

James P. Stack
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Department of Plant Pathology
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Education:

Cornell University, Ph.D. 1984 Plant Pathology (soil science & biochemistry minors)
University of Massachusetts, M.S. 1978. Plant Pathology (genetics minor)
University of Massachusetts, B.S. 1976. Plant Pathology

Professional Experience:

Kansas State University:

Professor , Department of Plant Pathology	2006 - present
Director , Great Plains Diagnostic Network	2004 - present
Director , Biosecurity Research Institute	2006 - 2008
Associate Professor , Department of Plant Pathology	2003 – 2005

University of Nebraska:

Assistant Professor/Extension Specialist , Department of Plant Pathology	1997-2003
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EcoScience Corporation:

Director of Applied Research & Technology	1995-1997
Senior Scientist , Discovery & Plant Science Departments	1993-1995
Project Manager & Scientist , Plant Science Department	1989-1993

Texas A&M University:

Assistant Professor , Department of Plant Pathology & Microbiology	1986-1989
Postdoctoral Research Associate , Dept. of Plant Pathology & Microbiology	1983-1986

Professional Affiliations: (recent)

American Phytopathological Society	current
American Association for the Advancement of Science	current
International Society of Plant Pathology	current

Professional Service: (select)

Executive Director, National Plant Diagnostic Network	2005-2007, 2017-2019
President, North Central Division, American Phytopathological Society	2013
Advisory Panel, DARPA	2017-2020
APS Liaison to National Plant Disease Recovery System	2011-2020
APS Advisory Committee on Plant Biosecurity, Chair	2007-2013

Awards and Honors:

- *Fellow*, American Phytopathological Society, 2019
- *Distinguished Service Award*, NE Division, American Phytopathological Society, 2017 “...for contributions to the science of plant pathology...”
- *Professorial Performance Award*, Kansas State University, Manhattan, KS, April 2017
- *Science Impact Award*, Plant Biosecurity Cooperative Research Centre, Australia, 2016, “...For excellence in science demonstrated by international recognition of research...”

- *Marty Vanier and Bob Krause Research Fellow*, Biosecurity Research Institute, Kansas State University, 2016-present
- *Innovative Program Award*, National Institute of Food and Agriculture, USDA, 2010
- *Peine Professor of Biosecurity*, Kansas State University, 2006-2008, “...for leadership in biosecurity research and education...”
- Certificate of Excellence, American Society of Agronomy, 2006, for “...the development of outstanding agronomic educational material...”
- Hollings Family Award for Teaching Excellence, University of Nebraska, 2002, for “...innovation and excellence in program delivery.”

Program interests:

General: Plant health-public health interface. Impacts of plant disease on human wellbeing, including the plant biosecurity-food security challenge.

Research: Genome-informed diagnostics of plant pathogenic bacteria to the sub-specific and population levels of discrimination. Epidemiology and ecology of toxigenic fungi and bacteria. Design and development of biologically secure systems; identification of attributes associated with agricultural system resilience, stability, and recovery with respect to high-risk pathogens.

Extension: Director of the Great Plains Diagnostic Network, an eight-state collaborative project concerned with the rapid detection and diagnosis of introduced foreign pests and pathogens. International cooperation and collaboration in plant biosecurity and diagnostics through virtual and physical diagnostic networks. Extension leader for an AFRI-funded multi-institution wheat blast project.

Teaching: One-week short course entitled *Plant Biosecurity in Theory and Practice* (PBTP) and a 2-credit graduate course *Plant Pathogenic Bacteria*. PBTP is offered at K-State’s *Biosecurity Research Institute*, a state-of-the-art BSL-3 biocontainment facility; approximately 120 participants from over 15 countries have completed PBTP.

Industry Experience: Led the discovery, development, and successful commercial introduction of the biological fungicide, *Bio-Save™*. The *Bio-Save* product line has been in continuous commercial use since 1995 on oranges, lemons, pears, apples, sweet potatoes, potatoes and to a limited extent on cherries.

Management Experience:

University: **Director, Great Plains Diagnostic Network** – provide leadership for nine state collaboration to ensure rapid detection and diagnosis of introduced foreign pests and pathogens. **Director, Biosecurity Research Institute** (<https://www.bri.k-state.edu>), a 113,000 ft² BSL-3 containment facility - responsible for research and education programs and facility staff that ensured biosafety and biosecurity. **Executive Director, National Plant Diagnostic Network** (2 terms) – provided leadership for the national network (>70 diagnostic labs in 50 states and three U.S. territories spanning eight time zones) with shared responsibilities for governance, funding, and external relations. **Project Director** for multi-institutional, tri-national research collaboration – provided leadership and guidance for a team of scientists (~14) at five institutions in Australia, New Zealand, and the U.S. concerning the development of genome-enabled diagnostic assays to support plant biosecurity.

Industry: As **Head of the Plant Science Department** and subsequently **Director of Applied Research** at *EcoScience Corporation*, I managed multiple internal research projects, as well as cooperative research

projects with government, industry, and academic laboratories leading to patented technology and two commercial products. I interacted with patent attorneys regarding proprietary technology and with regulatory agencies regarding compliance and permitting.

International Experience: (select projects)

- Australia & New Zealand: Project Leader and research collaborator for the Plant Biosecurity Cooperative Research Center; a multi-institutional research project to develop genome-based diagnostics for plant pathogenic bacteria.
- Israel: Research collaboration concerning toxigenic *Fusarium proliferatum* and forensic investigations in agricultural environments.
- Bolivia: Research collaboration to address emerging wheat blast disease; field-testing program for screening wheat cultivars for resistance to *Magnaporthe oryzae* Triticum pathotype.
- European Union: PI on multi-nation, multi-year *Crop & Food Biosecurity* projects to develop the basis for a European plant diagnostic research network.
- NATO Security through Science Program: Explored regional cooperation for biosecurity and food security projects. Published *Crop Biosecurity* book.

Other Professional Experience:

Young Professionals Mentored (Last 6 Years): 16

Patent: Patent Number: 5,554,368. *Pseudomonas Syringae* ATCC 55389 and Use Thereof for Inhibiting Microbial Decay on Fruit. **James P. Stack**, Steven N. Jeffers, Baruch Sneh, and Teresa Wright. Patent filed: December 3, 1993. Patent awarded: September 10, 1996.

Grants (Research and Extension/Outreach): (2011-2022)	Total = \$10,831,722
<i>K-State National Bio-Agro-defense Facility Grant (2021-2023)</i>	\$216,400
<i>USDA - REE - NIFA Great Plains Diagnostic Network (2022-2023)</i>	\$547,654
<i>Michigan State North Central Plant Diagnostic Network Support (2022-2023)</i>	\$ 90,000
<i>USDA NIFA Tactical Sciences Network to Enhance Plant and Animal Health and Biosecurity (2022)</i>	\$ 6,250
<i>Great Plains Plant Diagnostic Network, Sept. 2021-Aug. 2022 USDA NIFA</i>	\$547,408
<i>Creating and Implementing Professional Development Courses USDA APHIS PPQ (2021-2022)</i>	\$ 35,016
<i>Western Regional Center in the NPDN Univ. California</i>	\$ 14,000
<i>Strategic Resource Development and Deployment USDA NIFA</i>	\$ 11,400
<i>Tactical Sciences Coordination Network to Enhance Plant & Animal Health USDA AFRI</i>	\$300,000
<i>Deployment of Validated Genome-Informed Bacterial Diagnostics (2015-2018) Australia PBCRC</i>	\$466,819
<i>Novel Strategies for Managing Blast Diseases on Rice and Wheat (2013-2018) USDA AFRI</i>	\$383,101
<i>New Approaches for Diagnosing Bacterial Pathovars (2012-2015) Australia PBCRC</i>	\$560,860
<i>Crop Bioterrorism: means for prevention and mitigation (2011-2015) EU 7th Framework</i>	\$ 84,762
<i>Genome-enabled Diagnosis of the Wheat Blast Pathogen <i>M. oryzae</i> (2009-2012) USDA AFRI</i>	\$249,922
<i>Great Plains Diagnostic Network, Food and Agriculture Defense Initiative (2020)</i>	\$437,002
<i>Plant Diagnostic Information System (2019-2020)</i>	\$168,000
<i>Great Plains Diagnostic Network, Food and Agriculture Defense Initiative (2011-2019)</i>	\$5,845,628
<i>Plant Diagnostic Information System (2011-2018)</i>	\$796,500
<i>USDA Food and Agriculture Defense Initiative (2012)</i>	\$ 6,000
<i>Plant Diagnostic Laboratories for Diagnosis and Surveillance USDA (2011)</i>	\$ 65,000

Invited Speaker: {select 2006 - present}

Plant Health is Essential to One Health – Your life and our health depend on it! Invited seminar – University of Hawai'i, Manoa – 30 November 2022.

Assessment of the National Biodefense Strategy and Implementation Plan. Invited Formal Remarks – White House, Washington D.C. – 9 November 2022.

Attribution in an Agricultural Context: A Plant Health Perspective. National Academy of Sciences Workshop: Assessing and Improving Strategies for Preventing, Countering, and Responding to Weapons of Mass Destruction related to Biological Threats. Virtual Workshop – 25 July 2022.

A More Inclusive One Health Concept: Plant Health, The Foundation for Human Health & Wellbeing. University-Industry Consortium. Manhattan, Kansas – 27 April 2022.

Food Security Challenges: Protecting Plant Systems to Keep People Healthy. Invited seminar – University of Hawai'i, Manoa – 29 March 2022.

Food Security and Food Sovereignty: Challenges, Dilemmas, and Paradoxes. Invited presentation – Native American Student Association. Kansas State University – 22 March 2022.

High Consequence Trans-Kingdom Plant Pathogens: A more inclusive One Health concept. Department of Homeland Security BSL-3 Training Program, Biosecurity Research Institute – 30 June 2021. (rated #1 speaker out of 26 invited speakers by participants) (in-person)

The National Plant Diagnostic Network: Partners in Plant Health Surveillance in the U.S. International Society of Plant Pathology, North American Pest Outbreaks Alert and Response Systems Workshop – 17 June 2021. (Virtual)

Resource-conscious, near-comprehensive approach to quality diagnostics in the National Plant Diagnostic Network. National Clean Plant Network Workshop. U.C. Davis – 14 May 2021. (virtual)

*Genome-informed diagnostics and invasion biology for two high consequence plant pathogens, *Magnaporthe oryzae* Triticum and *Rhizyibacter toxicus*.* National BioAgro-Defense Facility, Plum Island Hot Topics Seminar. 25 February 2021 (virtual)

Future Needs of the National Plant Disease Recovery System. Improving the National Plant Disease Recovery System Workshop. APS Annual Meeting, Denver CO – 12 January 2021 (virtual/COVID-19)

Surveillance as a Primary Plant Health Strategy. In, A Global Surveillance System for Crop Diseases and Pests. ASA, CSSA & SSSA Annual Meeting – 9 November 2020 (virtual - COVID-19).

Confluence of drivers and accelerators of change on the emergence, re-emergence and geographic redistribution of pathogens and pests. International Tropical Agriculture Symposium, 13 November 2019 – **Brisbane, Australia**

Quality Diagnostics in the National Plant Diagnostic Network: Getting it right, not just getting it done. **Keynote.** National Clean Plant Network Quality Management Initiative Meeting, Riverside, CA – 18 June 2019

The National Plant Diagnostic Network: Protecting the Plant Systems that Underpin Human Health and Wellbeing. National Academy of Sciences Board on Agriculture and Natural Resources, Manhattan, KS – 23 April 2019

Emerging Crop Diseases and Food Security. 5th International Biosafety & Biocontainment Symposium. Baltimore, MD – February 2019

Emerging Plant Diseases of Global Consequence: A Plant Biosecurity – Food Security Challenge. 4th Mitigation of Infectious Diseases Conference. **Cali, Colombia** – 14 November 2018

*Genome-Informed Diagnostics for Early and Accurate Detection of *Magnaporthe oryzae* Triticum and *Rathayibacter toxicus*.* Ag Biosecurity and Biodefense Consortium, Nebraska City, NE – 23 October 2018

Emergence, Reemergence, and Redistribution: Consequences of a Global Economy. University of Pretoria, **Pretoria, South Africa** – 19 October 2018

Protecting Plant Systems to Keep People Healthy: A Plant Biosecurity-Food Security Challenge, Keynote. 2ND International Conference on Food Safety and Security, **Pretoria, South Africa** – 17 October 2018

Emerging Crop Diseases and Food Security. MABion Biosafety Conference, Manhattan, KS – 8 August 2018

Transnational Biological Threats and Global Security. Bipartisan Commission on Biodefense, Washington DC – 25 April 2018

<https://www.youtube.com/watch?v=rDOPAJCrIM&list=PLr5tk1Hf6CeMYRE9UeFiA0ykAAhRtWBk-&index=4>

Plant Health Networks and Information Systems. Canadian Food Inspection Agency, **Ottawa, Canada** – 1 February 2018

Challenges to Plant Health and Food Security, Keynote. 3RD CALICONF: Mitigation Strategies for Infectious Diseases, Santiago de **Cali, Colombia** - 24-27 October 2017

The Plant Biosecurity-Food Security-National Security Nexus, SLU Agricultural University, **Uppsala, Sweden** – 12 September 2017

Emergence, Re-emergence, and Redistribution: A challenging plant disease landscape, Keynote, **Auckland, New Zealand** – 29-31 August 2017

Sequence-based biosecurity: Bioinformatics-informed genome-based identification of sub-specific taxa in the field. Plant Biosecurity CRC Science Exchange, October 2016 – **Victoria, Australia**

Plant Biosecurity and Climate Change: Policy challenges for the 21st Century. 4-6 October 2016. National Forum on Climate and Pests, National Academy of Sciences, Washington D.C.

Genomic Analysis of the Select Agent Rathayibacter toxicus. 31 July 2016. Microbial Forensics and Agricultural Biosecurity Symposium, APS Annual Meeting, Tampa, Florida.

Food security in a world of uncertainty. 26 February 2016 – Invited seminar, Plant & Food Research, **Lincoln, New Zealand**.

Field-deployable LAMP and RPA-based diagnostics for Pseudomonas syringae pathovar actinidiae and P. syringae pathovar actinifoliorum. 22 February 2016 – Invited seminar, Plant & Food Research, **Auckland, New Zealand**.

Diagnostics in Support of IPM. 1er Simposio Internacional de Manejo Integrado de Plagas INIAP, 7-8 October 2015 – Invited Presentation. **Quito, Ecuador**.

Genome-informed diagnostics: making sense of sequence. Plant Biosecurity CRC Science Exchange, August 2015 – **Plenary Lecture. Sunshine Coast, Australia**

One Health: Finding balance at the interface of animal, plant and human health. CEEZAD Symposium – BRI June 2015.

Plant Biosecurity and Climate Change: a world of uncertainty. March 2015 – **Gordon Research Conference Keynote Presentation**, Ventura CA.

The Plant Health-Public Health Interface: Where the Solutions are the Problem. Seminar, K-State College of Veterinary Medicine, December 2014.

Feeding a Growing Population in a Shrinking World: A Plant Biosecurity Challenge. International Global Plant Health Risks and Consequences Conference. U.N. Organization for Economic Cooperation and Development, **FERA, United Kingdom**, October 2014.

Pathogen Detection & Diagnostics: Technologies & Strategies to Protect Food Systems. Foodborne pathogens: diagnostics, safety & biosecurity Workshop. September 2014. Middle East Technical University, **Ankara, Turkey**.

Food Safety and Security for a Growing Population. Foodborne pathogens: diagnostics, safety & biosecurity Workshop. September 2014. Middle East Technical University, **Ankara, Turkey**.

Genome-informed diagnostics for plant pathogenic bacteria PBCRC Science Exchange, **Sunshine Coast, Australia**, May 2014.

Detection & Surveillance in Action: The US Diagnostic and Surveillance Network. Ontario Plant Health Symposium, **Niagara, Canada**, March 2014.

Feeding a Growing Population in a Shrinking World: A Plant Biosecurity Challenge. Center for Comparative Genomics, Murdoch University, **Perth, Australia**, March 2014.

Plant Biosecurity: Why does it matter? International Congress of Plant Pathology, **Beijing, China**, August 2013.

Networking Plant Diagnostics. International Congress of Plant Pathology, **Beijing, China**, August 2013.

A Plant Biosecurity – Food Security Paradox: Implications for National Security. Kansas Intelligence Fusion Center, Topeka, KS, April 2013.

Plant Systems: How bad can it get? Food and Ag Defense Initiative Meeting, USDA, Washington, D.C., June 2012.

Plant Biosecurity: Why Does It Matter? 3rd National Plant Diagnostic Network Meeting, Berkeley, CA. November 2011 **Keynote Presentation**.

Reconciling Plant Biosecurity Strategy with Trends in Emergence and Evolution of Plant Diseases. 18th Australasian Plant Pathology Conference, Darwin, Australia. April 2011. **Keynote Presentation**.

The Plant Biosecurity-Food Security paradox: The solution is the problem. USDA NIFA, Washington D.C. March 2010.

The Plant Biosecurity – Food Security Challenge. CSIRO, **Canberra, Australia**. February 2010.

Infrastructure for Plant Biosecurity. Division of Primary Industries, **Victoria, Australia**. February 2010.

Biological Invasions as a Threat to Human Wellbeing. International Congress on Biological Invasions, **Fuzhou, China**. November 2009. **Keynote Presentation**.

The Plant Biosecurity-Food Security paradox: The solution is the problem. 5th International Conference on Plant Pathology, **New Delhi, India**. November 2009. **Plenary Lecture**.

Diagnostic Networks: Critical Infrastructure for Plant Biosecurity. 5th International Conference on Plant Pathology, **New Delhi, India**, November 2009. Symposium: Biosecurity, transboundary movement of crops/pathogens, and policy issues in plant protection.

Agroterrorism: security and forensics challenges in plant systems. FBI Forensic Laboratory Partners Meeting, Quantico, Virginia. September 2009.

Linking diagnostic laboratories to ensure rapid detection and accurate diagnosis of plant disease. 8th International Congress of Plant Pathology, Torino, Italy. August 2008. **Keynote paper**.

Biodefense: vision of a broader cooperation. 8th International Congress of Plant Pathology. Torino, Italy. August 2008. EU Crop Biosecurity Symposium.

Plant Biosecurity: Relevance and Needs. Food Safety and Security Summit. Washington D.C. March 2008. Protecting our Food Supply in an Age of Terrorism Symposium.

The U.S. Perspective of Crop Biosecurity. 3rd European Crop Biosecurity Workshop. Institut National de le Recherche Agronomique, **Paris, France**. November 2007.

Protecting natural and agricultural plant systems from bioterrorism and biocrime. XVI International Plant Protection Congress. **Glasgow, Scotland**, October 2007.

Data sourcing from university labs and field programs. Information Technologies for Multi-Scale Disease Forecasting and Surveillance Systems Symposium. APS Annual Meeting, San Diego, CA 2007

Protecting Natural and Agricultural Plant Systems. Plant Canada 2007. Conference, **Saskatchewan, Canada**, June 2007.

Plant Biosecurity: Challenges and Infrastructure. REC-Regional Environmental Center for Central and Eastern Europe, **Budapest, Hungary**, May 2007.

Plant Diagnostic Networks and Disease Surveillance. Academy of Agriculture, University of Torino. **Torino, Italy**. February 2007.

The U.S. National Plant Diagnostic Network, Plant Disease detection and diagnosis. International Workshop on Agro-terrorism: Prediction, Detection, Prevention, Management & Modeling. **York, United Kingdom**, February 2007.

Global Challenges to Plant Biosecurity: the Need for International Cooperation. INRES – Rheinische Friedrich-Wilhelms-University, Department of Phytomedicine and Plant Health, **Bonn Germany**, November 2006.

Building a National Biosecurity Infrastructure: The Biosecurity Research Institute. International Symposium on Agroterrorism, FBI Joint Terrorism Task Force, Kansas City, MO September 2006.

The Importance of International Cooperation to Agricultural Biosecurity. Institute for Plant Protection, Chinese Academy of Agricultural Sciences, **Beijing, China**, June 2006.

Plant Disease Detection and Surveillance: A U.S. Perspective. EU Crop Biosecurity Symposium, **Cambridge, England**, May 2006.

Agricultural Biosecurity: The Need for National Infrastructure. NATO Crop Biosecurity Workshop, Volcani Institute, **Beit Dagan, Israel**, March 2006.

Agricultural Biosecurity: The Need for National Infrastructure. NATO Crop Biosecurity Workshop, **Cairo, Egypt**, March 2006.

Refereed Publications and Book Chapters:

Sharma, P., **Stack, J.P.**, Luster, D., Hyten, A., Nakhla, M., Harmon, C. and Cardwell, K. 2023. Need and Vision for a Diagnostic Assay Validation Network. *PhytoFrontiers* *accepted* {KAES 23-069-J}

Stack, J.P. and Cardwell, K. 2022. Communications Ecosystem to Support the Assay Validation Community: A Concept. *PhytoFrontiers* **FIRST LOOK**. Published Online:9 Oct 2022
<https://doi.org/10.1094/PHTOFR-05-22-0055-FI> {KAES 23-068-J}

DeLude, A., Wells, R., Boomla, S. Chuang, SC, Urena, F., Shipman, A., Rubas, N., Kuehu, D.L., Bickerton, B., Peterson, T., Dobhal, S., Arizala, D., Klair, D., Ochoa-Corona, F., Ali, M.E., Odani, J., Bingham, J.P., Jenkins, D., Fletcher, J., **Stack, J.P.**, Alvarez, A.M., and Arif, M. 2022 Loop-mediated isothermal amplification (LAMP) assay for specific and rapid detection of *Dickeya fangzhongdai* targeting a unique genomic region. *Sci Rep* **12**, 19193 (2022). <https://doi.org/10.1038/s41598-022-22023-4>

Arif M, Busot GY, Mann R, Rodoni B, and **Stack JP**. 2021. Field-Deployable Recombinase Polymerase Amplification Assay for Specific, Sensitive and Rapid Detection of the US Select Agent and Toxigenic Bacterium, *Rathayibacter toxicus*. *MDPI Biology*. 2021; 10(7):620. <https://doi.org/10.3390/biology10070620> {KAES 20-127-J}

Arif, M., Busot, G.Y., Mann, R., Rodoni, B., and **Stack, J.P.** 2021. Multi-internal controls enhance reliability and accuracy for PCR and qPCR detection and population-level discrimination of the Select Agent *Rathayibacter toxicus*. *Scientific Reports*: 11:8365. <https://doi.org/10.1038/s41598-021-87815-6> {KAES 20-012-J}

Domingo, R., Perez, C., Klair, D., Vu, H., Candelario-Tochiki, A., Wang, X., Camson, A., Uy, J.N., Salameh, M., Arizala, D., Dobhal, S., Boluk, G., Bingham, J.P., Ochoa-Corona, F., Ali, E., **Stack, J.P.**, Fletcher, J, Odani, J., Jenkins, D., Alvarez, A.M., and Arif, M. 2021. Development of a genome-informed loop-mediated isothermal amplification assay for specific detection of *Pectobacterium parmentieri* in infected potato tissues and soil samples. *Scientific Reports*. 11:21948. <https://doi.org/10.1038/s41598-021-01196-4>

Larrea-Sarmiento A, **Stack JP**, Alvarez AM, Arif M 2021. Multiplex recombinase polymerase amplification (RPA) assay developed using unique genomic regions and coupled with a lateral flow device for rapid on-site detection of genus *Clavibacter* and *C. nebraskensis*. *Scientific Reports* **11**, 12017 (2021). <https://doi.org/10.1038/s41598-021-91336-7>

Valent, Barbara, Giovana Cruppe, **James P. Stack**, Christian D. Cruz, Mark L. Farman, Pierce A. Paul, Gary L. Peterson and Kerry F. Pedley 2021. Recovery plan for wheat blast caused by *Magnaporthe oryzae* pathotype *triticum*. *Plant Health Progress*, 22(2): 182-212. <https://doi.org/10.1094/PHP-11-20-0101-RP> {KAES 21-120-J}

Smart, A., Harmon, C.L., Jones, J, Byrne, J., Hammerschmidt, R. Snover-Clift, K.L., **Stack, J.** and Brenes-Arguedas, T. 2021. Evolving plant diagnostics during a pandemic. *Plant Health Progress* 22(1):21-25. <https://doi.org/10.1094/PHP-08-20-0074-MR>

Yasuhara-Bell, J., Arif, M., Busot, G., Mann, R., Rodoni, B. and **Stack, J.P.** 2020. Comparative genomics of *Rathayibacter toxicus*. *Microorganisms* 2020, 8:366 (38 pp); doi:10.3390/microorganisms8030366. {KAES 19-273-J}

Reyes Gaike, A., Todd, T., and **Stack, J.P.** 2020. Interspecific Competition for Colonization of Maize Plants Between *Fusarium proliferatum* and *F. verticillioides*. *Plant Disease* 104(8):2102–2110. <https://doi.org/10.1094/PDIS-09-19-1964-RE>. {KAES }

Fletcher, J., Gamliel, A., Gullino, M.L., McKirdy, S., Smith, G.R. and **J.P. Stack** 2020. A Fresh Look at Graduate Education in Plant Pathology in A Changing World: Global Needs and Perspectives. *J. Plant Pathology* (2020). <https://doi.org/10.1007/s42161-020-00509-2> {KAES 20-117-J}

Yasuhara-Bell, J., Pieck, M.L., Ruck, A., Farman, M.L., Peterson, G.L., **Stack, J.P.**, Valent, B., and Pedley, K.F. 2019. A Response to Gupta et al. 2019. Regarding the MoT3 Wheat Blast Diagnostic Assay. *Phytopathology* 109:509-511. {KAES 19-079-J}

Larrea-Sarmiento A, Alvarez AM, **Stack JP**, Arif M 2019. Synergetic effect of non-complementary 5' AT-rich sequences on the development of a multiplex TaqMan real-time PCR for specific and robust detection of *Clavibacter michiganensis* and *C. michiganensis* subsp. *nebraskensis*. *PLoS ONE* 14(7): e0218530. <https://doi.org/10.1371/journal.pone.0218530> {KAES 19-173-J}

Yasuhara-Bell, J. and **Stack, J.P.** 2019. Panel of three loop-mediated isothermal amplification assays allows differentiation of *Rathayibacter toxicus* subpopulations RT-I, RT-II, RT-III, RT-IV, and RT-V. *J Plant Pathol* 101(2):1-11. <https://doi.org/10.1007/s42161-018-00232-z>. {KAES 19-008-J}

Reyes Gaige, A., Giraldo, M., Todd, T., and **Stack, J.P.** 2019. Active dispersal through soil and colonization of organic matter by *Fusarium proliferatum*. *Canadian Journal of Plant Pathology* 40(4):1-9. {KAES 16-174-J}

Cardwell, K., Dennis, G., Flannery, A., Fletcher, J., Luster, D., Nakhla, M., Rice, A., Shiel, P., **Stack, J.**, Walsh, C., and Levy L. 2018. Principles of diagnostic assay validation for plant pathogens: A Basic Review of Concepts. *Plant Health Progress* 19:272-278. {KAES 19-172-J}

Yasuhara-Bell, J., Pedley, K.F., A.R., Farman, M.L., Valent, B., and **Stack, J.P.** 2018. Specific detection of the wheat blast pathogen (*Magnaporthe oryzae* Triticum) by loop-mediated isothermal amplification. *Plant Dis.* 102(12):2550-2559. [102:https://doi.org/10.1094/PDIS-03-18-0512-RE](https://doi.org/10.1094/PDIS-03-18-0512-RE). {KAES 18-324-J}

Rodoni B.C., Mann, R., Smith G.R., Chapman T.A., and **Stack J.P.** 2018. Emerging Pathogens and Diseases: Where do they come from? *Annals of Biological Sciences* 6 (1): 23-25. DOI: 10.21767/2348-1927.1000117. KAES 19-171-J

Fletcher, J., A. Gamliel, **J. Stack**, H. Dehne, and I. Moncrief. 2017. Applications and assessment of microbial forensics in a field outbreak of salmon blotch of onion in Israel. Pp. 257-288, in: Gullino, M.L., J.P. Stack, J. Fletcher and J. Mumford, eds. *Practical Tools for Plant and Food Biosecurity*. *Plant Pathology in the 21st Century* 8, DOI 10.1007/978-3-319-46897-6_4. Springer International Publishing AG, Gewerbestrasse, Switzerland. {KAES }

Verrier, P.J., Thomas, J.E. and **Stack, J.P.** 2017. *The European Union Plant Diagnostic Information System (EUPDIS): A platform for collaborative diagnostics and a tool for early detection of plant pathogens*. Pp. 227-242, in: Gullino, M.L., J.P. Stack, J. Fletcher and J. Mumford, eds. *Practical Tools for Plant and Food Biosecurity*. DOI 10.1007/978-3-319-46897-6_4. Springer International AG, Gewerbestrasse, Switzerland. {KAES }

Gamliel, A., **Stack, J.P.**, and Mumford, J. 2017. *A risk management framework for plant biosecurity*. Pp. 97-120, in: Gullino, M.L., J.P. Stack, J. Fletcher and J. Mumford, eds. *Practical Tools for Plant and Food Biosecurity*. *Plant Pathology in the 21st Century* 8, DOI 10.1007/978-3-319-46897-6_4. Springer International Publishing AG, Gewerbestrasse, Switzerland. {KAES }

Mumford, J., Gullino, M.L., **Stack, J.P.** and Quinlan, M.M. 2017. *The need for international perspectives to solve global biosecurity challenges*. Pp. 363-384, in: Gullino, M.L., J.P. Stack, J. Fletcher and J.

Mumford, eds. *Practical Tools for Plant and Food Biosecurity*. Plant Pathology in the 21st Century 8, DOI 10.1007/978-3-319-46897-6_4. Springer International Publishing AG, Gewerbestrasse, Switzerland. {KAES }

Pieck, A.R., Farman, M.L., Peterson, G.L., **Stack, J.P.**, Valent, B. and Pedley, K.F. 2017. Genomics-Based Marker Discovery and Diagnostic Assay Development for Wheat Blast. *Plant Disease* 101(1):103-109. Accepted for publication <http://dx.doi.org/10.1094/PDIS-04-16-0500-RE>. {KAES 16-261-J}

Arif, M., Busot, G.Y., Mann, R., Rodoni, B., Liu, S. and **Stack, J.P.** 2016. Emergence of a new population of the select agent *Rathayibacter toxicus*: an ecologically complex, geographically isolated bacterium. *PLOS ONE*. (doi.org/10.1371/journal.pone.0156182). {KAES 16-130-J}

Moncrief, I., Garzon, C., Marek, S., **Stack, J.P.**, Gamliel, A., Garrido, P., Proaño, F., Gard, M., Dehne, H., and Fletcher, J. 2016. *Development of simple sequence repeat (SSR) markers for discrimination among isolates of Fusarium proliferatum*. *Journal of Microbiological Methods* 126:12-17. {KAES }

Cruz, C.D., Magary, R.D., Christie, D.N., Fowler, G.A., Fernandes, J.M., Bockus, W.W., Valent, B., **Stack, J.P.** 2016. *Climate suitability for Magnaporthe oryzae Triticum pathotype in the United States*. *Plant Disease* 100(10):1979-1987. {KAES 15-438-J}

Cruz, C.D., Bockus, W.W., **Stack, J.P.**, Valent, B., Maciel, J.N., and Peterson, G.L. 2016. *A Standardized Inoculation Protocol to Test Wheat Cultivars for Reaction to Head Blast caused by Magnaporthe oryzae (Triticum pathotype)*. *Plant Health Progress (PHP-BR-16-0041.R1)*. {KAES 17-047-J}

McRoberts, N., Thomas, C.S., Brown, J.K., Nutter, F.W., **Stack, J.P.** and Martin, R.D. 2016. The Evolution of a Process for Selecting and Prioritizing Diseases for Recovery Plans. *Plant Disease* 100(4):665-671. <http://dx.doi.org/10.1094/PDIS-04-15-0457-FE>. {KAES }

Burrows, M.E., Thomas, C.S., McRoberts, N., Bostock, R.M., Coop, L., and **Stack, J.P.** 2016. *Coordination of Diagnostic Efforts in the Great Plains: Wheat Virus Survey and Modeling of Disease Onset*. *Plant Disease* 100(6):1037-1045. <http://apsjournals.apsnet.org/doi/pdfplus/10.1094/PDIS-04-15-0467-FE>. {KAES }

Cruz, C.D., Kiyuna, J., Bockus, W.W., Todd, T.C., **Stack, J.P.** and Valent, B. 2015. *Magnaporthe oryzae conidia on basal wheat leaves as a potential source of wheat blast inoculum*. *Plant Pathology* 64(6):1491-1498. Doi: 10.1111/ppa.12414. {KAES 15-426-J}

Stack, J.P., Thomas, J., Baldwin, W., and Verrier, P. 2014. *Virtual Diagnostic Networks: a platform for collaborative diagnostics*. In, *Detection and Diagnostics of Plant Pathogens*. Eds: M. Lodovica Bullino and Dr. Peter Bonants. Springer, Dordrecht. {KAES 14-298-B}

Stack, J.P., Bostock, R.M., Hammerschmidt, R., Jones, J.B. and Luke, E. 2014. *The National Plant Diagnostic Network: Partnering to Protect Plant Systems*. *Plant Disease* 98(6):708-715. {KAES 14-297-J}

Stack, J.P., Fletcher, J., and Gullino, M.L. 2013. *Plant Biosecurity and Climate Change: A New World Disorder?* Pp 161-181, In, *Global Climate Change, New Drivers for Resistance, Crime and Terrorism?* Nomos, Baden-Baden, Germany, 298 pp. {KAES 12-468-B}

Cruz, C.D., Bockus, W.W., **Stack, J.P.**, Tang, X., Valent, B., Pedley, K.F., and Peterson, G.L. 2012. *Preliminary assessment of resistance among U.S. wheat cultivars to the *Triticum* pathotype of *Magnaporthe oryzae**. Plant Dis. 96:1501-1505 {KAES 12-218-J}

Jeger, M., Pautasso, M. and **Stack, J.P.** 2011. Climate, globalization and trade: impacts on dispersal and invasion of fungal plant pathogens. Pp 174-197, in, IOM (Institute of Medicine). *Fungal Diseases: An Emerging Threat to Human, Animal and Plant Health*. Washington, D.C: The National Academies Press. {KAES 12-185-B}

Bockus, W.W., DeWolf, E.D., Gill, B.S., Jardine, D.J., **Stack, J.P.**, Bowden, R.L., Fritz, A.K. and Martin, T.J. 2011. Historical durability of resistance to wheat diseases in Kansas. Online. Plant Health Progress doi:10.1094/PHP-2011-0802-01-RV. {KAES 10-329-J}

Stack, J.P., Suffert, F. and Gullino, M.L. 2010. Bioterrorism: a threat to plant biosecurity? In, *The role of plant pathology in food safety and food security*. Strange R.N., Gullino, M.L. eds. 155 p Springer, Dordrecht. {KAES 10-086-B}

Stack, J.P. 2010. Diagnostic networks for plant biosecurity. In, *Knowledge and technology transfer for plant pathology*. Hardwick, N. Gullino, M.L. eds. 123 p. Springer, Dordrecht {KAES 10-085-B}

Burrows, M., Franc, G., Rush, C., Blunt, T., Ito, D., Kinzer, K., Olson, J., O'Mara, J., Price, J., Tande, C., Ziems, A. and **Stack, J.P.** 2009. Occurrence of viruses in wheat in the Great Plains region, 2008. Online. Plant Health Progress doi:10.1094/PHP-2009-0706-01-RS. {KAES 10-087-J}

Stack, J.P. 2008. Challenges to Crop Biosecurity. Pp. 15-23. In: *Crop biosecurity: assuring our global food supply*. (Eds: Gullino, M.L., Fletcher, J., Gamliel, A., **Stack, J.P.**). Springer, The Netherlands. 148 pp.

Stack, J.P. and Baldwin, W. 2008. The need for secure communications networks and global connectivity. In: *Crop biosecurity: assuring our global food supply*. (Eds: Gullino, M.L., Fletcher, J., Gamliel, A., **Stack, J.P.**). Springer, The Netherlands. 148 pp.

Tinivella, F., Gullino, M.L., and **Stack, J.P.** 2008. The need for diagnostic tools and infrastructure. Pp. 63-71. In: *Crop biosecurity: assuring our global food supply*. (Eds: Gullino, M.L., Fletcher, J., Gamliel, A., **Stack, J.P.**). Springer, The Netherlands. 148 pp.

Gamliel, A., Gullino, M.L. and **Stack, J.P.** 2008. Crop biosecurity: Local, national, regional and global perspectives. In: *Crop biosecurity: assuring our global food supply*. (Eds: Gullino, M.L., Fletcher, J., Gamliel, A., **Stack, J.P.**). Springer, The Netherlands. 148pp.

Seifers, D.L., Martin, T.J., Harvey, T.L., Fellers, J.P., **Stack, J.P.**, Ryba-White, M., Haber, S., Krohkin, O., Spicer, V., Lovat, N., Yamchuk, A., and Standing, K.G. 2008. *Triticum Mosaic Virus: A New Virus Isolated from Wheat in Kansas*. Plant Disease 92:808-817.

Stack, J.P., Fletcher, J. 2007. Plant Biosecurity Infrastructure for Disease Surveillance and Diagnostics. Pp 95-106. In: Institute of Medicine. 2007. *Global infectious disease surveillance and detection: Assessing the challenges – finding the solutions*. Workshop summary. Washington, D.C.: The National Academies Press. 263. P.

Fletcher, J., **Stack, J.P.** 2007. Agricultural biosecurity: threats and impacts for plant pathogens. Pp. 86-94. In, Institute of Medicine. 2007. Global infectious disease surveillance and detection: Assessing the challenges – finding the solutions. Workshop. Washington, D.C: The National Academies Press. 263 p.

Stockwell, V.O. and **Stack, J.P.** 2007. Using *Pseudomonas* spp. for integrated biological control. *Phytopathology* 97:244-249.

Knudsen, G.R., **Stack, J.P.**, Schuhmann, S.O., Orr, K., and LaPaglia, C. 2006. Individual-Based Approach to Modeling Hyphal Growth of a Biocontrol Fungus in Soil. *Phytopathology* 96:1108-1115.

Stack, J.P., Cardwell, K., Hammerschmidt, R., Byrne, J., Loria, R., Snover-Clift, K., Baldwin, W., Wisler, G., Beck, H., Bostock, R., Thomas, C. and Luke, E. 2006. The National Plant Diagnostic Network. *Plant Disease* 90:128-136.

Bulluck, R., Shiel, P., Berger, P., Kaplan, D., Parra, G., Li, W., Levey, L., Keller, J., Reddy, Munagala, Sharma, N., Dennis, M., **Stack, J.P.**, Pierzynski, J., O'Mara, J., Webb, C., McKemy, J and Palm, M. 2006. Evaluation of detection techniques to determine presence of *Phytophthora ramorum* in a nursery. Online. *Plant Health Progress* doi:10.1094/PHP-2006-1016-01-RS.

Lamour, K.H., Habera, L.F., Snover-Clift, K.L., **Stack, J.P.**, Pierzynski, J., Hammerschmidt, R., Jacobs, J.L., Byrne, J.M., Harmon, P.F., Vitoreli, A.M., Wisler, G.C., Harmon, C.L., Levy, L.E., Zeller, K.A., Stone, C.L., Luster, D.G. and Frederick, R.D. 2006. Early detection of Asian soybean rust using PCR. *Plant Health Progress*: Online. *Plant Progress* doi:10.1094/PHP-2006-0524-01-RS.

Stack, J.P. 2003. Recurring and Emerging Sorghum Diseases in North America. In: *Sorghum and Millet Diseases: A Third World Review*. Iowa State University Press. Blackwell Scientific.

Stack, J.P. and Pedersen, J.F. 2003. Expression of susceptibility to Fusarium head blight and grain mold in A1 and A2 cytoplasm of *Sorghum bicolor* (L.) Moench. *Plant Disease* 87:172-176.

Bull, C.T., **Stack, J.P.**, and Smilanick, J.L. 1997. *Pseudomonas syringae* pv. *syringae* strains ESC-10 and ESC-11 survive in wounds on citrus and control green and blue molds of citrus. *Biological Control* 8:81-88.

Cook, R.J., Bruckart, W.L., Coulson, J.R., Goettl, M.S., Humber, R.A., Lumsden, R.D., Maddox, J. V., McManus, M.L., Moore, L., Meyer, S.F., Quimby, P.C., **Stack, J.P.** and Vaughn, J.L. 1997. Safety of microorganisms intended for pest and plant disease control: A framework for scientific evaluation. *Biological Control* 7:333-351.

Chen, X., **Stack, J.P.**, McDowell, D., Kramer, J. and Grant, L.A. 1997. Using *Biosave*[™] to replace chemical fungicides for postharvest disease. *Proc. Fla. State Hort. Soc.* 110:208-211.

Diourte, M., Starr, J.L., Jeger, M. J., **Stack, J.P.**, and Rosenow, D.T. 1995. Charcoal rot (*Macrophomina phaseolina*) resistance and the effects of water-stress on disease development in sorghum. *Plant Pathology* 44:196-202.

Park, Y.H., Kenerly, C.M., and **Stack, J.P.** 1992. Inoculum dynamics of *Gliocladium virens* associated with roots of cotton seedlings. *Microbial Ecology* 23:169-179.

- Park, Y.H., **Stack, J.P.**, and Kenerley, C.M. 1992. Selective isolation and enumeration of *Gliocladium virens* and *G. roseum* from natural soil. *Plant Disease* 76:230-235.
- Park, Y.H., **Stack, J.P.**, and Kenerley, C.M. 1991. Production of gliotoxin by *Gliocladium virens* as a function of source and concentration of carbon and nitrogen nutrition. *Mycol. Res.* 95:1242-1248.
- Sneh, B., and **Stack, J.P.** 1990. Selective medium for isolation of *Mycoleptodiscus terrestris* from soil sediments of aquatic environments. *Applied & Environmental Microbiology* 56:3273-3277.
- Knudsen, G.R. and **Stack, J.P.** 1990. Modeling fungal growth and dispersal in natural environments, pgs 625-645. In, *Handbook of Applied Mycology, Vol. 1: Soil and Plants*. Marcel Dekker, Inc., New York.
- Stack, J.P.**, Kenerley, C.M., and Pettit, R.E. 1988. Application of biological control agents. In, *Biocontrol of Plant Diseases*, K. G. Mukerji and K.L. Garg, eds. CRC Press, Boca Raton, FL.
- Martyn, R.D. and **Stack, J.P.** 1988. Biological control of soil-borne plant pathogens with antagonistic fungi. In: *Laboratory Exercises in Plant Pathology*, A.B.A.M. Baudoin, ed. APS Press, St. Paul, MN.
- Stack, J.P.**, Kenerley, C.M., and Pettit, R.E. 1987. Influence of carbon and nitrogen sources, relative carbon and nitrogen concentrations, and soil moisture on the growth in non-sterile soil of soilborne fungal antagonists. *Canadian J of Microbiology* 33:632-635.
- Kenerley, C.M. and **Stack, J.P.** 1987. Influence of assessment method on selection of potential fungal antagonists of sclerotium-forming fungi. *Canadian J Of Microbiology* 33:632-635.
- Stack, J.P.** and Millar, R.L. 1985. Isolation and characterization of a metalaxyl-insensitive isolate of *Phytophthora megasperma* f. sp. *medicaginis*. *Phytopathology* 75:1387-1392.
- Stack, J.P.** and Millar, R.L. 1985. Competitive colonization of organic matter in soil by *Phytophthora megasperma* f. sp. *medicaginis*. *Phytopathology* 75:1393-1398.
- Stack, J.P.** and Millar, R.L. 1985. Relative survival potential of propagules of *Phytophthora megasperma* f. sp. *medicaginis*. *Phytopathology* 75:1398-1404.
- Neck, K.F., **Stack, J.P.**, Neck, J.S., Caceci, T. 1985. A scanning electron microscope study of mature *Aspergillus flavus* sclerotia. *Proc. Electron Microscope Soc. Amer.* Pp. 640-641
- Stack, J.P.**, Mount, M.S., Berman, P.M., Hubbard, J.P. 1980. Pectic enzyme complex from *Erwinia carotovora*: A model for degradation and assimilation of host pectic fractions. *Phytopathology* 70:267-272.
- Stack, J.P.** and Tattar, T.A. 1978. Measurement of transmembrane electropotentials of *Vigna sinensis* leaf cells infected with tobacco ringspot virus. *Physiological Plant Pathology* 12:173-178
- Tattar, T.A., **Stack, J.P.**, and Zuckerman, B.M. 1977. Apparent nondestructive penetration of *Caenorhabditis elegans* by microelectrodes. *Nematologica* 23:267-267.