

# Adam H. Sparks

## experience

### contact

IRRI  
Los Baños, Laguna  
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### web

Adam H. Sparks   
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### skills

GIS  
modelling  
agricultural statistics

- 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*  
<http://www.wheatcab.psu.edu/>
- 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 **Post 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](https://doi.org/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](https://doi.org/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 (2014) pp. 3621–3631. DOI: [10.1094/PDIS-04-11-031](https://doi.org/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
- 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
- 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 Wof, 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><br>4th International Rice Congress (IRC2014)<br>Bangkok, Thailand   |
| 2014 | <b>Impact of Climate Change on Rice Diseases</b><br>Workshop on the Impact of Climate Change on Crop Pests and Diseases,<br>and Adaptation Strategies for the Greater Mekong Sub – Region (GMS)<br>Hotel Continental Saigon,<br>Ho Chi Minh City, Vietnam |
| 2014 | <b>Epidemiology and Disease Management of Rice Brown Spot:<br/>Research Priorities and Knowledge Gaps</b><br>66th Annual Indian Phytopathological Society Meeting<br>Indira Gandhi Krishi Vishwavidyalaya University,<br>Raipur, India                    |
| 2013 | <b>Biosecurity Risks in Southeast Asia Impacting on Human Food Supplies</b><br>Pacific Environmental Security Forum<br>Australian Department of Defence (ADoD) and U. S. Pacific Command (US-<br>PACOM)<br>Sydney, New South Wales, Australia             |
| 2010 | <b>Global Potato Late Blight Risk in Response to Climate Change, Possible Futures for a Historic Disease</b><br>Emerging Infectious Diseases in Response to Climate Change.<br>New York Academy of Sciences,<br>New York, New York, USA                   |

## extramural support

2013–2017	<b>PRISM</b> (Philippine Rice Information System) 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

## 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)  
American Phytopathological Society (APS)  
International Society for Plant Pathology (ISPP)