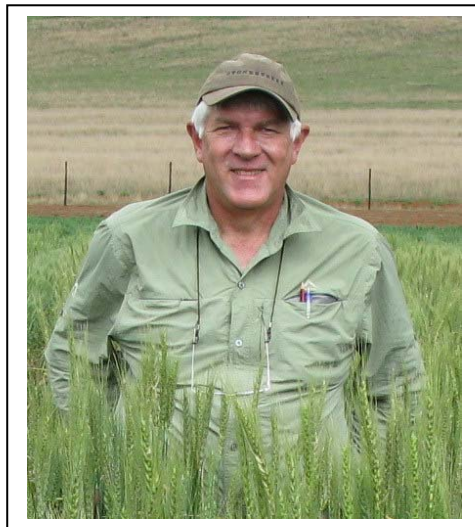


CURRICULUM VITAE

ZACHARIAS A. PRETORIUS



March 2010

PERSONAL

Surname : Pretorius
First names : Zacharias Andries
Birth date and place : 21 September 1954, Cape Town, South Africa
Home address : 38A Danie Pienaar Crescent
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 Telephone: +27-51-4367728 / 082 334 4733
Work address : Department of Plant Sciences
 University of the Free State
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 SOUTH AFRICA
 Telephone: +27-51-4012466
 Fax: +27-51-4445945
 E-mail: pretorza @ ufs.ac.za
Family : Married to Carien; two sons: JD (12 April 1985)
 and Dirk (28 June 1989).
Other interests : Cycling, golf and art

EDUCATIONAL QUALIFICATIONS

Secondary education : Jan van Riebeeck High School, Cape Town, S.A.
 (1968-1972)

University education :

University of Stellenbosch, Stellenbosch, S.A.

Degrees obtained:

- BSc. Agric (Plant Pathology and Entomology, 1977)
- Honours BSc. Agric (Plant Pathology, 1979);
- MSc. Agric (Plant Pathology, 1982); Thesis: Disease progress and yield response in spring wheat infected with *Puccinia graminis* f. sp. *tritici* (supervisor: Prof. P.S. Knox-Davies)

University of Minnesota, St. Paul, USA (non-degree programme: 1982/83)

Courses completed:

- Agronomy 5020, Plant Pathology 5005 and 5006, Statistics 5021

University of Natal, Pietermaritzburg, S.A.

Degree obtained:

- Ph.D. (Plant Pathology, 1987); Thesis: Studies on *Puccinia recondita* f. sp. *tritici* with special emphasis on adult plant resistance in wheat (promoters: Prof. F.H.J. Rijkenberg [U. Natal] and Prof. R.D. Wilcoxson [U. Minnesota]).

EMPLOYMENT HISTORY

Present position

- Professor
Department of Plant Sciences (Plant Pathology)
University of the Free State
Bloemfontein 9300
South Africa

Previous positions

- Chairperson (1 January 2002 - 31 December 2009).
Department of Plant Sciences
University of the Free State
Bloemfontein 9300
South Africa
- Head of Department (1 July 1995 - 31 December 2001);
- Professor: (1 January 1991 to 30 June 1995)
- Senior Lecturer (1 February 1989 to 31 December 1990)
Department of Plant Pathology
University of the Orange Free State
Bloemfontein 9300
South Africa
- Plant Pathologist (1 January 1978 to 31 January 1989).
Small Grain Centre
Department of Agriculture
Bethlehem 9700
South Africa

PROFESSIONAL EXPERIENCE

Research

Research field: Genetic resistance to rust diseases of field crops. Current projects involve the identification, genetic analysis and mapping of useful sources of rust resistance in wheat.

- **Achievements:**
 - First comprehensive and ongoing characterisation of pathogenic variation in the wheat leaf rust fungus in South Africa;
 - Identification of germplasm with effective genetic resistance (emphasis on field resistance) to local leaf and stem rust pathotypes and establishment of evaluation and selection protocols;
 - Development of adapted leaf rust resistant wheat lines for use in larger breeding programmes in South Africa (BC6 NILs [two recurrent parents] with *Lr21, 29, 32, 34, 35, 36, 37* and *41*;
 - Identification and description of first and devastating *Puccinia striiformis* pathotype introduced to South Africa in 1996;

- Genetic studies of stripe rust resistance in S.A. wheats, in particular germplasm development and mapping of genes;
 - Identification of adult-plant leaf rust resistance in wild relatives of wheat;
 - First worldwide confirmation of virulence to *Sr31* in *P. graminis* f. sp. *tritici* from Uganda and race Ug99 naming and characterisation in 1999; the occurrence of Ug99 and its variants has resulted in arguably the most extensive effort of awareness and pro-active research to alleviate the effects of stem rust on wheat production globally (see www.globalrust.org);
 - Initiated projects in pathogenicity determination of, respectively, *P. helianthi* on sunflower, *P. coronata* and *P. graminis* on oat, *P. hordei* on barley, and *P. sorghi* on maize (important type cultures are available for germplasm screening and genetic studies);
 - Co-author of risk assessment for Karnal bunt of wheat, an important new disease in South Africa;
 - First report of rust, a new and important soybean disease in South Africa, in 2001;
 - Co-responsible for development (production of antibodies) of a user friendly diagnostic test, with a USA partner, for soybean rust infection;
 - First description of *Sr31* virulence in South Africa in 2010;
 - Provided continuity in rust pathology of field crops in South Africa for many years.
 - Trained several senior pathologists/breeders at UFS.
- **Impact:** Based on this work, and those of colleagues and students, more directed selection or breeding for rust resistance in crops, in particular cereals, is now possible in South Africa. This has resulted from extensive characterisation of host-pathogen interactions in several pathosystems, elucidating which genes remain effective in the host plant and which genes for virulence occur in the pathogen. Since more emphasis on durability of resistance is needed, current research is aimed at tools to incorporate and confirm multiple genes for rust resistance in cultivars. Furthermore, cereal rust research in South Africa is acknowledged by peers internationally: requests from CIMMYT to confirm *Sr31* virulence, the University of Sydney to assist in NIL development, and from the Borlaug Global Rust Initiative, serving as examples.
 - **Financial support negotiated:**
 - UFS Research Fund (1989-1990; 1998-2010);
 - Wheat Board (1990-1997);
 - FRD/NRF (1991-2010);
 - Winter Cereals Research Trust (1999-2001, 2003-2010)
 - Oil Seeds Research Trust (1999-2001);
 - Agricultural Research Council (2000, 2002);
 - PANNAR Seed Company (2000-2001);

- Protein Research Foundation (2004-2006);
- BBSRC/DfID (UK) (co-applicant, 2008-2011).
- Cornell University (2008-2010)

Teaching

Under-graduate semester courses:

- LWL312 (Professional skills, co-responsible 2002)
- PBS148 (Crop Protection, responsible for one theme) (1998)
- PPG214/5/6 (Introductory Plant Pathology, responsible for one theme) (1996-2001)
- PPG304 (co-responsible for seminar, tutorial and practical classes, 1989-92)
- PPG314 (Principles of plant disease control, 2002 - present)
- PPG334 and PPG364 (Diseases of field and horticultural crops, respectively, 1989-94)
- PPG344 (Epidemiology and control of plant diseases, 1989-92)
- PPG364 (Diseases of field and horticultural crops, 1995-99)
- PPG426 (Control of plant diseases, 1993-2001)
- PPG434 (Ecology and epidemiology of plant diseases, co-responsible, 2003-2004)
- PPG454 (Epidemiology of plant diseases, 1993-2002)
- PPG472 and PPG482 (co-responsible for seminar and tutorial classes, 1993-2002)
- PPG451/461 (Literature review, 2010 -)

Post-graduate courses:

- PPG603/634 (Advanced epidemiology and disease control, 1993-99, 2005, 2007, 2008 2010)
- PPG604/692 and PPG691/693 (co-responsible for seminar course and research projects of Hons. students, 1993-99, 2008)
- PPG701 (Masters course, co-responsible 2000-2002)
- PPG702 (Masters course, 2000-2002)
- PPG703 (Masters seminar course, 2002)
- MVL714/762 (Convenor of IPM course, 2002 - present)

Post-graduate research supervision:

Masters completed:

- Barnard, J.E. MSc. Agric, with distinction, UFS, 1999 (supervisor)
- Barnard, R. (MSc, UFS, 2003 (supervisor)
- Bender, C.M. MSc., UFS, 1996 (supervisor)
- Boshoff, W.H.P. MSc. Agric, with distinction, UFS, 1997 (supervisor)
- Bower, J.M. MSc, UFS, 2002 (supervisor)
- Craven, M. MSc Agric, UFS, 2002 (supervisor)
- De Villiers, C. MSc. Agric, UFS, 2009 (co-supervisor)
- De Wet, L. MSc. Agric, UFS, 2001 (co-supervisor)
- Drijepont, S.C. MSc. Agric, U. Natal, 1990 (co-supervisor)

- Dunhin, B.J. MSc. Agric, UFS, 2001 (supervisor)
- Fato, P. MSc. Agric, UFS, 2000 (supervisor)
- Grobbelaar, B. MSc Agric, UFS, 1999 (co-supervisor)
- Jacobs, A.S. MSc. Agric, UFS, 1996 (supervisor)
- Kemp, G. MSc, with distinction, UFS, 1997 (co-supervisor)
- Komen, J. MSc. Agric, UFS, 2007 (supervisor)
- Kotze, P.M. MSc, UFS, 1999 (supervisor)
- Liebenberg, M.M. MSc. Agric, with distinction, UFS, 1996 (supervisor)
- Naidoo, A. MSc, Univ. KwaZulu-Natal, 2006 (co-supervisor)
- Pienaar, L. MSc. Agric, UFS, 2004 (supervisor)
- Sydenham, S. MSc. Agric, UFS, 2008 (co-supervisor)
- Van der Bank, J. MSc Agric, U.Stell., 1998 (co-supervisor)
- Van Jaarsveld, L. MSc. Agric, UFS, 2004 (co-supervisor)
- Van Niekerk, B.D. MSc Agric, with distinction, UFS, 1999 (supervisor)

Masters current:

- Senoko, K. (UFS, 2010-, co-supervisor)

PhD completed:

- Appelgryn, J. (Ph.D., UFS, 2007, co-promoter)
- Beshir, Tesfaye M. (Ph.D, UFS, 2003, promoter)
- Boshoff, W.H.P (Ph.D, UFS, 2001, promoter)
- Cilliers, A.J. (Ph.D, UFS, 2001, promoter)
- Kemp, G. (Ph.D, UFS, 2001, promoter)
- Kloppers, F.J. (Ph.D, UFS, 1994, promoter)
- Liebenberg, M.M. (Ph.D, UFS, 2003, promoter)
- Mohase, L. (Ph.D, UFS, 2003, co-promoter)
- Negussie, T. (Ph.D, UFS, 2004, promoter)
- Rossouw, J.D. (Ph.D., UFS, 2007, promoter)
- Shimelis, H. A. (Ph.D, UFS, 2003, co-promoter)

PhD current:

- Agenbag, G.M. (Ph.D., UFS, 2008-, co-promotor)

Post-doctoral supervision and visiting scientists hosted:

- Co-supervisor for Dr V. Anguelova (Bulgaria, post-doc 1997-1999)
- Dr Catherine Kuwite, visiting cereal pathologist from Tanzania (27 Feb. - 27 March 1999)
- Dr C.R. Wellings (Australia, wheat rust research, 2001)
- Dr A. Dreiseitl (Czech Republic, 2004; collection of barley mildew samples)
- Dr. R. Frederick and Dr M. Miles (USDA, 2004; soybean rust research)
- Dr. M. Bandla and Ms. J. Lawton (EnviroLogix, USA, 2005, soybean rust research)
- Dr R.F. Park (University of Sydney, wheat rusts, January 2007).

- Dr R.W. Ward (Cornell University, Durable Rust Resistance in Wheat project, June 2008).
- Prof. R.A. McIntosh (University of Sydney, Durable Rust Resistance in Wheat project, October 2008).

External examination:

- *Plant Pathology 210a,b* and *Plant Pathology 248* for University of Natal, Pietermaritzburg (1989-1994)
- *Plant Pathology 330* for University of Natal, Pietermaritzburg (2003)
- *Crop Protection, Plant Breeding and Agricultural Botany* courses for Botswana College of Agriculture, Gaborone (1995-1997)

Post-graduate thesis examination:

- MSc. (Agric) (1989, 1996, 1996, 1997) and Ph.D. (1991, 1994, 2003, 2005) (UFS)
- MSc. (Agric) (1990, 1995, 2003) and Ph.D. (1990) (U. Natal)
- MSc. (Agric) (1994, 1995, 1996, 1998) (U. Stellenbosch)
- MSc. (1995) (U. Stellenbosch)
- MSc. (1996) (UFS)
- MSc. (1999) (U. Pretoria)
- Ph.D (1998, 2000) (U. Sydney)
- Ph.D (2002) (U. Pretoria)

Community service

- Involved on a continual basis in diagnostic services, extension and expertise regarding identification, occurrence and control of plant diseases. Recent involvement in diseases of national importance includes wheat stripe rust, wheat karnal bunt, soybean rust, Fusarium head blight, sunflower rust and take-all of wheat.

University committees

- Chair, Parking Committee, UFS (1994-96)
- Chair, Social Club, FoA, UFS (1995)
- Chair, Research Committee, FNAS, UFS (2002-2004)
- Convenor, Bursary committee, FoA, UFS (1998)
- Council member, Lecturers' Society, UFS (1993-96)
- FoA representative: Timetable committee, UFS (1991-95)
- Member, Research Committee, FoA, UFS (1995-2000)
- HOD committee, FoA, UFS (1996-2000)
- Member of Board, Faculty of Agriculture, UFS (1989-2001)
- Member of Board, Faculty of Natural and Agricultural Sciences, UFS (2002-)
- Member of Senate, UFS (1991-)
- Member, Dean evaluation committee, FoA, UFS (1998)
- Member, Curriculum and Programme committee, FoA, UFS (1998-99)
- Member, Dean evaluation committee, FNAS, UFS (2001)
- Member, UFS Research Committee (2000-)

- Member, Management Committee, FNAS, UFS (2001-2009)
- Member, Executive Management Committee, FNAS (2004-2009)

Membership of professional societies

- **Southern African Society for Plant Pathology**
 - Council member (secretary) 1990 -1993
 - Representative on national IUMS committee 1994-1998
 - Member: Congress Organising Committees: Golden Gate (1986), Bloemfontein (2003)
 - Chair: Congress Organising Committee: Thaba Nchu (1995)
 - Session chair: 1991-2001, 2003, 2004, 2007, 2009
 - President of the Society (April 2003 – March 2006)
- **Southern African Plant Breeders' Association**
 - Session chair: 2000, 2002, 2004, 2010
- **American Phytopathological Society**
- **Australasian Plant Pathology Society**

Professional registration

- Registered as a professional agricultural scientist (Pr. Sci. Nat) with SACNASP.

Review boards / panels

- Evaluation of several research proposals submitted to Wheat Board, Oil Seeds Advisory Committee and Protein Research Foundation
- Evaluation of several THRIP, technikon, research and post-doc project proposals for FRD/NRF
- Evaluation of University Development Programme for FRD (1994 and 1995)
- External reviewer for appointment of adjunct-professor: The University of Sydney (2002)
- External reviewer for Senior Research Scientist position, NSW Agriculture, Australia (1998)
- External reviewer, Appointments and Promotions Committee, Faculty of Biological and Agricultural Sciences, University of Pretoria (1998, 1999, 2000, 2003)
- External reviewer, Plant Protection Project Evaluation meeting, Small Grain Institute, Bethlehem (1999)
- External reviewer, Professorial Promotions Committee, Technikon Free State (2001)
- External reviewer, Professorial Promotions Committee, Technikon Witwatersrand (2003)
- External reviewer, Promotions Committee, Faculty of Agriculture, University of Natal (1998)
- Member of FRD/NRF assessment committee for rating of candidates in Microbiology and Plant Pathology (1997-1998; convenor for 1999 cycle)
- Member, National Small Grain Cultivar Advisory Committee (1996-)

- Panel member of many appointment and promotion committees, UFS
- Panel member, external evaluation of Department of Plant Pathology, University of Stellenbosch (1999)
- Peer-reviewing of submissions in FRD/NRF rating system (1993-)
- Reviewer for abstracts submitted to International Cotton Conference (2002)
- Soybean Rust Task Team (2001-)
- Technical evaluator: Innovation Fund project (2004, 2006)
- Member, International Wheat Genetics Symposium Committee (2008)
- Member, ARC Grain and Industrial Crops Advisory Panel (2003-2005)
- Panel Member, SARCHI proposals, NRF (2007)

Workshops attended

- Session chair for sunflower diseases, ARC (1996)
- International Bean Rust Workshop, ARC (2002)
- Global Rust Initiative, FAO, Rome (2005) on invitation
- Global Rust Initiative, Alexandria, Egypt (2006) on invitation
- Stem rust surveillance, Shimla, India (2008) on invitation
- Stripe rust resistance, Yangling, China (2009) on invitation

Workshops presented

- Cereal Rust Pathology (2-day) (UFS, 2006)
- Wheat Rust Pathology (3-wks) for Kenyan and Ethiopian scientists (UFS, 2009)
- Wheat Rust Pathology (1-day) (UFS, 2009)

Editorial contributions

Referee for articles submitted to:

- Acta Academica (RSA)
- African Plant Protection (RSA)
- Agronomie (The Netherlands)
- Australasian Plant Pathology (Australia)
- Australian Journal of Agricultural Research (Australia)
- Bothalia (RSA)
- Canadian Journal of Botany (Canada)
- Canadian Journal of Plant Pathology (Canada)
- Crop Protection (USA)
- Crop Science (USA)
- Department of Agriculture Technical Communication (RSA)
- Euphytica (The Netherlands)
- European Journal of Plant Pathology (The Netherlands)
- Journal of Phytopathology
- Journal of Crop Breeding
- Mycological Research (UK)
- Phytopathology (USA)
- Phytophylactica (RSA)

- Plant Disease (USA)
- Plant Pathology (UK)
- South African Journal for Enology and Viticulture (RSA)
- South African Journal of Botany (RSA)
- South African Journal of Plant and Soil (RSA)
- South African Journal of Science (RSA)
- Theoretical and Applied Genetics

Member: Editorial Boards

- S.A. Journal of Plant and Soil (RSA) (2002-2006)
- Plant Disease (USA) (2004-2006)

International visits

- 1982: Twelve month study visit to University of Minnesota and Cereal Rust Laboratory, USDA-ARS, St. Paul, USA.
- 1986: Three week study visit to wheat research institutions in the USA and Canada.
- 1988: Attend 7th European Cereal Rusts Conference in Vienna, Austria.
- 1991: Attend APS meetings and visit Department of Plant Pathology, NDSU, Fargo.
- 1992: Attend 8th European Cereal Rusts Conference in Freising-Weißenstephan, Germany.
- 1993: Attend 8th International Wheat Genetics Symposium in Beijing, China.
- 1994: Attend APS meetings in Albuquerque, USA
- 1994: Visit International Maize and Wheat Improvement Center (CIMMYT) in Mexico regarding a cooperative wheat leaf rust research project.
- 1995: Attend 9th Regional Wheat Workshop in Addis Ababa, Ehtiopia.
- 1996: Attend 9th European Cereal Rusts Conference in Lunteren, The Netherlands.
- 1997: Six month sabbatical visit to The University of Sydney, Australia.
- 2000: Attend Southern African Plant Breeding Symposium, Harare, Zimbabwe.
- 2000: Attend 10th European Cereal Rusts Conference in Budapest, Hungary.
- 2001: Supervise field experiments of PhD students in Ethiopia.
- 2003: Attend 10 th International Wheat Genetics Symposium, Paestum, Italy.
- 2004: Attend Cereal Rusts and Powdery Mildew conference, Norwich, UK.
- 2005: Attend Global Landscapes in Cereal Rust Research, Sydney, Australia (on invitation).
- 2005: Attend UG99 workshop at FAO, Rome, Italy (on invitation).

- 2006: Visit Njoro Research Station, Kenya Agricultural Research Institute, for evaluation of SA wheat cultivars to stem rust race Ug99 (on invitation).
- 2006: Attend UG99 workshop, Alexandria, Egypt (9-13 October) (on invitation).
- 2006: Visit Cereal Disease Lab, ARS-USDA in St Paul Minnesota for rust evaluation of SA wheat cultivars (November/December).
- 2007: Visit Njoro Research Station, Kenya Agricultural Research Institute, for evaluation of SA wheat cultivars to stem rust race Ug99 (24-28 September).
- 2008: Visit agricultural research centres in Ethiopia as consultant for critical facility development.
- 2008: Attend stem rust survey workshop and Ug99 international conference in Shimla and New Delhi, India (November 2008) (on invitation).
- 2009: Attend Technical Workshop of the BGRI, Obregon, Mexico.
- 2009: Survey of wheat production areas in Zambia (August).
- 2009: Visit Njoro Research Station, Kenya Agricultural Research Institute, for evaluation of African wheat collection to stem rust race Ug99 (September).
- 2009: Visit NWA&F University in Yangling, China to present paper at international stripe rust meeting (on invitation).

Awards

- 1982: International Rotary Foundation Educational Award.
- 1991: President's Award: Foundation for Research Development.
- 1991-92: Stipend; Foundation for Research Development.
- 1994: C-rating, Foundation for Research Development.
- 1995: Sanachem Award for best paper in SA J. Plant and Soil (first author).
- 1995: SA Plant Breeders' Association Award for best presentation.
- 1995: Free State Agricultural Scientist of the year.
- 1996: Havenga Prize, *SA Akademie vir Wetenskap en Kuns*.
- 1997: BP Research Scholarship in Agriculture.
- 1998-08: Outstanding Professor Award, UFS.
- 1998: B1-rating, National Research Foundation.
- 1999: Fellow, Southern African Society for Plant Pathology.
- 2000: Roll of Honour, Southern African Plant Breeders' Association.
- 2000: SA Plant Breeders' Association Award for best presentation.
- 2001: Honorary award, Jan van Riebeeck High School, Cape Town.
- 2001: Research award, Faculty of Natural and Agricultural Sciences, UFS.
- 2002: Dow Agrosiences Award for best paper in SA J. Plant and Soil (co-author).
- 2003: B1-rating, National Research Foundation
- 2003: Certificate of recognition for editorial service to SA J. Plant and Soil.

- 2004: Centenary Medal, University of the Free State.
- 2005: Mentorship award, Faculty of Natural and Agricultural Sciences, UFS.
- 2008: B2-rating, National Research Foundation
- 2009: C.H. Persoon medal (gold), Southern African Society for Plant Pathology.

Professional development

- 1987: Introduction to management, short course, Institute for Training, S.A.
- 1988: Seminar in business meeting procedures, Institute for Training, S.A.
- 1989: Workshops in professional development, Buro for Academic Support, UFS
- 1995: Introductory Sesotho language course, UFS
- 1995: Media Skills Seminar, Dept. of Journalism, University of Stellenbosch

PUBLICATIONS

Refereed journal articles

1. Van der Mey, J.A.M., Howard, N.L., Kotzé, S.P.F., Le Roux, J. & Pretorius, Z.A. 1981. The reconstitution of stem rust resistance and protein characteristics in Elize spring wheat through a backcrossing programme. *Crop Production* 10: 31-33.
2. Pretorius, Z.A., 1983. Disease progress and yield response in spring wheat cultivars and lines infected with *Puccinia graminis* f.sp. *tritici*. *Phytophylactica* 15: 35-45.
3. Andres, M.W., Wilcoxson, R.D., Roelfs, A.P. & Pretorius, Z.A. 1983. Races of *Puccinia hordei* in the United States from 1979 through 1982. *Plant Disease* 67: 1336-1337.
4. Pretorius, Z.A., Wilcoxson, R.D., Long, D.L. & Schafer, J.F. 1984. Detecting wheat leaf rust resistance gene *Lr13* in seedlings. *Plant Disease* 68: 585-586.
5. Pretorius, Z.A. & Wilcoxson, R.D. 1986. Differential effect of races of *Puccinia hordei* on latent period, numbers of uredinia and slow rusting in barley. *Int. J. Tropical Plant Diseases* 4: 139-146.
6. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1987. Characterization of adult-plant resistance to leaf rust of wheat conferred by the gene *Lr22a*. *Plant Disease* 71: 542-545.
7. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1987. Occurrence and pathogenicity of *Puccinia recondita* f.sp. *tritici* on wheat in South Africa from 1983 through 1985. *Plant Disease* 71: 1133-1137.
8. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1987. Components of resistance in wheat infected with *Puccinia recondita* f.sp. *tritici*. *Phytophylactica* 19: 457-460.

9. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1988. Effects of growth stage, leaf position and temperature on adult-plant resistance of wheat infected by *Puccinia recondita* f.sp. *tritici*. *Plant Pathology* 37: 36-44.
10. Pretorius, Z.A. & Kemp, G.H.J. 1988. Effect of adult-plant resistance on leaf rust development and grain yield in wheat. *Phytophylactica* 20: 341-343.
11. Pretorius, Z.A. & Le Roux, J. 1988. Occurrence and pathogenicity of *Puccinia recondita* f.sp. *tritici* in South Africa during 1986 and 1987. *Phytophylactica* 20: 349-352.
12. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1988. Temperature-specific seedling resistance and adult-plant resistance to *Puccinia recondita* f.sp. *tritici* in the wheat cultivar Glenlea. *Plant Disease* 72: 439-442.
13. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1988. Recessive inheritance of wheat gene *Lr22a* for adult-plant resistance to leaf rust of wheat. *Cereal Research Communications* 16: 11-17.
14. Pretorius, Z.A. 1988. First report of virulence to wheat leaf rust resistance gene *Lr26* in South Africa. *Plant Disease* 72: 175.
15. Drijepondt, S.C. & Pretorius, Z.A. 1989. Greenhouse evaluation of adult-plant resistance conferred by the gene *Lr34* to leaf rust of wheat. *Plant Disease* 73: 669-671.
16. Kemp, G.H.J., Pretorius, Z.A. & Le Roux, J. 1989. First report of the perfect state of *Leptosphaeria nodorum* on wheat in South Africa. *Mycological Research* 93: 114-115.
17. Pretorius, Z.A. 1989. The reaction of gene *Lr32* to South African pathotypes of *Puccinia recondita* f.sp. *tritici*. *Phytophylactica* 21: 195-196.
18. Pretorius, Z.A. & Purchase, J.L. 1990. Virulence characteristics of wheat leaf rust in Zimbabwe, Zambia and Malawi. *Phytophylactica* 22: 141-142.
19. Pretorius, Z.A., Le Roux, J. & Drijepondt, S.C. 1990. Occurrence and pathogenicity of *Puccinia recondita* f.sp. *tritici* on wheat in South Africa during 1988. *Phytophylactica* 22: 225-228.
20. Pretorius, Z.A., Rijkenberg, F.H.J. & Wilcoxson, R.D. 1990. Influence of genetic background on the expression of wheat leaf rust resistance gene *Lr22a*. *Phytopathology* 80: 579-584.
21. Pretorius, Z.A. 1990. An assessment of leaf rust resistance conferred by two *Lr* genes associated with increased seed protein in wheat. *Phytophylactica* 22: 121-123.
22. Pretorius, Z.A. & Kemp, G.H.J. 1990. Effects of temperature and growth stage on components of resistance in wheat genotypes with *Lr26*. *Plant Disease* 74: 631-635.
23. Drijepondt, S.C., Pretorius, Z.A. & Van Lill, D. & Rijkenberg, F.H.J. 1990. Effect of *Lr34* resistance on leaf rust development, grain yield and quality in wheat. *Plant Breeding* 105: 62-68.
24. Kemp, G.H.J., Pretorius, Z.A. & Van Jaarsveldt, M. 1990. The occurrence of *Pyrenophora tritici-repentis* on winter wheat debris in the Eastern Orange Free State. *Phytophylactica* 22: 363-364.
25. Drijepondt, S.C. & Pretorius, Z.A. 1991. Expression of two wheat leaf rust resistance gene combinations involving *Lr34*. *Plant Disease* 75: 526-528.
26. Kemp, G.H.J., Pretorius, Z.A. & Smith, J. 1991. Wheat anthracnose in South Africa. *Phytophylactica* 23:177-179.

27. Drijepondt, S.C., Pretorius, Z.A. & Rijkenberg, F.H.J. 1991. Effects of growth stage, leaf position and races of *Puccinia recondita* f.sp. *tritici* on *Lr34* resistance in wheat. *Phytophylactica* 23:53-58.
28. Kloppers, F.J. & Pretorius, Z.A. 1993. *Bromus catharticus*: A new host record for wheat stem rust in South Africa. *Plant Disease* 77:1063.
29. Kloppers, F.J. & Pretorius, Z.A. 1994. Expression and inheritance of resistance conferred by *Lr37* in wheat seedlings. *Cereal Research Communications* 22:91-97.
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30. Cilliers, A.J. & Pretorius, Z.A. 2000. Relative pathogenicity of mycelial compatibility groups of *Sclerotium rolfsii* to groundnut in South Africa. 12 th Biennial Congress of the Australasian Plant Pathology Society. Canberra, Australia.
31. Pretorius, Z.A., Bower, J.M., Bender, C.M., Spies, J.J. & Viljoen, C.D. 2000. Adult-plant resistance to wheat leaf rust in *Triticum turgidum* spp. *dicoccum*. Southern African Plant Breeding Symposium, Harare, Zimbabwe.
32. Pretorius, Z.A. & Kloppers, F.J. 2000. Stripe rust reaction of wheat lines developed for resistance to *Puccinia recondita* f. sp. *tritici*. Southern African Plant Breeding Symposium, Harare, Zimbabwe.
33. Grobbelaar, B., Labuschagne, M.T. & Pretorius, Z.A. 2000. Breadmaking quality of wheat lines with leaf rust resistance genes *Lr29*, *Lr34*, *Lr35* and *Lr37*. Southern African Plant Breeding Symposium, Harare, Zimbabwe.
34. Van Niekerk, B.D., Pretorius, Z.A. & Boshoff, W.H.P. 2000. Occurrence and pathogenicity of *Puccinia hordei* on barley in South Africa. Southern African Plant Breeding Symposium, Harare, Zimbabwe.
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36. Van der Westhuizen, A.J., Swart, E., Mohase, L. & Pretorius, Z.A. 2000. Lipoxygenase activity in plant resistance to aphids and pathogens.

- International Symposium on Non-mammalian Eicosanoids and Bioactive Lipids, 29-31 May, Berlin, Germany.
37. Pretorius, Z.A., Park, R.F. & Wellings, C.R. 2000. An accelerated method for evaluating adult-plant resistance to leaf and stripe rust in spring wheat. 10 th Cereal Rusts and Powdery Mildews Conference, Budapest, Hungary, Acta Phyto. Entomol. Hungarica 35: 359-364.
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 39. Liebenberg, M.M., Liebenberg, A.J. & Pretorius, Z.A. 2000. Improving rust resistance in dry bean in South Africa. Durable Resistance Symposium, Wageningen, The Netherlands.
 40. Cilliers, A.J., Herselman, L. & Pretorius, Z.A. 2000. Mycelial compatibility groups of *Sclerotium rolfsii* in South Africa. Durable Resistance Symposium, Wageningen, The Netherlands.
 41. Liebenberg, M.M., Mienie, C.M.S., Viljoen, C.D. & Pretorius, Z.A. 2002. The use of existing molecular markers for rust resistance genes in South African common bean breeding lines. 3rd International Bean Rust Workshop, Game Valley Lodge, South Africa.
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 43. Craven, M., Prins, R. & Pretorius, Z.A. 2003. Development of AFLP markers for a wheat leaf rust resistance gene transferred from *Triticum monococcum*. Pages 1124-1126 in: Proceedings of the 10 th International Wheat Genetics Symposium, Paestum, Italy.
 44. Pretorius, Z.A. 2004. The impact of wheat stripe rust in South Africa. 11th International Cereal Rusts and Powdery Mildews Conference, John Innes Centre, Norwich, U.K. (on invitation).
 45. Pretorius, Z.A. 2004. Wheat stripe rust in South Africa: 8 years on. 11th International Cereal Rusts and Powdery Mildews Conference, John Innes Centre, Norwich, U.K. (on invitation).
 46. Wellings, C.R., Singh, R.P., McIntosh, R.A. & Pretorius, Z.A. 2004. The development and application of near isogenic lines for the wheat stripe (yellow) rust pathosystem. 11th International Cereal Rusts and Powdery Mildews Conference, John Innes Centre, Norwich, U.K.
 47. Liebenberg, M.M. & Pretorius, Z.A. 2005. New perspectives on rust differential cultivars of *Phaseolus vulgaris*. International Edible Legume Conference, Durban, South Africa.
 48. Nunkumar, A., Caldwell, P.M., Pretorius, Z.A. and Fernandes, J.M.C. 2005. Development of *Phakopsora pachyrhizi* at different temperatures, relative humidities and leaf wetness durations. 9th International Workshop on Plant Disease Epidemiology, Landernau, France; April 11-15th, 2005.
 49. Pretorius, Z., Visser, B., Larkin, K., Goddard, T., Ferguson, B. & Bandla, M. 2005. Development of an enzyme-linked immunosorbent assay (ELISA) for soybean rust caused by *Phakopsora pachyrhizi*. Annual meeting of the

- American Phytopathological Society, Austin, TX. *Phytopathology* 95 (supplement) S85 (abstract).
50. Pretorius, Z.A., Pakendorf, K.W., Marais, G.F., Prins, R. & Komen, J.S. 2005. Challenges for sustainable control of cereal rust diseases in South Africa. *Global Landscapes in Cereal Rust Control*, University of Sydney, Katoomba, Australia (invited lecture).
 51. Liebenberg, M.M., Liebenberg, A.J. & Pretorius, Z.A. 2005. The occurrence of Asian soybean rust (caused by *Phakopsora pachyrhizi*) on common bean in South Africa. Biennial Meeting of the Bean Improvement Cooperative, Newark, Delaware.
 52. Kriel, W. & Pretorius, Z.A. 2005. Fusarium head blight of wheat: The South African situation. U.S. National Wheat Head Blight Forum, Milwaukee, USA (11-13 December 2005).
 53. Pretorius, Z.A. 2005. Experiences in rust resistance breeding in South Africa. Expert Workshop on Wheat Stem Rust, FAO, Rome, Italy, 15-16 December, 2005; on invitation).
 54. Nunkumar, A., Caldwell, P.M., Pretorius, Z.A. 2006. Studies on *Phakopsora pachyrhizi*, the cause of Asian soybean rust. APS Annual Conference, Quebec.
 55. Yahyaoui, A., Jin, Y., Park, P., Pretorius, Z.A. & Fetch, T. 2006. Pathogen surveillance, monitoring and early warning. First Global Rust Initiative Workshop, 9-11 October, Alexandria, Egypt.
 56. Herselman, L., Phillipou, O.A., Pretorius, Z.A. & Prins, R. 2007. The effectiveness of targeted bulk segregant analysis to identify AFLP markers closely linked to QTL for adult plant stripe rust resistance in wheat. 2nd International Conference on Plant Molecular Breeding, 23-27 March, Sanya, Hainan, China.
 57. Yahyaoui, A., Singh, R.P., Pretorius, Z.A., Hovmoller, M., Fetch, T., Wellings, C.R., Houry, W. & Rajaram, S. 2007. Implication of climate change on trans-boundary rust diseases. 16th IPPC, Glasgow, October 2007.
 58. Negussie, T. & Pretorius, Z.A. 2007. Recent progress in epidemiological studies of lentil rust in Ethiopia. ICARDA, Aleppo, Syria.
 59. Jin, Y., Pretorius, Z. A., and Singh, R. P. 2007. New virulence within race TTKS (Ug99) of the stem rust pathogen and effective resistance genes. APS, *Phytopathology* 97, S137(Abstract).
 60. Kriel, W.M. & Pretorius, Z.A. 2008. The FHB challenge to irrigation wheat production in South Africa. 3rd International Fusarium Head Blight Symposium, Szeged, Hungary. *Cereal Research Communication* 36, Suppl. B: 569-571.
 61. Jin, Y., Szabo, L. & Pretorius, Z.A. 2008. Virulence variation within the Ug99 lineage. Proceedings of the 11th International Wheat Genetics Symposium, Brisbane, Australia. Ed. R. Appels, R. Eastwood, E. Lagudah, P. Langridge & M.M. Lynne. Sydney University Press, <http://ses.library.usyd.edu.au/handle/2123/3168> (invited talk).
 62. Pretorius, Z.A. Jin, Y., Prins, R., Bender, C.M. & Herselman, L. 2008. Stem rust resistance in South African wheat cultivars. Proceedings of the 11th International Wheat Genetics Symposium, Brisbane, Australia. Ed. R. Appels, R. Eastwood, E. Lagudah, P. Langridge & M.M. Lynne. Sydney

- University Press, <http://ses.library.usyd.edu.au/handle/2123/3168>.
63. Prins, R., Pretorius, Z.A., Lehmensiek, A. & Bender, C.M. 2008. Genetic analysis of wheat rust resistance genes segregating in a Kariega x Avocet S population. Proceedings of the 11th International Wheat Genetics Symposium, Brisbane, Australia. Ed. R. Appels, R. Eastwood, E. Lagudah, P. Langridge & M.M. Lynne. Sydney University Press, <http://ses.library.usyd.edu.au>.
 64. Pretorius, Z.A. 2008. Surveillance and Sample Analyses. Stem Rust Baseline Survey Workshop, Shimla, India.
 65. Pretorius, Z.A. & Park, R.F. 2008. Origin, Evolution, Distribution and Virulence of Ug99 and the Global Stem Rust Monitoring System. Pages 82-85 in: Proceedings of the International Conference on Wheat Stem Rust Race Ug99 – A Threat to Global Food Security, New Delhi, India (invited talk).
 66. Pretorius, Z.A. & Nazari, K. 2009. Global stem rust surveillance in practice. BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (invited talk).
 67. Fetch, T., Jin, Y., Park, R.F. & Pretorius, Z.A. 2009. Race nomenclature systems: can we all speak the same language? BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (invited talk).
 68. Park, R.F., Fetch, T., Jin, Y., Prashar, M. & Pretorius, Z.A. 2009. Using race survey outputs to protect wheat from rust. BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (invited talk).
 69. Marais, G.F., Marais, A., Eksteen, A. & Pretorius, Z.A. 2009. Shortening the *Lr62/Yr42* translocation in common wheat. BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (poster).
 70. Pretorius, Z.A. 2009. Stripe rust resistance breeding and research in South Africa. International stripe rust workshop, Yangling, China (24-27 November) (invited talk).
 71. Bender, C.M. & Pretorius, Z.A. 2009. Development of a greenhouse screening method for adult plant response in wheat to stem rust. 12th International Cereal Rusts and Powdery Mildews Conference, Antalya, Turkey (13-16 October).
 72. Agenbag, G.M., Boyd, L.A., Pretorius, Z.A. & Prins, R. 2010. Fine mapping of durable resistance to stripe rust in the South African wheat cultivar, Kariega, using an expressed sequence tag (EST) marker strategy. Plant and Animal Genome Conference XVIII, San Diego, USA (9-13 January) (poster).
 73. Herselman, L., Sydenham, S.L., Senoko, K.J., Prins, R. & Pretorius, Z.A. 2010. Combining wheat rust and Fusarium head blight resistance genes and QTL using marker-assisted selection. International Wheat Conference, St. Petersburg (abstract submitted).

MISCELLANEOUS LECTURES AT OTHER PROFESSIONAL MEETINGS

1. "Approaches to stem rust resistance breeding" - Small Grain Centre Seminar, Bethlehem, S.A. (1978).
2. "Report on a study visit to the Cereal Rust Laboratory and University of Minnesota" - Small Grain Center Seminar, Bethlehem, S.A. (1983).

3. "Progress with wheat leaf rust research" - Presentation at biennial course for agricultural consultants, Small Grain Center, Bethlehem (1984).
4. "Identification and importance of diseases of small grain crops in South Africa" - Field day, Riversdal, S.A. (1985).
5. "Studies on *Puccinia recondita* f. sp. *tritici* : PhD Thesis proposal" - Graduate student seminar, University of Natal, Pietermaritzburg, S.A. (1985).
6. "Factors influencing the efficacy of chemical control of small grain diseases" - Plant protection course for extension officers, Elsenburg, S.A. (1986).
7. "Epidemiology and importance of wheat leaf rust in South Africa" Presentation at biennial course for agricultural consultants, Small Grain Center, Bethlehem, S.A. (1986).
8. "Small grain research in South Africa" - Invited seminar, Agriculture Canada/University of Manitoba, Winnipeg, Canada (1986).
9. "Recommendations for chemical control of small grain diseases" - Wheat diseases field day, Swellendam, S.A. (1987).
10. "Report on study visit to USA and Canada with special reference to wheat leaf rust research" - Small Grain Center Seminar, Bethlehem, S.A. (1987).
11. "Breeding for resistance to rust diseases" - Field day, Small Grain Center field day, Bethlehem, S.A. (1987).
12. "Experimental design and data analyses" - Seminar for technical staff in agricultural chemical industry, Small Grain Center, Bethlehem, S.A. (1988).
13. "Breeding strategies for developing rust resistant wheat cultivars" - Faculty of Agriculture, UFS, Bloemfontein, S.A. (1989).
14. "Genetic resistance to the rusts of wheat: In pursuit of durability" - Professorial inaugural address, UFS, Bloemfontein, S.A. (1992).
15. "New developments in wheat genetics and breeding for leaf rust resistance" - Invited lecture, Small Grain Center, Bethlehem, S.A. (1993).
16. "Wheat health: Challenges and control strategies"- Field day, Pannar Research Station, Bainsvlei, S.A. (1994).
17. "Wheat rust research in perspective" - Invited lecture, S.A. Association of Botanists, UFS, Bloemfontein, S.A. (1995).
18. "Advances in stripe rust research" - Presentation at meeting of Wheat Stripe Rust Task Group, Stellenbosch (1996).
19. "Leaf and stem rust reactions of South African wheat cultivars" - Presentation at annual meeting of National Committee for Small Grain Cultivar Recommendation, Bethlehem (1997).
20. "Stripe rust of small grains" - Presentation on invitation to Cape Small Grains Development Association, Stilbaai (1997).
21. "Cereal rust research at the UFS, South Africa". Seminar presented at PBIC, The University of Sydney, Australia (1997).
22. "Genetic resistance to stripe rust of wheat". Lecture on invitation to agricultural chemical industry, Bothaville (1998).
23. "Australian experiences". Lecture to Faculty of Agriculture, UFS (1998).
24. "Agricultural Science: Expectations, Challenges and Limitations". Lecture on invitation at UFS Science Workshop (1998).
25. "Biology and control of wheat stripe rust". Presentation on invitation at SENSAGO field day, Bethlehem (1998).

26. "Biology and control of Fusarium head blight of wheat". Presentation on invitation VKB irrigation farmers, Frankfort (2001).
27. "Karnal bunt of wheat". Presentation to farmers' study group, Bloemfontein (2001).
28. "Post-graduate research supervision", presentation to Centre for Higher Education, UFS, Bloemfontein (2001).
29. "The occurrence and control of wheat diseases in the eastern Free State", presentation at VKB information day, Reitz (2002).
30. "The biology and control of Fusarium head blight on wheat", two presentations at GWK information days: Prieska and Douglas (2002).
31. "Fusarium head blight of wheat", presentation to All Grow Seed Company, Magaliespark (2003).
32. "Koringsiektes van die Noord-Kaap besproeiingsarea". Vaallus Boerevereniging, 10 September 2003 (Kriel, W. & Pretorius, Z.A.).
33. "Kleingraansiektes onder besproeiing - Identifisering en oplossings". GWK-boeredag, Rietrivier, 30 April 2003 (Kriel, W. & Pretorius, Z.A.).
34. "Studies on pathogenic variability in *Phakopsora pachyrhizi* in South Africa". Soybean Rust Task Team, Grain SA, Bothaville, 24 July 2003.
35. "The anatomy of a thesis". Scientific writing and publication skills Workshop, Department of Plant Sciences, UFS, 29 September 2003 and 18 March 2005.
36. "What supervisors, examiners and editors expect". Scientific writing and publication skills workshop, Department of Plant Sciences, UFS, 29 September 2003 and 18 March 2005.
37. "Reaction of soybean cultivars to rust". Soybean Rust Taskteam meeting, Greytown, 21 July 2004.
38. "Eight years of wheat stripe rust research in South Africa". Invited lecture to Monsanto maize and wheat breeders, Johannesburg, 4 October 2004.
39. "Detection of soybean rust caused by *Phakopsora pachyrhizi*". Workshop of Soybean Rust Taskteam, Potchestroom, 26 July 2005.
40. "Perspectives on plant disease management". CePHMa Launch, UFS, 21 October 2005.
41. "Small Grain Pathology Programme". CePHMa Launch, UFS, 21 October 2005.
42. "Roessiektes van koring". All Grow Seed Symposium (compiled by ZAP, presented by W. Kriel), Buffelspoort, 12 April 2007.
43. "Breeding for durable resistance to plant diseases". Pannar Research Symposium, Estcourt, 19 September 2007).
44. 'Stem rust race analysis'. CIMMYT training workshop, Njoro, Kenya (28 September 2009).

PHOTOGRAPHIC IMAGES

- Sr31 virulence (CDL website www.crl.umn.edu/ (1999)
- Telia of *Puccinia xanthii* on sunflower (cover of Plant Disease, August 2000).
- Symptoms of Karnal bunt in wheat seed (Volksblad, December 2000).
- Spores of *Phakopsora pachyrhizi* (www.saspp.co.za, March 2001)
- Bean rust and common blight (www.saspp.co.za, March 2002)

ENTREPRENEURIAL PROJECTS

- Co-worker in development of flow strip diagnostic test for soybean rust in collaboration with USA company. Product launched September 2006.
