Curriculum Vitae

Jacob Michael Jungers

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EDUCATION

2014	**Ph.D. Conservation Biology**, University of Minnesota
2008	**B.S. Biology,** emphasis in Ecology, University of Wisconsin – Oshkosh
2008	**B.S. Environmental Studies**, emphasis in Applied Environmental Science University of Wisconsin – Oshkosh

EMPLOYMENT

2019 – current	**Assistant Professor**, Department of Agronomy and Plant Genetics, University of Minnesota
2017 – 2019	**Research Assistant Professor**, Department of Agronomy and Plant Genetics, University of Minnesota
2016 – 2017	**USDA AFRI Postdoctoral Fellow**, University of Minnesota
2015 – 2016	**The Land Institute and Malone Family Foundation Fellow**, University of Minnesota
2014 – 2015	**Research Associate**, Department of Agronomy and Plant Genetics, University of Minnesota
2010 – 2014	**Graduate Research Assistant**, Conservation Biology Graduate Program, University of Minnesota
2009 – 2010	**Research Coordinator**, Department of Ecology, Evolution and Behavior, University of Minnesota
2008 – 2009	**Junior Scientist**, Cedar Creek Ecosystem Science Reserve

AFFILIATIONS

2019 – current	Faculty, Applied Plant Sciences Graduate Program, UMN
2023 – current	Faculty, Plant and Microbial Biology Graduate Program, UMN
2020 – current	Faculty, Land and Atmospheric Sciences Graduate Program, UMN
2019 – current	Associate, Institute on the Environment

AWARDS

2022	McKnight Land Grant Professor, UMN
2021	Early Career Award, Agronomy Society of America
2021	CFANS Hunger Fighters, UMN
2010	Outstanding Conservation Biology Graduate Student Award, UMN

GRANTS AND FELLOWSHIPS

Funded

2024 – 2028 **Jungers, J.** (PI), K. Smith, P. Bajgain, B. Stupar, S. Mulkey, G. Annor. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Advancing Kernza, winter barley, winter pea, and silflower through agronomic studies on establishment and high-throughput phenotyping for crop quality*. $348,260.

2024 – 2028 Jin, Z. (PI), **J. Jungers**, V. Kumar, J. Gamble, L. Liu. Source: Minnesota Department of Agriculture – Forever Green Initiative. *A systematic assessment of adopting Kernza in Minnesota's Drinking Water Supply Management Areas through a knowledge-guided machine learning approach*. $349,686.

2024 – 2028 Gutknecht, J. (PI), **J. Jungers**, J. Gamble, L. Christenson, A. Cates, A. Marcelle Lewandowski: Minnesota Department of Agriculture – Forever Green Initiative. *A cohesive strategy for evaluating ecosystem benefits of Forever Green crops*. $349,934.

2023 – 2026 **Jungers, J. (PI)**. Source: USDA Agricultural Research Service. *Kernza genotype by environment for dual-use.* $290,523.

2022 – 2025 **Jungers, J. (PI)**. Source: USDA Agricultural Research Service. *Digestibility of Alfalfa Stem Segments.* $275,760.

2022 – 2026 Gamble, J. (PI), **J. Jungers,** J. Gutknecht, C. Yang. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Understanding Field-Scale Variability in Kernza and Winter Camelina to Improve Yield and Carbon Accounting.* $345,849.

2022 – 2026 Gutknecht, J. (PI), **J. Jungers,** Source: Minnesota Department of Agriculture – Forever Green Initiative. *Ensuring clean water, mitigating climate change, and optimizing yields through advanced fertility management of Kernza.* $349,988.

2022 – 2026 Annor, G. (PI), **J. Jungers,** J. Anderson, P. Bajgain, P. Ismail. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Investigating functionality, end-use characteristics, and processing specifications of IWG grain across stand life and crop varieties.* $349,852.

2022 – 2026 Bajgain, P. (PI), **J. Jungers,** J. Anderson. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Leveraging Phenomics and Root Informatics to Improve Intermediate Wheatgrass Breeding Germplasm.* $175,138.

2021 – 2024 **Jungers, J.** (PI of UMN subaward), J. Tallaksen, E. Meier. Source: USDA NIFA Sustainable Agricultural Systems CAP (main award to the University of Wisconsin). *Fostering resilience and ecosystem services in landscapes by integrating diverse perennial circular systems.* $338,783.

2021 – 2024 **Jungers, J.** (PI of UMN subaward), J. Goplen. Source: USDA NIFA (main award to Cornell University). *Breeding alfalfa for intercropping with intermediate wheatgrass: Towards perennial grain-forage systems.* $63,015.

2021 – 2024 **Jungers, J.** (PI of UMN subaward), J. Gutknecht. Source: Minnesota Environment and Natural Resources Trust Fund (main award to Stearns County SWCD). *Long-term nitrate mitigation by maintaining profitable Kernza production.* $224,791.

2020 – 2025 **Jungers, J.** (PI), A. Basche, N. Brunsell, T. Crews, S. Culman, G. Feenstra, C. Keene, C.A.M. Laboski, V. Picasso, J. Poland, N. Tautges, J. Trost. Source: USDA AFRI Sustainable Agricultural Systems. *Developing and deploying a perennial grain crop enterprise to improve environmental quality and rural prosperity.* $10,000,000.

2020 – 2024 **Jungers, J.** (PI), C. Sheaffer, J. Gutknecht, P. Bajgain, J. Anderson, M. Rakkar, C. Fernandez, D. Wyse. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Low-risk, high-reward agronomic trials to enhance Kernza development and deployment.* $314,905.

2020 – 2024 Mulla, D. (PI), **J. Jungers**, J. Gutknecht. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Modelling water and nitrate transport beneath Kernza SW Minnesota wellhead protection areas.* $310,630.

2020 – 2024 Sadok, W. (PI), Dobbratz, **J. Jungers**, M., P. Bajgain, J. Anderson, K. Altendorf, G. Gardner. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Unlocking the physiological and environmental bottlenecks of Kernza interannual yield decline.* $309,319.

2020 – 2024 Gamble, J. (PI), **J. Jungers**, C. Sheaffer, J. Gutknecht, R. Gesch. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Production-scale deployment of Forever Green Cropping Systems: Agronomic, economic, and environmental aspects.* $311,017.

2020 – 2022 Annor, G. (PI), P. Ismail, T. Shoenfuss, J. Anderson, **J. Jungers**, Z. Vickers. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Improving the commercial viability of intermediate wheatgrass through the development of value-added ingredients and new products.* $313,007.

2019 – 2023 **Jungers, J.** (PI of UMN subaward). Source: USDA OREI (main award to Ohio State). *Organic dual use perennial grain crops: pathways to profitability and soil health.* $329,361.

2019 – 2024 Gutknech, J. (PI), C. Fernandez, M. Hunter, **J. Jungers,** C. Sheaffer. Source: USDA NIFA. *Perennial crops to enhance soil health and sustain yields for climate extremes.* $500,000.

2019 – 2022 **Jungers, J.** (PI of UMN subaward). Source: Minnesota Environment and Natural Resources Trust Fund. *Accelerating perennial crop production to prevent nitrate leaching.* $193,044.

2019 – 2022 **Jungers, J.** (PI), T. Crews, V. Picasso, and C. Sheaffer. Source: Sustainable Agriculture Research & Education (SARE). *Intercropping the perennial grain Kernza with legumes for sustained economics and environmental benefits.* $199,946.

2018 – 2021 Sheaffer, C. (PI), **J. Jungers,** V. Picasso Risso, J. Goplan, K. Fernandez. Source: USDA NIFA Alfalfa and Forage Research Program. *Evaluating Alfalfa Winter Survival.* $297,557.

2018 – 2020 **Jungers, J.** (PI), D. Wyse, C. Sheaffer, J. Anderson, P. Bajgain. Source: University of Minnesota Provost Office. *Accelerating commercialization of Forever Green crops for diversification of Midwest Agriculture*. $92,500.

2018 – 2020 Johnson, G. (PI), A. Garcia y Garcia, **J. Jungers**, J. Strock, M.S. Wells. Source: Minnesota Soybean Research and Promotion Council. *Managing perennial biomass and food crops in Buffer Areas*. $70,000.

2018 – 2021 **Jungers, J.** (PI), C. Sheaffer, D. Wyse. Source: General Mills Foundation. *Agronomics to increase and sustain intermediate wheatgrass grain yield: A pathway towards carbon sequestration.* $213,357.

2018 – 2022 **Jungers, J.** (PI). Source: The Land Institute and Malone Family Land Preservation Foundation Perennial Agriculture. *Future Research on Agronomics and Environmental Impacts of Kernza Production in the Upper Midwest.* $400,725.

2018 – 2020 **Jungers, J.** (PI of UMN subaward), J. Gutknecht, and C. Sheaffer. Source: Minnesota Environment and Natural Resources Trust Fund. *Using perennial crops in vulnerable areas to protect groundwater.* $219,025.

2017 – 2020 **Jungers, J.** (PI), J. Anderson, P. Bajgain, J. Gutknecht, C. Sheaffer, N. Tautges, and D. Wyse. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Measuring intermediate wheatgrass root growth and morphology to enhance ecosystem services, prolong grain yield, and inform plant breeding.* $137,000.

2017 – 2020 Wyse, D. (PI), J. Anderson, T. Crews, L. DeHaan, J. Gutknecht, F. Iutzi, N. Jordan, **J. Jungers**, C. Sheaffer, X. Zhang. Source: General Mills, Inc. Foundation. *Reducing greenhouse gas emissions through the development of the novel perennial grain crop Kernza®.* $500,000.

2017 – 2019 Hegeman, A. (PI), **J. Jungers**, C. Sheaffer. Source: Minnesota Department of Agriculture Specialty Crop Block Grant. Cultivation of fireweed (*Chamerion angustifolium*), a native medicinal herb. $51,053.

2017 – 2020 Sheaffer, C. (PI), J. Gutknecht, J. Grossman, **J. Jungers**, D. Wyse. Source: USDA Integrated Research, Education and Extension – Organic Transitions. *Perennial and annual organic transition systems to optimize soil health, carbon sequestration, and profitability.* $498,508.

2016 – 2018 **Jungers, J.** (PI). Source: USDA AFRI Postdoctoral Fellowship. *Quantifying the greenhouse gas mitigation potential of a potential perennial grain crop; intermediate wheatgrass.* $149,807.

2016 – 2019 Sheaffer, C. (PI), B. Ismail, **J. Jungers**, D. Wyse. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Harvest timing and techniques to optimize Kernza grain yield and grain quality*. $124,749.

2016 – 2019 Picasso, V. (PI), L. DeHaan, B. Heins, **J. Jungers**, L. Paine, C. Sheaffer, D. Schaefer. Sustainable Agriculture Research & Education (SARE). Grazing management of "Kernza" intermediate wheatgrass as a dual-purpose crop. $200,000.

2016 – 2018 Sheaffer, C. (PI), K. Cassida, **J. Jungers**, V. Marrone, S. Snapp, D. Wyse. Source: Ceres Trust Fund. *Grain and forage from intermediate wheatgrass – A new perennial grain crop.* $179,284.

2015 – 2018 Sheaffer, C. (PI), J. Anderson, B. Heins, **J. Jungers,** W. Sadok, D. Wyse. Source: Minnesota Department of Agriculture – Forever Green Initiative. *Advanced management practices for enhancing profitability of intermediate wheatgrass.* $98,405.

2015 – 2016 **Jungers, J.** (PI). Source: The Land Institute and Malone Family Land Preservation Foundation Perennial Agriculture Research Fellowship. *Agronomic methods for increasing perennial grain yields of Kernza intermediate wheatgrass*. $103,713.

2014 – 2016 Sheaffer, C. (PI), J. Anderson, N. Ehlke, **J. Jungers,** D. Wyse. Source: University of Minnesota – Forever Green Initiative. *Solving production challenges to provide commercial perennial grain demands using intermediate wheatgrass.* $92,780.

2014 – 2017 Sheaffer, C. (PI), G. Johnson, **J. Jungers**, M. S. Wells, D. Wyse. Source: Minnesota Department of Agriculture. *Growing polycultures for multiple high-value outputs: natural products, seed, and biomass.* $233,300.

2014 – 2017 Zutz, M. (PI), **J. Jungers,** C. Sheaffer, D. Wyse. Source: Minnesota Department of Agriculture. *Intermediate wheatgrass: Managing a new perennial grain for food, forage, and bioenergy.* $150,000.

PEER-REVIEWED PUBLICATIONS - *INDICATES STUDENTS, POSTDOCS, AND TECHNICIANS IN MY LAB

In review

Gutknecht, J., DeHaan, L., Anderson, J., Bajgain, P., Hartman, A., Crews, T., Tautges, N., Picasso, V., Streit-Krug, A., Meier, E., Peters, T., Cureton, C., Annor, G., Reser, A., Ritter, T., **Jungers, J. M.** Development and deployment of Kernza - a perennial grain crop for sustainable agriculture and food systems. *One Earth*.

Griffin, A.*, **Jungers, J. M.,** Bajgain, P. Root phenotyping and plant breeding of crops for enhanced ecosystem services. *Crop Science*.

Yang, Yi, D. Tilman, Z. Jin, P. Smith, C. B. Barrett, Y. Zhu, J. Burney, P. D'Odorico, P. Fantke, J. Fargione, J. C. Finlay, M. Rulli, L. Sloat, K. Jan van Groenigen, P. C. West, L. Ziska, M. Clark, J. Colquoun, T. Garg, K. Garrett, C. Geels, R. R. Hernandez, M. Herrero, W. Hutchison, M. Jain, J. M. Jungers, B. Liu, A. M. Michalak, N. D. Mueller, A. Ortiz-Bobea, J. Schewe, J. Verheyen, P. Vitousek Y. Wada, L. Xia, X. zhang, M. Zhuang, D. B. Lovell. Climate change threatens agricultural sustainability. *Science*.

Woeltjen, S.*, **Jungers, J. M.**, Cates, A., Gutknecht, J. Early changes in carbon uptake and partitioning moderates belowground carbon storage in a perennial grain. *Agriculture, Ecosystems and Environment.*

Griffin, A.*, **Jungers, J. M.** Effects of intercropping legumes on intermediate wheatgrass seed and biomass yield. *Agriculture, Ecosystems, and Environment*.

Link, E.*, Gutknecht, J., Kennedy, P., Fernandez, C. *, & **Jungers, J. M.** Early improvements in soil aggregation under perennial grain intermediate wheatgrass. *Geoderma*.

Schaedel, M., Noel Majuga, J. C., Ishii, S., **Jungers, J. M.**, Paul, B., Multimura, M., Mwendia, S., Grossman, J. Rhizosphere microbial community dynamics contribute to nitrogen fixation and forage quality in novel perennial intercrops in Rwanda. *Soil Biology and Biochemistry*. [Submitted; In Revision]

Schaedel, M., Ishii, S., **Jungers, J. M.**, Gutknecht, J., Venterea, R., Paul, B., Mutimura, M., Grossman, J. Nutrient cycling functional gene abundance and potential activity in novel perennial forage cropping systems in Rwanda. *Soil Biology and Biochemistry*. [Submitted:2023]

Published

64. Kundert, J.*, Gutknecht, J., Rakkar, M.*, **Jungers, J. M.** Perennial grain crop termination methods affect carbon flux and soil health. *Journal of Sustainable Agriculture and Environment.*

63. Black, K., Johnson, G. A., Wells, S. S., Garcia y Garcia, A., **Jungers, J. M.**, & Strock, J. S. Effects of landscape position on perennial biomass and food crop performance in buffer areas. *Ecosphere*.

62. Woeltjen, S.*, Gutknecht, & **Jungers, J. M.** Perennial grain maintains larger root stock than annual grain, but root growth and decomposition patterns differ across perennial grain stand age. *Grassland Research*.

61. Zhen, X., Dobbratz, M.*, **Jungers, J. M.**, Sadok, W. Does interannual yield decline of intermediate wheatgrass respond to management and climate in the Upper Midwest? *Agriculture, Ecosystems, and Environment*.

60. Conway, A., Franco, J., **Jungers, J. M.**, Moore, E. B., Reilly, E.*, & Williams, C. Editorial – Continuous living cover: Adaptive strategies for putting regenerative agriculture into practice. *Frontiers in Sustainable Food Systems*.

59. Shoenberg, E. D., **Jungers, J. M.,** Law, E. P., Keene, C. L., DiTommaso, A., Sheaffer, C. C., Wyse, D. L., Picasso, V. D., & Stoltenberg, D. E. Synthetic auxin herbicides do not injure intermediate wheatgrass or affect grain yield. *Weed Technology*.

58. Poudel, K., Sheaffer, C., **Jungers, J. M.**, Weihs, B., Lamb, J., Bauder, S., Picasso, V., Heuschele, J., Xu, Z. Quantifying winter survival of alfalfa (Medicago sativa L.). *Agronomy Journal*.

57. Fruend Saxhaug, K., **J. M. Jungers**, D. W. Wyse, C. C. Sheaffer, A. Heggeman. Field production of purple coneflower for beneficial phytochemicals. *Journal of Horticultural Science and Biotechnology.*

56. Mulla, D., M. Tahir, **J. M. Jungers**. Comparative simulation of crop productivity, soil moisture, and nitrate-nitrogen leaching losses for intermediate wheatgrass and maize in Minnesota using the DSSAT model. *Frontiers in Sustainable Food Systems*.

55. Wilson, G. L., Mulla, D. J., Jordan, N. J., **Jungers, J. M.**, Gordon, B. A. Simulating the effect of perennialized cropping systems on nitrate-N losses using the SWAT model. *Frontiers in Agronomy*.

54. DeHaan, L.R., J. Anderson, P. Bajgain, A. Basche, D. J. Cattani, J. Crain, T. E. Crews, C. David, O. Duchene J. Gutknecht, R. C. Hayes, F. Hu, **J. M. Jungers**. S. Knudsen, W. Kong, S. Larsen, P.O. Lundquist, G. Luo, A. J. Miller, P. Nabukalu, M. T. Newell, L. Olsson M. Palmgren, A. H. Paterson, V. D. Picasso, J. A. Poland, E. J. Sacks, S. Wang, A. Westerbergh. Now is the time to expand perennial grain research. *Science of the Total Environment*.

53. Culman, S. P. Pinto, J. Pugliese, T. Crews, L. DeHaan, **J.M. Jungers**, J. Larsen, M. Ryan, M. Schipanski, R.M. Sulc, S. Wayman, M. Wiedenhoeft, D. Stoltenberg, V. Picasso. Forage

harvest management impacts Kernza intermediate wheatgrass productivity across North America. *Agronomy Journal.*

52. **Jungers, J. M.**, P. Ewing, B. C. Runck, T. Maaz, N. Fumia, C. Carlson, J. Neyhart, M. Hunter, S. Subedi, S. Senay, P. Bajgain, V. Sharma, C. Cureton, J. Gutknecht, M. Kantar. 2023. Adapting perennial grain and oilseed crops for climate resiliency. *Crops Science.* (Accepted)

51. Dobbratz, M.*, **J. M. Jungers**, J. Gutknecht. 2023. Seasonal plant nitrogen use and soil N pools in intermediate wheatgrass (*Thinopyrum intermedium*). *Agriculture*. **14**:468

50. Fruend Saxhaug, K., **J. M. Jungers**, D. W. Wyse, C. C. Sheaffer, A. Heggeman. 2023. Hydroponic production of fireweed for biomass and phytochemicals. *Canadian Journal of Plant Science*. **102**:1164-1176.

49. Reilly, E*., J. Gutknecht, C. C. Sheaffer, **J. M. Jungers.** 2022. Reductions in soil water nitrate beneath intermediate wheatgrass compared to an annual row crop rotation. *Frontiers in Sustainable Food Systems*. **6**:996586.

48. Bergquist, G*., J. Gutknecht, C. C. Sheaffer, **J. M. Jungers.** 2022. Plant suppression and termination methods to maintain intermediate wheatgrass grain yield. *Agriculture.* **12**:1638

47. Rakkar, M.*, **J. M. Jungers**, C. Sheaffer, B. Bergquist, J. Grossman, F. Li, J. Gutknecht. 2022. Soil health improvements after perennial crop production during organic transition. *Agriculture, Ecosystems and Environment.* **341**:108164.

46. Reilly, E*., J. Gutknecht, N. Tautges, C. C. Sheaffer, **J. M. Jungers**. 2022. Nitrogen transfer and yield effects of intercropped legumes with the perennial grain crop intermediate wheatgrass. *Field Crops Research*. **286**:108627.

45. Puka-Beals, J.*, **J. M. Jungers**, C. C. Sheaffer. 2022. Forage yield and profitability of grain-type intermediate wheatgrass under different harvest schedules. *Agrosystems, Geosciences and Environment*. **5**:20274.

44. Eckberg, J., S. S. Wells, **J. M. Jungers**, C. C. Sheaffer. 2022. Alfalfa forage yield, milk yield, and nutritive value under intensive cutting. *Agrosystems, Geosciences and Environment*. **5**:e20246.

43. **Jungers, J. M.**, S. Schiffner, C. Sheaffer, N. Ehlke, L. DeHaan, J. Torrion, R. Noland, J. Franco. 2022. Effects of seeding date on grain and biomass yield of intermediate wheatgrass. *Agronomy Journal*. **14**:2342-2351.

42. Heineck, G. C.*, B. Schlautman, E. Law, M. R. Ryan, C. C. Sheaffer, D. E. Stoltenberg, V. Picasso, J. W. Zimbric, **J. M. Jungers**. 2022. Intermediate wheatgrass seed size and moisture dynamics inform grain harvest timing. *Crop Science*. **62**:410-424.

41. **Jungers, J. M.**, Y. Yang, C. Fernandez*, F. Isbell, C. L. Lehman, D. L. Wyse, C. C. Sheaffer. Diversifying bioenergy crops increases yield and yield stability by reducing weed abundance. *Science Advances*. **7**:eabg8531.

40. Dai, Y., R. Bharathi, **J. M. Jungers**, G. A. Annor, C. Tyl. 2021. Effect of bran pre-treatment with endoxylanase on the characteristics of intermediate wheatgrass (Thinopyrum intermedium) bread. *Foods.* **10**:1464.

39. Dobbratz, M.*, J. Gutknecht, D. L. Wyse, C. C. Sheaffer, **J. M. Jungers.** 2021. Inconsistent effects of species diversity and N fertilization on soil microbes and carbon systems in perennial bioenergy cropping systems. *Renewable Agriculture and Food Systems*. **37**:60-70.

38. Prigge, J. L., C. C. Sheaffer, **J. M. Jungers**, A. L. Jaqueth, H. L. Lochner, K. L. Martinson. 2021. Forage characteristics and grazing preference of cover crops in equine pasture systems. *Journal of Equine Veterinary Science*. **103:**103663.

37. Duchene, O., B. Dumont, D. J. Cattani, L. Fagnant, B. Schlautman, L. R. DeHaan, S. Barriball, **J. M. Jungers**, V. D. Picasso, C. David, F. Celette. 2021. Process-based analysis of Thinopyrum intermedium phenological development highlights the importance of dual induction for reproductive growth and agronomic performance. *Agricultural and Forest Meteorology*. **301**: 108341.

36. Kazanski, C. E., J. Cowles, S. Dymond, A. Clark, A. S. David, **J. M. Jungers**, A. E. Kendig, C. E. Riggs, J. Trost, X. Wei. 2021. Water availability modifies productivity response to biodiversity and nitrogen in long-term grassland experiments. *Ecological Applications*. e02363.

35. Schiffner, S., **J. M. Jungers**, B. Hulke, K. P. Smith, D. van Tassel, C. C. Sheaffer. 2020. Silphium integrifolium seed and biomass responses to plant density and N fertilization. *Agrosystems, Geosciences and Environment*. e20118.

34. **Jungers, J. M.**, J. Cherney, K. Martinson, A. Jaqueth, C. C. Sheaffer. 2020. Forage nutritive value of modern alfalfa cultivars. *Crop, Forage & Turfgrass Management.* e20076.

33. Yang, Y., S. E. Hobbie, R. R. Hernandez, J. Fargione, S. M. Grodsky. D. Tilman, Y.G. Zhu, Y. Luo, T. M. Smith, **J. M. Jungers**, M. Yang, W. Q. Chen. 2020. Restoring abandoned farmland to mitigate climate change on a full Earth. *One Earth*. **3**:176-186.

32. Schiffner, S., C. C. Sheaffer, D. Van Tassel, K. Smith, **J. M. Jungers**. 2020. Seeding date affects seed and biomass yield of *Silphium integrifolium* (Silflower). *Native Plants Journal.* **22**:30-44.

31. Heineck, G. C., K. Altendorf, **J. M. Jungers**, E. Lamb, R. F. Dennison, N. J. Ehlke, E. Watkins. 2020. Relationships and influence of yield components on spaced-plant and sward seed yield in perennial ryegrass. *Grass and Forage Science.* **75**:424-437.

30. Fernandez, C. W.*, N. Ehlke, C. C. Sheaffer, **J. M. Jungers**. 2020. Effects of nitrogen fertilization and planting density on intermediate wheatgrass yield. *Agronomy Journal*. **112**:4159-4170.

29. Sakiroglu, M., C. Dong, M. Hall, **J. M. Jungers**, V. Picasso Risso. 2020. How does nitrogen and forage harvest affect belowground biomass and non-structural carbohydrates in dual-use Kernza intermediate wheatgrass? *Crops Science*. **60**:2562-2573.

28. Bajgain, P., X. Zhang, **J. M. Jungers**, L. R. DeHaan, B. Heim, C. C. Sheaffer, D. L. Wyse, J. A. Anderson. 2020. 'MN-Clearwater', the first food-grade Intermediate Wheatgrass (Kernza® perennial grain) cultivar. *Journal of Plant Registrations.***14**:288-297.

27. Freund Saxhaug, K., **J. M. Jungers**, D.L Wyse, C.C. Sheaffer. 2020. Cultivation of native plants for seed and biomass production. *Agronomy Journal.* **112**:1815-1827.

26. Hunter, M. C.*, C. C. Sheaffer, S. Culman, W. Lazarus, **J. M. Jungers**. 2020. Effects of defoliation and row spacing on intermediate wheatgrass II: Forage yield and economics. *Agronomy Journal*. **113**:1862-1880.

25. Hunter, M. C.*, C. C. Sheaffer, S. Culman, **J. M. Jungers**. 2020. Effects of defoliation and row spacing on intermediate wheatgrass I: Grain production. *Agronomy Journal*. **113**:1748-1763.

24. Grev, A. M., M. S. Wells, D. N. Catalano, K. L. Martinson, **J. M. Jungers**, C. C. Sheaffer. 2020. Morphology and stem and leaf forage nutritive value of reduced lignin alfalfa. *Agronomy Journal*. **112:**406-417.

23. Yang, Y., E. C. Reilly*, **J. M. Jungers**, J. Chen, T. M. Smith. 2019. Climate benefits of increasing plant diversity in perennial bioenergy crops. *One Earth*. **1**:434-445.

22. Heineck, G. C., **J. M. Jungers**, E. Gilbert, I. McNish, E. Watkins. 2019. Using R-based Image Analysis to Quantify Rusts on Perennial Ryegrass. *The Plant Phenome Journal*. **2.** 1-10.

21. **Jungers, J. M.**, R. Noland, D. E. Kaiser, D. A. Samac, J. A. Lamb, M. S. Wells, J. F. S. Lamb, C. C. Sheaffer. 2019. Potassium fertilization affects alfalfa forage yield, nutritive value, root traits, and persistence. *Agronomy Journal*. **111.** 2843-2852.

20. **Jungers, J. M.**, L. R. DeHaan, D. J. Mulla, C. C. Sheaffer, D. L. Wyse. 2019. Reduced nitrate leaching in a perennial grain crop compared to maize in the Upper Midwest, USA. *Agriculture, Ecosystems and Environment*. **272**:63-73.

19. Tautges, N., C. Flavin, T. Michaels, N. Ehlke, J. Lamb, **J. M. Jungers**, C. C. Sheaffer. 2019. Rotating alfalfa with dry bean as an alternative to corn-soybean rotations in organic systems in the Upper Midwest. *Renewable Agriculture and Food Systems*. **34**:41-49.

18. Tautges, N., **J. M. Jungers**, L. DeHaan, D. Wyse, C. C. Sheaffer. 2018. Maintaining grain yields of the perennial cereal intermediate wheatgrass in monoculture vs. biculture with alfalfa in the Upper Midwestern U.S. *Journal of Agricultural Science*. **156:**758-773.

17. Frahm, C.S., N. Tautges, **J. M. Jungers,** N. J. Ehlke, D. L. Wyse, C. C. Sheaffer. 2018. Responses of intermediate wheatgrass to plant growth regulators and nitrogen fertilizer. *Agronomy Journal*. **110**:1028-1035.

16. **Jungers, J. M.**, C. S. Frahm, N. Tautges, N. J. Ehlke, M. S. Wells, D. L. Wyse, C. C. Sheaffer. 2018. Growth, development, and biomass partitioning of the perennial grain crop *Thinopyrum intermedium*. *Annals of Applied Biology*. **172**:346-354.

15. Ryan, M.R., T. Crews, S. Culman, L. DeHaan, R. Hayes, **J. M. Jungers,** B. Bakker. 2018. Managing multifunctionality in perennial grain crops. *BioScience.* **68**:294-304.

14. **Jungers, J. M.**, L. DeHaan, K. Betts, C. C. Sheaffer, D. L. Wyse. 2017. Intermediate wheatgrass grain and forage yield responses to nitrogen fertilization. *Agronomy Journal*. **109**:462-472.

13. **Jungers, J. M.**, J. O. Eckberg, K. Betts, M. E. Mangan, D. L. Wyse, C. C. Sheaffer. 2017. Plant roots and GHG mitigation in native perennial bioenergy cropping systems, *Global Change Biology: Bioenergy*. **9:**326-338.

12. **Jungers, J. M.**, M. Brakke, A. Rendahl, C. C. Sheaffer. 2016. Identifying base temperature for alfalfa germination: Implications for frost seeding. *Crop Science*. **56**:2833-2840.

11. M. B. Kantar,† C. E. Tyl,† K. M. Dorn,† X. Zhang,† **J. M. Jungers**,† J. M. Kaser,† R. R. Schendel,† J. O. Eckberg,† B. C. Runck,† M. Bunzel, N. R. Jordan, R. M. Stupar, M. D. Marks, J. A. Anderson, G. A. Johnson, C. C. Sheaffer, T. C. Schoenfuss, B. Ismail, G. E. Heimpel, D. L. Wyse. 2016. Perennial grain and oilseed crops. *Annual Reviews of Plant Biology*. **67**:703-729.
†These authors contributed equally to this work.

10. **Jungers, J. M.**, A. Clark, K. Betts, M. Mangen, C. C. Sheaffer, D. L. Wyse. 2015. Long-term biomass yield and species composition in native perennial bioenergy cropping systems. *Agronomy Journal*. **107**:1627-1640.

9. **Jungers, J. M.**, T. Arnold, C. L. Lehman. 2015. Effects of harvesting biomass from conservation grasslands on waterfowl nest success and density. *American Midland Naturalist*. **173**:122-132.

8. Gamble, J., **J. M. Jungers**, D. L. Wyse, G. Johnson, J. A. Lamb, C. C. Sheaffer. 2015. Effect of harvest date on biomass yield, moisture, mineral concentration, and mineral export in low-input grasslands in Minnesota. *BioEnergy Resesarch*. **8**:740-749.

7. **Jungers, J. M.**, C. C. Sheaffer, J. A. Lamb. 2015. Effects of nitrogen, phosphorus, and potassium fertilizers on prairie biomass yield, ethanol yield, and nutrient removal. *BioEnergy Research*. **8**:279-291.

6. **Jungers, J. M.**, D. L. Wyse, C. C. Sheaffer. 2015**.** Establishing native, perennial bioenergy crops with cereal grain companion crops. *BioEnergy Research*. **8**:109-118.

5. **Jungers, J.M.**, J. E. Fargione, C. C. Sheaffer, D. L. Wyse, C. L. Lehman. 2015. Short-term harvesting of bioenergy from conservation grasslands maintains plant biodiversity. *Global Change Biology: Bioenergy*. **7**:1050-1061.

4. **Jungers, J. M.**, J. E. Fargione, C. C. Sheaffer, D. L. Wyse, C. L. Lehman. 2013. Energy potential of biomass from conservation grasslands in Minnesota, USA. *PLoS One*. 8(4): e 61209.

3. **Jungers, J. M.**, C. L. Lehman, C. C. Sheaffer, D. L. Wyse. 2012. Characterizing grassland biomass for energy production and habitat in Minnesota. Proceeding to the 22nd North American Prairie Conference. 168-171.

2. Williams, S., **J. M. Jungers**, K. Johnson, C. Satyshur, M. DonCarlos, R. Dunlap, T. Mielke, J. Schaffer, D. Tilman, D. Wyse, R. Moon, T. Arnold, C. Lehman. 2012. Bioenergy from reserve prairies in Minnesota: Measuring harvest and monitoring wildlife. Proceedings from Sun Grant National Conference: Science for Biomass Feedstock Production and Utilization, Volume 2, Chapter 5, New Orleans.

1. **Jungers, J. M.**, J. J. Trost, C. L. Lehman, D. Tilman. 2011. Energy and conservation benefits from managed prairie biomass. *Aspects of Applied Biology: Biomass and Energy Crops IV*. **112**:147-151.

TEXTBOOKS

Sheaffer, C. C., G. W. Evers, **J. M. Jungers**. 2020. Cool-season legumes for humid areas. In: *Forages, Volume 2: The Science of Grassland Agriculture*. (eds. K. J. Moore, M. Collins, C. J. Nelson, D. D. Redfearn). 263-275. Wiley Blackwell.

EXTENSION PUBLICATIONS

Tautges, N., Detjens, A., & Jungers, J. (2023). Kernza® Grower Guide. https://kernza.org/wp-content/uploads/Grower-guide_final.pdf

Jungers, J., Gamble, J., & Sheaffer, C. (2023). *Managing alfalfa for carbon credits: Where to start?* Forage Focus, August, 2023.

Sheaffer, C. C., J. M. Jungers. 2023. Agronomic advances in Kernza research. Minnesota Crop News: https://blog-crop-news.extension.umn.edu/2023/03/agronomic-advances-in-kernza-research.html

Sheaffer, C. C., J. M. Jungers. 2022. Intermediate Wheatgrass: A new perennial multi-use crop. Minnesota Crop News: https://blog-crop-news.extension.umn.edu/2022/10/intermediate-wheatgrass-new-perennial.html

Wells, M. S., J. Eckberg, **J. M. Jungers**, C. C. Sheaffer. 2019. Optimizing alfalfa cutting management. *Forage Focus*. March, 2019. p. 16-18.

Sheaffer, C. C., N. J. Ehlke, K. A. Albrecht, **J. M. Jungers**, J. J. Goplen. 2018. Forage Legumes: Clovers, birdsfoot trefoil, cicer milkvetch, crownvetch and alfalfa. *Minnesota Agricultural Experiment Station*. Bulletin 608-2018.

Sheaffer, C. C., **J. M. Jungers**, J. Larson. 2018. Alfalfa field crop trial results. *Minnesota Agricultural Experiment Station*.
https://www.maes.umn.edu/sites/maes.umn.edu/files/2018_alfalfa_final.pdf

Sheaffer, C. C., **J. M. Jungers**, T. Hoverstad, W. Ihlenfeld. 2018. Corn silage field crop trial results. *Minnesota Agricultural Experiment Station*.
https://www.maes.umn.edu/sites/maes.umn.edu/files/2018_corn_silage_final2.pdf

EXTENSION PROGRAMMING AND PRESENTATIONS

- Co-author of the "Kernza Growers Handbook", 2nd ed. - 2023
- Co-developer of the Minnesota Winter Kernza Grower Meeting - 2019
- Developer of the NC SARE funded "Kernza Growers Network" - 2019
- Co-author of the "Kernza Growers Handbook" - 2028
- Organizer of four field days on perennial crops and water quality
- Leader of the regional Kernza commercialization community meeting

MENTORING

Postdoctoral researchers (current positions)
Eeusha Nafi (2023-current) – Postdoc at UMN
Craig See (2023-current) – Postdoc at UMN
Hannah Rusch (2023-current) – Postdoc at UMN
Krishna Bhandari (2023-2023) – Assistant Research Professor at Colorado State
Manbir Rakkar (2018-2021) –Assistant Professor, The Ohio State University
Garett Heineck (2019-2020) – Research Agronomist, USDA ARS
Christopher Fernandez (2018-2019) – Assistant Professor, Syracuse University
Mitchell Hunter (2018-2019) – Associate Director, Forever Green Initiative
Nicole Tautges (2017-2018) – Agroecologist, The Michael Fields Agricultural Institute

Undergraduate students (current positions)
Madeleine Penoza (2023) – Undergraduate Researcher, CFANS, UMN
Leah Hallett (2023) – Undergraduate student, Plant and Microbial Biology Major, CBS, UMN
Cole Schiller Olson (2022) – Researcher 2, CFANS, UMN
Nick Seitzer (2021) – Intern, Pasture Farm in New Zealand
Thomas Donelan (2020) – Graduate Student, Iowa State
Rodrigo Arroyo (2019) – Commercialization Intern, GDM
Julia Kloehn (2015) – Intern, World Wide Organic Farming

PhD students (and current positions)
Jason Hickman (advising 2022-current)
Gurparteet Singh (co-advising 2021-current)
Jake Kundert (co-advising 2021-current)
Stella Woeltjen (co-advised 2018-2023) – Scientist at the Danforth Center
Michelle Dobbratz (advised 2017-2019) – Fertilizer Regulator, MN Dept. of Agriculture

MS students
Cassandra Kaplan (co-advised 2023-current)
Alexandra Griffin (advised 2021-2023) – Fulbright Scholar, Argentina
Ezra Moses (advised 2023) – Lead Ecological Data Scientist - University of Illinois
James Bowden (advised 2020-2023) – Rancher and consultant
Emma Link (co-advised 2020-2023) – Senior Research Coordinator - Practical Farmers of Iowa
Evelyn Reilly (advised 2018-2021) – Programs Specialist, Green Lands Blue Waters
Dominic Christensen (co-advised 2018-2021) – Soil Conservationist, USDA Natural Resource Conservation Service
Galen Bergquist (co-advised 2017-2019) – Research Technician, USDA ARS

Graduate student committee service
Chase Krug (PhD 2022-current)
Stephen Gregg (PhD 2022-current)
Zachary Buell (PhD 2022-2023)
Hannah Stoll (PhD 2020-current)
Qiansu Ding (PhD 2021-current)
Marie Schaedel (PhD 2019-2023)
Leta Larson (MS 2021-2022)
Sharon Peronne (PhD 2019-2021)
Garett Heineck (PhD 2018-2019)

CONFERENCE AND SEMINAR PRESENTATIONS

51. **Jungers, J. M.**, Gamble, J., Sheaffer, C. Impacts of harvest intensity and cultivar selection on alfalfa yield, nutritive value, and root dynamics. 2023 ASA, CSSA, and SSSA Annual Meeting. St. Louis, Missouri. November 1, 2023.
50. **Jungers, J. M.** Cropping systems for improved productivity and sustainability. University of Minnesota Dept. of Agronomy and Plant Genetics Promotion and Tenure Seminar. St. Paul, Minnesota. September 25, 2023.
49. **Jungers, J. M.** What do we know about the environmental impacts of Kernza? 2023 Annual International Kernza Conference. Minneapolis, Minnesota. June 22, 2023.
48. **Jungers, J. M.**, Hartman, A. Environmental Quality Research Updates. 2023 KernzaCAP All Hands Meeting. Minneapolis, Minnesota. June 21, 2023.

47. **Jungers, J. M.** Traits and timing: Sustainable management of perennial intercropping systems. University of Minnesota Plant and Microbial Biology Graduate Program Seminar, St. Paul, Minnesota. April 24, 2023.

46. **Jungers, J. M.**, Anderson, J., Bajgain, P., Cureton, C., DeHaan, L., Gutknecht, J., Hartman, A., Meier, E., Peters, T., Picasso, V., Reser, A., Ritter, T., Streit-Krug, A., Tautges, N. Developing and deploying Kernza, a perennial grain crop. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

45. **Jungers, J. M.** Agronomics for profitable and sustainable Kernza perennial grain production. 2022 Annual International Kernza Conference. Salina, Kansas. April 22, 2022.

44. **Jungers, J. M.** KernzaCAP: Overview and updates. 2022 Annual International Kernza Conference. Salina, Kansas. April 22, 2022.

43. **Jungers, J. M.** Kernza perennial grain development. USDA Dairy Agroecology Working Group Meeting. Virtual. April 14, 2022.

42. **Jungers, J. M.** KernzaCAP: A model for developing and deploying a new sustainable crop enterprise, University of Minnesota Applied Plant Sciences Graduate Program Seminar. Virtual. February 7, 2022.

41. **Jungers, J. M.** Perennial grains for ecological restoration. Symposium on Environmental Governance and Ecological Restoration. College of Environment and Ecology, Chongquing University. Virtual. December 2, 2021.

40. **Jungers, J. M.** From grazing to grain: Dual-use potential of intermediate wheatgrass. 2021 ASA, CSSA, and SSSA Annual Meeting. Virtual. November 8, 2021.

39. **Jungers, J. M.** Perennial grain crops mitigate nitrate leaching in the Central Sands region of Minnesota. 2021 Minnesota Water Resources Conference. Virtual. October 19, 2021.

38. **Jungers, J. M.** Kernza perennial grain production. Cornell University Perennial Grains Winter Workshop. Virtual. February 22, 2021.

37. **Jungers, J. M.**, Hunter, M., Culman, S., Lazarus, W. F., Sheaffer, C. C. Dual-use potential of intermediate wheatgrass - forage and grazing. 2020 Annual International Kernza Conference. Virtual. June 3, 2020.

36. **Jungers, J. M.** Diversifying and perennializing cropping systems for enhanced economics and ecosystem services Minnesota Agricultural Experiment Station Seminar. Virtual. June 2, 2020.

35. **Jungers, J. M.** Distance learning during a pandemic. Minnesota Association for Agricultural Educators Annual Conference. Virtual. May 7, 2020.

34. **Jungers, J. M.** New perennial grain crops and partnerships to enhance rural prosperity and ecosystem services. University of Illinois Natural Resources and Environmental Sciences Department Seminar. Champaign Urbana, Illinois. March 6, 2020.

33. **Jungers, J. M.**, Fernholz, C., Carlson, C., Cureton, C. Kernza - A perennial grain crop for the Midwest. 2020 Midwest Organic and Sustainable Education Service (MOSES) Annual Conference. La Crosse, Wisconsin. February 27, 2020.

32. **Jungers, J. M.** Kernza - An emerging high-value crop for the Northern Plains. Northern Plains Sustainable Agriculture Conference. Fargo, North Dakota. January 24, 2020.

31. **Jungers, J. M.**, Fernholz, C., Carlson, C., Cureton, C. Kernza - A perennial grain crop for the Midwest. Minnesota Organics Conference. St. Cloud, Minnesota. January 9, 2020.

30. **Jungers, J. M.** Agronomic effects of soil carbon sequestration in perennial crops. Calibrating the Message: A Soil Carbon Workshop. Salina, Kansas. September 30, 2019.

29. **Jungers, J. M.** Improving drinking water quality with Kernza. International Conference: Is the Future of Agriculture Perennial? Lund, Sweden. May 9, 2019.

28. **Jungers, J. M.** New cropping systems for enhanced productivity and sustainability. Montana State University College of Agriculture Seminar. Bozeman, Montana. March 13, 2019.

27. **Jungers, J. M.** Perennial and winter annual crops for source water protection. 34th Annual Water and Wastewater Technical Conference. St. Cloud, Minnesota. March 6, 2019.

26. **Jungers, J. M.** Diversifying and perennializing cropping systems for enhanced productivity and sustainability. University of Minnesota Dept. of Agronomy and Plant Genetics Seminar. St. Paul, Minnesota. February 7, 2019.

25. **Jungers, J. M.** Optimizing harvest timing of Kernza. 2019 Annual International Kernza Conference. Madison, Wisconsin. July 2, 2019.

24. **Jungers, J. M.**, Hunter, M., Fernandez, C. Overview of Kernza agronomics research. University of Minnesota Forever Green Initiative Seminar. St. Paul, Minnesota. January 25, 2019.

23. **Jungers, J. M.** Kernza yield components. Cornell University Perennial Grains. Virtual. January 21, 2019.

22. **Jungers, J. M.** Water quality benefits from perennial grain crops. 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2018.

21. **Jungers, J. M.** Nitrate leaching reductions to groundwater beneath a new perennial grain crop. Minnesota Water Resources Conference. St. Paul, Minnesota. October 16, 2018.

20. **Jungers, J. M.** Enhancing agricultural productivity and sustainability with alfalfa and new perennial crops. USDA ARS Plant Science Unit Seminar. St. Paul, Minnesota. September 25, 2018.

19. **Jungers, J. M.** Agronomic and water quality research on intermediate wheatgrass. 2018 Annual International Kernza Conference. Lindsborg, Kansas. June 29, 2018.

18. **Jungers, J. M.** Limited nitrate leaching beneath intermediate wheatgrass. 2017 ASA, CSSA, and SSSA Annual Meeting. Tampa, Florida. October 24, 2017.

17. **Jungers, J. M.** The potential for water quality benefits from a new perennial grain crop: Intermediate wheatgrass. Soil & Water Conservation Society International Conference. Madison, Wisconsin. August 1, 2017.

16. **Jungers, J. M.** Quantifying the environmental benefits of Kernza. 2017 Annual International Kernza Conference. St. Paul, Minnesota. July 6, 2017.

15. **Jungers, J. M.** Progress and pitfalls in the development of a perennial grain crop. University of Wisconsin Department of Agronomy and Horticulture Seminar Series. Madison, Wisconsin. March 30, 2017.

14. **Jungers, J. M.** Agronomic methods for maximizing intermediate wheatgrass grain yields. 2016 Annual International Kernza Conference. Wilson, Kansas. 2016.

13. **Jungers, J. M.** Progress and pitfalls in the development of a perennial grain crop. Washington State Departmental Seminar. Pullman, Washington. November 28, 2016.

12. **Jungers, J. M.**, DeHaan, L., Sheaffer, C., Wyse, D., Betts, K. Nitrogen fertilizer rates for optimized grain production of intermediate wheatgrass. 2016 ASA, CSSA, and SSSA Annual Meeting. Phoenix, Arizona. November 9, 2016.

11. **Jungers, J. M.** Harnessing the power of perennials. University of Wisconsin-Oshkosh Biology Department Seminar Series. Oshkosh, Wisconsin. February 26, 2016.

10. **Jungers, J. M.** Agronomic methods to increase intermediate wheatgrass grain yields. University of Minnesota Forever Green Initiative Seminar. St. Paul, Minnesota. 2015.

9. **Jungers, J. M.**, Clark, A., Eckberg, J., Wagner, M., Betts, K., Sheaffer, C., Wyse, D. The effect of nitrogen fertilization and species composition on greenhouse gas mitigation potential in perennial grassland bioenergy cropping systems. 2015 ASA, CSSA, and SSSA Annual Meeting. Minneapolis, Minnesota. November 17, 2015.

8. **Jungers, J. M.** Agronomic methods to increase intermediate wheatgrass grain yields. Green Lands Blue Waters Annual Conference. Minneapolis, Minnesota. November 4, 2015.

7. **Jungers, J. M.** Agronomic methods to increase intermediate wheatgrass grain yields. New Roots for Ecological Intensification Conference. Estes Park, Colorado. October 28, 2014.

6. **Jungers, J. M.** Complementarity in ecosystem services: Creating a vision for agriculture, energy, and society, 2013 Ecological Society of America Annual Meeting. Minneapolis, Minnesota. August 4, 2013.

5. **Jungers, J. M.** Can conservation grasslands be managed for wildlife and bioenergy? Midwest Conservation Biomass Alliance Annual Meeting. Kirksville, Missouri. July 30, 2013.

4. **Jungers, J. M.,** Can conservation grasslands be managed for wildlife and bioenergy? University of Minnesota Conservation Biology Graduate Program Seminar. St. Paul, Minnesota. May 6, 2013.

3. **Jungers, J. M.,** Assessing bioenergy potential of conservation grasslands in Minnesota. University of Minnesota Conservation Biology Graduate Program Seminar Series. St. Paul, Minnesota. March 19, 2012.

2. **Jungers, J. M.** Energy and conservation benefits from managed prairie biomass. Association for Applied Biologists Biomass and Energy Crops Conference. Champaign, Illinois. September 22, 2011.

1. **Jungers, J. M.,** Managing prairies for bioenergy and wildlife. Cedar Creek Ecosystem Science Reserve LTER Seminar Series. Bethel, Minnesota. 2010.

OUTREACH PRESENTATIONS

55. **Jungers, J. M.** Grazing Kernza Intermediate Wheatgrass. Sustainable Farming Association and Clean River Partners Research Farm Field Day. Kellogg, Minnesota. October 11, 2023. *Upcoming*

54. **Jungers, J. M.** Long-term management of Kernza for water quality protection. Pope County Soil and Water Conservation District Rosholt Research Farm Field Day. Westport, Minnesota. August 17, 2023. *Upcoming*

53. **Jungers, J. M.** Forever Green crops for Minnesota agriculture. AGREETT Steering Committee Field Visit. St. Paul, Minnesota. August 7, 2023.

52. **Jungers, J. M.** Agronomic updates on Kernza. A-Frame Farm Field Day. Madison, Minnesota. July 13, 2023.

51. **Jungers, J. M.** Nitrate leaching mitigation by winter barley. Barley U Field Day. St. Paul,

Minnesota. June 30, 2023.

50. **Jungers, J. M.** Farming Kernza with legume intercrops. 2023 Annual International Kernza Conference - Field Trip Presentation. Farmington, Minnesota. June 23, 2023.

49. **Jungers, J. M.** Agronomics for profitable and sustainable Kernza production. Forever Green Crop Webinar. Virtual. June 13, 2023.

48. **Jungers, J. M.** Agronomics for profitable and sustainable Kernza production. University of Minnesota Extension Soil Management Summit. St. Cloud, Minnesota. December 15, 2022.

47. **Jungers, J. M.** Kernza - A perennial grain crop to mitigate nitrate leaching. Pope County Soil and Water Conservation District Rosholt Research Farm Field Day. Westport, Minnesota. August 18, 2022.
    Presented information on our research measuring nitrate leaching beneath perennial crops to an audience of > 80 farmers and community members.

46. **Jungers, J. M.** Kernza - A forever green crop. Minnesota FarmFest. Morgan, Minnesota. August 3, 2022.

45. **Jungers, J. M.** Perennial grain research overview. USDA NRCS Regional Agronomist Meeting. St. Paul, Minnesota. July 18, 2022.
    Provided a field tour of research plots for the NRCS Regional Agronomist.

44. **Jungers, J. M.** Kernza for dual-use forage and grain production. National Cattleman's Beef Association Field Visit. St. Paul, Minnesota. July 12, 2022.

43. **Jungers, J. M.** Kernza agronomics field talk. A-Frame Farm Field Day. Madison, Minnesota. July 7, 2022.
    Presented information on Kernza production to about 50 attendees of growers and other stakeholders.

42. **Jungers, J. M.** Kernza - A forever green crop. Lake Pepin Legacy Alliance Kernza. Lake City, Minnesota. June 18, 2022.
    Presented information on our research measuring nitrate leaching beneath perennial crops to an audience of > 80 farmers and community members.

41. **Jungers, J. M.** Update on Kernza agronomic research. Perennial Promise Grower's Coop Winter Meeting. Dundas, Minnesota. March 7, 2022.
    Presented to about 50 growers and regional food system stakeholders about progress of research on perennial grains.

40. **Jungers, J. M.** Preventing nitrate leaching with perennial crops. Pope County Soil and Water Conservation District Rosholt Research Farm Field Day. Westport, Minnesota. August 19, 2021.
    Presented information on our research measuring nitrate leaching beneath perennial crops to an audience of 63 farmers and community members.

39. **Jungers, J. M.** Forever green crops for Minnesota agriculture. Minnesota Farmfest. Morgan, Minnesota. August 4, 2021.
    Fielded questions at a table with information on sustainable crops from the University of Minnesota. Farmfest is one of the nation's largest agricultural trade shows with thousands of attendees annually. I provided information to Minnesota Governor Waltz as he stopped by my booth.

38. **Jungers, J. M.** Dual-use potential of Kernza. Clean River Partners Soil Health Field Day. Goodhue, Minnesota. July 28, 2021.
    Presented to audience of about 50 community members about our on-farm research being conducted in partnership and field day host Kaleb Anderson on grazing Kernza.

37. **Jungers, J. M.** Kernza research and development in Minnesota. Great River Greening Kernza Field Day. St. Peter, Minnesota. July 22, 2021.
    Presented at an on-farm field day event to about 50 community members on the development of Kernza for Minnesota agriculture.

36. **Jungers, J. M.** Kernza for clean water. ROCORI School District and FFA Field Day. Cold Spring, Minnesota. July 17, 2021.
    Organized event and presented to an audience of about 80 attendees of farmers, high-school students and parents, community members, and state agency personnel including the MN Dept. of Agriculture Commissioner.

35. **Jungers, J. M.** Kernza agronomics field talk. A-Frame Farm Field Day. Madison, Minnesota. July 8, 2021.
    Presented information on Kernza production to more than 150 attendees of growers, grain processors, food companies, and state and federal agency personnel.

34. **Jungers, J. M.** Kernza perennial grain production in Minnesota. University of Minnesota Extension Staff Summit. Virtual. March 26, 2021.

33. **Jungers, J. M.** KernzaCAP: A national collaboration to launch the Kernza perennial grain enterprise. University of Minnesota Forever Green Initiative Winter Kernza Call Series. Virtual. February 23, 2021.

32. **Jungers, J. M.** Kernza production in Minnesota, University of Minnesota Extension Crop Connect. Virtual. December 10, 2020.

31. **Jungers, J. M.** Kernza and water quality in Central Minnesota. Pope County Soil & Water Conservation District Rosholt Research Farm Field Day. Virtual. August 20, 2020.

30. **Jungers, J. M.** How to use Kernza in organic production. Midwest Organic and Sustainable Education Service Field Day. Virtual. July 22, 2020.

29. **Jungers, J. M.** Kernza Production for Central Minnesota, Rosholt Research Farm Field Day Pope County SWCD, Westport, Minnesota. August 27, 2019.
    Presented information on perennial crops research to ~100 field day attendees

28. **Jungers, J. M.** Perennial crops for source water protection. Minnesota Association of Professional

Soil Scientists Kernza Field. Cold Spring, Minnesota. August 2, 2019.

27. **Jungers, J. M.** Kernza for Northern Minnesota cropping systems. Minnesota Turf Seed Council Field Day. Roseau, Minnesota. July 2019.

26. **Jungers, J. M.** Kernza and soil health. Soil Health. University of Minnesota Extension Field Day. Madison, Minnesota. July 11, 2019.

25. **Jungers, J. M.** Kernza: A new perennial grain crop for Montana. Montana State Northwest Agricultural Research Station Farmer Advisory Committee. Kalispell, Montana. March 14, 2019.

24. **Jungers, J. M.** Kernza agronomics update. University of Minnesota Forever Green Initiative Kernza Grower Meeting. St. Paul, Minnesota. March 11, 2019.

23. **Jungers, J. M.** Perennial grain crop research. Izaak Walton League Forever Green Field Tour. St. Paul, Minnesota. October 12, 2018.

22. **Jungers, J. M.** Kernza for improved water quality. Lincoln-Pipestone Rural Water Field Day. Pipestone, Minnesota. August 23, 2018.

21. **Jungers, J. M.** Kernza for improved water quality. City of Chatfield Kernza Field Day. Chatfield, Minnesota. August 22, 2018.

20. **Jungers, J. M.** Forever Green research on Kernza perennial grains. US Water Alliance One Water Summit. St. Paul, Minnesota. July 10, 2018.

19. **Jungers, J. M.** The Kernza Kraze: An update on agronomics and commercialization. Minnesota Turf Seed Council Winter Symposium. Roseau, Minnesota. February 21, 2018.

18. **Jungers, J. M.** Quantifying the environmental benefits of Kernza. Green Lands Blue Waters Annual Conference. Madison, Wisconsin. November 29, 2017.

17. **Jungers, J. M.**, Anderson, J., Gutknecht, J., Warner, R., Fernholz, C. Perennial grain crops for Minnesota. Minnesota Department of Agriculture A-Frame Farm Field Day. Madison, Minnesota. August 10, 2017.

16. **Jungers, J. M.** Kernza® intermediate wheatgrass: A new perennial grain crop. Food Company CEO Sustainability Task Force Meeting. St. Paul, Minnesota. July 28, 2017.

15. **Jungers, J. M.** UMN Forever Green Initiative. Sustainable Farming Association - Crow Wing Chapter Meeting. Minneapolis, Minnesota. April 23, 2017.

14. **Jungers, J. M.** Intermediate wheatgrass: A new perennial grain crop. Minnesota Turf Seed Council

Winter Symposium. Roseau, Minnesota. February 15, 2017.

13. **Jungers, J. M.** Profitable perennials for improving water quality and providing healthy grains. Buffer Science and Design Symposium. St. Paul, Minnesota. 2016.

12. **Jungers, J. M.** Forever Green research on Kernza® perennial grains. National Association for Conservation Districts Leadership Forum Field Day. St. Paul, Minnesota. 2016.
    Field talk to ~120 attendees

11. **Jungers, J. M.** Progress on managing intermediate wheatgrass. Minnesota Turf Seed Council Field Day. Roseau, Minnesota. June 2016.
    Field day talk to ~50 farmers

10. **Jungers, J. M.** Agronomic methods for maximizing intermediate wheatgrass grain yields. Minnesota Turf Seed Council Winter Symposium. Roseau, Minnesota. February 24, 2016.

9. **Jungers, J. M.** Managing grasslands for bioenergy and ecosystem services. Minnesota Turf Seed Council Winter Symposium. Roseau, Minnesota. February 17, 2015.

8. **Jungers, J. M.** Projects for MCBA. Midwest Conservation Biomass Alliance Regional Meeting. St. Paul, Minnesota. June 12, 2014.

7. **Jungers, J. M.** Managing conservation grasslands for bioenergy and wildlife. Minnesota Department of Natural Resources Science Chat Webinar. St. Paul, Minnesota. May 1, 2014.
    Virtual presentation to all staff at the Minnesota Department of Natural Resources

6. **Jungers, J. M.** Bioenergy from native polycultures. University of Minnesota Forever Green Initiative Field Day. St. Paul, Minnesota. August 20, 2013.

5. **Jungers, J. M.** Managing WMAs for wildlife and bioenergy: Ecological and economic tradeoffs. Minnesota Department of Natural Resources State Wildlife and Bioenergy Meeting. Hutchinson, Minnesota. March 26, 2013.

4. **Jungers, J. M.** Ecology and management of biomass and energy. Rural Advantage Third Crops Meeting: Perennial Crops for Bioenergy. Fairmont, Minnesota. April 2, 2012.

3. **Jungers, J. M.** Native prairie for biofuels University of Minnesota College of Biological Sciences & Norwegian Research Delegation Meeting. St. Paul, Minnesota. 2011.

2. **Jungers, J. M.** Managing prairies for wildlife and biofuel. Missouri Prairie Foundation Board of Directors Meeting. Gray Summit, Missouri. 2010.

1. **Jungers, J. M.** Analyzing bioenergy potential of conservation grasslands: Tracking ecosystem changes in a biomass harvesting system. Minnesota Department of Natural Resources Briefing.

Lac Qui Parle, Minnesota. September 27, 2010.

BROADER IMPACTS

47. **Jungers, J. M.** Kernza: Challenges and opportunities for agriculture in the Upper Midwest. Minnesota Crop Production Retailers Conference. Presentation at UMN Extension Crop and Pest Management Short Course. Minneapolis, MN. Dec. 13, 2023

46. **Jungers, J. M.** Kernza perennial grain production in the US. Webinar presentation to MN Board of Water and Soil Resources and NRCS technical staff. Virtual. Dec. 5, 2023

45. **Jungers, J. M.** Grazing Kernza Intermediate Wheatgrass. Field day presentation at the Sustainable Farming Association and Clean River Partners Research Field Day. Kellogg, MN. October 11, 2023

44. **Jungers, J. M.** Long-term management of Kernza for water quality protection. Field day presentation at the Pope County Soil and Water Conservation District Rosholt Research Farm Field Day. Westport, MN. August 17, 2023

43. **Jungers, J. M.** Tracking fertilizers from farm to faucet. Field day presentation and high school student engagement event for the Urban Ag Internship Field Day. St. Paul, Minnesota. August 11, 2023.

42. **Jungers, J. M.** Forever Green crops for Minnesota Agriculture – Field day presentation to AGREETT steering committee - St. Paul, MN. August 07, 2023.

41. **Jungers, J. M.** Crop scouting: novel crops. Minnesota 4-H State Crop Scouting Event. St. Paul, Minnesota. July 25, 2023.

40. **Jungers, J. M.** Perennial crops for the future. Sustainable Opportunities for Agricultural Research - Research and Extension Experiences for Undergraduates Field Day. St. Paul, Minnesota. July 20, 2023.

39. **Jungers, J. M.** Water quality field research demonstration. Presentation and educational event for high school students for the Minnesota Youth Institute. St. Paul, Minnesota. May 17, 2023.

38. **Jungers, J. M.** Forever Green crops for clean water. Field talk to ~45 members of the Minnesota Clean Water Council, a legislatively appointed group that determines the allocation of state

funding to water projects. Minnesota Clean Water Council Field Tour. St. Paul, Minnesota. May 15, 2023.

37. **Jungers, J. M.** Forever Green crops for clean water. Field talk to ~30 members of the Minnesota Dept. of Agriculture's Minnesota Water Quality Certification program steering committee. Minnesota Department of Agriculture Water Quality Certification Steering Committee. St. Paul, Minnesota. May 11, 2023.

36. **Jungers, J. M.** New crops for sustainable agriculture. Field demonstration and experiential learning activity for class of 48 high school students from Great River School. Great River High School - Field Trip to UMN. St. Paul, Minnesota. April 13, 2023.

35. **Jungers, J. M.** Environmental and agronomic research on intermediate wheatgrass. Field presentation to ~30 legislators, aides, and state agency leaders. Minnesota Environmental Partnership Legislator Field Day. St. Paul, Minnesota. April 5, 2023.

34. **Jungers, J. M.** Perennial grain research overview. Field presentation to international delegation of agricultural policy makers as part of a USDA Foreign Agricultural Service event. USDA Foreign Agriculture Service Field Tour. St. Paul, Minnesota. September 19, 2022.

33. **Jungers, J. M.** Kernza planting demonstration. Assisted Alexandria High School students, staff, and FFA members plant a field of Kernza on school property for education and demonstration. Alexandria High School FFA. Alexandria, Minnesota. August 23, 2022.

32. **Jungers, J. M.**, Fernholz, C., Bickford, P., Roberson, F. Land access for food-grade grain farmers. Panelist to discuss land access challenges for emerging farmers. Michael Fields Agricultural Institute - Midwest GRIT Webinar. Virtual. August 21, 2022.

31. **Jungers, J. M.** Perennial grain research overview. Presented research activities and results to the Minnesota Agricultural Experiment Station Rosemount Research and Outreach Station steering committee. Minnesota Agricultural Experiment Station Rosemount Research and Outreach Station Steering Committee Tour. Rosemount, Minnesota. August 18, 2022.

30. **Jungers, J. M.** Tracking carbon in agroecosystems. University of Minnesota IonE. Carbon Tracking and Monitoring Workshop, Virtual. July 19, 2022.

29. **Jungers, J. M.** Water quality field research demonstration. Led high school students through demonstration of sampling soil water for nutrient analysis. Minnesota Youth Institute Immersion Event. Minnesota Youth Institute. St. Paul, Minnesota. May 16, 2022.

28. **Jungers, J. M.**, Peterson, R., Newman, Y., Nieman, N., Howe, T. Integrating on-farm research and post-secondary education. Panelist with agricultural educators and program developers from various colleges to discuss engagement opportunities for high school students and agriculture programs. Minnesota Association for Agricultural Educators Post-Secondary Summit. St. Cloud,

Minnesota. January 21, 2022.

27. **Jungers, J. M.** Solving global grand challenges with innovative agriculture. Field presentation to visiting MN House Agricultural Finance and Policy Committee members. Minnesota House Ag Committee Tour. St. Paul, Minnesota. October 15, 2021.

26. **Jungers, J. M.** Ecosystem services from Kernza. Event facilitator and presenter to audience of about 75 Minnesota legislators, legislative staff, and state agency personnel. Friends of the Mississippi and Minnesota Environmental Partnership - Minnesota Policy Maker Field Day. St. Paul, Minnesota. July 19, 2021.

25. **Jungers, J. M.** Forever Green crops for a prosperous Minnesota. Presented to former US Representative Colin Peterson and an audience of commodity crop leaders on the potential for Kernza and other Forever Green crops in rotations in the Upper Midwest. Meeting with former US Representative Colin Peterson. June 2021.

24. **Jungers, J. M.** Ecosystem services from Kernza perennial grain. Presentation to a diverse stakeholder steering committee composed of business leaders, NGO directors, and funders. Forever Green Partnership Steering Committee Meeting. June 8, 2021.

23. **Jungers, J. M.** New crops for environmental protection. St. Paul Campus research plot tour guide and presenter for Minnesota Science Museum staff. Minnesota Science Museum St. Paul Campus Tour. St. Paul, MN. May 18, 2021.

22. **Jungers, J. M.** Perennial crops for a sustainable future. Panelist for a Minnesota Youth Institute event involving over 80 Minnesota high school students. Minnesota Youth Institute. Virtual. May 17, 2021.

21. **Jungers, J. M.** Uncertainty in agricultural soil carbon storage. Presentation to Minnesota state agency leaders on agriculture and climate change. Roundtable for Minnesota Agencies on Climate Change and Agriculture. Virtual. April 30, 2021.

20. **Jungers, J. M.** Forever Green crops for Minnesota agriculture. Minnesota House Legacy Committee. Virtual. March 26, 2021.

19. **Jungers, J. M.** Sustainable cropping systems for Minnesota and beyond. Agricultural Research, Extension, Education, and Tech Transfer - Minnesota House Agriculture Finance and Policy Committee. Virtual. March 3, 2021.

18. **Jungers, J. M.** Perennial grains for the future of farming. Presentation and educational engagement with ROCORI high-school students in the Future Farmers of America Chapter based in Central Minnesota. ROCORI FFA Field Day. Cold Spring, Minnesota. August 22, 2020.

17. **Jungers, J. M.** Sustaining nitrate leaching benefits and farm profitability of the perennial grain crop Kernza. Minnesota Legislative Testimony for the Legislative-Citizen Commission on Minnesota

Resources. Virtual. July 27, 2020.

16. **Jungers, J. M.** Rhizotrons: Snapchat for roots. Hosted a virtual immersion activity for Minnesota high school students. Minnesota Youth Institute. Virtual. July 14, 2020.

15. **Jungers, J. M.** Kernza production in Minnesota. University of Minnesota CFANS Classes Without Quizzes. Virtual. June 29, 2020.

14. **Jungers, J. M.** The power of perennials and Kernza's path to commercialization. Presentation and discussion session with farmers participating in the Stone Barn Regenerative Agriculture Fellowship. Stone Barn Regenerative Agriculture Fellowship Program Fellow Meeting. Virtual. April 7, 2020.

13. **Jungers, J. M.** Synergistic activities: New research, partnerships, and a model for sustainable agriculture. General Mills, Inc. Sustainability Team Update. Golden Valley, Minnesota. February 3, 2020.

12. **Jungers, J. M.** The future of perennial crops. Conversations on the Wonders of Science. Northfield, Minnesota. December 10, 2019.

11. **Jungers, J. M.** Protecting source water and drinking water with perennial crops. The Institute on the Environment Second Mondays Event. St. Paul, Minnesota. April 8, 2019.

10. **Jungers, J. M.** Forever Green Crops. Agricultural Utilization Research Institute New Uses Forum. Wayzata, Minnesota. February 28, 2019.

9. **Jungers, J. M.**, DeHaan, L., Fernandez, C., Hunter, M., Rakkar, M., Sheaffer, C., Wyse, D. Intermediate wheatgrass agronomics: Increasing profitability, grain yield, and yield longevity. General Mills, Inc Sustainability Team Update. Golden Valley, Minnesota. January 9, 2019.

8. **Jungers, J. M.**, Wyse, D. Forever green crops for Minnesota. Virtual presentation to statewide staff at the Minnesota Department of Agriculture. Minnesota Department of Agriculture Brown Bag Lunch Seminar. St. Paul, Minnesota. September 19, 2018.

7. **Jungers, J. M.** Accelerating perennial crop production to prevent nitrate leaching. Minnesota Legislative Testimony for the Legislative-Citizen Commission on Minnesota Resources. St. Paul, Minnesota. June 20, 2018.

6. **Jungers, J. M.** Intermediate wheatgrass (Kernza) agronomics at the University of Minnesota. PepsiCo Campus Tour. St. Paul, Minnesota. June 11, 2018.

5. **Jungers, J. M.** Overview of the Forever Green Initiative. Minnesota House Agriculture Finance Committee Hearing. St. Paul, Minnesota. March 8, 2018.

4. **Jungers, J. M.** Preventing nitrate contamination of groundwater using perennial crops. Minnesota Legislative Testimony for the Legislative-Citizen Commission for Minnesota Resources. St. Paul, Minnesota. October 5, 2017.

3. **Jungers, J. M.** Kernza intermediate wheatgrass: A new perennial grain crop. Lukas Walton and Walton Family Foundation Campus Tour and Funding Meeting. St. Paul, Minnesota. June 28, 2017.

2. **Jungers, J. M.** New crops for sustainable agriculture. River's Edge High School Fieldtrip to the St. Paul Campus, St. Paul, Minnesota. 2016.
   Field talk to class of high school students from River's Edge Academy

1. **Jungers, J. M.** Reducing nitrogen pollution in ground water with perennial grasses. Minnesota Legislative Testimony for the Legislative-Citizen Committee on Minnesota Natural Resources. St. Paul, Minnesota. June 18, 2014.

CONFERENCE ABSTRACTS

44. Gutknecht, J., Link, E., **Jungers, J. M.** Perennial and annual cropping system responses to simulated flood and drought. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

43. Kundert, J., Gamble, J., Gutknecht, J., **Jungers, J. M.** Comparing methods for soil carbon accounting in a perennial crop rotation. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

42. Djuric, N., DiTommaso, A., **Jungers, J. M.,** Crews T.E., Franco, J.G., Deiss, L., Culman, S., Ryan, M.R. Optimizing seeding rate in organic Kernza production. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

41. Gregg, S., **Jungers, J. M.,** Strock, J., Johnson, G.A., Garcia y Garcia, A. Crop root traits and resource use in current and future climate scenarios. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

40. Ritter, T., Gutknecht, J., **Jungers, J. M.** Kernza CAP: Developing and deploying a perennial grain crop enterprise to improve environmental quality and rural prosperity. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

39. Singh, G., Gutknecht, J., Jungers, J. M., Trost, J. Nitrate leaching and crop yield for intermediate wheatgrass (Kernza) in the US Midwest. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

38. Nesser, S., Schiffner, S., Smith, K.P., **Jungers, J. M.,** Franco, J.G., Sheaffer, C. Stand age and growth stage affect Silphium integrifolium forage quality. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

37. Tahir, M., Gutknecht, J., **Jungers, J. M.,** Mulla, D. J. DSSAT modeling of kernza biomass and coupled water and nitrogen balances in SW Minnesota at two N rates. CSSA, SSSA International Annual Meeting, St. Louis, Mo. Oct. 29-Nov. 1, 2023.

36. Gutknecht, J., **Jungers, J. M.,** Woeltjen, S. Age-related changes in partitioning of carbon in perennial grain and annual grain cropping systems. 2023 ESA Annual Meeting. Portland, OR. August 7, 2023.

35. Schaedel, M., Ishii, S., **Jungers, J. M.,** Paul, B., Mwendia, S., Mutimura, M., Grossman, J. Microbial community dynamics in the rhizosphere enhance nitrogen fixation and forage quality in novel perennial intercrops in Rwanda. 2023 ESA Annual Meeting. Portland, OR. August 10, 2023.

34. Nufi, E., Torrion, J., **Jungers, J. M.** Can Kernza survive the winter in Northwest Montana? 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

33. Kundert, J., Rakkar, M., Gutknecht, J., **Jungers, J. M.** Evaluating intermediate wheatgrass termination methods for preservation of environmental benefits. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

32. Woeltjen, S., **Jungers, J. M.**, Gutknecht, J. Evaluating nitrogen conservation and translocation in intermediate wheatgrass. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

31. Griffin, A., **Jungers, J. M.** Investigating effects of root architecture and plant spacing on seed and vegetative traits of intermediate wheatgrass using minirhizotrons. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

30. Williams, M., **Jungers, J. M.**, Picasso, V., Schlautman, B., Moore, V. Investigating optimal nutrient management practices in alfalfa-intermediate wheatgrass intercropping systems. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

29. Singh, G., Gutknecht, J., **Jungers, J. M.** Nitrate leaching and crop yield for intermediate wheatgrass (Kernza) in the US Midwest. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

28. Link, E., Gutknecht, J., **Jungers, J. M.** Soil health in diverse perennial grain and annual cropping systems under climate change scenarios. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

27. Link, E., Gutknecht, J., **Jungers, J. M.** Soil microbial community responses after two years of annual and perennial grain crop management. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

26. Bianchin Rebesquini, R., Basche, A., **Jungers, J. M.**, Picasso, V., Culman, S. The impact of nitrogen rates across sites and years on intermediate wheatgrass grain yield: A meta-analysis. 2022 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2022.

25. **Jungers, J. M.** KernzaCAP: Overview and updates. USDA NIFA Sustainable Agricultural Systems CAP Meeting. Kansas City, Missouri. April 18, 2022.

24. Pinto, P., Culman, S., Crews, T., DeHaan, L., **Jungers, J. M.**, Larsen, J., Maul, J., Pugliese, J., Ryan, M., Schipanski, M., Sulc, M., Wayman, S., Wiedenhoeft, M., Picasso, V. Dual-use Kernza intermediate wheatgrass seasonal forage yield and nutritional value across North America. 2021 ASA, CSSA and SSSA Annual Meeting. Salt Lake City, Utah. November 9, 2021.

23. Woeltjen, S., **Jungers, J. M.**, Gutknecht, J. Fine root growth dynamics in Kernza perennial grain crop systems. 2021 ASA, CSSA, and SSSA Annual Meeting. Salt Lake City, Utah. November 9, 2021.

22. Woeltjen, S., **Jungers, J. M.**, Gutknecht, J. Does crop-soil carbon flow limit SOC accrual in perennial grain soils?. 2021 ASA, CSSA, and SSSA Annual Meeting. Salt Lake City, Utah. November 8, 2021.

21. Schiffner, S., **Jungers, J. M.**, Smith, K., Van Tassel, D., C. Agronomic Potential of a Perennial Oilseed Crop, Silphium integrifolium. 2019 ASA, CSSA and SSSA Annual Meeting. San Antonio, Texas. November 11, 2019.

20. Johnson, G., Current, D., Lazarus, B., Zamora, D., Serra, A., Wyatt, G., **Jungers, J. M.**, Gamble, J. Crop Enterprise and Environmental Budgeting Tool (CE2T) for Biomass Cropping Systems. 2019 ASA, CSSA and SSSA Annual Meeting. San Antonio, Texas. November 11, 2019.

19. Hunter, M., Sheaffer, C., Culman, S., **Jungers, J. M.** Effects of Defoliation and Row Spacing on Intermediate Wheatgrass Grain and Forage Yield. 2019 ASA, CSSA and SSSA Annual Meeting. San Antonio, Texas. November 11, 2019.

18. Marrone, V., Snapp, S., Cassida, K., **Jungers, J. M.** Getting nature's services and eating it too. 2019 ASA, CSSA and SSSA Annual Meeting. San Antonio, Texas. November 11, 2019.

17. Rakkar, M., C., **Jungers, J. M.**, Gutknecht, J., Grossman, J., Bergquist, G., Li, F. Impact of Perennial and Annual Organic Transition Systems on Profitability and Soil Health Indicators. 2019 ASA, CSSA and SSSA Annual Meeting. San Antonio, Texas. November 11, 2019.

16. Gutknecht, J., Sheaffer, C., Wyse, D., Crew, T., de Oliveira, G., Brunsell, N., **Jungers, J. M.** The carbon budget, sustainability, and viability of a novel perennial agroecosystem. 2019 Ecological Society of America Annual Meeting. Louisville, Kentucky. August 11, 2019.

15. Bergquist, G., Gutknecht, J., **Jungers, J. M.**, Sheaffer, C., Wyse, D. Building soil carbon and improving resilience with Kernza intermediate wheatgrass. 2019 Soil Ecology Society Annual

Conference. Toledo, Ohio. May 29, 2019.

14. Bergquist, G., **Jungers, J. M.**, Gutknecht, J. Carbon Balance and Soil Quality from Intermediate Wheatgrass in Minnesota, USA. 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2018.

13. Dobbratz, M., **Jungers, J. M.**, Gutknecht, J., Sheaffer, C., Wyse, D. Species and Richness Affects Soil Microbial Biomass in Minnesota Agricultural Soils. 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 7, 2018.

12. Favre, J., **Jungers, J. M.**, Tautges, N., Sheaffer, C., Picasso, V. Effects of Spring and Fall Grazing on Grain Yield, Forage Yield and Forage Nutritive Value of Perennial Grain Kernza Grown in Monoculture and Intercropped with Red Clover. 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 6, 2018.

11. Dobbratz, M., **Jungers, J. M.**, Gutknecht, J., Sheaffer, C. Reproductive Morphology of Intermediate Wheatgrass (Thinopyrum intermedium). 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore, Maryland. November 6, 2018.

10. Heineck, G., Watkins, E., **Jungers, J. M.**, McNish, I. Using R Based Image Analysis to Quantify Rust on Perennial Ryegrass. 2018 ASA, CSSA, and SSSA Annual Meeting. Baltimore,10 Maryland. November 6, 2018.

9. Tautges, N., **Jungers, J. M.**, Sheaffer, C. Intermediate Wheatgrass + Legumes: Friends or Foes?. 2017 ASA, CSSA and SSSA Annual Meeting. Tampa, Florida. October 24, 2017.

8. Marrone, V., Snapp, S., Tautges, N., **Jungers, J. M.** Intermediate wheatgrass - a grain for many uses. 2017 ASA, CSSA and SSSA Annual Meeting. Tampa, Florida. October 24, 2017.

7. Johnson, G., Current, D., Lazarus, B., Zamora, D., Serra, A., Gamble, J., **Jungers, J. M.**, Tautges, N., Smith, D., Wyatt, G., Sheaffer, C. Crop Enterprise and Environmental Budgeting Tool (CE2T) for Biomass Cropping Systems. 2017 ASA, CSSA and SSSA Annual Meeting. Tampa, Florida. October 23, 2017.

6. Culman, S., Pugliese, J., DeHaan, L., Crews, T., Sulc, M., Ryan, M., **Jungers, J. M.**, Maul, J., Schipanski, M., Sheaffer, C. Can the Perennial Grain Crop Kernza Yield Both Forage and Grain?. 2016 ASA, CSSA and SSSA Annual Meeting. Phoenix, Arizona. November 9, 2016.

5. Frahm, C., **Jungers, J. M.**, Wyse, D., Sheaffer, C., Betts, K. Optimal Nitrogen Fertilizer Rates to Maximize Seed Yields from the Perennial Grain Crop Intermediate Wheatgrass (Thinopyrum intermedium L.). 2015 ASA, CSSA and SSSA Annual Meeting. Minneapolis, Minnesota. November 11, 2015.

4. **Jungers, J. M.**, Fargione, J., Lehman, C., Sheaffer, C. Linking plant community composition to bioenergy potential in conservation grasslands. 2013 Ecological Society of America Annual

Meeting Ecological Society of America, Minneapolis, Minnesota. August 5, 2013.

3. **Jungers, J. M.**, Lehman, C. Managing conservation grasslands for bioenergy and wildlife: Measuring the effects of biomass harvest on waterfowl and pheasants. 2012 Wildlife Society Annual Meeting The Wildlife Society, Portland, Oregon. October 15, 2012.

2. **Jungers, J. M.**, Lehman, C. Managing prairies for bioenergy and wildlife: Supporting ecosystem services and local renewable energy. 2010 North American Prairie Conference. Cedar Falls, Iowa. August 3, 2010.

1. **Jungers, J. M.** Conservation Grasslands for Habitat and Bioenergy. Tallgrass Prairie for Biofuel, Ridgetown, Canada. May 25, 2010.

Media Contributions

Interview on NPR Morning Edition (national). https://www.npr.org/2023/11/16/1213401031/kernza-a-climate-friendly-grain-gets-the-attention-of-brewers-distillers	November 16, 2023
"Prairie Prophecy" documentary. Film interview for documentary on Wes Jackson (Not yet released)	2023
Farm Connections Television Show. Minnesota Public Broadcast. https://www.youtube.com/watch?v=OS89GXgvNNM&list=PLeaJvDnTCwRpUiJ79gqMbcO1lZ9mXWjGe&index=4	2021
"Ear to the Ground". Podcast. The Land Stewardship Project. https://landstewardshipproject.org/posts/1426	September 27, 2021
"Minnesota Kernza farmers see a market for earth-friendly grain". News article. Ag Week. https://www.agweek.com/business/agriculture/7187530-Minnesota-Kernza-farmers-see-a-market-for-earth-friendly-grain	September 9, 2021
"Kernza farmers see a market for earth-friendly grain". Radio news article. Minnesota Public Radio. https://www.mprnews.org/story/2021/09/08/kernza-farmers-see-a-market-for-earthfriendly-grain	September 8, 2021
"Soil Health Podcast" Podcast. Sustainable Farming Association. https://www.podbean.com/ew/pb-w7e7k-1081098	June 30, 2021

"New kind of wheat shows promise for cleaning nitrates from soil, water". Newspaper article. Star Tribune. https://www.startribune.com/new-kind-of-wheat-shows-promise-for-cleaning-nitrates-from-soil-water/600057973/	May 16, 2021
"University of Minnesota leads project to boost yield, uses of crop that could cut water pollution". Newspaper article. Star Tribune. https://www.startribune.com/university-of-minnesota-leads-project-to-boost-yield-uses-of-crop-that-could-cut-water-pollution/572458142/	September 18, 2020
"State urges Minnesota farmers to plant more vegetative cover to fight nitrate contamination". Newspaper article. Star Tribune https://www.startribune.com/state-urges-minnesota-farmers-to-plant-more-vegetative-cover-to-fight-nitrate-contamination/572244792/	August 27, 2020
Promotion video for water quality protection. Minnesota Department of Health.	2019
"How a new grain can help combat climate change". Television Program. PBS Newshour. https://www.youtube.com/watch?v=j12vrJIh0Tk	2019
"The World's First Perennial Grain Crop". Television Program. Prairie Sportsman. https://www.youtube.com/watch?v=71sDBgOUfmk	2019
"Novel crops can save rural Minnesota's drinking water, U says". Newspaper Article. Start Tribune. https://www.startribune.com/novel-crops-can-save-rural-minnesota-s-drinking-water-u-says/510491722/	May 28, 2019

TEACHING AND RESEARCH TRAINING

2022	**Participant**. Teaching with Access and Inclusion (CEI 475)
2020	**Participant.** Facilitating Student Engagement in Synchronous Zoom Sessions (CEI 319)
2020	**Participant.** Teaching Online – Design (CF 0202)
2019	**Participant.** Active learning in intercultural classrooms (CEI 292)

2019	**Participant.** Developing memorable presentations (CEI 171)
2019	**Participant.** Group work and canvas – Everything you need to know (CEI 307)
2019	**Workshop participant.** Back of the envelop guide for strategic communications: IonE Professional development workshop hosted by Ann Christiano from the University of Florida.
2019	**Workshop participant.** The science of what makes people care: IonE Professional development workshop hosted by Ann Christiano from the University of Florida.
2019	**Workshop participant.** Agroecology Pedagogy, UMN
2019	Workshop participant. Developing memorable presentations. Hosted by David Langley.
2019 - 2020	Early Career Teaching and Learning Program. A year-long program to

TEACHING

Fall 2023	**Course Instructor**. Agronomy 1103: Crops, Environment, and Society.
Fall 2023	**Course Instructor.** Agronomy 4605: Principles of Agricultural Production and Management.
Fall 2023	**Guest lecturer.** Honors Program 2515: Experiencing Local Environmental Solutions.
Spring 2023	**Field Trip Host**. Great River School. 48 Students.
Spring 2023	**Course Instructor/Faculty Mentor**. Plant and Microbial Biology 4794W. Directed Research
Spring 2023	**Course Instructor/Faculty Mentor**. Agronomy 4393. Directed Study.
Fall 2022	**Course Instructor**. Agronomy 1103: Crops, Environment, and Society.
Fall 2022	**Course Instructor.** Agronomy 4605: Principles of Agricultural Production and Management.
Fall 2022	**Guest lecturer.** Honors Program 2515: Experiencing Local Environmental Solutions.
Fall 2021	**Course Instructor**. Agronomy 1103: Crops, Environment, and Society.

Fall 2021	**Course Instructor.** Agronomy 4605: Principles of Agricultural Production and Management.
Fall 2021	**Guest lecturer.** Environmental Science, Policy, and Management 3108: Ecology of Managed Systems.
Fall 2021	**Guest lecturer.** Honors Program 2515: Experiencing Local Environmental Solutions.
Fall 2020	**Guest lecturer.** Agronomy 5311: Research Methods in Crop Improvement and Production.
Fall 2020	**Course co-Instructor**. Agronomy 1103: Crops, Environment, and Society.
Fall 2020	**Course Instructor.** Agronomy 4605: Principles of Agricultural Production and Management.
Spring 2020	**Guest lecturer**. Agronomy 1101: Biology of Plant Food Systems.
Fall 2019	**Course Instructor.** Agronomy 4605: Principles of Agricultural Production and Management.
Summer 2018	**Guest lecturer**. Agronomy 5311: Research Methods in Crop Improvement and Production, UMN
2017 - 2018	**Guest lecturer**. Food Systems 2101: Plant Production Systems, UMN
Spring 2016	**Curriculum co-developer & guest lecturer**. Food Systems 2101: Plant Production Systems, UMN
Summer 2015	**Intern Advisor**. Horticulture 4096: Internships for Environmental Horticulture, UMN
Spring 2015	**Curriculum co-developer & guest lecturer**. Food Systems 2101: Plant Production Systems, UMN
Spring 2014	**Curriculum co-developer & guest lecturer**. Food Systems 2101: Plant Production Systems, UMN
Fall 2013	**Teaching Assistant**. Biology 3407/5407: Ecology, UMN
2013 – 2014	**Graduate Research Assistant**. Department of Agronomy and Plant Genetics, UMN
2010 – 2013	**Graduate Research Assistant**. Department of Ecology, Evolution and Behavior, UMN
Fall 2012	**Teaching Assistant**. Biology 2022: General Botany, UMN

2009 – 2010 **Research Coordinator**. Department of Ecology, Evolution and Behavior, UMN

2008 – 2009 **Project Coordinator**. Proposed Whole Earth Dynamics Graduate Program, UMN

2008 **Research Intern**. Cedar Creek Ecosystem Science Reserve

2008 **Research Technician**. Department of Microbiology, University of Wisconsin Oshkosh

2007 – 2008 **Research Technician**. Stream Ecology Lab, University of Wisconsin Oshkosh

PEER-REVIEWED EDITORIAL SERVICE

Subject Matter Editor, Ecosphere 2020-current
Guest Editor, Special Issue in Frontiers in Sustainable Food Systems, 2022-current

Reviewer for the following journals: Crop, Forage, & Turfgrass Management; Agronomy Journal; Journal of Agronomy; Journal of Applied Ecology; Ecological Applications; Ecosystems; Global Change Biology: Bioenergy; Renewable Agriculture and Food Systems; Restoration Ecology; BioEnergy Research; Journal of Soil, Water, and Climate; PLoS One; Biomass and Bioenergy; Acta Agriculturae Scandinavica;

HONORS AND AWARDS

2022 McKnight Land Grant Professor, University of Minnesota
2021 Early Career Award, Agronomy Society of America
2021 CFANS Hunger Fighters, UMN
2010 Outstanding Conservation Biology Graduate Student Award, UMN
2008 Westbrook Award, Environmental Studies, UWO
2008 Environmental Studies Leadership Award, UWO
2007 Environmental Studies Leadership Certificate of Appreciation, UWO

UNIVERSITY OF MINNESOTA SERVICE

Co-chair - Diversity, Equity, and Inclusion Committee, Dept. of Agronomy & Plant Genetics 2021-current
Member - Undergraduate Education Committee, Dept. of Agronomy & Plant Genetics 2019-current

PROFESSIONAL AND COMMUNITY SERVICE ACTIVITIES

National Student Advisory Committee Member, American Society of Agronomy, Students of Agronomy, Soils, and Environmental Sciences (SASES) 2022-current

Steering Committee Member, Minnesota Association of Agriculture Educators, Post-secondary Summit 2021-current.
Steering Committee Member, Minnesota Youth Institute 2020-current
Advisor, Sustainable Plant Systems Undergraduate Student Club 2022-current
Advisor, Gopher Crops and Soils Undergraduate Student Club 2019-current
Social Committee Member, Dept. of Agronomy & Plant Genetics 2019-2020
Green Lands Blue Waters One Water Summit Delegate 2018
Chair of the Agronomy Society of America Perennial Grains Community 2018
Vice Chair of the Agronomy Society of America Perennial Grains Community 2017
Member of Agronomy Society of America 2014-current
Founding member of Midwest Conservation Biomass Alliance
Former member of the Ecological Society of America 2014-2016
Former member of the Wildlife Society 2012-2014
Council of Graduate Students – Program Representative 2011-2012 - UMN
Environmental Studies Club President 2006-2008 - UWO
Elected Campus Sustainability Committee 2007 - UWO
