

Adam H. Sparks

ASSOCIATE PROFESSOR

University of Southern Queensland, Centre for Crop Health, West St., Toowoomba, Queensland 4350 AUS

☎ +61 (4) 15489422 | ✉ adam.h.sparks@gmail.com | 🏠 adamhsparks.com | 📧 adamhsparks | 🐦 adamhsparks | 📞 0000-0002-0061-8359

I have demonstrated consistent success both in non-profit international NGO and academic settings and have an extensive background of experiences in working with diverse partners.

Education and Qualifications

Kansas State University

Manhattan, KS, USA

PH.D. IN PLANT PATHOLOGY

Dec. 2009

- Dissertation Title: "Disease risk mapping with metamodels for coarse resolution predictors: global potato late blight risk now and under future climate conditions."
- Committee members: Drs. Karen A. Garrett (adviser), James P. Stack, Erick DeWolf and J. M. Shawn Hutchinson.

Kansas State University

Manhattan, KS, USA

GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SCIENCES

Dec. 2007

Purdue University

West Lafayette, IN, USA

B.S. IN AGRONOMY (SOIL AND CROP MANAGEMENT)

May 2000

Professional Appointments

University of Southern Queensland

Toowoomba, Queensland, AUS

ASSOCIATE PROFESSOR OF FIELD CROPS PATHOLOGY

2016 – Current

International Rice Research Institute (IRRI)

Los Baños, Laguna, PHL

SCIENTIST I PLANT DISEASE MANAGEMENT SPECIALIST

2012 – 2015

International Rice Research Institute (IRRI)

Los Baños, Laguna, PHL

POST-DOCTORAL FELLOW

2011 – 2012

Kansas State University

Manhattan, Kansas, USA

POST-DOCTORAL RESEARCH ASSOCIATE

2010 – 2010

Publications

SELECTED PUBLICATIONS

- Purushotham, N., Jones, A., Poudel, B., Nasim, J., Adorada, D., **Sparks, A.**, ... Vaghefi, N. (2020). Draft genome resource for *macrophomina phaseolina* associated with charcoal rot in sorghum. *Molecular Plant-Microbe Interactions*.
- Čučak, M., **Sparks, A.**, M., d. R., Kildea, S., Lambkin, K., & Fealy, R. (2019). Evaluation of the 'Irish Rules': The potato late blight forecasting model and its operational use in the Republic of Ireland. *Agronomy*, 9(9), 515. <https://doi.org/10.3390/agronomy9090515>
- McCoy, A. G., Noel, Z. A., **Sparks, A.**, & Chilvers, M. (2019). hags, an R package resource for pathotype analysis of *Phytophthora sojae* populations causing stem and root rot of soybean. *Molecular Plant-Microbe Interactions*, 32(12). <https://doi.org/10.1094/MPMI-07-19-0180-A>
- Pede, V. O., Barboza, G., **Sparks, A.**, & McKinley, J. (2018). The inequality-growth link revisited with spatial considerations: The case of provinces in the Philippines. *Journal of the Asia Pacific Economy*, 23(3), 411–427. <https://doi.org/10.1080/13547860.2018.1503765>
- Savary, S., Nelson, A. D., Djurle, A., Esker, P. D., **Sparks, A.**, Amorim, L., ... Willocquet, L. (2018). Concepts, approaches, and avenues for modelling crop health and crop losses. *European Journal of Agronomy*, 100, 4–18. <https://doi.org/10.1016/j.eja.2018.04.003>

- Sparks, A.** (2018). nasapower: A NASA POWER global meteorology, surface solar energy and climatology data client for R. *Journal of Open Source Software*, 3, 1035. <https://doi.org/10.21105/joss.01035>
- Savary, S., Bregaglio, S., Willocquet, L., Gustafson, D., D'Croz, D. M., **Sparks, A.**, ... Garrett, K. (2017). Crop health and its global impacts on the components of food security. *Food Security*, 9(2), 311–327. <https://doi.org/10.1007/s12571-017-0659-1>
- Sparks, A.** (2017). getCRUCLdata: Use and explore CRU CL v. 2.0 climatology elements in R. *The Journal of Open Source Software*, 2(12). <https://doi.org/10.21105/joss.00230>
- Sparks, A.**, Hengl, T., & Nelson, A. (2017). GSODR: Global summary daily weather data in R. *The Journal of Open Source Software*, 2(10). <https://doi.org/10.21105/joss.00177>
- Sparks, A.**, Padgham, M., Parsonage, H., & Pembleton, K. (2017). bomrang: Fetch Australian government Bureau of Meteorology weather data. *The Journal of Open Source Software*, 2(17). <https://doi.org/10.21105/joss.00411>
- Duku, C., **Sparks, A.**, & Zwart, S. J. (2016). Spatial modelling of rice yield losses in Tanzania due to bacterial leaf blight and leaf blast in a changing climate. *Climatic Change*, 135(3-4), 569–583. <https://doi.org/10.1007/s10584-015-1580-2>
- Dossa, G. S., **Sparks, A.**, Cruz, C. V., & Oliva, R. (2015). Decision tools for bacterial blight resistance gene deployment in rice-based agricultural ecosystems. *Frontiers in Plant Science*, 6(305). <https://doi.org/10.3389/fpls.2015.00305>
- Laborte, A. G., Paguirigan, N. C., Moya, P. F., Nelson, A., **Sparks, A.**, & Gregorio, G. B. (2015). Farmers' preference for rice traits: Insights from farm surveys in central Luzon, Philippines, 1966–2012. *PLOS ONE*, 10(8), e0136562. <https://doi.org/10.1371/journal.pone.0136562>
- Maloon, J. M., Quilang, E. J. P., Mabalay, M. R. O., Dios, J. L. de, Jr., A. C. A., Mirandilla, J. R. R., ... Barbierri, M. (2015). Philippine Rice Information System (PRISM): Innovating the rice field data capture and monitoring using smartphone. *Philippine Journal of Crop Science*.
- Sparks, A.**, Forbes, G. A., Hijmans, R. J., & Garrett, K. A. (2014). Climate change may have limited effect on global risk of potato late blight. *Global Change Biology*, 20(12), 3621–3631. <https://doi.org/10.1111/gcb.12587>
- Barnwal, M. K., Kotasthane, A., Magculia, N., Mukherjee, P. K., Savary, S., Sharma, A. K., ... Zaidi, N. (2013). A review on crop losses, epidemiology and disease management of rice brown spot to identify research priorities and knowledge gaps. *European Journal of Plant Pathology*, 136(3), 443–457. <https://doi.org/10.1007/s10658-013-0195-6>
- Gaudin, A. C. M., **Sparks, A.**, & Slamet-Loedin, I. H. (2012). Taking transgenic rice drought screening to the field. *Journal of Experimental Botany*, 64(1), 109–117. <https://doi.org/10.1093/jxb/ers313>
- Mckinley, J. D., **Sparks, A.**, Pede, V. O., & Duff, B. (2012). An economic assessment of the impact of mango pulp weevil on the agricultural sector of Palawan, Philippines. *The Philippine Agricultural Scientist*, 95(3), 286–292.
- Garrett, K. A., Forbes, G. A., Savary, S., Skelsey, P., **Sparks, A.**, Valdivia, C., ... Yuen, J. (2011). Complexity in climate-change impacts: An analytical framework for effects mediated by plant disease. *Plant Pathology*, 60(1), 15–30. <https://doi.org/10.1111/j.1365-3059.2010.02409.x>
- Savary, S., Nelson, A., **Sparks, A.**, Willocquet, L., Duveiller, E., Mahuku, G., ... Djurle, A. (2011). International agricultural research tackling the effects of global and climate changes on plant diseases in the developing world. *Plant Disease*, 95(10), 1204–1216. <https://doi.org/10.1094/pdis-04-11-0316>
doi: 10.1094/PDIS-04-11-0316
- Sparks, A.**, Forbes, G. A., Hijmans, R. J., & Garrett, K. A. (2011). A metamodeling framework for extending the application domain of process-based ecological models. *Ecosphere*, 2(8), art90. <https://doi.org/10.1890/es11-00128.1>
- Cheatham, M. R., Rouse, M. N., Esker, P. D., Ignacio, S., Pradel, W., Raymundo, R., ... Garrett, K. A. (2009). Beyond yield: Plant disease in the context of ecosystem services. *Phytopathology*, 99(11), 1228–1236. <https://doi.org/10.1094/phyto-99-11-1228>

- Esler, P. D., **Sparks, A.**, Campbell, L., Guo, Z., Rouse, M., Silwal, S. D., ... Garrett, K. A. (2008). Ecology and epidemiology in R: Disease forecasting. *The Plant Health Instructor*. <https://doi.org/10.1094/phi-a-2008-0129-01>
- Sparks, A.**, Esler, P. D., Antony, G., Campbell, L., Frank, E. E., Huebel, L., ... Garrett, K. A. (2008). Ecology and epidemiology in R: Spatial analysis. *The Plant Health Instructor*. <https://doi.org/10.1094/phi-a-2008-0129-03>
- Sparks, A.**, Esler, P. D., Bates, M., Dall'Acqua, W., Guo, Z., Segovia, V., ... Garrett, K. A. (2008). Ecology and epidemiology in R: Disease progress over time. *The Plant Health Instructor*. <https://doi.org/10.1094/phi-a-2008-0129-02>
- Esler, P. D., **Sparks, A.**, Antony, G., Bates, M., Dall'Acqua, W., Frank, E. E., ... Garrett, K. A. (2007). Ecology and epidemiology in R: Modeling dispersal gradients. *The Plant Health Instructor*. <https://doi.org/10.1094/PHI-A-2007-1226-03>
- Garrett, K. A., Esler, P. D., & **Sparks, A.** (2007). An introduction to the R programming environment. *The Plant Health Instructor*. <https://doi.org/10.1094/phi-a-2007-1226-02>
- Garrett, K. A., Esler, P. D., **Sparks, A.**, & Scharmann, L. C. (2007). Writing teaching documents as a class project. *The Plant Health Instructor*. <https://doi.org/10.1094/phi-t-2007-1226-01>

BOOK CHAPTERS

- Kannan, E., Paliwal, A., & **Sparks, A.** (2017). Spatial and temporal patterns of rice production and productivity. In S. Mohanty, P. G. Chengappa, M. Hedge, J. K. Ladha, S. Baruah, E. Kannan, & A. V. Manjunatha (Eds.), *The future rice strategy for india* (First, pp. 39–68). <https://doi.org/10.1016/B978-0-12-805374-4.00003-8>
- Garrett, K. A., Nita, M., DeWolf, E. D., Esler, P. D., Gomez-Montano, L., & **Sparks, A. H.** (2016). Plant pathogens as indicators of climate change. In T. M. Letcher (Ed.), *Climate change: Observed impacts on earth* (Second, pp. 325–328). Elsevier.
- Garrett, K. A., Esler, P. D., & **Sparks, A. H.** (2014). An introduction to key distributions and models in epidemiology using r. In K. Stevenson & M. Jeger (Eds.), *Exercises in plant disease epidemiology* (2nd ed.). APS Press, Minneapolis, MN.
- Garrett, K. A., Forbes, G. A., Gómez, L., Gonzáles, M. A., Gray, M., Skelsey, P., & **Sparks, A. H.** (2013). Cambio climático, enfermedades de las plantas e insectos plaga. In E. Jimenez (Ed.), *Cambio climático y adaptación en el altiplano boliviano* (Primera edición).

REPORTS

- Raitzer, D. A., **Sparks, A.**, Huelgas, Z., Maligalig, R., Balangue, Z., Launio, C., ... Ahmed, H. U. (2015). *Is rice improvement still making a difference? Assessing the economic, poverty and food security impacts of rice varieties released from 1989 to 2009 in bangladesh, indonesia and the philippines*. [A report submitted to the Standing Panel on Impact Assessment (SPIA), CGIAR Independent Science and Partnership Council (ISPC). 128 pp.]. Retrieved from Standing Panel on Impact Assessment (SPIA), CGIAR Independent Science; Partnership Council (ISPC) website: <http://impact.cgiar.org/rice-improvement-still-making-difference>
- Geisler, L. J., & **Sparks, A.** (2004a). *Evaluation of seed treatment for controlling seedling diseases and compatibility with rhizobium inoculants, 2003*. (Fungicide and Nematicide Tests No. 59:ST025). The American Phytopathological Society, St. Paul, MN.
- Geisler, L. J., & **Sparks, A.** (2004b). *Evaluation of seed treatment fungicides for controlling soybean seedling diseases, 2003* (Fungicide and Nematicide Tests No. 59:ST025). The American Phytopathological Society, St. Paul, MN.

Grants

Country Technical Consultant

UNITED NATIONS FOOD AND AGRICULTURE ORGANISATION (FAO): CONSULTANCY

- Provided technical expertise and advice to country partners for building an agrometeorology bulletin in three provinces.
- Funding amount: \$80,000 AUD

KHM

2019 – 2020

Ph.D. Student Scholarship

Toowoomba, Queensland, AUS

COTTON RESEARCH AND DEVELOPMENT CORPORATION (CRDC): SUPPRESSIVE SOILS PROJECT

2019 – 2021

- Funding amount: \$30,000 AUD

A model for predicting chickpea ascochyta blight risk, Parent Project: DAW1810

AUS

GRAINS RESEARCH AND DEVELOPMENT CORPORATION (GRDC): POST-DOCTORAL FELLOWSHIP PROJECT USQ1903-003RTX

2019 – 2021

- Supervised post-doctoral research fellow in the development of spatial disease risk model development for chickpea ascochyta blight.
- Funding amount: \$510,800 AUD

Disease epidemiology and management tools for Australian grain growers

AUS

RESEARCH AND DEVELOPMENT CORPORATION (GRDC) RESEARCH PROJECT DAW1810 SUBCONTRACT TO USQ FROM THE

2018 – 2021

GOVERNMENT OF WESTERN AUSTRALIA

- Led epidemiological and modelling research activities to support Australian grain growers.
- Supervised post-doctoral research fellow in the development of spatial disease risk model development for black spot in field pea.
- Funding amount: \$650,429 AUD

Northern rice Australia - Developing rice growing packages for tropical climates

Queensland, AUS

RURAL INDUSTRIES RESEARCH AND DEVELOPMENT CORPORATION (RIRDC): PROJECT PRJ-010814

2018 – 2021

- Led research into and developed control methods for common diseases of tropical rice.
- Co-PIs: G. Ash and K. Pembleton
- Funding amount: \$2 million AUD

1-Year Extension to Existing Project

AUS

GRAINS RESEARCH AND DEVELOPMENT CORPORATION (GRDC): RESEARCH PROJECT DAQ00186

2017

- Led inter-organisational team in integrated disease management research and disease monitoring activities
- Funding amount: \$1.2 million AUD

Laboratory Improvements

Toowoomba, Queensland, AUS

UNIVERSITY OF SOUTHERN QUEENSLAND: RESEARCH INFRASTRUCTURE PROGRAM 2017

2017

- Co-PIs: D. Adorada and A. Young
- Funding amount: \$25,000 AUD

Phase III, Sub-Project 1 - Crop Health Management

South and Southeast Asia

SYNGENTA: SYNGENTA – IIRI SCIENTIFIC KNOWLEDGE AND EXCHANGE PROGRAM (SKEP)

2016 – 2019

- Led international and inter-organisational team in integrated disease management research and disease monitoring activities
- Co-PI: Kee-Fui Kon (Syngenta)
- Funding amount: \$484,274 USD

Epidemiology and environmental characterisation of false smut

PHL

BAYER: IDENTIFYING RESISTANT RICE GERMPLASM TO FALSE SMUT USING COMBINED SCREENING APPROACHES AND

2015 – 2017

UNDERSTANDING THE MECHANISMS UNDERLYING RICE RESISTANCE (BAYER)

- Led research into development of a predictive model for false smut in rice.
- Co-PIs: B. Zhou and C. M. Vera Cruz
- Funding amount: \$653,91 USD

Component B - Crop Health Monitoring

PHL

PHILIPPINE DEPARTMENT OF AGRICULTURE: PHILIPPINE RICE INFORMATION SYSTEM (PRISM)

2013 – 2015

- Led inter-organisational team in integrated disease management research and disease monitoring activities
- Led efforts to standardise data collection methods and ensure data integrity through the use of mobile devices and cloud-hosted databases.
- Co-PIs: A. Nelson (IRRI), G. S. Arida (PhilRice), E. J. P. Quilang (PhilRice)
- Funding amount: \$2.8 million USD

Phase II, Sub-Project 2 - Crop Health Management

South and Southeast Asia

SYNGENTA – IIRI SCIENTIFIC KNOWLEDGE AND EXCHANGE PROGRAM (SKEP)

2013 – 2015

- Led international and inter-organisational team in integrated disease management research and disease monitoring activities
- Co-PI: Kee-Fui Kon (Syngenta)
- Funding amount: \$454,640 USD

Awards and Honours

Theo Murphy (Australia) Initiative for support for ‘Re:produce – kick-off meeting of reproducible research network’

Brisbane, Queensland, AUS

R. PANCZAK (LEAD), P. BAKER, F. GACENGA, R. KING, L. LI, J. LODGE, C. LIM, N. SCHNYDER AND A. SPARKS

2019

- Sponsored by The Australian Academy of Science

Participant in workshop on “Food System Impacts of Pests & Pathogens in a Changing Climate”

Aspen, Colorado, USA

A. SPARKS

2019

- Aspen Initiative

“Best Independent Film” Award for creation of extension articles for extensionAUS website

Adelaide, South Australia, AUS

A. SPARKS & D. ADORADA

2018

- extensionAUS Field Disease Community of Practice

First Place Award for Paddock to Plate Category, John Conner Hack

AUS

K. PEMBLETON, G. GRUNDY, A. SPARKS

2016

- GovHack 2016

Invited Guest Lectures

Sparks, A. (2019). *The Impact of Plant Pathology on the Global Economy*. Invited presentation delivered at the “IX Symposium on Updates in Phytopathology” held in Viçosa, Minas Gerais, BRA.

Sparks, A. (2019). *Delivering and Supporting Open Science Practices Through Open Plant Pathology*. Invited presentation delivered at the October 2019 Queensland Chapter APPS Seminar Series, held in Toowoomba, Queensland, AUS.

Sparks, A. (2019). *Climate Change May Have Limited Effect on Global Risk of Potato Late Blight*. Invited presentation delivered at the workshop on “Food System Impacts of Pests & Pathogens in a Changing Climate” hosted by Aspen Initiative held in Aspen, Colorado, USA

Sparks, A. (2019). *What’s so Open About Plant Pathology?* Invited presentation delivered at the “Openness and Reproducibility in Science” symposium, hosted by Australian National University, held in Canberra, Australian Capital Territory, AUS

Sparks, A., A.D. Nelson, K.A. Garrett, C. Gilligan and K. Pembleton. (2018). *Upscaling models, downscaling data or the right model for the right scale of application?* Invited presentation delivered at the “2018 International Congress of Plant Pathology” held in Boston, Massachusetts, USA.

Sparks, A. (2016). *Using modelling and mapping for digital insights into diseases in the rice field*. Invited presentation delivered at the “2016 Korean Society of Plant Pathology Fall Meeting and International Conference” at Seoul National University, Pyeongchang, Gangwon-do, KOR.

Sparks, A., N. P. Castilla and G. S. Arida. (2014). *Taking sustainable crop protection from the field to the cloud*. Invited presentation delivered at the “4th International Rice Congress (IRC2014)” in Bangkok, THA.

Sparks, A. (2014). *Impact of climate change on rice diseases*. Invited presentation delivered at the “Workshop on the impact of climate change on crop pests and diseases, and adaptation strategies for the Greater Mekong Sub – Region (GMS)” at Hotel Continental Saigon, Ho Chi Minh City, VNM.

Sparks, A. (2014). *Epidemiology and Disease Management of rice brown spot: Research priorities and knowledge gaps*. Invited presentation delivered at the “66th Annual Indian Phytopathological Society Meeting” at Indira Gandhi Krishi Vishwavidyalaya University, Raipur, IND.

Sparks, A. (2013). *Biosecurity risks in Southeast Asia impacting on human food supplies*. Invited presentation delivered at the “Pacific Environmental Security Forum” hosted by the Australian Department of Defence (ADoD) and U. S. Pacific Command (USPACOM) in Sydney, New South Wales, AUS.

Sparks, A. (2010). *Global potato late blight risk in response to climate change, possible futures for a historic disease*. Invited presentation presented at “Emerging infectious diseases in response to climate change” hosted by New York Academy of Sciences in New York, New York, USA.

Papers and Posters Presented

Adorada, D. L., Adorada, E. E., Gonzales, P., & **Sparks, A.** (2019). Pathogenicity and aggressiveness of *macrophomina phaseolina* isolates to sorghum in Australia’s northern grains region. *Proceedings of the 2019 Australian Summer Grains Conference*.

- Sparks, A.**, Diggle, A., Galloway, J., Kelly, L., Melloy, P., & Weir, D. (2019). A new tool to support mungbean growers and advisers in the fight against powdery mildew. *Proceedings of the 2019 Australian Summer Grains Conference*.
- Vaghefi, N., Adorada, D. L., Adorada, E. E., Kelly, L., Young, A., & **Sparks, A.** (2019). Characterising the genotypic diversity of *Curtobacterium flaccumfaciens* pv. *Flaccumfaciens*, the cause of tan spot on mungbean. *Proceedings of the 2019 Australian Summer Grains Conference*.
- Adorada, D. L., Gonzales, P., McKay, A., Vaghefi, N., & **Sparks, A.** (2018). A broad look at charcoal rot in the Northern Region broadacre crops through soil sampling and in-crop surveys. *Proceedings of the 10th australasian soilborne diseases symposium*. Presented at the National Wine Centre.
- Adorada, D. L., Thompson, S. M., Grams, R. A., Adorada, E. E., **Sparks, A.**, Wright, G., ... Ash, G. J. (2017). Fungi and bacteria associated with the Peanut Kernel Shriveled (PKS) disease in the Bundaberg region. *Proceedings of the australasian plant pathology society 2017 meeting*.
- Cucak, M., **Sparks, A.**, Fealy, R., Griffin, D., Lambkin, K., & Kildea, S. (2017). Lowering thresholds of qualitative plant risk prediction algorithms: Sensitivity versus specificity of Irish Rules for potato late blight development. *Euroblight Workshop*.
- Kelly, L., White, J., Sharman, M., Brier, H., Williams, L., Grams, R., ... **Sparks, A.** (2017). Mungbean and sorghum disease update. *GRDC Updates (Jondaryan)*. Presented at the Jondaryan Woolshed. GRDC.
- Sparks, A.**, Castilla, N. P., & Sander, B. O. (2017). Do alternate wetting and drying irrigation technologies and nitrogen rates affect rice sheath blight? *Proceedings of the australasian plant pathology society 2017 meeting*.
- Jaisong, S., Castilla, N. P., Magculia, C. T., Savary, S., Pangga, I. B., & **Sparks, A.** (2015). Evaluation of correlation methods for co-occurrence network construction of rice crop health survey data. *Proceedings of the Australasian Plant Pathology Society 2015 Meeting*.
- Sparks, A.**, & Noel, M. (2015). Mapping rice diseases for targeted deployment of resistant varieties in India. *Proceedings of the australasian plant pathology society 2015 meeting*.
- Sparks, A.**, Anaurio, J., Duku, C., Noel, M., & Raitzer, D. (2013). Modeling the impact of disease resistance on rice yields in the Philippines and Indonesia. *Proceedings of the 2013 australasian plant pathology society*. Technical report. CGIAR - SPIA.
- Sparks, A.**, Duku, C., Noel, M., & Zwart, S. J. (2013). Spatial modelling of rice yield losses due to bacterial leaf blight and leaf blast in a changing climate. *Acta phytopathologica sinica*, 43.
- Magculia, N. J., & **Sparks, A.** (2012). Predisposition factors affecting brown spot disease development in rice. *Phytopathology*, 102:S4.74.
- Savary, S., **Sparks, A.**, Nelson, A., McRoberts, N., & Esker, P. D. (2012). Putting information to use: Decisions at different scales. *Phytopathology*, 102:S4.162.
- Sparks, A.**, Savary, S., & Nelson, A. (2012). Preventing what ails rice with a strategic, statistical, prescriptive model system. *Phytopathology*, 102:S4.113.
- Ballesefin, G. B., Pedde, V. O., & **Sparks, A.** (2011). Income inequality and economic growth in the Philippines. *The conference secretariat, 2011 paeda biennial convention*.
- McKinley, J., Pedde, V. O., **Sparks, A.**, & Duff, B. (2011). An economic assessment of the impact of mango pulp weevil on the agricultural sector of Palawan, Philippines. *The conference secretariat, 2011 paeda biennial convention*.
- Sparks, A.**, Shah, D., DeWolf, E., Madden, L., Paul, P., & Willyerd, K. (2011). Refined empirical models for predicting Fusarium head blight epidemics in the United States. *Phytopathology*, 101:S223.
- Willcoquet, L., Nelson, A., **Sparks, A.**, Laborte, A., & Savary, S. (2011). Crop losses in highly populated areas: A global perspective. *Phytopathology*, 101:S223.
- Sparks, A.**, Forbes, G., Hijmans, R., & Garrett, K. (2010). Metamodels for scaling potato late blight risk analysis in climate change scenarios. *Phytopathology*, 100:S121.

Garrett, K., Forbes, G., Pande, S., Savary, S., **Sparks, A.**, Valdivia, C., ... Willocquet, L. (2009). Anticipating and responding to biological complexity in the effects of climate change on agriculture. *IOP conference series: Earth and environmental science*, 6. <https://doi.org/10.1088/1755-1307/6/7/372007>

Sparks, A., Forbes, G., & Garrett, K. A. (2009). Adapting disease forecasting models to coarser scales: Global potato late blight prediction. *Phytopathology*, 99:S122.

Sparks, A., Raymundo, R., Simon, R., Forbes, G., & Garrett, K. A. (2008). Regional predictions of potato late blight risk in a GIS incorporating disease resistance profiles, climate change, and risk neighborhoods. *Phytopathology*, 98:S149.

Campus or Departmental Talks

Sparks, A. (2013). *Don't get caught with your plants down. Consult a plant pathologist.* Invited presentation for IIRI Thursday Seminar Series in Los Baños, Laguna, PHL.

Extension Community Outreach

Adorada, D., & **Sparks, A.** (2019). Low levels of disease persist during the drier summer season in parts of the northern region. *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/low-disease-drier-summer-northern/>

Adorada, D., & **Sparks, A.** (2019). Moisture saves sorghum from disease in parts of the northern region. *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/sorghum-disease-survey/>

Adorada, D., Vaghefi, N., & **Sparks, A.** (2019). Re-visiting management options for charcoal rot in sorghum. *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/re-visiting-management-options-charcoal-rot-sorghum/>

Sparks, A. (2019). Where and when does charcoal rot in sorghum occur? *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/charcoal-rot-sorghum/>

Sparks, A., & Purushotham, N. (2019). Last season's summer grain diseases & sorghum charcoal rot. *GRDC Communities Podcast*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/summer-crop-diseases-podcast/>

Adorada, D., Kelly, L., Vaghefi, N., & **Sparks, A.** (2018). Summer paddock survey finds fungal and bacterial diseases decreased but not eliminated. *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/summer-paddock-survey/>

Adorada, D., Sigel, L., Kelly, L., & **Sparks, A.** (2017). Diagnosing plant diseases: What do we ask and why do we ask for it? *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/diagnosing-plant-diseases-ask-ask/>

Sparks, A., & Kelly, L. (2017). Mungbean powdery mildew management with fungicide. *GRDC Communities*. Retrieved from <https://communities.grdc.com.au/field-crop-diseases/mungbean-powdery-mildew-fungicide/>

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Research Experience

University of Nebraska – Lincoln	Lincoln, Nebraska, USA
RESEARCH TECHNOLOGIST	2002 – 2004
University of Nebraska – Lincoln	Clay Center, Nebraska, USA
RESEARCH TECHNICIAN	2000 – 2003
Purdue University	West Lafayette, Indiana, USA
ASSISTANT DIRECTOR	1999 – 2000
Purdue University	West Lafayette, Indiana, USA
RESEARCH TECHNICIAN	1997 – 1999

Teaching Experience

CLASSROOM

Kansas State University	Manhattan, Kansas, USA
TEACHING ASSISTANT	2006
• Epidemiology and Ecology of Plant Pathogens	

Kansas State University

TEACHING ASSISTANT

- Introduction to Plant Pathology Laboratory Section

Manhattan, Kansas, USA

2008

WORKSHOPS

University of Southern Queensland

SOFTWARE CARPENTRIES R WORKSHOP

- Co-organiser and Instructor

Toowoomba, Queensland, AUS

2019

Southern Cross University

R FOR SCIENTIFIC ANALYSIS

- Lead Instructor

Lismore, New South Wales, AUS

2019

University of Southern Queensland

SOFTWARE CARPENTRIES PYTHON WORKSHOP

- Helper

Springfield, Queensland, AUS

2019

Australasian Plant Pathology Society

R MARKDOWN FOR SCIENTISTS

- Organiser and Lead Instructor

Melbourne, Victoria, AUS

2019

University of Southern Queensland

SOFTWARE CARPENTRIES R WORKSHOP

- Co-organiser and Instructor

Toowoomba, Queensland, AUS

2018

University of Southern Queensland

SOFTWARE CARPENTRIES PYTHON WORKSHOP

- Helper

Springfield, Queensland, AUS

2018

University of Southern Queensland

SOFTWARE CARPENTRIES R WORKSHOP

- Co-organiser and Instructor

Toowoomba, Queensland, AUS

2017

Bureau of Rice Research and Development, Rice Department, Bangkok

WORKSHOP ON INTEGRATED RICE DISEASE MANAGEMENT AND TRAINING ON STATISTICAL ANALYSIS

- Co-organiser and Instructor

Chiang Mai, THL

2012

Service

University of Southern Queensland Hacky Hour

R PROGRAMMING HELPER

Toowoomba, Queensland, AUS

2019 – Present

MDPI Remote Sensing

GUEST EDITOR FOR SPECIAL ISSUE ON REMOTE SENSING AND CROP HEALTH

Global

2019 – Present

Australia New Zealand Open Research Network (ANZORN)

MEMBER

AUS and NZL

2019 – Present

Tropical Plant Pathology

EPIDEMIOLOGY SECTION EDITOR

Global

2017 – Present

Open Plant Pathology

CO-FOUNDER AND CO-DIRECTOR

Global

2018 – Present

University of Southern Queensland Athena SWAN (Scientific Women's Academic Network) SAGE (Science in Australia Gender Equality) Submission Committee

MEMBER

Toowoomba, Queensland, AUS

2018 – Present

International Congress of Plant Pathology (ICPP) Crop Loss Committee

MEMBER

Global

2018 – Present

University of Southern Queensland Centre for Crop Health

MEMBER

Toowoomba, Queensland, AUS

2016 – Present

Australia National Plant Biosecurity Diagnostic Network

MEMBER

AUS

2016 – Present

GRDC Communities of Practice: Field Crop Diseases

MEMBER

AUS

2018 – 2019

extensionAUS: Field Crops Diseases Community of Practice

MEMBER

AUS

2016 – 2018

International Congress of Plant Pathology (ICPP) Epidemiology Committee

MEMBER

Global

2013 – Present

Manila R Users Group

FOUNDING MEMBER

Manila, PHL

2013 – 2015

IRRI Crop and Environmental Sciences Division Seminar Series

COORDINATOR

Los Baños, Laguna, PHL

2013 – 2015

IRRI One Corporate System (OCS) Advisory Committee

MEMBER

Los Baños, Laguna, PHL

2013 – 2015

IRRI National Employee Recognition Program Committee

MEMBER

Los Baños, Laguna, PHL

2013 – 2015

K-State Plant Pathology Webpage Advisory Committee

MEMBER

Manhattan, Kansas, USA

2005 – 2007

K-State Plant Pathology Graduate Student Club

PRESIDENT

Manhattan, Kansas, USA

2006 – 2007

K-State Plant Pathology Graduate Student Club

MEMBER

Manhattan, Kansas, USA

2004 – 2009

K-State Agronomy Graduate Student Club

MEMBER

Manhattan, Kansas, USA

2004 – 2009

Related Professional Skills

PROGRAMMING ABILITIES

- Programming: R (author and maintain packages on CRAN)
- Operating System: Unix/Linux (install and maintain Linux)
- Others: Git, Docker, Travis CI, LaTeX, Markdown and RMarkdown

SOFTWARE

- Statistical Software: R
- Office Software Packages: Microsoft Office, LibreOffice and Google Suites
- GIS Software: R, QGIS, ArcGIS

Certifications

Carpentries

CERTIFIED INSTRUCTOR

Global

2019 - Present

PRINCE2 Foundation, HiLogic Pty Ltd.

CANDIDATE NUMBER: P2R/009385

Global

2014 – Present

Memberships

International Society for Plant Pathology

MEMBER

Global

2011 – Present

Australasian Plant Pathology Society

MEMBER

AUS and NZL

2013 – Present

American Phytopathological Society (APS)

MEMBER

USA

2004 – Present

Australia New Zealand Open Research Network (ANZORN)

MEMBER

AUS and NZL

2019 – Present

University of Southern Queensland Athena SWAN (Scientific Women’s Academic Network) SAGE (Science in Australia Gender Equality) Submission Committee	<i>Toowoomba, Queensland, AUS</i>
MEMBER	<i>2018 – Present</i>
International Congress of Plant Pathology (ICPP) Crop Loss Committee	<i>Global</i>
MEMBER	<i>2018 – Present</i>
University of Southern Queensland Centre for Crop Health	<i>Toowoomba, Queensland, AUS</i>
MEMBER	<i>2016 – Present</i>
Australia National Plant Biosecurity Diagnostic Network	<i>AUS</i>
MEMBER	<i>2016 – Present</i>
GRDC Communities of Practice: Field Crop Diseases	<i>AUS</i>
MEMBER	<i>2018 – Present</i>
extensionAUS Field Crops Diseases Community of Practice	<i>AUS</i>
MEMBER	<i>2016 – 2018</i>
International Congress of Plant Pathology (ICPP) Epidemiology Committee	<i>Global</i>
MEMBER	<i>2013 – Present</i>
Manila R Users Group	<i>Manila, PHL</i>
FOUNDING MEMBER	<i>2013 – 2015</i>
IRRI One Corporate System (OCS) Advisory Committee	<i>Los Baños, Laguna, PHL</i>
MEMBER	<i>2013 – 2015</i>
IRRI National Employee Recognition Program Committee	<i>Los Baños, Laguna, PHL</i>
MEMBER	<i>2013 – 2015</i>
K-State Plant Pathology Webpage Advisory Committee	<i>Manhattan, Kansas, USA</i>
MEMBER	<i>2005 – 2007</i>
K-State Plant Pathology Graduate Student Club	<i>Manhattan, Kansas, USA</i>
MEMBER	<i>2004 – 2009</i>
K-State Agronomy Graduate Student Club	<i>Manhattan, Kansas, USA</i>
MEMBER	<i>2004 – 2009</i>