Adam H. Sparks

Associate Professor

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

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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 *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 *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*

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*

Publications

Selected Publications

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). hagis, 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

Esker, 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., Esker, 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., Esker, 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

Esker, 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., Esker, 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., Esker, 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

Accepted 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*.

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., Esker, 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., Esker, 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 edicion).

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 — *KHM*

United Nations Food and Agriculture Organisation (FAO): Consultancy — *2019 – 2020*

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

Ph.D. Student Scholarship — *Toowoomba, Queensland, AUS*

Cotton Research and Development Corporation (CRDC): Suppresive 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 Government of Western Australia — *2018 – 2021*

- 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 – IRRI 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 understanding the mechanisms underlying rice resistance (Bayer) — *2015 – 2017*

- 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 – IRRI 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 Shrivel (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., Pede, V. O., & **Sparks, A.** (2011). Income inequality and economic growth in the Philippines. *The conference secretariat, 2011 paeda biennial convention*.

McKinley, J., Pede, 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*.

Willocquet, 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 IRRI Thursday Seminar Series in Los Baños, Laguna, PHL.

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 Communties*. 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/

Choi, I. R., **Sparks, A.**, Castilla, N. P., & Cruz, C. M. V. (2014). Rice stripe virus disease. *IRRI Rice Knowledge Bank*. Retrieved from http://www.knowledgebank.irri.org/decision-tools/rice-doctor/rice-doctor-fact-sheets/item/rice-stripe

Choi, I. R., **Sparks, A.**, & Cruz, C. M. V. (2014). Red stripe. *IRRI Rice Knowledge Bank*. Retrieved from http://www.knowledgebank.irri.org/training/fact-sheets/pest-management/diseases/item/narrow-brown-spot

Sparks, A., Castilla, N. P., & Cruz, C. M. V. (2014). Bakanae. *IRRI Rice Knowledge Bank*. Retrieved from http://www.knowledgebank.irri.org/training/fact-sheets/pest-management/diseases/item/bakanae

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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

Service

University of Southern Queensland Hacky Hour — *Toowoomba, Queensland, AUS*
R Programming Helper — *2019 – Present*

MDPI Remote Sensing — *Global*
Guest Editor for Special Issue on Remote Sensing and Crop Health — *2019 – Present*

Australia New Zealand Open Research Network (ANZORN) — *AUS and NZL*
Member — *2019 – Present*

Tropical Plant Pathology — *Global*
Epidemiology Section Editor — *2017 – Present*

Open Plant Pathology — *Global*
Co-Founder and Co-Director — *2018 – Present*

University of Southern Queensland Athena SWAN (Scientific Women's Academic Network) SAGE (Science in Australia Gender Equality) Submission Committee — *Toowoomba, Queensland, AUS*
Member — *2018 – Present*

International Congress of Plant Pathology (ICPP) Crop Loss Committee — *Global*
Member — *2018 – Present*

University of Southern Queensland Centre for Crop Health — *Toowoomba, Queensland, AUS*
Member — *2016 – Present*

Australia National Plant Biosecurity Diagnostic Network — *AUS*
Member — *2016 – Present*

GRDC Communities of Practice: Field Crop Diseases — *AUS*
Member — *2018 – 2019*

extensionAUS: Field Crops Diseases Community of Practice — *AUS*
Member — *2016 – 2018*

International Congress of Plant Pathology (ICPP) Epidemiology Committee — *Global*
Member — *2013 – Present*

Manila R Users Group — *Manila, PHL*
Founding Member — *2013 – 2015*

IRRI Crop and Environmental Sciences Division Seminar Series — *Los Baños, Laguna, PHL*
Coordinator — *2013 – 2015*

IRRI One Corporate System (OCS) Advisory Committee — *Los Baños, Laguna, PHL*
Member — *2013 – 2015*

IRRI National Employee Recognition Program Committee — *Los Baños, Laguna, PHL*
Member — *2013 – 2015*

K-State Plant Pathology Webpage Advisory Committee — *Manhattan, Kansas, USA*
Member — *2005 – 2007*

K-State Plant Pathology Graduate Student Club — *Manhattan, Kansas, USA*
President — *2006 – 2007*

K-State Plant Pathology Graduate Student Club — *Manhattan, Kansas, USA*
Member — *2004 – 2009*

K-State Agronomy Graduate Student Club — *Manhattan, Kansas, USA*
Member — *2004 – 2009*

Workshops

University of Southern Queensland — *Toowoomba, Queensland, AUS*
Software Carpentries R Workshop — *2019*
- Co-organiser and Instructor

Southern Cross University — *Lismore, New South Wales, AUS*
R for Scientific Analysis — *2019*
- Lead Instructor

University of Southern Queensland — *Springfield, Queensland, AUS*

Software Carpentries Python Workshop — *2019*

- Helper

Australasian Plant Pathology Society — *Melbourne, Victoria, AUS*

R Markdown for Scientists — *2019*

- Organiser and Lead Instructor

University of Southern Queensland — *Toowoomba, Queensland, AUS*

Software Carpentries R Workshop — *2018*

- Co-organiser and Instructor

University of Southern Queensland — *Springfield, Queensland, AUS*

Software Carpentries Python Workshop — *2018*

- Helper

University of Southern Queensland — *Toowoomba, Queensland, AUS*

Software Carpentries R Workshop — *2017*

- Co-organiser and Instructor

Bureau of Rice Research and Development, Rice Department, Bangkok — *Chiang Mai, THL*

Workshop on Integrated Rice Disease Management and Training on Statistical Analysis — *2012*

- Co-organiser and Instructor

Certifications

Carpentries — *Global*

Certified Instructor — *2019 - Present*

PRINCE2 Foundation, HiLogic Pty Ltd. — *Global*

Candidate number: P2R/009385 — *2014 – Present*

Memberships

International Society for Plant Pathology — *Global*

Member — *2011 – Present*

Australasian Plant Pathology Society — *AUS and NZL*

Member — *2013 – Present*

American Phytopathological Society (APS) — *USA*

Member — *2004 – Present*

Australia New Zealand Open Research Network (ANZORN) — *AUS and NZL*

Member — *2019 – Present*

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

Member — *2018 – Present*

International Congress of Plant Pathology (ICPP) Crop Loss Committee — *Global*

Member — *2018 – Present*

University of Southern Queensland Centre for Crop Health — *Toowoomba, Queensland, AUS*

Member — *2016 – Present*

Australia National Plant Biosecurity Diagnostic Network — *AUS*

Member — *2016 – Present*

GRDC Communities of Practice: Field Crop Diseases — *AUS*

Member — *2018 – Present*

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Member — *2013 – Present*

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Founding Member *2013 – 2015*

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Member *2013 – 2015*

IRRI National Employee Recognition Program Committee *Los Baños, Laguna, PHL*

Member *2013 – 2015*

K-State Plant Pathology Webpage Advisory Committee *Manhattan, Kansas, USA*

Member *2005 – 2007*

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Member *2004 – 2009*