

INTERNATIONAL NEWSLETTER ON PLANT PATHOLOGY

ISPP Newsletter 44 (3) March 2014

News and announcements from all on any aspect of Plant Pathology are invited for the Newsletter. Contributions from the ISPP Executive, Council and Subject Matter Committees, Associated Societies and Supporting Organisations are requested.

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Grant from the Esther B O'Keeffe Foundation to model the spread of citrus huanglongbing

Dr Ariena van Bruggen, professor at the University of Florida in Gainesville, received a substantial grant from the Esther B O'Keeffe foundation to expand the model for citrus huanglongbing (HLB) transmission that she and her colleagues published in PNAS. (<http://www.pnas.org/content/109/30/12213.full.pdf+html?with-ds=yes>).

This grant will pay for a postdoc and assistant to expand the model with spatial and economic components. The ultimate goal is to optimize management strategies for HLB, the worst citrus disease in many citrus production areas in Asia, Africa and the Americas. The Florida citrus industry has been hard-hit by this disease in recent years, and the O'Keeffe Foundation (located in Florida) is very concerned about the survival of the citrus industry.

ISPP Subject Matter Committee on Seed Pathology

The ISPP Subject Matter Committee on Seed Pathology is to be revived. The Committee will address seed pathology in its broadest possible meaning. The aim is to have Committee members from chemical and seed companies, universities, research institutions, government departments and international bodies such as ISTA, ISF, EPPO, NSHS etc. The production of pathogen-free seed is essential for global food security and safety. Due to economics and the importance of seed-borne diseases and pathogen-free seed in international seed trade, renewed interest in the ability to identify and detect seed-transmitted pathogens using the latest technological advances has occurred. Seed treatments have also become more feasible and environmentally friendly. With

the update of the "Annotated list of seed-borne diseases" currently taking place, the input of a revived ISPP Seed Pathology Committee will be invaluable. This is a call for all interested colleagues to participate in the ISPP Seed Pathology Committee.

Please contact Theresa (Terry) Aveling at < terry.aveling@fabu.up.ac.za >.

Carolee Bull Honoured

Plant pathologist Carolee Bull has just received the US Department of Agriculture Secretary's Honor Award and wants her students to be caught by the same pathology bug. Carolee is also the Chair of the ISPP Committee on Taxonomy of Plant Pathogenic Bacteria. Carolee, a researcher with the USDA, received her award for the work she's done mentoring students mostly from Hartnell College. In the last few years, several of the students who have interned with her have received prestigious fellowships and continued on to careers in science. Rubio, for example, received a pre-doctoral fellowship from the National Science Foundation Graduate Research Fellowship Program in March 2012. Ana Ibarra received a Frank L Howard Undergraduate Fellowship from the American Phytopathological Society in June 2012.

"The work she's doing with our students, providing research opportunities, is almost unheard of," said Hartnell President Willard Lewallen. "To see what happens to those students afterward is incredible. What she does to them is something you don't see very often."

Carolee Bull began working in Salinas in 1995, not long after finishing her doctoral program in plant pathology at Oregon State University. Ever since, she's dedicated her working hours to studying bacteria that affect the crops grown in the region. Recently, her work and that of her colleagues led her to detect and classify the plant-killing microbe now officially called *Pseudomonas cannabina* pathovar. *alisalensis*. This bug attacks crucifers, such as broccoli, and kills them. It's the type of information that growers find extremely useful. "We have limited resources," Bull said. "We have a lot of people we need to feed, and I want for us to get as much yield out of that land as possible without damaging the environment. In order to do that you want to make sure pathogens aren't taking away from that potential yield. If you understand what organisms are there and what crops they may affect, you can develop a rotation that would permit you to get maximum yield. We don't want those organisms outsmarting us."

When students participate in the studies, their name appears in peer-reviewed articles, a prestigious event that opens the door to grants and other research opportunities. The number of interns working in her lab in Salinas varies, but she's had up to nine at a time, she said. Right now there's only two: a high school student who plans to start classes in Hartnell soon; and Frances Wong, who's volunteering her time since the lab still does not have an internship program with San Jose State University. "She's perfect," said Wong referring to Bull. "She's a wonderful mentor, the best I've ever had. She's giving me excellent advice."

While Bull says she's honored about the national award — and one Hartnell official just gave her — she feels they're more for her students than for her. "I'm getting an award because the people I have worked with have succeeded. They're working hard, they're getting \$90,000 grants, which is incredible," she said. "They're the sons and daughters of field workers, and they are the top graduate students in the nation, I love that. I just get the chills thinking about it."

Vision for Australian Fungal Conservation

From Sapphire McMullan Fisher < sapphire@flycatcher.com.au >.

Fungi are the 2nd biggest Kingdom of life and we are trying to conserve the vulnerable members of this kingdom. We know this Kingdom provides vital ecosystem services not carried out by plants or animals. Fungi mediate the interactions between species and facilitate important ecosystem functions. Australasia biodiversity is ~72% endemic. Including the fungi, this biological treasure is ours to protect. We must, therefore, integrate all fungi into current conservation actions with great urgency for the vulnerable species as well as species in threatened ecosystems. Modern research funds needs to include all functional and phylogeny groups of organisms. Filling current knowledge gaps must be made a focus and priority for future funding.

Knowledge of Australian fungi should inform conservation actions - i.e. sufficient knowledge on fungal taxonomy, ecology, biology, biogeography and phylogeny to inform management that will allow successful conservation.

Critical Considerations:-

Current biodiversity and conservation of Australian Fungi; Fungi are 9% of Australia's biodiversity, yet are poorly understood by modern science, with currently just 11,846 of an estimated 50,000 species even named by modern science; A mere 14 species and just 1 fungal community listed under Australian state legislations and no fungi at all are listed under federal legislation; Fungi play vital ecological roles in all Australian ecosystems; Decomposer fungi are important for nutrient recycling; Facilitating the formation of tree hollows for housing vertebrates; Fungi are food for both vertebrates and invertebrates. For example, our large numbers of native truffles are food for rare and endangered species such as Potoroos and Woylies, as well as for specialised insects.

Pathogenic fungi, such as rusts, smuts and galls play an important role in natural selection; Mycorrhizal fungi are necessary partners for more than 90% of terrestrial plants - and seeds of our native orchids cannot germinate without the aid of a specialised fungal partner; Mycorrhizas are important physical links in the ecosystem between vertebrates, invertebrates and plants.

Diversity is important for ecosystem health and resilience including drought tolerance; Lichens capture carbon and contribute nitrogen to ecosystems, are used as an indicator to air quality, also providing habitat for micro-fauna. Endophytes are present in most plant tissues, and have roles in plants avoiding some diseases and grazing by animals; Some are important in stable carbon sequestration; Fungal hyphae, which ramify throughout soils are important for good soil structure, water retention and nutrient availability.

Questions that need answering for science-based solutions towards the long term management of ecosystem functions:-

What and where fungi are found in Australia? Are the ranges of any species of fungi changing? What is the biology and ecology of fungal species?

What levels and types of fungal diversity are needed for ecosystem health and function? How do fungi that have critical ecosystem functions disperse and spread in the current modified Australian landscape? How do current large scale management tools – such as fire - affect the fungi and the connected functioning of ecosystems?

With regard to Australia's National Biodiversity Strategy 2010-2030; Why were fungi not referred to alongside 'plants, animals and micro-organisms' in the first of the three levels of biodiversity - genetic diversity (p. 7)?

a) Does the Government consider fungi to be important in providing life-supporting ecosystem services, particularly that of soil formation and retention? b) If so, why is there no National Framework for the Management and Monitoring of Australia's fungi? Will clear priorities be established for new investment to fill gaps and address emerging issues in conserving fungal diversity? Will strategic consideration be explicitly given to fungal conservation, through of the protection of important fungi habitats and fungal biodiversity hotspots? Will the deficiencies in legal protection for fungi identified and addressed through plans to rectify those deficiencies and threats to fungi identified, and fungi being protected? Will principal fungal habitats and roles be taken into account? Examples such as decomposer fungi including specialised coprophilous species, endophytes, freshwater fungi, species being developed to decompose man-made products – particularly pollutants, fungi on naturally occurring inanimate substrata, lichen-forming fungi, marine fungi, mycorrhizal fungi and parasitic fungi?

Does the Government consider there to be gaps in our current science and knowledge of fungal biodiversity and if so, what research and education investment will be provided to fill those gaps? Will fungal diversity be a feature of the 10 National Targets established by the Strategy? Will fungal diversity be a feature of the Convention's Aichi Strategic Goals for;

- a) Addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
 - b) Reducing the direct pressures on biodiversity and promoting sustainable use
 - c) Improving the status of biodiversity by safeguarding ecosystems, species and genetic diversity
 - d) Enhancing the benefits to all, via biodiversity and ecosystem services
 - e) Enhancing implementation through participatory planning, knowledge management and capacity building
6. Will the fifth National Report on progress towards implementation of the Strategic Plan and Aichi Biodiversity Targets, due 31 March 2014, include fungi?
9. Will fungi be considered in the proposed review by 2015 of relevant legislation policies and programs?

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The X International Symposium on Thysanoptera and Tospoviruses

[Organizing & Scientific Advisory Committees/Program](#)

[Registration](#)

[Accommodations](#)

[Laurence Mound Travel Scholarship](#)

[Workshop on Mitigating the Impact of Thrips and Tospoviruses](#)

[Participate](#)

Asilomar Conference Grounds May 16th through May 20th 2015. The X International Symposium on Thysanoptera and Tospoviruses planned for May 2014 in Brazil was cancelled due to unavoidable circumstances. Carrying on the vision, plans, and efforts of the original Organizing & Scientific Advisory Committees, the X International Symposium on Thysanoptera and Tospoviruses will now be held at the historic [Asilomar Conference Grounds](#) in Pacific Grove, CA, May 16th through May 20th 2015.

At the same venue, immediately preceeding the X International Symposium (May 14th through May 16th), will be a workshop on the introduction and comparison of risk indices and prediction models for tospoviruses in North America, with the goal of implementing readily available risk assessment calculators. Organizers include Dr George Kennedy (North Carolina State University), and Robert Kemerait and John Sherwood (University of Georgia).

This is a unique opportunity to convene world specialists in tospoviruses and thrips, discuss research progress, and explore the interactions between tospoviruses and their thrips vectors. The new Organizing & Scientific Advisory Committees invite you to attend and participate in this exciting scientific program.

As with previous meetings, joint presentations of common interest to both research areas will occur during morning sessions and a poster session, more specific discussions, and contributed presentations (concurrent sessions) will occur in the afternoon and evening.

[Asilomar State Park and Conference Grounds](#) is a beautiful, historic location with excellent conference facilities and accommodations, easily accessible by shuttle from the [Mineta San Jose International Airport](#), and is in close proximity to the Salinas Valley, an agricultural hotspot, making it the perfect location for our meeting.

Program Chairs

George Kennedy (North Carolina State University; Diane Ullman (University of California Davis).

7th ISTA Seed Health Symposium

The Organising Committee is proud to invite you to the 7th ISTA Seed Health Committee Seed Health Symposium on 12-14 June 2014 in Edinburgh. The symposium provides a unique opportunity to bring together scientists, technicians, managers and policy makers from research institutes, government, the seed trade, and

international organisations who are involved with the health status of seed.

The 7th Seed Health Symposium will take place from 12-14 June 2014 at the National Museum of Scotland, in the heart of Edinburgh and walking distance from the railway station and local hotels. The National Museum of Scotland is situated in Chambers Street, in the heart of the Old Town, a few minutes walk from the Royal Mile. Chambers Street links Edinburgh's George IV Bridge and South Bridge.

The programme will be of a high technical and scientific quality discussing the latest scientific research on seed-borne pathogens; progress in seed health testing; and both phytosanitary and practical issues confronting the industry worldwide.

We hope Edinburgh will provide an ideal environment for scientific exchange and hospitality. We will do all we can to ensure your visit is a pleasant one.

Valerie Cockerell, Chair of the Organising Committee; < Valerie.Cockerell@sasa.gsi.gov.uk >.

5th Asian Conference on Plant Pathology – an update

The 5th Asian Conference on Plant Pathology, organized by Thai Phytopathological Society will be held at Empress Convention Center, Chiang Mai, Thailand between November 3-6, 2014. Visit: <http://www.acppthailand2014.com/welcome.php>.

The 5th Conference follows on from the 4th ACPP held in Darwin Australia in 2011, the 3rd ACPP held in Yogyakarta Indonesia in 2007, the second ACPP, held in Singapore in 2005 and the first ACPP, held in Beijing, China in 2000.

We are honored to invite professionals and friends in Asia and other parts of the world to participate in ACPP 2014. It will bring many plant pathologists with different disciplines and expertise to share their knowledge and experience in the warm hospitality of Northern Thailand. The conference will cover many topics in the field of plant pathology and feature invited speakers at the Conference. Participants can also see some of Thailand's highland agriculture and scenery in the pre-conference tours.

Looking forward seeing you at ACPP2014 in Chiang Mai 2014. Sincerely yours, Assoc. Prof. Dr. Somsiri Sangchote

More News from Florida

Ariana van Bruggen advises that a gene for susceptibility of citrus to canker has been found by researchers at the University of Florida (UF)

Citrus canker, manifested by pustules on fruit, leaves and twigs, is a highly contagious plant disease and spreads rapidly over short and longer distances. Wind-driven rain, overhead irrigation, flooding and human movement promote its spread. The disease is caused by *Xanthomonas citri*.

The last large canker outbreak in Florida occurred beginning in 1995, which led to an eradication program that

ended in 2006, because spread could not be curtailed any further. That effort cost an estimated \$1 billion and stimulated renewed efforts for more effective and economical controls. Farmers destroyed more than 16.5 million citrus trees between 1995 and 2012, and the disease continues to be problematic despite intensive copper sprays.

Professor Jeff Jones and former graduate student Yang Hu in the plant pathology department of UF in Gainesville, as well as Dr Hongge Jia and Nian Wang at UF's Citrus Research and Education Center in Lake Alfred and collaborators from other universities identified a gene that renders citrus trees susceptible to X citri. While studying the bacterial pathogen's role in infected citrus, they were able to identify a gene in citrus critical to the development of citrus canker, known as the susceptibility, or "S" gene. By finding this susceptibility gene, the researchers expect to be closer to a cure for the disease. The research was published online this month by Proceedings of the National Academy of Sciences. See: <http://www.pnas.org/content/early/2014/01/08/1313271111.abstract>.

Based on the identification of the "S" gene, the researchers hope to engineer broad-spectrum plant resistance to most kinds of Xanthomonas diseases.

8th International Conference on Plant Protection in the Tropics

"Plant Protection for Food Security and Safety" See: < <http://mapps.org.my/8th-icppt/> >
8-10 April 2014. Berjaya Times Square Hotel, Kuala Lumpur, Malaysia.
Organized by the MALAYSIAN PLANT PROTECTION SOCIETY (MAPPS); (Persatuan Perlindungan Tumbuhan Malaysia)

Thousand cankers disease confirmed in Italy

A Pro-Med Plant Post on 6 February 2014 reported for the first time the occurrence of the fungus *Geosmithia morbida* and its vector *Pityophthorus juglandis* on walnut in the Veneto region of Italy. The pathogen causes a disease known as thousand cankers. The origin of this outbreak is unknown, but it is likely to have come from the USA. The most likely pathway is thought to be introduction of the insect vector on wood from the USA. The discovery of thousand cankers disease is considered as a serious threat. In the USA, the association of the recently described fungal species, *Geosmithia morbida*, and its vector, *Pityophthorus juglandis* (walnut twig beetle), is causing a severe and emerging disease of black walnut (*Juglans nigra*) and other *Juglans* species or hybrids. This disease is called thousand cankers and until recently had not been reported from any other parts of the world.

The Origin of *Puccinia psidii* in Brazil

A paper by Rodrigo N Graca and colleagues in *Molecular Ecology* (2013) **22**, 6033-6047 is about "Rust disease of eucalypt, caused by *Puccinia psidii*, did not originate via host jump from guava in Brazil". As the title implies, evidence is presented supporting this conclusion.

See: < <http://dx.doi.org/10.1111/mec.12545> >.

International Plant Protection Congress

It is our great pleasure to invite you to the XVIII. International Plant Protection Congress (IPPC) 2015, scheduled from 24-27 August 2015 at Henry Ford Building, Berlin (Germany). The program of activities being developed jointly by the three German organisations ([DPG](#), [JKI](#) and [IVA](#)) together with [IAPPS](#) is aimed to address many of the key issues faced by farmers, governments and plant protection scientists in meeting the challenge of designing and implementing appropriate and sustainable plant protection measures.

We kindly request your active support by submitting your scientific contributions to our abstract topics which you can find in our [Call for Abstracts](#). Abstracts must be submitted in English and online by 1 February 2015. Up-to-date and any necessary information regarding scientific topics, registration and organizational remarks can be found on our conference website www.ippc2015.de.

If you have any further questions regarding the conference, please contact the organizing agency Conventus via phone 0049 3641 31 16-374 or email ippc@conventus.de.

We are looking forward to receiving your contributions to this unique international and multi-disciplinary congress and to welcoming you to the exciting city of Berlin!

With best regards, Justus Appelt and Claudia Tonn

On behalf of the congress managing director Falko Feldmann,
Deutsche Phytomedizinische Gesellschaft e.V.

– The German Scientific Society for Plant Protection and Plant Health r.S.

News from ACIAR



The Hon Julie Bishop, Minister for Foreign Affairs has [launched an ACIAR vegetable project](#) in Hanoi. The project is being led by the Vietnam Women's Union and aims to improve the profitability and sustainability of smallholder vegetable farmers in the highlands of north western Vietnam.

Strategic Plan

ACIAR's [5-year Strategic Plan](#) was launched in Brisbane this week by Senator the Hon Brett Mason, Parliamentary Secretary to the Minister for Foreign Affairs. See Senator Mason's [media release](#) and [speech](#). Outstanding contributions recognised with prestigious awards

Congratulations to several of our [valued collaborators](#) who have recently been recognised for their outstanding contribution to

science and society. This includes Dr Richard Richards who received the 2014 Rank Prize. See [ABC news article](#).

3rd World Agroforestry Congress

ACIAR recently supported 28 attendees from Rwanda, Ethiopia, Laos, Nepal, Indonesia and Vietnam to attend the [3rd World Agroforestry Congress](#), held in New Dehli, India, 10-13 February 2014. The high-profile Congress was attended by more than 1000 delegates from 80 countries. These included 50 researchers from ACIAR's Forestry program, who also participated in a follow-on workshop to share knowledge and swap ideas on their research.

Feeding Knowledge

Richard Strange, Editor-in-Chief of the ISPP journal *Food Security*, has drawn attention to *Expo Milano* < <http://en.expo2015.org> > which has a component termed *Feeding Knowledge* < <http://www.feedingknowledge.net/> > which requires input and thought.

International Workshop on Grapevine Trunk Diseases

The call for abstracts for this 9th such workshop is now open. The Workshop will be in Adelaide from 18-20 November 2014. See: Coming Events.

Acknowledgements

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