Adam H. Sparks

contact

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web

Adam H. Sparks
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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

Crop health and its global impacts on the components of food security
S Savary, S Bregaglio, L Willocquet, D Gustafson, D Mason D'Croz, A Sparks, N Castilla, A Djurle, C Allinne, Mamta Sharma, V Rossi, L Amorim, A Bergamin, J Yuen, P Esker, Neil McRoberts, J Avelino, E Duveiller, J Koo, K Garrett
Food Security (Mar. 2017) pp. 1–17. Springer. DOI: *10.1007/s12571-017-0659-1*

GSODR: Global Summary Daily Weather Data in R
Adam H Sparks, Tomislav Hengl, Andrew Nelson
The Journal of Open Source Software 2.10 (Feb. 2017). The Open Journal. DOI: *10.21105/joss.00177*

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

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

Evaluation of correlation methods for co-occurrence network construction of rice crop health survey data
S Jaisong, N P Castilla, C T Magculia, S Savary, I B Pangga, A H Sparks
(2015)

Mapping Rice Diseases for Targeted Deployment of Resistant Varieties in India
A H Sparks, M Noel
(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
(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
Vol. 43.Supplement (2013)

Predisposition factors affecting brown spot disease development in rice
N J Magculia, A H Sparks
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
Vol. 102:S4.162 (2012)

Preventing what ails rice with a strategic, statistical, prescriptive model system
A H Sparks, S Savary, A Nelson
Vol. 102:S4.113.7 (2012)

Income inequality and economic growth in the Philippines
G B Ballesefin, V O Pede, A H Sparks
(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
(2011)

Crop losses in highly populated areas: A global perspective
L Willocquet, A Nelson, A Sparks, A Laborte, S Savary
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
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
Vol. 6.37 (2009)

Adapting disease forecasting models to coarser scales: Global potato late blight prediction
A H Sparks, G Forbes, K A Garrett
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
(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
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

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)

professional service

International Congress of Plant Pathology (ICPP) 2018 Epidemiology Committee
American Phytopathological Society (APS) Epidemiology Committee