



The International Society for Plant Pathology promotes the world-wide development of plant pathology and the dissemination of knowledge about plant diseases and plant health management



PROMOTING WORLD-WIDE PLANT HEALTH AND FOOD SECURITY

INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY

# ISPP NEWSLETTER

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INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)

[WWW.ISPPWEB.ORG](http://WWW.ISPPWEB.ORG)

# THE GLOBAL PLANT HEALTH ASSESSMENT

## AN INTERNATIONAL PEER REVIEWED EVALUATION OF THE STATE OF PLANT HEALTH ACROSS ECOREGIONS OF THE WORLD, AND OF THE EFFECTS OF PLANT DISEASE ON ECOSYSTEM SERVICES

Coordination (in alphabetic order):

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(2) Dept. Agrosystèmes, INRAE, France

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(6) Plant Pathology and Plant-Microbe Biology Section, Cornell Agritech, Cornell University, USA

(7) Département Santé des Plantes et Environnement, INRAE, France

(8) Heinrich-Heine-Universität Düsseldorf, Germany

(9) Lancaster Environment Centre, University of Lancaster, U.K.

## GOALS OF THE GLOBAL PLANT HEALTH ASSESSMENT

The state of plant health has a very large influence on the existence, the functioning, and the performance of plant systems in the biosphere; and plant pathogens play an important role in plant health. Plants are extraordinarily important towards the Earth's climate, its total biological diversity, the shape of our landscapes, the quality of the water we drink, the food we eat, and the pollution and temperatures that prevail in our cities. Plants, also, are the essence of beauty and inspiration in our daily life. Yet, there seems to be no scientific reference that would enable producing statements on the current state of plant health globally, or on the evolution of plant health in recent years.

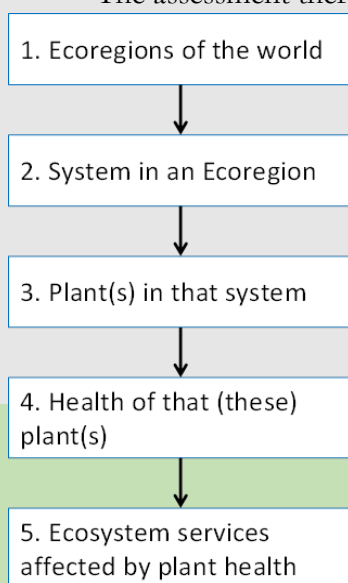
Policies must be grounded on scientific evidence. With the Global Plant Health Assessment, we hope to produce material that would help developing policies globally and locally which would strengthen the ability to ensure plant health in a sustainable manner.

The year 2020 being declared as the International Year of Plant Health by the United Nations created the opportunity to attempt to fill this gap. During its November 2019 meeting, the Executive Committee of the International Society for Plant Pathology approved the conduct of a Global Plant Health Assessment. The objective was to mobilise ISPP colleagues all over the world in an assessment of plant health and the consequences of plant health in the generation of ecosystem services - **provisioning services** (food, fibre, materials); **regulating services** (climate, water, soils, pollution reduction); and **cultural services** (spiritual, beauty, re-creation). This note is meant to report to ISPP community on the progress accomplished so far in this endeavour.

## OVERVIEW OF THE GLOBAL PLANT HEALTH ASSESSMENT

The concepts and guiding principles of the Global Plant Health Assessment (GPHA) Project can be summarised in a few points:

- The GPHA is entirely based on volunteered time from members of the ISPP.
- GPHA is coordinated by an interdisciplinary team of colleagues, representing different fields of expertise: Geography, Climatology, Sociology, Environmental Sciences, Systems Sciences, and, in Plant Pathology: Integrated Pest Management, Molecular Plant-Pathogen Interactions, Epidemiology, and Crop Loss Analysis. Members of the coordination team come from very different parts of the world.
- The project is templated on the Millennium Ecosystem Assessment: a series of Ecoregions of the world have been defined; in each of these, key "PlantSystems" have been identified.
- For each identified [PlantSystem x Ecoregion] pair, teams have been established, involving a Lead Scientist who mobilised a few (2-3) Experts.
- Each team is to produce a report on the state of plant health in its chosen [PlantSystem x Ecoregion] component. These reports are standardised in format and size, and address a specified, limited set of questions.
- Standardisation of reports is a critical way to: (1) minimise the volunteered time inputs of Lead Scientists and Experts; (2) produce homogeneous reports in their formats and sizes, which (3) enables comparisons: across ecoregions for similar plant systems, and across plant systems within ecoregions.
- Each report must be grounded on scientific, published, evidence.
- The GPHA considers the health of plants from the angle of infectious diseases in their effects on plant health – and does not consider abiotic stresses. Non-infectious, biotic and abiotic factors, however, are considered as factors of infectious diseases and their consequences.
- The assessment therefore concentrates on viruses, bacteria, fungi, oomycetes, nematodes, as well as on organisms (e.g., parasitic plants) which behave (specialisation/adaptation) as plant pathogens. Pathogen vectors are also considered.



**Figure 1. Steps in the Global Plant Health Assessment**

Critically, the assessment considers plant health as a whole, and not specific plant diseases. As in the Millennium Ecosystem Assessment, plant health assessment is built from the collection of science- and fact-based expert opinions on the state of health of plants in specified plant systems within chosen ecoregions of the world.

The assessment does not attempt to address all plant species of the biosphere. It therefore considers keystone plant species, the status of 'keystone' being assigned to plants that play a critical role in natural (including managed) ecosystems or in human-made agro-ecosystems. The approach therefore follows a series of steps as shown in Figure 1.

Recognising that plant health is an abstraction which cannot be quantitatively measured, the GPHA Project (1) is designed to produce qualitative assessments based on verifiable, published data, and

(2) focuses on the consequences of plant health on ecosystem services (provisioning, regulating, and cultural), because these can be quantified.

PlantSystem	World Eco-region	Main Ecosystem Service			Key Plant(s)/Crop	Lead Scientist <sup>(1)</sup>
		P	R	C		
Cereal systems	NW Europe	P			Wheat	Laetitia Willocquet
	N. America	P			Wheat and Maize	Paul Esker
	S. America	P			Wheat	Emerson Del Ponte
	South Asia	P			Rice and Wheat	Serge Savary
	East Asia	P			Wheat	Xianming Chen
	East Asia	P			Rice	Zhanhong Ma
	SE Asia	P			Rice	Serge Savary
	SS Africa	P			Maize	Lava Kumar
	Australasia	P			Wheat	Daniel Hüberli
Roots & Tubers	South Asia	P			Potato	U.S. Singh
	East Asia	P			Potato	Xiangming Xu
	SS Africa	P			Cassava	James Legg
	NW Europe	P			Potato	Peter Kromann
	S. America	P			Potato	Karen Garrett
Banana & Plantains	SS Africa	P			Banana and Plantains	Leena Tripathi
Fruit trees & Grape	NW Europe	P		C	Grapevine	Vittorio Rossi
	SE Asia	P			Mango	Greg Johnson
	N. America 1	P			Fruits and nuts	Clive Bock
	N. America 2	P			Grapevine and almond	Neil McRoberts
Horticultural Systems	South Asia	P		C	Multiple	Srinivasan Ramasamy
	SE Asia	P		C	Multiple	Lawrence Kenyon
	SS Africa	P		C	Multiple	Wubetu Bihon Legesse
Urban Vegetation	NW Europe		R	C	Plane tree	Pascal Frey
Forests	Amazon		R	C	multiple	Tania Brenes-Arguedas
	Australasia		R	C	Eucalypts	Angus Carnegie
	Europe	P	R	C	Oaks	Marie-Laure Desprez-Loustau
	North Europe	P	R		multiple	Jan Stenlid
	N. America 1	P	R		multiple	Alex Woods
	N. America 2	P	R		Oaks	Suzan Frankel



## IMPLEMENTATION OF THE GLOBAL PLANT HEALTH ASSESSMENT

The teams involved in the project are addressing the following four questions in each [PlantSystem x Ecoregion]:








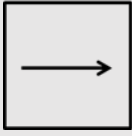
Q1: On a scale from “excellent” to “poor”, how to qualify plant health in the past 30 years?

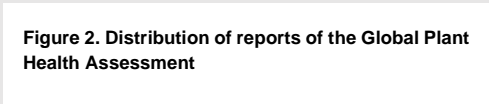
Q2: On a scale from “improving”, to “stable”, to “declined”, how has plant health evolved on the considered plant system over the recent 10 years?

Q3: On a scale from “excellent” to “poor”, how to qualify the generation – as affected by plant disease – of the considered ecosystem service(s) in the past 30 years?

Q4: On a scale from “improving”, to “stable”, to “declining”, how has the generation – as affected by plant disease – of this (these) service(s) evolved over the recent 10 years?

The qualitative scales used in the GPHA therefore are as follows:

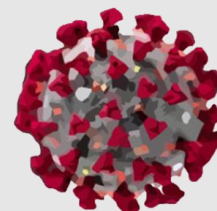
For the qualifying questions (1 and 3):	For the trend questions (2 and 4):
 <b>Excellent</b>  <b>Good</b>  <b>Fair</b>  <b>Poor</b>  <b>Bad</b>	 <b>Declining</b>  <b>Improving</b>  <b>Stable</b>



11. *Journal of the American Statistical Association*, 1997, 92, 1009-1014.

## How is COVID-19 AFFECTING PLANT PATHOLOGISTS?

In the seventh month of this series, Mark Balendres shares his story on: “How is the COVID-19 pandemic impacting your research, teaching, outreach and lives? Share your stories with our ISPP community on how you and your family and colleagues are coping. Send a few lines through the [online form](#) to share in the ISPP Newsletters over the next few months!



### MARK BALENDRES, PHILIPPINES

The restrictions brought by the COVID-19 pandemic have significantly affected the implementation of our current and new research projects. When the restrictions were implemented, it was challenging to coordinate the research activities with our team because all actions must be in accordance with the government's guidelines. There were times when experiments had to be abandoned. However, a skeleton workforce was permitted to maintain plant collections. Despite the events that have unfolded over the last months, we became more conscientious (and productive). We focused on doing the essential activities when we had the chance to visit the lab/glasshouse. Most of us worked from home (WFH), and meetings were done via Zoom. We've conducted 15 webinars on various topics and have reached more than a thousand audiences from across the country and overseas. We became more connected to our stakeholders (students, researchers, industry people, policymakers, growers, etc.) than before the restrictions took effect. Also, the WFH arrangement enhanced the time to write/submit manuscripts to journals. We had papers published recently, and perhaps this is one good outcome of the pandemic restrictions. Although with minimal staff, we are now back, and we've picked up where we left last time. We remain optimistic.



## POSTPONED CONFERENCE DUE TO COVID-19

In order to protect the health, safety and well-being of our international community from COVID-19 some conferences and workshops have been postponed or changed to virtual meetings. Affected meetings with cancellations or new dates, where confirmed, are listed here. These changes have also

been updated in the Coming Events list. Please let me know of any date changes that I may have missed.

- [7<sup>th</sup> International Congress of Nematology](#), has been further postponed to 1 May - 6 May, 2022.



## NSTF VIDEO INTERVIEW WITH MIKE WINGFIELD

A video interview with FABI founding Director, Professor Mike Wingfield has been published online on the YouTube channel of the [National Science and Technology Forum](#) (NSTF). Mike is one of this year's STEM Role Models in the NSTF 'Share 'n Dare' outreach programme that communicates science to the youth and the general public and aims to inspire learners to choose STEM subjects. He was awarded the NSTF Annual Theme Award: Plant Health, at a ceremony on 30 July. This Special Annual Theme Award recognises the 2020 United Nations International Year of Plant Health (IYPH-2020). The 15 minute video provides insights into Mike's research activities and how he was inspired to pursue a career in the natural sciences. It is the hope of the NSTF that the interview will inspire a new generation of learners to consider plant health as an area of study.

[Click here](#) to watch the full video.





## **KOREAN SOCIETY OF PLANT PATHOLOGY RECOMMENDS ISPP COUNCILLORS**

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The Board of Directors of Korean Society of Plant Pathology (KSPP) decided to recommend the following members as councillors of ISPP:

- Dr. Lee, Yong-Hwan (Seoul National University),
- Dr. Kim, Heung Tae (Chungbuk National University), and
- Dr. Kim, Ki Deok (Korea University).

Dr. Lee is a current councillor, and Dr. H. T. Kim and Dr. K. D. Kim are recommended at this time.

## **FAO COMMITTEE ON AGRICULTURE ENDORSES PROPOSAL FOR AN INTERNATIONAL DAY OF PLANT HEALTH**

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The FAO Committee on Agriculture endorsed the proposal tabled by the government of Zambia to proclaim 12 May the International Day of Plant Health (IDPH).

The IDPH will provide continuity to the efforts made throughout the International Year of Plant Health (IYPH) 2020 and continue to raise awareness among the public and policy makers of the key role of plant health in tackling hunger, poverty, threats to the environment and economic development.

In commenting the decision, FAO Deputy Director-General Ms Beth Bechdol thanked the COAG Members and especially the Government of Zambia for their keen effort and continuing support to this proposal. She emphasised how the IYPH was hit by the COVID-19 pandemic, but ensured FAO's highest attention and efforts to increase awareness of the importance of plant health.

The proposal will be submitted for approval by the 165<sup>th</sup> Session of the FAO Council in December 2020 and for adoption by the 42<sup>nd</sup> Session of the FAO Conference in July 2021. The Committee stressed that the extra-budgetary resources should be identified to cover the costs for implementation of the Day, noting the importance of involving FAO and the Secretariat of the International Plant Protection Convention.

## AN EXTENSION FOR THE CONNECTED VIRUS NETWORK

RICHARD WYATT, CONNECTED NETWORK COMMUNICATIONS OFFICER

Funding that will provide a one-year extension to the life of The CONNECTED Virus Network was unveiled by Network Director Prof. Gary Foster and Co-Director, Prof. Neil Boonham, on the final day of the successful two week [‘Springboard To Impact’ online conference](#). The 1,480-strong plant health / entomology network was due to end its term on 31 December 2020. Now a 12-month extension has been granted by the UK Biotechnology and Biological Sciences Research Council (BBSRC).

The network, which brings together world-class researchers from across the globe to tackle plant diseases that devastate food crops in Sub-Saharan African countries, will now be able to continue its work until at least the end of 2021.

Prof. Gary Foster (University of Bristol) said: “We are grateful to the BBSRC for its support, and to all our fabulous network members for their continuing engagement since 2017. As Directors we will continue to work closely with the network team, redoubling efforts to ensure the network goes from strength to strength. The extension will provide a number of extra opportunities for members. For example, we are planning for more networking and collaboration, putting some of our scientific training online for easier access, and improved website resources.”

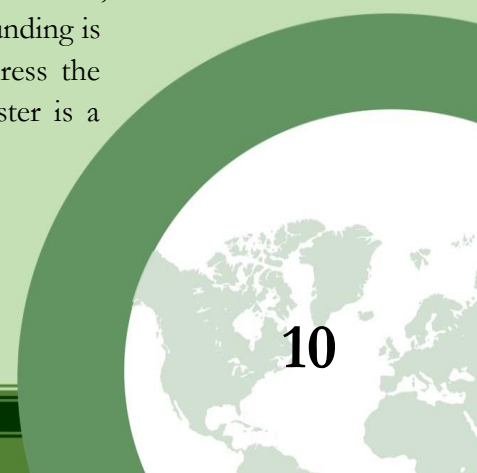
Prof Neil Boonham (Newcastle University) added: “By far the most important outcome of this welcome extension is that there will be more opportunity for network members to collectively take further steps to improve food security in Sub-Saharan African countries.”

The Directors made the announcement on the final day of the ‘Springboard To Impact’ online conference, which brought together many dozens of researchers from across the world, for two weeks of scientific presentations and workshops. It included presentations, via Zoom, from each of the 20 research projects which have received pump-prime funding from The CONNECTED Network. The projects involved 11 different food crops, and collaborations of 55 researchers in 34 institutions in 14 countries.

### PROJECT BACKGROUND

The CONNECTED Network, based at The University of Bristol and Newcastle University, was funded by a £2 million grant from the UK government’s Global Challenges Research Fund, which supports research on global issues that affect developing countries. It exists to bring together world-class researchers to find ways of tackling the devastating plant diseases caused by vector-borne viruses.

It is co-ordinated by Prof. Foster, from the University of Bristol School of Biological Sciences, long recognised as world-leading in plant virology and vector-transmitted diseases, with Professor Neil Boonham, from Newcastle University its Co-Director. The funding is being used to build a sustainable network of scientists and researchers to address the challenges. The University of Bristol’s Cabot Institute, of which Professor Foster is a member, also provides input and expertise.



## JACQUIE VAN DER WAALS ON DISEASES THREATENING SUSTAINABLE POTATO PRODUCTION

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The World Potato Congress Inc is pleased to be beginning its Autumn webinar series on 12 November 2020 with Professor Jacque van der Waals from the University of Pretoria, South Africa.

Prof. van der Waals will present on “Above and Below Ground: Diseases threatening sustainable potato production”. This presentation will discuss three important disease complexes in potatoes, namely Rhizoctoniasis, soft rot and blackleg, early blight and brown spot. For each of these disease complexes, Prof van der Waals will introduce the pathogen, give a description of symptoms, discuss the disease cycle and touch on basic management principles.

Prof Jacque van der Waals is an associate professor in the Department of Plant and Soil Sciences at the University of Pretoria (UP). She began her research career on potatoes in 1998, with a PhD on the epidemiology of early blight on potatoes and since then established the Potato Pathology Programme at the University of Pretoria (PPP @ UP), which is one of the flagship research programmes funded by Potatoes South Africa (PSA).

The host for this webinar will be WPC Director, Dr. Nora Olsen ([norao@uidaho.edu](mailto:norao@uidaho.edu)). To register in advance for this webinar on 12 November 2020 at 9:00 a.m. Eastern Standard Time (USA and Canada) [click here](#). After registering, you will receive a confirmation email containing information about joining the webinar.

## THE HISTORY OF CACAO AND ITS DISEASES IN THE AMERICAS

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A paper by Jorge R. Díaz-Valderrama *et al.* titled “The history of cacao and its diseases in the Americas” was published in October 2020 by *Phytopathology* (vol. 110, pp. 1604-1619). The abstract is as follows:-

Cacao is a commodity crop from the tropics cultivated by about 6 million smallholder farmers. The tree, *Theobroma cacao*, originated in the Upper Amazon where it was domesticated ca. 5450 to 5300 B.P. From this center of origin, cacao was dispersed and cultivated in Mesoamerica as early as 3800 to 3000 B.P. After the European conquest of the Americas (the 1500s), cacao cultivation intensified in several loci, primarily Mesoamerica, Trinidad, Venezuela, and Ecuador. It was during the colonial period that cacao diseases began emerging as threats to production. One early example is the collapse of the cacao industry in Trinidad in the 1720s, attributed to an unknown disease referred to as the “blast”. Trinidad would resurface as a production center due to the discovery of the Trinitario genetic group, which is still widely used in breeding programs around the world. However, a resurgence of diseases like frosty pod rot during the republican period (the late 1800s and early 1900s) had profound impacts on other centers of Latin American production, especially in Venezuela and Ecuador, shifting the focus of cacao production southward, to Bahia, Brazil. Production in Bahia was, in turn, dramatically curtailed by the introduction of witches’ broom disease in the late 1980s. Today, most of the world’s cacao production occurs in West Africa and parts of Asia, where the primary Latin American diseases have not yet spread. In this review, we discuss the history of cacao cultivation in the Americas and how that history has been shaped by the emergence of diseases..

[Read paper.](#)



## CAN ORGANIC PLANT PROTECTION PRODUCTS DAMAGE CROPS?

UNIVERSITY OF GÖTTINGEN PRESS RELEASE, 30 SEPTEMBER 2020

Around 95 percent of food comes from conventional agriculture, which uses chemical pesticides to keep crops healthy. Increasingly, however, organic pesticides are also being sought as an alternative. Some organic pesticides contain live spores of the fungus *Trichoderma*, which have the ability to suppress other pathogens. Researchers at the University of Göttingen have now discovered that one *Trichoderma* species can cause severe rot in cobs of maize (corn). The results were published in the journal *Frontiers in Agronomy*.



Researchers at the University of Göttingen have discovered that the spores of the fungus *Trichoderma*, which is contained in some organic plant protection products, can cause severe cob rot in maize (corn) (Photo credit: A Pfordt, University of Göttingen).

The massive outbreak of a previously unknown species of *Trichoderma* on corn cobs in Europe was first detected in Southern Germany in 2018. In affected plants, grey-green spore layers formed on the grains of corn and between the leaves that form the husks of the cobs. In addition, the infested grains germinated prematurely. For this study, the scientists brought maize plants in the greenhouse into contact with *Trichoderma* by inoculation. They were then able to prove that the dry matter content of the maize cobs is greatly reduced. Annette Pfordt, PhD student at the Department of Crop Sciences of the University of Göttingen and first author of the study, analysed 18 separate *Trichoderma* strains mainly from maize cobs in Southern Germany and France over two years. She found that some of these strains are highly aggressive with a cob infestation of 95 to 100 percent. By means of molecular genetic analyses, these spores could be assigned to the relatively new species *Trichoderma afrobarzianum*. Within this species of fungus, previously unknown plant-pathogenic strains seem to have evolved which are now responsible for this newly discovered disease affecting maize.

"The species used in organic plant protection products is a close relative, namely *T. barzianum*. Strains of this species were not as aggressive in the study, but in the inoculation experiments they also led to a slight infestation on the cob," says Pfordt. "Although the investigations carried out so far show that the *Trichoderma* strains used in organic plant protection products differ from the aggressive forms now found, it is also clear that the risks from the use of living microorganisms in plant protection must be thoroughly investigated," adds Professor Andreas von Tiedemann, head of the Department of Plant Pathology and Protection at the University of Göttingen.

In vegetable growing, "*Trichoderma* agents" can be used, for example to control diseases such as Botrytis (grey mould) or Fusarium and to reduce rotting pathogens on the crop products. Various organic products containing *Trichoderma* are available on the market. They are used almost exclusively in organic farming. *Trichoderma* species belong to the ascomycetes and are found worldwide in the soil, on plant roots, in decaying plant remains and on wood. They act as decomposers of substrates and as antagonists of other microorganisms. This is the first time that they have been described as pathogens on plants.



## PLANT PATHOLOGIST PAMELA RONALD NAMED GCHERA WORLD AGRICULTURE PRIZE LAUREATE

AMY QUINTON, UC DAVIS NEWS, 19 OCTOBER 2020

Pamela Ronald, distinguished professor in the Department of Plant Pathology at the University of California (UC), Davis, and with the UC Davis Genome Center, has been named a 2020 World Agriculture Prize laureate by the Global Confederation of Higher Education Associations for Agricultural and Life Sciences, or [GCHERA](#). She becomes the first woman whose work is recognised by the award. The award ceremony will be virtually held on 30 November from Nanjing Agricultural University, Jiangsu Province, China. GCHERA also jointly named Professor Zhang Fusuo of China Agricultural University a laureate this year.



Pamela Ronald becomes the first woman whose work is recognised with the GCHERA World Agriculture Prize (Photo credit: University of California, Davis).

“This award is a really special honor and I’m very grateful,” said Ronald. “I’m happy to be part of a global community of agricultural scientists that has been able to make a huge difference in the lives of farmers.”

Ronald is recognised for her history of major discoveries in plant molecular genetics. In 1995, she isolated a key immune receptor that revealed a new mechanism with which plants and animals detect and respond to infection. Her discovery in 2006, with UC Davis plant scientist David Mackill, of a rice submergence tolerance gene facilitated the development of high-yielding, flood-tolerant rice varieties that have benefited millions of farmers in South and Southeast Asia.

Ronald also directs the Institute for Food and Agricultural Literacy at UC Davis, which she established to provide the next generation of scientists with the training, support, and tools they need to become effective communicators and infuse scientifically sound information into the public discourse. Ronald is also a key scientist at the U.S. Department of Energy Joint Bioenergy Institute, an affiliated scholar with the Center on Food Security and the Environment at Stanford University, and a member of the Innovative Genomics Institute at UC Berkeley.

She was named a National Geographic Innovator and one of the world’s 100 most influential people in biotechnology by Scientific American. With her collaborators, she received the 2012 Tech Award for the innovative use of technology to benefit humanity. Ronald co-authored *Tomorrow’s Table* with her husband, Raoul Adamchak, organic farmer and former manager at the UC Davis Student Farm. In it, they speak of the need to nourish a growing population without further destroying the environment. Her 2015 TED talk has been viewed by more than 1.8 million people. In 2019, she received the ASPB Leadership Award, an honorary doctorate from the Swedish Agricultural University, and was elected to the National Academy of Sciences.

## ***CURRENT VACANCIES***

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No current vacancies.

## ***ACKNOWLEDGEMENTS***

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Thanks to Mark Balendres, Greg Johnson, Jan Leach, Serge Savary, Brenda Wingfield, and Richard Wyatt for contributions.

## COMING EVENTS

### International Seed Testing Association Seed Health Workshop: Seed health methods to detect fungi, bacteria and viruses

Postponed – date to be announced

Pretoria, South Africa

Website: [www.seedtest.org/en/event-detail---0--0--0--111.html](http://www.seedtest.org/en/event-detail---0--0--0--111.html)

### 7<sup>th</sup> International Bacterial Wilt Symposium

3 November - 7 November, 2020

Montevideo, Uruguay

Website: [7ibws2020.fq.edu.uy](http://7ibws2020.fq.edu.uy)

### 7<sup>th</sup> International Conference of Pakistan Phytopathological Society

29 November - 1 December, 2020

University of Agriculture Faisalabad and Ayub Agricultural Research Institute, Faisalabad, Pakistan

Website: [pakps.com/web/7icpps](http://pakps.com/web/7icpps)

### 4<sup>th</sup> International Conference on Global Food Security

6 December - 9 December, 2020

Montpellier, France

Website: [www.globalfoodsecurityconference.com](http://www.globalfoodsecurityconference.com)

### 10<sup>th</sup> International IPM Symposium

15 March - 18 March, 2021

Denver, Colorado, USA

Website: [ipmsymposium.org/2021](http://ipmsymposium.org/2021)

### Meeting of the 66<sup>th</sup> Annual Conference on Soilborne Plant Pathogens and the 51<sup>st</sup> Annual Statewide California Nematology Workshop

23 March - 24 March, 2021

To be held virtually on Zoom

Website: [soilfungus.wsu.edu](http://soilfungus.wsu.edu)

### 16<sup>th</sup> Congress of the Mediterranean Phytopathological Union

20 April - 22 April, 2021

Limassol, Cyprus

Website: [cyprusconferences.org/mpu2020](http://cyprusconferences.org/mpu2020)

### International Symposium on Cereal Leaf Blights

19 May - 21 May, 2021

Hammamet, Tunisia

Website: [www.isclb2021.com](http://www.isclb2021.com)

### 4<sup>th</sup> International *Erwinia* Workshop

5 June - 6 June, 2021

Assisi, Italy

Website: [www.icppb2020.com](http://www.icppb2020.com)

### 14<sup>th</sup> International Conference on Plant Pathogenic Bacteria

6 June - 11 June, 2021

Assisi, Italy

Website: [www.icppb2020.com](http://www.icppb2020.com)

### Joint 18<sup>th</sup> International *Botrytis* Symposium & 17<sup>th</sup> International *Sclerotinia* Workshop

7 June - 11 June, 2021

Avignon, France

Website: [colloque.inra.fr/botrytis-sclerotinia-2020](http://colloque.inra.fr/botrytis-sclerotinia-2020)

### International Plant Health Conference “Protecting Plant Health in a changing world”

28 June - 1 July, 2021

Paasitorni Conference Centre, Helsinki, Finland

Website: [www.fao.org/plant-health-2020/events/events-detail/en/c/1250609/](http://www.fao.org/plant-health-2020/events/events-detail/en/c/1250609/)

### International Phytobiomes Conference 2021

14 September - 17 September, 2021

Denver, Colorado, USA

Website: [phytobiomesconference.org/](http://phytobiomesconference.org/)

**13<sup>th</sup> Arab Congress of Plant Protection**

31 October - 5 November, 2021

Le Royal Hotel, Hammamat, Tunisia

Contact: Dr. Asma Jajar, Chairperson of Organising Committee [info@acpp-aspp.com](mailto:info@acpp-aspp.com)

Website: [acpp-aspp.com](http://acpp-aspp.com)

**7<sup>th</sup> International Congress of Nematology**

1 May - 6 May, 2022

Antibes Juan-les-Pins, France

Website: [www.alphavisa.com/icn/2020/index.php](http://www.alphavisa.com/icn/2020/index.php)

**11<sup>th</sup> Australasian Soilborne Diseases Symposium**

Mid-late 2022

Cairns, Queensland, Australia

Website: [asds2020.w.yrd.currinda.com](http://asds2020.w.yrd.currinda.com)

**XX International Plant Protection Congress**

10 June - 15 June, 2023

Athens, Greece

Website: [www.ippcathens2023.gr](http://www.ippcathens2023.gr)

**12<sup>th</sup> International Congress of Plant Pathology (ICPP2023)**

20 August - 25 August, 2023

Lyon, France

Website: [www.icpp2023.org](http://www.icpp2023.org)

**9<sup>th</sup> ISHS International Postharvest Symposium**

11 November – 15 November, 2024

Rotorua, New Zealand

Website: [scienceevents.co.nz/postharvest2024](http://scienceevents.co.nz/postharvest2024)





INTERNATIONAL SOCIETY FOR PLANT PATHOLOGY (ISPP)



[WWW.ISPPWEB.ORG](http://WWW.ISPPWEB.ORG)

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