

# Adam H. Sparks

## experience

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

## contact

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## web

Adam H. Sparks  
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## skills

GIS  
modelling  
agricultural statistics

## education

2009	<b>Ph.D. Plant Pathology</b> Epidemiology and Ecology of Plant Pathogens <b>Dissertation:</b> <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	<b>Post Graduate Certificate</b> Geography Geographic Information Science	Kansas State University, Manhattan, Kansas, USA
2000	<b>B.Sc. Agronomy</b> 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  
Confidence Duku, Adam H. Sparks, Sander 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

Serge Savary, Andrew Nelson, Adam H. Sparks, Laetitia Willocquet, Etienne Duveiller, George Mahuku, Greg Forbes, Karen A. Garrett, David Hodson, Jon Padgham, Suresh Pande, Mamta Sharma, Jonathan Yuen, Annika 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-2008-0129-02

## 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

Adam H. Sparks, Michael 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**

Karen A. Garrett, Mizuho Nita, Erick D. De Wolf, Paul D. Esker, Lorena Gomez-Montano, Adam 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

2014	<b>Taking sustainable crop protection from the field to the cloud</b> 4th International Rice Congress (IRC2014) Bangkok, Thailand
2014	<b>Impact of climate change on rice diseases</b> 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	<b>Epidemiology and Disease Management of rice brown spot: Research priorities and knowledge gaps</b> 66th Annual Indian Phytopathological Society Meeting Indira Gandhi Krishi Vishwavidyalaya University, Raipur, India
2013	<b>Biosecurity risks in Southeast Asia impacting on human food supplies</b> Pacific Environmental Security Forum Australian Department of Defence (ADoD) and U. S. Pacific Command (US-PACOM) Sydney, New South Wales, Australia
2010	<b>Global potato late blight risk in response to climate change, possible futures for a historic disease</b> Emerging infectious diseases in response to climate change. New York Academy of Sciences, New York, New York, USA

## extramural support

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

## doctoral dissertation mentorship

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

## **service to profession**

**currently reviewing for**  
Global Change Biology  
European Journal of Plant Pathology  
Annals of Applied Biology

## **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)