

Adam H. Sparks

experience

2016–Present	University of Southern Queensland Toowoomba, Queensland, AUS	Associate Professor
2012–2015	International Rice Research Institute Los Baños, Laguna, PHL	Scientist I
2011–2012	International Rice Research Institute Los Baños, Laguna, PHL	Post-Doctoral Fellow
2009–2010	Kansas State University Manhattan, Kansas, USA	Post-Doctoral Research Associate
2002–2004	University of Nebraska-Lincoln Lincoln, Nebraska, USA	Research Technologist
2000–2003	University of Nebraska-Lincoln Clay Center, Nebraska, USA	Research Technician
1999–2000	Purdue University West Lafayette, Indiana, USA	Assistant Director
1997–1999	Purdue University West Lafayette, Indiana, USA	Research Technician

contact

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skills

GIS
modelling
R

education

2009	Ph.D. Plant Pathology Epidemiology and Ecology of Plant Pathogens Dissertation: <i>Disease risk mapping with metamodels for coarse resolution predictors: global potato late blight risk now and under future climate conditions</i>	Kansas State University, Manhattan, Kansas, USA
2007	Post Graduate Certificate Geography Geographic Information Science	Kansas State University, Manhattan, Kansas, USA
2000	B.Sc. Agronomy Soil and Crop Management	Purdue University, West Lafayette, Indiana, USA

publications

peer-reviewed

GSODR: Global Summary Daily Weather Data in R

Adam H Sparks, Tomislav Hengl, Andrew Nelson

The Journal of Open Source Software 2.10 (Feb. 2017). *The Open Journal*. DOI: 10.21105/joss.00177

Spatial modelling of rice yield losses in Tanzania due to bacterial leaf blight and leaf blast in a changing climate

C Duku, A H Sparks, S J Zwart

Climatic Change 135.3 (Jan. 2016) pp. 569–583. DOI: 10.1007/s10584-015-1580-2

Decision tools for bacterial blight resistance gene deployment in rice-based agricultural ecosystems

S G Dossa, A H Sparks, C M Vera Cruz, R Oliva

Frontiers in Plant Science 6.305 (May 2015). DOI: 10.3389/fpls.2015.00305

- Farmers' preference for rice traits: Insights from farm surveys in Central Luzon, Philippines, 1966–2012
A G Laborte, N C Paguirigan, P F Moya, A Nelson, A H Sparks, G B Gregorio
PLOS ONE e0136562 (Aug. 2015). DOI: DOI:10.1371/journal.pone.0136562
- Climate change may have limited effect on global risk of potato late blight
A H Sparks, G A Forbes, R J Hijmans, K A Garrett
Global Change Biology 20 (Dec. 2014) pp. 3621–3631. DOI: 10.1111/gcb.12587
- A review on crop losses, epidemiology and disease management of rice brown spot to identify research priorities and knowledge gaps
M K Barnwal, A Kotasthane, N Magculia, P K Mukherjee, S Savary, A K Sharma, H B Singh, U S Singh, A H Sparks, M Variar, N Zaidi
European Journal of Plant Pathology 136.3 (2013) pp. 443–457. DOI: 10.1007/s10658-013-0195-6
- Taking transgenic rice drought screening to the field
A C M Gaudin, A Henry, A H Sparks, I H Slamet-Loedin
Journal of Experimental Botany 63.1 (2013) pp. 109–117. DOI: 10.1093/jxb/ers313
- An economic assessment of the impact of mango pulp weevil on the agricultural sector of Palawan, Philippines
J D Mckinley, A H Sparks, V O Pede, B Duff
The Philippine Agricultural Scientist 95.3 (2012) pp. 286–292
- Complexity in climate-change impacts: an analytical framework for effects mediated by plant disease
K A Garrett, G A Forbes, S Savary, P Skelsey, A H Sparks, C Valdivia, A H C van Bruggen, L Willocquet, A Djurle, E Duveiller, H Eckersten, S Pande, C Vera Cruz, J Yuen
Plant Pathology 60.1 (2011) pp. 15–30. DOI: 10.1111/j.1365-3059.2010.02409.x
- International agricultural research tackling the effects of global and climate changes on plant diseases in the developing world
S Savary, A Nelson, A H Sparks, L Willocquet, E Duveiller, G Mahuku, G Forbes, K A Garrett, D Hodson, J Padgham, S Pande, M Sharma, J Yuen, A Djurle
Plant Disease 95.10 (2011) pp. 1204–1216. Scientific Societies. DOI: 10.1094/PDIS-04-11-0316
- A metamodeling framework for extending the application domain of process-based ecological models
A H Sparks, G A Forbes, R J Hijmans, K A Garrett
Ecosphere 2.8 (2011) art90. DOI: 10.1890/ES11-00128.1
- Beyond yield: plant disease in the context of ecosystem services.
M R Cheatham, M N Rouse, P D Esker, S Ignacio, W Pradel, R Raymundo, A H Sparks, G A Forbes, T R Gordon, K A Garrett
Phytopathology 99.11 (2009) pp. 1228–36. DOI: 10.1094/PHYTO-99-11-1228
- Ecology and epidemiology in R: disease forecasting
P D Esker, A H Sparks, L Campbell, Z Guo, M Rouse, S D Silwal, S Tolos, B Van Allen, K A Garrett
The Plant Health Instructor (2008). DOI: 10.1094/PHI-A-2008-0129-01
- Ecology and epidemiology in R: spatial analysis
A H Sparks, P D Esker, G Antony, L Campbell, E E Frank, L Huebel, M N Rouse, B Van Allen, K A Garrett
The Plant Health Instructor (2008). DOI: 10.1094/PHI-A-2008-0129-03
- Ecology and epidemiology in R: modeling plant disease progress over time
A H Sparks, P D Esker, M Bates, W Dall'Acqua, Z Guo, V Segovia, S D Silwal, S Tolos, K A Garrett
The Plant Health Instructor (2008). DOI: 10.1094/PHI-A-2008-0129-02
- Ecology and epidemiology in R: modeling dispersal gradients
P D Esker, A H Sparks, G Antony, M Bates, W Dall'Acqua, E E Frank, L Huebel, V Segovia, K A Garrett

The Plant Health Instructor (2007). DOI: 10.1094/PHI-A-2007-1226-03

Introduction to the R programming environment
 K A Garrett, P D Esker, A H Sparks
 The Plant Health Instructor (2007). DOI: 10.1094/PHI-A-2007-1226-02

Writing teaching documents as a class project
 K A Garrett, P D Esker, A H Sparks, L C Scharmann
 The Plant Health Instructor (2007). DOI: 10.1094/PHI-T-2007-1226-01

conferences/proceedings

Evaluation of correlation methods for co-occurrence network construction of rice crop health survey data
 S Jaisong, N P Castilla, C T Magculia, S Savary, I B Pangga, A H Sparks
 In Proceedings of the Australasian Plant Pathology Society 2015 Meeting (2015)

Mapping Rice Diseases for Targeted Deployment of Resistant Varieties in India
 A H Sparks, M Noel
 In Proceedings of the Australasian Plant Pathology Society 2015 Meeting (2015)

Modeling the impact of disease resistance on rice yields in the Philippines and Indonesia
 A H Sparks, J Anaurio, C Duku, M Noel, D Raitzer
 In Proceedings of the Australasian Plant Pathology Society 2013 Meeting (2013)

Spatial modelling of rice yield losses due to bacterial leaf blight and leaf blast in a changing climate
 A H Sparks, C Duku, M Noel, S J Zwart
 Acta Phytopathologica Sinica vol. 43.Supplement (2013)

Predisposition factors affecting brown spot disease development in rice
 N J Magculia, A H Sparks
 Phytopathology vol. 102:S4.74.7 (2012)

Putting information to use: Decisions at different scales
 S Savary, A H Sparks, A Nelson, N McRoberts, P D Esker
 Phytopathology vol. 102:S4.162 (2012)

Preventing what ails rice with a strategic, statistical, prescriptive model system
 A H Sparks, S Savary, A Nelson
 Phytopathology vol. 102:S4.113.7 (2012)

Income inequality and economic growth in the Philippines
 G B Ballesefin, V O Pede, A H Sparks
 The Conference Secretariat, 2011 PAEDA Biennial Convention (2011)

An economic assessment of the impact of mango pulp weevil on the agricultural sector of Palawan, Philippines
 J McKinley, V O Pede, A H Sparks, B Duff
 The Conference Secretariat, 2011 PAEDA Biennial Convention (2011)

Crop losses in highly populated areas: A global perspective
 L Willocquet, A Nelson, A Sparks, A Laborte, S Savary
 Phytopathology vol. 101:S223 (2011)

Metamodels for scaling potato late blight risk analysis in climate change scenarios
 A H Sparks, G Forbes, R Hijmans, K Garrett
 Phytopathology vol. 100:S121 (2010)

Anticipating and responding to biological complexity in the effects of climate change on agriculture
 K Garrett, G Forbes, S Pande, S Savary, A Sparks, C Valdivia, C Vera Cruz, L Willocquet
 IOP Conference Series: Earth and Environmental Science vol. 6.37 (2009)

- Adapting disease forecasting models to coarser scales: Global potato late blight prediction
 A H Sparks, G Forbes, K A Garrett
Phytopathology vol. 99:S122 (2009)
- Adapting global disease forecasting models for readily available weather data sets in GIS
 A H Sparks, K A Garrett, G A Forbes
 In Proceedings of the 10th International Epidemiology Workshop (2009). Geneva, NY, USA
- Regional predictions of potato late blight risk in a GIS incorporating disease resistance profiles, climate change, and risk neighborhoods
 A H Sparks, R Raymundo, R Simon, G Forbes, K A Garrett
Phytopathology vol. 98:S149 (2008)

book chapters

- Chap. Plant pathogens as indicators for climate change
 K A Garrett, M Nita, E D De Wolf, P D Esker, L Gomez-Montano, A H Sparks
 Letcher, Trevor M., Elsevier, "Plant Pathogens as Indicators of Climate Change", 2016
- Chap. An introduction to key distributions and models for epidemiology using R
 K A Garrett, P D Esker, A H Sparks
 Stevenson, K and M Jeger, APS Press, Minneapolis, MN, "Exercises in Plant Disease Epidemiology", 2014
- Chap. Cambio climático, enfermedades de las plantas e insectos plaga
 K A Garrett, G A Forbes, L Gómez, M A Gonzáles, M Gray, P Skelsey, A H Sparks
 Jiménez, E, "Cambio climático y adaptación en el Altiplano boliviano", 2013

reports

- Evaluation of seed treatment for controlling seedling diseases and compatibility with Rhizobium inoculants, 2003.
 L J Geisler, A H Sparks
Fungicide and Nematicide Tests 59:ST025
- Evaluation of seed treatment fungicides for controlling soybean seedling diseases, 2003
 L J Geisler, A H Sparks
Fungicide and Nematicide Tests 59:ST025

invited talks

2016	Using modelling and mapping for digital insights into diseases in the rice field 2016 Korean Society of Plant Pathology Fall Meeting and International Conference Seoul National University Pyeongchang, Gangwon-do, Korea
2014	Taking sustainable crop protection from the field to the cloud 4th International Rice Congress (IRC2014) Bangkok, Thailand
2014	Impact of climate change on rice diseases Workshop on the impact of climate change on crop pests and diseases, and adaptation strategies for the Greater Mekong Sub - Region (GMS) Hotel Continental Saigon, Ho Chi Minh City, Vietnam
2014	Epidemiology and Disease Management of rice brown spot: Research priorities and knowledge gaps 66th Annual Indian Phytopathological Society Meeting Indira Gandhi Krishi Vishwavidyalaya University, Raipur, India
2013	Biosecurity risks in Southeast Asia impacting on human food supplies Pacific Environmental Security Forum Australian Department of Defence (ADoD) and U. S. Pacific Command (US-PACOM) Sydney, New South Wales, Australia
2010	Global potato late blight risk in response to climate change, possible futures for a historic disease Emerging infectious diseases in response to climate change. New York Academy of Sciences, New York, New York, USA

extramural support

2016–2019	Syngenta-IRRI Scientific Knowledge and Exchange Program Phase III, Sub-Project 1 - Crop Health Management	USD\$484,274
2013–2017	PRISM (Philippine Rice Information System) Component B - Crop Health Monitoring, Co-PIs: A Nelson (IRRI) and G S Arida (PhilRice), E J P Quilang (PhilRice)	USD\$2,765,783
2013–2015	Syngenta-IRRI Scientific Knowledge and Exchange Program Phase II, Sub-Project 2 - Crop Health Management	USD\$454,640
2015–2017	Identifying resistant rice germplasm to false smut using combined screening approaches and understanding the mechanisms underlying rice resistance Epidemiology and environmental characterisation of false smut, Co-PI's: B Zhou (IRRI) and CM Vera Cruz (IRRI)	USD\$653,914

awards

2016	GovHack 2016 First Place Award for Paddock to Plate Category, John Conner Hack As part of the Toowoomba Trio with K Pembleton and G Grundy
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doctoral dissertation mentorship

2016 **Sith Jaisong** Plant Pathology University of the Philippines, Los Baños
Network analysis of rice crop health survey data for characterization of yield
reducing factors of tropical rice ecosystems in South and Southeast Asia

master's thesis mentorship

2016 **Jerico Bigornia** Environmental Science University of the Philippines, Los Baños
Environmental performance of water saving technologies for irrigated low-
land rice production

organizational service

2014–2015 **Crop and Environmental Sciences Division Seminar Committee Chair**

2015 **IRRI OCS Advisory Group Member**

professional certifications

PRINCE2 Foundation (2014) candidate number: P2R/009385 – HiLogic Pty Ltd.

professional affiliations

Australasian Plant Pathology Society (APPS)
American Phytopathological Society (APS)
International Society for Plant Pathology (ISPP)

professional service

International Congress of Plant Pathology (ICPP) 2018 Epidemiology Committee
American Phytopathological Society (APS) Epidemiology Committee