

# Jayne E. Bock

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1200 NW Naito Pkwy, Suite #230  
Portland, OR 97209

1-503-295-0823  
jbock@wmcinc.org

## EDUCATION

*University of Wisconsin-Madison*

Ph.D. – Food Science

Minor – Physical Chemistry

August 2011

*Kansas State University*

M.Sc. – Food Science

B.Sc. – Feed Science and Management

Minor – Agricultural Economics

May 2006

May 2004

*Česká Zemědělská Univerzita v Praze, Prague, Czech Republic*

Summer 2002

## EXPERIENCE

*Technical Director, Wheat Marketing Center, Oregon*

2018-present

My role is to provide technical education and research for stakeholders in the international wheat market value chain. I serve as the bridge between the wheat production and end-use portions of the chain, facilitating communication and understanding between the two groups to solve complex technical issues that span the value chain.

- Collaborate with U.S. wheat growers and international wheat buyers to address technical issues associated with use and processing of U.S. origin wheat
- Develop and deliver hands-on technical workshops for a diverse range of audiences focused on end-use quality of wheat and wheat products
- Assess market needs and design commercially relevant research projects to aid the industry in meeting emerging issues
- Serve as a scientific communicator and expert on topics related to wheat and wheat products

*Global Technical Leader, C.W. Brabender Instruments, New Jersey*

2016-2018

I served as the global technical face of the Brabender Group for food applications in a unique role at the interface of academia and industry. It required a strong understanding of the scientific principles underlying food materials and processing, strength in basic and applied research, and the ability to communicate high level technical information to diverse audiences. I regularly worked with academics, scientists, and industry lay people in settings that ranged from commercial processing facilities to research laboratories and scientific seminars to educational workshops to develop solutions for issues facing the grain, milling, and baking industries.

- Directed an international research & technical program with internal and external experts to support global objectives that resulted in development of new applications for Brabender instrumentation (e.g. development of a rapid gluten quality testing method for early generation wheat breeding lines using the Brabender GlutoPeak)
- Collaborated with external customers across the market value chain to maintain excellent customer relations and retain key accounts (\$500,000+ annually) by delivering grain and flour quality solutions and targeted technical support
- Coordinated outreach and communication of technical information for the food product portfolio across multiple platforms including presentations and print publications reaching an average annual audience of 50,000+

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## EXPERIENCE

*Adjunct Professor*, University of Guelph, Canada

2013-2018

I specialized in gluten chemistry, baking science, wheat quality, and flour functionality. My research spanned the cereal industry market value chain, specifically concentrating on the knowledge gaps occurring at the interface of academia and industry with a focus on improving the competitiveness of the Ontario cereal industry. I took a holistic interdisciplinary approach to my work, preferring to address problems in a way that integrated and optimized the knowledge and expertise of a wide array of academic, government, and industry collaborators. Those collaborators included geneticists, breeders, growers, agronomists, millers, food processors, cereal chemists, sensory scientists, and nutritionists.

- Generated in excess of \$1 million in research funding for 5 years through grant proposals submitted in collaboration with industry partners
- Selected by the Ontario Cereal Industry Research Council (OCIRC) to execute a 5 year strategic plan to maintain and build on the continuity of the cereals program and its relationships with external industry stakeholders
- Worked through building renovations and staffing transitions to deliver against project milestones and objectives on time for 5 multi-year projects
- Led and mentored a team of 4 post-doctoral fellows, 2 M.Sc. students and 7 B.Sc. students on 5 multi-year projects

*Food industry consultant*

2012-present

I provide specialized technical expertise to companies in the grain industry on an *ad hoc* basis. My primary areas are scientific communication and flour/gluten quality expertise. My most active years were 2012-2015, although I do continue to provide *pro bono* support to companies requiring troubleshooting assistance with particularly difficult flour/gluten quality issues.

- Developed a 5 year strategic plan for the Ontario Cereal Industry Research Council (OCIRC) after the departure of the cereals program chair at the University of Guelph
- Delivered technical content (presentations and print publications) on behalf of clients in support of scientific communication and outreach efforts to international industry audiences
- Provided technical guidance and troubleshooting assistance to clients resolving flour quality issues impacting processing performance
- Organized a seminar on measuring gluten quality on behalf of a client at the 12<sup>th</sup> International Gluten Biotechnology Workshop in Perth, Australia (Sept. 13 – 15, 2015)

*Post-doctoral Fellow*, University of Guelph, Canada

2011-2013

I was the lead post-doctoral fellow working under the late Dr. Koushik Seetharaman. I was brought on to initiate and lead a protein research group to complement the larger starch research group, and this role evolved to a larger leadership role in the laboratory as a whole.

- Managed research projects in excess of \$1,000,000 by supervising and mentoring over 35 undergraduate and graduate students, research technicians, and post-doctoral fellows in a multicultural environment
- Successfully leveraged industry funding with government funded proposals for collaborative interdisciplinary research projects worth \$100,000+ over 2 years

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## COMMITTEES

### *Cereal Foods World*

2016-present

- Editor-in-chief – 2020
- Special guest editor – Nov/Dec 2018; Jul/Aug 2017
- Served as part of a cross-functional advisory panel to re-envision and develop a digital platform for the publication

### *Ontario Cereal Crop Committee (OCCC) Quality Sub-Committee*

2015-2018

- Co-chair – 2017
- Evaluate the quality of candidate cultivars of wheat, oats, and barley submitted for registration and make recommendations on candidates for commercial release in Ontario

### *American Association of Cereal Chemists International (AACCI) Protein Division Leadership*

2016-2018

- Secretary/Treasurer – 2016; Vice Chair – 2017; Chair – 2018

### *American Association of Cereal Chemists International (AACCI) Ad-Hoc Advisory Board*

2014

- Served with a team of academic, industry, and government leaders to make recommendations regarding the repositioning of the AACCI organization

## SOCIETY MEMBERSHIP

American Association of Cereal Chemists International (AACCI)

2006-present

Institute of Food Technologists (IFT)

2004-present

## PUBLICATIONS

### *Refereed Publications*

14. BOCK JE. 2019. The structural evolution of water and gluten in refined and whole grain breads: a study of soft and hard wheat breads from postmixing to final product. *Cereal Chem* 96:520-531.

13. Wang J, GG Hou, T Liu, N Wang and J BOCK. 2018. GlutoPeak method improvement for gluten aggregation measurement of whole wheat flour. *LWT-Food Sci Technol* 90:8-14.

12. Issarny C, W Cao, D Falk, K Seetharaman and JE BOCK. 2017. Exploring functionality of hard and soft wheat flour blends for improved end-use quality prediction. *Cereal Chem* 94:723-732. **AACCI Texture Technologies Best Paper Award 2018**

11. JE BOCK and P Deiters. 2017. Laboratory scale extrusion: open the black box of extrusion processing for improved product development. *Cereal Foods World* 62:151-155.

10. Cao W, D Falk and JE BOCK. 2017. Protein structural features in winter wheat: benchmarking diversity in Ontario hard and soft winter wheat. *Cereal Chem* 94:199-206.

9. Marti A, JE BOCK, MA Pagani and K Seetharaman. 2016. A comparison of protein structural conformation in doughs from wheat flour, intermediate wheatgrass (*Thinopyrum intermedium*) flour, and their blends. *Food Chem* 194:994-1002.

8. BOCK JE, R West, S Iametti, F Bonomi and K Seetharaman. 2015. Gluten structural evolution during pasta processing of refined and whole grain pasta: The influence of mixing, drying, and cooking. *Cereal Chem* 92:460-465.
7. Jazaeri S, JE BOCK, MP Bagagli, S Iametti, F Bonomi, and K Seetharaman. 2015. Structural evolution of gluten proteins in strong and weak dough during mixing. *Cereal Chem* 92:105-113.
6. Bagagli MP, S Jazaeri, JE BOCK, K Seetharaman and HH Sato. 2014. Effect of transglutaminase, citrate buffer and temperature on a soft wheat dough system. *Cereal Chem* 91:460-465.
5. BOCK JE, RK Connelly and S Damodaran. 2013. Impact of bran addition on water properties and gluten secondary structure in wheat flour doughs studied by attenuated total reflectance Fourier transform infrared spectroscopy. *Cereal Chem* 90:377-386.
4. BOCK JE and S Damodaran. 2013. Bran-induced changes in water structure and gluten conformation in model gluten dough studied by Fourier transform infrared spectroscopy. *Food Hydrocolloids* 31:146-155.
3. BOCK JE and K Seetharaman. 2012. Unfolding gluten: an overview of research on gluten. *Cereal Foods World* 57:209-214.
2. BOCK JE and RK Connelly. 2008. Innovative uses of near-infrared spectroscopy in food processing. *J Food Sci* 73:R91-R98.
1. BOCK JE, GA Milliken and KA Schmidt. 2008. Best mixing practices to minimize the casein size of reconstituted nonfat dry milk. *J Food Process Pres* 32(1):60-74.

*Book Chapters*

2. BOCK JE, CW Wrigley, and CE Walker. 2016. Bakeries: the source of our unique wheat-based food – bread. In: *The encyclopedia of food grains*. 2<sup>nd</sup> ed. Eds: H Corke, K Seetharaman, J Faubion, and CW Wrigley. Elsevier, Ltd.: Kidlington, UK. Vol. 3, pp 335-342.
1. BOCK JE. 2015. Enzymes in bread making. In: *Improving and tailoring enzymes for food quality and functionality*. Ed: R Yada. Woodhead Publishing: Cambridge, UK. pp 181-198.