

Arun K. Bhunia, BVSc, PhD
Professor of Food Microbiology

Address

Department of Food Science
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Research Focus

- Microbial pathogenesis, host immune response, and bioengineered probiotics approach in mitigating foodborne pathogen infection
- Pathogen and toxin detection using mammalian cell-based biosensors and immunosensors.

Affiliation at Purdue and Beyond

- Chair, Interdepartmental Food Science Graduate Program (08/2017– Present)
- The Purdue Institute of Inflammation, Immunology, and Infectious Diseases (PI4D) (2017-Present)
- Chair, Microbiology Training Group, Purdue University Life Sciences Program (PULSe) (2015-2018)
- Guest Professor, Southwest University for Nationalities, Chengdu, China (2014-2016)
- Department of Comparative Pathobiology (College of Veterinary Medicine) (2010-Present)
- Center for Food Safety Engineering (CFSE) (1999-Present)

Academic Record

- 1984 **B.V.Sc. & A.H.** (Veterinary Medicine & Animal Husbandry), Bidhan Chandra Krishi Viswa Vidyalaya (currently West Bengal University of Animal and Fishery Sciences), West Bengal, India
- 1989 **Ph.D.** (Food Microbiology), University of Wyoming, Laramie, WY, USA, Mentor: Prof. Bibek Ray
- 1995 **Postdoctoral Training** (Food Microbiology, Immunology), University of Arkansas, Fayetteville, AR, USA, Mentor: Prof. Michael G. Johnson

Positions Held

Aug 2010–Present	Professor, Department of Comparative Pathobiology (Courtesy), Purdue Veterinary Medicine
Aug 2004–Present	Professor, Dept. of Food Science, Purdue University, West Lafayette
Aug 2000–Jul 2004	Associate Professor, Department of Food Science, Purdue University
Aug 1998–Jul 2000	Assistant Professor, Department of Food Science, Purdue University, West Lafayette, IN
Jun 1995-Aug 1998	Assistant Professor, Department Food and Animal Sciences, Alabama A&M University, Normal (Huntsville), AL
Jan 1997-Aug 1998	Adjunct Assistant Professor, Department of Biological Science, Univ of Alabama at Huntsville, Huntsville, AL

Aug 1992-Jun 1993	Visiting Assistant Professor, Department of Biological Sciences, University of Arkansas, Fayetteville, AR
Sep 1990-May 1995	Interim Director of Hybridoma Laboratory, University of Arkansas Biotechnology Center, Fayetteville, AR
Aug 1989-May 1995	Research Associate, Department of Food Science, University of Arkansas, Fayetteville, AR
Aug 1985 - Jul 1989	Research Assistant, Department of Animal Sciences, University of Wyoming, Laramie, WY

Leadership Training

LEAD²¹ – Leadership for the 21st Century – Fanning Institute, University of Georgia, Athens, GA (2005-2006)

Professional Awards and Honors

2017	Maurice Weber Laboratorian Award, International Association for Food Protection (IAFP), Des Moines, IA
2017	GMA Food Safety Award, IAFP, Des Moines, IA (Purdue CFSE Team Award recipient)
2016	Purdue Innovator Hall of Fame Inductee (for Detecting Foodborne Pathogens)
2016	Bravo Award, Purdue University
2016-2023	Fulbright Specialist Roster, Washington, DC; Taught Microbiology and Pathogen Detection at Medical College, Sumy State University, Sumy, Ukraine (2016, 2019)
2014-2016	High-End Foreign Experts Recruitment Program (China) and taught 2 weeks at Southwest University for Nationalities, Chengdu, China
2013-2017	NACMCF member (National Advisory Committee on Microbiological Criteria for Foods; appointed by USDA Secretary Vilsack): USDA-FSIS, Washington, DC
2013	Outstanding Graduate Educator: College of Agriculture, Purdue University
2012	Panelist: NASA Forum on Next-generation Microbiology Food Requirements for Spaceflight: Houston, TX
2011	Omicron Chapter of Phi Zeta Honor Society
2010, 2011	Outstanding Graduate Educator: Department of Food Science, Purdue University
2009	Institute of Food Technologist (IFT) Research and Development Award
2008	College of Agriculture Millionaire's Club
2006	Purdue Agriculture 2006 Team Award
2005-2010	University Faculty Scholar
2003	Purdue Agriculture Research Award
2003	Phi Tau Sigma, Food Science Honor Society
1998	Outstanding Researcher, Dept. of Food and Animal Sci, Alabama A&M University
1998	Outstanding Teacher, Dept. of Food and Animal Sciences, Alabama A&M University
1990	Outstanding Dissertation Award, College of Agriculture, Univ. of Wyoming
1986	First Place in Poster Competition, IFT Branch Meeting, Fort Collins, CO
1986	Gamma Sigma Delta: University of Wyoming, WY

Membership in Academic, Professional and Scholarly Societies

- American Society for Microbiology (ASM) (1987-Present)
- Institute of Food Technologists (IFT) (1987-Present)
- International Association for Food Protection (IAFP) (2008-Present)
- International Society for Microbial Ecologist (ISME) (2015-2016)
- Society for Photo Instrumentation and Optical Engineers (SPIE) (2004-2011)
- American Association for the Advancement of Science (1990-2007).

Teaching Activities at Purdue

Course	Credit	Title and Course Content	Semester
FS565	3	Microbial Foodborne Pathogens (Lecture) (Contents: Mechanism of pathogenesis, immunology and host-pathogen interactions, detection and control)	Every other Spring (Started in 1999)
FS566	2	Microbial Techniques for Food Pathogens (Laboratory course) (Contents: Conventional, immunological, molecular, cell culture- and biosensor-based detection methods)	Every other Spring (Started in 2000)
FS660	1	Intestinal Microbiology and Immunology (Seminar/discussion course) Moderate weekly journal club seminar on current topics in intestinal microbiology, foodborne pathogens, probiotics, and intestinal immunology	Fall Every year (Started 2005)
Contributing Lectures			
HSCI201	3	Principles of Public Health Science: Guest lectures on "Food Safety and Public Health"	Spring, since 2006
CPB856	3	Veterinary Microbiology and Mycology (DVM students) Four lectures on bacterial pathogens	Fall: 2009, and Since 2012
HSCI575	2	Introduction to Environmental Health	Spring, 2012
CPB622	2	Microbial Pathogenesis (team-taught): lectures on "Mechanism of Pathogenesis for Foodborne Pathogens"	Fall, 2006-2010, 2017
CPB869	2	Veterinary Public Health and Zoonosis: lectures on "Foodborne Pathogens and Control"	Spring 2010
VM809	0.5	International Veterinary Medicine (Lecture: Food Safety, Foodborne Diseases, and Food Security)	Fall, 2010
Distance Education			
FS565	3	Microbial Foodborne Pathogens (Lecture) (Contents: Mechanism of pathogenesis, immunology and host-pathogen interactions, detection and control) Offered online to students at - Medical College, Sumy State University, Sumy, Ukraine - Gyeongsang National University, Jinju-si, Gyeongsangnam-do, South Korea	2017 Spring 2017 Fall 2017

Professional Activities and Services

- Editor-in-Chief:** *Open Journal of Medical Microbiology*, SR Publishing (2012-Present); *Open Journal of Applied Biosensor*, SR Publishing (2012-Present); Section **Editor-in-Chief** of Food Microbiology section of *Foods* (MDPI) (2018-Present)
- Associate Editor:** *Frontiers in Microbiology* (May 2019 – Present); *Frontiers in Sustainable Food Systems* (2020-Present); *BMC Microbiology* (2020-Present)
- Academic Editor:** *PLoS One* (Aug 2018-Present); *AIMS Microbiology* (2017-Present); *Foods* (2012-Present); *Indian Journal of Microbiology* (2008-2012)
- Editorial Board:** *Journal of Food Protection* (2002-Present); *Gut Pathogens* (2010-Present); *Frontiers in Cellular and Infection Microbiology* (2016-Present); *Indian Journal of Microbiology* (2007-Present); *AIMS Microbiology* (2017-Present); *Frontiers in Microbiology* (2016-Present); *Frontiers in Sustainable Food Systems* (2018-Present)
- Guest Editor:** *Journal of Biomedicine and Biotechnology* (2012: Hindawi Publishing Corp); "Foods" special issue on "Biosensors and Food Safety" (2012-2014) MDPI; *Sensors* special issue "Sensors for Food Safety and Quality" (2014-2015) MDPI; "Foods" special issue "Food Nanotechnology" (2016-

2017); "Foods" special issue on "Advances in Foodborne Pathogen Analysis" (2018-2019) MDPI; Sensors special issue "Sensors for Toxins and Pathogen Detection 2019" (2018-2019) MDPI

6. National and International Symposium Convenor/Moderator:

- **2018: IAFP2018:** The Future of Food Microbiology is Extra CRISPy: Novel Application of CRISPR Technology (Co-moderator: B. Brehm-Stecher), Salt Lake City, UT, July 8-11, 2018
- **2018:** Biodefense World Summit Symposium Organizer: Rapid Detection for Food Safety Symposium, Bethesda, MD, June 27, 2018
- **2017: IAFP2017:** Mechanisms of hypervirulence in selected foodborne pathogens (Co-moderator: B. Brehm-Stecher), Tampa, FL, July 9-12, 2017
- **2017:** Biodefense World Summit Symposium Organizer: Rapid Detection for Food Safety Symposium, Baltimore, MD, June 26-27, 2017
- **2016: SelectBio-**Food Safety & Analysis Congress 2016, Cambridge, UK, Sept 6-7, 2016
- **2016: IAFP2016:** St. Louis, MO, Nanophysical, Electrical, and Chemical Biology Approaches for Control of Bacterial Biofilms (Co-moderator: B. Brehm-Stecher) Aug 3, 2016.
- **2016: Biodefense World Summit Symposium Organizer:** Rapid Detection for Food Safety Symposium, Baltimore, MD, June 26-27, 2016
- **2015: IFT2015:** Portland, OR, Emerging Biocontrol Strategy for Food Safety (Co-moderator: B. Brehm-Stecher), July 12, 2015
- **2015: IAFP2015,** Portland, OR: Novel Frontiers in Microbiology – Recent Advances in Non-DNA based Rapid Microbial Detection and Identification Methods (Co-moderator: Amit Morey), July 2015
- **2015: Biodefense World Summit Symposium Organizer:** Rapid Detection for Food Safety Symposium, Bethesda, MD, June 22-23, 2015
- **2014: Biodefense World Summit Symposium Organizer:** Emerging Sensor Technologies for Food Safety Symposium, Baltimore, MD, June 12, 2014
- **2013: IAFP2013,** Charlotte, NC: Emerging Technologies for Detection and Characterization of Foodborne Pathogens, July 28-31, 2013.
- **2011:** The Sixth International Forum on Food Safety: Shanghai, China, Sept 26-29, 2011.
- **2010: IFT2010:** Automation and high throughput pathogen/toxin screening technologies for food safety and food defense: IFT Annual Meeting and Expo, Chicago, IL, July 19, 2010.
- **2010: IAFP:** Advances in detection technologies to address food safety and food defense needs: IAFP Annual Meeting, Anaheim, CA, Aug 1-4, 2010
- **2009: IAFP Korea:** Detection of Hazards, Asia-Pacific Symposium on Food Safety, IAFP-Korea, Seoul, South Korea
- **2009: SPIE** Defense, Security + Sensing: Sensing for Agriculture and Food Quality and Safety". SPIE.
- **LabAutomation 2008:** Foodborne Pathogens and Food Safety
- **2000, 2003-2006.** Detection and Intervention Technologies for Safe Food". SPIE, The International Society for Optical Engineering annual meeting, Photonic East

7. Associate Track Chair and Session Chair (Food Safety) LabAutomation 2008.

8. Chair, Detection and Typing Center, National Alliance for Food Safety (NAFS): 2001–2003.

9. Southern Regional Development Committee on "Biotechnology and Bioconversion Engineering and Processes" Purdue University representative: 2000-2003.

10. Reviewer for Grants

USDA-NIFA; USDA-Capacity Building Grants Program; USDA-CSREES; USDA-SBIR; FWF-The Board of the Austrian Science Fund; Technology Development Corporation (TEDCO) of Maryland Technology Transfer Fund; JSTO-CBD (Joint Science and Technology Office for Chemical and Biological defense proposals (2009); Science Foundation of Ireland (SFI) (2009; 2012; 2014); Science Foundation of Romania (June 2012); University of Wyoming Experiment Station grant (Oct 2012); Qatar National Research Fund (QNRF) (2013-Present); NASA Postdoctoral Program (2014, 2015); Mississippi State University Ag Exp Station (2015); AgSEED Indiana (2014, 2015, 2017), Purdue Vet Medicine (PVM, 2016); Innovation & Technology Commission, Hong Kong (2020); Canada Innovation Fund (2020).

11. Grants Review Panel Member

NIH- NIAID- Biodefense Special Emphasis Grant Program (2005); NSF-SBIR/STTR (2006, 2010, 2014, 2015, 2017); NIH Study Section (2018); USDA-NIFA (2010); Science Foundation of Ireland (2017). USDA-NIFA Biotechnology Risk Assessment Grants (2019)

12. External Examiner for Thesis/Dissertation

Reviewer for Ph.D. thesis from Indian Institute of Technology (IIT), Guwahati, India (2009; 2018), Anna University, India (2009), Birla Institute of Technology, India (2012), Indian Institute of Technology (IIT) Roorkee (2015); National Institute of Nutrition (ICMR), Hyderabad, India (2019); King Abdulaziz University, Saudi Arabia (2021)

13. Program Reviewer for University: Food Safety and Environmental Health program at University of Sharjah, Dubai, UAE (2010)

14. Institute of Food Technologist: Invited Panelists for IFT Research Summit, Las Vegas, NV (2012); IFT Research and Development Award Committee: As Chair of Jury (2013-2014) and Jury Committee Member (2012-2013); Reviewer of Abstracts for IFT Division of Biotechnology, Microbiology (2014, 2015); Abstracts competition review (2015); Undergraduate Research Competition Judge, IFT2015; IFT16 Session Proposal Reviewer

15. International Association for Food Protection: Member since 2008; Food Chemical Hazards and Allergy PDG member since 2010; Applied Laboratory Methods PDG since 2015; IAFP Nominating Committee (2015); IAFP Student Travel Award Selection Committee (2018, 2019).

Refereed Research Publications (197)

Google Scholar Citation Report (Feb 18, 2021):

h-index: 62; i10-index: 194 (Total Citations: 14,605)

1. Bhunia, A.K., Johnson, M.C. and Ray, B. **1987**. Direct detection of antimicrobial peptide of *Pediococcus acidilactici* in sodium dodecyl sulfate polyacrylamide gel electrophoresis. **J. Indust. Microbiol.** 2:319-322.
2. Bhunia, A.K., Johnson, M.C. and Ray, B. **1988**. Purification, characterization, and antimicrobial spectrum of a bacteriocin produced by *Pediococcus acidilactici*. **J. Appl. Bacteriol.** 65:261-268.
3. Bhunia, A.K., Johnson, M.C., Ray, B. and Belden, E.L. **1990**. Antigenic property of pediocin ACh, produced by *Pediococcus acidilactici*. **J. Appl. Bacteriol.** 69:211-215.
4. Bhunia, A.K., Johnson, M.C., Ray, B. and Kalchayanand, N. **1991**. Mode of action of pediocin ACh from *Pediococcus acidilactici* H on sensitive bacterial strains. **J. Appl. Bacteriol.** 70:25-33.
5. Bhunia, A.K., Ball, P.H., Fuad, A.T., Kurz, B.W., Emerson, J.W. and Johnson, M.G. **1991**. Development and characterization of a monoclonal antibody specific for *Listeria monocytogenes* and *L. innocua*. **Infect. Immun.** 59:3176-3184.
6. Motlagh, A.M., Bhunia, A.K., Szostek, F., Hansen, T.R., Johnson, M.C. and Ray, B. **1992**. Nucleotide sequence of pap-gene (pediocin ACh production) in *Pediococcus acidilactici*. **Letf. Appl. Microbiol.** 15:45-48.
7. Bhunia, A.K. and Johnson, M.G. **1992**. A modified method to directly detect in SDS-PAGE the bacteriocin of *Pediococcus acidilactici*. **Letf. Appl. Microbiol.** 15:5-7.
8. Bhunia, A.K. and Johnson, M.G. **1992**. Monoclonal antibody-colony immunoblot method specific for isolation of *Pediococcus acidilactici* from foods and correlation with pediocin (bacteriocin) production. **Appl. Environ. Microbiol.** 58: 2315-2320.

9. Bhunia, A.K., Ball, P.H., and Johnson, M.G. **1992**. A 20-24 h microcolony-immunoblot technique to directly detect and enumerate *Listeria monocytogenes* inoculated into foods. **J. Rapid Methods Automat. Microbiol.** 1:67-82.
10. Bhunia, A.K., and Johnson, M.G. **1992**. Monoclonal antibody specific for *Listeria monocytogenes* associated with 66-kDa cell surface antigen. **Appl. Environ. Microbiol.** 58:1924-1929.
11. Bhunia, A.K., Bhowmik, T.K. and Johnson, M.G. **1994**. Determination of bacteriocin encoding plasmids of *Pediococcus acidilactici* strains by Southern hybridization. **Letf. Appl. Microbiol.** 18:168-170.
12. Bhunia, A.K. **1994**. Monoclonal antibody-based enzyme immunoassay for pediocin of *Pediococcus acidilactici*. **Appl. Environ. Microbiol.** 60:2692-2696.
13. Bhunia, A., Steele, P., Westbrook, D., Bly, L., Maloney, T. and Johnson, M.G. **1994**. A six-hour *in vitro* virulence assay for *Listeria monocytogenes* using myeloma and hybridoma cells from murine and human sources. **Microb. Pathog.** 16:99-110.
14. Bhunia, A.K., Westbrook, D.G., Story, R. and Johnson, M.G. **1995**. Frozen-stored murine hybridoma cells can be used to determine the virulence of *Listeria monocytogenes*. **J. Clin. Microbiol.** 33:3349-3351.
15. Goff, J.H., Bhunia, A.K. and Johnson, M.G. **1996**. Complete inhibition of low levels of *Listeria monocytogenes* on refrigerated chicken meat with pediocin ACh bound to heat-killed *Pediococcus acidilactici* cells. **J. Food Protect.** 59 (11):1187-1192.
16. Bhunia, A.K. **1997**. Antibodies to *Listeria monocytogenes*. **Crit. Rev. Microbiol.** 23 (2):77-107. (**Review Article**)
17. Nannapaneni, R., Story, R., Bhunia, A.K. and Johnson, M.G. **1998**. Unstable expression and thermal instability of species-specific cell surface epitope associated with 66-kilodalton antigen recognized by monoclonal antibody EM-7G1 within serotypes of *Listeria monocytogenes* grown in nonselective and selective broths. **Appl. Environ. Microbiol.** 64:3070-3074.
18. Nannapaneni, R., Story, R., Bhunia, A.K. and Johnson, M.G. **1998**. Reactivities of genus-specific monoclonal antibody EM-6E11 against *Listeria* species and serotypes of *Listeria monocytogenes* grown in nonselective and selective enrichment broth media. **J. Food Prot.** 61:1195-1198.
19. Bhunia, A.K. and Westbrook, D.G. **1998**. Alkaline phosphatase release assay to determine cytotoxicity for *Listeria* species. **Letf. Appl. Microbiol.** 26:305-310.
20. Pandiripally, V.K., Westbrook, D.G., Sunki, G.R. and Bhunia, A.K. **1999**. Surface protein p104 is involved in adhesion of *Listeria monocytogenes* to human intestinal cell line, Caco-2. **J. Med. Microbiol.** 48:117-124.
21. Santiago, N.I., Zipf, A. and Bhunia, A.K. **1999**. Influence of temperature and growth phase on expression of a 104-kDa *Listeria* adhesion protein in *Listeria monocytogenes*. **Appl. Environ. Microbiol.** 65:2765-2769.
22. Bhunia, A.K. and Feng, X. **1999**. Examination of cytopathic effect and apoptosis in *Listeria monocytogenes*-infected hybridoma B-lymphocyte (Ped-2E9) lines. **J. Microbiol. Biotechnol.** 9:398-403.

23. Amoril, J.G. and Bhunia, A.K. **1999**. Immunological and cytopathogenic properties of *Listeria monocytogenes* isolated from naturally contaminated raw meats. **J. Food Safety** 19:195-207.
24. Westbrook, D.G. and Bhunia, A.K. **2000**. Dithiothreitol enhances *Listeria monocytogenes* mediated cell cytotoxicity. **Microbiol. Immunol.** 44:431-438.

2001

25. Roberts, P.H., Davis, K.C., Garstka, W.R. and Bhunia, A.K. **2001**. Lactate dehydrogenase release assay from Vero cells to distinguish verotoxin producing *Escherichia coli* from non-verotoxin producing strains. **J. Microbiol. Methods** 43:171-181.
26. Gomez, R., Bashir R., Sarikaya A., Ladisch M.R., Sturgis J., Robinson J.P., Geng T., Bhunia A.K., Apple H.L., Wereley S. **2001**. Microfluidic biochip for impedance spectroscopy of biological species. **Biomed. Microdev.** 3:201-209.

2002

27. Singh, N., Singh, R.K., Bhunia, A.K. and Stroshine, R.L. **2002**. Different surface inoculation methods with *Escherichia coli* O157:H7 affect the effectiveness of sanitizers on shredded lettuce. **Food Microbiol.** 19:183-193.
28. Jaradat, Z.W., Schutze, G.E. and Bhunia, A.K. **2002**. Genetic homogeneity among *Listeria monocytogenes* strains from infected patients and meat products from two geographic locations determined by phenotyping, ribotyping and PCR analysis of virulence genes. **Int. J. Food Microbiol.** 76:1-10.
29. Gomez, R., Bashir, R. and Bhunia, A.K. **2002**. Microscale electronic detection of bacterial metabolism. **Sens. Actuat. B: Chem.** 86:98-208.
30. Jaradat, Z.W. and Bhunia, A.K. **2002**. Glucose and nutrient concentrations affect the expression of a 104-kDa *Listeria* adhesion protein in *Listeria monocytogenes*. **Appl. Environ. Microbiol.** 68 (10):4876-4883.
31. Chang, H., Ikram, A., Kosari, F., Vasmatzis, G., Bhunia, A. and Bashir, R. **2002**. A microfabricated device for the characterization of biological species. **J. Vacuum Sci. Technol. B.** 20(5):2058-2064.
32. Singh, N., Singh, R.K., Bhunia, A.K. and Stroshine, R.L. **2002**. Efficacy of chlorine dioxide, ozone, and thyme essential oil, or a sequential washing in killing *Escherichia coli* O157:H7 on lettuce and baby carrots. **LWT-Food Sci. Technol.** 35:720-729.

2003

33. Menon, A., Shroyer, M.L., Wampler, J.L., Chawan, C.B. and Bhunia, A.K. **2003**. *In vitro* study of *Listeria monocytogenes* infection to murine primary and human transformed B cells. **Comp. Immunol. Microbiol. Infect. Dis.** 26 (3):157-174.
34. Singh, N., Singh, R.K. and Bhunia, A.K. **2003**. Sequential disinfection of *Escherichia coli* O157:H7 inoculated alfalfa seeds before and during sprouting using aqueous chlorine dioxide, ozonated water and thyme essential oil. **LWT-Food Sci. Technol.** 36:235-243.
35. Singh, A., Singh, R.K., Bhunia, A.K. and Singh, N. **2003**. Efficacy of plant essential oils as antimicrobial agents against *Listeria monocytogenes* in hotdogs. **LWT-Food Sci. Technol.** 36:787-794.

36. Jaradat, Z.W., Wampler, J.W. and Bhunia, A.K. **2003**. A *Listeria* adhesion protein-deficient *Listeria monocytogenes* strain shows reduced adhesion primarily to intestinal cell lines. **Med. Microbiol. Immunol.** 192:85-91.
37. Jaradat, J.W. and Bhunia, A.K. **2003**. Adhesion, Invasion, and translocation characteristics of *Listeria monocytogenes* serotypes in a Caco-2 cell and mouse model. **Appl. Environ. Microbiol.** 69 (6):3640-3645.
38. Huang, T.T., Sturgis, J., Gomez, R., Geng, T., Bashir, R., Bhunia, A.K., Robinson, J.P. and Ladisch, M.R. **2003**. Composite surface for blocking bacterial adsorption on protein biochips. **Biotechnol. Bioeng.** 81:618-624.
39. Huang, T., Geng, T., Sturgis, J., Li, H., Gomez, R., Bashir, R., Bhunia, A.K., Robinson, J.P. and Ladisch, M.R. **2003**. Lysozyme for capture of microorganisms on protein biochips. **Enz. Microb. Technol.** 33: 958-966.
40. Huang, T.T., Geng, T., Akin, D., Chang, W.J., Sturgis, J., Bashir, R., Bhunia, A.K., Robinson, J.P. and Ladisch, M.R. **2003**. Micro-assembly of functionalized particulate monolayers on C₁₈-derivatized SiO₂ surfaces. **Biotechnol. Bioeng.** 83:416-427.
41. Hahm, B.-K., Maldonado Y., Schreiber E., Bhunia, A.K. and Nakatsu, C.H. **2003**. Subtyping of clinical and environmental isolates of *Escherichia coli* by multiplex PCR, AFLP, REP-PCR, Box-PCR, PFGE and ribotyping. **J. Microbiol. Methods** 53:387-399.
42. Davis, K., Nakatsu, C., Turco, R., Weagant, S. and Bhunia, A.K. **2003**. Analysis of environmental *Escherichia coli* isolates for virulence genes using the TaqMan system. **J. Appl. Microbiol.** 95:612-620.
43. Shroyer, M. and Bhunia, A.K. **2003**. Development of a rapid 1-h fluorescence-based cytotoxicity assay for *Listeria* species. **J. Microbiol. Methods** 55:35-40.
44. Geng, T., Kim, K.P., Gomez, R., Sherman, D.M., Bashir, R., Ladisch, M.R. and Bhunia, A.K. **2003**. Expression of cellular antigens of *Listeria monocytogenes* that react with monoclonal antibodies C11E9 and EM-7G1 under acid-, salt- or temperature-induced stress environments. **J. Appl. Microbiol.** 95:762-772.
45. Lathrop, A.A., Jaradat, Z.W., Haley, T. and Bhunia, A.K. **2003**. Characterization and application of a *Listeria monocytogenes* reactive monoclonal antibody C11E9 in a resonant mirror biosensor. **J. Immunol. Methods** 281:119-128.

2004

46. Wampler, J.L., Kim, K.P., Jaradat, Z. and Bhunia, A.K. **2004**. Heat-shock protein 60 acts as a receptor for the *Listeria* adhesion protein in Caco-2 cells. **Infect. Immun.** 72(2):931-936.
47. Jaradat, Z.W., Bzikot, J.H., Zawistowski, J. and Bhunia, A.K. **2004**. Optimization of a rapid dot-blot immunoassay for detection of *Salmonella enterica* serovar Enteritidis in poultry products. **Food Microbiol.** 21:761-769.
48. Ariefdjohan, M.W., Nelson, P.E., Singh, R.K., Bhunia, A.K., Balasubramaniam, V.M. and Singh, N. **2004**. Efficacy of high hydrostatic pressure treatment in reducing *Escherichia coli* O157 and *Listeria monocytogenes* in alfalfa seeds. **J. Food Sci.** 69 (5):M117-120.

49. Zhang, P., Wampler, J.L., Bhunia, A.K., Burkholder, K.M., Patterson, J.A. and Whistler, R.L. **2004**. Effects of arabinoxylans on activation of murine macrophages and growth performance of broiler chicks. **Cereal Chem.** 81 (4):511-514.
50. Geng, T., Morgan, M.T. and Bhunia, A.K. **2004**. Detection of low levels of *Listeria monocytogenes* cells by using a fiber-optic immunosensor. **Appl. Environ. Microbiol.** 70: 6138-6146.

2005

51. Gray, K.M., and Bhunia, A.K. **2005**. Specific detection of cytopathogenic *Listeria monocytogenes* using a two-step method of immunoseparation and cytotoxicity analysis. **J. Microbiol. Methods** 60:259-268.
52. Gray, K.M., Banada, P.P., O'Neal, E. and Bhunia, A.K. **2005**. Rapid Ped-2E9 cell-based cytotoxicity analysis and genotyping of *Bacillus* species. **J. Clin. Microbiol.** 43 (12):5865-5872.
53. Maldonado, Y., Fiser, J.C., Nakatsu, C.H. and Bhunia, A.K. **2005**. Cytotoxicity potential and genotypic characterization of *Escherichia coli* isolates from environmental and food sources. **Appl. Environ. Microbiol.** 71 (4):1890-1898.
54. Chen, W.T., Hendrickson, R.L., Huang, C.P., Sherman, D., Geng, T., Bhunia, A.K. and Ladisch, M.R. **2005**. Mechanistic study of membrane concentration and recovery of *Listeria monocytogenes*. **Biotechnol. Bioeng.** 89:261-273.
55. Chen, W.T., Ladisch, M.R., Geng, T. and Bhunia, A.K. **2005**. Membrane for selective capture of microbial pathogen *Listeria monocytogenes*. **AIChE J.** 51:3305-3308.
56. Yang, L.J., Banada, P.P., Liu, Y.S., Bhunia, A.K. and Bashir, R. **2005**. Conductivity and pH dual detection of growth profile of healthy and stressed *Listeria monocytogenes*. **Biotechnol. Bioeng.** 92(6):685-693.

2006

57. Kim, K.P., Jagadeesan, B., Burkholder, K.M., Jaradat, Z.W., Wampler, J.L., Lathrop, A.A., Morgan, M.T. and Bhunia, A.K. **2006**. Adhesion characteristics of *Listeria* adhesion protein (LAP) – expressing *Escherichia coli* to Caco-2 cells and of recombinant LAP to eukaryotic receptor Hsp60 as examined in a surface plasmon resonance sensor. **FEMS Microbiol. Lett.** 256:324-332.
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33. Rajwa, B., Dundar, M.M., Akova, F., Patsekin, V., Bae, E., Tang, Y., Dietz, J.E., Hirleman, E.D., Robinson, J.P., and Bhunia, A.K. **2011**. Digital microbiology: detection and classification of unknown bacterial pathogens using a label-free laser light scatter-sensing system. *Proceedings of SPIE, Vol. 8029*

Research Abstracts Presented at National Meetings (Total published= 180)

Invited Lectures

Local/Regional/National (80)

1. "Molecular characterization and mechanism of action of a bacteriocin, Pediocin AcH" Division of Molecular Sciences and Microbiology, University of Memphis, Memphis, TN: Sep 1994.

2. "Application of immunology in biological research" Department of Plant and Soil Sciences, Alabama A&M University, Normal, AL: Oct 1995.
3. "Bacteriocin, a natural bacteria killer" Department of Food Science and Animal Industries, Alabama A&M University, Normal, AL: Nov 1995.
4. "Food safety: Detection and pathogenicity testing of foodborne pathogens" North Alabama Dietetic Association Meeting, Huntsville, AL: Sep 1997.
5. "Cytopathogenicity testing: Is it feasible for rapid detection of foodborne pathogens?" USDA-ARS, Eastern Regional Research Center (ERRC), Philadelphia, PA. Nov. 1999.
6. "Molecular food microbiology and food safety research". I-HELP Fellows, International Programs in Agriculture, Purdue University, Oct 30, 2000.
7. "Impedance spectroscopy and biochip sensor for detection of *Listeria monocytogenes*." SPIE, The International Society for Optical Engineering annual meeting, Boston, Mass. Nov 5-8, 2000.
8. "Food Safety, a global concern" to EMBA students in Food and Agribusiness (Distance education degree program) in the Department of Ag Economics, Purdue University, Nov 8, 2000.
9. "Foodborne Pathogen Detection: Biosensor - based approaches" Forum on Nanotechnology and the Food Industry. Institute of Food Technologist (IFT) national annual meeting, Anaheim, Calif. June 15-19, 2002.
10. "Foodborne pathogens- a continuous challenge" to Wabash chapter of the Indiana Environmental Health Association, Monticello (Indiana Beach), IN. August 1, 2002.
11. "Optical immunosensor for detection of *Listeria monocytogenes* and *Salmonella* Enteritidis from food" SPIE, The International Society for Optical Engineering annual meeting. Providence, RI. Oct 2003.
12. "Biosensor – the next frontier in pathogen detection" Auburn University, Auburn, AL. March 2004.
13. "State of antibody production and immunoassay for food pathogens" Eastman Chemical Company, Bristol, TN. Feb 18, 2005.
14. "Optical immunosensors and cell-based sensors for detection of *Listeria monocytogenes*". International Rapid Methods Workshop, Kansas State University, Manhattan, KS. June 22, 2005.
15. "Pathogenesis of *Listeria monocytogenes* and its detection strategies using micro/nano sensors" Department of Biology, Ball State University, Muncie, IN. Nov 4, 2005.
16. "Novel approaches for detection for *Listeria monocytogenes* in foods". International Rapid Methods Workshop, Kansas State University, Manhattan, KS. July 19, 2006.
17. "Biosensor-based detection methodologies for *Listeria* and *Bacillus*". The Southern Great Lakes Local Section of the Society for Industrial Microbiology. Abbott Laboratories, North Chicago, IL, October 14, 2006.
18. "Optical biosensors for pathogen detection" NC-1031 Nanotechnology and Biosensors, Regional Research Annual Meeting. Purdue University, Jan 22-23, 2007.
19. "Sample preparation and optical biosensors for pathogen detection" USDA-ARS-FSIS joint meeting, Shepherdstown, WV, Feb 21-22, 2007.
20. "Novel optical biosensors for foodborne pathogens" International Rapid Methods Workshop, Kansas State University, Manhattan, KS. June 20, 2007.
21. "Emerging biosensor technologies for pathogen detection" USDA-FSIS-NACMCF subcommittee meeting, Washington, DC, Sept 26, 2007.
22. "Multiplex detection of foodborne pathogens and toxins using optical biosensors" Southeastern Branch of ASM meeting, Auburn, AL. Nov 7-9, 2007.
23. "Novel optical biosensor methods for foodborne pathogens" Lab Automation 2008, Palm Springs, California. Jan 28-31, 2008.
24. "Optical biosensor platforms for multiplex detection of foodborne pathogens" SPIE Defense+Security, Orlando, FL. Mar 17-20, 2008.
25. "Novel biosensor technologies in food safety applications" Agriculture Industry Study Group, Industrial College of the Armed Forces Visit to Purdue University. March 27, 2008.
26. "Optical forward scattering for bacterial colony differentiation and identification" International Rapid Methods Workshop, Kansas State University, Manhattan, KS. June 18, 2008.
27. "Optical biosensors for multipathogen detection" 2008 AIChE Midwest Regional Conference. University of Illinois Chicago, Chicago, IL, Sept 23, 2008.

28. "Sample preparation and light scattering biosensors for pathogen detection" USDA-ARS-FSIS joint meeting, Shepherdstown, WV, Feb 17-18, 2009
29. "The BARDOT system for pathogen detection" International Rapid Methods Workshop, Kansas State University, Manhattan, KS. June 24, 2009.
30. "Detection Methods: From Conventional to Nanobiosensor and in between" Food Safety Summit, Purdue University, July 29, 2009
31. "Biosensor technologies for pathogens and toxins" IUCRC-CAPN Meeting, University of Illinois, Urbana, IL, Aug 31, 2009
32. "Advanced Biosensor Based Detection Methods" IFT Indiana-Illinois branch meeting, Covington Beef House, Sept 14, 2009
33. "RTE meats and intestinal phase of *Listeria monocytogenes* pathogenesis" IAFP Arkansas branch meeting, Springdale, AR, Oct 8-9, 2009
34. "Nanobiotechnology methods for detection of *Listeria monocytogenes* from RTE meats" IAFP Arkansas branch meeting, Springdale, AR, Oct 8-9, 2009
35. "*Listeria monocytogenes*: Intestinal phase of infection" Department of Pathobiology, Purdue University, Oct 22, 2009
36. "Rapid detection of foodborne pathogens" Spring Corporate Affiliate, F&N Department, Purdue University, Feb 26, 2010.
37. "Intestinal Phase of *Listeria monocytogenes* Infection and Label-Free Novel Biosensor Technologies for Detection". Dept of Food Science and Human Nutrition, University of Illinois, Urbana-Champaign, IL, March 19, 2010
38. "The BARDOT system for pathogen detection" 30th International Workshop/Symposium, Rapid Methods and Automation in Microbiology, Kansas State University, Manhattan, KS, June 16, 2010.
39. "Laser-based optical scattering technology for direct detection and typing of foodborne bacterial pathogens". ASABE 2010 Annual International Meeting, Pittsburgh, PA., June 20-23, 2010.
40. "High throughput screening of multiple pathogens and toxins using optical light scattering and cell-based sensors". Institute of Food Technologist Annual Meeting and Expo. Chicago, IL. July 18-21. 2010.
41. "Cell-based assays and light scattering sensors for toxins and pathogens". Annual Meeting of International Association for Food Protection. Anaheim, CA. Aug 1-4, 2010.
42. "Novel technologies for high throughput screening of pathogens and toxins". Thirtieth University of Wisconsin – River Falls Food Microbiology Symposium and Workshop. Oct 17-20, 2010.
43. "Intestinal Epithelial barrier crossing strategy for *Listeria monocytogenes*". Research Focus Meeting on Bacterial Infections. Purdue University Center for Global Research and Intervention in Infectious Disease (C-GRID), Feb 18, 2011
44. "Biosensors: Broad and Pathogen-Specific". BD Technologies, Durham, NC. March 17, 2011.
45. "*Listeria monocytogenes* Physiology and Pathogenesis". Indiana Environmental Health Association (IEHA), Tippecanoe Chapter, Lafayette, IN, June 9, 2011
46. "High throughput screening of foods for pathogens using biosensor" NSF-Workshop on Novel sampling and Sensing for Improving Food Safety" Georgia Tech Univ., Atlanta, GA June 16-17, 2011
47. "Harnessing light scattering for label-free identification of food-borne pathogens". ASABE meeting, Louisville, KY, Aug 8, 2011.
48. "Light scattering sensor: Biophysics of colony-light interactions". ASABE Annual Meeting, Louisville, KY, Aug 8, 2011.
49. "Novel Biosensor Tools and Pathogenic Mechanism: Complimentary Approaches to Food Safety". Department of Food Science and Human Nutrition, Iowa State University, Ames, IA, Sept 7, 2011.
50. "Novel biosensor technologies for high throughput screening of pathogens and toxins". 6th International Conference for Food Safety and Quality, Chicago, Nov 8-9, 2011
51. "Food Safety Related Research: Detection and Intervention". Food Safety for Fresh Fruits and Vegetables, Purdue Extension Staff Development, Fort Harrison State Park, IN, Nov 30th, 2011 (Via Skype).

52. "Light scattering and multi-pathogen screening sensors". IFT Annual Meeting Webinar in a session on "Rapid Detection Technologies for Foodborne Pathogens" May 18, 2012.
53. "Pathogens and toxins of concerns in Indian subcontinent and their entry into the food supply chain" in a symposium "Challenges in Microbiological Safety of Food Products and Food Security in the Indian Subcontinent" IFT Annual Meeting, Las Vegas, NV, June 27, 2012
54. "Novel techniques and advancements in the detection of foodborne pathogens" 1st Annual Food Safety and Midwest Workshop, Fort Wayne, IN, Sept 13, 2012.
55. "Novel biosensor technologies for high throughput screening of pathogens and toxins". 7th International Conference for Food Safety and Quality, Chicago, Nov 13-14, 2012
56. "Nano/Biosensors in pathogen detection". University of Wisconsin-Madison E. Michael Foster Food Safety Symposium, Food Research Institute 2013 Spring Meeting, May 22-23, 2013.
57. "Bacterial rapid detection using optical scattering technology (BARDOT)", IAFP Annual Meeting, Charlotte, NC, July 28-31, 2013
58. "Bacterial Pathogenesis and Nano/Biosensor Tools: A Complimentary Approach to Improving Food Safety". Purdue University–Calumet campus, Hammond, IN, Oct 22, 2013
59. "Novel biosensor technologies for high throughput screening of pathogens and toxins". 8th International Conference for Food Safety and Quality, Las Vegas, NV, Nov 5-6, 2013
60. "Foodborne Pathogen Detection and Intervention: Purdue Research Activities". Food Safety Modernization Act: How will it impact your clients? Indiana Continuing Legal Education Forum (ICLEF), Indianapolis, IN, Feb 27, 2014.
61. "Control Methods/Sanitation for Food Safety" A full day Workshop for Food HACCP, Chicago, IL, April 10, 2014.
62. "Laser Optical Sensor for Label-Free Rapid On-Plate Pathogen Screening" USDA-FSIS, Washington, DC, April 23, 2014 (via FoodShield, remote presentation)
63. "New Technology in Food Science" Indiana Food Safety and Defense Task Force, Indianapolis, IN, May 14, 2014.
64. "Light scattering and spectral pattern recognition for bacterial detection". Emerging Sensor Technologies for Food Safety Symposium, Baltimore, MD June 12, 2014.
65. "Light scattering and optical sensors for bacterial detection". Rapid Detection for Food Safety. Knowledge Foundation, Bethesda, MD June 22-23, 2015
66. "Bioengineered probiotics to targeted pathogen control". Institute of Food Technologist, Chicago, IL, July 12, 2015.
67. "One day to one hour: How quickly can foodborne pathogens be detected?" IAFP annual meeting, Portland OR, July 27, 2015
68. "On-plate bacterial colony identification using a laser light scattering sensor, BARDOT" IAFP annual meeting, Portland OR, July 27, 2015
69. "Control Methods/Sanitation for Food Safety" Two-day Workshop for Food HACCP, Chicago, IL, May 9-10, 2016.
70. "Optical scattering sensor for label-free rapid detection of pathogen and indicator bacterial colonies on Petri-plate". Rapid Detection for Food Safety. Knowledge Foundation, Baltimore, MD June 26-27, 2016.
71. "Laser Optical Sensor for Rapid On-Plate Screening of Water and Food-borne Pathogens". Water Microbiology & Novel Technologies, Chicago, IL, July 18-19, 2016.
72. "Probiotics and Bioengineered Probiotics to Control Pathogens" 11th Food Safety Conference, Las Vegas, NV, Nov 15-16, 2016
73. "Rapid detection of Enterobacteriaceae as an indicator for pathogen testing using a light scattering sensor" Knowledge Foundation, Alexandria, VA, June 26-27, 2017.
74. "Gastrointestinal Phase of *Listeria monocytogenes* Pathogenesis and A Probiotic Vaccine for Prevention," Purdue University North West (Hammond, IN), Nov 6, 2017

75. "Prevention of *Listeria monocytogenes* Infection with Bioengineered Probiotic in Laboratory Animal Models." Abstract 131. Symposium on Gut Health in Production of Food Animals, Nov 13-15, 2017, St. Louis, MO
76. "Impact of stress on detection of bacterial pathogens". Rapid Detection for Food Safety. Biodefense World Summit, Bethesda, MD June 27, 2018.
77. "*Listeria monocytogenes*: Molecular Mechanism during Gastrointestinal Phase of Infection. International Association for Food Protection Annual Meeting, Salt Lake City, UT. July 16-18, 2018. Session on "Listeriosis Outbreak – Special Session" # SS1
78. "Pathogenesis inspired probiotic bioengineering to prevent enteric disease". Markets and Markets Gen-Next Probiotics and Microbiome Congress, San Diego, CA, Feb 6-7, 2020.
79. "Next-generation bioengineered probiotic approach in preventing *Listeria monocytogenes* infection" Department of Biological Sciences, Northern Illinois University, DeKalb, IL, March 5, 2020.
80. "Listeria Adhesion Protein - Mediated Drug Delivery across Epithelial Barrier" Takeda California, San Diego, CA, June 12, 2020.

Invited Lectures – International (72)

1. "Antimicrobial peptide (Pediocin AcH), purification, characterization and development of monoclonal antibody against this peptide" Faculty of Veterinary Medicine, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal, India: Dec 1987.
2. (i) Cytopathogenicity assay and adhesion mechanism of *Listeria monocytogenes*" (ii) "Foodborne pathogen detection: From conventional to nanotechnology." These two seminars were presented at Central Food Technological Research Institute (CFTRI), Mysore, India. Nov 25-28, 2002.
3. "Foodborne pathogens and their impact on human health" Organized by Association for Microbiologist of India (AMI)- Mysore Chapter, Mysore University, Mysore, Karnataka, India. Nov 26, 2002.
4. "Nanotechnology in foodborne pathogen detection" Presented at Indian Institute of Technology (IIT), Kharagpur, West Bengal, India. Dec 4, 2002.
5. "Animal and foodborne pathogens and their impact on human health" Presented at West Bengal University of Animal and Fishery Sciences, Calcutta, India. Dec 16, 2002.
6. Presented combined seminars and a short course on (i) Foodborne pathogen detection – a nanotechnology approach, (ii) *Listeria monocytogenes* pathogenesis-adhesion mechanism, and (iii) *Escherichia coli* to students and faculty members at Federal University of Goias (UFG), Goiania, Brazil, from June 25-27th, 2003.
7. Two talks: "Microbiology Meets Nanotechnology" and "*Listeria monocytogenes* Pathogenesis: Intestinal Phase of Infection" Indian Institute of Technology, Guwahati, India. Dec 5, 2005.
8. "Bacterial Pathogen Detection: Micro/Nano-Technology Approaches" Indian Institute of Chemical Biology, Calcutta, India. Dec 21, 2005.
9. "Prevention and control of *Listeria monocytogenes* in dairy industry" (**Keynote lecture**). II Brazilian Congress on Milk Quality. Goiania, GO, Brazil. Oct 23-25, 2006.
10. Taught a mini course on two topics to the attendees of II Brazilian Congress on Milk Quality: (i) *Listeria monocytogenes* and (ii) Nanotechnology/Biosensor based methods for detection of *Listeria monocytogenes*, Goiania, GO, Brazil. Oct 26 and Oct 27, 2006.
11. "Bacterial pathogen detection using a novel light scattering technology" Rapid Methods Europe 2007, Noordwijkerhout, The Netherlands, Jan 29-30, 2007.
12. "*Listeria monocytogenes* – pathogenesis and novel biosensor-based detection methods" Department of Biotechnology, Mahidol University, Bangkok, Thailand, June 7, 2007.
13. "Multipathogen detection using optical biosensors" 1st Annual Meeting of Joint US-Sino Food Safety Research Center. Shanghai Jiao Tong University, Shanghai, China. May 12, 2008.
14. "Multipathogen detection strategies using biosensors" (**Plenary talk**) Food Micro 2008, Aberdeen, Scotland, UK. Sept 1-4, 2008.
15. "Biosensor based methods in food safety and biosecurity applications" (**Keynote lecture**) International Fermented Food Expo (IFFE), Jeonju, Jeonbuk, Korea, Oct 24-25, 2008.

16. "Pathogen detection: From conventional to nanobiosensor approaches" (**Plenary talk**). 49th Annual meeting of the Association of Microbiologist of India. University of Delhi North Campus, Delhi, India, Nov 18-20, 2008.
17. "Biosensors and bio-based methods for the separation and detection of foodborne pathogens" (**Plenary talk**) Rapid Methods Europe 2009. Noordwijkerhout, The Netherlands, Jan 26-28, 2009
18. "Pathogen Detection Technologies" AES Chemunex, Paris, France, Jan 29, 2009
19. "Food Safety: Molecular and microbiological approaches to pathogen detection" (**Plenary talk**) International Symposium on Strategies for Technology Development for Ensuring Agro Food Safety. Seoul, Korea. July 8-9, 2009.
20. "Pathogen Detection: From Conventional to Nanobiosensor Methods," Dongguk University, Seoul, Korea, July 10, 2009.
21. "Intestinal Phase of *Listeria monocytogenes* Infection and Label-Free Novel Biosensor Technologies for Detection" University of West England, Bristol, UK, Sept 30, 2009
22. "Intestinal Phase of *Listeria monocytogenes* infection" Cardiff University Medical School, Wales, UK, Oct 1, 2009
23. "Molecular approaches to the routine identification and characterization of foodborne pathogens" Asia-Pacific Symposium on Food Safety, IAFP Korea, Seoul, Nov 11-13, 2009
24. "Nano/microtechnology for diagnosis and detection of pathogens and toxins" (**Plenary Talk**) International Conference on Advanced Nanomaterials and Nanotechnology" IIT – Guwahati, India, Dec 9-11, 2009.
25. "Light scattering and mammalian cell-based optical sensors for multipathogen detection" CMOS Emerging Technology Workshop, Whistler, British Columbia, Canada, May 19-21, 2010.
26. "Current challenges and solutions in foodborne pathogen detection to ensure food safety" (**Plenary Talk**) Food Hygiene and Technology, 40th Lenfeld and Hökl Days, University of Veterinary and Pharmaceutical Sciences, Brno, Czech Republic, Oct 14-15, 2010.
27. "Infectious Diseases spread by food" and "*Listeria monocytogenes* detection" Ministry of Agriculture, Goiania, GO, Brazil. March 28, 2011.
28. "*Listeria monocytogenes* Physiology, Epidemiology, Risk and Control" and *Listeria monocytogenes* detection, a nanotechnology approach" Brazilian Ministry of Agriculture, Brasilia, Brazil. March 29, 2011.
29. Taught short courses on (i) "Infectious Diseases spread by food" (ii) "*Listeria monocytogenes* pathogenesis" and (iii) "*Listeria monocytogenes* detection, a nanotechnology approach" to graduate students at Federal University of Goias (UFG), Goiania, Brazil, from March 30-31, 2011.
30. Taught a week-long course on "Rapid and Nondestructive Evaluation of Food Quality and Safety Factors using Spectroscopy and Biosensing Methods" Central Institute of Post-Harvest Engineering & Technology (CIPHET), Ludhiana, Punjab, India. May 6-19, 2011.
31. "Novel optical biosensors for detection of viable pathogens and toxins" The Sixth International Forum on Food Safety and 2011 Annual Meeting of MOST-USDA Joint Research Center for Food Safety. Shanghai, China. Sept 27-29, 2011.
32. "Biosensor Technologies for Pathogen and Toxin Detection" Jiangnan University, Wuxi, China, Sept 30, 2011.
33. "Advanced Pathogen Detection Systems" 5th International Symposium on Recent Advances in Food Analysis (RAFA 2011). Prague, Czech Republic, Nov 1-4, 2011
34. "Novel Biosensor Tools and Bacterial Pathogenesis: Complimentary Approaches to Food Safety". Technical University of Denmark (DTU), Copenhagen, Denmark, Nov 2, 2011.
35. "Advances in Biosensor and Related Technologies for Detection of Pathogens, Toxins and Biomolecules" 16th World Congress of Food Science and Technology (IUFoST), Foz do Iguacu, Parana State, Brazil, Aug 5-9, 2012
36. "Bacterial Pathogenesis and Novel Biosensor Tools: Complimentary Approaches to Food Safety" University of Pelotas (UFPel), Pelotas, Brazil, Aug 10, 2012

37. "Biosensor-based approaches for foodborne pathogens" Universita Degli Studi di Brescia, Brescia, Italy, March 18-23, 2013.
38. "Pathogenesis and Nanotechnology- Complimentary Approaches to Disease Prevention". University of Hyderabad, India, July 1, 2013, and CFTRI, Mysore, India, July 4, 2013.
39. "Global Food Safety and Food Security Issues". Central Institute of Fisheries Education, Salt Lake City, Kolkata, India, July 9, 2013.
40. "Forthcoming New Technologies for Microbial Detection". Annual International Food Safety Congress (Inocuidad Alimentaria 2013), Universidad Autonoma de Nuevo Leon in Monterrey, Mexico, Oct 2-4, 2013
41. "Bacterial Pathogenesis and Nano/Biosensor Tools: A Complimentary Approach to Improving Food Safety". Korea Food Research Institute, SeongNam-SI, Korea, Oct 24, 2013
42. "Bioengineered Probiotic: A Novel Approach in Preventing Microbial Disease" (**Keynote lecture**). International Fermented Food Expo (IFFE), Chonbuk National University, Jeonju, Korea, Oct 25-26, 2013.
43. "Laser Optical Sensor, a Label-free Rapid On-Plate Pathogen Screening Tool" Rapid Methods Europe 2014, Noordwijkerhout, The Netherlands, March 31- April 2, 2014
44. "Novel Biosensor Technologies for High Throughput Screening of Pathogens and Toxins" Serbia Microbiology Days Conference: ASM Virtual Speaker, April 15, 2014 (pre-recorded via Camtasia)
45. Presented two seminars on (i) "Novel Biosensor Technologies for High Throughput Screening of Pathogens and Toxins" and (ii) "Bioengineered Probiotic: A Novel Approach in Preventing Microbial Disease" at Southwest University for Nationalities, and Sichuan University, Chengdu, China. Taught short courses on "FM201: Fundamental Food Microbiology" and "FM301: Foodborne Pathogen and Pathogenesis" to Sophomore and Junior Food Science and Technology major students at Southwest University for Nationalities, Chengdu, China, Oct 6-Oct 19, 2014.
46. "High Throughput Screening of Pathogens and toxins using Novel Biosensor Technologies" 2nd International Congress on Food Technology, Kusadasi, Izmir, Republic of Turkey, Nov 4-7, 2014. In addition, two presentations (i) "Bioengineered Probiotic: A Novel Approach in Preventing Microbial Disease" and (ii) "High Throughput Screening of Pathogens and toxins using Novel Biosensor Technologies" were delivered at Izmir Institute of Technology, Izmir (Urla), Turkey, Nov 7, 2014.
47. "Optical Biosensors in Foodborne Pathogen Detection" Food Value Chain: Innovations and Challenges-2016, NIFTEM, Kundli, Sonapat, Haryana, India, March 17-18, 2016.
48. Presented three seminars (i) "*Listeria monocytogenes* infection during intestinal phase of infection: a novel strategy for crossing epithelial barrier", (ii) Probiotic vaccine: Bioengineered probiotics for targeted prevention of infectious diseases", and (iii) Novel biosensor technologies for high throughput screening and detection of pathogens and toxins" at Sumy State University, Sumy, Ukraine. May 13-27, 2016.
49. "Novel Biosensor Technologies for Detection and High Throughput Screening of Pathogens and Toxins" SelectBio-Food Safety & Analysis Congress 2016. Cambridge, UK, Sept 6-7, 2016 (**Keynote lecture**).
50. "Foodborne Pathogen Detection Approach" Testo SE & Co. KGaA, Lenzkirch, Germany, Nov 21-22, 2016
51. (i) "Novel Biosensor Technologies for Detection and High Throughput Screening of Pathogens and Toxins" and (ii) "Probiotic vaccine: Bioengineered probiotics for targeted prevention of infectious diseases" at Shanghai Jiao Tong University - Summer School 2017, Shanghai, China, July 1-4, 2017.
52. "*Listeria monocytogenes* pathogenesis and a novel probiotic vaccine for prevention." Jiangnan University, Wuxi, China, July 5th, 2017.
53. "*Listeria monocytogenes* pathogenesis in the gut and a novel probiotic vaccine," 2017 International Conference on Building Human and Animal Health Capacities. Jordon University Science and Technology (JUST), Irbid/Amman, Jordon, Oct 17-19, 2017.
54. "LAP Disrupts Intestinal Epithelial Barrier for *Listeria monocytogenes* Translocation" 2018. Technische Universität Braunschweig, Braunschweig, Germany, March 15-16, 2018.

55. "Next-generation bioengineered probiotic approach in preventing enteric pathogen infection" Symposium on "Beneficial Bacteria: Manipulating the Little Machines for Better Life". National Research Center. Dokki, Giza, Egypt. Nov 11, 2018.
56. "Impact of Environmental and Host Induced Stress on Detection and Pathogenesis of Bacterial Pathogens", National Research Center, Dokki, Giza, Egypt. Nov 12, 2018.
57. "Global Food Safety Issues", and "Antilisterial and antibiofilm activities of Pediocin and LAP Functionalized Gold Nanoparticles", Assiut University, Assiut, Egypt, Nov 14-15, 2018
58. "Foodborne Disease Prevention Strategies: Biosensors and Probiotic Vaccine" King Abdulaziz University, Jeddah, Saudi Arabia; March 5-7, 2019
59. "Global Food Safety Issues, and Solutions" (Keynote Talk). AgroFood2019, Istanbul, Turkey, June 20-21, 2019
60. "Impact of environmental and host induced stress on pathogenesis and microbial detection" AgroFood2019, Istanbul, Turkey, June 20-21, 2019
61. "Molecular Mechanism of *Listeria monocytogenes* Infection and Disease Prevention using a Next-Generation Bioengineered Probiotic" IIT-Delhi, India June 26, 2019
62. "Molecular Mechanism of *Listeria monocytogenes* Infection and Disease Prevention using a Next-Generation Bioengineered Probiotic" Kalyani University, India July 8, 2019
63. "Mechanism of *Listeria monocytogenes* Pathogenesis and Next-Generation Bioengineered Probiotic Approach in Prevention" West Bengal University of Animal and Fishery Sciences, Belgachia, Kolkatta, WB, India. July 9, 2019.
64. "Next-generation bioengineered probiotic approach in preventing enteric pathogen infection" Visva-Bharati University, Santiniketan, West Bengal, India, July 12, 2019.
65. "Pathogenesis inspired bioengineering strategy in preventing enteric diseases", Sumy State University, Sumy, Ukraine, Nov 13, 2019.
66. "Enteric bacterial pathogen-induced intestinal epithelial barrier dysfunction", National Research Center, Giza, Cairo, Egypt, Nov 19, 2019.
67. "Next-generation bioengineered probiotic approach in preventing enteric pathogen infection" Amity University, Noida, Uttar Pradesh, India, May 5, 2020. (Webinar)
68. "Value addition in Meat and meat products to cope up the need of the hour during post COVID 19 Scenario" "in Animal Health, Production & Entrepreneurship Development in Post COVID 19 Scenario Conference, Directorate of Research, Extension and Farms, West Bengal University of Animal & Fishery Sciences, Kolkata, West Bengal, India, July 7-8, 2020 (Webinar).
69. "Application of Nanotechnology in Biosensor Research", Vaishwik Bharatiya Vaigyanik (VAIBHAV) Summit; Agro Economy and Food Security; India; 16th October 2020 (Webinar)
70. "Bioengineered Probiotic Approach for the Prevention of Foodborne Diseases"; 2020 The 5th International Symposium on Food and Health (Shanghai), China; Dec 3, 2020 (Webinar)
71. Workshop on "Introduction to foodborne pathogens" and "Conventional and biosensor-based approaches for pathogen detection" Food safety/Foodborne pathogen detection/ Biosensors Workshop; NDRI, Karnal, India; Jan 4-6, 2021 (Webinar).
72. *Listeria* Adhesion Protein - Mediated Drug Delivery across Epithelial Barrier" AstraZeneca, Cambridge, UK, February 12, 2021 (Webinar).

U.S. Patents Awarded

1. Bhunia, A.K., Drolia, R and Sammaddar, M. 2020. Peptide-mediated drug delivery across the epithelial barrier. Patent No. US20190105401A1. Issue date April 28, 2020.
2. Robinson, J.P., Rajwa, B., Bayraktar, B., Bhunia, A.K., Hirleman, E.D., Bae, E. System and method of organism identification. US 8787633 B2, July 22, 2014.
3. Bhunia, A.K., and Yao, Y. 2012. Carbohydrate nanoparticles for prolonged efficacy of antimicrobial peptide US 20140066363 A1

4. Hirleman, E.D., Guo, S., Bae, E., Bhunia, A.K. System and method for rapid detection and characterization of bacteria colonies using forward light scattering*, US Patent No. 7,465,560, Issue date Dec 16, 2008.
5. Gomez, R., Bashir, R., Bhunia, A.K., Ladisch, M., Robinson, J.P.R. Biosensor and related methods, Patent number 7,306,924, Issue date: Dec 11, 2007.

Graduate Students Supervised (35) and Their Current Positions

Alabama A&M University (1995-1998)

1. Amoril, J.G. (**MS, July 1997**) Isolation, immunological and cytotoxic characterization of *Listeria monocytogenes* and isolation of non-sorbitol fermenting *Escherichia coli* from naturally contaminated raw meat.
Current position: Food Safety Inspector for Brazilian Govt, Brazil
2. Pandiripally, V.K. (**PhD, May 1998**) Study of *Listeria monocytogenes* adhesion to mammalian cells by transposon mutagenesis.
Current Position: President, Microprotein Technologies Inc., Stilwell, KS
3. Westbrook, D.G. (**MS, May 1998**) Cytotoxicity assay for serotypes of *Listeria* species, effect of dithiothreitol on cytotoxicity and analysis of cytopathic effect by scanning electron microscopy.
Current Position: Department of Pathology, Univ of Alabama at Birmingham, Birmingham, AL.
4. Roberts, P.H. (**MS, July 1998**) A modified cytotoxicity assay to distinguish verotoxin producing *Escherichia coli* from non-toxin producing strains.
5. Santiago, S.I. (**MS, July 1998**) Influence of growth states and temperatures on the expression of adhesion (p104) protein in *Listeria monocytogenes*.
Current Position: Pure Produce Inc., Somis, CA
6. Williams, L.L. (**PhD, July 2000**) Genotypic characterization, antibiotic testing and cytopathogenic properties of *Escherichia coli* isolates from ground beef.
Current Position: Professor, Family and Consumer Sciences, North Carolina A&T University, Greensboro, NC
7. Menon, A. (**PhD, May 2001**) Interaction of *Listeria monocytogenes* with primary and transformed B lymphocytes.

Purdue University (1998-Present)

8. Naschansky, K. (**MS, May 2001**) Development of an immunoseparation and impedance spectroscopy-based cytotoxicity assay to isolate and detect *Listeria monocytogenes* from hotdog samples.
9. Gray (Naschansky), K (**PhD, May 2004**) Cytotoxicity and cell-based sensors for detection of *Listeria monocytogenes* and *Bacillus cereus*.
Current Position: R&D, ConAgra Foods, Omaha, NE
10. Shroyer, M (**MS, Dec 2002**) Fluorescence-based cytotoxicity assay for *Listeria monocytogenes* and analysis of mammalian cell death. Purdue University
Current Position: Schreiber Foods, Stephenville, TX

11. Lathrop, A (**MS, July 2002**) Characterization of monoclonal and polyclonal antibodies to *Listeria* species: Reaction spectrum, partial blocking of epitope binding sites and cross-absorption.
12. Lathrop, A. (**PhD, May 2005**) Development of *Listeria monocytogenes* specific antibodies using a proteomic/genomic approach and expression of antibody-specific antigens InlB and ActA under different environments.
Current Position: Associate Professor, Department of Food Science, California Polytechnic State University, San Luis Obispo, CA
13. Wampler, J. (**PhD, July 2003**) *Listeria monocytogenes* adhesion to intestinal cells is mediated, in part, by interaction of Listeria adhesion protein with a eukaryotic cell receptor, heat shock protein 60. **Current Position:** Associate Medical Writer, Mead Johnson Nutrition, Evansville, IN
14. Asrar, S. (**MS, Dec 2003**) Acquisition of kinetic constants of *L. monocytogenes* binding in a resonant mirror optical biosensor.
Current Position: Quality Control Specialist, Greenville, South Carolina
15. Geng, T. (**PhD, May 2004**) Study of antibodies to stress-induced cellular antigens of *Listeria monocytogenes* and its detection using a fiber-optic biosensor in food.
Current Position: R&D, Monsanto, St Louis, MO
16. Kim, K.P. (**PhD, July 2004**) Genetic identification and characterization of *Listeria* adhesion protein, an alcohol acetaldehyde dehydrogenase homolog in *Listeria monocytogenes*.
Current Position: Associate Professor, Department of Food Science, Chonbuk National University, Jeonju, Chonbuk, Republic of Korea
17. Maldonado, Y. (**MS, Dec 2004**) Characterization of *Escherichia coli* from food, clinical and environmental sources by genomic typing, cytotoxicity analysis and by adhesion to eukaryotic cells. **Current Position:** Mead Johnson, Evansville, IN
18. Davis, K. (**PhD, May 2005**) Assessment of molecular virulence gene profiling and antibodies for rapid detection of pathogenic *Escherichia coli* isolates.
Current Position: Diversity Director, School of Veterinary Medicine, Purdue University
19. Valadez, A. (**MS, May 2006**) Development of a fiber-optic biosensor assay to detect *Salmonella* Enteritidis in foods. **Current Position:** Quality assurance manager, Publix
20. Kim, Hyochin (**MS, July 2007**). A selective enrichment medium for simultaneous growth and detection of *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella* Enteritidis from food.
21. Kim, Hyochin (**PhD, Dec 2011**) Listeria adhesion protein-mediated *Listeria monocytogenes* translocation and infection in a cell culture model.
Current Position: Food Safety Researcher, CJ Jaelijedang, Seoul, South Korea
22. Huff, K. (**MS, July 2008**). The light scatterometer BARDOT as a non-invasive sensor for the identification of common foodborne bacteria. **Current Position:** Kraft Foods, IL
23. Banerjee, P. (**PhD, May 2008**). Mammalian cell-based biosensor for rapid screening of pathogenic bacteria and toxins. **Current Position:** Assistant Professor, Division of Environmental Health, School of Public Health, University of Memphis, Memphis, TN
24. Jagadeesan, B., (**PhD, May 2009**). Molecular characterization of Listeria adhesion protein (LAP), an alcohol acetaldehyde dehydrogenase homolog involved in the adhesion of *Listeria monocytogenes* to intestinal epithelial cells. **Current Position:** R&D, Nestle, Lausanne, Switzerland

25. Burkholder, K.M., (**PhD, Dec 2010**). The role of *Listeria* adhesion protein (LAP) during the intestinal phase of *Listeria monocytogenes* pathogenesis. **Current Position:** Assistant Professor, Department of Biological Sciences, University of New England, Biddeford, ME.
26. Bettasso, A. M., (**MS, July 2010**). Application of light scattering technology in microorganism detection and classification. **Current Position:** Associate Food Scientist, NewlyWeds Foods, Inc., Springdale, AR
27. Koo, O.K. (**PhD, July 2010**). *Listeria* adhesion protein and heat shock protein 60: application in pathogenic *Listeria* detection and implication in listeriosis prevention. **Current Position:** Assistant Professor, Gyeongsang National University, Jinju-si, Gyeongsangnam-do, South Korea
28. Medina, S. (**MS, July 2011**). Effect of *Listeria monocytogenes* pre-exposure to mammalian cells under an anaerobic environment in LAP-mediated pathogenesis in subsequent infection under anaerobic conditions. **Current Position:** R&D, Kerry Food, and Ingredients, MI.
29. Titiksha Dikshit (**MS, Dec 2013**) Anti-pyruvate kinase monoclonal antibody and Translocated intimin receptor (TIR) for specific detection *Listeria* species and Shiga-toxigenic *Escherichia coli*. **Current Position:** R&D, Kellogg, MI
30. Carlos Carter (**MS, July 2016**). Effect of carrageenan-based antibacterial fibers on the growth of pathogenic bacteria. **Current Position:** Cargill, Minneapolis, MN
31. Valerie Ryan (**MS, Dec 2016**). Recombinant *Listeria* adhesion protein expressing probiotics protect against *Listeria monocytogenes* infection in animal models. **Current position:** Research Scientist, Dow Agro Chemicals, Indianapolis, IN
32. Tawfiq Alsulami (**MS, May 2017**). Rapid Detection and Differentiation of *Staphylococcus* Colonies Using Optical Scattering Technology. **Current Position:** PhD student, Dept of Bacteriology, University of Wisconsin, Madison, WI
33. Marcela Martinez (**MS, July 2017**). Light scattering sensor for indicator bacteria and pathogens. **Current position:** PhD student, Purdue University, West Lafayette
34. Celina To (**MS, Dec 2017**). A 3D cell-based assay to detect Shiga-like toxin producing *Escherichia coli*. **Current Position:** Hygiene, 941 Avenida Acaso, Camarillo, CA 93012.
35. Rishi Drolia (**PhD, Aug 2012-Dec 2018**): Cellular and Molecular Mechanism of *Listeria* Adhesion Protein-Mediated Bacterial Crossing of the Intestinal Barrier. **Current Position:** Postdoctoral Research Associate, Purdue University

International Students Supervised in a Sandwich PhD Program

1. Puriya Ngamwongsatit (**PhD**) Mahidol University, Thailand (Feb 2006–Dec 2006). **Current position:** Assistant professor, Department of Clinical Sciences and Public Health, Mahidol University, Bangkok, Thailand
2. Valter Bueno (**PhD**), Goias Federal University, GO, Brazil (June 2006–Nov 2006). **Current position:** Scientist, Brazilian Government
3. Marcelo Mendonca (**PhD**) Federal University at Pelotas, RS, Brazil (Mar 2010–Jun 2011). **Current Position:** Assistant Professor, College of Veterinary Medicine, University of Federal Rural de Pernambuco, Brazil.
4. Maha Usama Abdelhaseib (**PhD**) Meat Hygiene Dept., Faculty of Veterinary Medicine, Assiut University, Assuit, Egypt (May 2012- 2014). **Current Position:** Lecturer, Assiut University, Egypt

5. Xingyue Zhu (**PhD**) Nanjing University of Aeronautics and Astronautics (Nanjing, China) (May 2016-April 2017),
6. Moloko Mathipa (**PhD**) University of Pretoria, South Africa (Jan 2017-July 2018),

Current Graduate Students

1. Xingjian Bai (PhD: Start date: Aug 2014): Bacterial biofilm formation and pathogenesis
2. Dongqi Liu (PhD: Start date: Aug 2015): LAP-mediated *Listeria* pathogenesis and receptor identification
3. Manalee Samaddar (PhD: Start Date: Jan 2017): Crystallographic structural analysis of LAP and its application in drug delivery
4. Luping Xu (MS: Start Date: Aug 2018): Cell-based sensor for *Salmonella* detection
5. Nicholas Gallina (PhD: Start Date: Aug 2019): Ameliorating *L. monocytogenes* mediated pathology using bioengineered probiotics

Current Postdoc

1. Rishi Drolia (Jan 2, 2019-Present) LAP mediated intestinal epithelial cell junction compromise mechanism and *Listeria monocytogenes* translocation across the epithelial barrier

Past Post-doctorate Advisee and Research Projects

1. Xiang Feng (Jan 1999–July 2001): Sequence analysis and characterization of *lap* gene in *Listeria*
2. Ziad W. Jaradat (Oct 1999–July 2002): Influence of nutrients and glucose on LAP expression and *Listeria* pathogenesis in a mouse model. **Current Position:** Associate Professor. Jordon University Science and Technology (JUST), Irbid, Jordon
3. Ferda Soyer (Nov 2000 - Oct 2001): Characterization of anti-*Listeria* antibodies
4. B.K. Hahm (June 2001–July 2007): Multipathogen detection using PCR and biosensor array
5. Padmapriya Banada (June 2003–Oct 2007): Microfluidic biochip and light scattering sensor-based detection of *Listeria monocytogenes*. **Current Position:** Assistant Professor Resaedrch Track, Department of Medicine, New Jersey Medical School- Rutgers University, Newark, NJ.
6. Jennifer Wampler (Jan 2003 – May 2004): Study of LAP-mediated pathogenesis of *Listeria monocytogenes*
7. Tao Geng (May 2004–Jun 2005): Fiber-optic sensor for detection of *Listeria monocytogenes* and *E. coli* O157:H7 **Current Position:** R&D, Monsanto, St Louis, MO
8. Kwang-Pyo Kim (Sep 2004–Dec 2004): Molecular characterization of *lap* gene. **Current Position:** Associate Professor, Chonbuk National University, South Korea
9. Viswaprakash Nanduri (Sep 1, 2005–Jan 2008): Surface plasmon resonance and a fiber-optic sensor for detection of *Listeria monocytogenes*. (Deceased)
10. Krishna Mishra (Sep 1, 2005–Jul 2011): Study of SecA2 system in *Listeria* for secretion of LAP and other proteins. **Current Position:** Associate Professor. Ivy Tech Community College, Lafayette, IN
11. Seung-Oh Ohk (Aug 1, 2007–Dec 2008): Aptamer and a fiber-optic sensor for detection of *Listeria monocytogenes*. **Current Position:** Professor, Chonnam National University, Gwangju, South Korea
12. Amornrat Aroonual (Oct 1, 2007–Oct 30, 2009): Optimization of light scattering sensor technology for detection and identification of *Vibrio*, *E. coli*, *Salmonella* and other foodborne pathogens. **Current Position:** Associate. Prof. Mahidol University, Bangkok, Thailand
13. Marry Anne R. Amalaradjou (Aug 7, 2010–Jul 31, 2013): Prevention of *Listeria monocytogenes* infection in the host using recombinant probiotic bacteria. **Current Position:** Assistant Professor, Department of Animal Science, University of Connecticut, Storrs, CT
14. Naíla Cannes do Nascimento (Sept 8, 2015–April 30, 2016). Molecular analysis of *Listeria* genome
15. Atul Singh (Jun 1, 2010–April 2017): Light scattering sensor for foodborne pathogen detection. **Current Position:** Research Scientist, Clear Lab, Menlo Park, CA
16. Shivendra Tenguria (May 1, 2016–March 31, 2020): *Listeria* pathogenesis (gastroenteritis) in a mouse model. **Current Position:** Postdoc, Mount Saini, Los Angeles, CA

International Scholars Hosted

1. Oleksandra Marchenko (**BS**) an I-HELP fellow from Scientific and Research Institute of Veterinary Medicine, Ukraine (Aug 2001- Nov 2001).
2. Zineb Berrada (**MS**), University of Western Brittany, Brest, France (June 2003-July 2003).
3. Vaclav Trozan (**MS**) Veterinary and Pharmaceutical University, Brno, CZ (Nov 2007- Dec, 2007)
4. Radka Urbabova (**BS**) Veterinary and Pharmaceutical University, Brno, CZ (Dec 8-12, 2008)
5. Hana Brozkova (**BS**) Veterinary and Pharmaceutical University, Brno, CZ (Apr 12-30, 2010)
6. Martina Pucalikova (**MS**) Veterinary and Pharmaceutical University, Brno, CZ (Apr 12-May 7, 2010)
7. Xiulan Sun (**PhD**, Associate Professor) Jiangnan University, Wuxi, Jiansu, PR China (June 2010 -July 2011): Rapid detection and identification of *Bacillus* using label-free light scattering sensor
8. Melissa Mialon (**MS in Engineering**) Agrosup Dijon–Ailiere Agroalimentaire, France (May 15, 2011 – Oct 22, 2011): Effects of preparation and storage of the Petri dishes to the sensitivity of bacterial forward light scattering patterns
9. Alice Jirova (**MS**) Veterinary and Pharmaceutical University, Brno, CZ (Oct 1-Nov 11, 2011)
10. Lucie Kvapilova (**BS**) Veterinary and Pharmaceutical University, Brno, CZ (Oct 1-Nov 11, 2011) Food Safety and foodborne pathogen detection using biosensors
11. Lena Luprene (**MS**) Agrosup Dijon –Ailiere Agroalimentaire, France (May 15, 2012–Oct 19, 2012)
12. Junni Tang (**PhD**, Associate Professor) College of Life Science and Technology, Southwest University for Nationalities, Chengdu, China (Aug 11, 2012- Present)
13. Gabriela Zelinska (**PhD**) Veterinary and Pharmaceutical University, Brno, CZ (Oct 1-Nov 2, 2012) Food Safety and foodborne pathogen detection using PCR
14. Soraya Lhacheq (**MS**) Effect of sugar on colony growth and BARDOT scatter signature. ESMISAB, University of Western Brittany, Brest, France (May 21- Aug 20, 2013)
15. Alena Skockova (**MS**) Veterinary and Pharmaceutical University, Brno, CZ (Sept-Oct, 2013)
16. Bohdana Janstova (**MS**) Veterinary and Pharmaceutical University, Brno, CZ (Sept-Oct, 2013)
17. Simona Uherkova (**BS**) Veterinary and Pharmaceutical University, Brno, CZ (Sept-Oct, 2013)
18. Tana Fritscherova (**BS**) Veterinary and Pharmaceutical University, Brno, CZ (Sept-Oct, 2013)
19. Mapitsi Thantsha (**PhD**, Senior Lecturer), Fulbright Scholar, University of Pretoria, Pretoria, South Africa (Sept 2013-May 30, 2014)
20. Eduardo Cole (**BS**) Federal University of Goiania (Jan 2 2014- May 2014) Light scattering sensor to determine effect of antibiotics on bacterial colony scatter signature
21. Gustavo Moreira (**MS**), Federal University of Pelotas Cloning and expression of *lap* in *E. coli* Clear Coli and *Listeria* pathogenesis (May 2014- Aug 2014)
22. Hongmei Liao (**PhD**, Associate Professor), Jiangnan University, Wuxi, China (June 2014- May 2015)
23. Qinghua He (**PhD**, Associate Professor), Nanchang University, Nanchang, China (Aug 2014- July 2015)
24. H. Ferhan Nizamlioglu (**DVM, PhD**, Associate Professor), University of Necmettin Erbakan, Faculty of Tourism, Department of Gastronomy and Culinary Arts Karatay/Konya, Turkey (Dec 2014 – Nov 2015)
25. Hassane Belafatmi (**MS** student) ECOLE SUPERIEURE D'INGENIEURS EN AGROALIMENTAIRE DE BRETAGNE (ESIAB) – FRANCE (May – Aug 2016)
26. Xingyue Zhu (**PhD** student) Nanjing University of Aeronautics and Astronautics (Nanjing, China) (May 2016-April 2017)
27. Maha Usama Abdelhaseib (**PhD**, Lecturer), Assiut University, Egypt (Nov 2016 – Oct 2018)
28. Moloko Mathipa (**PhD** student) University of Pretoria, Pretoria, South Africa (Jan 2017-July 2018)
29. Kwang-Pyo Kim (**PhD**, Asso. Prof.) Chonbuk National University, S. Korea (Aug 1 2018-July 31, 2019)
30. Biao Suo (**PhD**, Asso. Prof) College of Food Science and Technology; Henan Agricultural University, China (Aug 2018-Sept 11, 2019)
31. Raghu H. Vishweswaraiah (PhD, Asst. Prof) National Dairy Research Institute, Kernal, Hariyana, India (April 29, 2019-Sept 28, 2019).
32. Gonglian Zhang (**PhD**, Asso. Prof) Dalian Polytechnic University, Dalian, China (Sept 1, 2019 – Aug 31, 2020)

33. Esmâ Eser (**PhD**, Asst Prof.) Department of Food Engineering, Çanakkale Onsekiz Mart University, Çanakkale, Turkey (Oct 1, 2019-Oct 30, 2020)
34. Amr Husain Abdou (**PhD**, Asso. Prof) National Research Center, Cairo, Giza, Egypt. (March 1 -Aug 30, 2020)

Undergraduate Student Research Activities Supervised

1. Salynthia Lewis (**Summer 1996**) Evaluation of microbiological quality of raw meat products. Alabama A&M University.
2. Allison Hall (**Summer 1996**) Inhibitory effect of a bacteriocin (Pediocin) on bacterial isolates obtained from raw ground beef. Alabama A&M University.
3. Requanda Moore (High School Student) (**Summer 1996**) Detection of *Listeria* species by ELISA. Alabama A&M University.
4. Semico Askew (**Summer 1997**) Potential harmful bacteria found in Carver Complex. Alabama A&M University.
5. Yadilka Maldonado (**Summer 2000**) Genomic typing of enterohemorrhagic *E. coli* using PCR and riboprinter. MARC/AIM program, Purdue University.
6. Erin O'Neal (**Fall 2001–Spring 2002**) Development of a rapid cytotoxicity assay for foodborne pathogen *Bacillus cereus*. FS 499, Honor Research Program. Purdue University
7. Angela Valadez (**Summer 2002**) Virulence gene profiles in multiple antibiotic-resistant *Escherichia coli* O157:H7 strains. MARC/AIM program, Purdue University.
8. Angela Valadez (**Fall 2002–Spring 2003**) Development of biosensor-based detection for *Salmonella* using an antibody-coupled fiber optic wave-guide. BIOL 494. Special research project. Purdue University.
9. B. Elliot Hickman (**Fall 2003**) Purification and characterization of *Listeria*-specific antibodies. FS 591 Special research project. Purdue University
10. Miniayah DeBruce (**Summer 2004**) Optimization of growth for rapid detection of foodborne pathogens by fiber optic immunosensor. MARC/AIM program, Purdue University
11. Adrienne Johnson (**Summer 2005**) Gel encapsulated Ped-2E9 hybridoma as cell-based biosensor for rapid detection of foodborne *Listeria monocytogenes* and *Bacillus cereus* toxins. MARC/AIM program, Purdue University.
12. Dori Lin (**Fall 2005–Spring 2006**) Characterization of anti-*Salmonella* polyclonal and monoclonal antibody against *Salmonella* Enteritidis.
13. Siqi Liu (**Spring 2006**) Analysis of antibody specific antigen expression in *L. monocytogenes* under different enrichment media.
14. Abrar Adil (**Fall 2006–Spring 2007**) Optical light scattering based analysis of *Staphylococcus* and *Streptococcus* species.
15. Danielle DelVillano (**Fall 2009- Spring 2010**) Cell-based sensor for *Salmonella* detection (FS491)
16. Belinda Christina (**Fall 2010**) Study of *Listeria monocytogenes* translocation through epithelial cells (FS491).
17. Harini Kadambi (**Fall 2011**) Sensor for foodborne pathogens (FS491)
18. Hechen Wei (**Fall 2012–Spring 2013**): LAP preparation, purification and interaction with mammalian cells
19. Xingjian Bai (**Fall 2012–2014**) Inactivation of pathogens using gold nanoparticle pediocin conjugate.
20. Taylor Bailey (**Fall 2012–2014**) Analysis of SecA2 dependent proteins in *Listeria*
21. Allison (**Fall 2013–Fall 2014**) LAP-mediated epithelial tight junction compromise
22. Jenn (Zhenjing Tang) (**Spring 2014–Present**) Assessment of *Listeria* for Biofilm formation
23. Wen Lv (**Fall 2014–present**) LAP-mediated epithelial tight junction compromise
24. Luping Xu (**Spring 2016–Spring 2018**) Biofilm analysis of *Listeria* and *Staphylococcus* spp.
25. Jingyi Ren (**Spring 2016–Spring 2018**). *Listeria* pathogenesis
26. Tang Qi (**Spring 2017–Fall 2017**). *Listeria* pathogenesis: To elucidate the fragment of *Listeria* Adhesion Protein (LAP) sequence for cell surface display
27. Shayna R. Dubos (**Fall 2017**): Laboratory Techniques used in genetic research

28. Yifei Shen (Fall 2018-Spring 2019): LAP expression study under different condition (nutrients)
29. Xiaolin Liu (Fall 2018 - Present): Analysis of biofilm formation by foodborne pathogens
30. Vignesh Nathan (Spring 2019- Present): Probiotic-mediated mycotoxin inactivation
31. Yi (Tim) Liu (Fall 2018 – Spring 2020): *Listeria* induced gastroenteritis
32. Mai Liu (Spring 2019 – Spring 2020): Molecular characterization of biofilm forming *Lm* isolates from mice.
33. Zhian Gao (Fall 2018 – Spring 2020): LAP-mediated innate immune response

Advisory Committee Member for Graduate Students at Purdue University

MS	PhD
Jennifer Vierra (Food Science)	Jatinder Gulani (Veterinary Pathobiology)
Willfredo Dominguez (Food Science)	Linna Wang (Food Science)
Ashutosh Singh (Food Science)	Haibo Li (Electrical and Computer Engineering)
Travis Selby (Animal Sciences)	Yi-Shao-Liu (Electrical and Computer Engineering)
Kristin Burkholder (Animal Sciences)	Rafael Gomez (Electrical and Computer Engineering)
Jennifer Fiser (Agronomy)	Kristi Thompson (Animal Sciences)
Marlin Ariefdjohan (Food Science)	Li Ma (Food Science)
Noel Larson (Food Science)	Lilian Were (Food Science)
Manjari Iyer (Food Science)	Willette Crawford (Food Science)
Karen Chong (Food Science)	Udit Minocha (Food Science)
Songling Guo (Mech. Eng.)	Wan-Tzu Chen (Biomed Eng)
Wan-Tzu Chen (Ag. Biol. Eng.)	J. Zhao (Ag. and Biol. Engineering)
Tom Huang (Ag. Biol. Eng.)	Kidong Park (Electrical and Computer Eng)
Jeremiah Bwatwa (Biomed. Eng.)	Wan-Tzu Chen (Ag. and Biol. Eng.)
Catherine McInnis (Ag. and Biol. Eng)	Bonnie Co (PULSe)
Tejas Bhatt (Food Science)	Jamison Auer (Food Science)
Jiayi Zhang (Animal Sciences)	Yi-Shao-Liu (Electrical and Computer Engineering)
Samantha Wall (Animal Sciences)	Nan Bai (Mech. Eng.)
Michael Oats (Biology)	Amandeep Kaur (FS)
Chuyan Chen (Food Science)	Jiang Zhang (Animal Sciences)
Trevor Lim (FS)	Jiayi Zhang (Animal Sciences)
	Lin Bi (Food Science)
	Kashayar Farrokhazad (PULSe)
	Carla Rosenfield (PULSe)
	Preetam Sarkar (Food Science)
	Aaron Plaitner (Food Science)
	Wu Xi (Ag & Biol Eng); Yuan Lyu (Ag & Biol Eng); Ning Xiang (Ag & Biol Eng); Maya Fitriyanti (Ag & Biol Eng)
	Huisung Kim (Mech. Eng)
	Myunghoo Kim (Vet Comparative Pathobiology)
	Andrea Ray (PULSe); Andrew Kanath (PULSe)
	Jagpinder Barr (Food Science); Mathew Bailey (Food Science)
	Luis Mejia (Food Science); Jose Bonilla (Food Science)
	Yezi Fu (FS), Jing Fan Chen (FS)
	Harrison Helmick (FS)
	Manoj Sawale (FS)
	Prabha Bista (CPB)

Bhunias' Research Covered by Popular Press (in the news)

1. "Research: *E. coli* rates are higher than once believed" – *Journal and Courier*, Nov 14, 1999.
2. "Unlocking Nature's secret in 2025" – Purdue Agriculture, summer 2000.
3. "Researchers develop biochip for safer food" - *Journal and Courier*, July 6, 2000.
4. "Microchip detects *Listeria*" – ENN News, July 8, 2000.
5. "Safer Food is on the way" – Reuters Health Information, July 7, 2000.
6. "Purdue Scientists first to create protein biochip" - Purdue University Perspective, fall 2000.
7. "Researchers study deadly bacteria" – *The Exponent*, July 24, 2000.
8. "Researchers say biochips lack speed, not potential" – *Journal and Courier*, August 26, 2000.
9. "Food safety microbiologist battles food-borne pathogen" *Purdue News*, April 21, 2003.
10. "Microbiologist battles food-borne pathogen" *Purdue Agriculture Connections*, 13 (2) Spring 2003.
11. "Researchers learning how foodborne bacteria make you sick" Breakthrough Digest. June 9, 2003.
12. "Dynamics of *Listeria*" published in Food navigator.com. June 12, 2003.
13. WLFI (TV 18) News about the *Listeria monocytogenes* infection mechanism, June 2003.
14. "Researcher aims to eradicate deadly bacteria" *The Exponent*, July 25, 2003.
15. "Keeping our food safe" *The World & I*, Washington, DC, Sept 2003.
16. "Lock to food-borne pathogen pathway may be key to vaccine" *Purdue News*, Jan 30, 2004
17. "Clues found in listeria battle" Food navigator.com, Feb 2, 2004
18. "Food scientists design sensor for *Listeria* detection" Food navigator.com, October 6, 2004
19. "Biosensing foodborne Pathogens" *Food Quality*" Oct/Nov 2004 issue, pp 48-50.
20. Biosensor on *Listeria monocytogenes*: *Chicago Tribune* (Oct 23, 2004, Inside Technology, pg 3); *Environmental Laboratory Washington Report* (Oct 21, 2004); *Electronic Engineering Times*, (Oct 18, 2004); *Obesity, Fitness & Wellness Week* Nov 6, 2004); *MD Week* (Nov 5, 2004); *Biotech Week* (Nov 3, 2004); *Medicine and Law Weekly* (Nov 5, 2004); *Biotech Week* (Nov 3, 2004); *Life Science Weekly* (Nov 2, 2004); *Pharma Law Weekly* (Nov 2, 2004); *Science Letter* (Nov 2, 2004); *TB & Outbreaks Week* (Nov 2, 2004); *Anti-Infectives Week* (Nov 1, 2004); *Analyte separation News* (October 2004, vol 2. No5); *Health and Medicine Week* (Nov 1, 2004); *Medical Letters on the CDC & FDA* (Nov 7, 2004); *Food Ingredients News* (Oct 2004 Vol 12 No. 10); *Healthcare Mergers, Acquisitions & Ventures Week* (Nov 6, 2004).
21. "Rapid immunoassay detects *Salmonella* Enteritidis in poultry" *Health & Medicine Week* (Nov 22, 2004); *Gastroenterology Week* (Nov 22, 2004).
22. "New biochip makes food safer" *Exponent* (May 17, 2006)
23. "Advancing rapid microbial testing" *Food Technology*. 2006, 60(9): 68-72.
24. "Pinpointing bacteria" *R&D Magazine* 2006, 48(8)
25. "Detecting pathogens on produce" *Analytical Chemistry* Jan 1, 2007; 79(1): 7-9.
26. "Good enough to eat" *BioTechniques*, Jan 2008; 44 (1): 27-28.
27. "Purdue Researchers develop cell-based biosensors for rapid onsite toxin testing" *Cell-based Assay News*. March 21, 2008
28. "Live cells adapted for food pathogen testing" *Food Production.Com | Europe*. March 3, 2008
29. "Now, a new method to detect toxins in food" *Mumbai Mirror, India*, March 2, 2008
30. "Technology uses live cells to detect foodborne pathogens, toxins" *Inside Purdue*, March 18, 2008
31. "Mammalian-cell biosensor accelerates pathogen detection" *Lab technologist.com*, March 11, 2008
32. "Pathogen detection at the speed of light" *Food Quality*, 15 (4): 14-20 (Aug/Sept 2008)
33. "Cell-based sensors to detect food-borne pathogens" *Frost & Sullivan* March 14, 2008
34. "Chip can make sure safe food products aren't unduly discarded" *Purdue University News Service*, March 27, 2009.
35. "Purdue scientists develop test to detect food safety" *WTHR* (Channel 12, Indianapolis), March 31, 2009
36. "New Technique For *L. monocytogenes* Detection" *Food Quality* 5/13 eNewsletter [eNews@wiley.com] May 13, 2009
37. "Analyzing for Microbial Contaminants" *Food Technology*, 63 (10):68-72 (Oct 2009).
38. "Purdue fetes work of its patent winners" *Journal and Courier*, Nov 5, 2009.

39. "Purdue steps up lobbying game" Journal and Courier, May 2, 2010.
40. "Purdue Biodefense Tech Project Receives Funding" Inside Indiana Business, Aug 26, 2010
41. "Listeria clever at finding its way into the bloodstream, causing sickness" Purdue University News Service, Oct 25, 2010. This was covered by numerous News services.
42. "Listeria's deadly route" Journal and Courier, Nov 16, 2010.
43. "Nanoparticle gives antimicrobial ability to fight *Listeria* longer", Dec 8, 2010, IFT Newsletter
44. "New Nanoparticle Helps Fight Listeria" Food Safety News, Jan 06, 2011
45. "Olive garden diners in North Carolina exposed to Hepatitis A" Health.com, Aug 10, 2011
46. "9/11 spawned big changes on campus" Los Angeles Times, by Scott Gold. Aug 31st, 2011.
47. "9/11 changes curricula on U.S. campuses" The Seattle Times, by Scott Gold. Sept 1, 2011
48. "Pills may someday prevent foodborne pathogens" Purdue News Jan 10, 2012. WFHB news (Jan 20, 2012). "Pumped up probiotics" Journal and Courier, Lafayette, IN, Jan 24, 2012.
49. Laser tool speeds up detection of *Salmonella* in food products" Purdue Agriculture News, Feb 12, 2014; PhyS.Org; IFT Food Technology; R&D; Biophotonics.
50. "Purdue expert has bad news about your beef" Journal and Courier" Sept 3, 2015
<http://www.jconline.com/story/news/2015/09/03/purdue-bacteria-beef/71643274/>
51. "Laser tool magnifies bacterial genotypic alteration as a colony phenotype", Atlas of Science, July 19, 2016 <http://atlasofscience.org/laser-tool-magnifies-bacterial-genotypic-alteration-as-a-colony-phenotype/>
52. "Laser Scatterometer Distinguishes Wild Type, Mutant Bacteria" Photonics.com, June 6, 2016.
<http://www.photonics.com/Article.aspx?AID=60756>
53. "Approaches to Controlling Pathogens" Food Technology, Nov issue (2016) pages 66-69.
54. "E. coli Happens" Food Technology, January Issue (2017) pages 60-63.
55. "Researchers find alternate path for *Listeria* to sicken people" Purdue News, March 29, 2018; Medical Express (March 30, 2018); TechExplorist (March 30, 2018); Health Informative; Debug Lies News.
56. "*Listeria monocytogenes* finds an alternate path to cross the gut wall." Food Safety Magazine. May 1, 2018 (Invited). (<https://www.foodsafetymagazine.com/enewsletter/listeria-monocytogenes-finds-an-alternate-path-to-cross-the-gut-wall/>)
57. "Purdue researchers fight bacteria with bacteria" The Exponent. Jan 12, 2020.
https://www.purdueexponent.org/article_60729af0-c8e4-5d6e-b4a3-f4be51cc42af.html
58. "Bioengineered probiotic could prevent Listeria infections" Mirage News. Dec 15, 2020.
<https://www.miragenews.com/bioengineered-probiotic-could-prevent-listeria-infections/>

University Service and Leadership Roles at Purdue University

University

College of Engineering Strategic Planning Reviewer Search Committee
 Purdue University Interdisciplinary Life Sciences (PULSe) program: Curriculum committee, Microbiology Training Group, Executive Committee member, PULSe (2015-Present)
 Chair, Microbiology Training Group, PULSe (2015-Present)
 Purdue Homeland Security Institute – Advisory Board Member
 Purdue Microscopy Consortium
 Search Committee member for faculty hires in College of Veterinary Medicine (2012-2014, 2020), Department of Nutrition (2014-2015)
 Reviewer: PVM proposals
 Lead-Organizer: Big Data Safe Food 2020 Virtual Conference 2020 (Oct 12-15, 2020). Total registrants: 339.

College of Agriculture

Agenda and Policy Committee (1999 – 2002)
 Area Promotion and Tenure Committee (2008-2011, 2012)
 College of Agriculture Award Committee (2008-Present)

Diversity Action Team (2003-2006)

Served on a committee to develop "Promotion and Tenure Guidelines for Research" (2012-2013)

Search Committee member for Associate Dean Search (twice), Dept of Animal Science faculty (2016-2017)

Reviewer: Hatch grants, AgSEED grants (2016, 2017)

Grad Council on Agriculture (2017-Present)

Department of Food Science

Advisory Board Member to Head (2009-2013)

Member Food Science Graduate Program (1998-2017)

Chair, Interdepartmental Food Science Graduate Program (2017-Present)

Departmental Space and Facilities Committee

Departmental Review Steering Committee (2015)

Search Committee Chair for "Scholle Chair" (2012-2013), "Microbiology faculty" (2009-2010), "Food and the Human Microbiome" (2016)

Search committee member for "Food Science Department Head" (2003, 2013)

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