

2010-2013 IGERT I-STAR Products

2012-2013 Journal Articles – Refereed Publications

Fewell, J.E., M.K. Lynes, J.S. Bergtold, & J.R. Williams. (forthcoming). "Kansas Farmers' Interest and Preferences for Growing Cellulosic Bioenergy Crops." *Journal of the American Society of Farm Managers and Rural Appraisers*.

Martinez, A., and D. E. Maier. 2013. Improvements in Quantification of Biomass Feedstock Availability to a Biorefinery Using a GIS-based Method. (In preparation).

Ronald Michalsky, Peter H. Pfromm: Thermodynamics of metal reactants for ammonia synthesis from steam, nitrogen and biomass at atmospheric pressure, *AIChE Journal* 58 (2012) 3203-3213.

Ronald Michalsky, Bryon J. Parman, Vincent Amanor-Boadu, Peter H. Pfromm: Solar thermochemical production of ammonia from water, air and sunlight: Thermodynamic and economic analyses, *Energy* 42 (2012) 251-260.

Ronald Michalsky, Peter H. Pfromm: An ionicity rationale to design solid phase metal nitride reactants for solar ammonia production, *The Journal of Physical Chemistry C* 116 (2012) 23243-23251.

Michalsky, R., P. Pfromm, B. Parman and V. Amanor-Boadu. "Solar Thermochemical Production Of Ammonia From Water, Air And Sunlight: Thermodynamic And Economic Analyses," *Energy*, 42(2012): 251-260.

Peña, L., Ikenberry, M., Hohn, K.L., & Wang, D. (2012). Acid-functionalized nanoparticles for pretreatment of wheat straw. *Journal of Biomaterials and Nanobiotechnology*: 3:342-352.

Rigdon, A.R., Jumpponen, A., Vadlani, P., Maier, D. 2013. Impact of various storage conditions on enzymatic activity, biomass components and conversion to ethanol yields from sorghum biomass used as a bioenergy crop. *Bioresource Technology* 269-275. doi-10.1016/j.biortech.2013.01.055

2011-2012 Journal Articles – Refereed Publications

Martinez, A., D. E. Maier. (2011). Quantifying Feedstock Availability Using a Geographical Information System. *Biological Engineering*, 4(3), 133-146.

Michalsky, R., Pfromm, P. H. (2011). Chromium as reactant for solar thermochemical synthesis of ammonia from steam, nitrogen, and biomass at atmospheric pressure. *Solar Energy*, 85(11), 2642-2654.

Michalsky, R., Pfromm, P. H. (2011). Thermodynamics of metal reactants for ammonia synthesis from steam, nitrogen and biomass at atmospheric pressure. in press, *AIChE Journal*, doi: 10.1002/aic.13717/pdf

*Parman, B. J., Amanor-Boadu, V., Pfromm, P.H., & Michalsky, R. (2011). Third generation biofuels and the food versus fuel debate: A systems perspective. *The International Journal of Environmental, Cultural, Economic and Social Sustainability*, 7(2), 287-300.

Peña, L., Ikenberry, M., Ware, B., Hohn, K.L., Boyle, D. Sun, X.S., & Wang, D. (2011). Cellobiose hydrolysis using acid-functionalized nanoparticles. *Biotechnology and Bioprocess Engineering*, 16, 1214-1222. doi: 10.1007/s12257-011-0166-8

2010-2011 Journal Articles – Refereed Publications

Brijwani, K., *Rigdon, A., Vadlani, P. (2010). Fungal laccases: Production, function and applications in food processing. *Enzyme Research*, 2010, 10 pages. doi: 10.4061/2010/149748.

Bulatwicz, T., Yang, X., Peterson, J.M., Staggenborg, S., Welch, S.M., Steward, D.R. (2010). Accessible integration of agriculture, groundwater, and economic models using the open modeling interface (OpenMI): Methodology and initial results. *Hydrology and Earth System Sciences*, 14, 521-534, doi: 10.5194/hess-14-521-2010, 2010

Douglas-Mankin, K.R., Srinivasan, R., Arnold, J.G. (2010). Soil and water assessment tool (SWAT) Model: Current developments and applications. *Transactions of the ASABE*, 53(5), 1423-1431.

Propheter, J.L., Staggenborg S.A., Wu, X., Wang, D. (2010). Performance of annual and perennial biofuel crops: Yield during the first two years. *Agronomy Journal*, 102, 806-814.

Theerarattananoon, K., Xu, F., Wilson, J., Ballard, R., Mckinney, S., Staggenborg, L., Vadlani, P., Pei, Z.J., Wang, D. (2011). Physical properties of pellets made from sorghum stalk, corn stover, wheat straw, and big bluestem. *Industrial Crop and Products*, 33(2), 335-342.

Submitted to Refereed Journals

Martinez, A., and D. E. Maier. (2010). Quantifying Feedstock Availability Using a Geographical Information System. *Transaction of the ASABE*. (Submitted December 2010)

Forthcoming

*Parman, B., Amanor-Boadu, V., Pfromm, P.H., Michalsky, R. (2011). Third Generations Biofuels and the Food Vs. Fuel Debate: A Systems Perspective. *International Journal of Environmental, Cultural, Economic, and Social Sustainability* (Forthcoming).

2012-2013 Journal Articles – Non-Refereed Publications

Ronald Michalsky, Brian A. Peterson, Peter H. Pfromm: Formation of magnesium chromite or magnesium ferrite with solar radiation in reducing environments (in preparation, Ceramics International).

Probst, K.V., Schulte, L., Vadlani, P.V., & Rezac, M.E. (2012). Implementation of a Yeast Single Cell Oil Production Platform into Biorefineries for Value-Added Products: A Review. In preparation for submission to Critical Reviews in Biotechnology.

Schulte, L., Ballard, T., Samarakoon, T., Yao, L., Staggenborg, S., Rezac, M. (2013). Increased growing temperature reduces content of multiply unsaturated lipids in oilseed crops.

Zhang, Y., & Vadlani, V.P. 2012. D-lactic acid biosynthesis from biomass-derived sugars via *Lactobacillus delbrueckii* fermentation. *Bioprocess Biosyst Eng.*

2011-2012 Journal Articles – Non-Refereed Publications

In Preparation for submission

*Ballard, T., *Schulte, L.R., Samarakoom, T., Rezac, M., Staggenborg, S.A., Welti, R., Vadlani, P., Tesso, T., & Nelson, R. To be submitted in *Progress in Lipid Research*, *Indus Crop and Products*, or *Agron J.*

*Ballard, T.C., Staggenborg, S.A., Vadlani, P., Tesso, T., Holman, J., Zhang, Y., Bansal, S., Assefa, Y., *Schulte, L. R., Rezac, M., Haag, L.A., & Schlegel, A. (2012). Biomass and grain yields as an ethanol feedstock from sorghum cultivars and corn as affected by seeding rates. To be submitted to *Agron J.* or *Indus. Crops and Products 2012.*

Michalsky, R., *Parman, B. J., Amanor-Boadu, V., & Pfromm, P. H. A concept for high-purity polycrystalline silicon from SiO₂ without carbonaceous reducing agent or HSiCl₃ distillation (*Solar Energy Materials & Solar Cells*).

Submitted

Michalsky, R., *Parman, B. J., Amanor-Boadu, V., & Pfromm, P. H. Solar thermochemical production of ammonia from water and air using molybdenum-based reactants: thermodynamic and economic analyses (*Energy*).

*Schulte, L.R., *Ballard, T., & Samarakoon, T. (2012). Lipid profiles of drought stressed oil crops grown in Kansas. *Industrial Crops and Products*.

Forthcoming

*Ballard, T.C., Staggenborg, S.A., *Freeman, O.W., Assefa, Y., Tesso, T., Vadlani, P., Nelson, R., Schulte, L. R. *, Rezac, M. Annual Oil Yield Totals from Crop Combinations in KS for Biodiesel Feedstocks. To be submitted to *Agron J.* or *Indus Crops and Products*.

Michalsky, R., Pfromm, P. H. Solar fuel production via decoupled dinitrogen reduction and protonation of mobile nitrogen ions to ammonia (in preparation, *The Journal of Physical Chemistry C*).

*Probst, K.V, *Schulte, L., Vadlani, P.V., & Rezac, M.E. (2012). Implementation of a Yeast Single Cell Oil Production Platform into Biorefineries for Value-Added Products: A Review. In preparation for submission to Critical Reviews in Biotechnology.

2010-2011 Journal Articles – Non-Refereed Publications

In Preparation for submission

Michalsky, R., Pfromm, P.H. (2011). The potential of transition metal reactants for solar thermochemical synthesis of ammonia from steam and nitrogen at atmospheric pressure. (In preparation for submission to Solar Energy).

2012-2013 Books

Cellulose and Oil Production from Annual Crops: Annual Cellulose Crop Options for Ethanol and Oil Cropping Intensification for Biodiesel Feedstocks. Todd Ballard

2011-2012 Book Chapters

Anand, M., Archer, D., Bergtold, J., & Canales, E. (2011). Balancing feedstock economics and ecosystem services. in: Sustainable Feedstock for Advanced Biofuels. In Sustainable Alternative Fuel Feedstock Opportunities, Challenges and Roadmaps for Six U.S. Regions. Braun, R. & Johnson, D. (Eds.), (pp. 193-216). Ames, IA: Soil and Water Conservation Society.

*Ballard, T., Bansal, S., Agrupis, S., Haag, L.A., Vadlani, P., and Staggenborg, S. (2011). Seeding Rate Effects on Ethanol production in Corn and Sorghum. In Plant Fibers as Renewable Feedstocks for Biofuel and Bio-Based Products. Webber III, C. L., and Liu, A. (Eds.), St. Paul, MN: CCG International Inc.

2010-2011 Book Chapters

Forthcoming

Peterson, J.M. and Smith, C.M. (2010). Water Quality Markets: Institutional Design and Performance. The Independent Institute: D. Gardner and R. Simmons, eds. (Forthcoming).

2012-2013 Patent Applications

Ronald Michalsky, Peter H. Pfromm: Thermochemical ammonia and hydrocarbons, Kansas State University (USPTO Provisional Patent Application No. 61/729,850, filed November 26, 2012).

2012-2013 Conference Publications

Ronald Michalsky, Peter H. Pfromm, Bryon J. Parman, Vincent Amanor-Boadu: Reactive synthesis of ammonia at ambient pressure via solar thermochemical processing, Abstracts of Papers of the American Chemical Society 242 (2011), 100-IEC.

Rigdon, A., Jumpponen, A., Vadlani, P., Maier, D. 2012. Impact of storage conditions on composition, enzymatic activity and ethanol yield of sorghum biomass. 2012 ASABE Annual International Meeting, Dallas, TX. Paper No:121336830.

2011-2012 Conference Publications

Bergtold, J., *Fewell, J., & Williams, J. (2011). Farmers' willingness to grow sweet sorghum as a cellulosic bioenergy feedstock: A Stated Choice Approach. 2011 Agricultural and Applied Economics Association and Northeastern Agricultural and Resource Economics Association Joint Annual Meeting, Pittsburgh, PA.

*Fewell, J., Bergtold, J., & Williams, J. (2011). Farmers' willingness to grow switchgrass as a biofuel feedstock: A stated choice approach. Joint Annual Meeting of the Canadian Agricultural Economics Society and Western Agricultural Economics Association, Banff, AB, Canada.

Martinez, A. & Maier, D.E. (2011). Feedstock availability using a geographic information system. American Society of Agricultural and Biological Engineers, St. Joseph, Michigan, 11-11730.

Michalsky, R., & Pfromm, P. H. (2011). Solar fuel production via water splitting and protonation of solid-state nitrogen ions forming ammonia. Preprint Papers- American Chemical Society, Division of Fuel Chemistry. 56(2), 529-530.

Peña, L., Ikenberry, M., Ware, B., Hohn, K.L., Boyle, D. Sun, X.S., & Wang, D. (2011). Cellobiose hydrolysis using acid-functionalized nanoparticles. Proceedings of the International Congress on Energy 2011, Minneapolis, MN.

2010-2011 Conference Publications

Chin, A.M., English, K.G., Gerlak, A., Harden, C., McDowell, P., Peterson, J., Poff, L., Rosa, E., Wohl, E. (2010). Economic linkages to changing landscapes. In Summary Report of Landscapes in the "Anthropocene": Exploring the Human Connections. Eugene, OR: University of Oregon.

Maier, D.E., Channaiah, L.H., Martinez-Kawas, A., Lawrence, J.S., Chaves, E.V., Coradi, P.C., Fromme, G. A. (2010) Monitoring carbon dioxide concentration for early detection of spoilage in stored grain. In Proceedings of the 10th International Working Conference on Stored Product Protection. Esortil, Portugal.

Paradis, S., Douglas-Mankin, K., Hutchinson, S., Gay, M., Selfa, T. (2010) AREM: An original joint educational program to improve the sustainability of agricultural natural resources and environmental management. In Proceedings of 9th European International Farming Systems Association (IFSA)

Symposium.Vienna, Austria.

Conference Publications In Review

*Ballard, T., Bansal, S. Agrupis, S., Haag, L., Vadlani, P., Staggenborg, S.A. Seeding Rate Effects for Ethanol Production in Corn and Sorghum. In Proceedings of the 2010 International symposium on renewable feedstock for bio-fuel and biobased products: the role of kenaf, jute and allied fibers. (In review).

2012-2013 Conference Presentations

Patrick M. Bollin, Matthew Young, Peter H. Pfromm, and Mary E. Rezac "Catalytic Upgrading of Bio-oil using Metal Coated Membranes," Poster at the 2012 K-State Center for Sustainable Energy Symposium, Manhattan, KS, May 2012.

Bergtold, J.S., J. Fewell, and J. Williams. 2012. "Farmers' Willingness to Produce Alternative Cellulosic Biofuel Feedstocks in Kansas Using Stated Choice Experiments." Paper presentation at 2012 Sun Grant National Conference: Science for Biomass Feedstock Production and Utilization, New Orleans, LA. October 2-5.

Cover crop benefits for corn and forage sorghum rotations in the Great Plains.

Heidlage, M. G., Pfromm, P. H., Rezac, M.E., Young, M. (2013, April). Catalytic membrane-facilitated hydrotreating of bio-oil. Poster session presented at the annual symposium of the Center for Sustainable Energy, Manhattan, KS.

Lauer, B., Bergtold, J., Caldas, M., Sherwood, S., Earnhart, D., Agricultural Land-Use and Spatial Proximity of Ethanol Production. Poster presented at the Sustainable Energy Symposium, Manhattan, KS.

Lauer, B., Bergtold, J., Caldas, M., Sherwood, S., Earnhart, D., Agricultural Land-Use and Spatial Proximity of Ethanol Production. Poster presented at the BACC-FLUD Symposium, Lawrence, KS.

Lindbloom, M.B., Shearer, D., Bergtold, J., Utilization of CRP Land for Growing Cellulosic Ethanol Feedstock. Paper presented at World Renewable Energy Conference, Perth, Australia, July 14-18, 2013

Lindbloom, M.B., Shearer, D., Bergtold, J., Utilization of CRP Land for Growing Cellulosic Ethanol Feedstock. Poster presented at World Congress on Industrial Biotechnology, Montreal, Canada, June 17-19, 2013

Martinez, A., and D. E. Maier. (July and August 2012). Improvements in Quantification of Biomass Feedstock Availability to a Biorefinery Using a GIS-based Method. Oral presentation presented at the 2012 ASABE International Meeting, paper #121336807, Dallas, Texas.

Martinez, A., K. Probst, A. Rigdon, and S. Gutowski. (September 2012). GSI Study Abroad Trip to Germany and Switzerland. Oral presentation at the AACC-GSI Meeting , Manhattan, Kansas.

Martinez, A., L. McKinney, and K. Behnke. (October 2012). Flushing Procedures to Prevent Drug Carryover During Medicated Feed Manufacturing. Oral presentation at the V Latin American Animal Nutrition Congress (CLANA), Puerto Vallarta, Mexico.

Campabadal, C., and A. Martinez. (October 2012). Importance and Storage Techniques to Obtain Optimum Quality Grain. Oral presentation at the V Latin American Animal Nutrition Congress (CLANA), Puerto Vallarta, Mexico.

McGowan, A., Inouye, J., Swamy, A., Staggenborg, S., Rice, C. (2012, October). Nitrous oxide emissions in bioenergy cropping systems: Implications for life cycle assessment. Poster presented at American

Society of Agronomy-Crop Science Society of American-Soil Science Society of America International Meetings, Cincinnati, Ohio.

Rice, C., Zeglin, L., Bottomly, P., Tisdell, N., Jumpponen, A., David, M., Prestat, E., Jansson, J., Tringe, S., VerBerkmoes, N., Hettich, R., McGowan, A., Mfombep, P., Arango, M., Myrold, D. (2012, October). Response of microbial transcriptome, proteome and activity to rainfall pulses in a prairie soil. Poster presented at American Society of Agronomy-Crop Science Society of American-Soil Science Society of America International Meetings, Cincinnati, Ohio.

McGowan, A., Rice, C., Staggenborg, S., Swamy, S. (2012, October). Nitrous oxide emissions in bioenergy cropping systems: Implications for life cycle assessment. In Graduate Student Oral Presentation Competition. Growing the Bioeconomy, Banff, Alberta, Canada.

McGowan, A., Rice, C., Staggenborg, S., Swamy, S. (2012, October). Nitrous oxide emissions in bioenergy cropping systems: Implications for life cycle assessment. Poster presented at Growing the Bioeconomy, Banff, Alberta, Canada.

McGowan, A., Rice, C., Staggenborg, S. (2012, August). Nitrous oxide emissions in bioenergy cropping systems: Implications for life cycle assessment. In Environmental Sustainability and Bioenergy. Symposium conducted at the Department of Soil Science, University of Sao Paulo, Piracicaba, Sao Paulo, Brazil. Aug. 2012.

Arango, M., McGowan, A. (2012, Aug). N₂O. In Biofuels, Climate Change and Mitigation: Annual Research Symposium. Symposium conducted at Kansas EPSCoR annual research symposium, Lawrence, KS.

McGowan, A., Inouye, J., Swamy, A., Staggenborg, S., Rice, C. (2012, August). Nitrous oxide emissions in bioenergy cropping systems: Implications for life cycle assessment. Poster presented at Symposium conducted at Kansas EPSCoR annual research symposium, Lawrence, KS.

Ronald Michalsky, Peter H. Pfromm, Bryon Parman, Vincent Amanor-Boadu: Sustainable ammonia and its link to the production of food and fuel, Corporate Sustainability Symposium, May 1-2, 2012, Kansas State University, Manhattan, KS, USA (poster).

Bryon Parman, Ronald Michalsky, Vincent Amanor-Boadu, Peter H. Pfromm: Sustainable nitrogen fertilizer, NSF IGERT Trainee Online Video & Poster Competition, May 3-6, 2012 (video & poster) and NSF Annual PI meeting, May 30 - June 1, 2012, Washington, DC, USA.

Ronald Michalsky, Peter H. Pfromm, Andrew A. Peterson, Bryon Parman, Vincent Amanor-Boadu: Solar Fuels between Mars van Krevelen Catalysis and Solar Thermal Reaction Engineering, Invited seminar with paid expenses at the Department of Mechanical Engineering, ETH Zürich, October 5, 2012, Zürich, Switzerland.

Peña, L., Hohn, K.L., Wang, D. (2012, June). Acid functionalized nanoparticles for biomass conversion. Poster presented at the 20th European Biomass Conference, Milan, IT.

Peña, L., Lorg, B., Hohn, K.L., Wang, D. (2012, November). Pretreatment of corn stover using propyl-sulfonic acid-functionalized nanoparticles. Paper presented at the annual meeting of the American

Institute of Chemical Engineers, Pittsburgh, PA

Peña, L., & Wang, D. (2012, November). Nanotechnology for biofuels. Poster session presented at the Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA

Probst, K.V., Rigdon, A., Gutkowski, S. and Martinez-Kawas, A. 2012. Germany and Switzerland Study Abroad. American Association of Cereal Chemists (AACC) Manhattan Series Seminar, Sept. 5, 2012.

Probst, K.V. and P. Vadlani. 2012. Producing single cell oils using oleaginous yeast for the production of renewable value-added products. Environmental Sustainability and Bioenergy Seminar. Luiz de Queiroz College of Agriculture Universidade de São Paulo. Piracicaba/SP, Brazil. Aug. 7, 2012 (Oral).

Probst, K.V. and P. Vadlani. 2012. Optimization of single cell oil production from oleaginous yeast using fed-batch fermentation. ASABE Paper No. 121337652. Dallas, TX. July 29-Aug. 1, 2012 (Oral).

Probst, K.V. and P. Vadlani. 2012. Optimization of process and media parameters for single-cell oil biosynthesis using *Lipomyces starkeyi*. Kansas State University Bioenergy Symposium: Mapping sustainable bioenergy opportunities in the central great plains-feedstocks, land use, markets, and socio-economic aspects. Manhattan, KS. April 27-28, 2012 (Poster).

Probst, K.V. and P. Vadlani. 2012. Optimization of cellular growth and single cell oil production from *Lipomyces starkeyi* using RSM experimental design. Kansas State Research Forum (KRF). Manhattan, KS. March 8, 2012 (Oral).

Rigdon, A., Jumpponen, A., Vadlani, P., Maier, D. 2012. Impact of storage conditions on composition, enzymatic activity and ethanol yield of sorghum biomass. 2012 ASABE Annual International Meeting, Dallas, TX.

Rigdon, A., Jumpponen, A., Vadlani, P. and Maier, D. 2012. Maintaining substrate quality of stored sorghum biomass for profitable production of lignocellulosic ethanol in Kansas. Research and the State, Manhattan, KS (poster)

Rigdon, A., Jumpponen, A., Vadlani, P. and Maier, D. 2012. Storage of biomass influences fungal communities, enzymatic activities and substrate quality for lignocellulosic ethanol production. 10th Annual Ecological Genomics Symposium. Manhattan, KS (poster)

Rigdon, A. 2012. Storage of biomass influences fungal communities, enzymatic activities and substrate quality for lignocellulosic ethanol production. Grain Science Graduate Student Organization Symposium, Manhattan, KS

Rigdon, A. 2012. Storage of biomass influences fungal communities, enzyme activities and substrate quality for lignocellulosic ethanol production. KSU Ecological Genomics Research Forum, Manhattan, KS
Rigdon, A., Jumpponen, A., Vadlani, P., Staggenborg, S., Maier, D. 2012. Impact of various storage conditions on composition, enzymatic activity and conversion to ethanol yields of sorghum biomass used as a bioenergy crop. 2012 Corporate Sustainability Symposium, Manhattan, KS (poster)

Schulte, L. Gana, K., Rezac, M. (2013, April). Green chemistry applied to the production of cyclic carbonates. Poster session presented at Kansas State University Center for Sustainable Energy BioEnergy

Symposium, Manhattan, KS.

Schulte, L., Gana, K., Rezac, M. (2012, July). .Green Chemistry Applied to the Production of Cyclic Carbonates from Epoxides and Carbon Dioxide. Poster session presented at the American Chemical Society's Summer School on Green Chemistry and Sustainable Energy, Golden, CO

Schulte, L., Gana, K., Rezac, M. (2013, July). Producing cyclic carbonates using a catalytic membrane reactor. Poster session presented at the 11th International Conference on Catalysis in Membrane Reactors, Porto, Portugal.

Schulte, L., Gana, K., Clark, A., Rezac, M. (2013, July) Production of fatty alcohols from methyl esters in an integrated biorefinery. Presented at the International Conference on Renewable Energy for Sustainable Development and Decarbonisation, Perth, Australia.

Stanford, J. P. and Rezac, M. E. (2012, June). Dimethylfuran (DMF) Production using Membrane Reactor Technology. Poster session presented at the annual meeting of the North American Membrane Society, New Orleans, LA.

Stanford, J. P. and Rezac, M. E. (2013, April). Dimethylfuran (DMF) Production using Membrane Reactor Technology. Poster session presented at the Kansas State Sustainability Symposium, Kansas State University, Manhattan, KS.

Stanford, J. P. and Rezac, M. E. (2013, March). Dimethylfuran (DMF) Production using Membrane Reactor Technology. Poster session presented at the Kansas State Research Forum, Kansas State University, Manhattan, KS.

Wales, M. D., Rezac M.E., Pfromm, P. H. (2013, April). CATALYTIC POLYMERIC HOLLOW FIBER MEMBRANE MODULES FOR USE IN MODEL THREE PHASE REACTIONS: Understanding the influence of the ratio of membrane area to reaction volume treated. Poster session presented at 2013 Bio Energy Symposium, Kansas State University, Manhattan, KS

Wales, M. D., Rezac M.E., Pfromm, P. H. (2013, June). CATALYTIC POLYMERIC HOLLOW FIBER MEMBRANE MODULES FOR USE IN MODEL THREE PHASE REACTIONS: Understanding the influence of the ratio of membrane area to reaction volume treated. Poster session presented at the annual meeting of the North American Membrane Society, Boise, ID

Zhang, Z., & Vadlani, V. P. (2012, Aug). D-lactic acid production from paper residue. poster session presented at the annual meeting of Society for Industry Microbiology and Biotechnology meeting, Washington, DC.

2011-2012 Conference Presentations

*Ballard, T.C., *Schulte, L.R., Staggenborg, S.A., Rezac, M. (May 2011). Lipid profile of drought stressed crops. Poster session presented at Kansas State University Bioenergy Symposium, Manhattan, KS.

Bergtold, J.S. (2011, August). An exploration of land use and cover change at the county level in Kansas. Paper presented at Biofuels and Climate Change: Farmers' Land Use Decision Research Symposium,

Lawrence, KS.

Bergtold, J., *Fewell, J., & Williams, J. (2011, May). Farmers' willingness to grow cellulosic biofuel feedstocks: contracting and pricing. Paper presentation at The World Congress on Industrial Biotechnology and Bioprocessing, Toronto, ON, Canada.

*Fewell, J., Bergtold, J., & Williams, J. (2011, June). Farmers' willingness to grow switchgrass as a biofuel feedstock: A stated choice approach. Paper presented at the Joint Annual Meeting of the Canadian Agricultural Economics Society and Western Agricultural Economics Association, Banff, AB, Canada.

Bergtold, J., *Fewell, J., & Williams, J. (2011, July). Farmers' willingness to grow sweet sorghum as a cellulosic bioenergy feedstock: A stated choice approach. Paper presentation at 2011 Agricultural and Applied Economics Association and Northeastern Agricultural and Resource Economics Association Joint Annual Meeting, Pittsburgh, PA.

Bergtold, J., *Fewell, J., & Williams, J. (2011, August). Biofuels contracting for cellulosic feedstocks. Paper presented at the 2011 Risk and Profit Conference, Manhattan, KS.

*Fewell, J., Bergtold, J., Williams, J., & Peterson, J. (2011, August). Farmers' willingness to grow sweet sorghum for biofuels: A stated choice approach. Poster session presented at Biofuels and Climate Change: Farmers' Land Use Decisions, Lawrence, KS.

Law, J., *Fewell, J.E., & Bergtold, J.S. (2011, April). Cellulosic biofuel feedstock choice survey. Paper presentation at the 16th Annual Kansas State University Research Forum, Undergraduate Oral Presentation Session, Manhattan, KS.

Martinez, A., & Maier D. E. (2011, February). Quantifying feedstock availability using a geographical information system. Paper presented at the NC-213 Scientific Forum, Kansas City, MO.

Martinez, A., & Maier D. E. (2011, April). Quantifying feedstock availability using a geographical information system. Poster session presented at the Center for Sustainable Energy Bioenergy Symposium, Manhattan, KS.

Martinez, A., & Maier D. E. (2011, August). Quantifying feedstock availability using a geographical information system. Paper presented at the American Society of Agricultural and Biological Engineers International Meeting, Louisville, KY.

*McGowan, A., Inouye, J., Arango, M., Rice, C. (2012, May). Nitrous oxide emissions in different bioenergy cropping systems. Poster session presented at the Coalition for National Science Funding Exhibit, Washington, D.C.

*McGowan, A., Inouye, J., Rice, C. (2011, October). Nitrous oxide emissions in different biofuel cropping systems. Poster session presented at the annual National Science Foundation Experimental Program to Stimulate Competitive Research meeting, Coeur d'Alen, ID.

Michalsky, R., Pfromm, P. H. (2011, August-September). Solar fuel production via water splitting and protonation of solid-state nitrogen ions forming ammonia. Paper presented at the Annual Meeting of the American Chemical Society (ACS), Division of Fuel Chemistry, Denver, CO.

Michalsky, R., Pfromm, P. H. (2011, October). Solar thermochemical hydrolysis of metal nitrides for H₂ production and integrated storage in form of ammonia. Paper presented at the Annual Meeting of the American Institute of Chemical Engineers (AIChE), Minneapolis, MN.

Michalsky, R., Pfromm, P. H. (2011, November). Solar fuels and fertilizer and their link to sustainable biomass production and conversion. Poster session presented at the Society for Biological Engineering's (SBE's) Conference on Electrofuels Research, Providence, RI.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2011, April). Food and fuel from solar ammonia. Poster session presented at the Bioenergy Symposium, Manhattan, KS.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2011, August-September). Reactive synthesis of ammonia at ambient pressure via solar thermochemical processing. Paper presented at the Annual Meeting of the American Chemical Society (ACS), Division of Industrial and Engineering Chemistry, Denver, CO.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2011, October). Solar thermochemical production of solar-grade silicon: thermodynamic and economic analyses paper presented at the Annual Meeting of the American Institute of Chemical Engineers (AIChE), Minneapolis, MN.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2011, October). Solar thermochemistry for sustainable fuel and food production and for industrial CO₂ capture and sequestration. Poster session presented at the Annual Meeting of the American Institute of Chemical Engineers (AIChE), Minneapolis, MN.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2011, October). Techno-economical analysis of solar thermochemical ammonia production at near atmospheric pressure. Paper presented at the Annual Meeting of the American Institute of Chemical Engineers (AIChE), Minneapolis, MN.

Michalsky, R., Pfromm, P., *Parman, B., Amanor-Boadu, V. (2011, October). Techno-economical analysis of solar thermochemical ammonia production at near atmospheric pressure. Presented at the International Congress on Energy, Manhattan, KS.

Michalsky, R., Pfromm, P. H., *Parman, B., Amanor-Boadu V. (2012, January). Sustainable fertilizer via solarthermal dinitrogen reduction and water cleavage. Poster session presented at the Global Aspects of Biobased Products and Bioenergy Seminar, Manhattan, KS.

Peña, L., Ikenberry, M., Ware, B., Hohn, K.L., Boyle, D. Sun, X.S., & Wang, D. (2011, October). Cellobiose hydrolysis using acid-functionalized nanoparticles. Paper presented at the Annual meeting of the American Institute of Chemical Engineers, Minneapolis, MN.

*Probst, K.V. (2011, December). Bioemulsifiers from single cell oils. Poster session presented at the Pepsico New York Academy of Science December Career Day, New York, NY.

*Probst, K.V. (2012, January). Bioemulsifiers from single cell oils. Poster session presented at the Global Aspects of Biobased Products and Bioenergy Conference at Kansas State University, Manhattan, KS.

Rice, C., Arango, M.,* McGowan, A., Salas, W., Li., C. (2011, October). Strategies to reduce N₂O emissions from cropland ecosystems: technology, monitoring and policy. In Jones, S., Tuller, M., Knighton, R. (Chairs), Emission of regulated and greenhouse gases: measurement technology, monitoring and policy: I. Symposium conducted at American Society of Agronomy-Crop Science Society of America-Soil Science Society of America International Annual meetings, San Antonio, TX.

*Rigdon, A. R., Maier, D. E., Staggenborg, S.A., Vadlani, P. & Wilson, J. (February 2011). Preliminary Study: Impact of biomass storage on conversion to ethanol and other characteristics. Paper presented at the Annual Meeting for NC-213, Kansas City, MO.

*Rigdon, A.R., Maier, D. E., Vadlani, P. & Jumpponen, A. (May, 2011). Evaluation of composition and enzymatic activity changes in sorghum biomass under various storage conditions. Poster presented at the Kansas State University Bioenergy Symposium Manhattan, KS.

*Schulte, L., Rezac, M.E., *Ballard, T., Staggenborg, S.A. (2011, April). Sustainable production of plastic precursors from carbon dioxide and epoxids. Paper presented at the Kansas State University Center for Sustainable Energy BioEnergy Symposium, Manhattan, KS.

Staggenborg, S. A., & *Freeman, O. F. (2012, March). Winter cover crops in a corn-forage sorghum crop rotation system. Poster Session presented at the annual meeting of Minorities in Agriculture Natural Resources and Related Sciences, Atlanta, GA.

Staggenborg, S. A., & *Freeman, O. F. (2012, April). Winter cover crops in a corn-forage sorghum crop rotation system. Poster Session presented at the annual meeting for the 2012 International Biomass Conference and Exposition, Denver, CO.

2010-2011 Conference Presentations

*Ballard, T., Bansal, S., Agrupis, S., Haag, L., Vadlani, P., Staggenborg, S.A. (2010, August). *Seeding rate effects for ethanol production in corn and sorghum*. Oral presentation at the International Symposium on renewable feedstock for bio-fuel and products: the role of kenaf, jute and allied fibers, Austin, TX.

Bergtold, J., *Fewell, J., Williams, J. (2010, August 19-20). *Cellulosic Biofuel Feedstock Production and Contracting: An Interactive Survey Building Session*. Selected presentation at the 2010 Risk and Profit Conference, Manhattan, KS.

Brewer, L., *Rigdon, A., Abdillahi, H., Liu, W. (2010, July 4-16). [Student presentation-Pumpkin Seed Oil]. *The Intensive Program: Sustainable Utilization of Renewable Resource II*, Graz, Austria.

Campabadal, C., Channaiah, K., Lawrence, J., Martinez, A., *Rigdon, A., Maier, D.E. (2010, October 2). *Stored Product Protection and Technology Research Group*. Poster session presented at Grain Science and Industry Centennial Celebration, Manhattan, KS.

Garay, P.V., Peterson, J.M., Golden, B.B., Smith, C.M. (2010, July). *Disaggregated Spatial Modeling of Irrigated Land and Water use*. Selected Presentation at the Agricultural and Applied Economics Association Annual Meeting, Denver, CO.

Maier, D. (2010, May). *Sustainability of Human Capital for the Grain Processing Industry*. Presentation at the Corn Dry Milling Conference, Peoria, IL.

Maier, D.E. (2010, May). *Stored Product Protection Research*. Presented at the New Technologies and Practices, Food Safety Workshop, Delhi, India.

Martinez, A., Maier, D.E. (2010, September 18). *Quantifying feedstock availability using a geographical information system*. Oral presentation at the 3rd GSI Graduate Student Organization Symposium, Manhattan, KS.

Michalsky, R., Pfromm, P.H. (2010, February). *Sustainable production of ammonia from air water and biomass in Kansas*. Poster session presented at the annual Kansas State Research Forum, Manhattan, KS.

Michalsky, R., Pfromm, P.H. (2010, March). *Sustainable production of ammonia from air, water and biomass in Kansas*. Poster session presented at the annual Capitol Graduate Research Summit, Topeka, KS.

Michalsky, R., Pfromm, P.H. (2010, May). *Sustainable production of ammonia utilizing a chromium reactant and solar processing*. Poster session presented at the annual meeting of the Center for Sustainable Energy, Manhattan, KS.

Michalsky, R., Pfromm, P. H. (2010, September). *Sustainable production of ammonia utilizing transition metal reactants and solar processing*. Poster session presented at the annual IGERT Energy and Sustainability Conference, Newark, DE.

*Parman, B. Amanor-Boadu, V., Pfromm, P.H. (2011, January 5-7). *Third Generation Biofuels and the Food versus Fuel Debate: The Case of Algae Biofuels from a Systems Perspective*. Paper presentation at the 7th International Conference on Environmental, Cultural, Economic, and Social Sustainability, Hamilton, New Zealand: University of Waikato.

Peterson, J.M. (2010, March). *Economic Linkages to Changing Landscapes*. Invited presentation at the workshop, Landscapes in the Anthropocene: Exploring the Human Connection, Eugene, OR: University of Oregon.

Pfromm, P.H., Amanor-Boadu, V., Nelson, R. (2010, October 14). *Sustainability of algae derived biodiesel: a mass balance approach*. Presentation for the University of Missouri, Columbia Department of Chemical Engineering Research Seminar, Columbia, MO.

Pfromm, P.H., Amanor-Boadu, V., Nelson, R. (2010, October 13). *Sustainability of algae derived biodiesel: a mass balance approach*. Presentation for Missouri University of Science and Technology Department of Chemical and Biological Engineering Research Seminar, Rolla, MO.

Pfromm, P.H., Amanor-Boadu, V., Nelson, R. (2010, October 5). *Sustainability of algae derived biodiesel: a mass balance approach*. Presentation for the University of Nebraska, Lincoln Department of Chemical and Biomolecular Engineering Research Seminar, Lincoln, NE.

*Rigdon, A., *Ballard, T., Brewer, L., Bunnell, K. (2010, July 4-16). [Student presentation and research at Kansas State University and UA related to renewable resources and sustainability]. The Intensive Program: Sustainable Utilization of Renewable Resource II, Graz, Austria.

*Schulte, L., Rezac, M.E., *Ballard, T., Staggenborg, S.A. (2011, April). *Bio-based production of polyurethanes from nonisocyanate chemistries*. Paper presented at the Kansas State University Center for Sustainable Energy Bioenergy Symposium, Manhattan, KS.

Smith, C.M., Peterson, J.M., Leatherman, J.C. (2010, July). *Simulation of Factors Impeding Water Quality Trading Market Performance*. Selected Presentation at the Agricultural and Applied Economics Association Annual Meeting, Denver, CO.

*Ballard, T., Bansal, S., Agrupis, S., Haag, L., Vadlani, P., Staggenborg, S.A. (2010, August). *Seeding rate effects for ethanol production in corn and sorghum*. Oral presentation at the International Symposium on renewable feedstock for bio-fuel and products: the role of kenaf, jute and allied fibers, Austin, TX.

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*Parman, B. Amanor-Boadu, V., Pfromm, P.H. (2011, January 5-7). *Third Generation Biofuels and the Food versus Fuel Debate: The Case of Algae Biofuels from a Systems Perspective*. Paper presentation at the 7th International Conference on Environmental, Cultural, Economic, and Social Sustainability, Hamilton, New Zealand: University of Waikato.

Peterson, J.M. (2010, March). *Economic Linkages to Changing Landscapes*. Invited presentation at the workshop, Landscapes in the Anthropocene: Exploring the Human Connection, Eugene, OR: University of Oregon.

Pfromm, P.H., Amanor-Boadu, V., Nelson, R. (2010, October 14). *Sustainability of algae derived biodiesel: a mass balance approach*. Presentation for the University of Missouri, Columbia Department of Chemical Engineering Research Seminar, Columbia, MO.

Pfromm, P.H., Amanor-Boadu, V., Nelson, R. (2010, October 13). *Sustainability of algae derived biodiesel: a mass balance approach*. Presentation for Missouri University of Science and Technology Department of Chemical and Biological Engineering Research Seminar, Rolla, MO.

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