**SCOTT W. PRYOR**

Associate Professor

Department of Agricultural and Biosystems Engineering

North Dakota State University

Fargo, ND 58108-6050

Tel: (701) 231-7274, Fax: (701) 231-1008

scott.pryor@ndsu.edu

**EDUCATION**

PhD Cornell University 2005

*Biological and Environmental Engineering*

Minors: Civil and Environmental Engineering, Microbiology

BS Cornell University 1993

*Agricultural and Biological Engineering*

**PROFESSIONAL EXPERIENCE**

*Associate Professor* (80% Research, 20% Teaching) – NDSU ABEN, 2012-present

*Assistant Professor* (80% Research, 20% Teaching) – NDSU ABEN, 2006-2012

*Postdoctoral Research Associate* – Cargill Acidulants, Eddyville, IA, 2005

*Environmental Engineer* – Brown and Caldwell, St. Paul, MN, 1998-1999

*Peace Corps Volunteer Leader* – U.S. Peace Corps, Dar es Salaam, Tanzania, 1997

*Mathematics Teacher* – U.S. Peace Corps, Monduli, Tanzania, 1994-1996

**COURSES TAUGHT**

ABEN 110 Introduction to Agricultural and Biosystems Engineering

ABEN 189 Skills for Academic Success

ABEN 450/650 Bioprocess Engineering

ABEN 456/656 Biobased Energy

ABEN 491 Senior Seminar

ABEN 791 Bioprocess Engineering

ENGR 292 Cornerstone Engineering (Pilot first-year, project-based engineering course)

PLSC 379/779 Bioenergy Crops: The European View: Faculty-led study abroad course with Marisol Berti (Plant Science)

**INVITED PRESENTATIONS (11)**

Pryor, S.W., 2013. Synergies of Biomass Densification and Pretreatment for Biofuel Production, NDSU ABEN Seminar, Fargo, ND, Jan 25, 2013.

Pryor, S.W., 2012. Biofuels and Environmental Sustainability, NDSU ECS Greenbag Seminar, Fargo, ND, Jan 10, 2012.

Pryor, S.W., 2010. Ethanol from Perennial Grasses & Biobased Plastics from Canola, National Farm Management Conference, Fargo, ND, June 15 2010.

Pryor, S.W., 2010. Technologies and Feedstock Properties for Biomass-derived Liquid Fuels, NDSU Soil and Range Science Seminar, Mar 2010.

Pryor, S. W., 2009. Developments in the NDSU Bioproducts Research Laboratory, 2009 Northern Plains Biomass Economy: What Makes Sense?, Fargo, ND, Sept 22, 2009

Pryor, S. W., 2009. Focus the Nation, National Teach-in on Climate Change at NDSU, “Biofuels: Value and Sustainability”, 2009, 2010.

Manamperi, W.A., K.C. Chang, C. Ulven, and S. Pryor 2009. Canola Proteins in Biocomposites: Protein Characterization and Product Formulation. 100th AOCS Annual Meeting and Expo, Orlando, FL May 3-6, 2009.

Pryor, S. W., W. Eide 2008. Nutrient Management program at NDSU Fall REC/Extension Conference, “Feedlots of the Future - A North Dakota Feasibility Assessment for Blue Flint Ethanol”, Fargo, ND, Nov 2008.

Pryor, S. W., 2008. FM Sustainable Engineering and Planning Conference (Fargo-Moorhead Council of Governments), “Biofuels: Benefits, Potential, and Limitations”, Fargo, ND Oct 2008.

Pryor, S. W., 2008. Steele and Trail Counties Extension Workshop,“Corn Ethanol: Public Perception, Realities, and Future Outlook” Portland, ND, Feb 2008.

Pryor, S. W., 2007. NDSU Field Days, “The Truth about Corn Ethanol”, Casselton and Carrington, ND July 2007.

**PUBLICATIONS (peer-reviewed) (32)**

Pryor, S. W., and Nahar, N., 2015. β-glucosidase supplementation during biomass hydrolysis: How low can we go?, *Biomass and Bioenergy*, 80:298-302.

Samaratunga, A., O. Kudina, N. Nahar, A. Zakharchenko, S. Minko, A. Voronov, and S.W. Pryor. 2015. Impact of Enzyme Loading on the Efficacy and Recovery of Cellulolytic Enzymes Immobilized on Enzymogel Nanoparticles. *Applied Biochemistry and Biotechnology*. 175(6):2872-82.

Rijal, B., Biersbach, G., Gibbons, W., and S. W. Pryor. 2014. Effect of initial particle size and densification on AFEX-pretreated biomass for ethanol production, *Applied Biochemistry and Biotechnology*, 174:845–854.

Nahar, N., Rorick, R.E., and S.W. Pryor. 2014. Effects of enzyme and solid loading on sugar beet pulp hydrolysis, *Biological Engineering Transactions,* 7(1): 17-26.

Nahar, N., and S. W. Pryor. 2014. Reduced Pretreatment Severity and Enzyme Loading Enabled through Switchgrass Pelleting, *Biomass and Bioenergy*, 67:46-52.

**Kudina, O., A. Zakharchenko, L. Ionov, G. Stoychev, N. Puretskiy, S.W. Pryor, A. Voronov, and S. Minko. 2014.** Highly Efficient Phase Boundary Biocatalysis with Enzymogel Nanoparticles**,** *Angewandte Chemie*, 53(2), 483-487.

Nahar, N., and S. W. Pryor. 2013. Enzymatic Hydrolysis and Fermentation of Crushed Whole Sugar Beets, *Biomass and Bioenergy*, 59:512-519.

Vargas-Ramirez, J.M., Haagenson, D.M., Pryor, S.W., and D. P. Wiesenborn. 2013. Determination of Suitable Storage Conditions to Preserve Fermentable Sugars in Raw Thick Beet Juice for Ethanol Production, *Biomass and Bioenergy*, 59: 362-269.

Manamperi, W.A., Chang, S.K.C., Wiesenborn, D.P. and S.W. Pryor. 2012. Impact of Meal Preparation Method and Extraction Procedure on Canola Protein Yield and Properties, *Biological Engineering Transactions,* 5(4): 191-200.

Pryor, S. W., Karki, B., and N. Nahar. 2012. Effect of Hemicellulase Addition during Enzymatic Hydrolysis of Switchgrass Pretreated by Soaking in Aqueous Ammonia, *Bioresource Technology*,123(2012): 620-626.

Monono, E., Haagenson, D., and S. W. Pryor. 2012. Developing and evaluating NIR calibration models for multi-species herbaceous perennials, *Industrial Biotechnology*, 8(5): 285-292.

Monono, E., Berti, M., Nyren, P., and S. W. Pryor. 2012.Variability in Biomass Yield, Chemical Composition, and Ethanol Potential of Individual and Mixed Herbaceous Biomass Species Grown in North Dakota, *Industrial Crops and Products*, 41(2013): 331-339.

Rijal, B., Igathinathane, C., Karki, B., Yu, M., and S. W. Pryor. 2012. Combined Effect of Pelleting and Pretreatment on Enzymatic Hydrolysis of Switchgrass, *Bioresource Technology*, 116 (2012): 36-41.

Karki, B., B. Rijal, and S. W. Pryor. 2011. Simultaneous Saccharification and Fermentation of Aqueous Ammonia Pretreated Oat Straw for Ethanol Production, *Biological Engineering Transactions* 4(3): 157-166.

Manamperi, W.A., and S.W. Pryor. 2011. Properties of Canola Protein-Based Plastics and Protein Isolates Modified using SDS and SDBS, *Journal of the American Oil Chemists' Society,* 89:541–549.

Rorick, R.E., Nahar, N., and S.W. Pryor. 2011. Ethanol production from sugar beet pulp using *Escherichia coli* KO11 and *Saccharomyces cerevisiae*, *Biological Engineering Transactions* 3(4):199-209.

Manamperi, W.A., M. Fuqua, C.A. Ulven, D. P. Wiesenborn, and S. W. Pryor. 2011. Effect of canola protein extraction parameters on protein-based plastic properties, *Journal of Biobased Materials and Bioenergy* 5(4):500-506.

Karki, B., N. Nahar and S. W. Pryor. 2011. Enzymatic Hydrolysis of Switchgrass and Tall Wheatgrass Mixtures using Aqueous Ammonia Pretreatment, *Biological Engineering Transactions* 3(3):163-171.

Lin, H., D.M. Haagenson, D.P. Wiesenborn, and S.W. Pryor. 2011. Effect of trace contaminants on cold soak filterability of canola biodiesel. *Fuel,* 90:1771-1777*.*

Manamperi, W.A., D. P. Wiesenborn, S. K.C. Chang, and S. W. Pryor. 2011. Effects of Protein Separation Parameters on the Functional and Thermal Properties of Canola Protein Isolates, *Journal of Food Science*, 76(3):266-273.

DeVuyst, E., S.W. Pryor, G. Lardy, W. Eidie and R. Wiederholt. 2011. Cattle, ethanol, and biogas: Does closing the loop make economic sense? *Agricultural Systems,* 104(2011):609-614.

Manamperi, W.A., C.A. Ulven, K.C. Chang, and S.W. Pryor. 2010. Plastics from an Improved Canola Protein Isolate: Preparation and Properties, *Journal of the American Oil Chemists' Society,* 87:909–915.

Pryor, S.W., and N. Nahar. 2010. Deficiency of Cellulase Activity Measurements for Enzyme Evaluation, *Applied Biochemistry and Biotechnology - Part A Enzyme Engineering and Biotechnology,* 162:1737–1750.

Espinoza-Pérez, J. D., D.M. Haagenson, S.W. Pryor, C.A. Ulven, and D.P. Wiesenborn. 2009. Production and Characterization of Epoxidized Canola Oil, *Transactions of the ASABE*, 52(4): 1213-1221.

Wilhelmi, A.J., D. P. Wiesenborn, C.R. Gustafson, S.W. Pryor. 2009. Models for Fractionation of Field Peas to Supplement Corn Ethanol, *Applied Engineering in Agriculture*, 25(5):709‐717.

Gustafson, C., S. Pryor, D.Wiesenborn, A. Goel, R. Haugen, and A. Wilhelmi. 2008. Economic feasibility of supplementing corn ethanol feedstock with fractionated dry peas: A risk perspective. In *Transition to a Bioeconomy: Risk, Infrastructure and Industry Evolution*, 90-97. Berkeley, California: Farm Foundation.

Lin, W., G. Padmanabhan, S. Pryor, D. Wiesenborn. 2007. Introducing Native American Community College Students to Engineering through Hands-On Exploratory Projects, Paper AC 2007-1957. ASEE Annual Conference Proceedings.

Pryor, S.W., K.J. Siebert, D.M. Gibson, J.M. Gossett, and L.P. Walker. 2007. Modeling Production of Antifungal Compounds and their Role in Biocontrol Product Inhibitory Activity. *Journal of Agricultural and Food Chemistry*. 55(23): 9530-9536.

Pryor, S.W., D.M. Gibson, A.G. Hay, J.M. Gossett, and L. P. Walker. 2007. Optimization of Spore and Antifungal Lipopeptide Production during the Solid State Fermentation of *Bacillus subtilis*. *Applied Biochemistry and Biotechnology - Part A Enzyme Engineering and Biotechnology* 143: 63-79.

Pryor, S.W., D.M Gibson, G.C. Bergstrom, and L.P. Walker. 2006. Minimization of between-well sample variance of antifungal activity measurements using a high-throughput screening microplate bioassay. *BioTechniques*. 42(2): 168-172.

Pryor, S.W., D.M. Gibson, S.B. Krasnoff, and L.P. Walker. 2006. Identification of antifungal compounds in a biological control product using a microplate inhibition bioassay. *Transactions of the ASABE* 49(5): 1643-1649.

Pryor, S.W., A.G. Hay, and L.P. Walker. 2002. Nonylphenol in Anaerobically Digested Sewage Sludge from New York State. *Environmental Science & Technology* 36(17): 3678-3682.

**MEETING PRESENTATIONS (51)**

**Vargas-Ramirez, J., A. Pothula, I. Cannayen, S. W. Pryor, D. Haagenson, D. Wiesenborn, Sugar retention in ensiled industrial-beet tissue** Paper No. 152190193. ASABE International Meeting. New Orleans, LA Jul 26-29, 2015.

**Cobb, B., and S. W. Pryor, Antioxidant Concentration of Post-fermentation Corn Oil from Dry Grind Ethanol Production, RRV15-042** ASABE North Central Intersectional Meeting. Fargo, ND. Apr 10-11, 2015.

**Nahar, N. Higher Pretreatment Solid Loading and Lower Enzyme Loading Using Corn Stover Pellets. NDSU, RRV15-037** ASABE North Central Intersectional Meeting. Fargo, ND. Apr 10-11, 2015.

**Pryor, S. W., Using Prerecorded Lectures to Increase Student Interaction in Introductory and Applied Engineering Courses. Scott Pryor, NDSU, RRV15-029** ASABE North Central Intersectional Meeting. Fargo, ND. Apr 10-11, 2015.

**Hansen, J., B. Bowen,, S. Pryor, D. Ewert, R. Pieri, D. Wells, M. Abdelrahman, J. Hanson, and L. Roy. 2014. Analyzing the First Year of a Freshman Engineering Experience Pilot Program. 6th First Year Engineering Experience (FYEE) Conference. College Station, TX Aug 7 – 8, 2014. (oral and paper)**

**Nahar, N., and S. W. Pryor 2014.** Effect of pH, temperature, and enzyme loading on hydrolysis of soaking aqueous ammonia pretreated corn stover**,** Paper No. 141910128. ASABE International Meeting. Montreal, CA Jul 14-16, 2014. (oral)

**Samaratunga, A., N. Nahar, A. Voronov, S. Minko, and S.W. Pryor 2014. Modeling the effect of pH and temperature for cellulases immobilized on polymer brushes,** Paper No. 141910262. ASABE International Meeting. Montreal, CA Jul 14-16, 2014. (oral)

Bee, J., N. Nahar, and S.W. Pryor. 2014 Effects of Solid Loading of Corn Stover Pellets on Soaking in Aqueous Ammonia Pretreatment. NDSU Summer Undergraduate STEM Research Symposium. Fargo, ND Jul 15, 2014. (oral and poster)

Pryor, S.W., N. Nahar, C. Igathinathane, D. Ripplinger, B. Rijal, and J. Bee. 2014. Synergies of Biomass Densification and Biochemical Processing, S1041 Annual Meeting - S1041: The Science and Engineering for a Biobased Industry and Economy. New Orleans, LA Aug 3-5, 2014.

**Pryor, S.W. and N. Nahar, and 2014. Enzymatic hydrolysis of corn cob with reduced cellobiase loadings**. ASABE North Central Intersectional Meeting. Brookings, SD. Mar 28-29, 2014.

**Kudina, O., Zakharchenko, A., Samaratunga, A., Nahar, N., Ionov, L., Pryor, S.W., Voronov, A., and S. Minko. Nanostructured responsive enzymogel particles for bioconversion. Responsive Nanostructures and Nanocomposites, 247th ACS National Meeting, Dallas, TX, March 16-20, 2014**

**Samaratunga, A., N.Nahar, O. Kudina, A. Voronov, S. Minko, and S. W. Pryor 2013. Impact of enzyme loading on activity and recovery of cellulases immobilized on polymer brushes,** Paper No. 1620390. ASABE International Meeting. Kansas City, MO Jul 22-24, 2013.

**Nahar, N., and S.W. Pryor 2013. Effects of Pretreatment Conditions for Enzymatic Hydrolysis of Pelleted Switchgrass,** Paper No. 1619709. ASABE International Meeting. Kansas City, MO Jul 22-24, 2013.

**Pryor, S.W., O. Kudina, A. Samaratunga, N. Nahar, S. Minko, and A. Voronov 2013. Kinetics and recovery of cellulases immobilized on pH-responsive polymer brushes grafted to nanosilica and ferromagnetic particles,** Paper No. 23962. 35th Symposium on Biotechnology for Fuels and Chemicals. Portland, OR Apr 29-May 2, 2013. (poster)

**Kudina, O., Voronov, A., Samaratunga, A., Nahar, N., Pryor, S., Ionov, L., and S. Minko 2013. Hybrid Polymer-Decorated Magnetic Silica Carriers of Enzymes For Biomass Hydrolysis, 4th International Conference on Nanotechnology: Fundamentals and Applications, Toronto, ON, August, 12-14, 2013.**

**Kudina, O., Samaratunga, A., Nahar, N., Ionov, L., Minko, S., Pryor, S.W., and A. Voronov 2013. Hybrid Polymer-Decorated Magnetic Silica Carriers of Enzymes For Biomass Hydrolysis 45th ACS National Meeting, New Orleans, LA, April, 7-11, 2013**

**Samaratunga, A., O. Kudina, N.Nahar, S. Minko, A. Voronov, and S. W. Pryor 2012. Recovery and efficacy of cellulases immobilized on magnetic core polymer brushes,** Paper No. 121338123. ASABE International Meeting. Dallas, TX Jul 29 Aug 1, 2012. (poster)

**Nahar, N., B. Karki, and S.W. Pryor 2012. Enzymatic Hydrolysis and Fermentation of Whole Sugar Beets for Ethanol Production,** Paper No. 121338125. ASABE International Meeting. Dallas, TX Jul 29 Aug 1, 2012. (oral and paper)

**Rijal, B.,** B. Karki, C. Igathinathane, M. Yu, **and S.W. Pryor 2012 Interaction of Densification and Pretreatment for the Enzymatic Hydrolysis and Fermentation of Biomass,** Paper No. 121338124. ASABE International Meeting. Dallas, TX Jul 29 Aug 1, 2012. (oral)

**Li, Y., S. W. Pryor, W. Liao, B. He, A. Shahbazi, L. Wang, A. Christy, F. Michel, and T. Ezeji, 2012. Biobased Energy Education Materials exchange System (BEEMS), Poster No. 20121-0316. North American Colleges & Teachers of Agriculture 2012 Conference, River Falls, WI Jun 25-29, 2012. (poster)**

**Kudina, O., A. Samaratunga, B. Karki, N. Nahar, A. Kohut, L. Ionov, S. Pryor, A. Voronov, S. Minko. Polymer-Modified Silica Particles for Enzymatic Recovery in Biomass Processing. 43rd ACS National Meeting & Exposition, CATL: Division of Catalysis Science and Technology. March 25 - March 29, 2012, San Diego, CA**

**Nahar, N., and S.W. Pryor 2012. Fermentation of Sugarbeets with E. coli K011: Impact of Buffer Strength and Hydrolyzate Composition** (RRV12126) 2012 CSBE/ASABE North Central Intersectional Conference, Fargo, ND Mar 30-21, 2012. (oral)

**Samaratunga, A., Voronov, A., and S.W. Pryor 2012. Detecting and Quantifying Cellulases Immobilized on Polymer Brushes Grafted on Magnetizable Particles** (RRV12111) 2012 CSBE/ASABE North Central Intersectional Conference, Fargo, ND Mar 30-21, 2012. (oral)

**Rijal, B. and S.W. Pryor 2012 Interaction Effect of Pelleting and Pretreatment on the Sugar Yield of Switchgrass (**RRV12102) 2012 CSBE/ASABE North Central Intersectional Conference, Fargo, ND Mar 30-21, 2012. (oral)

Kudina, O, Samaratunga,A., Karki, B., Nahar, N., Kohut, A., Ionov, L., Pryor, S., Minko, S., and A. Voronov 2011 Grafted Polymer Brush-Decorated Silica Particles for Enzymatic Recovery in Biomass Processing, ND-SD 2011 Joint EPSCoR Conference. Fargo, ND Oct 4, 2011. (poster)

Karki, B., B. Rijal and S.W. Pryor 2011. Aqueous Ammonia Pretreatment and Enzymatic Saccharification of Oat Straw, Paper No. 1111308. ASABE International Meeting. Louisville, KY Aug 7-9, 2011. (oral)

Karki, B., N. Nahar and S.W. Pryor 2011. Investigation of Lignin Redistribution during Dilute Acid Pretreatment of Corn Stalks, Corn Cobs and their Mixtures, Paper No. 1111322. ASABE International Meeting. Louisville, KY Aug 7-9, 2011. (oral plus paper)

Rijal, B., B. Karki and S.W. Pryor 2011. Impact of AFEX Pretreatment and Biomass Densification on Cellulosic Ethanol Production, Paper No. 1111208. ASABE International Meeting. Louisville, KY Aug 7-9, 2011. (poster)

Monono, E. and S.W. Pryor, 2011. Influence of Sieve Size and Sample Presentation on NIR Prediction of Perennial Grass Composition, Paper No. 1111307. ASABE International Meeting. Louisville, KY Aug 7-9, 2011. (oral plus paper)

Pryor, S.W. N. Nahar, and B. Karki, 2010. Enzymatic Saccharification of Switchgrass and Tall Wheatgrass Mixtures using Dilute Acid and Aqueous Ammonia Pretreatments, Paper No. 1009227. ASABE International Meeting. Pittsburgh, PA June 19-23, 2010. (poster)

Monono, E. and S.W. Pryor, 2010. Compositional Analysis of Perennial Grass Species to Evaluate Potential as Individual or Conglomerate Bioenergy Crops, Paper No. 1009050. ASABE International Meeting. Pittsburgh, PA June 19-23, 2010. (poster)

Rorick, R. and S.W. Pryor, 2010. Fermentation of Sugar Beet Pulp Hydrolyzate with *Saccharomyces cerevisiae* and *E. coli* KO11, Paper No. 1009043. ASABE International Meeting. Pittsburgh, PA June 19-23, 2010. (poster)

Sehrawat, J., Manamperi, W.A., and S.W. Pryor, 2010. Preparation of plastics from acetylated canola proteins, Paper No. 1009224. ASABE International Meeting. Pittsburgh, PA June 19-23, 2010. (poster)

Sietsema, C., N. Nahar, and S.W. Pryor, 2009. Comparison of Switchgrass Hydrolysis using different Enzyme Systems following Soaking in Aqueous Ammonia Pretreatment, 2009 CSBE/ASABE North Central Intersectional Conference, Brookings, SD Sept 18-19, 2009. (oral)

Rorick, R., C. Sietsema, N. Nahar, and S.W. Pryor, 2009. Strategies for Increasing Ethanol Yields and Titers following Enzymatic Hydrolysis and Fermentation of Sugar Beet Pulp, 2009 CSBE/ASABE North Central Intersectional Conference, Brookings, SD Sept 18-19, 2009. (oral)

Rorick, R., N. Nahar, and S.W. Pryor, 2009. Enzymatic Hydrolysis and Fermentation of Sugar Beet Pulp, Paper No. 09-6193. ASABE International Meeting. Reno, NV, June 21-24, 2009. (oral plus paper)

Pryor, S.W. and N. Nahar, 2009. Impact of Dilute Acid Pretreatment Conditions and Enzyme System on Switchgrass Hydrolysis, Paper No. 09-6026. ASABE International Meeting. Reno, NV, June 21-24, 2009. (oral plus paper)

Manamperi, W.A., J. Sehrawat, M. Fuqua, C. Ulven, S.W. Pryor, 2009. Influence of Plasticizers on Properties of Polymers Made from Canola Protein Polyester Blends, Paper No. 09-6327. ASABE International Meeting. Reno, NV, June 21-24, 2009. (oral plus paper)

Manamperi, W.A., K.C. Chang, and S.W. Pryor 2008. Thermal and functional properties of canola meal proteins precipitated at different pH values, Paper No. RRV08-803. 2008 CSBE/ASABE North Central Intersectional Conference, Winnipeg, Canada Sept 19-20, 2008. (oral plus paper)

Manamperi, W.A., M. Fuqua, C. Ulven, S.W. Pryor 2008. Preparation of plastic specimens from canola meal protein isolate, Paper No. RRV08-P02. 2008 CSBE/ASABE North Central Intersectional Conference, Winnipeg, Canada Sept 19-20, 2008. (poster)

Rorick, R., N. Nahar, and S.W. Pryor 2008. Enzymatic hydrolysis of pectin and hemicellulose in sugar beet pulp, Paper No. RRV08-601. 2008 CSBE/ASABE North Central Intersectional Conference, Winnipeg, Canada Sept 19-20, 2008. (oral plus paper)

Gustafson, C., S.W. Pryor, D. Wiesenborn, A. Goel, R. Haugen, and A. Wilhelmi 2008. Investing in Fractionation Technology to Mitigate Corn Supply Risk, at NC-1014: Agricultural and Rural Finance Markets in Transition Annual Meeting Kansas City, MO, September 25-26, 2008. (oral)

Gustafson, C., S.W. Pryor, D. Wiesenborn, A. Goel, R. Haugen, and A. Wilhelmi. 2008. Economic Feasibility of Supplementing Corn Ethanol Feedstock with Fractionated Dry Peas: A Risk Perspective. Transition to a Bioeconomy: Risk, Infrastructure and Industry Evolution conference. Farm Foundation. June 24-25, 2008. (oral plus peer-reviewed paper; see above)

Pryor, S.W., M. Lenling, and D.P. Wiesenborn. 2008 Integrated Use of Field Pea Starch and Corn for Ethanol Production. paper 083999,  2008 ASABE International Meeting. Providence, Rhode Island, June 29 – July 2, 2008. (oral plus paper)

Manamperi, W.A., K.C. Chang, D. P. Wiesenborn, and S.W. Pryor. 2008. Alteration of Osborn Sequence Extraction for Isolation of Canola Proteins. Paper 083924,  2008 ASABE International Meeting, Providence, Rhode Island, June 29 – July 2, 2008. (oral plus paper)

Wilhelmi, A., D.P. Wiesenborn, C. Gustafson, and S.W. Pryor. 2007. Model for Mechanical Fractionation of Field Peas to Supplement a Dry Grind Corn Ethanol Plant, paper 07113. 2007 CSBE/ASABE North Central Intersectional Conference, Fargo, ND Oct 12-13, 2007. (oral plus paper)

Manamperi, W.A., K.C. Chang, and S.W. Pryor. 2007. Canola meal protein fractionation and utilization for industrial applications, paper 07116. 2007 CSBE/ASABE North Central Intersectional Conference, Fargo, ND Oct 12-13, 2007. (oral plus paper)

Manamperi, W.A., D.P. Wiesenborn, and S.W. Pryor. 2007. Canola Meal Protein Fractionation and Utilization for Industrial Applications, paper 077036. 2007 ASABE International Meeting, Minneapolis, MN, Jun 17-20, 2007. (poster)

Polansky, P., D.P. Wiesenborn, and S.W. Pryor. Batch Reactor for Lignocellulosic Biomass Pretreatment, paper 077037. 2007 ASABE International Meeting, Minneapolis, MN, Jun 17-20, 2007. (poster)

Lin, W., G. Padmanabhan, S. Pryor, D. Wiesenborn. 2007. Introducing Native American Community College Students to Engineering Through Hands-On Exploratory Projects, 114th Annual ASEE Conference and Exposition, Honolulu, HI, June 24-27. (poster and oral – peer reviewed paper noted above)

Pryor, S.W. 2005 Optimization and Modeling of Antifungal Lipopeptide Production during the Solid State Fermentation *of Bacillus subtilis*. The World Congress on Industrial Biotechnology and Bioprocessing. Orlando, FL. (oral)

**OTHER NON-REVIEWED PAPERS/REPORTS (5)**

Hellevang, K., K. Kinzer, G. Lardy, M. McMullen, M. Mostrom, F. Olson, S. Pryor, J. Ransom and J.W. Schroeder. 2009. Corn Ear Molds - Basic Questions and Answers. NDSU Extension Publication PP-1451.

Pryor, S.W., R. Rorick, and N. Nahar. 2009. Enzymatic Hydrolysis of Sugarbeet Pulp for Cellulose Isolation and Ethanol Production. *In* 2008 Sugarbeet Research and Extension Reports. Vol. 39. Sugarbeet Research and Education Board of MN and ND.

Gustafson, C, and S.W. Pryor. 2008. Biofuel Economics: North Dakota’s Relative Biomass Potential. *Ag News from NDSU*. Dec 4, 2008.

Lardy, G., E. DeVuyst, W. Eide, S.W. Pryor, R. Wiederholt. 2007. Feasibility Analysis for a cattle feedlot and anaerobic digestion biogas facility co-located with Blue Flint Ethanol. Report to Great River Energy.

Lardy, G., E. DeVuyst, W. Eide, S.W. Pryor, R. Wiederholt. 2008. Dairy of the Future: A North Dakota Feasibility Assessment for Great River Energy. Report to Great River Energy.

**OTHER POSTERS DEVELOPED (11)**

Pryor, S.W., Transforming and Densifying Biomass in Regional Biomass Processing Centers (RBPC)

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009

Pryor, S.W., C. Gustafson, and D.P. Wiesenborn. Synergy of Using Field Peas as an Ethanol Feedstock

* + - Great Plains Energy Expo and Showcase, Nov 10-11, 2008 (Bismarck)
		- Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008
		- NDSU BioOpportunities Workshop, May 17, 2007

Pryor, S.W., G. Lardy, E. DeVuyst, W. Eide, R. Wiederholt. Feedlots of the Future: Feasibility Analysis for a Cattle Feedlot collocated with an Ethanol Plant

* Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008

Biondini, M., L. Cihacek, C. Grygiel, W. Koo, S.W. Pryor, K. Ringwall. CRP to Ethanol

Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008

* NDSU BioOpportunities Workshop, May 17, 2007

Pryor, S.W., From Biomass to Ethanol, Breaking it Down: The Sugar Platform.

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009
* Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008
* NDSU BioOpportunities Workshop, May 17, 2007

Pryor, S.W., ABEN 499/696 – Biofuels (incl. rev. as ABEN 456/656 - Biobased Energy).

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009
* Great Plains Energy Expo and Showcase, Nov 10-11, 2008 (Bismarck)
	+ - * Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008
		- NDSU BioOpportunities Workshop, May 17, 2007

Pryor, S.W., R. Rorick, N. Nahar. Ethanol Production from Sugarbeet Pulp.

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009
	+ - Marketplace for Entrepreneurs, Jan 13-14, 2009 (Bismarck)
		- Great Plains Energy Expo and Showcase, Nov 10-11, 2008 (Bismarck)
		- Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008

Manamperi, W.A., M.A. Fuqua, C.A. Ulven, S.W. Pryor, Preparation of Plastic Specimens from Canola Meal Protein Isolates

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009
* Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008

Ulven, C., D. Wiesenborn, C. Gustafson, S. Pryor, Z. Chen, B. Tande, M. Alcock, D. Haagenson, Development of Biobased Composite materials for Structural Applications

* + - Great Plains Energy Expo and Showcase, Nov 10-11, 2008 (Bismarck)
		- Northern Plains Biomass Economy: What Makes Sense?, Sept 29, 2008

Pryor, S.W., D.P. Wiesenborn, K. Tostenson, and D. Haagenson. Bioproducts Research Laboratory

* Northern Plains Biomass Economy: What Makes Sense?, Sept 22, 2009
* NDSU BioOpportunities Workshop, May 17, 2007

Pryor, S.W., G. Lardy, E. DeVuyst, W. Eide, R. Wiederholt. Feedlots of the Future: Capturing Synergies of Integrating Ethanol Production, Livestock Management, and Anaerobic Digestion for Sustainable Energy and Food Systems,

* NDSU BioOpportunities Workshop, May 17, 2007

**GRADUATE STUDENT MENTORING**

**Committee Chair (7)**

Bonnie Cobb (MS) - Extraction of high-value products from corn ethanol production centrifugal oil (2014-2016)

Nurun Nahar (PhD - Environmental and Conservation Science) - Life Cycle Impacts on Biomass Densification for Cellulosic Biofuels (2012-2016)

Ashani Samaratunga (MS) (2011-2013) – Recovery and Efficacy of Immobilized Cellulases

Binod Rijal (MS) (2010-2012) - Impact of Densification on Biomass Pretreatment and Hydrolysis

Ewumbua Monono (MS) (2009-20110) - Compositional Analysis of Mixed Perennial Species from Prairie Grasslands

Rachel E. Rorick (MS) (2008-2010) – Enzymatic Pretreatment of Sugarbeet Pulp for Cellulosic Ethanol Production

Wajira A. Manamperi (PhD) (2006-2010) – Evaluation of Canola Proteins for Biobased Plastics and Composite Materials

**Committee Member (29)**

Served or serving on 21 MS Committees and 8 PhD Committees in Agricultural Engineering, Mechanical Engineering, Civil Engineering, Cereal Science, Polymers and Coatings, Agribusiness, Mathematics, and Chemistry and Molecular Biology

**Postdoctoral Researchers Supervised (2)**

Bishnu Karki, 2010-2012

Wajira Manamperi, 2010-2011

**PROJECT GRANTS (12 grants, $3.3 million total, $1.1 million personal portion)**

Energy beets: a new industrial sugar source for the production of advanced biofuels ($248,099), North Central Sun Grant Initiative. (D. Wiesenborn, S. Pryor, D. Ripplinger, I. Cannayen, W. Gibbons)

Creation of an NDSU Student Competition to Develop New Uses for Corn ($260,000), ND Corn Growers Association. (S. Pryor)

pH-responsive Capsules for Enhanced Delivery and Recovery of Cellulases for Biomass Hydrolysis ($309,357), National Science Foundation (S. Minko (Clarkson Univ.), A. Voronov, and S. Pryor)

Demonstration of Improved Canola Bioproducts using Carbon Dioxide Oil Extraction ($62,890), ND APUC (S.W. Pryor, C. Ulven, and D. Wiesenborn)

Renewable Energy and Products from Biomass Grown in North Dakota ($900,000), USDA/CSREES Special Grant (K. Grafton, R. Lym, W. Koo, P. Nyren, S. Pryor)

Biobased Energy Educational Materials exchange System (BEEMS) ($459,867) USDA/CSREESHigher Education Challenge Grant(Y. Li, S.W. Pryor, B. He, W. Liao, F. Michel, A. Shahbazi)

Transforming and Densifying Biomass in Regional Biomass Processing Centers ($689,553) North Central Sun Grant Initiative, (K. Muthukumarappan, W. Gibbons, S. Pryor, J. Gonzalez, J. Julson, M. Twedt, B. Dale, L. Christopher, J. Flaherty, C. Saffron)

Environmental and Economic Consequence of Biomass Feedstock Production in the Northern Great Plains, $71,199 + 51,790) (Specific Cooperative Agreement with USDA/ARS (Mandan T. Faller, S.W. Pryor, I. Cannayen, P. Nyren)

Enzymatic Pretreatment of Sugar Beet Pulp for Ethanol Production ($55,097) American Crystal Sugar Company, ND SBARE Agr. Research Fund, Sugarbeet Research and Education Board of MN and ND (S.W. Pryor)

Synergy of Using Field Peas as an Ethanol Feedstock ($45,000) APUC (C. Gustafson, S.W. Pryor, D. Wiesenborn)

Feasibility Analysis for a Cattle/Dairy Feedlot and Anaerobic Digestion Biogas Facility Co-located with Blue Flint Ethanol ($121,250) APUC/Great River Energy (G. Lardy, E. DeVuyst, W. Eidie, S.W. Pryor, R. Wiederholt)

Biodiesel Co-product Development: Utilization of Canola Meal and Canola Proteins for Industrial Bio-products ($99,562) USDA NRI (S.W. Pryor, K.C. Chang)

**PROFESSIONAL ACTIVITIES**

Associate Editor for Transactions of the ASABE (Energy systems division), 2014-present

Associate Editor for Biological Engineering Transactions, 2010-2014

Guest Editor for Biological Engineering journal (ASABE) special issue on bioenergy, 2010

Biological Engineering representative on the ASABE Nomination Committee to choose national society leaders, 2011-2013

Manuscript Reviewer: Biotechnology and Bioengineering, Industrial Biotechnology, Energy & Fuels, Biomass and Bioenergy, Biological Engineering Transactions, Enzyme and Microbial Technology, Applied Microbiology and Biotechnology, Bioresource Technology, and the Journal of the American of the Oil Chemists’ Society, Journal of Materials Science.

Honorary Scientist & Advisor on Agricultural Green Technology, Bio-energy Crop Research Center, National Institute of Crop Science, Republic of Korea (2010-2012)

Organizing committee, Northern Plains Biomass Economy; What Makes Sense?, Sept 2008

Development committee – NDSU BioEnergy and Products Innovation Center (BioEPIC) 2007

Organizing committee, NDSU BioOpportunities Meeting, May 2007

Grant Reviews: USDA/DOE Biomass Research and Development Initiative, NIFA 1890 Capacity Building Grant Teaching, USDA SBIR Phase II proposals, ND Industrial Commission's Renewable Energy Program, ND APUC.

North Dakota Biomass Energy Taskforce, Jamestown, ND 2006

World Congress on Industrial Biotechnology and Bioprocessing

Advances in Bioprocessing track recorder, 2005

Bioprocessing of Agricultural Feedstocks track recorder, 2004

The Northeast Sun Grant Initiative Regional Planning Meeting, Buffalo, NY 2004

**SOCIETY MEMBERSHIP**

*American Society of Agricultural and Biological Engineers*

*Society of Industrial Microbiology*

**HONORS AND AWARDS**

*2013 NDSU College of Agriculture, Food Systems, and Natural Resources Larson-Yaggie Excellence in Research Award*

*2012 NDSU College of Engineering and Architecture Researcher of the Year*

*2011-2012 ASABE Nominating Committee,* Biological Engineering representative

*2010 Outstanding Reviewer*, Biological Engineering Division of ASABE

*Gordon A. Larson Agricultural Research Award*, NDSU Development Foundation, 2009

*Midwest Ag Energy Network Professional Development Grant*: to attend Biobased Industry Outlook Conference (Ames, IA) – Oct 2007

*Alpha Epsilon* (Honor Society of Agricultural, Food, and Biological Engineering)

Chapter President, Cornell University, 2000

*USDA Multidisciplinary Graduate Education Traineeship*, 2002-2004

*USDA National Needs Fellowship*, 1999-2002

*National Science Foundation undergraduate research fellowship*, 1992-1993

*Cornell Tradition Fellowship*, 1989-1993