

CURRICULUM VITAE

PRASHANT SINGH

Personal

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Education

- 2015** **Ph.D.** University of Missouri, Columbia, MO (Major: Food Science)
- 2015** **Food Safety and Defense Graduate Certificate Program**, University of Missouri, Columbia, MO
- 2006** **M.S.** Vellore Institute of Technology, TN, India (Major: Applied Microbiology)
- 2004** **B. S. (Honors)** Delhi University, Delhi, India (Major: Botany)

Research Interest

- Development of rapid methods for detection of foodborne pathogens.
- Development of post-harvest intervention treatments for enhancing beef safety.
- Prevalence of antibiotic resistant strains among food of animal origin.

Professional Experience

- **Assistant Professor** (2017 – Present)
Nutrition, and Integrative Physiology
Florida State University
- **Postdoctoral Research Associate** (2015 – 2017)
Department of Food Science and Technology,
University of Georgia- Griffin Campus
- **Graduate Research Assistant** (2010 – 2015)
Department of Food Science,
University of Missouri, Columbia, MO
- **Graduate Teaching Assistant** (2012 – 2014)
Department of Food Science,
University of Missouri, Columbia, MO

- **Senior Research Fellow** (2008 – 2009)
Dairy Microbiology Division,
National Dairy Research Institute (NDRI), Karnal, India
- **Senior Research Fellow** (2006 – 2008)
National Bureau of Animal Genetic Resources (NBAGR), Karnal, India

Teaching Experience

At the Florida State University, Tallahassee

- Food Microbiology (Graduate Course) (2018-present)
- Food Microbiology (Undergraduate) (Fall 2019)
- Physical and Chemical Techniques in Food and Nutrition (2019- present)
- Selected Topics in Food Science and Technology (2018- present)
- Foods (2018- present)

At the University of Missouri, Columbia

- Food Microbiology Lab (2012-2014)
- Principles of Dairy Foods Science Lab (2012-2014)
- Food Science and Nutrition (2012-2014)

Fellowship and Awards

- **Yun-Hwa P. Hsieh Innovation & Excellence Award**. Florida State University (2021)
- **Fellow for Scialog**: Mitigating Zoonotic Threats (2021)
- **Provost Faculty Travel Award**, Florida State University (2019)
- **Student Travel Award**, Department of Food Science, University of Missouri (2014)
- **Mizzou Advantage Student Travel Award**, University of Missouri (2014)
- **Feeding Tomorrow, Graduate Scholarship -2014**, Institute of Food Technologists (IFT)
- **Marion L. Fields Graduate Fellowship**, 2013. Department of Food Science, University of Missouri
- Placed 3rd in the evaluation of Ice cream and Cottage Cheese in the **91st Annual Collegiate Dairy Products Evaluation Contest (National)**, Springfield, MO, USA (Nov 2012)
- **Faye W. Ferguson Scholarship, 2011 and 2012** Department of Food Science, University of Missouri
- 2nd prize, **IFT AAFFSIS poster competition**, annual IFT meeting, New Orleans (2011)
- **Italian Government Scholarships 2009-2010**. The scholarship offered for the academic year 2009-2010 to work at the University of Bari, Italy, for **eight months** (Did not avail)

Grants

- Title: Effect of Simulated Microgravity and Partial Unloading on Organ Systems of the Body. Funder: NASA; Role: Co-I; Total funds: \$1,199,949.
- Title: Purchase of EchoMRI to assess body composition in Mice, Rats and Tissue specimens. Funder: FSU, EIEG Grant Program. Role: Co-I; Total funds: \$ 70,000.
- Title: High-Resolution Melting PCR Assays for Detection of Six Shiga Toxin Producing *Escherichia coli* Serogroups. FSU, CRC GAP Grant. Role: PI. Total funds: \$48,000
- Title: Host dietary iron intake and the pathogenic potential of *Salmonella* Typhimurium. Funder: FSU, CRC MDS Grant; Role: Co-I; Total funds: \$25,000.
- Title: Ensuring the safety of Valencia oranges using peroxyacetic acid sanitizer under a simulated food processing condition – Antimicrobial efficacy evaluations. Funder: BUDA Juice; Role: PI; Total funds: \$5,000
- Title: Using Pulse Resistant Starch to Ameliorate Aging-Associated Dysbiosis of the Gut-Microbiome-Brain Axis. Funder: USDA Pulse Crop Health Initiative; Role: Co-I; Total funds: \$98,949.40
- Title: Development of a microbiome-based method for the identification of the region-of-origin of imported shrimp. Funder: Southern Shrimp Alliance; Role: PI; Total funds: \$26,450

Publications

Peer-Reviewed:

Velez, F. J., Bosilevac, J., & **Singh, P.** (2021). Validation of High-Resolution Melting Assays for the Detection of Virulent Strains of *Escherichia coli* O26 and O111 in Beef and Pork Enrichment Broths. *Food Control*. 128, 108123.

Sharma, L., Nagpal, R., Jackson, C. R., Patel, D., & **Singh, P.** (2021). Antibiotic-resistant bacteria and gut microbiome communities associated with wild-caught shrimp from the United States versus imported farm-raised retail shrimp. *Scientific reports*, 11(1), 1-14.

Indugu, N., Sharma, L., Jackson, C. R., & **Singh, P.** (2020). Whole-Genome Sequence Analysis of Multidrug-Resistant *Enterobacter hormaechei* Isolated from Imported Retail Shrimp. *Microbiology Resource Announcements*, 9(50).

Sharma, L., Watts, E., & **Singh, P.** (2020). High-resolution real-time PCR melting curve assay for identification of top five Penaeidae shrimp species. *LWT Food Science and Technology*, 109983.

Singh, P., Cubillos, G., Kirshteyn G., Bosilevac, JM. (2020). High-resolution melting real-time PCR assays for detection of *Escherichia coli* O26 and O111 strains possessing Shiga toxin genes. *LWT Food Science and Technology*. 131, 109785.

Sangokunle, O.O., Sathe, S.K., **Singh, P.** (2020). Purified starches from 18 pulses have markedly different functionality. *Starch*, 72(11-12), 2000022.

Rather, I. A., Bajpai, V. K., Ching, L. L., Majumder, R., Nam, G. J., Indugu, N., **Singh, P.** ... & Kamli, M. R. (2020). Effect of a bioactive product SEL001 from *Lactobacillus sakei* probio65 on gut microbiota and its anti-colitis effects in a TNBS-induced colitis mouse model. *Saudi Journal of Biological Sciences*, 27(1), 261-270.

Singh, P., Liu, Y., Bosilevac, J.M., Mustapha, A. (2018). Detection of shiga toxin producing *Escherichia coli*, *stx1*, *stx2* and *salmonella* by high resolution melt curve multiplex real-time PCR. *Food Control* 96, 251-259

Tian, K., Chen, X., Luan, B., **Singh, P.**, Yang, Z., Gates, K. S., ... & Gu, L. Q. (2018). Single locked nucleic acid-enhanced nanopore genetic discrimination of pathogenic serotypes and cancer driver mutations. *ACS Nano*, 12(5), 4194-4205.

Singh, P., Hung, Y. C., & Qi, H. (2018). Efficacy of peracetic acid in inactivating foodborne pathogens on fresh produce surface. *Journal of food science*, 83(2), 432-439.

Liu, Y., **Singh, P.**, & Mustapha, A. (2018). Multiplex high-resolution melt-curve real-time PCR assay for reliable detection of *Salmonella*. *Food Control*, 91, 225-230.

Liu, Y., **Singh, P.**, & Mustapha, A. (2018). High-resolution melt curve PCR assay for specific detection of *Escherichia coli* O157: H7 in beef. *Food Control*, 86, 275-282.

Ouf, J.M.M., Yuan Y., **Singh, P.**, Mustapha, A. (2017). Detection of viable but nonculturable *Escherichia coli* O157:H7 in ground beef by propidium monoazide real-time PCR. *International Journal of Agricultural Science and Food Technology* 3(2), 026-031.

Singh, P., Pfeifer, Y., Mustapha, A. (2016). Multiplex real-time PCR assay for the detection of extended-spectrum β -lactamase (ESBL) and carbapenemase genes using melting curve analysis. *Journal of Microbiological Methods*, 124, 72-78.

Forghani, F., **Singh, P.**, & Oh, D. H. (2015). A novel pentaplex real time (RT)-PCR high resolution melt curve assay for simultaneous detection of emetic and enterotoxin producing *Bacillus cereus* in food. *Food Control*, 60, 560-568.

Singh, P., & Mustapha, A. (2015). Multiplex real-time PCR assays for detection of eight Shiga toxin-producing *Escherichia coli* in food samples by melting curve analysis. *International Journal of Food Microbiology*, 215, 101-108.

Pophaly, S. D., Poonam., **Singh, P.**, Kumar, H., Tomar, S. K., Singh, R. (2014). Selenium enrichment of lactic acid bacteria and Bifidobacteria: A functional food perspective. *Trends in Food Science and Technology*, 39(2), 135-145.

Kaliyaperumal, A., Nanda, D. K., UmaMaheswari, T., Thiagaraja, H., **Singh, P.**, Singh, R. (2014). Assessment of expression of Leloir pathway genes in wild type galactose

fermenting *Streptococcus thermophilus* by real time PCR. European Food Research and Technology, 239(5), 895-903.

Blumhagen, A., **Singh, P.**, Mustapha, A., Yu, Q. (2014). Plasma deactivation of oral bacteria seeded on hydroxyapatite disks as tooth enamel analogue. American Journal of Dentistry, 27(2), 84-90.

Singh, P., & Mustapha, A. (2014). Development of a real-time PCR melt curve assay for simultaneous detection of virulent and antibiotic resistant *Salmonella*. Food Microbiology, 44,6-14.

Kaliyaperumal, A., UmaMaheswari, T., Thiagaraja, H., Nanda, D. K., **Singh, P.**, Singh, R. (2014). Preparation of low galactose yogurt using cultures of Gal⁺ *Streptococcus thermophilus* in combination with *Lactobacillus delbrueckii ssp. bulgaricus*. Journal of Food Science and Technology, 51(9), 2183-2189.

UmaMaheswari, T., Singh, R., **Singh, P.**, Tomar, S. K. (2014). Polyphasic characterization, phylogenetic analysis and technological properties of *Streptococcus thermophilus* strains isolated from plant sources. International Journal of Dairy Technology, 67(1), 117-122

Singh, P., & Mustapha, A. (2013). Multiplex TaqMan detection of pathogenic and multi-drug resistant *Salmonella*. International Journal of Food Microbiology, 166(2), 213-218.

Anbukkarasi, K., UmaMaheswari, T., Hemalatha, T., Nanda, D., **Singh, P.**, Rashmi, H. M., & Singh, R. (2013). Production of low browning mozzarella cheese: Screening and characterization of wild galactose fermenting *Streptococcus thermophilus* strains. International Journal of Advanced Research, 1, 83-96.

Iyer, R., Tomar, S. K., Mohanty, A. K., **Singh, P.**, Singh, R. (2011). Bioprospecting *Streptococcus thermophilus* strains from Indian fermented milk products for folate production. Dairy Science & Technology 91(2), 237-246.

Nanda, D. K., Tomar, S. K., Singh, R., Mal, G., **Singh, P.**, Arora, D. K., Joshi, B. K., Kumar, D. (2011). Phenotypic and genotypic characterization of Lactobacilli isolated from camel cheese produced in India. International Journal of Dairy Technology, 64(3), 437-443.

Jain, A., Gour, D. S., Bisen, P. S., **Prashant.**, Dubey, P. P., Sharma, D. K., Joshi, B. K., Kumar, D. (2009). Single nucleotide polymorphism in alpha lactalbumin 1 gene of Jamunapari goat. Small Ruminant Research, 82, 156-160.

Prashant., Tomar, S. K., Singh, R., Gupta, S. C., Joshi, B. K., Arora, D. K., Kumar, D. (2009). Phenotypic and Genotypic characterization of *Lactobacillus* from Churpi Cheese. Dairy Science and Technology, 89, 531-540.

Jain A., Gour D. S., Dubey P. P., **Prashant**, Bisen P. S., Kumar D. (2008). Single strand confirmation polymorphism (SSCP) detection in alpha-lactalbumin Gene of Indian Jakhrana milk goats. *Acta Agri Scand A Animal Science*, 58, 205-208.

Prashant, Gour D. S., Dubey P. P., Jain A., ... & Kumar, D. (2008). Sex determination in 6 bovid species by duplex PCR. *Journal of Applied Genetics*, 49(4), 379-381.

Book chapter:

- **Singh, P.**, Velez, F., & Forghani, F. (2021). Methods for Multiplex Real-Time PCR Melting Curve Assays for Pathogen Detection. In Irshad M. Sulaiman, PhD (Ed.), *Diagnosis of Pathogenic Microorganisms Causing Infectious Diseases* (pp. 16). CRC Press.
- Zaffran, V., Kirshiteyn, G., **Singh, P.** (2019). Application of Predatory Bacteria for Enhancing Food Safety and Mitigating Clinical Pathogens. In: *Application of Predatory Bacteria for Enhancing Food Safety*. Editors: Santosh Mishra. Apple Academic Press
- **Singh, P.**, Gao, F., Bernat, A. (2019). Nanobodies and their in vivo applications. In: *Advanced Biosensors for Health Care Applications*. Editors: Inamuddin, Raju Khan, Ali Mohammad and Abdullah M. Asiri. Elsevier. ISBN: 9780128157435
- Mustapha, A., & **Singh, P.** (2013). Applications of molecular-based foodborne pathogen detection. In: *Microbial Food Safety and Preservation Techniques*. Editors: V Ravishankar Rai and A Jamuna Bai. CRC Press/Taylor & Francis Group ISBN: 9781466593060 (*Invited*)
- **Prashant.**, Pophaly, S. D., Tomar, S. K. (2011). Production of functional biomolecules by Propionibacteria. In: *Functional Dairy Foods: Concepts and applications*. Eds. Tomar, S. K., Singh, R., Singh, A. K., Arora, S., Singh, R. R. B. Delhi: Satish Serial Publishing House. pp. 347-355. ISBN 81- 89304-90-9
- Pophaly, S. D., **Prashant***, Singh, A. K., Tomar, S. K., Singh, R. (2011). Safety aspects of probiotics. In: *Functional Dairy Foods: Concepts and applications*. Eds. Tomar, S. K., Singh, R., Singh, A. K., Arora, S., Singh, R. R. B. Delhi: Satish Serial Publishing House. pp. 367-388. ISBN 81- 89304-90-9

Poster Presented in Conferences

- Velez, F; Bosilevac, JM; **Singh, P.** High-Resolution Melt Assay for Detection of Virulent Lineages of Shiga Toxin-producing *Escherichia coli* O26 and O111. 2021, IAFP Annual Meeting, 18 -21th July, Phoenix, Arizona, USA.
- Sharma, L; Jackson, CR; Nagpal, R; **Singh, P.** Prevalence of Antibiotic-resistant Bacteria in Retail Shrimp. 2021, IAFP Annual Meeting, 18 -21th July, Phoenix, Arizona, USA.
- Sangokunle, OO; **Singh, P;** Hamaker, B. Some Pulse Starches Have Slow Digestibility Property in an In Vitro Study. 2021. IFT Annual Meeting. 19-21th July.

- Ippolito, J., Barney, D., **Singh, P.**, & Hennigar, S. (2020). Oral Iron Supplementation Increases Severity of Salmonella Typhimurium Infection. *Current Developments in Nutrition*, 4(Supplement_2), 1812-1812.
- **Singh, P.**, Hung, YC. A Multiple Hurdle Carcass Washing Protocol for Inactivating Shiga Toxin-Producing *Escherichia coli* on Beef. 2017, IAFP Annual Meeting, 9 -12th July, Tampa, Florida, USA
- **Singh, P.**, Hung, YC., Qi, H. Efficacy of Peroxyacetic Acid and Other Sanitizers for Ensuring Produce Safety. 2017, IAFP Annual Meeting, 9 -12th July, Tampa, Florida, USA
- Liu, Y., **Singh, P.**, Mustapha, A. High-Resolution Melt Curve PCR Assay for Detection of *E. coli* O157:H7 in Beef. 2017, IAFP Annual Meeting, 9 -12th July, Tampa, Florida, USA
- Liu, Y., **Singh, P.**, Mustapha, A. Multiplex Real-time PCR Assay for Reliable Detection of *Salmonella*. 2016, IAFP Annual Meeting, 30th July – 3rd August, St. Louis, Missouri, USA
- **Singh, P.**, Mustapha, A. Detection of Shiga toxin-producing *Escherichia coli*, seven stx subtypes and *Salmonella* via a two-tiered multiplex real-time PCR. 2015, IAFP Annual Meeting, July 25 - 28, Portland, Oregon, USA
- Gao, F., Yu, H., Shen, Z., **Singh, P.**, Xu, Y., Sun, H., Mustapha, A. Influence of Novel Chemical Compounds on Virulence Gene Expression by Shiga Toxin-Producing *Escherichia coli*. 2014, IAFP Annual Meeting, Aug 3 - 6, Indianapolis, Indiana, USA
- Kang, J., Yoo, A., **Singh, P.**, Mustapha, A. Differentiation of colony morphology of Shiga toxin-producing *Escherichia coli* on commercial agar media. 2014, IAFP Annual Meeting, Aug 3 - 6, Indianapolis, Indiana, USA
- **Singh, P.**, & Mustapha, A. Multiplex Real-time PCR Assay for Detection of Eight STEC Serotypes. 2014, IAFP Annual Meeting, Aug 3 - 6, Indianapolis, Indiana, USA
- **Singh, P.**, & Mustapha, A. Pentaplex TaqMan Assay for the Detection of Pathogenic and Multidrug-Resistant Strains of *Salmonella*. 2012, IAFP Annual Meeting, July 22 - 25, Providence, Rhode Island, USA
- UmaMaheswari, T., Singh, R., **Prashant.**, Tomar, S. K. Evaluation of genotypic heterogeneity of *Streptococcus thermophilus* strains isolated from dairy and plant sources in India. 2011, IFT Annual Meeting, June 11 - 14, New Orleans, LA, USA
- Yang, J., **Prashant.**, Liu, Y., Sun, F., Mustapha, A. Phenotypic genotypic and physiological characterization of lactic acid bacteria from Chinese yak milk cheeses. 2011, IFT Annual Meeting, June 11 - 14, New Orleans, LA, USA
- **Prashant.**, Wang, L., Mustapha, A. Molecular and virulence characterization and detection of multi-drug resistant *Salmonella* strains from food and farm. 2011, IFT Annual Meeting, June 11 - 14, New Orleans, LA, USA
- UmaMaheswari, T., Singh, R., Rani, P., **Prashant.**, Anbukkarasi, K., Tomar, S. K. Genetic diversity of *Streptococcus thermophilus* strains isolated from plant sources. P.No-299;

Conference on Environmental, Industrial and Applied Microbiology
(BioMicroWorld2009), 2-4 December, Lisbon (Portugal).

Professional Societies

- Member of International Association for Food Protection