

# 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*  
<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)
- Spatial modelling of rice yield losses in Tanzania due to bacterial blight and leaf blast in a changing climate  
C Duku, A H Sparks, S Zwart  
*Climatic Change* (Accepted 2015)
- 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)

## contact

IRRI  
Los Baños, Laguna  
Philippines

DAPO Box 7777  
Metro Manila  
1301 Philippines

[adamhsparks@gmail.com](mailto:adamhsparks@gmail.com)

+63 908 182 8012 ☎  
[adam.h.sparks](https://www.linkedin.com/in/adamhsparks) 

## web

Adam H. Sparks   
+AdamHSparksPhD   
[@adamhsparks](https://twitter.com/adamhsparks)   
[adamhsparks](https://www.facebook.com/adamhsparks) 

## skills

GIS  
modelling  
agricultural statistics

- 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
- 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](https://doi.org/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

## 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, 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 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)