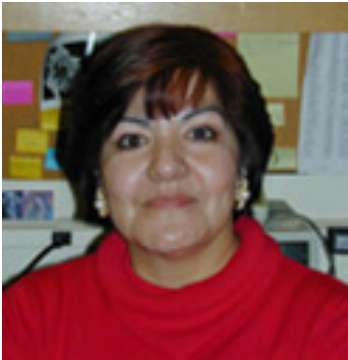


### 3rd Int. *Phytophthora*, *Pythium* and related genera workshop KEYNOTE SPEAKERS



#### **Z. Gloria Abad, Ph.D.**

Z. Gloria Abad obtained her M.Sc. in Plant Pathology at National Agrarian University "La Molina" in Lima-Peru in 1983 with thesis "*Phytophthora infestans* in Central Andes of Peru: Races, Pathotypes, Variability, and History" under direction of Ludoweyjk Turkensteen and Jan Henfling. She obtained her Ph.D. degree in Plant Pathology at North Carolina State University- USA in 1993 with thesis "*Pythium* species associated with root and crown rot of Turfgrasses: Taxonomy, Ecology, and Pathogenicity" under direction of David Shew and Leon T. Lucas. From 1994 to 2000 she was Research Associate working with Turfgrasses and Strawberries with David Shew and Frank Louws (respectively). During the years 2001-2006 she was the Director of the Plant Pathogen Identification Laboratory (PPIL) at North Carolina State University. G. Abad was the founder and primary investigator and worked incorporating morphological and molecular characterization primarily integrating sequencing and phylogenetic analyses for the identification of different groups of plant pathogens. At the present, since September 2006, she is the Lead Scientist at the USDA- APHIS Molecular Diagnostics Laboratory (MDL) that started its official operation in April 12, 2007 under Director Dr. Mary Palm. Dr. G. Abad has actively contributed for the establishment of the USDA/APHIS/MDL which is successfully working with the validation of select agents and identifying or monitoring important high risk plant pathogens at the USA and abroad. G. Abad pioneered work is on the integration of morphological and molecular tools for fast identification of *Phytophthora*, *Pythium* and *Pythiogeton*. She is proposing a new Genus *Phytopythium* with André Lévesque and Arthur de Cock for *Pythium* species in Clade K (*P. vexans* complex and other related species). She has described *Pythium plurisporum* Abad, Shew, Grand & Lucas and *Phytophthora bisheria* Abad Z.G., Abad J.A. & Louws with scientists from the USA, Netherlands and Australia. At the present, she is working with the description of eight new species of *Phytophthora*, two species of *Pythium* and three species of *Pythiogeton* in cooperation with scientists from Australia, Brazil, Italy, Japan, Mexico, Norway, Spain, South Africa, Taiwan, UK, and the USA. Dr. Abad has organized and participated as instructor in numerous international workshops and symposiums. The most relevant are the organization of the "1st and 2<sup>nd</sup> International Workshops for the Morphological and Molecular Identification of the Straminipiles *Phytophthora* and *Pythium*" (July 23-27, 2004, May 21-27, 2006) with the former PPIL-NCSU, and the 3<sup>rd</sup> International workshop with the USDA/APHIS Molecular Diagnostics Laboratory.



## **Arthur de Cock, Ph. D.**

### **Citizenship**

Nationality: Netherlands

Position: Scientist; (molecular) taxonomy of Oomycetes at the

### **Education**

1967 – 1974. Doctoraal (cf masters), University Nijmegen, The Netherlands ("cum laude"= with credit/distinction) Subjects: zoology (systematics of parasitic mites), botany (interference microscopy of maize races), history of biology (thesis on P.P.C.Hoek, a fishery biologist).

1974 - 1980 . Ph.D., University of Nijmegen, The Netherlands. Ph.D. thesis: "Flowering biology of the seagrass *Zostera marina*."

### **Professional career**

1974-1980 Department of Botany, University of Nijmegen (Ph.D. study)

1982-1987 Centraalbureau voor Schimmelcultures, Baarn

1987-1989 Two-year fellowship of the Alexander von Humboldt Foundation; Department of Molecular Genetics, Gesellschaft für Strahlen- und Umweltforschung (GSF-München), Göttingen, Germany

1989-2000 CBS, Delft

2000-present CBS, Utrecht

### **Current projects:**

Molecular taxonomy of *Pythium* (cooperation with G.R.Klassen (Winnipeg) and C.A.Lévesque (Ottawa). Molecular taxonomy of *Phytophthora* (cooperation with G.R.Klassen (Winnipeg), C.A.Lévesque (Ottawa) and W.A.Man in 't Veld (Wageningen). Cooperation in molecular taxonomic studies of ascomycetous yeasts (with M.Th.Smith and G.S. de Hoog)

### **Teaching and lecturing activities**

CBS course in Mycology: one day teaching in Oomycetes and Chytridiomycetes  
Congresses and symposia (invited lectures, organisation)



## **Clive Brasier, Ph. D.**

Clive Brasier is Emeritus Mycologist at Forest Research UK (where he has worked since 1969) and Visiting Professor in Mycology at Imperial College, London. His research interests include the biology, pathology and evolution of *Phytophthora* pathogens, the origins and spread of Dutch elm disease, fungal viruses as biocontrol agents and plant health risk to forest ecosystems.

He has been chair of the IUFRO Working Group on vascular wilts and co-chair of the IUFRO Working Group on *Phytophthora* species.

Clive is currently working on the environmental threat posed by the invasive Phytophthoras *P. kernoviae* and *P. ramorum*, on Phytophthoras obtained in a recent survey of forests in Nepal, and on the potential for interspecific hybridisation in *Phytophthora*.



## David Cooke, Ph.D.

**Name:** David Edward Llewelyn Cooke

**Date of Birth** 11/08/1966

### EDUCATION

1990-1993 **Ph.D. in Plant Pathology**, University of Wales, Aberystwyth  
1985-1989 **B.Sc. (Honours) Agricultural Botany (First Class)**

### EMPLOYMENT

1994-current **Senior Plant Pathologist (Band 4) SCRI**, Invergowrie, Dundee  
1989-1990 **Agrochemical Evaluation Unit**, Southampton Uni. Plant Pathologist  
1987-1988 **Shell Research Ltd**, Fungicide screening project

### PRINCIPAL RESEARCH INTERESTS

David is a project leader at SCRI with special interests in studying the population biology, epidemiology, evolution, phylogenetics, molecular detection, identification and control of *Phytophthora* species. Current specific interests lie in the population biology of the potato late blight pathogen (*Phytophthora infestans*) and the soft fruit *Phytophthora* species.

### MEMBERSHIP OF LEARNED SOCIETIES AND OTHER RESPONSIBILITIES

- Member of the British Society for Plant Pathology (elected to Board Oct. 97 - Nov. 2000)
- Editor of Mycological Research (2005-2010)

### TRAINING AND KNOWLEDGE TRANSFER ACTIVITIES

- Supervised four PhD students
- Training of Staff member on Marie Curie Fellowship (2004-5)
- Instructor at International workshop on *Phytophthora* identification (2004 and 2006)
- Regular invited presentations at international conferences and growers group meetings
- Over 40 refereed publications (see page 2) and over 80 non-refereed publications (e.g. book chapters, conference proceedings, trade articles etc)

### EXAMPLES OF RECENT PROJECTS & COLLABORATIONS

1. Development and exploitation of DNA-based SSR markers for studying the population biology and epidemiology of potato late blight in Scotland.
2. EU concerted Action - EUCABLIGHT. Chair of Technical Committee on *P. infestans* diversity; driving the marker development, database creation and exploitation of the results of the project.
3. PRI (The Netherlands) – Exchange of techniques and data on the development and mapping of SSR markers for *P. infestans*.
4. University of Palermo (Italy) – Development of diagnostics and detection systems for *Phytophthoras* in natural ecosystems and the nursery industry.
5. Leading British Potato Council project 'Survey of GB blight populations' 2006-9.



## **Michael David Coffey PhD, FTCD**

I was born in Manchester England during World War 2 and my life began under the stairs sheltering from German bombs. At an early age I developed a keen interest in plants and the countryside thanks to the love and attention of my grandmother Kate Coffey. My dad was a research chemist and pioneer in the field of polymer chemistry. I gained entry to Manchester Grammar School, one of the premier educational establishments in Great Britain and went on to study Plant Biology at Bangor University in Wales. After finishing my PhD in 1968 I did postdoctoral research at the University of British Columbia where I was involved in the axenic culture of rust fungi. From 1970-72 I was a research associate at the University of Wisconsin, Madison and researched the ultrastructure of rust fungi, especially their haustoria. From 1972-81 I was at Trinity College Dublin where I ran the Electron Microscope Unit and taught in the Botany School. In 1981 I was made a Fellow of Trinity College. I was awarded the Edwin Butler Medal for Plant Pathology by the Irish Society of Plant Pathologists in 1983 for contributions to Irish Agriculture.

From 1981 to the present I have been a professor of Plant Pathology at the University of California, Riverside where I replaced Professor George Zentmyer upon his retirement. I have been a consultant with FAO in both Indonesia and the Philippines working on *Phytophthora palmivora*, cause of budrot of coconuts.

I have maintained the World Phytophthora Collection since 1981 and conducted research on many different aspects of *Phytophthora* and the diseases it causes.



## **Seogchan Kang, Ph.D.**

Dr. Seogchan Kang obtained his B.S. and M.S. in Chemistry from Seoul National University. He completed his Ph.D. degree in Physiological Chemistry under the supervision of Dr. Robert L. Metzenberg from University of Wisconsin. In 1997, he joined the faculty of the Department of Plant Pathology at the Pennsylvania State University, where he is currently an associate professor. His research focuses genetic mechanisms underlying race variation in the rice blast system, molecular and cellular mechanisms underpinning Fusarium wilt, and development of informatics platforms supporting pathogen genomics, forensics, and systematics.

Dr. Kang and collaborators have established an integrative informatics platform, named the *Phytophthora* Database ([www.phytophthoradb.org](http://www.phytophthoradb.org)), that supports *Phytophthora* identification and monitoring by archiving genotypic and phenotypic data associated with previously characterized isolates in an easily searchable format. In the long run, the database will support integration and utilization of data from diverse areas of research on *Phytophthora*, ranging from genomics, phylogenetics and population biology to epidemiology. This informatics platform will expand to support new global networks for monitoring other pathogen groups. Databases for the genera *Pythium* and *Fusarium* are under construction. Using rice blast disease as a model, Dr. Kang has studied how new races arise at multiple levels, ranging from genes to populations. Another area of research is the study of soil-borne fungal diseases using *Arabidopsis thaliana* and *Fusarium oxysporum*. The work on the *A. thaliana*-*F. oxysporum* system has yielded many new insights into the molecular and cellular mechanisms underpinning root pathogenesis from both the host and pathogen sides. Dr. Kang has also offered his knowledge and achievements to many in plant pathology through the development of research tools and collaborations. The most notable tools that have been distributed to many laboratories are *Agrobacterium*-mediated transformation and gene manipulation tools. He also has collaborated with many pathologists who have field-oriented research programs nationally and internationally.

## C. André Lévesque, Ph.D.

C. André Lévesque is a Research Scientist with the Biodiversity group of Agriculture & Agri-Food Canada, Ottawa, Central Experimental Farm, Ontario, and has been the project leader for mycology under the Environmental Health program. He is adjunct professor in the Biology Department of Carleton University, Ottawa. Previously, he was with Agriculture & Agri-Food Canada, in Vancouver and Summerland, B.C. (1993-1996, 1996-2000, respectively), and Assistant Professor on a term contract in the Department of Biological Sciences, Simon Fraser University (1991-1992). He graduated with a B.Sc. in Agriculture (1983) from McGill University, Montréal, a Master of Pest Management (1985) and Ph.D. (1990) degrees



in Plant Pathology from Simon Fraser University, Burnaby, British Columbia. His thesis, under the direction of James Rahe, was entitled "The nature and significance of fungal colonizers in the herbicidal action of the herbicide glyphosate (Roundup)". His current research is on molecular taxonomy and ecology of fungi, specializing on the zoosporic fungi and oomycetes. One of his goals is to develop identification/detection tools based on solid taxonomy for practitioners in ecology or pest management. He has developed phylogenies for the genus *Pythium*, barcode databases for oomycetes, and has produced several DNA arrays for disease management and molecular ecology. He is coordinating projects on molecular taxonomy and monitoring of high risk plant pathogens and on Canadian microbial culture collections. Dr. Lévesque received the Outstanding Young Scientist Award by the Canadian Phytopathological Society in 1999-2000 and a 2008 Merit Award from the Deputy Minister of Natural Resources Canada. He has over 100 publications, half of them in peer reviewed journals. He gave over 80 invited presentations at scientific symposia, at university department seminars or industry meetings. He was president of the Canadian Phytopathological Society (2005-6).

**André Lévesque**

**Research Scientist**

**Agriculture and Agri-Food Canada**

**960 Carling Avenue**

**KW Neatby Bldg.**

**Ottawa, Ontario**

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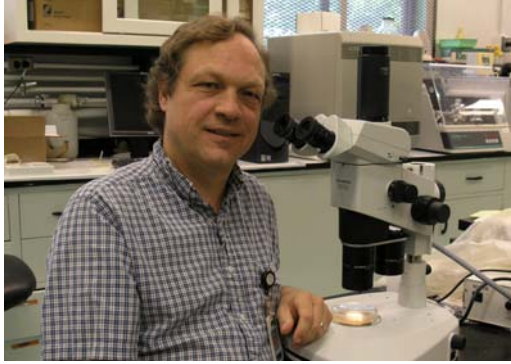
tél: 613-759-1017



## **Frank Martin, Ph.D.**

Frank joined the USDA-ARS in Salinas, CA in 1995 to work on the development of alternatives to methyl bromide for managing soilborne diseases in the strawberry and vegetable industry. He has collaborated on projects evaluating alternative fumigants and methods for their application to provide a short-term solution to the growers as well as on more integrated, environmentally benign methods for the long-term management of soilborne pathogens. As part of this research a remote sensing project was developed in an effort to monitor the effect of alternative treatments on plant health and productivity on a field wide basis. In addition to this field research program he has also worked on the molecular genetics of *Pythium* and *Phytophthora* spp. Current research interests include clarification of phylogenetic relationships in both genera using several mitochondrial loci for a multigene analysis and development of molecular tools for rapid species identification and diagnostic purposes. In the past the focus of this work has been the spacer region between the *cox1* and *cox2* genes but the current emphasis is the sequencing of the entire mitochondrial genome from a range of species from both genera in an effort to identify differences in gene order as well as sequence variation that can be used for the development of genus and species specific markers. Thus far 18 genomes from *Pythium* and 12 from *Phytophthora* have been sequenced (another 14 from *Phytophthora* are in progress) and several regions where there are conserved differences in gene order between the genera are being examined for development of diagnostic markers. He also is one of the co-PIs on the grants supporting the development of the *Phytophthora* database project and is collaborating with others to develop a parallel website for *Pythium*.

Prior to joining the USDA-ARS, Frank was a member of the Plant Pathology Department at the University of Florida for 10 years. Primary research interests were biological control of soilborne pathogens (primarily *Pythium* spp. using the non-plant pathogen *P. oligandrum*) and working on the molecular genetics of the genus *Pythium*. Of particular interest was looking at the mitochondrial DNA as a source for developing molecular tools to simplify species identification and elucidate phylogenetic relationships among species. Pulsed field gel electrophoresis (PFGE) was used to investigate the physical organization of the mitochondrial genome and demonstrate some species had linear genomes. PFGE was also used to examine the electrophoretic karyotype of the nuclear genome and clarify the mechanisms responsible for generating the observed intraspecific variation. Investigations on circular mitochondrial plasmids in *Pythium* were undertaken as well.



**Paul W. Tooley, Ph.D.**

Paul W. Tooley received his Ph.D degree in Plant Pathology from the University of Wisconsin-Madison in 1982 working with Dr. Craig Grau on soybean root and stem rot caused by *Phytophthora sojae*. Following his Ph.D, Dr. Tooley went to Cornell University as a Research Associate in the laboratory of Dr. Bill Fry, where he worked on *P. infestans* epidemiology and population genetics. There, he collected *P. infestans* isolates of A2 mating type from the field in Mexico, performed epidemiological and genetic studies, and pioneered the use of isozymes as genetic markers for *Phytophthora*. Dr. Richard Shattock from University College North Wales-Bangor joined the Fry lab on sabbatical, and the collaboration led to a series of papers in 1986 clearly demonstrating recombination, segregation, and selfing in *P. infestans* using isozyme markers. In 1985, Dr. Tooley joined the USDA-ARS Foreign Disease-Weed Science Research Unit at Ft. Detrick, MD where he has continued his career working with *Phytophthora* species. There, he determined nuclear DNA content of *P. infestans*, characterized the genetic makeup of *P. infestans* populations from different parts of the world, used CHEF gel electrophoresis to determine *Phytophthora* chromosome numbers, and discovered double-stranded RNA as well as retrotransposon sequences in *P. infestans*. Since 2001, he has led a project to research the biology and epidemiology of the sudden oak death pathogen *Phytophthora ramorum*, which has significantly impacted the U.S. nursery industry and threatens Eastern U.S. oak forests.



## Dr. Hermann Voglmayr

Hermann Voglmayr is currently an Associate Professor Department of Systematic and Evolutionary Botany, University of Vienna. He studied his Master Degree and Ph. D. at the University of Vienna (1988-1994 and 1995-1998). The topic of the Ph.D. thesis was "Genome size analysis in mosses (Musci) and downy mildews (Peronosporales)". From 1997-2005 he was assistant at the University of Vienna. He had research stays at the University of Tennessee, Knoxville, USA (1996, 2000, 2003), the Universität Tübingen, Germany (2001); the United States Department of Agriculture, Beltsville, MD, USA (2003); and the Centraalbureau voor Schimmelcultures (2006). His research interest are:

- 1) Molecular phylogeny, evolution, systematics, taxonomy and phylogenetic classification of downy mildews (Peronosporales) and white blister rusts (Albuginales).
- 2) Phylogenetic relationships of downy mildews to their closest relatives (*Phytophthora*).
- 3) Downy mildews speciation, adaptive radiation and host-parasite co-phylogeny.
- 4) Species concepts and delimitation in downy mildews.
- 5) Genome size evolution in downy mildews.
- 6) Molecular phylogeny, evolution, speciation, systematics and phylogenetic classification of various parasitic or saprotrophic ascomycetes (Diaporthales, Hypocreales, Pleomassariaceae).

Current research topics: In the previous years, numerous articles on the phylogeny and evolution of downy mildews and white blister rusts have been published, resulting in major taxonomic revisions and reclassifications of genera. The current main research topics concern the species circumscription and classification of members of the downy mildew genera *Albugo*, *Peronospora*, *Plasmopara* and *Bremia* (in collaboration with working groups in Tübingen and Hohenheim, Germany and Uppsala, Sweden). A central focus lies on host specificity of various species and its impact on species concept and delimitation. In addition, the classification, host range and species status of close relatives of important plant pathogens is of central interest, as it has important implications on applied aspects (e.g. quarantine lists and measures). An additional interest concerns the overall biodiversity of downy mildews, their appropriate documentation and the development of appropriate molecular tools for species identification. The current data at hand suggest that the biodiversity of downy mildews and white blister rusts is still understudied, which shows the necessity of taxonomic studies and the documentation of undescribed species. Another unresolved issue under study concerns the phylogenetic relationships of the main downy mildew groups to each other and to their closest relatives from the genus *Phytophthora*.