerardii*) ecotypes in Great Plains reciprocal gardens: the role of site and ecotype. **Ecological Genomics Symposium. Kansas City, KS. Poster Presentation. October 2013**

Johnson, L*, S.G. Baer, B.R. Maricle, M. Gray, H. Tetreault, N. Bello, S. Brown, T. Morgan, J. Shelton, and S. Chellapilla. Genetic Differentiation, Transcriptome Variation, and Local Adaptation of an Ecologically Dominant Prairie Grass *Andropogon gerardii* (Big Bluestem) Occurring Along the Climate Gradient in Midwest US Grasslands. **SMBE Meeting, July, 2013, Chicago. (poster)**

Johnson, L*, S.G. Baer, B.R. Maricle, M. Gray, H. Tetreault, N. Bello, S. Brown, T. Morgan, J. Shelton, and S. Chellapilla. Genetic differentiation, transcriptome variation, and local adaptation of an ecologically dominant prairie grass *Andropogon gerardii* (big bluestem) occurring along the climate gradient in Midwest U.S. grasslands. Presented at the Evolution 2013 Meeting, Snowbird, UT, June 2013 (oral)

Maricle*, B. R., K. L. Caudle, K. J. Lindsey, S. G. Baer, and L. C. Johnson. 2013. Effects of extreme drought on photosynthesis and water potential of *Andropogon gerardii* (big bluestem) ecotypes in common gardens across Kansas. **Kansas Academy of Science, April 5-6, Overland Park, Kansas; Botanical Society of America Annual Meeting, July 27-August 1, New Orleans, Louisiana; and America's Grasslands Conference, August 13-14. Manhattan, Kansas.**

Wilson*, L. R., D. J. Gibson, S. G. Baer, and L. Johnson. 2013. Plant community response to regional sources of dominant grasses restored across a precipitation gradient. **Annual Meetings of the Ecological Society of America, August 4-9, Minneapolis, Minnesota. (oral)**

Sabates*, S., M. Galliard, S. Baer, N. Bello, K. Caudle, B. Maricle, E. McCrea, D. Gibson, L. Wilson, and L. Johnson. 2013. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? A reciprocal garden approach to distinguish roles of site and ecotype. **Botanical Society of America Annual Meeting, July 27-August 1, New Orleans, Louisiana. Evolution Meeting, Snowbird, UT, June ,2013 (poster)**

Maricle*, B. R., M. M. Gray, J. Bryant, A. Jensen, A. de la Cruz, K. L. Caudle, J. T. Olsen, S. G. Baer, M. Knapp, and L. C. Johnson. 2013. A possible mechanism for increased performance of a xeric adapted big bluestem (*Andropogon gerardii*) ecotype: Nitrogen and chlorophyll content of leaves in reciprocal gardens across the Great Plains. **Botanical Society of America Annual Meeting, July 27-August 1, New Orleans, Louisiana and America's Grasslands Conference, August 13-14. Manhattan, Kansas. (poster)**

Caudle, K*. L., L. C. Johnson, S. G. Baer, and B. R. Maricle. 2013. Influence of precipitation on trichome densities in big bluestem (*Andropogon gerardii*) ecotypes in Great Plains reciprocal gardens. **Botanical Society of America Annual Meeting, July 27-August 1, New Orleans, Louisiana and America's Grasslands Conference, August 13-14. Manhattan, Kansas. (poster)**

Johnson, L*, M. Gray, H. Tetreault, K. Garrett, E. Akhunov, P. St. Amand, N. Bello, J. Bryant, N. An, B.R. Maricle, J. Olsen†, S.G. Baer, R.K. Goad†, A. De La Cruz†, T. Morgan, and M. Knapp. Ecotypic variation in drought tolerance and genetic diversity of the ecologically dominant grass big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient: Implications for climate change and restoration. **Presented at the America's Grasslands meeting, Manhattan, KS, August 2013. (poster)**

Maricle, B.R., K.L. Caudle*, K.J. Lindsey†, S.G. Baer, and L.C. Johnson. Effects of extreme drought on photosynthesis and water potential of *Andropogon gerardii* (big bluestem) ecotypes in common gardens across Kansas. **Presented at the Kansas Academy of Science Annual Meeting, Overland Park, KS, April 2013 (oral)**

Sabates*, S., M. Galliard*, S. Baer, N. Bello, K. Caudle, B. Maricle, E. McCrea, D. Gibson, L. Wilson, and L. Johnson. 2013. How does phenology and seed production of big bluestem (*Andropogon gerardii*) vary across the climate gradient of the Great Plains? **A reciprocal garden approach to distinguish roles of site and ecotype.KSU University Wide Research Forum, Best poster award.**

Loretta C Johnson* Miranda Gray, Alina Akhunova, Susan J. Brown, Sanjay Chellapilla, Theodore Morgan, Karen Garrett, Hanquan Liang and Eduard Akhunov, Loretta Phenotypic and genetic variation in a dominant forage and biofuel grass along the Great Plains' precipitation gradient: a reciprocal garden approach. **2013 PAG, San Diego.(poster)**

Shelton, Jennifer*†, Miranda M. Gray†, Susan J. Brown, Sanjay Chellapilla, Alina R. Akhunova, Eduard D. Akhunov, Hanquan Liang, Loretta C. Johnson *De novo* transcriptome profiling of two edaphically and phenotypically divergent grasses: dominant forage grass big bluestem *Andropogon gerardii* and drought-tolerant sand bluestem *Andropogon gerardii* ssp. *Hallii*. **2013 PAG, San Diego. (poster)**

Thilani N. Samarakoon*, Jennifer M. Shelton†, Richard Jeannotte, Zhihong Song, Nora Bello, Basil Nikolau, Ruth Welti, Loretta Johnson. A Gas Chromatography/Mass Spectrometry Reveals Contrasts in

Epicuticular Wax Composition of Big Bluestem (*Andropogon gerardii*) and edaphic variety Sand Bluestem (*A. gerardii* var. *hallii*.) **ASPB, Oral Presentation, Lincoln Nebraska, March 2012.**

Shelton, Jennifer M*, Ravenek Janneke[†], Samarakoon Thilani, Jeannotte Richard, Welti Ruth, Nikolau, Basil J, Song Zhihong, and Johnson, Loretta. Divergence in leaf morphology and physiology in *Andropogon gerardii* var. *hallii* (sand bluestem) a locally adapted variety of *Andropogon gerardii* (big bluestem) **ASPB, Poster Presentation, Lincoln Nebraska, March 2012.**

Olsen, J.T. *, H.M. Tetrault[†], R.K. Goad[†], M.L. Mendola[†], L.C. Johnson, S.G. Baer, and B.R. Maricle. Photosynthetic variation of big bluestem and sand bluestem influenced by ecotype and precipitation. **Presented at the Botanical Society of America Annual Meeting, Columbus July 2012 (oral presentation)**

Johnson, L*, M. Gray[†], H. Tetreault[†], K. Garrett, E. Akhunov, P. St. Amand, N. Bello, J. Bryant*, N. An[†], B.R. Maricle, J. Olsen[†], S.G. Baer, R.K. Goad[†], A. De La Cruz[†], T. Morgan, and M. Knapp. Ecotypic variation in drought tolerance and genetic diversity of the ecologically dominant grass big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient. **Presented at the Ecological Society of America Annual Meeting, Portland, OR, August 2012. (oral)**

Olsen, J.T. *, R.K. Goad[†], M.L. Mendola*, H.M. Tetrault[†], L.C. Johnson, S.G. Baer, and B.R. Maricle. Photosynthetic gas exchange of big bluestem (*Andropogon gerardii*) ecotypes across a precipitation gradient of the Great Plains. **Presented at the Botanical Society of America Annual Meeting, Columbus, OH, July 2012. (oral)**

Olsen, J.T. *, R.K. Goad[†], M.L. Mendola*, H.M. Tetrault[†], L.C. Johnson, S.G. Baer, and B.R. Maricle. Gas exchange of *Andropogon gerardii* (big bluestem) ecotypes across a climatic gradient of the Great Plains. **Presented at the Kansas Academy of Science Annual Meeting, Wichita, KS, March 2012 (oral)**

Gray*, Paul St. Amand, Loretta Johnson, Eduard Akhunov, Karen Garrett, Mary Knapp, Alina Akhunova, Sanjay Chellapilla, Ted Morgan, Guihua Bai. Genetic differentiation of *Andropogon gerardii*(big bluestem) ecotypes along a natural precipitation gradient Miranda **Botanical Society of America. Columbus July 2012 (oral Presentation)**

KSU Graduate School SUROP (Summer Undergraduate Research Opportunities) seminar, July, 2012. Jessica Gaffney*, Variations in polyploidy in Big Bluestem (*Andropogon gerardii*) ecotypes across the Great Plains (oral)

KSU Graduate School REU (Summer Undergraduate Research Opportunities) seminar, July, 2012. Amber Jensen*, Big bluestem ecotypic differences in leaf nitrogen content as a possible mechanism for increased performance of western Kansas ecotypes in reciprocal gardens planted across the Great Plains..(oral)

KSU URM (Undergraduate Research Mentoring Opportunities) Sofia Sabates*. July 2012 Phenology and seed production in Big Bluestem (*Andropogon gerardii*) ecotypes in Great Plains reciprocal gardens: the role of site and ecotype (poster)

K. Zhang*, L. Johnson, R. Nelson, W. Yuan, ZJ. Pei, and D. Wang. 2012. Chemical and elemental composition of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains. 2012 **ASABE Annual Meeting, 6/29 to 7/1, 2012, Dallas, TX. Paper No.121338462**

Gray*, Miranda, St Amand Paul, Tetreault, Hannah; Baer, Sara; Maricle, Brian; Morgan, Ted; Goad, Rachel†; Olsen†, Jake and Johnson, Loretta. Ecotypic variation in drought tolerance and genetic diversity of an ecologically dominant grass big bluestem (*Andropogon gerardii*) across the Great Plains precipitation gradient **Ecological Society of America. Portland Oregon, Aug. 2012. (oral)**

Meredith L Mendola *, Sara G Baer, Loretta C Johnson. Ecotype and climate controls on belowground ecosystem processes. Oral Presentation. **Ecological Society of America. Portland Oregon, Aug. 2012.**

Gan Jing*, Wenqiao Yuan, Loretta Johnson, Donghai Wang a, Richard Nelson, Ke Zhang. Hydrothermal conversion of big bluestem for bio-oil production: The effect of ecotype and planting location. **Presentation, DOT SunGrant Conference, Oct 2012. New Orleans**

Zhang, Ke* Loretta Johnson, Richard Nelson, Wenqiao Yuan, Zhijian. Pei, and Donghai Wang. Chemical and elemental composition of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains. **Presentation, DOT SunGrant Conference, Oct 2012. New Orleans**

Gray*, Miranda, St Amand Paul, Tetreault, Hannah; Baer, Sara; Maricle, Brian; Morgan, Ted; Goad, Rachel; Olsen, Jake and Johnson, Loretta Phenotypic and genetic variation in a dominant prairie grass along the Great Plains' precipitation gradient: a reciprocal garden approach. **Poster, Ecological Genomics Symposium, Oct 26-28, KC.**

Gaffney, Jessica*; Sabates, Sofia* Baer, Sara; Maricle, Brian; McCrea, Evan*; Bello, Nora M. and Johnson, Loretta Variations in polyploidy in Big Bluestem (*Andropogon gerardii*) ecotypes across the Great Plains. **Poster, Ecological Genomics Symposium, Oct 26-28, 2012 KC. (poster)**

Sabates, Sofia*; Baer, Sara; Caudle, Keri*; Harmony, Keith; Maricle, Brian; McCrea, Evan*; and Johnson, Loretta. Phenology and seed production in Big Bluestem (*Andropogon gerardii*) ecotypes in Great Plains reciprocal gardens: the role of site and ecotype **Poster, Ecological Genomics Symposium, Oct 26-28, 2012. KC.**

Olsen, J.T. *, H.M. Tetreault, R.K. Goad, M.L. Mendola, L.C. Johnson, S.G. Baer, and B.R. Maricle. Photosynthetic variation of big bluestem and sand bluestem influenced by ecotype and precipitation. **Presented at the Botanical Society of America Annual Meeting, St. Louis, MO, July 2011 (oral)**

Olsen, J.T. *, H.M. Tetreault, R.K. Goad, M.L. Mendola, L.C. Johnson, S.G. Baer, and B.R. Maricle. Variation of photosynthesis in big bluestem and sand bluestem reciprocally planted across a precipitation gradient. **Presented at the Kansas Academy of Science Annual Meeting, Baldwin City, KS, April 2011 (oral)**

Sendor, G. *, J. Donatelli, D.J. Gibson, S.G. Baer, & L. Johnson. 2011. Population variation in relative fitness of *Andropogon gerardii* (Big bluestem). **SIUC Undergraduate Research Forum, April 11, 2011. (poster presentation)**

Olsen, J.T. *, H.M. Tetreault, R.K. Goad, M.L. Mendola*, L.C. Johnson, S.G. Baer, and B.R. Maricle. Photosynthetic variation of big bluestem and sand bluestem influenced by ecotype and precipitation. **Presented at the Botanical Society of America Annual Meeting, St. Louis, MO, July 2011 (oral presentation)**

Olsen, J.T. *, H.M. Tetreault, R.K. Goad, M.L. Mendola, L.C. Johnson, S.G. Baer, and B.R. Maricle. Variation of photosynthesis in big bluestem and sand bluestem reciprocally planted across a precipitation

gradient. **Presented at the Kansas Academy of Science Annual Meeting, Baldwin City, KS, April 2011 (oral presentation)**

KSU Graduate School SUROP (Summer Undergraduate Research Opportunities) seminar, July, 2011. Angel DeLaCruz*, Phenotypic variation and Chlorophyll Absorbance in Big Bluestem (*Andropogon gerardii*) ecotypes across the Great Plains precipitation gradient (oral presentation)

Goad R.K. *, S.G. Baer, L.C. Johnson, and B.R. Maricle. Patterns in aboveground net primary productivity in prairie reciprocally restored with dominant grasses from across a precipitation gradient. **Presented at the Grasslands in a Global Context meeting, Manhattan, KS, September 2011 (poster presentation)**

Tetreault, H*, C. Rodewald, S. Baer, B. Maricle, N. Bello, T. Morgan, R. Goad, J. Olsen, and L. Johnson. Local drought adaptation of the ecologically dominant prairie grass big bluestem *Andropogon gerardii*: Contribution of genotype and environment to phenotypic variation. **Ecological Society of America Annual Meeting, Austin, TX, August 2011 (poster presentation)**

Tetreault, H*, C. Rodewald, S. Baer, B. Maricle, N. Bello, T. Morgan, R. Goad, J. Olsen, and L. Johnson. Local drought adaptation of the ecologically dominant prairie grass big bluestem *Andropogon gerardii*: Contribution of genotype and environment to phenotypic variation. **Gordon Research Conference. Ecological and Evolutionary Genomics. July 10-15. Biddeford Maine (poster)**

Tetreault, H*, M. Gray, C. Rodewald, P. St. Amand, G. Bai, E. Akhunov, K. Garrett, S. Baer, B. Maricle, T. Morgan, N. Bello, R. Goad, J. Olsen[†], and L. Johnson. Phenotypic variation and genetic differentiation of a dominant prairie grass along a longitudinal precipitation gradient. **Evolution 2011 Meeting, Norman, OK, June 2011 (poster presentation)**

Olsen, J.T. *, H.M. Tetreault, R.K. Goad, M.L. Mendola, S.G. Baer, L.C. Johnson, and B.R. Maricle. Effects of precipitation and ecotype on photosynthesis in two grass species. **Presented at Fort Hays State University's Research and Creative Activities Week, Hays, KS, April 2011 (poster)**

Goad R.K. *, H.M. Tetreault[†], K. Elsenbroek, D. Carpenter, J.T. Olsen, B.R. Maricle, L.C. Johnson, and S.G. Baer. Patterns in aboveground net primary productivity in prairie reciprocally restored with dominant grasses from across a precipitation gradient. **Presented at the Ecological Society of America Annual Meeting, Austin, TX, August 2011 (poster presentation)**

Gray*, Miranda St. Amand, Paul; Wheeler, Lauren; Akhunov, Eduard; Garrett, Karen; Bai, Guihua, Johnson, Loretta Population Genetic Structure and Diversity of *Andropogon gerardii* Tall Grass Along a Precipitation Cline.

Johnny Bryant*, Angel DeLa Cruz, Kevin Price, Nan An, Mary Knapp, Hannah Tetreault, Brian Maricle, Jake Olsen, Keri Caudle³, Sara Baer, Loretta Johnson Remote Sensing to detect plant performance in common gardens of big bluestem ecotypes across the Great Plains. (Poster) **Grasslands in a Global Context, Manhattan KS, Sept. 9, 2011.**

Jennifer Shelton*, Loretta Johnson, Janneke Ravenek, Richard Jeanotte, Zhihong Song, Ruth Welti. Local adaptation of wax biosynthesis in big bluestem *Andropogon gerardii* and sand bluestem *Andropogon gerardii* var. *hallii*. (poster presentation) (Poster) **Grasslands in a Global Context, Manhattan KS, Sept. 9, 2011.**

Goad R.K*, H.M. Tetreault, K. Elsenbroek, D. Carpenter, J.T. Olsen[†], B.R. Maricle, L.C. Johnson, and S.G. Baer. Patterns in aboveground net primary productivity in prairie reciprocally restored with dominant grasses from across a precipitation gradient. **Grasslands in a Global Context, Manhattan KS, Sept. 9, 2011.(poster)**

Miranda Gray*, Hannah Tetreault, Cody Rodewald, Meredith Mendola, Rachel Goad, Jake Olsen, Evan McCrea*, Lauren Wheeler, Nora Bello, Ted Morgan, Mary Knapp, Paul St. Amand, Eduard Akhunov, Karen Garrett, Guihua Bai, Sara Baer, Brian Maricle, Loretta Johnson: Evidence for Local Adaptation and Genetic Differentiation of *Andropogon gerardii* (big bluestem) Ecotypes Occurring along a Precipitation Gradient . **November 4-6, 2011.Marriot Hotel, Kansas City.(poster)**

Jennifer Shelton*, Loretta Johnson, Janneke Ravenek, Richard Jeanotte, Zhihong Song, Ruth Welti. Local adaptation of wax biosynthesis in big bluestem *Andropogon gerardii* and sand bluestem *Andropogon gerardii* var *hallii*. (poster presentation) **(Ecological Genomics Symposium, November 4-6, 2011.Marriot Hotel, Kansas City,**

Johnny Bryant*, Angel DeLa Cruz, Kevin Price, Nan An, Mary Knapp, Hannah Tetreault, Brian Maricle, Jake Olsen, Keri Caudle*, Sara Baer , Loretta Johnson: Remote Sensing to detect plant performance in common gardens of big bluestem ecotypes across the Great Plains. **Poster: Ecological Genomics Symposium. Kansas City, Nov 2011.**