

# **MICHAEL J. WINGFIELD**

## **ABRIDGED CURRICULUM VITAE**



**Forestry and Agricultural Biotechnology Institute (FABI)**  
**Faculty of Biological and Agricultural Sciences**  
**University of Pretoria**  
**Pretoria**  
**0002**

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## ABRIDGED CURRICULUM VITAE

*MICHAEL J. WINGFIELD*

### Personal details:

Michael John Wingfield, Mondi Professor of Forest Pathology, Director of the Forestry and Agricultural Biotechnology Institute (FABI) Director, Tree Protection Co-operative Programme (TPCP) and Director, Department of Science and Technology, Center of Excellence in Tree Health Biotechnology, Faculty of Natural and Agricultural Sciences, University of Pretoria, Pretoria 0002. Republic of South Africa. Born 21 April 1954. Married to Prof. Brenda Wingfield (Ph.D.), two children Anthony (30 years) and Beverley (26 years).

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### SUMMARY

Education and experience primarily focusing on the study of forest tree pests and diseases, with in excess of 30 years of active research experience in this field. A particular emphasis of this research has been on trees grown as plantation crops, especially, but not exclusively, in the tropics and Southern Hemisphere. Here, a specific strength has been developed in the identification of insect pests and pathogens of plantation-grown trees such as species *Pinus*, *Eucalyptus*, *Acacia* and *Gmelina*, as well as in devising strategies to reduce the impact of that they cause. A strong belief is held, that a comprehensive understanding of the biology and genetics of tree pests and pathogens is needed, in order to reduce their impact. This has been the basis for an intensive basic research programme using the most modern biotechnological tools. Results have continuously been transferred to the plantation level with considerable success, and this has led to support from private forestry companies and conservation groups, worldwide.

### Education:

Ph.D. (Plant Pathology and Entomology, University of Minnesota, USA, 1983) Dissertation: "The ecology of the Pine Wood Nematode, *Bursaphelenchus xylophilus* in the United States"; M.Sc. *cum laude* (University of Stellenbosch, 1979) Thesis; "Some forest tree diseases in South Africa"; B. Sc. Hons. (University of Natal, 1977); B. Sc. (University of Natal, 1976). Harvard Business School, Advanced Management Programme, 2008.

### Employment:

Department of Agriculture (1978-1988) up to Assistant Specialist Scientist; Associate Professor (1988-1990); Professor (1990-March 1998), University of the Free State, South Africa; Director of the Tree Protection Co-operative Programme (TPCP) 1990-present; Professor (member of Senate) and Founding Director of the Forestry and Agricultural Biotechnology Institute (FABI), Faculty of Natural and Agricultural Sciences, University of Pretoria (1998-present). Director of the Centre of Excellence in Tree Health Biotechnology, one of the first six Department of Science and Technology funded, Centres of Excellence in South Africa (2004-onwards).

## **Board and committee appointments**

- Senate Research Committee and Committee of the Academic Information Services, University of Pretoria. 2006 onwards.
- Advisory Committee of the Centraalbureau voor Schimmelcultures, Netherlands. 2003-2012.
- Board of the Council for Scientific and Industrial Research (Ministerial appointment), 2003-2005, including Strategic Review Committee of the CSIR. Reappointed for second term 2006-2009, third term 2009-2012 and fourth term (2012-2014).
- Research Committee of the Hans Merensky Foundation, 2003-present.
- Extended Board of the International Union of Forestry Research Organisations (IUFRO) 2001-2005 and Full Board member, 2005-2010. Member of Management Committee, 2006-2010 and as Vice President, 2010-2014. Elected President of IUFRO in October 2014 for a five year term.

## **Major awards and recognition:**

President's award, Foundation for Research Development (1989-1992); Certificate of Merit, South African Association for the Advancement of Science (1990); Finalist, Four Outstanding Young South Africans (1992); Senior Captain Scott Memorial Medal, South African Academy for Arts and Science (1995); Elected Fellow of the Southern African Society for Plant Pathology (1995); 'A' rated (one of 43 in South Africa at the time) by the Foundation for Research Development (FRD) (1996) and included a list of the 14 most highly rated FRD-linked scientists in South Africa in 1998; promoted to 'Super Professor' rank, University of the Free State (1997) based on exceptional accomplishment. Recipient of the Havenga Prize of the South African Academy for Arts and Science (1998). Elected to the South African Academy of Science (1998) and awarded fellowship of the Royal Society of South Africa (1998). In 1998 recipient of the National Science and Technology Forum's (NSTF, represented by more than 100 organizations in the fields of science and technology in South Africa) award for the most outstanding contribution by an individual in the field of science, engineering and technology. Recipient of the Christiaan Hendrik Persoon medal, highest award of the Southern African Society for Plant Pathology (1999). Recipient of the International Union for Forest Research Organisations (IUFRO), Scientific Achievement Award, Kuala Lumpur, August 2000 and in same year, recipient of the University of Minnesota, Plant Pathology Distinguished Alumnus Award. Recipient of the Chancellor's Medal for Research, University of Pretoria, 2001. University of Pretoria Outstanding Achiever's Award 2002-2004. Research Programme awarded Centre of Excellence Status by Department of Science and Technology (DST), one of the first six in South Africa, 2004 with intended ten-year term. Recipient of the Southern African Association for the Advancement of Science, Gold Medal, 2005; recipient of the Laureatus Award of the Alumni Association of the University of Pretoria, 2005. Recipient of honorary membership of the Mycological Association of America, 2006 the University of Pretoria Chancellor's Medal for research, 2007, Fellowship of the American Phytopathological Society 2008 and the Biotech Fundi Award, Gauteng Department of Agriculture and Rural Development, 2009. In 2012 he received the Johanna van Westerdijk award from the Centraalbureau voor Schimmelcultures (Netherlands Academy of Sciences) and he received an honorary Doctor of Science Degree from the University of British Columbia (Canada) in November 2012 and received an honorary doctorate from North Carolina State University (USA) in May 2013. Recipient of the Kwame Nkurma Scientific Award from the African Union, May 2013. Recipient of the University of

Minnesota Distinguished Leadership Award, 2016 and the John Herschel Gold Medal from the Royal Society, South Africa 2017.

### **Prestigious appointments:**

Director, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria (1998-present); Director, Tree Protection Co-operative Programme, University of the Orange Free State (1990-1997) and University of Pretoria (1998 onwards); various scientific and forestry committees, nationally and internationally; President, Southern African Society for Plant Pathology (1990-1993); Forest Pathology Committee, International Society for Plant Pathology (1988- present) and Chair (1993 - 1998); Microbiology Collegium, Foundation for Research Development (1990-1991 and convenor, 1992); Chair, IUFRO Working Party on Plant Pathogen Interactions (1996 - 2000); Vice-President, International Society for Plant Pathology, 1993-1998; Elected to Mondi Paper Company chair of Forest Pathology, 1994-1996 and re-elected for a further terms (1997-2000; 2001-2003 and 2004-2008). Review committee, Centraalbureau voor Schimmelcultures (CBS) Netherlands 2002, International Union of Forestry Research Organisations (IUFRO) Deputy Coordinator Division 7 (2002-2005) and Co-ordinator (2005-2010) and member of the IUFRO Scientific Programme Committee for 2005 and 2010 World Congresses. Vice President of IUFRO, 2010-2014 and President 2014-2019.

### **Invited guest and speaker:**

Universities, research institutions and congresses in South Africa, United States, Canada, Brazil, Chile, Colombia, Venezuela, Mexico, Argentina, Ecuador, Indonesia (Sumatra, Suluwesi, Kalimantan), Malaysia, Vietnam, Australia, New Zealand, Taiwan, Japan, China, Thailand, Malaysia, England, Norway, Finland, Bhutan, Germany, Austria, Switzerland, France-, Finland, in many countries on more than one occasion.

### **Publications:**

Publications in internationally recognised peer review journals – 877 printed, chapters in books and conference proceedings - 95; five books written and four books edited. In excess of 440 presentations at International Conferences and 650 at National Conferences and in excess of 20 popular scientific communications.

### **Editorial responsibilities:**

Editorial board for *Phytophylactica* (1989-1992) and *Mycological Research* (1997-2000); *Plant Pathology* 2000- onwards; *Australasian Plant Pathology* (2001 onwards. Regular reviewer for *Plant Disease* (USA), *Mycologia* (USA), *European Journal of Forest Pathology* (Europe), *Mycological Research* (UK), *Canadian Journal of Botany* (Canada), *Mycotaxon* (USA), *South African Journal of Botany* (South Africa), *Bothalia* (South Africa), *Sydowia* (Switzerland), *Canadian Journal of Forestry Research* (Canada); reviewer for grant proposals for National Science Foundation (USA), Foundation for Research Development (South Africa); referee for tenure applications for numerous American and other academic institutions.

### **Consultancies:**

Consultancies, primarily to advise forestry companies on the health status of plantations and to develop strategies to resolve tree disease problems. Advice and support has been provided to the following Companies, in many cases on a regular and continuing (beyond ten years of service) basis:

Celbi Portugal; Thai Stora (Thailand); Smurfit, Carton de Colombia; Smurfit, Carton de Venezuela; Smurfit Carton de Mexico, Mondi Forests; Sappi Forests; HL & H

Mining Timber Products (1998-1996); South African Forestry Company, Ltd., P.T. Inti, Indorayon Utama (Indonesia), Shell CAPSA (Argentina), Fundacion Forestal Manuel Durini, (Ecuador); Forest Solutions (Hawaii); Forestal Oriental (Uruguay); COFUSA (Uruguay); Servicio Agricola y Ganadero (Chile); Controladora Plagas Forestales (Chile); Bioforest (Chile); Los Ambrados (Uruguay); Llano Verde (Uruguay) and Lemusur (Uruguay); Ecalyptus Technologies (Thailand), Stora Enso (Portugal), Basque Government (Spain), UPM Kymene (Uruguay, Cambodia and Mozambique), PROTEAK (Mexico).

#### **Research grants and awards:**

Foundation for Research Development (FRD), President's Award (1989-1992); Comprehensive grant from the FRD Core Programme (1993-1996, and repeated based on 'A' rating 1997 onwards); Comprehensive research support as part of the **Tree Protection Co-operative Programme (TPCP)**, with members Sappi Forests, Mondi Forests, HL & H Timber Products and South African Forestry Company, Ltd. (SAFCOL), (1990 onwards), also including Central Timber Co-operative Ltd. and Department of Water Affairs and Forestry later Department of Agriculture Fisheries and Forests (1997 onwards); Sandoz Chemicals Biotech Research Cooperation (USA and UK) (1993-1995); South African Forest Owners Association, 1992 onwards; INFRUITECH, 1992-1993; Sappi grant for building programme, 1993-1997; South African Wattle Growers Union, 1993 onwards; Elected to Mondi Paper Company chair of Forest Pathology, 1994-1996, and re-instated (1997 onwards); SAFCOL *Botryosphaeria* Project (1996-2000), SAFCOL Blue Stain Project (1997-2000); Matching grants linked to Industry Funding from Department of Trade and Industry (THRIP) programme 1996- onwards). Australian ACIAR grant to participate in Eucalytus rust research programme (Australia, Brazil, South Africa) 200-2003; South Africa/ China bilateral agreement 2001-2003; South Africa/ Norway Bilateral Agreement 2003-2005; South Africa/ Sweden Bilateral Agreement 2004-2006. DST/NRF Centre of Excellence in Tree Health Biotechnology (CTHB, 2004-onwards).

#### **Students advised and co-advised:**

Completed M.Sc. degrees, 65 completed. Ph.D. degrees 85, completed.

#### **Two selected publications from each of the past five years:**

Iturrirxa E., R. J. Ganley, J. Wright, E. Heppe, E. T. Steenkamp, T. R. Gordon and M. J. Wingfield. 2011. A genetically homogenous population of *Fusarium circinatum* causes pitch canker of *Pinus radiata* in the Basque Country, Spain, **Fungal Biology** 115: 288-295.

Six, D. L. and M. J. Wingfield. 2011. The Role of Phytopathogenicity in Bark Beetle–Fungus Symbioses: A Challenge to the Classic Paradigm. **Annual Review of Entomology** 2011. 56:255– 272.

Wingfield, M.J., Z.W. de Beer, B. Slippers, B.D. Wingfield, J.Z. Groenewald, L. Lombard and P.W.Crous. 2012. One fungus, one name promotes progressive plant pathology. **Molecular Plant Pathology** 13: 604-613.

Duong, T.A., Z.W. de Beer, B.D. Wingfield and M.J. Wingfield. 2012. Characterization of the mating-type genes in *Leptographium procerum* and *Leptographium profanum*. **Fungal Biology** 117: 411-421

Sun, J., M. Lu. N.E Gillette and Michael J. Wingfield. 2013. Red turpentine beetle: innocuous

native becomes invasive tree killer in china. **Annual Review of Entomology** 58: 293-311.

van der Merwe, N.A., E.T. Steenkamp, C. Rodas, B.D. Wingfield and M.J. Wingfield. 2013. Host switching between native and non-native trees in a population of the canker pathogen *Chrysosporthe cubensis* from Colombia. **Plant Pathology** 62: 642-648.

De Beer, Z.W., , T.A. Duong, I. Barnes, B.D. Wingfield, M.J. Wingfield. 2014. Redefining *Ceratocystis* and allied genera. **Studies in Mycology** 79: 187-219.

Slippers B., B.P. Hurley, M.J. Wingfield. 2014. Sirex Woodwasp: A model for evolving management paradigms of invasive forest pests. **Annual Review of Entomology** 60: 601-619. 10.1146/annurev-ento-010814-021118.

McTaggart A.R., R.G. Shivas, M. vand der Nest, J. Roux, B.D. Wingfield, M.J. Wingfield. 2015. Host jumps shaped the diversity of extant rust fungi (Pucciniales). **New Phytologist** 209(3): 1149-1158. 10.1111/nph.13686.

Wingfield M.J., E.G. Brockerhoff, B.D. Wingfield, B. Slippers. Planted forest health: The need for a global strategy. **Science** 349: 832-836. 10.1126/science.aac6674.

### **BOOKS AND MONOGRAPHS (selection of 10)**

Wingfield, M.J., K.A. Seifert and J.F. Webber. (Eds). 1993. *Ceratocystis* and *Ophiostoma*. Biology, Taxonomy and Ecology. **American Phytopathological Society Press, St. Paul, Minnesota, U.S.A.** ISBN 0-89054-156-6.

Jacobs, K. and M.J. Wingfield (2001). *Leptographium* species: Tree Pathogens, Insect Associates and Agents of Blue Stain. **American Phytopathological Society Press** Minnesota, U.S.A. 207pp. ISBN 0-89054278-3.

Gryzenhout, M., M.J. Wingfield and B.D. Wingfield 2007. Cryphonectriaceae: Tree pathogens and bark-infecting fungi. **American Phytopathological Society Press.**

Slippers, B. Wingfield, M.J. and De Groot, P. 2011. **The Sirex woodwasp and its fungal symbiont research and management of a worldwide invasive pest.** Dordrecht ; New York : Springer  
ISBN978-94-007-1959-0.

Seifert, K, Z.W. de Beer and M.J. Wingfield. 2013. *The Ophiostomatoid Fungi. Expanding Frontiers.* Centraalbureau voor Schimmelcultures Biodiversity Series 90.

**A MORE COMPLETE OVERVIEW OF ACTIVITIES LINKED TO MY RESEARCH PROGRAMME CAN BE FOUND ON THE WEB SITE OF THE FORESTRY AND AGRICULTURAL BIOTECHNOLOGY INSTITUTE (FABI), UNIVERSITY OF PRETORIA, SOUTH AFRICA <http://fabinet.up.ac.za/>**