

# KARYN BIASCA

## CURRICULUM VITAE

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### FORMAL EDUCATION

- The Institute of Paper Chemistry (Lawrence University), Appleton, Wisconsin, Doctor of Philosophy, June 1989  
Dissertation Topic: A Study of the Kinetics of Delignification During the Early Stage of Alkaline Sulfite Anthraquinone Pulping
- The Institute of Paper Chemistry (Lawrence University), Appleton, Wisconsin, September 1984-June 1986, Master of Science (Pulp and Paper Technology), June 1986
- The University of California at Los Angeles (UCLA) September 1977-December 1981, Bachelor of Science (Chemical Engineering), December 1981

### POSITIONS HELD

- May 2013-present: Chair, Department of Paper Science and Chemical Engineering, University of Wisconsin - Stevens Point, Stevens Point, Wisconsin
- April 2007 - present: Professor, Department of Paper Science and Chemical Engineering, University of Wisconsin - Stevens Point, Stevens Point, Wisconsin
- June 1994 - April 2007: Associate Professor, Department of Paper Science and Engineering, University of Wisconsin - Stevens Point, Stevens Point, Wisconsin
- January 1989 - June 1994: Assistant Professor, Department of Paper Science and Engineering, University of Wisconsin - Stevens Point, Stevens Point, Wisconsin
- January 1988 - March 1988: Teaching Assistant (statistical methods) The Institute of Paper Chemistry, Appleton, Wisconsin
- June 1986 - August 1986: Laboratory Assistant (pilot supercalender) Wartsila - Appleton Inc., Appleton, Wisconsin
- February 1982 - July 1984: Process Engineer, Kimberly - Clark Corporation, Fullerton, California
- August 1980 - December 1981: Senior Reactor Operator, UCLA Nuclear Energy Laboratory, Los Angeles, California

### PUBLICATIONS

- Biasca, K. L. "Using ePortfolio to Assess General Education Program Learning Outcomes", Distance Teaching and Learning Conference, Madison, WI (August 2016)
- Biasca, K. L. "Using ePortfolio and Brightspace to Assess General Education Program Learning Outcomes", UW System LTDC Virtual Showcase (April 2016)
- Biasca, K. L. "Using Course Management Software to Assess ABET Student Outcomes Development During Industrial Internships", ABET Symposium (April 2012)
- Biasca, K. L. and S. Hill. "Assessment of ABET Student Outcomes During Industrial Internships", American Society for Engineering Education Annual Meeting and Conference (June 2011)
- Biasca, K. L. "Wood Fibers", Chapter 1, *The Pulp and Paper Technology Advanced Workforce Training and Education Series: 2005 - 2008*, TAPPI Press (2007)
- Biasca, K. L. "Kraft Pulping", Chapter 4, *The Pulp and Paper Technology Advanced Workforce Training and Education Series: 2005 - 2008*, TAPPI Press (2007)

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- Biasca, K. L. "Bridging Hurdles-Recreating an Introductory Engineering Course Using Backward Design", in "Views from the Bridge: A collection of essays that share the professional journeys of colleagues," S. Gingrasso, L. Owen Wilson, eds. (June 2006)
- Biasca, K. L. "Learning to Pulp - Helping Kids", TAPPI Frontline Focus, TAPPI Press (June 2006)
- Biasca, K. L. "The Development of an Online Psychometric Chart Tutorial," American Society for Engineering Education Annual Meeting and Conference, Best Poster - Honorable Mention (June 2005)
- Biasca, K. L. "The New York Times Recycling Project," 2005 TAPPI Practical Papermaking Conference (May 2005)
- Biasca, K. L. "Survey of Pulp Mill Use of Anthraquinone," TAPPI Journal 81(1):78-9 (1998)
- Biasca, K. L. "Ethanol Production from Paper Mill Waste," NCASI Central — Lake States Regional Meeting (1994)
- Biasca, K. L., Misovich, M. "The Use of Spreadsheet Software in the Solution of Mass and Energy Balance Problems," Chemical Engineering Education (1990)
- Biasca, K. L., McDonough, T. J. "Study of Pulping Kinetics During the Early Stage of Alkaline Sulfite Anthraquinone Pulping," AIChE For. Prod. Symp. p. 5-24 (1990)
- Abubakr, S., Misovich, M. and Biasca, K. "The Use of Case Studies from the Pulp and Paper Industry in a Mass and Energy Balances Course," AIChE Annual Meeting Proc. (1989)
- Horvath, J. J., Biasca, K. L. et al. "Laser Induced Fluorescence for Measurement of Lignin Concentrations in Pulping Liquors," Proc. SPIE — Intl. Society of Optical Engineers, 961 (Industrial Optical Sensing): 68-77 (1988)

## PRESENTATIONS

- Biasca, K. Participant on panel discussion "Navigating the New Economy" sponsored by WisPolitics; Appleton, WI (Sept 20, 2018)
- Biasca, K. "Engineering Ethics" training for Jacobs Engineering (May 2018)
- Biasca, K. "The Paper Industry in Wisconsin", presentation for the Wisconsin Idea Seminar (May 2017)
- Biasca, K. and DeHart, P. "Assessment Planning for Academic Programs", faculty workshop (October 2015)
- Sage, J., DeHart, P. and Biasca, K. "General Education Assessment: Where's the Learning in Faculty Learning Communities?", Annual Conference of the Higher Learning Commission (April 2014)
- Biasca, K. L. "Program Level Assessment using the Competencies and Rubrics Tools", Desire2Learn Ignite Regional User Forum, Madison, WI (November 2013)
- Biasca, K. L. "Using Course Management Software to Assess ABET Student Outcomes Development During Industrial Internships", UW System ePortfolio Faculty Showcase (June 2012)
- Biasca, K. L. "I confess. I'm a Technology Geek." Keynote address for 2012 UW-System Central Regional Conference, Using Technology for Solving Problems-Saving Time, March 16, 2012 ----UW Green Bay
- Biasca, K. L. "Saving Time on Program Assessment using D2L's ePortfolio", 2012 UW-System Central Regional Conference, Using Technology for Solving Problems-Saving Time, March 16, 2012 ----UW Green Bay
- Biasca, K. L. "D2L and ePortfolio for Assessment", faculty workshop leader (June 2011)
- Biasca, K. L. "ePortfolio Basics", faculty workshop leader (June 2011)

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- Biasca, K. L., J. Steinmetz, D. Hastings and S. Hill. "Teaching and Learning Using D2L ePortfolio", University of Wisconsin System President's Summit on Excellence in Teaching and Learning (April 2011)
- Biasca, K. L. "Assessment of Industrial Internships", University of Wisconsin System D2L ePortfolio Showcase (September 2010)
- Biasca, K. L. "Electronic Portfolios", faculty workshop leader (June 2010)
- Biasca, K. L. "Electronic Portfolios at UWSP: Program Level Assessment in Engineering", UW System ePortfolio Showcase (April 2010)
- Biasca, K. L. and D. Guay. "Assessment Strategies in Writing Emphasis", UW-Stevens Point 14<sup>th</sup> Annual Teaching Conference (January 2010)
- Biasca, K. L., P. Ploetz and D. Guay. "Portfolios: A New Technology from a New Perspective," WISCNet Future Technologies Conference (April 2006)
- Biasca, K. L. "Bleaching Recycled Fiber", presentation for BTG Tissue Seminar, Green Bay, WI (November 2005)
- Guay, D., Arthur, J. and Biasca, K. "Choosing and Using Control Charts for Pulp and Paper," 2005 TAPPI Practical Papermaking Conference (2005)
- Biasca, K. L. "New York Times Recycling Project", project reception, UWSP (May 2005)
- Biasca, K. L. "Outcomes Based Course Design", Curriculum Redesign Program, UWSP (June 2004)
- Biasca, K. L. "Assessment in Online Courses", Curriculum Redesign Program, UWSP (June 2004)
- Biasca, K. L. "Air, Water and Learning Objects", presented for IT Brownbag (February 2004), UWSP Line Officers (March 2004) and Board of Regents Campus Visit (April 2004)
- "Writing Emphasis in the Paper Science Major", UWSP Teaching and Learning Summit (April 2001)
- Biasca, K. L. "A Technical Course on the Web", Faculty Technology Series, UWSP (December 1999)
- Biasca, K. L. "Classroom Assessment Techniques", CNR Brown Bag Series, UWSP (April 1999)
- Biasca, K. L. Alumni Panel, The Institute of Paper Science and Technology, Atlanta, GA (1993, 1996)
- Biasca, K. L. "Pulping and Bleaching" in Value Added Processing of Secondary Fibers, Lake States TAPPI, Appleton, WI (1993)
- Biasca, K. L. "Hot Topics in Paper Machines" in Paper Machine Operations, Lake States TAPPI, Appleton WI (1991)
- Biasca, K. L. "A Fluorescence Technique for Measurement of Dissolved Lignin Concentration", Institute of Paper Chemistry - Executives' Conference, Appleton, WI (May 1987)
- Biasca, K. L. "The Use of a Flow-Through Reactor for the Study of Pulping Kinetics", Institute of Paper Chemistry - Executives' Conference, Appleton, WI (May 1986)

## FUNDING FOR RESEARCH AND DEVELOPMENT

- UWSP Research and Creative Activities Grant: "Update and Evaluation of the Efficacy of an Online Psychrometric Chart Tutorial", \$750 (2016)
- University of Wisconsin System Innovation Fund: "UWSP Web-based Learning Outcome Tool", \$19,283 (2015)
- University of Wisconsin System Economic Development Incentive Grant: "Economic Development through Innovations in Specialty Papers, Packaging and Converting", \$1,445,336 (2013)

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- University of Wisconsin System: Supporting the Growth Agenda, “Desire 2 Learn’s ePortfolio: Can it meet a variety of curricular and co-curricular assessment needs?”, \$63,816 (2010)
- Wisconsin Institute for Sustainable Technology, WIST Scholar Grant, Development of an “Introduction to Life Cycle Assessment” course, \$7,935 (2010)
- Faculty Technology Grant, UWSP CNR, \$749 for equipment (2005)
- Faculty Technology Grant, UWSP CNR, salary + \$1000 for equipment (1999)
- IBM CIM in Higher Education Grant, \$180,000 in equipment donated (1994)
- Razvi, A., Chitaranjan, D., and Biasca, K. Ethanol Feedstock Resource Assessment, \$150,000 (1993)
- Ozone Bleaching of Secondary Fiber, Cross Pointe Paper, \$6150 (1993)
- Ozone Bleaching of Secondary Fiber, UWSP UPDC Grant, \$2500 (1993)

## PAPERS, CHAPTERS AND GRANT APPLICATIONS REVIEWED

- Akili, W. “The Contribution of an Adjunct Faculty in Addressing the Practice in a Geotechnical Engineering Class,” ASEE/IEEE Frontiers in Engineering Education Conference (2006)
- Campbell, B. K. and Empie, H. J. "Improving Clarifier Performance through Decreased Backmixing," The Canadian Journal of Chemical Engineering (2005)
- Montgomery, D. Reviewed two chapters from the textbook "Engineering Statistics", 4th edition, J. Wiley & Sons, Inc. (2005)
- United States Department of Agriculture, Cooperative State Research, Education and Extension Program, National Research Initiative Competitive Grants Program Proposal Reviewer (1996-97)
- U. S. Department of Energy, Notice of Program Interest #DE-NP02-93CH10566 for Research, Development and Demonstration of Advanced Technologies for the Pulp and Paper Industry (1993)
- Renders, A., Solvay Interox, Brussels, Belgium, "Hydrogen Peroxide and Related Chemical Additives in Deinking Processes," reviewed for publication in TAPPI Journal (1993)
- Hatton, J. V., Pulp and Paper Research Institute of Canada, Vancouver, British Columbia, "Kraft Pulp of Second Growth Jack Pine," reviewed for publication in TAPPI Journal (1992)

## SERVICE TO THE UNIVERSITY

- Howard Hughes Medical Institute STEM Inclusive Excellence grant committee (2020-present)
- General Education Committee (2018-2020)
- Assessment Subcommittee (2011-2017)
- Campus Team Leader, Higher Learning Commission (HLC) Academy for the Assessment of Student Learning (2008-2010)
- Assessment Subcommittee Co-chair (2008-2010)
- Steering Committee Co-chair and Mission and Integrity Task Force Chair, UWSP HLC Accreditation (2006-2008)
- Ad Hoc Committee, Teaching and Learning Center (2005)
- Ad Hoc Committee, Student Reaction to Course Instruction (2001-2003)
- Faculty Affairs Committee Chair (2001-2003)
- Committee on the Status of Women (2000-2003)
- Faculty Athletics Representative - Women's Sports (1999-2004)

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- Academic Affairs Committee (1999-2001)
- Faculty Senate (1997-99, 2000-2002, 2006)
- Wisconsin Women in Higher Education Leadership Steering Committee (1998-2003)
- College Days for Kids (1995-2003)
- Faculty Mediation Subcommittee (1995-1999)
- Information Technology Administrative Structure Review Committee (1996-97)
- Affirmative Action Committee (1990-92)
- Women in Science Day (1990-1998, 2011-)
- Odyssey of the Mind (1990-1994)

## **SERVICE TO THE COLLEGE OF NATURAL RESOURCES**

- CNR Dean's Council (2013-present)
- Led process leading to UW System approval of new Chemical Engineering B.S. major (2013-2015)
- Environmental Engineering Ad Hoc Committee (2011-12)
- Assessment Committee (2006-2011)
- Computer Committee (1994-2012)
- Curriculum Committee (2000-2004, 2012-2014)
- Human Resources Committee (1990-91)
- Ad Hoc Committee on Tenure and Promotion Guidelines (1992)
- CNR Career Days (1990-1997)
- Natural Resources Careers Workshops for High School Teachers and Guidance Counselors (1990-1997)

## **SERVICE TO THE DEPARTMENT OF PAPER SCIENCE AND CHEMICAL ENGINEERING**

- ABET Accreditation site visit coordinator (2020)
- Obtained UW System approval for new Chemical Engineering major (2013-15)
- Engineering Accreditation Coordinator (2006-present)
- Liaison to ABET (2006-present)
- Leader of department strategic planning (2002-2003, 2016-present)
- American Society for Engineering Education Campus Representative (2000-present)
- Recruiting high school students with high potential for success in engineering, particularly from under-represented groups (2000-present)
- Assessment Coordinator (1997-present)
- Faculty Advisor to the Student Chapter of TAPPI/PIMA (1993-present)
- Faculty Advisor to the AIChE Student Chapter (2015-present)
- Coach students in resume preparation and successful interviewing (2000-present)
- Paper Machine Computer Control System (1994-2009)
- Schedule Paper Science and Engineering courses (1991-present)
- Prospective Student Visits and Tours (ongoing)

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## HONORS AND AWARDS

- Elected to Board of Directors, Technical Association of the Pulp and Paper Industry (2021)
- University of Wisconsin - Stevens Point University Service Award (2016)
- College of Natural Resources Professional Service Award (2015)
- Who's Who Among American Women (2008)
- University of Wisconsin - Stevens Point Excellence in Teaching Award (2005)
- "Who's Who Among America's Teachers" (1998, 2005, 2006)
- "Going the Extra Mile" Award, UWSP Extension (1999)
- "High Tech Teacher" profile in UWSP Sundial (1996)
- Computer Integrated Manufacturing (CIM) in Higher Education Leadership Award, IBM Corp. (1995)

## TEACHING

Catalog descriptions of courses taught for the Paper Science and Engineering Department, UWSP

**PSEN 103. Paper, Society and the Environment.** 3 cr. Study lifecycle of paper; raw materials; manufacturing; economic impact on society, recycling and sustainability; alternative disposal methods; impact on environment; policy and politics of pulp and paper industry.

**PSEN 105. Freshman Forum.** 1 cr; pass/fail. Orientation to technical and professional aspects of paper and allied industries; presentations by students, faculty, and guest lecturers.

**PSEN 210. Pulp and Paper Laboratory Methods.** 3 cr. Laboratory methods in pulp, paper, and nonfibrous testing; microscopic techniques; emphasis on statistical analysis of data.

**PSEN 215. Introduction to Process Engineering Calculations.** 4 cr. Basic principles and techniques of engineering problem formulation and solution; material and energy balances, including chemical reactions and studies of advanced systems; thermodynamic properties and engineering data information management; introduction to computer modeling and simulation; applications to pulp and papermaking process engineering.

**PSEN 300. Mill Internship.** 3 cr. Paper science majors work 10 weeks in a pulp and paper mill, with emphasis on manufacturing assignments; comprehensive report required.

**PSEN 216 (314). Engineering Statistical Design and Analysis.** 3 cr. Statistical methods for the design, analysis and improvement of engineering experimentation and process operation: experimental design, regression analysis, modeling, analysis of variance, and evolutionary operation.

**PSEN 340. Chemical Kinetics and Reactor Design.** 3 cr. Fundamentals of chemical kinetics and catalysis. Introduction to analysis and design of homogenous and heterogenous chemical reactors.

**PSEN 350. Wood and Pulping Technology.** 4 cr. Cellulose, hemicelluloses, lignin, wood extractives, wood and fiber microstructure; commercial pulping and bleaching processes. Effective use of technical literature and presentation of information.

**PSEN 385. Systems Engineering and Simulation.** 3 cr. Modeling and simulation of pulp and papermaking systems; computer systems analysis; commercially available simulation hardware and software; model building for engineering systems; industrial case histories and economic systems optimization.

**PSEN 390. Special Topics in Paper Science.** 3 cr. Advanced Topics in Pulping and Bleaching; pulping additives; advances in pulp bleaching; Cluster Regulations

**PSEN 399. Research Problem.** 1-3 cr. Chemical Engineering and/or Paper Science and Engineering majors may arrange for special laboratory or field research in consultation with staff and

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industry. Emphasizes problem analysis, literature searches, and communication of research results. Credit is based on scope of project.

**PSEN 430. Mass Transfer Operations.** 3 cr. Fundamental concepts; mass transfer coefficients; gas absorption; filtration; extraction; pulp washing systems; sedimentation; cooling, humidification, air conditioning; drying; applications specific to pulp and paper processes; study of field operations.

**PSEN 445. Paper Coating and Converting.** 3 cr. Pigment coating materials and processes; converting operations including laminating, corrugating, extrusion and hot melt coating; functional coatings; presentation of information by staff and guest lecturers.

**PSEN 460. Process Dynamics and Control** 3 cr. Dynamic model formulation and solution, using Laplace transform, analog, and digital computing techniques; control theories, strategies, and equipment; controller tuning; applications to pulp and paper processes; field trips.

**PSEN 475. Paper Machine Operations.** 3 cr. Hydrodynamics of fibrous suspensions; dynamics of sheet formation and water removal; fundamentals of pressing; analysis of the drying process in terms of heat and mass transfer; engineering calculations performed on full scale production paper machines; field trips to paper mills and affiliated industries.

**PSEN 484. Engineering Design I.** 2 cr. Engineering economics; interest and economic equivalence; methods of comparing project and investment alternatives. Ethical and professional issues in engineering. Basic principles of process design.

**PSEN 486. Engineering Design II.** 3 cr. Engineering economics; interest and economic equivalence; methods of comparing project and investment alternatives. Individual student project includes project definition, equipment selection and sizing, capital and operating cost estimation, economic evaluation and justification; oral and written presentations.

**PSEN 489. Industrial Environmental Management.** 3 cr. Regulations, economic, and technical aspects of industrial waste (air, water, solid, and hazardous) generation, alternative methods of treatment, and release of treated materials to the environment.