Adam H. Sparks

contact

Centre for Crop Health
University of Southern Queensland
Toowoomba QLD 4350
Australia
adamhsparks@gmail.com
+61 415 489 422
adam.h.sparks

web

Adam H. Sparks
@adamhsparks
adamhsparks

skills

GIS
modelling
R

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

education

2009	**Ph.D.** Plant Pathology Epidemiology and Ecology of Plant Pathogens **Dissertation:** Disease risk mapping with metamodels for coarse resolution predictors: global potato late blight risk now and under future climate conditions	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

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

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 F 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, Trever 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 adaptaciń 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, Gangown-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 (USPACOM)
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** USD$484,274
Phase III, Sub-Project 1 - Crop Health Management

2013–2017 **PRiSM** (Philippine Rice Information SysteM) USD$2,765,783
Component B - Crop Health Monitoring,
Co-PIs: A Nelson (IRRI) and G S Arida (PhilRice), E J P Quilang (PhilRice)

2013–2015 **Syngenta-IRRI Scientific Knowledge and Exchange Program** USD$454,640
Phase II, Sub-Project 2 - Crop Health Management

2015–2017 **Identifying resistant rice germplasm to false smut using combined screening approaches and understanding the mechanisms underlying rice resistance** USD$653,914
Epidemiology and environmental characterisation of false smut,
Co-PI's: B Zhou (IRRI) and CM Vera Cruz (IRRI)

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

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 lowland 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)