

Shefali Dobhal
College of Tropical Agriculture and Human Resources
(Plant and Environmental Protection Sciences)
Junior Researcher

Education

<u>Degree</u>	<u>University</u>	<u>Major</u>
Bachelors	Banasthali Vidyapith, Rajasthan, India	Botany
Masters	Banasthali Vidyapith, Rajasthan, India	Biosciences (Plant Science)
PhD	G. B. Pant University of Agriculture & Technology, India	Biochemistry

Professional Appointments

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
Junior Researcher	University of Hawaii	Feb 2018-present
Post-Doctoral Research Associate	Kansas State University	2015 - 2016
Post-Doctoral Research Associate	Oklahoma State University	2010 - 2014
Post-Doctoral Research Associate	The University of Arizona	2010

Awards and Fellowships

1. Recipient of “*Young Scientist Award*” for Ph.D. research at 3rd Uttarakhand State Science and Technology Congress at IIT (Indian Institute of Technology) Roorkee, India, October 2008.
2. *UGC-CSIR* Junior Research Fellowship (JRF) Award during Ph.D.
3. Indian Council of Medical Research-Junior Research (*ICMR-JRF*) Fellowship Award during Ph.D.
4. *University Merit Scholarship Award*, Department of Biochemistry, G. B. Pant University of Agriculture and Technology, Pantnagar, UK, India.
5. M.S. Gold Medal, Banasthali Vidyapith, Rajasthan, India.

Courses Taught

Course Number and Title (credits)

PEPS 606 Biology of Plant Pathogens: Viruses and Bacteria (4) (Spring 2023-Teach Bacteria section 2023)
PEPS 405 Plant Pathogens and Diseases (Fall 2023-Teach 3 lectures, 75 mins each; 2 labs, 170 min each)
Invited Guest Lecture PEPS 405 Plant Pathogens and Diseases- Significant Plant pathogens/diseases in Hawaii (11/21/2023)
BBC-360 Elementary Biochemistry (4 credits) (2009, G. B. Pant University of Agriculture & Technology, India)

I assisted in the following courses

PEPS 606 Biology of Plant Pathogens: Viruses and Bacteria (4)
PEPS/MBBE 627 Molecular Diagnostics: Principles and Practices (3)
ENTO/PLP 5623 Advanced Biotechnology Methods (3; 2013, Oklahoma State University)
BBC-510 Biochemical Techniques (3; 2004-2008, G. B. Pant University of Agriculture & Technology, India)

Publications (reverse chronological order)

Refereed Journal Publications

1. Klair D, **Dobhal S**, Ahmad A, Hassan ZU, Uyeda J, Silva J, Wang KH, Kim S, Alvarez AM, Arif M (2022). Exploring taxonomic and functional microbiome of Hawaiian stream and spring irrigation water systems using Illumina and Oxford Nanopore sequencing platforms. *BioRxiv*. <https://doi.org/10.1101/2022.07.01.498518>
2. Paudel S, **Dobhal S**, Lowe-Power T, Schlub RL, Hu J, Caitilyn A, Alvarez AM, Arif M (2022). “RSSC-Lineage Multiplex PCR” assay detects and differentiates *Ralstonia solanacearum*, *R. pseudosolanacearum*, *R. solygyii* and the R3bv2 subgroup. *BioRxiv*. <https://doi.org/10.21203/rs.3.rs-1693987/v1>
3. DeLude A, Wells R, Boomla S, Chuang S, Urena F, Shipman A, Rubas N, Kuehu DL, Bickerton B, Peterson T, **Dobhal S**, Arizala D, Klair D, Ochoa-Corona FM, Ali ME, Odani J, Bingham JP, Jenkins D, Fletcher J, Stack JP, Alvarez AM, Arif M (2022). Loop-mediated isothermal amplification (LAMP) assay for specific and rapid

- detection of *Dickeya fangzhongdai* targeting a unique genomic region. **BioRxiv**. <https://doi.org/10.21203/rs.3.rs-1691421/v1>
4. Klair D, Arizala D, **Dobhal S**, Boluk G, Alvarez AM, Arif M (2022). *Pectobacterium colocasium* sp. nov. isolated from taro (*Colocasia esculenta*). **BioRxiv**. Doi:10.1101/2022.02.08.479620
 5. Arizala D, **Dobhal S**, Alvarez AM, Arif M (2022). Elevation of *Clavibacter michiganensis* subsp. *californiensis* to species level as *Clavibacter californiensis* sp. nov., merging and re-classification of *Clavibacter michiganensis* subsp. *chilensis* and *Clavibacter michiganensis* subsp. *phaseoli* as *Clavibacter chilensis* sp. nov. based on complete genome *in-silico* analyses. **Int J Syst Evol Microbiol** doi: 10.1099/ijsem.0.005427
 6. Boluk G, **Dobhal S**, Arizala D, Alvarez AM, Arif M (2022). *Dickeya colocasiae* sp. nov. isolated from wetland taro, *Colocasia esculentum*. **BioRxiv**. Doi:10.1101/2022.01.14.476417
 7. Arizala D, **Dobhal S**, Babler B, Crockford A, Rioux RA, Alvarez AM, Arif M (2022). Development of a multiplex TaqMan qPCR targeting unique genomic regions for the specific and sensitive detection of *Pectobacterium* species and *P. parmentieri*. **J Appl Microbiol**, doi.org/10.1111/jam.15447
 8. Pal A, **Dobhal S**, Dey KK, Sharma AK, Savani V, Negi VS (2021). Polymorphic landscape of SARS-CoV-2 genomes isolated from Indian population in 2020 demonstrates rapid evolution in ORF3a, ORF8, nucleocapsid phosphoprotein and spike glycoprotein. **Computational biology and chemistry**, 107594
 9. Boluk G, Arizala D, **Dobhal S**, Zhang J, Hu J, Alvarez AM, Arif M (2021). Genomic and phenotypic biology of novel strains of *Dickeya zeae* isolated from pineapple and taro in Hawaii: insights into genome plasticity, pathogenicity, and virulence determinants. **Frontiers in Plant Science**. doi:10.3389/fpls.2021.663851
 10. Domingo R, Perez C, Klair D, Vu H, Candelaria-Tochiki A, Wang X, Camson A, Uy JN, Salameh M, Arizala D, **Dobhal S**, Boluk G, Bingham JP, Ochoa-Corona F, Ali ME, Stack JP, Fletcher J, Odani J, Jenkins D, Alvarez AM, Arif M (2021). Genome-informed loop-mediated isothermal amplification assay for specific detection of *Pectobacterium parmentieri* in infected potato tissues and soil. **Scientific Reports**, 11, 21948. doi.org/10.1038/s41598-021-01196-4
 11. Pal A, **Dobhal S**, Dey KK, Sharma AK, Savani V, Negi VS (2021). Polymorphic landscape of SARS-CoV-2 genomes isolated from Indian population in 2020 demonstrates rapid evolution in ORF3a, ORF8, nucleocapsid phosphoprotein and spike glycoprotein. **Computational biology and chemistry**, 107594.
 12. Boluk G, Arizala D, **Dobhal S**, Zhang J, Hu J, Alvarez AM, Arif M (2021). Genomic and phenotypic biology of novel strains of *Dickeya zeae* isolated from pineapple and taro in Hawaii: insights into genome plasticity, pathogenicity, and virulence determinants. **Frontiers in Plant Science**. doi: 10.3389/fpls.2021.663851
 13. Klair D, Silva J, Arizala D, Boluk G, **Dobhal S**, Ahmad AA, Uyeda J, Alvarez AM, Arif M (2021). First Report of *Pectobacterium brasiliense* causing soft rot on mizuna (*Brassica rapa* var. *japonica*) in the United States. **Plant Dis**.doi.org/10.1094/PDIS-03-21-0644-PDN
 14. Klair D, Boluk G, Silva J, Arizala D, **Dobhal S**, Arif M (2021). First report of bacterial soft rot disease on pak choi (*Brassica rapa* subsp. *chinensis*) caused by *Pectobacterium brasiliense* in the United States. **Plant Dis**. doi.org/10.1094/PDIS-08-20-1854-PDN
 15. Ramachandran S, **Dobhal S**, Alvarez AM, Arif M (2021). Improved multiplex TaqMan qPCR assay with universal internal control offers reliable and accurate detection of *Clavibacter michiganensis*. **J Appl Microbiol**, doi.org/10.1111/jam.15017
 16. Paudel S, **Dobhal S**, Alvarez AM, Arif M (2020). Taxonomy and phylogenetic research on *Ralstonia solanacearum*: a complex pathogen with extraordinary economic consequences. **Pathogens**, 9, 886; doi.org/10.3390/pathogens9110886
 17. Boluk G, Arizala D, Ocenar J, Mokwele J, Silva J, **Dobhal S**, Uyeda J, Alvarez AM, Arif M (2020). First report of *Pectobacterium brasiliense* causing soft rot on *Brassica oleracea* var. *sabellica* L. in Hawaii, United States. **Plant Dis**. doi.org/10.1094/PDIS-04-20-0701-PDN
 18. Arizala D, **Dobhal S**, Paudel S, Boluk G, Silva J, Ahmad AA, Uyeda J, Sugano J, Alvarez AM, Arif M (2020). First report of *Pectobacterium brasiliense* causing bacterial soft rot and blackleg diseases of potato in Hawaii. **Plant Dis** doi.org/10.1094/PDIS-02-20-0395-PDN
 19. **Dobhal S**, Boluk G, Babler B, Stulberg MJ, Rascoe J, Nakhla M, Chapman T, Crockford AB, Melzer M, Alvarez AM, Arif M (2020). Comparative genomics approach for identifying signature regions to develop a robust and highly reliable multiplex TaqMan real-time qPCR assay for sensitive detection of the genus *Dickeya* and *Dickeya dianthicola*. **J Appl Microbiol**, doi.org/10.1111/jam.14579
 20. Boluk G, **Dobhal S**, Crockford AB, Melzer MJ, Alvarez AM, Arif M (2020). Genome-informed recombinase polymerase amplification assay coupled with a lateral flow device for in-field detection of *Dickeya* species. **Plant Dis**. doi.org/10.1094/PDIS-09-19-1988-RE

21. Arizala D, **Dobhal S**, Paudel S, Gunarathne S, Boluk G, Arif M (2019). First report of bacterial soft rot and blackleg on potato caused by *Pectobacterium parmentieri* in Hawaii. *Plant Dis*. doi.org/10.1094/PDIS-09-19-1894-PDN.
22. Dhakal U, **Dobhal S**, Alvarez AM, Arif M (2019). Phylogenetic analyses of xanthomonads causing bacterial leaf spot of tomato and pepper: *Xanthomonas euvesicatoria* revealed homologous populations despite distant geographical distribution. *Microorganisms*, 7, 462, doi:10.3390/microorganisms7100462.
23. Ocenar J, Arizala D, Boluk G, Dhakal U, Gunarathne S, Paudel S, **Dobhal S**, Arif M (2019). Development of a robust, field-deployable loop-mediated isothermal amplification (LAMP) assay for specific detection of potato pathogen *Dickeya dianthicola* targeting a unique genomic region. *PLoS ONE*, 14 (6): e0218868, doi.org/10.1371/journal.pone.0218868.
24. **Dobhal S**, Larrea-Sarmiento A, Alvarez A, Arif M (2019). Development of a loop-mediated isothermal amplification assay for specific detection of all known subspecies of *Clavibacter michiganensis*. *J Appl Microbiol*, 126, 388-401. DOI: 10.1111/jam.14128.
25. **Dobhal S**, Olsen J, Arif M, Garcia-Suarez JA, Ochoa-Corona FM (2016). A simplified strategy for sensitive detection of Rose rosette virus compatible with three RT-PCR chemistries. *Journal of Virological Methods* doi:10.1016/j.jviromet.2016.01.013.
26. **Dobhal S**, Zhang G, Gautam D, Fletcher J, Ma LM (2015). Studies on the uneven distribution of microorganisms on the surface of the field-grown cantaloupes. *Food Control*, 47, 185-189 doi. 10.1016/j.foodcont.2014.07.002.
27. Arif M, Opit G, Yerbafría A, **Dobhal S**, Li Z, Kucerova Z, Ochoa-Corona FM (2015). Array of synthetic oligonucleotides to generate unique multi target artificial positive control and molecular probes based discrimination of *Liposcelis* species. *PLoS ONE*, 10(6): e0129810; doi: 10.1371/journal.pone.0129810.
28. **Dobhal S**, Arif M, Olsen J, Mendoza-Yerbafría A, Aguilar-Moreno S, Perez-Garcia M, Ochoa-Corona FM (2015). Sensitive detection and discrimination method for studying multiple infections of five major plant viruses infecting ornamental plants in nursery environments. *Ann. Appl. Biol*, 166, 286-296; doi:10.1111/aab.12182.
29. **Dobhal S**, Zhang G, Rohla C, Smith M, Ma LM (2014). A simple, sensitive, rapid and cost-effective method for PCR detection of *Salmonella* in environmental samples and pecans. *J Appl Microbiol*, 117, 1181-1190; doi. 10.1111/jam.12583.
30. **Dobhal S**, Zhang G, Royer T, Damicone J, Ma LM (2014). Survival and growth of foodborne pathogens in pesticide solutions routinely used in leafy green vegetables and tomato production. *J. Sci Food Agric*, 94, 2958-2964 (doi: 10.1002/jsfa.6640)
31. Gautam D, **Dobhal S**, Payton ME, Fletcher J, Ma LM (2014). Surface survival and internalization of *Salmonella enterica* through natural cracks on developing cantaloupe fruits, alone or in the presence of the melon wilt pathogen *Erwinia tracheiphila*. *PLoS ONE*, 22, 9(8): e105248 (doi: 10.1371/journal.pone.0105248).
32. Arif M, **Dobhal S**, Garrido PA, Orquera GK, Espindola A, Young CA, Ochoa-Corona FM, Marek SM, Garzon CD (2014). Highly sensitive end-point PCR and SYBR Green qPCR detection of *Phymatotrichopsis omnivora*, causal fungus of cotton root rot. *Plant Dis*, 98 (9), 1205-1212.
33. Timmons C, **Dobhal S**, Fletcher J, Ma LM (2013). Primers with 5' flaps improve the efficiency and sensitivity of multiplex PCR assays for the detection of *Salmonella* and *Escherichia coli* O157:H7. *J. Food Prot*, 76 (4), 668-673.
34. **Dobhal S**, Chaudhary VK, Singh A, Kumar A, Pandey D, Agrawal S (2013). Expression of recombinant antibody (single chain antibody fragment) in transgenic plant *Nicotiana tabacum* cv Xanthi. *Molecular Biology Reports*, 40 (12), 7027-7037.
35. **Dobhal S**, Kumar A, Pandey D, Agrawal S (2010). Studies on plant regeneration and transformation efficiency of *Agrobacterium* mediated transformation using neomycin phosphotransferase II (*nptII*) and glucuronidase (GUS) as a reporter gene. *African Journal of Biotechnology*, 9(41), 6853-6859.
36. Singh A, **Dobhal S**, Agrawal S, Arora S, Mishra DP (2006). Biopharming: A panaceae for developing countries. *Farmers Digest*, 21-24.

Book Chapter

1. Ma LM, **Dobhal S**, Timmons C (2014). Dried Teas and Herbs. In M. Doyle, J. Kornacki, & J. Gurtler (Eds), *Microbiological Safety of Low Moisture Foods* (pp 329-344). New York, NY: Springer Publishing.

Leadership Roles

1. Alternate Responsible Officer (ARO) for the Select Agent program at the University of Hawaii (11, 2019 - current)
2. University of Hawaii Institutional Biosafety Committee (IBC) member (09, 2019-current)
3. Judge in CTAHR Research Symposium 2019 (PhD and Master oral)

4. Co-instructor in a training workshop, “Plant Biosecurity in Theory and Practice”, Biosecurity Research Institute, Kansas State University, Manhattan, KS, USA (May 2016).
5. The reviewer of the Scientific Journals: *Frontiers in Microbiology*, *PhytoFrontiers*TM, *PLoS ONE*, *Current Microbiology*, *Letters in Applied Microbiology*, *Plant Disease*, *Plant Disease Notes*, *Applied Biochemistry and Biotechnology*, *African Journal of Biotechnology*, *African Journal of Microbiology Research*.
6. Member of American Phytopathological Society (2010, 2014, 2020) and the International Association for Food Protection (2013).

Graduate Students

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated (Career)</u>
Member of Master’s Committees	0	2
Member of PhD Committees	2	3

Presentations at Conferences

2023

Title: Interactions and Genome Biology of *Dickeya fangzhongdai*: A potential threat to Potato industry.

Authors (put an asterisk on the presenter): *Dobhal S, Arizala D, Boluk G, Arif, M

Name of Conference: International Congress of Plant Pathology, ICPP 2023

Location: Lyon, France

Date of Presentation: 08/2023

Title: Development of Recombinase Polymerase amplification assays for specific detection of *Xanthomonas oryzae* pv. *oryzae* and *Xanthomonas oryzae* pv. *oryzicola*.

Authors (put an asterisk on the presenter): *Dobhal S, Arif, M

Name of Conference: International Congress of Plant Pathology, ICPP 2023

Location: Lyon, France

Date of Presentation: 08/2023

Title: Genome biology and evolution of *Clavibacter michiganensis*.

Authors (put an asterisk on the presenter): *Arif M, Arizala D, Larrea-Sarmiento L, **Dobhal S**

Name of Conference: International Congress of Plant Pathology, ICPP 2023

Location: Lyon, France

Date of Presentation: 08/2023

Title: Genomic and phenotypic biology of novel strains of *Dickeya zeae*.

Authors (put an asterisk on the presenter): *Boluk G, Arizala D, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: International Congress of Plant Pathology, ICPP 2023

Location: Lyon, France

Date of Presentation: 08/2023

Title: BacPath: Diagnostics pipeline for highly reliable detection of bacterial plant pathogens.

Authors (put an asterisk on the presenter): *Montesinos S, D, **Dobhal S**, Arif M

Name of Conference: APS Annual Meeting - Plant Health 2023

Location: Denver, Colorado

Date of Presentation: 08/2023

Title: Three new species, *Xanthomonas hawaiiensis* sp. nov., *Stenotrophomonas aracearum* sp. nov., and *Stenotrophomonas oahuensis* sp. nov., isolated from *Araceae*.

Authors (put an asterisk on the presenter): *Chuang SC, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting - Plant Health 2023

Location: Denver, Colorado

Date of Presentation: 08/2023

Title: *Ralstonia* infection in ironwood trees negatively impacts the diversity of the endophytic microbiome.
Authors (put an asterisk on the presenter): Klair D, **Dobhal S**, *Montesinos S, Delorm J, Schlub R, Alvarez AM, Arif M
Name of Conference: APS Annual Meeting - Plant Health 2023
Location: Denver, Colorado
Date of Presentation: 08/2023

Title: Comparative genomic analyses revealed flagellar biosynthesis as a key virulence factor in the *Xanthomonas euvesicatoria*-panax pathosystem.
Authors (put an asterisk on the presenter): *Chuang SC., **Dobhal S**, Alvarez AM., Arif M
Name of Conference: APS Annual Meeting - Plant Health 2023
Location: Denver, Colorado
Date of Presentation: 08/2023

Title: Genome-Informed Loop-Mediated Isothermal Amplification (LAMP) Assay for Rapid and Specific Detection of *Dickeya dadantii*.
Authors (put an asterisk on the presenter): *Montesinos S, Tyagi G, Feng Z, Hampson E, Adhikari A, Minaai M, Wong L, Haubner M, Arizala D, **Dobhal S**, Arif M
Name of Conference: APS Annual Meeting - Plant Health 2023
Location: Denver, Colorado
Date of Presentation: 08/2023

2022

Title: Field deployable recombinase polymerase amplification assay and other methods used at the University of Hawaii to differentiate *Ralstonia solanacearum* species complex and related bacteria from Ironwood samples
Authors (put an asterisk on the presenter): ***Dobhal S**
Name of Conference: IWTD [Ironwood (*Casaurina equisetifolia*) Decline] Conference Meeting Guam
Location: Virtual/Zoom
Date of Presentation: 01/2022

Title: Taxonomic and functional microbiome analyses of stream and spring irrigation water systems using illumina and nanopore sequencing platforms.
Authors (put an asterisk on the presenter): Klair D, **Dobhal S**, *Arif M
Name of Conference: APS Annual Meeting
Location: Pittsburgh, PA
Date of Presentation: 08/2022

2021

Title: Multiplex real-time PCR assay for detection and discrimination of *Ralstonia solanacearum* R3bv2 from other strains in *R. solanacearum* species complex
Authors (put an asterisk on the presenter): ***Dobhal S**, Costanzo S, Paudel S, Stulberg MJ, Rivera Y, Nakhla MK, Alvarez AM, Arif M
Name of Conference: APS Annual Meeting
Location: Virtual/Zoom
Date of Presentation: 08/2021

Title: Comparative genomics and phylogenetic analyses suggest a taxonomic re-organization and inclusion of a new species in the genus *Clavibacter*
Authors (put an asterisk on the presenter): *Arizala D, **Dobhal S**, Alvarez AM, Arif M
Name of Conference: APS Annual Meeting
Location: Virtual/Zoom
Date of Presentation: 08/2021

Title: Phylogenetic characterization and genealogy of strains in the *Ralstonia solanacearum* species complex associated with ironwood decline in Guam.

Authors (put an asterisk on the presenter): Paudel S, **Dobhal S**, Hu J, Schlub R, Alvarez AM, *Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

Title: *Xanthomonas* strains isolated from Araceae reveal diverse phylogenetic relationships and origins.

Authors (put an asterisk on the presenter): *Chuang S, **Dobhal S**, Pal K, Amore TD, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

Title: Pathological and molecular biology of *Xanthomonas* strains causing bacterial leaf blight of Panax (*Polyscias guilfoylei*) in Hawaii.

Authors (put an asterisk on the presenter): *Chuang S, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

Title: Investigating microbial communities associated with source irrigation and wet taro field water using amplicon Oxford Nanopore MinIon sequencing.

Authors (put an asterisk on the presenter): *Klair D, **Dobhal S**, Ahmad A, Uyeda J, Silva J, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

Title: Development of loop-mediated isothermal amplification assay for rapid detection of *Pectobacterium parmentieri* in infected potato and soil samples

Authors (put an asterisk on the presenter): *Klair D, Domingo R, Perez C, Huong V, Candelario-Tochiki A, Wang S, Camson A, Uy JN, Salameh M, Arizala D, Boluk G, **Dobhal S**, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

Title: Recovery of potato blackleg pathogens and impact of temperature on interactions between *Pectobacterium parmentieri* and *Dickeya dianthicola*

Authors (put an asterisk on the presenter): *Shrestha S, Babler B, **Dobhal S**, Arif M, Rioux R

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2021

2020

Title: Multitrophic interactions of chromosomally labelled *Pectobacterium* and *Dickeya* species with their host and analysis of pathogenicity determinants

Authors (put an asterisk on the presenter): ***Dobhal S**, Boluk G, Arizala D, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Multigene based TaqMan qPCR multiplex assay for sensitive and reliable detection of *Dickeya solani*

Authors (put an asterisk on the presenter): ***Dobhal S**, Santillana G, Stulberg MJ, Boluk G, Rascoe J, Nakhla MK, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: A unique region revealed through genome-wide analyses was used to develop an RPA assay for detection of the Select Agent *Ralstonia solanacearum* R3bv2

Authors (put an asterisk on the presenter): ***Dobhal S**, Paudel S, Stulberg MJ, Rascoe J, Nakhla MK, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Comparative genomics analyses of the bacterial blight pathogen of anthurium, *Xanthomonas phaseoli* pv. *dieffenbachiae*

Authors (put an asterisk on the presenter): ***Dobhal S**, Arizala D, Chuang SC, Pal K, Amore TD, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Evolutionary genomics reveals recombination events involved in speciation, host specificity and pathogenicity in the genus *Clavibacter*

Authors (put an asterisk on the presenter): *Arizala D, **Dobhal S**, Paudel S, Seo HN, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Complete genomic analysis of plant-pathogenic *Pectobacterium* species found associated with soft rot disease of kale

Authors (put an asterisk on the presenter): *Boluk G, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Evolutionary relationships and phylogeny of *Dickeya zea* strains based on phenotypic, biochemical and genomic characteristics

Authors (put an asterisk on the presenter): *Boluk G, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Comparative Genomics analyses revealed distinct pathogenicity determinants and distinct features between *Dickeya zea* strains from taro and pineapple

Authors (put an asterisk on the presenter): *Boluk G, Arizala D, **Dobhal S**, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: Field deployable recombinase polymerase amplification assay for rapid and accurate detection of *Ralstonia solanacearum* species complex

Authors (put an asterisk on the presenter): *Paudel S, **Dobhal S**, Stulberg MJ, Rascoe J, Nakhla MK, Seo HN, Schlub RL, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting

Location: Virtual/Zoom

Date of Presentation: 08/2020

Title: PCR multiplex to differentiate *Ralstonia solanacearum* species complex, including *R. solanacearum*, *R. pseudosolanacearum* and Select Agent R3bv2 strains

Authors (put an asterisk on the presenter): *Paudel S, **Dobhal S**, Lowe-Power T, Schlub RL, Allen C, Alvarez AM,

Arif M

Name of Conference: APS Annual Meeting
Location: Virtual/Zoom
Date of Presentation: 08/2020

2019

Title: Insights into pathogenicity determinants of *Clavibacter michiganensis* subsp. *michiganensis* and their effects on disease expression

Authors (put an asterisk on the presenter): *Larrea A, **Dobhal S**, Alvarez A, Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

Title: Comparative genomics approach to develop a highly reliable duplex TaqMan qPCR assay for sensitive detection of genus *Dickeya* and *Dickeya dianthicola*

Authors (put an asterisk on the presenter): **Dobhal S**, *Boluk G, Babler B, Stulberg MJ, Rascoe J, Nakhla M, Chapman T, Crockford AB, Melzer M, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

Title: Phylogeny of *Dickeya zea* isolated from different hosts and irrigation water using multi-locus sequence analysis

Authors (put an asterisk on the presenter): *Boluk G, **Dobhal S**, Alvarez A, Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

Title: Robust and highly reliable loop-mediated isothermal amplification (LAMP) assay for specific and sensitive detection of *Dickeya solani*

Authors (put an asterisk on the presenter): **Dobhal S**, Boluk G, Stulberg MJ, Rascoe J, Nakhla M, *Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

Title: Multiplex TaqMan qPCR targeting unique genomic regions for specific, sensitive and robust detection of *Pectobacterium* species and *P. parmentieri*

Authors (put an asterisk on the presenter): *Arizala D, **Dobhal S**, Crockford AB, Ochoa-Corona F, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

Title: Genome-informed recombinase polymerase amplification assay for specific and sensitive detection of *Dickeya* species at point-of-care

Authors (put an asterisk on the presenter): *Boluk G, **Dobhal S**, Crockford AB, Melzer M, Alvarez AM, Arif M

Name of Conference: APS Annual Meeting
Location: Cleveland, OH
Date of Presentation: 08/2019

2018

Title: Accurate detection of three waterborne plant virus genera allows fine screening to species level by high resolution melting analysis.

Authors (put an asterisk on the presenter): * Ochoa Corona FM, **Dobhal S**, Olmedo-Velarde A, Carrillo-Tarazona Y, Garcia-Suarez J, Mazziero B

Name of Conference: ICPP Meeting

Location: Boston, MA

Date of Presentation: 08/2018

2016

Title: Virus detection of *Tobamovirus* with wide spectrum degenerate oligonucleotides by TD RT-PCR high resolution melting.

Authors (put an asterisk on the presenter): Garcia-Suarez J, **Dobhal S**, *Ochoa-Corona FM.

Name of Conference: APS Annual Meeting

Location: Tampa, FL

Date of Presentation: 07/2016

Title: Preliminary screening of genetic markers for population analyses of *Magnaporthe oryzae* Triticum pathotype

Authors (put an asterisk on the presenter): **Dobhal S**, Cruz CD, *Stack JP.

Name of Conference: APS Annual Meeting

Location: Tampa, FL

Date of Presentation: 07/2016

Title: Essential of molecular diagnostics protocol validation to develop reliable and accurate diagnostics.

Authors (put an asterisk on the presenter): ***Dobhal S**, Arif M, Busot GY, Stack JP.

Name of Conference: National Plant Diagnostic Network

Location: Washington DC, MD.

Date of Presentation: 03/2016

Title: Nucleic acid-based diagnostics: Does the target sequence matter?

Authors (put an asterisk on the presenter): *Busot GY, Arif M, **Dobhal S**, Stack JP.

Name of Conference: National Plant Diagnostic Network

Location: Washington DC, MD.

Date of Presentation: 03/2016

Title: Nucleic acid-based diagnostics: Internal control: Essential or optional for accurate and reliable diagnostics.

Authors (put an asterisk on the presenter): *Arif M, Busot GY, **Dobhal S**, Stack JP.

Name of Conference: National Plant Diagnostic Network

Location: Washington DC, MD.

Date of Presentation: 03/2016

Title: Developing durable DNA-based diagnostics: How well do you know your SOP?

Authors (put an asterisk on the presenter): *Stack JP, Arif M, Busot GY, **Dobhal S**.

Name of Conference: National Plant Diagnostic Network

Location: Washington DC, MD.

Date of Presentation: 03/2016

2014

Title: Development of a simple, sensitive, and cost-effective PCR method for detection of *Salmonella* in environmental samples.

Authors (put an asterisk on the presenter): **Dobhal S**, Zhang G, Rohla C, Smith M, *Ma LM

Name of Conference: IAFP (International Association of Food Protection) Annual Meeting

Location: Indianapolis, IN

Date of Presentation: 08/2014

Title: Preliminary survey of the occurrence of foodborne human pathogens in pecan production fields.

Authors (put an asterisk on the presenter): **Dobhal S**, Rohla C, Smith M, Zhang G, Timmons C, *Ma LM

Name of Conference: IAFP Annual Meeting

Location: Indianapolis, IN

Date of Presentation: 08/2014

Title: Application of high-throughput sequencing to assess the microbial communities associated with the surfaces of fresh tomatoes.

Authors (put an asterisk on the presenter): *Ma LM, **Dobhal S**, Timmons C, Zhang G

Name of Conference: Mid-South Computational Biology and Bioinformatics Society.

Location: Indianapolis, IN

Date of Presentation: 10/2014

Title: Screening for plant viruses including TMV, HVX, CMV, TSWV and INSV in ornamental and nursery crops from four states of the United States.

Authors (put an asterisk on the presenter): ***Dobhal S**, Arif M, Olsen J, Mendoza-Yerbafría A, Aguilar-Moreno S, Perez-Garcia M, Ochoa-Corona FM

Name of Conference: APS-CPS Joint meeting

Location: Minneapolis, MN

Date of Presentation: 08/2014

Title: Comparison of end point RT-PCR and RT-HDA using primer pairs for five viruses frequently infecting ornamental and nursery crops.

Authors (put an asterisk on the presenter): ***Dobhal S**, Arif M, Olsen J, Ochoa-Corona FM

Name of Conference: APS-CPS Joint meeting

Location: Minneapolis, MN

Date of Presentation: 08/2014

Title: Development of endpoint RT-PCR for *Rose rosette virus* and screening of *Rosa* spp from eight states of the United States.

Authors (put an asterisk on the presenter): ***Dobhal S**, Olsen J, Arif M, Garcia-Suarez JA, Ochoa-Corona FM

Name of Conference: APS-CPS Joint meeting

Location: Minneapolis, MN

Date of Presentation: 08/2014

2013

Title: A simple and rapid method to generate full sequence reads from small qPCR amplicons using direct sequencing.

Authors (put an asterisk on the presenter): *Arif M, Perez-Garcia M, **Dobhal S**, Ochoa-Corona FM

Name of Conference: APS Annual meeting

Location: Austin, TX

Date of Presentation: 08/2013

Title: Occurrence of human pathogens in pre-harvest pecan production fields.

Authors (put an asterisk on the presenter): * **Dobhal S**, Rohla C, Zhang G, Timmons C, Blanton J, Smith M, Ma LM

Name of Conference: *ISHS Nut Conference* (1st International Symposium on Pecans & Other Carya: In Indigenous & Managed Systems

Location: College Station, TX

Date of Presentation: 02/2013

Title: Rapid and sensitive detection of shiga toxin-producing *Escherichia coli* in environmental samples by multiplex PCR.

Authors (put an asterisk on the presenter): * **Dobhal S**, Timmons C, Zhang G, Rohla C, Smith M, Ma LM

Name of Conference: FDA Annual Foods and Veterinary Medicine Science and Research Conference

Location: White Oak, MD

Date of Presentation: 07/2013

Title: Uneven distribution of microorganisms on the surface of field-grown cantaloupes.

Authors (put an asterisk on the presenter): * **Dobhal S**, Zhang G, Gautam D, Timmons C, Ma LM

Name of Conference: FDA Annual Foods and Veterinary Medicine Science and Research Conference
Location: White Oak, MD
Date of Presentation: 07/2013

Title: Pre-harvest environmental assessment of pecan fields for the occurrence of human pathogens.
Authors (put an asterisk on the presenter): * **Dobhal S**, Rohla C, Zhang G, Timmons C, Blanton J, Smith M, Ma L
Name of Conference: FDA Annual Foods and Veterinary Medicine Science and Research Conference
Location: White Oak, MD
Date of Presentation: 07/2013

2012

Title: Screening of biological control agents from fresh produce against foodborne human pathogens
Authors (put an asterisk on the presenter): **Dobhal S**, Zhang G, *Ma LM
Name of Conference: APS Annual Meeting
Location: Providence, RI
Date of Presentation: 08/2012

Title: The effect of pesticides on the growth and survival of foodborne human pathogens
Authors (put an asterisk on the presenter): **Dobhal S**, Zhang G, Royer T, Damicone J, *Ma LM
Name of Conference: 99th IAFP Annual Meeting
Location: Providence, RI
Date of Presentation: 07/2012

Title: Control of human pathogens on plant products.
Authors (put an asterisk on the presenter): * Ma LM, Fletcher J, **Dobhal S**, Gautam D, Timmons C
Name of Conference: APS-IAFP-NIFA Conference
Location: College Park, MD
Date of Presentation: 07/2012

2011

Title: Increasing the sensitivity of PCR for the detection of foodborne pathogens in fresh produce
Authors (put an asterisk on the presenter): **Dobhal S**, Timmons C, Fletcher J, *Ma LM
Name of Conference: APS Meeting
Location: Honolulu, HI
Date of Presentation: 08/2011

Title: Population structure and genetic diversity of *Sclerotinia minor* from peanut research plots in Oklahoma
Authors (put an asterisk on the presenter): *Garrido P, **Dobhal S**, Flores FJ, Rodriguez C, Blough K, Melouk H, Garzon CD
Name of Conference: APS Meeting
Location: Honolulu, HI
Date of Presentation: 08/2011

Title: Primers with 5' AT rich flaps increase the sensitivity of PCR for the detection of *E. coli* O157:H7
Authors (put an asterisk on the presenter): * **Dobhal S**, Timmons C, Fletcher J, Ma LM
Name of Conference: IAFP Annual Meeting
Location: Milwaukee, WI
Date of Presentation: 08/2011

Title: Primers with 5' AT rich flaps increase the sensitivity of PCR for the detection of *Salmonella* serovars
Authors (put an asterisk on the presenter): * Timmons C, **Dobhal S**, Fletcher J, Ma LM

Name of Conference: Chemical and Biological Terrorism Defense, Gordon Research Conference
Location: Ventura, CA
Date of Presentation: 03/2011

Title: Strain discrimination and genetic diversity assessment of the fungal plant pathogen *Sclerotinia minor* from neighboring agricultural fields in Oklahoma.

Authors (put an asterisk on the presenter): **Dobhal S**, *Garrido P, Melouk H, Garzon C

Name of Conference: DTRA CBDS & T Conference

Location: Las Vegas, NV

Date of Presentation: 11/2011

Title: Increasing the sensitivity of PCR for the detection of foodborne pathogens using 5' AT rich flap.

Authors (put an asterisk on the presenter): * **Dobhal S**, Timmons C, Fletcher J, Ma LM

Name of Conference: FAPC Symposium, Oklahoma State University

Location: Stillwater, OK

Date of Presentation: 02/2011

2010

Title: PCR detection of aflatoxin producing strains of *Aspergillus* spp. from corn and red flour beetle.

Authors (put an asterisk on the presenter): ***Dobhal S**, Blazheva D, Arif M, Garrido P, Ochoa-Corona FM, Opit G,
Garzon C

Name of Conference: APS Annual Meeting

Location: Charlotte, NC

Date of Presentation: 08/2010

2008

Title: *In silico* determination of structural and comparative modelling of single chain variable fragment against p24, a core protein of HIV.

Authors (put an asterisk on the presenter): * **Dobhal S**, Singh V, Singh A, Chaudhary VK, Agrawal S

Name of Conference: International symposium of Microbiology on Microbial Biotechnology: Diversity, Genomics and Metagenomics

Location: New Delhi, India

Date of Presentation: 11/2008

Title: Cytosolic expression of single chain variable fragment (scFv) against p24, a core protein of HIV in plants (*Nicotiana tabacum*)

Authors (put an asterisk on the presenter): * **Dobhal S**, Chaudhary VK, Pandey DC, Agrawal S

Name of Conference: 3rd Uttarakhand State Science and Technology Congress

Location: Roorkee, India

Date of Presentation: 10/2008

Title: Studies on thermostable, alkaliphilic xylanase from different bacterial strains

Authors (put an asterisk on the presenter): *Singh V, **Dobhal S**, Kumar P, Agrawal S

Name of Conference: 3rd Uttarakhand State Science and Technology Congress

Location: Roorkee, India

Date of Presentation: 10/2008

2006

Title: Partial purification and properties of amylase from bacterial sources of Uttaranchal origin

Authors (put an asterisk on the presenter): * Tomar NR, **Dobhal S**, Goel R, Agrawal S

Name of Conference: 47th Annual Conference Association of Microbiologists of India

Location: India

Date of Presentation: 12/2006