



# **Society for Invertebrate Pathology Newsletter for February 2009**



- **2008 Student Prize Winners**
- **Update on 2009 Park City Meeting**
- **Photo Competition Prizes**

## Newsletter for February 2009

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Cover image of a view from the Canyons Resort, the host location for the 2009 SIP Park City meeting. More details on the meeting can be found from page 15 onwards.

## Newsletter Editorial

Welcome to another issue of the SIP Newsletter with a look back at 2008 and the winners of SIP's awards and prizes, followed by a look forward to the forthcoming meeting at Park City.

We have two requests. First, if you would like to submit an article on your work or a topic which may interest SIP members or even an opinion piece, then please get in touch - guidelines are on the right.

Second, we would urge everyone to enter the Photo Competition which we hope will be fun and we have now secured cash prizes from Elsevier.

There will be US\$75 for each category winner and a further \$125 for the overall winner, making the winning prize worth \$200. The images can be artistic, educational or humorous, so just use your imagination and take part!!!

Finally, the box below highlights some important changes to the SIP website.

**Paresh Shah**, [pareshashah@mac.com](mailto:pareshashah@mac.com)  
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**The deadline for the June issue is 15th May 2009.**

### Guidelines for articles

To submit a news item, announcement or opinion piece, please follow these simple guidelines:

**Font:** Verdana size 8 or Arial size 8

#### Word limits:

Notice/announcement - 150 words

Short article (one column) - 350 words

One page article - 700 words

Two page article - 1,400 words

*Email the Editors beforehand if you have an article exceeding two pages*

#### Images:

Images and/or logos are required for all articles except notices/announcements where it is optional.

Each image file should be less than 1 MB and JPEG is the preferred file format.

#### Book reviews/announcements:

- If you want a book review please send names of two or three potential reviewers and details for a contact at the publishing company who can post a free copy to a reviewer. Non-members of SIP can also do book reviews,
- For announcements of new books, just email the URL or web link to the Editors.

### Changes to SIP web pages

#### Photos from the 2008 Warwick meeting

<http://www.sipweb.org/2008meetingphotos.cfm>

**Please send us photos you would like included for this page**

#### Photo Competition rules and entry forms (remember the prizes!)

<http://www.sipweb.org/Internal/photo.cfm>

#### Positions available/wanted

All advertised posts will now feature **only** on the website and not in the Newsletter. This section will be updated during March 2009.

#### Obituaries

The pages will be revised over the coming months.

## From the President



I hope that everyone has had a prosperous year and is ready to tackle a New Year. All of the doom and gloom surrounding the world-wide recession provides unique challenges to each one of us personally as well as professionally. Certainly, we at SIP must also face the challenge.

Six months have already gone by since I took over as your new president and during this time, the SIP Council and Committees have been very busy. Council held its mid-year teleconference meeting on Monday, February 9. Indeed it is a challenge to hold such a meeting with Council Members spread on 3 continents. Special thanks to Wendy Gelernter who was up by 5:00 AM and Rose Hu, who stayed up till after midnight, and to Johannes Jehle and Cecilia Schmitt for having organized it all. Several important items were discussed and decisions made.

### New SIP Division

At the request of Regina Kleespies and with support signatures from 25 SIP members and 11 non-members, Council approved the formation of a new Division entitled "Division on Pathogens of Beneficial and other Non-pest Invertebrates". In her letter Regina writes "During recent years, there has been a large increase in the interest in pathology of pollinators, as well as of other beneficial invertebrates in general. New problems such as honey bee colony collapse disorder renewed the interest in this area. Also the growing markets of beneficials and of mass-produced invertebrates in general demonstrates the necessity of this new Division to solve problems with diseases. A growing importance is also recognized for aquatic crustaceans, dealing with, for example, tropical aquaculture and temperate wild fisheries species." Council welcomes the formation of this Division and hopes that it will attract new members in fields such as Marine Invertebrate Pathology. The Division will have its first formal Business Meetings in Park City at our annual SIP meeting. Please let your colleagues involved in non-pest invertebrate pathology know of the formation of this new Division.

### Finances

Ann Hajek presented her Treasurer's update and budget forecast for the coming year. Thanks to a very profitable meeting at Warwick, the Society has now achieved its goal of maintaining twice its operating expenses as a reserve in the General Fund. However, projected yearly income is still less than that required for running the Society, resulting in a projected deficit of \$3,000-\$4,000 US dollars this year. Much will depend on our ability not only to retain, but also to increase our membership. Ann's budget is based on 400 full and 50 student members. The General and Endowment funds are now invested in a 3-month laddered series of Certificates of Deposit, allowing us to take advantage of higher interest rates as they become available while at the same ensuring liquidity in any 3-month period. Nevertheless, present interest rates are insufficient to cover the Martignoni and Lomer Awards. Consequently, Council decided that proceeds from the auction at Park City be used to cover the shortfall in these two awards, with any excess used to increase the principle in these funds.

### Committees

Most SIP Committees have been busy working on several projects. The **Membership Committee**, under the chairmanship of Helen Roy, has been busy reminding delinquent members to renew their memberships. Previously endowed members have been contacted and a list of new members for endowment has been put forward. Helen shall be inviting these new members to the Society for an initial 2-year period. The Committee is also making an effort to entice retirees, who had been members in good standing for at least 20 consecutive years, to return to the Society as Emeritus Members.

The **Endowment and Financial Support Committee**, under the Chairmanship of John Vandenberg has been busy soliciting sponsorships for our meetings in Park City. If you know of a company that should be approached for possible sponsorship of our Society, please let John know by contacting him at [jdv3@cornell.edu](mailto:jdv3@cornell.edu). In addition to soliciting sponsorships, the committee is organizing an auction to be held at Park City. Once again, the auction will be under the guidance of Fernando Vega with Michael Brownbridge as auctioneer. And yes, Just, my tie which I wore at Warwick will be put on the auction block. But then that means I'll need to find another one that will match my president's jacket! Details on how to donate items for auction can be found in this newsletter and on the SIP website, [www.sipweb.org](http://www.sipweb.org).

The **Publications Committee**, under the chairmanship of David Shapiro-Ilan has been put in charge of oversight of the Society's Website and of non-Society related e-mailing to our Membership. If you would like to have an announcement sent to all members or posted on our website, please contact David at [David.Shapiro@ars.usda.gov](mailto:David.Shapiro@ars.usda.gov). David and his Committee are working with our Executive Secretary and Webmaster, Cecilia Schmitt to overhaul the



website and to keep it current. If you have suggestions on how to improve the website, please contact David.

The **History Committee**, under the chairmanship of Elizabeth Davidson and with the help of our Newsletter Editor, Paresh Shah, has been going back into the archives and scanning all of the Obituaries that have appeared in past Newsletters for posting on our website. The Committee is also busy getting in touch with retirees in preparation for a "catch up history talk" that Betty will present at Park City.

The **Awards and Student Contest Committee**, under the chairmanship of Andreas Linde has worked with our Webmaster, Cecilia to produce an on-line submission form for Student and Lomer Award applications. This should greatly facilitate not only the application but also the selection process. The Committee awaits applications for the Martignoni, Lomer and Student Travel Awards. Details can be found elsewhere in this Newsletter and on our website.

Our **SIP Newsletter Editors**, Paresh Shah and Judith Pell are not only busy with the Newsletter, but they have also taken upon themselves to organize a photo contest. I hope that this becomes a yearly event. Details can also be found elsewhere in this Newsletter and on our website.

The **Student Affairs Committee** has now found a chair in Vitalis Wafula Wekesa. The Committee is busy planning a student program for Park City.

And lastly, undoubtedly the busiest Committee has been the Park City **Meetings Program Committee**, co-chaired by Rosalind James and Don Roberts. Rosalind and Don have worked hard to keep meeting costs down while at the same time balancing the budget. They have faced many last minute challenges, details of which can be found in their report. I'm looking forward to meeting many of you in Park City. I'm sure it will be a grand success, as have all of the past SIP meetings.

In closing I would once again ask that each and every one of you make a concerted effort to increase our membership. Encourage your students and colleagues to join. Although our overall financial situation is in good shape at the moment, it is only through a balanced budget that the Society will be able to remain sustainable into the future. Membership is at the cornerstone of keeping the Society fluid and vibrant and achieving this goal.

Regards,

**Mark Goettel**

## SIP Auction 2009



Once again, we will hold a lively auction of goods and services during the barbecue at the Park City meeting (see page 13).

Our own "Auctioneer Extraordinaire" Michael Brownbridge will cajole you to loosen your wallets and somehow have a good time doing it. And chances are, you'll get something unique and valuable out of the deal. All proceeds benefit the Society but all the fun will be yours.

If you wish to donate an item or a service, or need ideas for these, please contact Fernando Vega at [fernando.vega@ars.usda.gov](mailto:fernando.vega@ars.usda.gov).

Donations, such as books, pictures or other memorabilia, can be mailed to the following address: Kendra McKenna, Conference Coordinator II, University Inn & Conference Center, 5005 Old Main Hill, Logan, UT, USA.

Please remember to email Fernando with a description of your donation if you plan to post an item to the conference organizers.

## Warwick 2008 Award Winners



The winners of the 2008 SIP oral, poster and travel awards were presented with their prizes during the Warwick University meeting and are briefly described in the following sections.

### The Mauro Martignoni Award

The Martignoni Award is the highest prize given by the Society. For 2008, the winner was **Anilkumar J. Konasale**, who was in the process of completing his PhD studies at Auburn University, USA, during the time of the meeting.



Anilkumar's presentation, co-authored with his supervisor William J. Moar, was entitled "Laboratory-selected Cry1Ac-resistant *Helicoverpa zea* (Lepidoptera: Noctuidae) cannot survive on *Bt* Cotton: Implication of potential synergistic interactions of Cry1Ac and gossypol".

Laboratory experiments with field-cultivated *Bacillus thuringiensis* (*Bt*) and non-*Bt* cotton were conducted to evaluate the performance of Cry1Ac-resistant (AR) and susceptible (SC) *Helicoverpa zea* (Boddie). The results may help explain the absence of field-evolved resistance to *Bt* cotton by *H. zea*.

After his PhD studies, Anilkumar intends to return to India to work on developing effective pest management strategies for agricultural crops.

### The Chris Lomer Travel Award

The Lomer Travel Award is open to non-members of SIP and is advertised outside of the Society. For 2008 the winner of this prize was **Nicholas Pedrini** at the National University of La Plata (UNLP), Argentina.



His talk to SIP was entitled "Alkane degradation by *Beauveria bassiana*: gene expression analysis of cytochrome P450 monooxygenases" which covered work to examine the biochemistry and genetics of insect cuticular hydrocarbon degradation by *Beauveria bassiana*.

This is a poorly studied area and has implications for increasing the efficacy and safety of using entomopathogenic fungi in practical biocontrol applications. Gene and protein analyses of the cytochrome P450 enzyme system showed that *B. bassiana* contains multiple pathways with overlapping substrate specificities to degrade the complex lipids present in insect cuticle in order to start fungal infection.

Nicholas was recently appointed as Assistant Professor in Biochemistry and Molecular Biology, School of Medical Sciences, UNLP. Prior to this he was a post-doctoral researcher and lecturer in the School of Agronomy and Forestry Sciences, UNLP.



## Division Travel Award Winners

### Bacteria Division



**Jerry Ericsson** is a PhD candidate at Simon Fraser University, Canada, studying under Dr. Carl Lowenberger. He is looking at the immune responses to spore-crystal formulations of *Bacillus thuringiensis kurstaki* in susceptible and resistant cabbage looper lines. After completing his PhD, Jerry would like to continue studying insect immune systems, while developing enhanced and novel biological pesticides. His talk was entitled "Changes in the cabbage looper immune system are associated with Bt exposure in resistant and susceptible lines".

### Bacteria Division



**Carolina Varela-Chavez** is studying for a PhD degree at Université Montpellier 2, UMR1133 INRA EMIP, Montpellier, France with Professors Jean-Michel Escoubas and Robert Zumbihl. She is studying the cell Cycle Inhibiting Factor (Cif) found in *Photorhabdus luminescens* and *Photorhabdus asymbiotica* genomes. The aim of her work is to characterise Cif *in vitro* by its introduction into HeLa cells. Her presentation was entitled "Functional characterisation of a cell cycle inhibiting factor (CIF) in the entomopathogenic bacteria *Photorhabdus*". Carolina would like to continue working with host - bacterial interactions to elucidate the various strategies that bacterial pathogens have developed to manipulate host-cell function.

### Fungus Division



**Sopher Ondiaka**, a PhD student at Wageningen University & Research Centre with Dr. Bart G.J. Knols, is carrying out laboratory studies on the impact of fungal infection on behaviour, ecology and fitness of the malaria vector *Anopheles gambiae*. She presented a talk entitled "Effects of fungal infection on the host-seeking behaviour

and fecundity of the malaria mosquito *Anopheles gambiae*". She intends to pursue post-doctoral studies on integrated malaria vector control combined with

forging collaborative links with scientists to create funding opportunities for MSc and PhD students.

### Microbial Control Division

**Nora Lawo** completed her PhD program under Dr. Joerg Romeis at Agroscope ART Reckenholz-Tänikon in Zurich, Switzerland. Her studies were on evaluating the compatibility of Bt transgenic chickpea with *Metarhizium anisopliae* for pest control. Her work showed the two strategies were compatible and was presented in a talk entitled "Effectiveness of Bt chickpeas and an entomopathogenic fungus to control *Helicoverpa armigera* (Lepidoptera: Noctuidae)". Nora is now a post doctoral researcher in the Institute of Horticulture, Fruit-Growing and Viticulture at the University of Natural Resources and Applied Life Sciences (BOKU) studying phylloxera-vine interactions.



### Microsporidia Division

**Yi-chun Tsai** completed her PhD degree in December 2008 at the Department of Entomology, National Taiwan University, Taipei, with Professor Chung-Hsiung Wang. She studied a microsporidium isolated from the three spot grass yellow butterfly *Eurema blanda arsakia* for which she established an *in vitro* propagation system, sequenced the rRNA gene and conducted ultrastructural studies on the developing stages of the pathogen. She also used confocal fluorescence microscopy to study development of the microsporidium in tissue culture. Her presentation was entitled "Life cycle of a microsporidian isolate (*Nosema* sp.) from the three spot grass yellow butterfly, *Eurema blanda arsakia*".



### Microsporidia Division



**Geoffrey Williams** is studying for a M.Sc. degree in the Department of Biology, Acadia University, Wolfville, Nova Scotia, Canada, with Dr. David Shutler. His thesis investigates the microsporidians *Nosema apis* and *N. ceranae* in western honey bees. He has recently received a scholarship from the Foundation for the Preservation of Honey Bees (American

Beekeeping Federation) and the Canadian Association of Professional Apiculturists' Student Merit Award for 2008. Geoff's talk was entitled "Does fumagillin control the microsporidian *Nosema ceranae* in western honey bees (*Apis mellifera*)?". Geoffrey also won an Honorable Mention for his oral presentation during the meeting.

### Nematode Division



**Ayako Hirao** is a graduate student at Christian-Albrechts-University Kiel, Institute for Phytopathology, Department Biotechnology and Biological Control, with Prof. Dr. Ralf Udo Ehlers. Ayako described the lifecycles of *Steinernema carpocapsae* and *S. feltiae* under several liquid culture conditions to obtain better

productivity of infective juvenile stages for use as biological control agents. She would like to continue research in biological control and sustainable agriculture development, especially in developing countries. Her presentation was entitled "Analysis of the population development of *S. carpocapsae* and *S. feltiae* in liquid culture".

### Nematode Division



**Benjamin McGraw** recently completed a PhD degree in Entomology at Rutgers University, studying with Dr. Albrecht Koppenhöfer. His interests include insect and pathogen ecology, population dynamics, biological control, and Integrated Pest Management (IPM). He investigated the dynamics of entomopathogenic

nematodes (EPNs) over a three year period to

determine their potential to regulate populations of the annual bluegrass weevil, a major pest of turfgrass. Benjamin will begin a new position as Assistant Professor at the State University of New York in March. His talk was entitled "Can endemic entomopathogenic nematode populations be used in conservation biological control of the Annual Bluegrass Weevil (*Listronotus maculicollis*)?"

### Virus Division

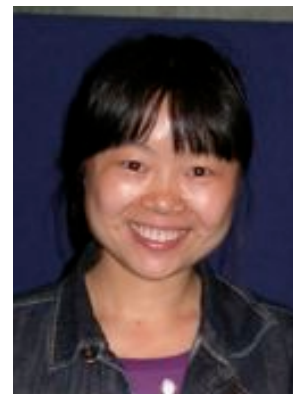
**Victoria Au** is a MS degree candidate in the Department of Microbiology and Immunology, Queen's University, Kingston, Ontario, Canada, where she is studying a single-stranded DNA binding protein, LEF-3 (407 aa, 45 kDa) that is essential for AcMNPV (Ac) DNA replication, under the supervision of Dr. Eric B. Carstens. Her



presentation was entitled "Characterization of AcMNPV late expression factor 3 (LEF-3) functional domains for their role in nuclear localization and baculovirus DNA replication".

### Virus Division

**Meijin Yuan** is a PhD candidate at the State Key Laboratory of Biocontrol, Sun Yat-sen University, Guangzhou, China, where she is using a knock-out virus to study genes necessary for the production of budded virus with Dr. Kai Yang. Her presentation was entitled "A highly conserved baculovirus gene p48 is essential for BV production and ODV envelopment". She also won an Honorable Mention for her oral presentation during the meeting.





## Virus Division

**Manli Wang** is a student at the State Key Laboratory of Virology, and Joint Laboratory of Invertebrate Virology, Wuhan Institute of Virology, Chinese Academy of Sciences, Wuhan, China, with Prof. Zhihong Hu and Prof. Hualin Wang. She has examined several types of envelope proteins to study the functional and evolutionary relatedness of baculovirus EFPs and to identify their cell surface receptors. The title of her talk was "The F-like protein of group I NPVs enhances the production and infectivity of the budded virus of gp64-null AcMNPV pseudotyped with the envelope fusion protein F of group II NPVs".



a postdoc position. His poster was entitled "Characterisation of novel resistance and cross-resistance to *Bacillus thuringiensis* crystal toxin".

## Third Place Poster

**Sahar Fazal** is conducting graduate studies in the Biochemistry Department, University of Sussex, Brighton, United Kingdom. She is studying the role of 20kb linear DNA fragments in the crystallization and activation of the toxin-containing inclusion bodies within *Bacillus thuringiensis* and has determined that this ubiquitous DNA in bacteria may not have a specific functional role in the formation or activation of Bt crystals. Her poster was entitled "20kb DNA: What is it doing in Bt crystals?".



## Poster Awards

### First Place Poster



**Sabine Asser-Kaiser** is in the final year of her PhD program at the Agricultural Service Center Palatinate (DLR Rheinpfalz), Laboratory of Biotechnical Crop Protection, Neustadt, Germany, working with Dr. Johannes Jehle. The aim of her work is to explore the mechanisms of CpGV resistance in codling moth. She investigated virus

replication in tissues of susceptible and resistant insects using quantitative PCR, and immune responses as a reason for resistance. Her first place poster was entitled "Investigations on the mechanism of CpGV resistance in *Cydia pomonella*". After finishing her PhD, she would like to work in entomology, virology or related fields either in industry, developing chemical or biological insect control products, or doing a postdoc in academia.

### Honorable Mention Posters

**Anaïs Castagnola** studies in the Department of Entomology and Plant Pathology, University of Tennessee, Knoxville, Tennessee, USA with Dr. Juan Jurat. Her poster was titled "Expression profiles of aminopeptidase genes in *Heliothis virescens* larvae exposed to Bt toxins" which described her studies using microarrays.



### Second Place Poster



**Paul Johnston** is a PhD student with Dr. Neil Crickmore at the University of Sussex, Biochemistry Department in Brighton, United Kingdom. Paul has been exploring the mechanisms of resistance to Cry1Ac in the *Plutella xylostella* SERD4 population, which shows polyfactorial resistance to *Bacillus thuringiensis* crystal toxins

with cross resistance to the pyrethroid deltamethrin. He is currently working on several manuscripts for publication and finishing his PhD with a view to finding

**John Owusu Danquah** is a PhD student at the School of Life Sciences, Oxford Brooks University, Oxford, United Kingdom with Professor Linda A. King. His research interest is to understand how baculovirus AcNPV is transported from the nucleus to the cell periphery- anterograde transport of baculovirus. He is looking at the role of actin and other motor proteins such as kinesin and myosin to provide a comprehensive picture about the anterograde transport of baculovirus in insect cells. After the completion of his PhD, he plans to do post-doctoral research, possibly in the trafficking of baculoviruses in both insect and mammalian cells and/or the use of baculovirus in gene therapy of human diseases. His poster was entitled "Anterograde transport of *Autographa californica* (AcNPV) is microtubule dependent".



## Oral Presentation Awards

### First Place Oral Presentation



**Wenbi Wu** studies at the State Key Laboratory of Biocontrol, Sun Yat-sen University, Guangzhou, China. Her presentation was entitled "38K is a novel baculovirus nucleocapsid protein that interacts with other nucleocapsid proteins (VP1054, VP39 and VP80) and itself in *Autographa californica* multiple nucleopolyhedrovirus". Her work demonstrated why 38K is essential for nucleocapsid assembly.

### Second Place Oral Presentation



**Gabriel Clavijo** is a graduate student at the Instituto de Agrobiotecnología, CSIC, Universidad Pública de Navarra, Navarra, Spain. His studies focus on interactions among genotypes of baculoviruses that affect infectivity. His presentation was entitled "Influence of pif and pif2 genes in the dynamics of recombinant insect virus populations".

### Third Place Oral Presentation



**Maria Teresa Fernandez-Luna** is a PhD student at the Instituto de Biotecnología, Universidad Nacional Autónoma de México, Cuernavaca, Morelos, Mexico with Dr. Juan Miranda-Rios. She analyzed the GPI anchored proteins from the brush border membrane vesicles of *Anopheles albimanus* midgut that interact with biotinylated Cry4B toxin and identified a 70kDa glucosidase that bound Cry4B. After her PhD, she would like to conduct molecular biology research on malaria and other important illnesses in developing countries. Her talk was entitled "Identification of the midgut receptor for Cry4Ba toxin in *Anopheles albimanus* larvae".

# Application Instructions for the 2009 Awards

## General instructions

**Please note** These instructions apply to both the Martignoni Student Award and the Division-sponsored Travel Awards. For the Chris J. Lomer Award see separate information below.

### 1. Mauro Martignoni Student Award 2009

All students of invertebrate pathology are invited to compete for the seventh annual Mauro E. Martignoni Student Award, the Society's premier award for student research. An award certificate and cash prize of \$1,000 will be presented at the 42nd Annual Meeting in Park City, Utah/USA (to be held August 16th – 20th, 2009). The applicant is required to submit an abstract of his/her research to be presented in an oral presentation at the meeting. Specific application details are as described below for SIP Student Awards.

### 2. Division Student Travel Awards 2009

All poster travel award applications and, with the exception of the Martignoni Award winner, all oral presentation travel award applications will be forwarded to appropriate Divisions for consideration for the Division Travel Awards. The following Division Travel awards will be available for the 2009 meeting:

Bacteria Division: Two awards of \$ 500

Fungi Division: One award of \$ 750

Microbial Control Division: One award of \$ 750

Microsporidia Division: One award of \$ 750, or one \$ 500 award plus one \$ 250 award

Nematode Division: One award of \$ 750 and one 500 \$ award

Virus Division: Up to three awards of \$ 650 each

To apply, you must be a student enrolled in a university degree program (B.S., M.S., Ph.D.) or have graduated from a M.S. or Ph.D. program during the 2008-2009 academic year. You need not be a member of the SIP or of any Division sponsoring a travel award. Award applicants must submit an abstract of their work to be presented in person at the Society's Annual Meeting.

**Visit the SIP Website at [www.sipweb.org](http://www.sipweb.org) for details on how to apply for the Travel Awards.**

The subject matter of the presentation should pertain to topics in invertebrate pathology and/or microbial/biological control. All individuals submitting oral presentations will automatically be considered for the Martignoni Award (poster presentations are not eligible for Martignoni Award consideration). Following selection of the Martignoni Award winner, all remaining applications will be considered by the appropriate division(s) for travel award competitions. Students and

their supervisors are advised to refer to the SIP website for specific information regarding availability of student travel awards for 2009.

There is no limit on the number of awards for which you may apply in a single year. However, while you may be considered for multiple awards (for example, one or more Division-sponsored awards and the Martignoni Award), you will be eligible to receive only one travel award per year. You are eligible to receive the Martignoni Award only once during your student career. Consult Division chairs for current guidelines on Division Travel Awards.

## Required information

1. *Curriculum vitae*. This should include your name, address, institution, earned degrees, current degree program, honors and awards, research experience, and a list of publications and previous presentations.

2. *A short biographical sketch and description of scientific interests and goals.*

3. *A letter from your supervisor* providing (1) a recommendation, (2) verification of your student status, and (3) confirmation that the research presented was conducted by you (if you are not listed as the first author of the abstract you submit, your supervisor must explain your specific role in the research and how you have met this requirement).

4. *Presentation abstract*. The body of the abstract should be 200 words or less, as submitted for the program. The abstract should provide a summary of your presentation. The title, authors, and affiliations and presentation category (oral or poster) should be clearly indicated. If your presentation relates to more than one pathogen group or involves fundamental studies such as research on invertebrate immune defence systems, please indicate the division or divisions you feel would be most qualified to judge your work. Your research contribution represents one of the most important selection criteria. Therefore, the abstract should be crafted with care, succinctly describing the research rationale, any unusual or novel methods, and the principal results. An explanation of the significance of the research findings should be offered in conclusion, based on sound interpretation of the results.

5. *Methods*. Brief (one page) description of experimental and analytical methods employed in conducting the research reported in the presentation abstract.

6. *Division*. Name one Division that you wish to consider your application for the travel award (in addition to consideration for the Martignoni Award).

*Please note*: Submitting an award application does not serve to place your name on the program. To do this,

you MUST also submit your abstract to the meeting organizers as specifically instructed on the meeting website.

If you wish to participate in the student paper / poster competition during the SIP meeting (where your oral or poster presentations will be judged by a jury), *be sure to check the "student competition" box when you submit your abstract.*

Deadlines: Deadline for submission: April 1  
Committee decisions: May 1

Successful applicants will receive an official communication from the appropriate Committee Chair and should confirm their acceptance and participation as soon as possible. Award certificates and cash prizes will be presented at the meeting, but if necessary for travel, the cash awards can be provided in advance.

### 3. Chris J. Lomer Memorial Award 2009

Applications are now invited for the Chris J. Lomer Memorial Award, for financial support of scientists from less developed countries who wish to attend the 2009 Society for Invertebrate Pathology meeting in Park City, USA. The award honors the memory of the late Chris Lomer for his work and enthusiastic leadership while carrying out microbial control research in less developed countries.

The award provides \$750.00 which partly covers travel costs to attend the SIP Annual Meeting.

Applicants will be required to make an oral or poster presentation at the Annual Meeting on their work in invertebrate pathology and a certificate will be presented at the meeting.

#### Required Information

1. *Completed Application Form.* An application form is available on the SIP website, or can be obtained by contacting the SIP headquarters at sip@sipweb.org, or from the coordinator, Dr. Patricia Stock (spstock@ag.arizona.edu).
2. *Curriculum Vitae.* This should include the applicant's name, address, institution, earned degrees, current degree programme (if relevant), honours and awards, research experience and a list of publications and previous presentations
3. *A letter of recommendation.* From the supervisor, Head of Department or other suitable Director, providing a recommendation and confirmation that the work being presented was conducted by the applicant
4. *Presentation abstract.* The application must include a summary of the presentation including title, authors, and affiliations. The abstract should follow the format described on the SIP meeting website at <http://www.utahsip.org>.
5. *Methods.* Brief (one page) description of experimental and analytical methods employed in

conducting the research reported in the presentation abstract.

If you wish to present work which does not fit within a standard experimental format then please discuss your ideas by emailing Dr. Patricia Stock (spstock@ag.arizona.edu) before making an application.

Please send completed applications to Dr. Patricia Stock, email: spstock@ag.arizona.edu

Deadline for submission: April 1, 2009.

#### Criteria

Applicants for the SIP Lomer Committee Award should:

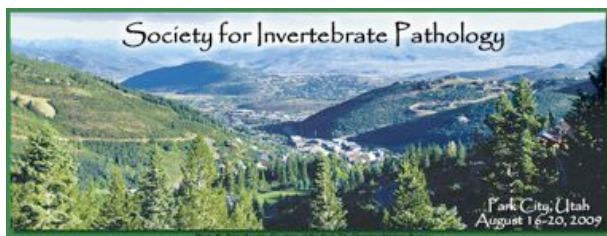
- normally have at least a B.Sc. or equivalent degree
- be working or studying at a university or research institution that carries out research, this includes field centres, non-governmental organizations (NGOs) and museums
- be working in scientific areas within the remit of the SIP (invertebrate pathology and microbial control)
- applicants do not need to be students (MSc, PhD) or members of SIP

Preference will be given to candidates who are based in less developed countries at the time of the application.

Applications forms for the Lomer Award can be found on the SIP website at [www.sipweb.org/](http://www.sipweb.org/).



# 42nd Annual Meeting, Aug. 16-20, 2009, Park City, Utah, USA



The 2009 SIP Annual Meeting will be held at The Canyons Resort in Park City, Utah, to explore the latest international findings on diseases of invertebrates, including biological control of insect pests, understanding disease in beneficial invertebrates such as bees, marine invertebrates and other beneficials, and scientific research on virulence, immunity, and host-pathogen interactions from the cellular to the ecological level.

Remember to visit the meeting website for regular updates at [www.utahSIP.org](http://www.utahSIP.org).

## Program

The symposia and workshops have been scheduled with excellent speakers, and are outlined below. In addition, we will be accepting submissions of titles and abstracts for 15 minute contributed papers and posters starting March 2. Abstract submittal will be on-line at the meeting website.

## Plenary Symposium

The Host-Pathogen Dance: Interactions between insect hosts and their pathogens.

Invited speakers: Bruce Tabashnik, Michael Bidochka, and Michael Strand.

## Divisional and Cross-Divisional Symposia

### Bacteria Division

- *Bacillus thuringiensis* resistance in the real world
- *Bacillus thuringiensis*, the bacterium, ecology and infection

### Fungus Division

- Fungi in soil habitats
- Insect defense responses to fungal pathogens

### Nematode Division

- Ecological interactions in entomopathogenic nematodes

### Microbial Control Division

- Biopesticides in organic farming: Available and potential technologies.

### Microsporidia Division

- Microsporidia of beneficial arthropods

### Virus Division

- Insect RNA viruses: advances and applications
- Invertebrate anti-virus response
- The viral face of PDVs: Origin and structure of the chromosomally integrated PDV genomes

### Cross-Divisional

- Multitrophic interactions: implications for invertebrate pathogens
- Epizootiology and its impact on microbial control: honoring the work of Jim Fuxa

### Workshops

- Virus Division—Take note, two workshops are being held!
  - Methods for Developing Insect Cell Lines: a laboratory workshop (**see page 15**)
  - Advances in invertebrate cell cultures: after Virus Division Business Meeting
- Microsporidia Division—Staining techniques used for microsporidia infecting invertebrates
- Bacteria Division—BT resistance mechanisms other than loss of toxin binding
- Student Workshop—How to get a postdoc position and get into the scientific network

### Important Dates

Abstract submission: March 2-April 17

Registration: Early - March 2 to July 3; Late - July 4 to Aug. 14; Register on-site after Aug. 14

Deadline for cancellation: July 31

Hotel reservations with SIP room rate deadline: July 14

## Meals

The conference registration fee includes the Sunday evening mixer, all morning and afternoon breaks and most meals (continental breakfast Monday through Thursday; lunch on Monday/Wednesday/Thursday; dinner on Monday, Tuesday evening BBQ, dinner on Wednesday, and Thursday's closing banquet).

All included meals will be served on-site at the Grand Summit Hotel, except the Tuesday BBQ which will be held in a mountain lodge behind the hotel, just a scenic gondola ride away! A companion meal package also will be available for purchase.



Red Pine Lodge

## Excursion

The optional Tuesday Excursion will take us to the Utah Olympic Park, site of 14 events during the 2002 Olympic Winter Games, and summer training site of current and future Olympians. Here, you will enjoy a box lunch while you watch the exciting Flying Ace Productions' Aerial Show. They will ski down the steep incline at speeds up to 35 miles an hour, then launch up to 70 feet in the air, performing amazing flips, twists and turns, before a soft landing in the state of the art swimming pool below. Following the performance, we will take a hosted tour of the Park and get a great view from the top of the highest jumps. Participants will also have time to browse the Joe Quinney Winter Sports Center and the Alf Engen Ski Museum. See the meeting website for more details.



Utah Olympic Park

## 5K Fun Run/Walk

The 5K run will be held after the Excursion and before the BBQ, launching from the Red Pine Lodge, site of the BBQ. The trail will pass through alpine forests at approximately 8000 ft (2438 m) altitude.

## Accommodation

The Canyons Resort is the host location for SIP 2009. The Resort is located three miles north of downtown Park City and features three hotel properties on site. All three hotels offer free covered parking, free high speed internet access, outdoor pool and hot tub, on-site exercise facilities, all non-smoking units, and do not allow pets. Guests of all three hotels will have access to the Grand Summit outdoor pool, exercise facilities, restaurant, lounge, and business center.

All conference sessions will be held in the Grand Summit Hotel & Conference Center.



## Bring the Children

The Grand Summit Hotel features an on-site daycare for children ages 6 weeks to 6 years of age. Little Adventures Children's Center is a state licensed daycare facility providing fun, age-appropriate activities. Call ahead for reservations as well as daily and hourly rates, 435-615-8036. Additional information will be available at [www.utahsip.org](http://www.utahsip.org).

## Travel

Attendees should fly directly into the Salt Lake City International Airport (SLC), which is a hub for Delta Airlines, and approximately 30 minute drive from The Canyons Resort, the site of the meeting.

The conference organizers have selected *All Resort Express* as the official airport shuttle for the conference. *All Resort Express* is offering round trip rates at \$70 per adult and \$52 per child (under age 12) for a shared-ride van. Please make reservation in advance via the online link from the SIP conference web site. All major rental cars are available at the Salt Lake International Airport for those who may wish to rent a car. Park City offers free buses within town, including to and from The Canyons Resort.

### Visas and Invitation Letters

The U.S. Government requires that Visas be obtained by visitors from most nations. Please visit the following web site for more information:

[http://travel.state.gov/visa/visa\\_1750.html](http://travel.state.gov/visa/visa_1750.html)

If you need a personal letter of invitation to SIP 2009, please contact:

Lisa Anderson

University Inn & Conference Center

Utah State University

Logan, Utah 84322-5005

[lisa.anderson@usu.edu](mailto:lisa.anderson@usu.edu)

### Climate & Elevation

The summer climate is moderate and dry - with brilliant blue skies and breathtaking mountains. August highs average 80°F (27°C) and lows about 50°F (10°C). The base of The Canyons Resort is 6800 ft (2070 m), and the peak is 9990 ft (3045 m).



Historic Main Street



### About Park City

Park City is a beautiful mountain resort located in northern Utah just 30 minutes from the Salt Lake City International Airport (SLC) and 20 minutes from downtown Salt Lake City, Utah's capital city. Park City originated as a mining town, and is now a world-famous winter and summer tourist destination. It became more famous by hosting the 2002 Winter Olympics. For those of you interested in extra-curricular activities, the training facilities for winter sports are in active use and open to visitors in the summer. Outdoor activities include hiking, biking, horseback riding, golf, and fishing -- to name a few. More adventurous folks may want to ride in a hot air balloon or ride a zip line down the mountain!

Old Town Park City is very picturesque with its old wood frame houses and shops. Park City's mining origins give the town a unique Western United States flavor. Year round cultural events, such as the Artstravaganza in August and the renowned Sundance Film Festival in February, bring a wide selection of local and international travelers to the area.

### Extra Virus Division Workshop

#### Workshop on Invertebrate Cell Culture

A hands-on workshop on Invertebrate Cell Culture led by Dr. Dwight Lynn, InSell Consulting, will be held on Sunday August 16, 2009 at Utah Valley University, Wasatch Campus, close to Park City, immediately prior to the SIP annual meeting.

The workshop, sponsored by Virus Division, will be comprised of an introductory lecture on the technicalities of making insect and invertebrate cell lines, followed by hands-on laboratory sessions.

Seats are limited. Please contact Bryony Bonning [bbonning@iastate.edu](mailto:bbonning@iastate.edu) if you are interested in participating in this workshop.

## Meeting Announcements

### Microbial Products: Exploiting Microbial Diversity for Sustainable Plant Production

New Zealand Plant Protection Society, Pre-conference Symposium, Monday 10 August 2009

Dunedin, South Island, New Zealand

#### Background

Microbes and their metabolites are poised to play an increasingly important role in agricultural systems as plant protection and growth promotion agents.

The impetus for change has been driven by consumer and market demands for products with "no-detectable" chemical residues that are produced with minimal environmental impacts.

Microbes contain an enormous diversity of genes with a broad range of functional attributes that are of potential value to agriculture. The symposium will be based around the development of Microbial Products relating to plant protection and plant growth promotion.

The symposium will highlight opportunities to tap in to this renewable resource and outline steps towards their commercialization, including sessions determining potential of new organisms, production, formulation and investment and uptake by end-users

#### Symposium organisation

Submissions of original research, case studies or reviews covering any of the areas described above are welcome. Oral presentations will range from 10-20 minutes and will be published as a book.

Please discuss potential submissions with the organisers, Sue Zydenbos ([zydenbos@xtra.co.nz](mailto:zydenbos@xtra.co.nz)) or Trevor Jackson ([trevor.jackson@agresearch.co.nz](mailto:trevor.jackson@agresearch.co.nz)).

The symposium will be held before the annual New Zealand Plant Protection Society Conference in Dunedin on 11-14 August 2009 at the [Otago Museum Conference Centre](#), on Great King St, Dunedin, New Zealand.

For further information please visit [www.nzpps.org](http://www.nzpps.org).

### Future Research and Development in the Use of Microbial Control Agents and Nematodes for Biological Insect Control

Pamplona, Spain, 22 to 25 June 2009

#### Background and Aims

The conference will contain programmes for the 12th European Meeting of the IOBC/WPRS Working Group "Insect Pathogens and Insect Parasitic Nematodes", the IOBC subgroup "Slugs and Snails", and COST Action 862 "Bacterial Toxins for Insect Control"

This meeting will particularly gather and discuss information on future trends in the field of insect pathogens and insect parasitic nematodes with the objective to produce a paper to be submitted to the Commission of the European Union DG Research for implementation in the forthcoming calls in the FP7 or future programmes. With this aim, the two plenary sessions will present the views of academia and the private sector. These will be followed by workshops, which will discuss further trends and produce the official working group position paper.

#### International Participation

Although the meeting is a European initiative, it is by no means restricted to European researchers. We encourage colleagues from other continents to contribute.

#### Registration and Submission of Presentations

For more information and to submit your abstract, please visit the conference website at <http://www.iobc-pamplona-2009.com/>.

Register early to avoid the additional late charges and book your accommodation to secure the specially arranged conference rates.

We are looking forward to arranging a stimulating meeting and hope that you will manage to participate.

In case you have questions, please do not hesitate to contact [info@iobc-pamplona-2009.com](mailto:info@iobc-pamplona-2009.com).

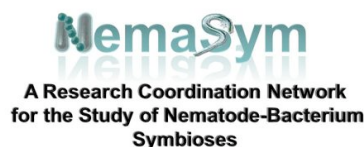
Primitivo Caballero and Ralf-Udo Ehlers



**Royal Entomological Society Symposium on  
Insect Infection and Immunity:**

**Evolution, Ecology and Mechanisms International  
Symposium**

Sheffield, UK, July 15-17 2009



Specialist topics include:

- Immunity • Comparative genomics • Reproduction
- Range expansion/climate change • Insect Evo-devo
- General Entomology • Insect chemoreception

Speakers include:

Professor Fotis Kafatos, Imperial College, London, UK;  
Professor Paul Schmid-Hempel, ETH Zurich,  
Switzerland; Professor Shelley Adamo, Dalhousie  
University, Canada; Professor Bruno Lemaitre, EPF  
Lausanne, Switzerland.

Further information, registration, abstract and  
accommodation booking forms available on  
<http://www.royensoc.co.uk>.

Daytime childcare is available on request to  
[childcare.ento2009@sheffield.ac.uk](mailto:childcare.ento2009@sheffield.ac.uk).

**Contacts for general enquiries**

Vi Nguyen [ento2009@sheffield.ac.uk](mailto:ento2009@sheffield.ac.uk)

Kirsty Whiteford [kirsty@royensoc.co.uk](mailto:kirsty@royensoc.co.uk)

**Contact for scientific programme**

Klaus Reinhardt [ento2009@sheffield.ac.uk](mailto:ento2009@sheffield.ac.uk)



Dear Colleagues,

We are pleased to announce that the National Science Foundation has awarded funds to support a **Research Coordination Network on Nematode-Bacterium Symbiosis** (NemaSym RCN). The goals of this network are to foster growth and advancement of the field of "nematode-bacterium symbioses" and to incorporate this research subject into a multidisciplinary forum that will facilitate communication, exchange of ideas, and the establishment of strong links for developing long-term collaborations.

In keeping with our goal to integrate nematode-bacterium symbiosis research with other related fields, our first network activity will occur as part of the International Symbiosis Society Congress to be held in **Madison, Wisconsin, August 9-15, 2009**. The 6<sup>th</sup> ISS conference has themes in symbiosis evolution, ecology, molecular biology, and metabolism, as well as career development and teaching sessions. The inaugural NemaSym network meeting has two primary purposes: 1) to lay groundwork for the success of RCN education and research goals and 2) to exchange knowledge and emerging symbiosis theory with the broader Symbiosis community.

Oral presentations will be selected from submitted abstracts by an international committee, providing a venue for NemaSym RCN participants to share their research within sessions. In addition, poster presentations by NemaSym RCN participants will occur as a special subsection within the Congress poster sessions. A full day of meetings with RCN participants is scheduled on Wednesday August 12<sup>th</sup>. Expected sessions to be discussed are: 1) Synthesis current knowledge of diverse nematode-bacterium symbiosis systems, 2) Identify major areas where unified study of nematode-bacterium symbiosis can contribute to symbiotic theory and 3) Establish nematode-bacterium symbiosis systems best suited for educational curricula.

We encourage you to attend this conference as a NemaSym participant, which you can declare upon registration. For further information visit the Congress web site: <http://www.union.wisc.edu/symbiosis/>.

Contact the NemaSym coordinator, Patricia Stock ([spstock@ag.arizona.edu](mailto:spstock@ag.arizona.edu)), if you want to attend the RCN symposium. For questions on the ISS Congress contact Heidi Goodrich-Blair ([hqblair@bact.wisc.edu](mailto:hqblair@bact.wisc.edu)) or Alicia Cramer-Carlson ([amcramer@wisc.edu](mailto:amcramer@wisc.edu)).

We look forward to building a strong nematode-bacterium symbiosis research community with you!

S. Patricia Stock (NemaSym RCN Director, U Arizona); David Bird (NCSU); Elodie Ghedin (U Pittsburgh); Heidi Goodrich-Blair (UW-Madison).

## News from SIP Members

### Bellagio Conference

In June of 2008, 12 scientists met at The Rockefeller Foundation Bellagio Study and Conference Center, in Bellagio, Italy.

The meeting, entitled "Insect Pathogenic Fungi in Sustainable Agriculture: Use Against Insects and Beyond" was organized by Fernando E. Vega and Mark S. Goettel to re-examine the potential role of entomopathogenic fungi in light of recent new discoveries linking these pathogens to additional roles in nature, including endophytism, antagonism or pathogenicity to plant pathogens and associations with the rhizosphere.

Possible novel uses for entomopathogenic fungi discussed indicate that a major weakness in the field is the lack of research aimed at understanding their ecology. Proposed research areas should lead to a new paradigm for entomopathogenic fungi that should refocus our efforts and that will hopefully lead to exciting new findings leading to these fungi being successfully used in the field in many different roles. A paper is in preparation.

A previous Bellagio Conference related to insect pathology was held in 1983, when a group of 23 scientists led by Don Roberts and James Aist met to discuss "Infection Processes of Fungi."

### Use of Microbes for Control and Eradication of Invasive Arthropods

Ann Hajek, Travis Glare & Maureen O'Callaghan (Eds.)  
Series: Progress in Biological Control, Vol. 6

This book offers a diverse presentation about use of arthropod-specific pathogens for control and eradication of invasive arthropod species. Basic concepts supporting use of pathogens for microbial control are covered as well as societal and environmental concerns.

The major functional issues faced when utilizing pathogens for control of invasive arthropods are discussed in the context of case studies. The majority of the book is composed of chapters describing different invasive species that have been targeted with entomopathogens for control, using diverse strategies, in many cases with excellent results. These examples cover urban, agricultural and forestry situations, providing an overview of the issues that use of insect pathogens can present.

### Baculovirus Molecular Biology

George Rohrmann

The book has been published online by the National Library of Medicine. It is open access and available at <http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=acvir>.

A composite pdf and a powerpoint file are available at <http://ir.library.oregonstate.edu/dspace/handle/1957/9989>. Updates to the online version will be made periodically. Please send corrections and comments to [rohrmannq@orst.edu](mailto:rohrmannq@orst.edu).



Bellagio Conference participants, from left to right: Bonnie Ownley, Helen Roy, Meredith Blackwell, Fernando Vega, Judy Pell, Mark Jackson, Mark Goettel, Siegfried Keller, David Chandler, Drauzio Rangel, Masanori Koike and Arnulfo Monzón

## SIP Photographic competition, 2008/09

**A chance to win prizes for your invertebrate pathology photos! Here's what you need to know in order to enter...**

### Prizes

Category winners will receive \$75 each in cash. The overall winner selected from the category winners will receive an extra \$125 making a total of \$200 for the winner. All entries will be posted on the SIP web site in 2009.

### Categories

#### A) Pathogen Biology

Pictures at any scale from microscopic images to populations that demonstrate the 'essence' of a pathogen and/ or its relationship with its host.

#### B) Invertebrate Pathology in Action

Pictures ranging from practical uses of beneficial pathogens to educating the public – as dynamic as you like!

#### C) Invertebrate Pathology in the 21<sup>st</sup> Century

Pictures that bring to life technological advances as applied to invertebrate pathology, for example gene sequences to mass production factories.

#### D) Best Collection

Consisting of a set of three pictures which are linked in some way. Each picture must be a potential prize-winner in its own right.

#### E) Student Category

This category is open only to SIP student members. Pictures can be on any invertebrate pathology topic or theme.

### Competition rules

1. The competition is open to current SIP members only.
2. Only images and photographs taken since January 2006 are eligible.
3. All entries must be accompanied by an entry form which must include, for each entry, the names of the species shown, and, if appropriate, a description explaining the image.
4. Pictures with close-ups of one or more persons can only be submitted with the permission of those

photographed. Crowd shots taken at a meeting or similar do not require permissions.

5. Applicants can submit a maximum of three pictures per category.
6. Entries must be digital images, not prints. Digital images must be submitted on CD, DVD or zipped e-mail file compatible with Apple Macintosh. Images must be saved in TIFF, JPEG or GIF formats at a maximum of 300 dpi and/ or less than 5 Mb file size.
7. If digital enhancement techniques have been used, they must be declared. Only limited digital enhancements that do not change the essence of the picture will be accepted (i.e. cleaning, minor colour and saturation work). The original and the edited image need to be submitted.
8. All entries must be clearly labelled with the entrant's details and category on the electronic file (e.g. PELL\_cat2.jpeg)
9. The same photograph cannot be entered for two different categories.
10. Although copyright remains with the photographer, by entering the competition applicants agree to give the SIP the right to freely use their image(s) e.g. for Newsletters and on the SIP web site.
11. Winners will be chosen by judges appointed by SIP. Judges decisions are final and no feedback will be available to applicants.
12. Winning entries will be announced at the SIP Annual General Meeting in 2009 and award winners will be notified by e-mail.
13. The SIP does not accept responsibility for loss, damage or delay to entries, however caused. Proof of posting will not be accepted as proof of delivery.
14. The closing date for entries is 26th June 2009.

### How to Enter

Via e-mail to [pareshashah@mac.com](mailto:pareshashah@mac.com) with the subject headline: 'SIP Photographic Competition 2009'. One image and entry form should be attached to one email.

OR

Via post by filling out the entry form and send it along with your digital image to:

Dr. Judith K. Pell, Plant and Invertebrate Ecology Department, Rothamsted Research, Harpenden, Hertfordshire, AL5 2JQ, United Kingdom.

**Entry forms and rules are on the SIP web site.**

## SOCIETY FOR INVERTEBRATE PATHOLOGY MEMBERSHIP FORM

**Membership is for a Calendar year**

You may also join **ONLINE** at [www.sipweb.org](http://www.sipweb.org) (it's faster and easier!)

Please check appropriate box:	<input type="checkbox"/> New Member	<input type="checkbox"/> Renewal	<input type="checkbox"/> Below is New Address
First Name: _____ M.I. _____ Last (family)Name: _____ InSTITUTE: _____ Department: _____ Street Address/PO Box: _____ City: _____ State/Province: _____ Zip/Postal Code : _____ Country: _____ Telephone: _____ FAX : _____ E-Mail Address: _____ <span style="float: right; font-size: small;">Very important to receive Newsletter notifications!</span>			
Annual Dues-2009			
Membership: <i>(Please check one)</i>	Regular, founding and charter	<input type="checkbox"/>	\$ 45.00
	Student <i>(Complete Certification Below)</i>	<input type="checkbox"/>	\$ 20.00
	Emeritus or Honorary	<input type="checkbox"/>	NO FEE
Divisions: <i>(You may check more than one)</i>	Microsporidia	<input type="checkbox"/>	\$ 5.00
	Additional voluntary support for Microsporidia Division	<input type="checkbox"/>	
	Microbial Control	<input type="checkbox"/>	\$ 2.00
	Virus	<input type="checkbox"/>	\$ 2.00
	<i>(choose one only)</i>	<input type="checkbox"/>	\$ 10.00
	Bacteria	<input type="checkbox"/>	\$ 5.00
	<i>(choose one only)</i>	<input type="checkbox"/>	\$ 10.00
	Fungi	<input type="checkbox"/>	\$ 5.00
Additional voluntary support for Fungi Division	<input type="checkbox"/>		
	Nematodes	<input type="checkbox"/>	\$ 2.00
	<i>(choose one only)</i>	<input type="checkbox"/>	\$ 10.00
<b>OPTIONAL</b>	Journal of Invertebrate Pathology (special member price)	<input type="checkbox"/>	\$ 106.00
	Canadian GST 5% (Canadian subscribers only)	<input type="checkbox"/>	\$ 5.30
	*Society contribution (For General Operations)		\$ _____
	* Endowment contribution (To Support Foreign Memberships)		\$ _____
	* Mauro Martignoni Fund (To support student travel to SIP meetings)		\$ _____
* Chris J. Lomer Memorial Fund (Supports attendance at SIP meetings for developing world scientists)		\$ _____	
*Contributions are Tax deductible (please check with revenue dept. of your country)		<b>TOTAL DUES</b>	\$ _____
The Newsletter is available to all members via the SIP Website: <a href="http://www.sipweb.org">www.sipweb.org</a> . Members are e-mailed when it is available. Internet delivery of the newsletter saves the Society printing costs, mail delays and trees! If you require receipt of a hard copy via post, please check here <input type="checkbox"/>			
METHOD OF PAYMENT (Check one)			
<input type="checkbox"/> Check	Make Checks Payable to: <b>Society for Invertebrate Pathology. Payable in U.S. Funds only!</b> Checks must be drawn on U.S. Federal Reserve System Member Bank   Check number: _____		
<input type="checkbox"/> Credit Card	<b>Circle One: VISA   MasterCard   American Express</b> Card Number: _____ Expire Date: ____/____/____ Signature: _____ (Month/Year)		
<input type="checkbox"/> Wire Transfer	Please e-mail SIP for instructions ( <a href="mailto:sip@sipweb.org">sip@sipweb.org</a> ) and <b>attach this form with your wire transfer receipt</b>		
MAIL FORM TO:	FAX AND CONTACT NUMBERS:		
Society for Invertebrate Pathology P.O. Box 11 Marceline, MO 64658 U.S.A.  <b>U.S. TAX ID: 52-6076168</b>	Toll Free Numbers: Telephone or Fax: 1-888-486-1505 Outside of North America : Telephone or Fax: 1-660-376-3586 E-MAIL: <a href="mailto:sip@sipweb.org">sip@sipweb.org</a>		
	If paying by credit card, you may FAX your membership		
***STUDENT CERTIFICATION***			
I certify that the person above is a candidate for an advanced degree in a field related to the study of Invertebrate Pathology Institution _____ Department _____ Signature of applicant's major research advisor: _____			