

# Adam H. Sparks

## experience

- 2012–present **International Rice Research Institute** Los Baños, Philippines Scientist I  
*Develop tools and strategies for farmers to use in addressing rice diseases*
- 2011–2012 **International Rice Research Institute** Los Baños, Philippines Post-Doctoral Fellow  
*Linked botanic epidemiology models to GIS tools for mapping model output*
- 2009–2010 **Kansas State University**, Manhattan, Kansas, USA Post-Doctoral Research Associate  
*Developed and refined predictive Fusarium head blight models for wheat*
- 2002–2004 **University of Nebraska-Lincoln**, Lincoln, Nebraska, USA Research Technologist  
*Managed maize and soybean plant pathology extension field research*
- 2000–2003 **University of Nebraska-Lincoln**, Clay Center, Nebraska, USA Research Technician  
*Managed maize and sorghum plant pathology extension field research*
- 1999–2000 **Purdue University**, West Lafayette, Indiana, USA Assistant Director  
*Coordinated training events for Purdue Diagnostic Training and Research Center*
- 1997–1999 **Purdue University**, West Lafayette, Indiana, USA Research Technician  
*Managed soybean and canola production research studies*

## education

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

## publications

### peer-reviewed

- 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 (2015). DOI: 10.3389/fpls.2015.00305
- 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 (2014) pp. 3621–3631. DOI: doi:10.1094/PDIS-04-11-031
- 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

## contact

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## web

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## skills

GIS  
modelling  
agricultural statistics

**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* 63.2 (2012) pp. 695–709. 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

**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 (2015/04/24 2011) pp. 1204–1216. *Scientific Societies*. DOI: 10.1094/PDIS-04-11-0316

**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

**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: 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 (2008). DOI: 10.1094/PHI-A-2008-0129-02

**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

**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

**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

**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**

**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)*
- 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)*
- 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, N Nelson, N McRoberts, P D Esker  
*Phytopathology vol. 102:S4.162 (2012)*
- 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)*
- 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)*
- 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. 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", In Press*
- 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*

## Chap. Plant pathogens as indicators for climate change

K A Garrett, M Nita, E D De Wolf, L Gomez, A H Sparks

Letcher, T, Elsevier, "Climate Change Indicators", 2009

## 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

October 2014 **Taking Sustainable Crop Protection From the Field to the Cloud**

4th International Rice Congress (IRC2014)

Bangkok, Thailand

August 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

May 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

April 2013 **Biosecurity Risks in Southeast Asia Impacting on Human Food Supplies**

Forum: Pacific Environmental Safety Forum Australian Department of Defence and U. S. Pacific Command

Sydney, New South Wales, Australia

March 2010 **Global Potato Late Blight Risk in Response to Climate Change, Possible Futures for a Historic Disease**

Symposium: Emerging Infectious Diseases in Response to Climate Change.

New York Academy of Sciences,

New York, New York, USA

## extramural support

2013–2017 **PRISM (Philippine Rice Information System)** \$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** \$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** \$653,914

Epidemiology and environmental characterisation of false smut,

Co-PI's: B Zhou (IRRI) and CM Vera Cruz (IRRI)

## **service to profession**

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

## **organizational service**

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

2015–present **IRRI OCS Advisory Group Member**

## **professional certifications**

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

## **professional affiliations**

Australasian Plant Pathology Society (APPS)