BISHNU KARKI, PhD

Biology and Microbiology Dept. DM 213, South Dakota State University (SDSU), Brookings, SD 57007·
Phone 605.688.5499, email: bishnu.karki@sdstate.edu

Education and Training

Institution	Major	Degree	Year
Tri-bhuvan University, Nepal	Microbiology	B.S	2001
Asian Institute of Technology	Food and Bioprocess Engineering	M.S.	2005
Iowa State University	Bioprocessing and Food Science	Ph.D.	2009

Appointments:

May 2016-Present	Research Scientist, SDSU, B&M
2012-2016	Research Associate, SDSU, ABE and B&M
2010-2012	Research Associate, NDSU, ABE and B&M

Teaching and Advising:

Undergraduate and graduate courses in the Dept. of ABE and B&M.
Advising undergraduate and graduate students (MS and PhD) with their research work. So far I have advised 6 PhD 4 MS and 6 undergraduate students.

Professional Honors and Awards:

04/15: *Best Faculty Research Poster Award,* Gamma Sigma Delta Poster Contest, South Dakota State University
03/15: Professional Staff Advisory Council Award for Excellence in Research and Scholarship, South Dakota State University, SD
03/14: Nominated for 2014 *Women of Distinction Award,* South Dakota State University, SD
04/13: *Archer Daniels Midland Best Paper Award,* 104th Annual AOCS Meeting and Expo, Montreal, Canada
04/08 & 05/09: *Pauline Grey Miller Memorial Scholarship Award,* Department of Civil, Construction and Environmental Engineering, Iowa State University, IA
11/08: *Graduate and Professional Student Senate Peer Research Award,* Iowa State University, IA
04/07: *Barbara Ann Herum Environmental Engineering Graduate Scholarship*, Dept. of Civil Construction & Environmental Engineering, Iowa State University, IA
03/05: *Government of Netherlands-AIT Fellowship for Master's Degree*, Asian Institute of Technology, Bangkok, Thailand

Professional Associations:

Sigma Xi Scientific Society: 2013-present
Gamma Sigma Delta: 2012-present
American Society for Microbiology (ASM): 2012-present
Institute of Food Technologists (IFT): 2009-Present
American Society of Agricultural and Biological Engineers (ASABE): 2007-present

Professional Activities:

Scholarly Activities

Proposal Panel Reviewer

South Dakota EPSCoR Education/Workforce Development Proposal, December 2015 (2 Proposals)
Research Scholarship Support Fund, 2014 (10 proposals) and 2015 (8 proposals)
SD STEM Standards Unpacking Meeting, Dept. of Education, Pierre, SD, July 18-20th, 2016
SD STEM Standards Reviewer, Dept. of Education, Watertown, SD, June 22nd-24th, 2015
***Manuscripts Reviewer**, Reviewed more than 50 papers for 14 different journals*

Applied Microbiology and Biotechnology, Bioenergy Research, Biological Engineering Transactions, Bioresource Technology, International Food Research Journal, International Journal of Food Properties, 3BioTech, Journal of Agricultural and Food Chemistry, Journal of Food Processing and Preservation, Journal of Microbiology and Biotechnology, Preparative Biochemistry and Biotechnology, Transactions of ASABE, Manufacturing Engineering Division" of American Society of Mechanical Engineers (ASME) meetings 2011, Journal of Food Research

Session Chair/Moderator at Professional Meetings

Bioprocessing Session Chair, ASABE/CSBE Intersectional Meeting, 2014 and 2015
Applied Microbiology Session Chair, North Central Branch of the American Society for Microbiology, NDSU, Fargo, ND, October 12-13, 2012

Technical Committee Member, ASABE/CSBE Intersectional Meeting, SDSU, March 28-29, 2014

Grants and Contracts (SDSU): *(Received ~$340,100 as PI and Co-PI in the last 4 years)*

- *Determining the Flow-ability and Storage Properties of Soybean Based Biomaterials under Varying Conditions;* Undergraduate Research Fund 2016- Agricultural Experimentation Station, South Dakota State University; **Karki, B. (PI)**, *$2500*; May 2016- April, 2017.
- *Acquisition of a Lab Scale Twin-Screw Extruder for Food and Bioprocess Engineering;* Hatch Multi-State Funds, South Dakota State University; Muthukumarappan, K., and **Karki, B. (Co-PI)**, *$75,000*; August-September, 2015.
- *Fungal Single Celled Protein: A High Protein Feed Ingredient and Technology to Capture Value from Food Processing Wastewater Streams;* Griffith Undergraduate Research Fund 2015- Agricultural Experimentation Station, South Dakota State University; **Karki, B. (PI)** and Zahler, J. (student), *$3000*; May 2015- April, 2016.
- *Evaluation of Biomass and Bioenergy Production, Environmental Performance, and Life Cycle Analysis of Prairie Cord Grass;* US Department of Transportation-North Central Sun Grant Center (NCSGC) Competitive Grant Program 2014; Kumar, S. (PI), Subramanian, S., Wei, L., Muthukumarappan, K., **Karki, B. (Co-PI)**, Mbonimpa, E., Chintala, R., Gu, Z., Gent, S. *$240,000*; October, 2014 – September, 2015.
- *Extrusion Pretreatment of Carinata Meal for High Protein Animal Feed;* South Dakota Oilseeds Council 2013; Muthukumarappan, K., **Karki, B. (Co-PI),** Gibbons, W., *$12,100*; July 2013 – June, 2014.
- *Supercritical Carbon Dioxide Assisted Extrusion of Oilseed Meals for Biofuel and Bio-based Product Development;* Research/Scholarship Support Fund 2013-South Dakota State University-Office of Research and Sponsored Programs; **Karki, B. (PI)**, *$7,500;* 11 April, 2013- 31st March, 2014.

Publications: 18 Peer-reviewed scientific publications, 12 manuscripts are in the several stages of publications

- Pryor, S.W., **Karki, B**., Nahar, N. (2012). Effect of Hemicellulase Addition During Enzymatic Hydrolysis of Switchgrass Pretreated by Soaking in Aqueous Ammonia. *Bioresource Technology*, 123, 620-626.
- Rijal, B., Cannayen, I., **Karki, B.,** Yu, M., Pryor, S.W. (2012). Combined Effect of Pelleting and Pretreatment on Enzymatic Hydrolysis of Switchgrass. *Bioresource Technology*, 116, 36-41.
- **Karki, B.,** Maurer, D., Box, S., Kim, T.H., Jung, S. (2012). Ethanol production from a Soybean Fiber, a Co-Product of Soybean Oil Extraction, Using Aqueous Ammonia Soaking Pretreatment. *Journal of American Oil Chemists' Society,* 89(7), 1345-1353. **(Winner of 2013 AOCS ADM-Best Paper Award)**
- **Karki, B.,** Rijal, B., Pryor, S.W. (2011). Simultaneous Saccharification and Fermentation of Aqueous Ammonia Pretreated Oat Straw for Ethanol Production. *Biological Engineering,* 4(3), 157-166.
- **Karki, B.,** Nahar, N., Pryor, S.W. (2011). Enzymatic Hydrolysis of Switchgrass and Tall Wheatgrass Mixtures using Dilute Sulfuric Acid and Aqueous Ammonia Pretreatments. *Biological Engineering,*

3(3), 163-171.

- **Karki, B.,** Maurer, D., Jung, S. (2011). Efficiency of Pretreatments for Optimal Enzymatic Saccharification of Soybean Fiber. *Bioresource Technology*, 102 (11), 6522-6528.
- **Karki, B.,** Maurer, D., Kim, T.H., Jung, S. (2011). Comparison and Optimization of Enzymatic Saccharification of Soybean Fibers Recovered from Aqueous Extractions. *Bioresource Technology*, 102 (2), 1228-1233.
- Mitra, D., Pometto, A.L., Khanal, S.K., **Karki, B.,** Brehm-Stecher, B.F., van Leeuwen, J. (*2010*). Value-added Production of Nisin from Soy Whey. *Applied Biochemistry and Biotechnology*, 162 (7), 1819-1833.
- **Karki, B.,** Lamsal, B.P., Jung, S., van Leeuwen, J., Pometto, A.L., Grewell, D., Khanal, S.K. (*2010*). Enhancing Protein and Sugar Release from Defatted Soybean Flakes using Ultrasound Technology. *Journal of Food Engineering,* 96 (2), 270-278.
- **Karki, B.,** Lamsal, B.P., Grewell, D., Pometto, A.L., van Leeuwen, J., Khanal, S.K., Jung, S. (2009). Functional Properties of Soy Protein Isolates produced from Ultrasonicated Defatted Soybean Flakes**.** *Journal of American Oil Chemists' Society,* 86 (10), 1021-1028.

Professional Oral and Poster Presentations: 44