



Society for Invertebrate Pathology Newsletter

Volume 49 Issue 1

February, 2016



Bienvenue à Tours ! Welcome to Tours!

Dear SIP members and colleagues,

It is our pleasure to invite you to attend

**SIP2016 - the International Congress on Invertebrate
Pathology and Microbial Control
and
the 49th Annual Meeting of the Society
for Invertebrate Pathology**

to be held on July 24-28, 2016 in Tours, Loire Valley, France

As always, the meeting will offer an **exciting scientific program**. Among the scientific highlights, the Society's Divisions have put together **stimulating symposia and workshops**, a **plenary symposium** on the innovative topic of '**Pathogenic aspects in insects produced for feed and food**' and two **special symposia**, one on '**Human impact on pathogens-honeybees interactions**' and the other on '**Using three-way interactions between plants, microbes and arthropods to enhance crop protection and production**' as part of a European Union funded European Cooperation in Science and Technology programme (COST Action). The meeting will take place at the **Vinci Conference Centre**, conveniently located in the **city centre of Tours**, close to hotels and restaurants, easily accessible by foot.

Following SIP tradition, the rich **social program** will foster discussions throughout the meeting, starting with the Sunday evening **Mixer** at the **Hotel de Ville de Tours**. On Tuesday afternoon, the **Excursion** will take you to the city of **Amboise** with the visit of the **Castle** and of the **Clos Lucé**, last home of Leonardo da Vinci. Then you will have time to relax or participate in the **5K Run** at the **Domaine de Candé** before the **Barbecue**. Every morning before the conference sessions, you may choose to partake in **Qi Gong classes**, a sure way of increasing energy and serenity. Last but not least, on Thursday evening, the **Banquet** will be held at the **Grange de Meslay**, a truly unique medieval monument.

We encourage you to **bring family and companions** and extend your stay, to make the most of the numerous local attractions and activities during your visit to Tours, in the heart of the **UNESCO Loire Valley World Heritage Site** (<http://loirevalley-worldheritage.org/>).

We look forward to welcoming you in Tours!

To find out more, visit our website at <http://sip2016tours.org/>

The Local Organizing Committee: contact@sip2016tours.org

IMPORTANT DEADLINES

Travel awards (Mauro Martignoni, Chris J. Lomer and Divisional awards)

April 1, 2016

Abstract submission

April 1, 2016

Registration

Early: to April 15, 2016

Regular: April 16 - June 15, 2016

Late or on-site: from June 16

President

Peter Krell, Canada

Vice President

Johannes Jehle, Germany

Past President

Jørgen Eilenberg, Denmark

Secretary

Mary Barbercheck, USA

Treasurer

Stefan Jaronski, USA

Trustees

Surendra Dara, USA

Albrecht Koppenhofer, USA

Ed Lewis, USA

Monique van Oers, The Netherlands

Newsletter Editor

Jean-Louis Schwartz, Canada

SIP Office

Society for Invertebrate Pathology

PO Box 11

Marceline, MO 64658, USA

Email: sip@sipweb.org**Web:** www.sipweb.org**Phone/Fax:** +1- 660-376-3586 (USA)**Table of Contents**

Invitation to the SIP 2016 meeting by the Local Organizing Committee	1
From the President	2
SIP 2016 Meeting in Tours, France	4
SIP 2016 Scientific program	5
SIP-CNRS Summer school in Tours	6
SIP 2016 Social program places	7
Nominees for SIP Council	8
Honorary Member nominees	15
News and announcements	16
New books	20

**From the President**

With our next meeting in France, I am reminded of *Liberté, Égalité, Fraternité* which has come to symbolize the aspirations and modus operandi of civilized nations throughout the world. The motto was originally coined during the dark days of the French Revolution in 1790 by the somewhat conflicted French lawyer and politician, Maximilien Robespierre. Despite its origin during the French reign of terror, “liberty, equality and fraternity” in one form or another continues to be the hallmark for conducting the affairs of state throughout most of the world and, in one form or another, that of many organizations. This significant philosophy of government, originating in France, provides a historical context (and challenge) to modern day France (and the world) as it tries to continue to live true to the motto that has served it well. It also introduces us to the next venue of the SIP in Tours.



Save the dates!! Both of them!!

The upcoming **SIP 2016 meeting in Tours, France**, organized by Elisabeth Herniou, Christina Nielsen-LeRoux, Jean-Michel Drezen *et leur équipe*, will be held **July 24 to 28**, a bit earlier this year and just in advance of the traditional European summer holiday. Further information is provided in this Newsletter and there is now a link to the SIP2016 Website through the SIP homepage. Flights to Europe and hotels sell out fast, so make your reservations soon. If going by train to Tours (a most pleasant ride) make sure you reserve your seats ahead of time. Looking at the draft of the program, there is something for everyone, including several high profile speakers and new topics like diseases of insects used for food and feed. In addition, Neil Crickmore, often the fastest of SIP 5K runners, will give this year’s Founders’ Lecture in tribute to the research of this year’s SIP Honoree, David Ellar. I trust you will show your support for the local arrangements committee and indeed honour France as a whole by attending this year’s meeting. The venue for the meeting is very modern while the surrounding hotels, restaurants and outdoor cafés, more medieval in age, provide the ideal ambience to discuss the latest scientific discoveries over a glass of wine, real champagne or *jus d’orange*. Or, if you like to fish, you can dangle a line off the “Wilson Bridge” (named after US President Woodrow Wilson) to test your ability to catch and land the big one (be prepared for stiff competition from the Tours *Fraternité des pêcheurs*).

The other dates to hold are for our **Golden Jubilee Meeting**, celebrating 50 years of SIP existence, to be held **Aug 13 to 17, 2017** at the University of California San Diego in La Jolla, California. Surendra Dara (SIP Trustee and former Newsletter Editor), Chair of the Local Arrangements Committee, (former Treasurer) Kelli Hoover and (former SIP President) Wendy Gelernter have already set the schedule and selected venues for the conference, social events, excursions and banquet. As this is to celebrate 50 years of SIP, we encourage as many of the current and former members of SIP to make every effort to participate in SIP 2017, and for those not yet members to do so as well.

As you read this Newsletter please make a special effort to review the profiles of the candidates for various executive positions and those nominated for honorary membership. It is again time for Council renewal and all SIP members will soon receive instructions on how to access the ballot for selecting the next slate of SIP Council members. I am particularly heartened that these

candidates have agreed to let their names stand for the various positions. But then again, this is SIP and SIP family members pitch in as needed. This time around you will be voting for the next Vice President to replace Johannes Jehle who will be President at the end of the Tours meeting, for the next Secretary, to replace Mary Barberchek and for two of the four trustees to replace outgoing trustees Surendra Dara and Ed Lewis. The treasurer serves a three-year term, so Stefan Jaronski will be replaced next year as treasurer, but nevertheless continuing for a third year has to be voted on. As I found out when I first took the position of Vice President, then President, the new officers have some huge shoes to fill. However, knowing the candidates, those who will be elected will be more than up to the task. Mary, Surendra, Ed and Jørgen (Past President) still have the Tours meeting and one Newsletter to go and will be recognized for their service to the SIP council as they step down in Tours.

Elsewhere in this newsletter, there is a request for SIP members to nominate candidates for our new **Ambassador program**. The mandate of the SIP Ambassadors is to be our representatives in different parts of the world and to familiarize fellow invertebrate pathologists globally with our society and its breadth of disciplines and activities, in promoting the society which provides a forum for exchange of ideas.

To end, I look forward to seeing you in Tours, to the scientific program and social events, and of course to renewing longstanding and more recent acquaintances.

Peter Krell



Plumereau Square (*Place Plumereau*) and the **Wilson bridge**, built between 1765 and 1778 (*Pont Wilson*, named in 1918, after U.S. President Woodrow Wilson (1856-1924), also called *Pont de pierre*), in Tours, Loire Valley (France)



49th Annual Meeting of the Society for Invertebrate Pathology

July 24 - 28, 2016

Vinci Conference Centre, Tours, France

Tours - Gateway to the Loire Valley

Known for its quiet atmosphere, Tours is a city that really has to be experienced for its cultural heritage and the added energy of some 40,000 resident students! Located at the heart of an area exceptionally rich in historical and natural heritage, with the major **Loire Valley castles** all close by and **great vineyards** like Vouvray, the **city of Tours** delights travellers from around the world with its **medieval centre**. Visitors will not miss the opportunity of stopping at the **Place Plumereau**, the best square in France for having a drink (according to *Lonely Planet*). City attractions also include the St. Gatien Cathedral, the St. Martin Basilica, the Museum of Fine Arts, city parks and gardens, shopping areas and covered markets. In Tours you will find **spirited gastronomy** set between culinary tradition and modernity, to be complemented, in moderation, with local red and white wines. Summer is also the best season for discovering the **Loire River**, be it by cycling along the paths of 'La Loire à vélo', boarding a traditional boat, or taking a pause at the lively café La Guinguette.

The Loire Valley has hosted the favourite residences of many a king. So whichever direction you travel, you soon reach **prestigious castles**, such as Azay-le-Rideau, Chenonceau, Chinon, Langeais, Villandry or Amboise (<http://www.touraineloirevalley.co.uk/discover-touraine>).



The **SIP 2016** will be hosted at the Vinci Conference Centre conveniently located in the city centre close to all amenities. The Divisions and the Scientific committee are putting together a brilliant **scientific program** exploring the latest fundamental and applied findings in invertebrate pathology, including microbial control, diseases of beneficial invertebrates, and advances in fundamental research on host-pathogen interactions. We expect numerous oral and poster presentations to complement this action packed program. This year, the usual intense discussions engaged during the poster session, will be sustained by a cocktail lunch. An excellent way to link the scientific and social programs!

Throughout the meeting, the social program, providing time for discussions, will take you to a number of historical monuments that are emblematic of Tours and its surroundings. You will be privileged to enter the **Hotel de Ville de Tours** for the opening Mixer, and the **Grange de Meslay**, for the closing Banquet. These places are normally closed to the public. On Tuesday afternoon, the **excursion** will take you to **Amboise**, following on **Leonardo da Vinci's** footsteps, to visit two major attractions, the Castle and the Clos Lucé. Then you will have time before the evening **barbecue** to relax or participate in the 5K run at the **Domaine de Candé** in Monts, about 15 km to the south of Tours.

Attendees may apply for a variety of **awards** to help defray the costs of attending the annual meeting. Applications for the Mauro Martignoni, Chris J. Lomer and Divisions' student travel awards will be due April 1, 2016. For requirements and application instructions, please visit the SIP awards website (<http://sipweb.org/about/award.html>). One presentation per student will automatically be entered into the best oral or poster presentation competition. Awards for the best student will be presented during the banquet.

Last, a **Summer school on invertebrate pathology**, focusing on the **Prevention and control of diseases and contaminants in insectaries**, will be run by Dr Louela Castrillo on Friday the 29th of July at the Insect Biology Research Institute on the Science campus of the *Université François-Rabelais de Tours*.

To find out more, submit your abstract and register, please visit our website at:

<http://sip2016tours.org/>

The Tours region is a popular destination. Therefore, we encourage early hotel booking. To this end, we have blocked a number of rooms that will be released at the end of June.

Scientific Program of the 2016 SIP Annual Meeting

Tours, France



FOUNDERS' LECTURE

Lecturer: Neil Crickmore, University of Sussex, Brighton, UK

Honoree: David Ellar, Emeritus Professor, University of Cambridge, Cambridge, UK

PLENARY SYMPOSIUM

Pathogenic aspects in insects produced for feed and food

Organiser: Christina Nielsen-Leroux

SPECIAL SYMPOSIA

COST Action Symposium

Using three-way interactions between plants, microbes and arthropods to enhance crop protection and production

Organiser: Richard Meadow

Human impact on pathogen-honeybee interactions

Organisers: Aurore Dubuffet & Philippe Gayral

CROSS DIVISION SYMPOSIA

Cross Division Symposium of the Fungi and Beneficial Invertebrate Divisions

Bioinformatic tools and methods in parasitology

Organisers: Brian Lovett, David Bass & Helen Hesketh

Cross Division Symposium of the Nematode and Microbial Control Divisions

Recruitment of beneficial microbes and nematodes

Organisers: Ivan Hiltbold & Mike Brownbridge

DIVISIONAL SYMPOSIA

Symposium of the Bacteria Division

Unity and diversity of entomopathogenic bacteria: from genomics to virulence mechanism

Organisers : Sophie Gaudriault & David Clarke

Symposium of the Diseases of Beneficial Invertebrates Division

Mollusc diseases

Organisers: David Bass & Kelly Bateman

Symposium of the Fungi Division

How fungi mediate protection against herbivores and plant pathogens

Organisers: Nicolai Vitt Meyling & Maya Raad

Symposium of the Microbial Control Division

Next generation biopesticides

Organisers : Travis Glare, Carrie Hauxwell & Roma Gwynn

Symposium of the Microsporidia Division

Host pathogen interactions

Organiser: Susan Bjornson

Symposium of the Nematode Division

Harnessing metabolites from entomopathogenic nematode symbiotic bacteria for broad use

Organisers: Selcuk Hazir & David Shapiro-Ilan

Symposium of the Virus Division

Viruses and horizontal gene transfers

Organisers: Elisabeth Herniou & Jean-Michel Drezen

WORKSHOPS

Special Bacteria Division Workshop

Bt toxin nomenclature

Organisers: Neil Crickmore & Colin Berry

Virus Division Workshop

Taxonomy of the polydnaviridae

Organiser: Michael Strand

Division of Diseases of Beneficial Invertebrates Workshop

Coral diseases

Organisers: Kelly Bateman & Mike Sweet

Nematode Division Workshop

Shooting a worm : insights on nematode photography

Organisers: Ivan Hiltbold & Jonathan Eisenback

One-Day Summer School on Insect Pathology

Tours, France

July 29, 2016

Following the 2016 SIP meeting, **Dr. Louela A. Castrillo** (Department of Entomology, Cornell University, Ithaca, NY, U.S.A.) will run the following summer school:

INSECT PATHOLOGY WORKSHOP

Prevention and Control of Diseases and Contaminants in Insectaries

July 29, 2016

Insect Biology Research Institute (IRBI), UMR CNRS 7261
Université François-Rabelais, Tours, France

Mass rearing of insects under artificial conditions often leads to overcrowding and stressful environment, making insects susceptible to pathogens and even causing disease directly. It is thus very important that insectary workers become familiar with potential insect diseases and recognize them when they occur. The impact of these diseases is not limited to the insect colony itself; accuracy of bioassay results and success of biological control programs may be compromised by the use of insects affected by chronic diseases.



Lecture topics on:

- Impact of diseases and contaminants on production and uses of laboratory-reared insects
- Insect pathology basics
- Biology of different insect pathogen groups, including common and well-studied species
- General control practices
- Insect colony establishment and maintenance, plus a brief review of related topics (i.e., use of artificial diets, insectary design, insect genetics).

Laboratory hands-on exercises on:

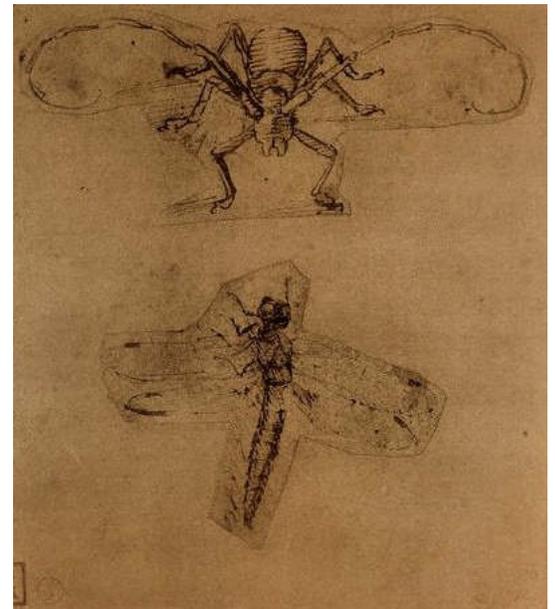
- Disease diagnosis and identification of different pathogen groups: uninfected versus infected insects
- Signs and symptoms of common insect diseases
- Handling of infected insects
- Microscopy.



Royal Château d'Amboise



Château of Clos Lucé



**Leonardo da Vinci. Two studies of insects
(Study of a beetle, about 1480–1500 and
Study of a dragonfly, about 1505)
*Turin, Biblioteca Reale***



La Grange de Meslay

Jørgen Eilenberg, Chair of the Nominating Committee, presents the nominees for SIP Council

Zhihong (Rose) Hu – Nominee for Vice President



Education

B.Sc. Virology, Wuhan University, Wuhan, China (1986). M.Sc. Virology (Tianen Xie, supervisor) at Wuhan Institute of Virology, Chinese Academy of Sciences, Wuhan, China (1989). Thesis on “Plaque assay of *Buzura suppressaria* nuclear polyhedrosis virus”. Ph.D. Virology (Just Vlak, supervisor) Wageningen University, Wageningen, the Netherlands (1998). Thesis on “Characterization of the *Buzura suppressaria* single nucleocapsid nucleopolyhedrovirus genome: a (phylo)genetic study”.

Experience

Assistant, Associate and Full Professor, Wuhan Institute of Virology, Chinese Academy of Sciences, Wuhan, China (1986 to date). Marie Curie fellowship, Wageningen Agricultural University (1993, Just Vlak’s lab). Tang-Cornell scholar, Boyce Thompson Institute, Ithaca, New York (2009-2010, Gary Blissard’s lab). Director General, Wuhan Institute of Virology, Chinese Academy of Sciences (2000-2008).

Research interests

I have been interested in baculoviruses since my M.Sc. study. The virus I studied during my M.Sc. and Ph.D., BusuNPV, was used in the 1980’s in China as a pesticide to control a tea pest, *Buzura suppressaria*. My early interest focused on how to improve baculoviruses as a biocontrol agent by genetic engineering. Later, I developed an interest in the molecular mechanism of baculovirus infection that became the major focus of my research ever since. Currently, the research area encompasses the mechanism of oral infection by baculovirus, viral-host interactions and modifications of baculovirus genomes to improve the virus as a biocontrol agent, as well as an expression vector. Major efforts also focus on the functional genomics of *Helicoverpa armigera* NPV (HearNPV) that has been widely used in China to control the cotton bollworm. As a virologist, I am also fascinated by the diversity of viruses and their interactions with hosts. Currently, I am leading a virus resource center in China with a large collection of viruses.

Professional activities

Director of the Chinese Center of General Virus Culture Collection (since 2011). Deputy director of the State Key

Laboratory of Virology (since 2005). Member of a temporary advisory group of WHO (2010, 2013). Member of an international scientific panel advising the International Atomic Energy Agency (FAO of the UN) on the control of tsetse flies in sub-Saharan Africa (2009-2013). Vice president of the Virology Professional Committee of the Chinese Society for Microbiology (2006-2016). Trustee of the Chinese Society for Microbiology (2001-2016). Associate editor of the *Journal of Invertebrate Pathology* (2014 to date), editorial board member of *Intervirology* (2012 to date), *Protein Expression and Purification* (2013 to date), *Virologica Sinica* (1996 to date), the *Chinese Science Bulletin* (2008-2013), the *Chinese Journal of Virology* (2001-2011), *Acta Entomologica Sinica* (2001-2014) and *the Chinese Journal of Biological Control* (2003-2004). Since 1993, I have published 144 articles in peer-reviewed journals.

Service to SIP

Member of SIP since 1996. Trustee in the Governing Council (2006-2010). Secretary/Treasurer of the Virus Division (2006-2008). Secretary/Treasurer of the Virus Division (2006-2008). Member of the Founders’ Lecture Committee (since 2007). Member of the Meetings Committee (since 2011). Local organizing committee chair and scientific program chair of the Wuhan annual meeting (2006).

Since my first meeting in 1996 in Cordoba, Spain, the SIP family has contributed in so many ways to my research and professional development that I cannot possibly imagine my career without the Society. The SIP is, indeed, unique. Through it, I not only learned of the diversity of insect pathology, but also learned how to become a scientist using knowledge to protect the natural environment, and to be a collaborative colleague as well as an interactive person. I came from a country with a very different background about scientific organizations, and what I have learned from the SIP encourages me to improve the scientific societies with which I am involved in my home country. I am convinced that the international and collaborative atmosphere, the warm welcome exhibited to students and young scientists and the deep respect for the Society’s Founders are all genuine strengths that will continue for generations to come. In this ever-changing world, we need concerted efforts to attract young investigators to the Society and to pass the SIP spirit through their careers to the next generation in different countries. I believe that the diverse knowledge generated by the Society has been of clear benefit to the environment and that we need, as members of the Society, to pursue this mission in order to better understand the nature of invertebrate pathology, and to use this knowledge for the betterment of this planet.

Grant D. Stentiford – Nominee for Vice President



Education

I obtained my B.Sc. (1st class. hons.) in Life Sciences from the University of Nottingham, UK in 1997, followed by a Ph.D. from the University of Glasgow, Scotland, UK in 2000. My Ph.D. thesis was entitled 'Effects of the Parasitic Dinoflagellate *Hematodinium* in the Norway Lobster'. I was elected to Fellow of the Royal College of Pathologists in 2014.

Academic and Professional Positions

Employed as a fish and shellfish pathologist at the UK Government Centre for Environment, Fisheries and Aquaculture Science (Cefas) following completion of my Ph.D. in late 2000, I became the team leader and Principal Scientific Officer within a new team, Pathology and Molecular Systematics, in 2007. In 2008, I took on the role of Director of the European Union Reference Laboratory for Crustacean Diseases on behalf of DG SANCO of the European Commission. I currently retain these two positions, in addition to leading a Strategic Alliance on the topic of Aquatic Food Security between Cefas and the University of Exeter, UK, where I hold an honorary Associate Professor role.

Research interests

Much of my work focuses on aquatic animal pathology and combines approaches based upon histopathology, transmission electron microscopy and molecular systematics for the classification of novel and emerging pathogens in experimental, farmed and wild aquatic animals. The work of the European Union Reference Laboratory for Crustacean Diseases (EURL) coordinates the diagnostic activities of 27 Member State National Reference Laboratories across the EU. The EURL leads in pathogen diagnostics in this animal group and is a globally recognised expert centre able to respond to disease outbreaks in farmed and wild animals (see www.crustaceancrl.eu). In recent years, my team has deployed high throughput sequencing technologies for the study of aquatic animal pathogen genomes and is using this data for rigorous systematics for policy-relevant pathogens. Taking this approach outside of the host *per se* is beginning to show utility for so-called 'environmental DNA' approaches for the extra-host detection of important pathogens of concern to fisheries and aquaculture. Current projects are applying this concept to rapid and accurate diagnostics in field (pond-side testing) and may eventually be applied to detection of pathogens in remote settings using in-field molecular sensors. Projects are designed to feed in to national and regional responses to disease outbreaks in wild and farmed aquatic animals. Projects funded under the Strategic Alliance between Cefas and the University of Exeter are focused on host-pathogen interaction (e.g. WSSV, Micro-

sporidia) and utilise increased availability of invertebrate host and pathogen genomes.

Professional activities and outputs

I have published over 100 peer-reviewed ISI papers on aquatic animal disease, have guest-edited two Special Volumes of the Journal of Invertebrate Pathology (2010, 2012), and one Special Volume of Diseases of Aquatic Organisms (2012) on crustacean diseases and food security. I am the Associate Editor-in-Chief for the Journal of Invertebrate Pathology (since 2013). I Chair an *ad hoc* Committee for Susceptibility of Crustacean Hosts to Listed Pathogens for the OIE (2014 to date) and am a Trustee and Chair of the Science Committee for the UK National Lobster Hatchery (since 2011). In my role as Director of the EURL, I have considerable experience with the organisation and chairing of international meetings (e.g. annual meetings of the EU Member State National Reference Laboratories for Crustacean Diseases since 2008). I have been an invited speaker at aquatic pathology conferences in UK, USA, Brazil, Argentina, Canada, Taiwan, Thailand, Indonesia, Qatar, Vietnam and, Malaysia. In addition to directing the EURL, I have lead numerous projects for the UK Department of Environment, Food and Rural Affairs (Defra) that were associated with aquatic animal health and disease and, for over a decade, been associated with health monitoring (cancer, intersex, etc.) in wild marine fish under the UK Clean Seas Environmental Monitoring Program. Work of this type informs policy making under international Directives (such as the MSFD) and has been published widely within the scientific literature. I use social media (e.g. @grantstent on Twitter) to communicate about the work of my team, Cefas and the broader field of aquatic food security.

Service to SIP

My first experience of the SIP meetings was the Warwick, UK meeting in 2008. Here, I was introduced to a wonderful community of researchers studying mainly land- and air-borne invertebrates. Speaking about aquatic crustacean-infecting Microsporidia at this meeting did not feel as strange as originally perceived. I soon realised that shrimp really were rather similar (when it comes to pathogens and response) to the models of my audience. Thereafter, I was responsible for the establishment and scoping of a new Division (Diseases of Beneficial Invertebrates, DBI) of the SIP – a concept which became live at the 2009 Park City meeting in the mountains of Utah. I became the inaugural chair of the Division between 2009 and 2012 and wrote some terms of reference (at the 1st Division business meeting, with the aid of the assembled audience) for this new Division. The terms were designed to somewhat seamlessly link those working on invertebrates and their pathogens from across biomes. In this role (and thereafter), I encouraged DBI to organise international symposia and workshops on aquatic animal and terrestrial invertebrate diseases in the USA (2009, 2013), Turkey (2010), Canada (2011, 2015), Argentina (2012) and, Germany (2014). At the Halifax meeting in 2011, I secured

funding from the OECD to host an international symposium on the topic of 'Crustacean Diseases and Global Food Security'. The symposium was written in a Special Volume of Journal of Invertebrate Pathology in 2012. In 2014, along with Lee Solter and Jimmy Becnel, funding for a second OECD symposium, this time on 'Microsporidia in the food chain', led to a successful prelude to the Vancouver meeting in 2015. A multi-authored paper arising from the symposium is to be published imminently in *Trends in Parasitology*. In 2015, I was humbled to fulfil the role of Founders' Lecturer in honour of Phyllis T. Johnson, an icon of aquatic invertebrate pathology. Delivering the lecture was a highlight of my year and has led to (I hope) a very fitting tribute to the work of this great lady, published as an annotated bibliography, in the Journal of Invertebrate Pathology.

A few words more...

Much has been said before about the family community of the SIP and the openness and friendship inherent in annual meetings of the Society. I have nothing to add but agreement to these statements and find myself regularly communicating this to any prospective member of the inverte-

brate disease community who are considering where to present their latest paper. In my experience, one works best with those that one likes. In the case of the SIP, the opportunities are endless. Maybe our community is small enough to create this sense of shared ownership? Maybe its small size creates a fragility that we are incentivized to protect? Or, maybe we just know something that those in other fields don't? Invertebrates are incredibly diverse, exist (and dominate) in all major biomes, have an impossibly diverse array of the most surprising and innovative pathogens and can do amazing things to mitigate their negative influences. You can write papers on them that have real societal impact. You can write papers on them which satisfy the administrators of your institute. You can eat them (and increasingly the world is doing so). There is so much to do and say, with a relatively small global community of engaged (and funded) workers to do it. So, my message to the SIP is this – keep doing what you are doing – the equation is right. Let's keep people talking together, designing, innovating and, imagining. And, let's make sure that the community of like-minds out there knows that we are here, what we do, and why we want them to come with us.

Juan Luis Jurat-Fuentes – Nominee for Secretary



Education

B.Sc. 1995 Biology, Universitat de Valencia, Valencia, Spain.

M.S. 1997 Genetics, Universitat de Valencia, Spain.

Ph.D. 2002 Entomology, University of Georgia, Athens, GA, USA.

Experience

Post-doctoral Research Associate (2002-2004), Department

of Entomology, University of Georgia, Athens (USA)

Assistant Research Scientist (2004-2006), Department of Entomology, University of Georgia, Athens (USA)

Assistant Professor, Insect Physiology (2006-2011), Department of Entomology and Plant Pathology, University of Tennessee, Knoxville (USA)

Associate Professor, Insect Physiology (2011 to date), Department of Entomology and Plant Pathology, University of Tennessee, Knoxville (USA).

Professional activities (selected)

Editor for PLoS ONE (2013 to date); member, Editorial Board of Applied and Environmental Microbiology (2004 to date), and Biological Control (2007-2013); review panel member, USDA-NIFA, NIH, EPA; grant reviewer for Flanders Research Foundation (FWO, Belgium), the Israel-USA Binational Agricultural Research & Development Fund (BARD) grant program, and the Blue Skies grant program from the National Research Foundation of South Africa; co-instructor of theoretical and practical course on "Protein-

Protein Interaction: Study of Bt Toxin-Receptor Case" at the Center of Biotechnology at Sfax in Tunisia (2014); external reviewer for USDA-ARS units research plans; member, scientific committee for the International Symposium on Insect Midgut Biology (2012); member of the Student Awards Committee, Southeastern Branch of the Entomological Society of America (2010-2012); member of the University of Tennessee Institute of Agriculture International Committee (2012 to date).

Contributions to SIP

I have been a member of SIP for 20 years and during this time, I have attended 16 of the annual meetings. During my membership I have served SIP as:

Trustee (2010-2014);

Bacteria Division Chair (2011-2013), Chair-elect (2009-2011), Member-at-Large (2008-2009);

Member of SIP Membership Committee (2008-2010);

Co-organizer for divisional symposium at the SIP annual meeting in Argentina (2012) and organizer of a divisional symposium at the SIP annual meeting in Vancouver (2015);

Co-editor of a special volume of the Journal of Invertebrate Pathology (Vol 110, Issue 3, 2012 SIP Symposium on Resistance to Bt Crops);

Judge for student posters and oral presentations at several SIP meetings.

Areas of interest

My research is focused on the mode of action of insecticidal proteins from *Bacillus thuringiensis* (Bt) and on the resistance mechanisms that insects develop against Bt pesticides or transgenic crops producing Bt toxins. Main areas of research in my group currently focus on the identification of

mechanisms and genes involved in field-evolved resistance to Bt crops, the characterization of the gut defensive response to Cry intoxication and its relevance to resistance against Bt pesticides. Additional areas of research in my group include the insect gut as a prospective resource for novel biotechnological applications, the characterization of the mode of action of insecticidal proteins and the develop-

ment of gene silencing for insect control.

Memberships

Society for Invertebrate Pathology (1996 to date)
Entomological Society of America (1998 to date)
American Society for Microbiology (2001 to date)

Susan Bjornson – Nominee for Secretary



Education

Susan Bjornson obtained a B.Sc. (1991) in Environmental Biology from the University of Guelph and a Ph.D. in Entomology from the University of Alberta. Her work focused on microsporidia in predatory mites that are used for biological pest control in agriculture.

Experience

Between degrees, Susan was involved in research that focused on population dynamics and control of greenhouse pests (spider mites, greenhouse whitefly, sweet potato whitefly, western flower thrips) and quality control of natural enemies (predatory mites and parasitoids) used for pest management in commercial greenhouses. During her Ph.D., she worked in a scanning electron microscopy lab at the University of Alberta. After a three-year position as a post-doctoral fellow at Agriculture & Agri-Food Canada (Pacific AAFC Research Centre, Agassiz, BC), Susan was hired at Saint Mary's University, Halifax, NS, in 2001. She is currently a Full Professor and Chair of the Department of Biology.

Professional Contributions (SIP)

Susan attended her first SIP meeting in Ithaca, New York (1995) as a Ph.D. student. She was a student volunteer for

the SIP meeting held in Banff (1997) and has since served as a Member-at-Large for the Microsporidia Division (2005-2007) and Secretary Treasurer and a member of the Student Awards Committee (Microsporidia Division, 2008-2010). She has held the position of Vice Chair (2012-2014) and is currently Chair (2014-2016) of the Microsporidia Division. In 2011, Susan was the Chair for the Local Organizing Committee of the 2011 International Congress on Invertebrate Pathology and Microbial Control & 44th Annual Meeting of the SIP at Saint Mary's University in Halifax, Ns.

Teaching

Susan has taught students at all levels, from first year to Honours, in topics that include microbiology, protozoology, invertebrate pathology, entomology and animal biology. As part of her research program, she has supervised both Honours and Masters students, several of them have presented their research at various SIP meetings over the years.

Research Interests

Susan's research program is focused on chronic diseases of beneficial invertebrates and arthropods that are used for pest management in agriculture. Her work has focused on the prevalence and impact of microsporidian pathogens and their host specificity in insect populations. She is interested in student participation in research and work from her lab has involved the description of new species of microsporidian pathogens from predatory mites, lacewings and lady beetles.

Stefan Jaronski – Nominee for Treasurer



Education

Stefan Jaronski obtained his M.S. (1972) in parasitology, and Ph.D. (1978) in entomology (insect pathology and medical entomology) from Cornell University, where he studied Microsporidia in blowflies and mosquitoes, respectively, under Dr. John Kramer. In between degrees, Jaronski served as an officer in the U.S. Air Force (1972-1974).

Experience

After receiving his doctorate, Jaronski had two postdoctoral

appointments concerning biocontrol of mosquitoes, one project with (then) *Nosema algerae* at the U.S. Army Walter Reed Institute of Research (1978-1980), and a subsequent project at North Carolina State University (1980-1983) concerning mass production and deployment of *Lagenidium giganteum*. In 1983 he did an abrupt left turn in career, leaving the academic community for industry, and changed from medical entomology to agricultural pests. Jaronski worked at Abbott Laboratories from 1983 to 1992, during which time his research involved development of *Beauveria bassiana* and *Bacillus thuringiensis* against a wide variety of insects, including *Diabrotica*. From 1992 until 2000, he worked at Mycotech Corp., Butte MT, a small venture biotech group commercializing *Beauveria*-based mycoinsecticides, and was involved in all aspects of commercial development, from

early, basic research through field efficacy trials (all over the U.S., in many pest crop systems) to generation of U.S. registration data, from basic mycology to mass production and formulation, from science to marketing, heading up their Biopesticide Research and Development (such is life in a small biotech company). In March 2000, Jaronski joined the Agricultural Research Service of the U.S. Department of Agriculture at the Northern Plains Agricultural Research Laboratory in Sidney, Montana, as a Research Entomologist, where he is currently still located.

Research Interests and Activities

Throughout his career, Jaronski has had keen interest in the ecology of the entomopathogenic Ascomycete as it affects efficacy of mycoinsecticides, as well as their development as alternatives to conventional pesticides. Jaronski's USDA research at Sidney centers on microbial control of grasshoppers on U.S. rangeland and the wheat stem sawfly, but has also included development of mycoinsecticides for sugar beet root maggot, and sundry other insects. He has a pilot-scale fungus production facility (created from a mobile home) supplying kilogram quantities of *Beauveria* and *Metarhizium* spores for research uses. His mass production and general applied mycoinsecticide expertise has afforded him technical consulting opportunities in the Republic of Georgia, Senegal, Azores, New Zealand, Germany, as well as in the U.S. In 2013 Jaronski taught a two-week course in Ecuador about commercializing microbial agents, from dis-

covery through development to application. In addition, Jaronski is interested in insects as food, and has spent time in Uganda, helping with mass production of a tettigoniid for human consumption.

Memberships

Jaronski has been a member of the Society for Invertebrate Pathology since the early-1970s. Jaronski has also been a member of the Entomological Society of America since 1977, Mycological Society of America (1984-2002), Phytopathology Society of America (2006 -12), North American and Western Palearctic Regional Sections of the International Organization for Biocontrol (2001 to date, and 2010 to date, respectively), and the Society of Sigma Xi (1969 to date). He has been involved in the governance of the Nearctic Regional Section of IOBC, since 2001, serving as Secretary-Treasurer (2002 - 2012), Vice-President (2012 - 2014) and is currently a Member-at-Large.

Service to SIP

During the past 16-18 years Jaronski has periodically served the Fungus and Microbial Divisions as Member-at-Large, Secretary Treasurer, and Chair (Microbial Control Division). At present, Jaronski is serving as Acting Chair of the Microbial Control Division for 2014. Jaronski is currently serving as Society Treasurer. He has organized several symposia at recent SIP meetings.

Helen Hesketh – Nominee for Trustee

Education

B.Sc. (Hons) Biology (1993) from University of Southampton; M.Sc. (Distinction) in Agronomy (1996) from University of Nottingham with dissertation on interactions between ladybirds and entomopathogenic fungi; Ph.D. (2000) awarded from University of Nottingham with thesis titled "Biorational approach to microbial control of aphids". During these studies I worked with Dr. Judith Pell and Prof. Helen Roy who inspired me to pursue my



career working with invertebrate pathogens.

Experience

1999-2000: Scientific Officer, Rothamsted Research, Hertfordshire, UK. 2000-2001: Postdoctoral position, Central Science Laboratory, York, UK. 2001-2003: Higher Scientific Officer, Horticulture Research International, Kent, UK. 2003 to present time: Pathogen Ecologist, NERC Centre for Ecology & Hydrology (CEH), Wallingford, UK.

Research Interests

My research interests are in the biological control of invertebrate pests and the ecology of insect pathogens, especial-

ly baculoviruses and entomopathogenic fungi. I am particularly interested in how co-infections of pathogens (and other toxins) affect disease severity and transmission in insect populations, and the implications this has for sustainable pest control and as a regulating factor in populations of beneficial insects. I use mixed pathogen studies in model invertebrate host systems to understand ecological mechanisms and predict infection in different mixed infection scenarios. Emergent parasites and pathogens are a major threat to biodiversity and some of my work has focused on the effects of pathogens in non-managed insect populations to improve our understanding of the ecological mechanisms that underpin the role that microbial pathogens play in insect population dynamics. Alongside this, I have also been working with a group of researchers/experts across Europe to improve understanding of the introduction, establishment and impact on biodiversity of invasive alien pathogens.

Memberships

Society Invertebrate Pathology, British Ecological Society, Association of Applied Biologists.

Professional service

I have been a member of SIP since 1996 and regularly attended meetings since then, but became more involved at the Warwick meeting (2008) when I took on the role of Secretary/Treasurer for the Division of Fungi. I have served in the following roles: Division of Fungi Secretary/Treasurer

(2008-2010), Chair Elect (2010-2012), Chair (2012-2014), Division of Beneficial Invertebrates Chair Elect (2014-2016). During this time, I have given two invited symposium talks and many contributed presentations, co-organized a student workshop & other workshops, and acted as student presen-

tation referee, session moderator and co-organized two symposia. The annual meeting is always one of the highlights of my year and I have made many professional contacts and wonderful friendships over the years so I would be very happy to take on a trustee role to support the society.

Hyon-Woo Park – Nominee for Trustee



Education

B.S. 1990. Agricultural Science, Seoul National University, Republic of Korea.

M.S. 1995. Agricultural Science/ Insect Pathology, Seoul National University, Republic of Korea.

Ph.D. 1999. Entomology/Insect Pathology, University of California, Riverside, U.S.A.

Experience

Sergeant (1990-1992), Army, Republic of Korea.

Post-doctoral Fellow (2000-2001), Department of Entomology, University of California, Riverside, U.S.A.

Assistant Research Entomologist (2001-2005), Department of Entomology, University of California, Riverside, U.S.A.

Assistant Professor of Entomology (2005-2009), Public Health Entomology Research & Education Center, Florida A&M University, U.S.A.

Associate Professor of Biology (2009-2014), Department of Natural and Mathematical Sciences, California Baptist University, U.S.A.

Professor of Biology (2014 to date), Department of Natural and Mathematical Sciences, California Baptist University, U.S.A.

Professional Activities

I am currently serving on the Editorial Board of Biotechnology Letters (2011 to date).

Contributions to SIP

I have been a member of SIP since 1998, and during this time, I have attended 14 of the annual meetings. During my membership, I have served SIP as the Bacteria Division chair (2009-2011), chair-elect (2007-2009), and secretary/treasurer (2005-2007), and as a member of the Awards & Student Contest Committee (2011 to date). Also, I have been a moderator for various contributed paper sessions of the Bacteria Division and judged student oral and poster presentations since 2006.

Areas of Interest

My research has been focused on the construction of recombinant *Bacillus thuringiensis* strains that are highly toxic to mosquitoes, using mosquitocidal protein genes of *B. thuringiensis* and *Lysinibacillus sphaericus*. Also, I am interested in crystallization and packaging of mosquitocidal proteins in *B. thuringiensis*, and isolation of novel mosquitocidal bacteria from various environmental samples.

Memberships

Society for Invertebrate Pathology (1998 to date)

American Mosquito Control Association (2006 to date)

American Society for Microbiology (2006 to date)

Entomological Society of America (2006 to date)

Sigma Xi (2008 to date)

Sean Moore – Nominee for Trustee



Education

B.Sc. Honours in Entomology, University of Kwazulu-Natal (1989); M.Sc. in Entomology, Rhodes University (1993), thesis title: 'The biology of a facultative hyperparasitoid, *Tetrastichus howardi* Oliff (Hymenoptera: Eulophidae) and its potential as a bio-control agent of lepidopterous stem borers'; Ph.D. in Biotechnology, Rhodes University (2002), thesis title: 'The development and

evaluation of *Cryptophlebia leucotreta* granulovirus (CIGV) as a biological control agent for the management of false codling moth, *Cryptophlebia leucotreta*, on citrus'.

Experience and Professional Activities

My career began in 1991, as a technician and then research entomologist with the Plant Protection Research Institute in Pretoria, South Africa, working on biological control of lepidopteran pests of grain crops and crucifers. In 1995, I took up a position as research entomologist in the South African citrus industry. In 2004 I founded River Bioscience, at that time the only commercial baculovirus producer in Africa. I managed the company and later served on the board of

directors until March 2014. I am now IPM Portfolio Research Manager with Citrus Research International and a research associate with Rhodes University, having supervised or co-supervised 24 Ph.D. or M.Sc. students. I have 30 peer-reviewed papers, five book chapters, 18 semi-popular papers, 179 conference papers, including one plenary address, one patent and two products developed and commercialised. I have received various research and commercialisation awards from the Southern African citrus industry, the South African government and the city of Port Elizabeth.

Research Interests

My research interests are diverse but generally very applied, working directly for a large agricultural sector. My first involvement in insect pathology was with the discovery of novel baculovirus isolates (both alpha- and betabaculoviruses) and their development as biopesticides. Although my main insect pathology interest remains with the viruses, I have subsequently conducted extensive work with ento-

mopathogenic nematodes and fungi. Although not directly relevant to SIP, I also work on biological control with parasitoids and predators, semiochemicals and development of IPM programmes.

Memberships

Society for Invertebrate Pathology; International Organisation for Biological Control; Entomological Society of Southern Africa; South African Bioproducts Organisation; South African Council of Natural Scientific Professions (SACNSP).

Service to SIP

I have been a member of SIP since 1997, including being a member of the Microbial Control and Virus Divisions. I served as a Member at Large on the Microbial Control Division Committee from 2006 to 2008. I would be honoured to serve SIP further as a trustee, particularly giving voice to our African fraternity.

Selcuk Hazir – Nominee for Trustee



Education

B.S. (1991) and M.S. (1996) in Biology, Hacettepe University, Ankara, Turkey. Thesis: Investigation on the antimicrobial properties of honey samples collected from various sources in Turkey.

Ph.D. (2002), University of California Davis (USA) and Hacettepe University (Turkey). Dissertation title: 'Faunistic surveys on entomopathogenic nematodes (Steinernematidae and Heterorhabditidae) in Turkey'.

Experience

Conducted Ph.D. studies at the Department of Nematology, University of California Davis (Harry K. Kaya and Patricia Stock laboratories, 1999-2000) with a Ph.D. scholarship programme of the Technical and Scientific Research Council of Turkey (TUBITAK).

Visiting scientist and postdoctoral researcher at e-nema (Ralf Udo-Ehlers laboratory) and DSMZ (Erko Stackebrandt laboratory), 2003.

Visiting scientist at the ARC-Small Grain Institute (Justin Hatting laboratory, 2004) Bethlehem, South Africa.

Assistant (2005) and Associated Professor (2006) at the

Biology Department of Adnan Menderes University, Aydin, Turkey.

Visiting scientist at the University of Florida, Fort Lauderdale Research and Education Center (Robin M. Giblin-Davis Laboratory, 2007).

Professor, Biology Department of Adnan Menderes University, Aydin, Turkey (2011 to date).

Working with Dr. David Shapiro-Ilan as a visiting scientist at USDA-ARS, SE Fruit and Tree Nut Research Laboratory Byron, Georgia (USA), 2014-2015.

Research Interests

My research areas are: (1) biology and ecology of entomopathogenic nematodes; (2) various application strategies to increase entomopathogenic nematode efficiency under field conditions; (3) natural enemies of entomopathogenic nematodes and the role of the Scavenger Deterrent Factor (SDF); (4) efficacy of secondary metabolites produced by symbiotic bacteria of EPNs on different groups of pathogens.

Memberships & Service to SIP

I have been a member of the Society for Invertebrate Pathology since 2002. I have served the Nematodes Division as Chair-Elect (2010-2012) and Chair (2012-2014). I organized the second Entomopathogens and Microbial Control symposium in 2009.

Honorary Member Nominees

Max Bergoin — Nominee for Honorary Member



Max Bergoin got his first PhD in 1963 (Thèse de troisième cycle) and his second in 1973 (Thèse d'Etat) from the Université de Provence in Marseille, France, but already worked as a researcher at the Centre National de la recherche scientifique (CNRS) at Saint Christol-les-Alès since 1964, under the supervision of Professor Constantin Vago, one of the founders of the Society for In-

vertebrate Pathology and its 3rd President. In 1969-1970, he was invited by Professor Karl Maramorosch to work on entomopoxvirus at the Boyce Thompson Institute (Cornell University), with Bob Granados and Don Roberts, two former SIP Presidents. While working at the Saint Christol laboratory, he was also an associate- (1978-1993) then a full professor (1993-2008) at the Université de Montpellier 2 as head of the Laboratory of Comparative Pathology until 2004. He supervised many PhD students, among others Roger Frutos, Jean-Louis Zeddum and Adly Abd-Alla, who are well known within the Society for Invertebrate Pathology.

Max Bergoin's research revolved around the (ultra) structure, morphogenesis and molecular biology of densovirus, poxviruses and herpesviruses. He has published over 120 peer-reviewed scientific articles for more than half a century in top scientific journals, and he currently has a

Hirsch-factor of 26 (Web of Science). Last year he published an article in the Proceedings of the National Academy of Sciences USA on the enhancement of virulence by poxviral spindles. He also published many book chapters.

Max Bergoin joined the SIP early on (in 1967) as a junior member and attended the annual SIP meetings very frequently ever since. He was a trustee from 1970 to 1972 and also the main organizer of the memorable 1994 SIP meeting in Montpellier, with an excellent social program including a visit to the famous Pont du Gard. For more than 10 years, he has been a member of the Founders' Lecture committee and assisted in establishing this highest award of the SIP.

Max Bergoin has also been and still is a member of various working groups of the International Committee for Taxonomy of Viruses (ICTV) and significantly contributed to the taxonomy and nomenclature of invertebrate viruses (parvoviruses, poxviruses, herpesviruses). He actually coined the name of the latter. He was also member of the ICTV Invertebrate Virus Subcommittee (1973-1988) and of the ICTV Executive Committee (1978-1985). Max was also a member of the French National Council of Universities (1992-2003).

Max Bergoin is not only an outstanding scientist, but also a very congenial person and always good humored. His French accent in his spoken English is unmistakable and charming. Max has been a staunch supporter of the SIP for about all the time that the SIP exists and he joins the annual meetings whenever he can, entertaining everyone not only with historical anecdotes, but also with informed advice on current and future scientific issues.

James Harper — Nominee for Honorary Member



Jim received his B.S. in Forest Management in 1964, and an M.S. in Forest Entomology from the University of Illinois, Urbana, in 1965. He then moved to the Oregon State University in Corvallis where he completed his Ph.D. in 1969, specializing in Insect Pathology with minors in Microbiology and Forest Entomology. He was appointed Assistant Professor, Department of Zoology-Entomology, Au-

burn University in 1969, Full Professor in 1980 and eventually Head of the Department of Entomology at North Carolina State, and finally Professor Emeritus.

He joined SIP as a charter member while working for Dr. Mauro Martignoni in the summer of 1967 and while doing graduate work on insect pathology at Oregon State University. Since 1967, he has attended, and participated in 39 of the 48 annual Society Meetings, beginning with the 1970 Meeting and Colloquium held in College Park, Maryland.

Jim promoted the concept of a Division of Microbial Control, wrote the draft bylaws and served as the first Division Chair. In 1980, he was elected Treasurer and served on the Governing Council from 1980-1982, also serving as chair of the Society's Publications Committee from 1980-1985. He chaired the Program Committee for the 1993 SIP annual Meetings held in Asheville, not only acting in his capacity as Chair of the Program Committee, but also in the emergency evacuation of one of the meeting delegates undergoing anaphylactic shock following a wasp sting at Chimney Rock, the venue for the meetings BBQ.

Jim was a member and Chair of the Founders' Lecture Committee from 1995 to 1998, then elected as Vice-President in 1998, President in 2000 and Past-President in 2002. While President, he took much credit for the establishment of the Mauro Martignoni student travel endowment. He received a letter from Louise Martignoni following Mauro's death, informing him that Mauro had bequeathed \$5000 to the Society, that he wished to be used to support a \$500 student travel award to our annual meeting each year for 10 years. He felt it would be a greater recognition of Mauro's key contributions to, and his love for the Society, to use the funds to establish an endowment in his name and using the interest earned toward a travel award which could be made every year in perpetuity. As a result, the Martignoni student travel endowment was established and has so far supported about 15 student travel awards of not \$500, but through additional direct support from the Society, of \$1000 each year.

Jim served on the Nominating Committee several times during his tenure with the Society, both before and after his term as President. He became a member of the Endowment and Financial Support Committee while serving as Past-

President in 2002, served as Chair until 2008, the year he retired from full-time employment at NC State University, and nevertheless continues to serve on this committee.

He also served as a member of the History Committee since the early 2000's and continues to do so. Other Society related matters include service on the Journal of Invertebrate Pathology Editorial Board from 1980 -1983, and receipt of an Award for Outstanding Service to the Society for Invertebrate Pathology certificate at the 2009 Annual Meeting.

In summarizing, Jim feels that although he has contributed to the advancement of the Society for Invertebrate Pathology in many ways, it has returned much more to him. The Society has been a source of knowledge, ideas and inspiration, a forum for debate over novel findings and for challenges to progress ever forward. It has been a cohesive group with diverse interests but with commonalities that hold the membership together, both personally and professionally. Jim hopes to be able to continue service to the Society for years to come.

News and Announcements

Travel Awards

Travel Awards to attend the SIP 2016 Annual Meeting

Attendees may apply for a variety of Travel Awards (Mauro Martignoni, Chris J. Lomer and Divisional student travel awards) to help defray the cost of attending the annual meeting.

For information about all travel awards for the SIP 2016 meeting in Tours, France, please visit the dedicated SIP webpage:

<http://www.sipweb.org/about/award.html>

The online application form for the Mauro Martignoni and Divisional Awards is available [here](#). To apply online to the Chris Lomer Award, click [here](#).

Student Competition

Awards for the best student oral presentations and posters will be presented during the banquet.

Students are automatically entered into the competition, so make sure you indicate if you are a student when submitting your abstract.

Early Career Award Approved by SIP Council

At the meeting in Vancouver in 2015, the SIP Council has approved to install an early career award for scientists in their first years after PhD. This award competition will first become effective for the Golden Jubilee meeting in 2017. More information on this award will be published next fall.

SIP Ambassadors Needed!

Nominate candidates for our new Ambassador program!

As many of you are aware, the SIP has instituted an **Ambassador Program** to improve our outreach and familiarize colleagues throughout the world about SIP and to encourage them to participate in SIP meetings and become members.

The ambassadors will serve a three-year term, renewable for a second three-year term. To that end, we are asking for nominations (self nominations will also be considered) for **SIP Ambassadors** to represent SIP in different large and small geographic regions of the world (cantons to continents).

The **nominees** should be long serving SIP members, be familiar with SIP and be willing to further the outreach of SIP. Once nominations have been received the SIP Council will select the final slate of ambassadors. If you know of someone (or even yourself) interested in promoting SIP on the international stage as a SIP Ambassador, please **suggest names and short bios** pointing out why they would make effective ambassadors, to:

either the **President, Peter Krell** (at pkrell@uoguelph.ca)

or **Surendra Dara, Chair of the Membership Committee** (at skdara@ucanr.edu).

An International Conference for Insect People... and Others!

XXV International Congress of Entomology
Orlando, Florida, USA
September 25-30, 2015

Full list of all symposia:

<http://ice2016orlando.org/scientific-program/symposia/>

To register at reduced rates before March 25:

<http://ice2016orlando.org/registration/>



ICE2016 Register Early for ICE 2016

Participate in the largest gathering of scientists and experts in the history of the discipline.

ENTOMOLOGY WITHOUT BORDERS

ICE 2016
XXV International Congress of Entomology
Orlando, Florida, USA
September 25-30

REGISTER EARLY & SAVE!

www.ice2016orlando.org/register

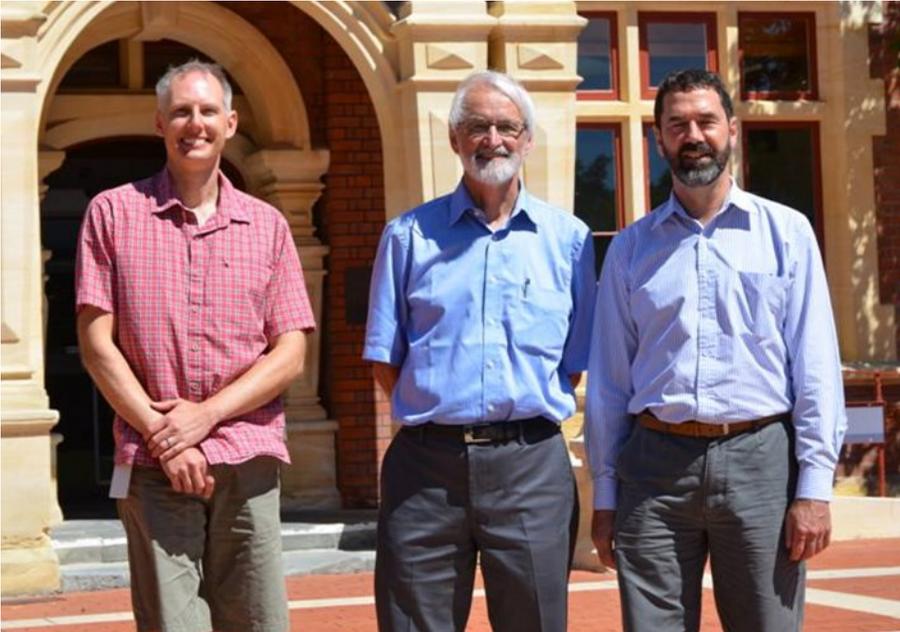
Check out the SIP Facebook Page!

The SIP Facebook page, liked by 667 people at the time of writing, provides a venue for news, information, photographs and videos relating to invertebrate pathology and to the Society's events. You can reach the page from the SIP home page by clicking on the **Facebook icon** (at lower right).

The Facebook page, which is overseen by the SIP Publications Committee, is managed by representatives from each SIP division: Bacteria, Juan Luis Jurat-Fuentes and Eva Fortea (student); DBI, Grant Stentiford and Kelly Bateman; Fungi, Helen Hesketh; MCD, Ken Narva; Nematode, Rousel Orozco (student); Virus, Bryony Bonning (lead administrator) and Eric Haas-Stapleton; Multi-Division, Lerry Lacey.

We invite you to LIKE the SIP Facebook page and to post invertebrate pathology-related news and photographs, including from past meetings.

SIP President Travels to New Zealand



With Sean Marshall (left) and Travis Glare (right) at Lincoln University, Christchurch, New Zealand. The SIP President Peter Krell (centre) goes out of his way from Canada to thank the SIP auditors personally.

The Changing of the Guard...

From the Editorial of *BIOCONTROL SCIENCE AND TECHNOLOGY*, 2016, Vol. 26, No. 3, 297



After 15 years as Editor-in-Chief of *Biocontrol Science and Technology*, Mark Goettel (SIP past President, 2008-2010) decided to step down. He will be replaced by Quirico Migheli (previously Associate Editor of the journal).

'Quirico graduated from the University of Torino in 1985 and is presently an Associate Professor at the Department of Plant Protection, University of Sassari, Italy. His main research interests are the development of biologicals against fungal plant pathogens, genetic manipulation and risk assessment of antagonistic Fusarium and Trichoderma spp., molecular characterisation of antagonistic and phytopathogenic fungi, and molecular and physiological plant-pathogen interactions. He has authored over 80 scientific papers in refereed journals, 20 reviews or book chapters, and approximately 200 abstracts in proceedings of national and international congresses'

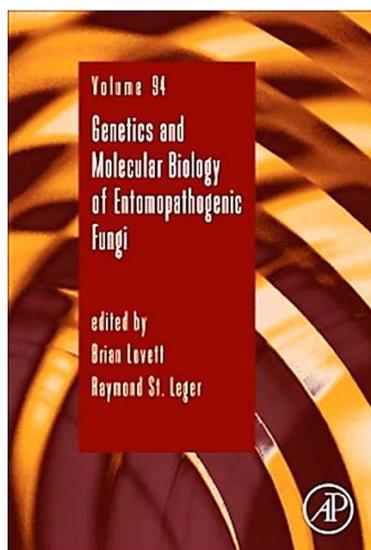
Mark hopes *'to free up some time to do all of those things that I dreamt of doing immediately after my retirement five years ago, such as renovating my home and travelling a bit more'*.

The picture on the right shows Mark removing one of the 33 blocks of his old chimney, each weighing more than 34 kg...

Happy retirement Mark, but protect your back!



A New Book of Interest



Genetics and Molecular Biology of Entomopathogenic Fungi 1st Edition

Editors: Brian Lovett & Raymond St. Leger

Multi-volume: Advances in Genetics

Academic Press

ISBN : 9780128046944

Pages: 120 pages

Expected release date: 01 May 2016

The book is dedicated "to the doyen of insect pathology, Donald Roberts, and his versatile little buddy *Metarhizium robertsii*"

Contents

Diversity of Entomopathogenic Fungi: Which Groups Conquered the Insect Body?

João P.M. Araújo and David P. Hughes

Utilizing Genomics to Study Entomopathogenicity in the Fungal Phylum Entomophthoromycota: A Review of Current Genetic Resources

Henrik H. De Fine Licht, Ann E. Hajek, Jørgen Eilenberg and Annette B. Jensen

Advances in Genomics of Insect Pathogenic Fungi

Jonathan B. Wang, Raymond J. St. Leger and Chengshu Wang

Insect Pathogenic Fungi as Endophytes

Soumya Moonjely, Larissa Barelli and Michael J. Bidochka

Genetically Engineering Entomopathogenic Fungi

Hong Zhao, Brian Richard Lovett and Weiguo Fang

Molecular Genetics in *Beauveria bassiana*

Almudena Ortiz-Urquiza and Nemat O. Keyhani

Insect Immunity to Entomopathogenic Fungi

Hsiao-Ling Lu and Raymond J. St. Leger

Diseases Dynamics in Ants: A Critical Review of the Ecological Relevance of Using Generalist Fungi to Study Infections in Insect Societies

Raquel G. Loreto and David P. Hughes

Entomopathogenic Fungi: New Insights into Host-Pathogen Interactions

Tariq M. Butt, Christopher J. Coates, Ivan M. Dubovskiy and Norman A. Ratcliffe

Molecular Genetics of Secondary Chemistry in *Metarhizium* Fungi

Bruno Giuliano Garisto Donzelli and Stuart B. Krasnoff

From So Simple a Beginning: The Evolution of Behavioral Manipulation by Fungi

David P. Hughes, João P.M. Araújo, Raquel G. Loreto, Lauren Quevillon, Charissa de Bekker, Harry C. Evans

From the Editors (Excerpts)

Insects are the most species-rich group of eukaryotes, and this diversity grants these animals profound power to influence ecosystems. The great research interest in insects arises from their ability to negatively impact human society: as vectors for disease in humans and our livestock, and as destroyers of crops and stored products. It is estimated that insects destroy approximately 18% of the world annual crop production, and vector borne diseases kill millions every year. Thus, the diseases, pathogens and immune responses of insects have been a long standing research interest. Early interest grew mostly from economic concerns. For example, *Beauveria bassiana* was described by Agostino Bassi in 1835 as the cause of the devastating muscardine disease of silkworm, and it was instrumental in his development of the germ theory of disease (Steinhaus, 1956). In 1880, the pioneer immunologist Elie Metchnikoff was among the first to propose practical methods of microbial biological control of an insect crop pest, initiating trials of the fungus *Metarhizium anisopliae* against grain beetles.

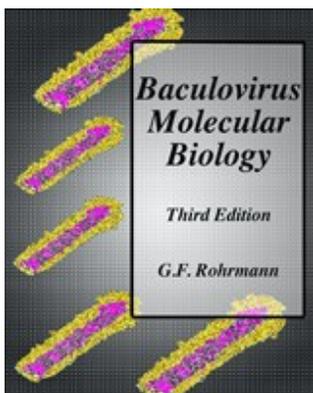
Such applied interest continues today, as we all still have a stake in either lengthening the life expectancy of useful insects or shortening the life expectancy of pestiferous ones. Since populations of most insects are regulated by density-dependent factors involving pathogens and predators, and fungi are the commonest disease causing agents in insects, we need to understand and be able to manipulate the interactions of pest insects with fungi and their other natural enemies in order to feed the world and prevent disease. Most research on fungal insect pathogens has continued to focus on hypocrealean Ascomycetes from the genera *Beauveria* and *Metarhizium* (family Cordycipitaceae and Clavicipitaceae, respectively). These genera are tractable model species, are readily cultivatable, and have a particularly wide host range allowing them to be applied en masse against vectors of human disease and multifarious agricultural pests. Numerous registered mycoinsecticide formulations are based on *Beauveria* and *Metarhizium* spp.

They also have a worldwide distribution with variants adapted from the arctic to the tropics and colonizing an impressive array of environments including forests, savannahs, swamps, coastal zones, and deserts.

The range of articles in this volume covers many interrelated aspects of the genetics, biology and ecology of these fascinating and useful insect-killing fungi. Although the individual chapters focus on specific issues, the reader should appreciate that each issue is multidimensional, being influenced by a milieu of fungal, insect and environmental fac-

tors. It is the hope of the editors that the chapters untangle the complexity and illuminate the interactions between insects and fungi in a manner that shows the wide-ranging scope of the field and numerous applications of the knowledge it generates. Contained herein is evidence of the progress our field has made since Bassi first cautiously transferred a fungal hypha from a silkworm cadaver to a healthy insect, but this volume aims to serve as a foundation for future scientists hoping to shine light on our burgeoning field.

Book Now Available in Chinese



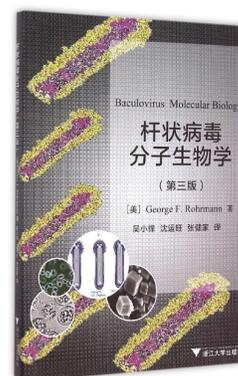
From George F. Rohrmann, Oregon State University:

The 3rd edition of his book *Baculovirus Molecular Biology* has been translated into Chinese and is available in hard copy.

For more information (in Chinese) visit:

<http://detail.bookuu.com/3401887.html>

or click [here](#).



The cerulean chafer beetle (*Hoplia coerulea*)

La hople bleue

The emblematic scarabaeid beetle of the Loire valley