

*CURRICULUM VITAE*

ZACHARIAS A. PRETORIUS

October 2016

**PERSONAL**

**Surname** : Pretorius  
**First names** : Zacharias Andries  
**Work address** : Department of Plant Sciences  
 University of the Free State  
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 BLOEMFONTEIN 9300  
 SOUTH AFRICA

**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

## 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 and competencies:**
  - 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 and stem rust resistance in S.A. wheats, in particular germplasm development, phenotyping (field and greenhouse) and mapping of genes;
  - Identification of adult-plant leaf rust resistance in wild relatives of wheat;
  - First worldwide confirmation of virulence for *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 proactive research to alleviate the effects of stem rust on wheat production globally (see [www.globalrust.org](http://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 Asian 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 (ELISA), with a USA partner, for soybean rust infection;
  - First description of *Sr31* virulence in South Africa in 2010. The recent detection of Ug99 in South Africa has created considerable international attention with many media interviews and reports in 2010 (e.g. Nature News, The Economist, Business Day, Science & Vie etc.);
  - Provided continuity in rust pathology of field crops in South Africa for many years;
  - Trained several senior South African 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 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 several projects of the Borlaug Global Rust Initiative, serving as examples. Collaboration on cereal rusts include scientists in the USA, Canada, UK, Israel, Nepal, Bangladesh, China, Australia and Sweden.
- **Financial support negotiated:**
  - UFS Research Fund (1989-1990; 1998-2016);
  - Wheat Board (1990-1997);

- FRD/NRF (1991-2016);
- Winter Cereals Research Trust (1999-2001, 2003-2016)
- Oil Seeds Research Trust (1999-2001);
- Agricultural Research Council (2000, 2002);
- PANNAR Seed Company (2000-2001);
- Protein Research Foundation (2004-2006);
- BBSRC/DfID (UK) (2008-2012; 2012-2016).
- Cornell University (2008-2015)

## 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 - 2011)
- PPG324 / PPLG3724 (Plant health management, 2011-)
- 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/PPLG4806 (Literature review, 2010 - 2016)

### Post-graduate courses:

- PPG603/634 (Advanced epidemiology and disease control, 1993-99, 2005, 2007, 2008, 2010, 2012, 2014)
- PPG604/692 and PPG691/693 (co-responsible for seminar course and research projects of Hons. students, 1993-99, 2008, 2014)
- PPG701 (Masters course, co-responsible 2000-2002)
- PPG702 (Masters course, 2000-2002)
- PPG703 (Masters seminar course, 2002)
- MVL714/762 (Convenor of IPM course, 2002 - 2012)

### 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)
- Castelyn, H. UFS, 2013 (co-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)
- Drijepondt, 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)
- Senoko, K. (UFS, 2010-2014, co-supervisor)
- Selinga, T. (UFS, 2013-2015, co-supervisor)
- Mafa, M. (UFS, 2013-2015, co-supervisor)

**Masters current:**

- Dithebe, K. (UFS, 2014-, co-supervisor)
- Maree, G. (UFS, 2015-, supervisor)

**PhD completed:**

- Agenbag, G.M. (Ph.D., UFS, 2012, co-promoter)
- 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:**

- Castelyn, H. UFS, 2013 (promoter)
- Bender, C.M. UFS, 2013 (promoter)
- Van Schalkwyk, H. UFS 2013 (co-promoter)
- Soko, T. UFS, 2014 (promoter)

**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; Nov 2014).
- 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 and October 2012).
- Dr B.J. Steffenson (University of Minnesota, cereal rusts, March 2010)
- Dr Negussie Tadesse (DZARC, Ethiopia, post-doctoral fellow, July 2010 – May 2012)

**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, 2012, 2015) (UFS)
- MSc. (Agric) (1990, 1995, 2003 and Ph.D. (1990) (U. Natal)
- MSc. (Agric) (1994, 1995, 1996, 1998) (U. Stellenbosch)
- MSc. (1995, 2012) (U. Stellenbosch)
- MSc. (1996) (UFS)
- MSc. (1999) (U. Pretoria)
- Ph.D (1998, 2000) (U. Sydney)
- Ph.D (2002, 2012) (U. Pretoria)

**Community service**

- Involved on a continual basis in diagnostic services, extension and expertise regarding identification, occurrence and control of plant diseases. Involvement in diseases of national importance includes wheat stem rust and 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 (2000-2009)
- 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, 2013
  - President of the Society (April 2003 – March 2006)
- **Southern African Plant Breeders' Association**
  - Session chair: 2000, 2002, 2004, 2010, 2012
- **American Phytopathological Society**
- **ASSAF** (2011-)
- **Suid-Afrikaanse Akademie vir Wetenskap en Kuns** (2014-)

**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)
- External reviewer, Promotions Committee, University of Stellenbosch (2010)
- External reviewer, Promotions Committee, University of Minnesota (2010)
- External reviewer, McKnight Fellowship, University of Minnesota (2011)
- Panel member, NRF rating committee for Microbiology and Plant Pathology (2011 - 2014)
- External reviewer, Siehl Prize Nominations by Cornell University (2012, 2013)
- External reviewer, Professorial appointment, Kansas State University (2012)
- External reviewer for Canadian funding body (2013)
- Selection panel, BGRI oral presentations, Mexico (2014, 2015)
- Convenor, poster judging committee, BGRI, Mexico and Sydney (2014, 2015)
- Convenor, NRF rating committee for Basic and Applied Microbiology (2015)
- External reviewer, Professorial appointment, University of Minnesota (2016)

#### **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 and 2010)
- Wheat rust race analysis (2-wks, Nepal and Bangladesh, 2011)
- Wheat rust pathology (3- wks, Nepal, 2013)
- Wheat rust pathology (2 –wks, Nepal, 2015)
- Field research in plant pathology, SASPP (1-day, 2013)

**Editorial contributions****Referee for articles submitted to:**

- Acta Academica
- African Plant Protection
- Agronomie
- Australasian Plant Pathology
- Australian Journal of Agricultural Research
- Bothalia
- Canadian Journal of Botany
- Canadian Journal of Plant Pathology
- Crop Protection
- Crop Science
- Department of Agriculture Technical Communication
- Euphytica
- European Journal of Plant Pathology
- Journal of Phytopathology
- Journal of Crop Breeding
- Journal of Plant Registrations
- Mycological Research
- Phytopathology
- Phytophylactica
- Plant Disease
- Plant Pathology
- South African Journal for Enology and Viticulture
- South African Journal of Botany
- South African Journal of Plant and Soil
- South African Journal of Science
- Theoretical and Applied Genetics

**Member: Editorial Boards**

- S.A. Journal of Plant and Soil (RSA) (2002-2006; 2011-2013)
- Plant Disease (USA) (2004-2006)
- Co-editor for BGRI 2010 Proceedings
- Guest editor for a special Euphytica issue (2011)

**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-Weihenstephan, 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 Insitute, 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 Insitute, 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 Insitute, 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).
- 2010: Attend 2<sup>nd</sup> Technical Workshop of BGRI and 8<sup>th</sup> International Wheat Conference in St Petersburg, Russia.
- 2011: Nepal and Bangladesh for wheat rust surveillance training (Feb/March 2011) (on invitation)
- 2011: Attend 3<sup>rd</sup> Technical Workshop of BGRI, St. Paul, MN, USA
- 2012: Attend 4<sup>th</sup> Technical Workshop of BGRI, Beijing, China
- 2013: India and Nepal for co-presentation of wheat rust training workshop (Feb/March 2013) (on invitation)
- 2013: Attend 5<sup>th</sup> Technical Workshop of BGRI, New Delhi, India
- 2014: Attend 6<sup>th</sup> Technical Workshop of BGRI, Cd. Obregon, Mexico
- 2014: Attend 2<sup>nd</sup> International Wheat Stripe Rust Symposium, Izmir, Turkey.
- 2014: Attend 2<sup>nd</sup> Ug99 Wheat Workshop for South America, Porto Alegre, Brazil (on invitation).
- 2015: Nepal for co-presentation of wheat rust training workshop (March 2015) (on invitation)
- 2015: Attend European and Mediterranean Cereal Rust Conference, Helsingor, Denmark.
- 2015: Attend 7<sup>th</sup> Technical Workshop of BGRI, Sydney, Australia.

## 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.
- 1998-14: 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.
- 2014: B1-rating, National Research Foundation.

### 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.
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35. Viljoen, C.D., Vos, M., Kotze, P.M., Pretorius, Z.A. & Labuschagne, M.T. 2000. The development and use of genetic markers for rust resistance in wheat breeding programmes. Southern African Plant Breeding Symposium, Harare, Zimbabwe.
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.
38. Bender, C.M. & Pretorius, Z.A. 2000. Expression of *Lr34* resistance to wheat leaf rust in apical and basal flag leaf segments. 10 th Cereal Rusts and Powdery Mildews Conference, Budapest, Hungary. Acta Phyto. Entomol. Hungarica 35: 95-101.
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. 3<sup>rd</sup> International Bean Rust Workshop, Game Valley Lodge, South Africa.
42. Prins, R., Boshoff, W.H.P., Boyd, L., Ramburan, V. & Pretorius, Z.A. 2003. Studies on wheat stripe rust resistance conferred by *Yr16*. Pages 1224-1226 in: Proceedings of the 10 th International Wheat Genetics Symposium, Paestum, Italy.
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. 11<sup>th</sup> 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. 11<sup>th</sup> 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. 11<sup>th</sup> 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. 2<sup>nd</sup> 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., Khoury, W. & Rajaram, S. 2007. Implication of climate change on trans-boundary rust diseases. 16<sup>th</sup> 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).
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61. Jin, Y., Szabo, L. & Pretorius, Z.A. 2008. Virulence variation within the Ug99 lineage. Proceedings of the 11<sup>th</sup> International Wheat Genetics Symposium, Brisbane, Australia. Appels R, Eastwood R, Lagudah E, Langridge P, Mackay M, McIntyre L, Sharp P (eds). Sydney University Press eScholarship Repository <http://hdl.handle.net/2123/3435> (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 11<sup>th</sup> International Wheat Genetics Symposium, Brisbane, Australia. Appels R, Eastwood R, Lagudah E, Langridge P, Mackay M, McIntyre L, Sharp P (eds). Sydney University Press eScholarship Repository <http://hdl.handle.net/2123/3384>.
63. Prins, R., Pretorius, Z.A., Lehmsiek, A. & Bender, C.M. 2008. Genetic analysis of wheat rust resistance genes segregating in a Karioga x Avocet S population. Proceedings of the 11<sup>th</sup> International Wheat Genetics Symposium, Brisbane, Australia. Appels R, Eastwood R, Lagudah E, Langridge P, Mackay M, McIntyre L, Sharp P (eds). Sydney University Press eScholarship Repository <http://hdl.handle.net/2123/3219>
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. Pages 55-59 in: Proceedings BGRI Technical Workshop, Ciudad Obregon, Mexico, R. McIntosh (ed) (17-20 March) (invited talk). ISBN: 978-0-615-37399-7.
67. Fetch, T., Jin, Y., Park, R.F. & Pretorius, Z.A. 2009. Race nomenclature systems: can we all speak the same language? Pages 61-64 in: Proceedings BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (invited talk). ISBN: 978-0-615-37399-7.
68. Park, R.F., Fetch, T., Jin, Y., Prashar, M. & Pretorius, Z.A. 2009. Using race survey outputs to protect wheat from rust. Pages 25-32 in: Proceedings BGRI Technical Workshop, Ciudad Obregon, Mexico (17-20 March) (invited talk). ISBN: 978-0-615-37399-7.
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. 12<sup>th</sup> 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, Karioga, 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. 8<sup>th</sup> International Wheat Conference, St. Petersburg, Russia (1-4 June) (poster).
74. Olivera, P.D., Pretorius, Z.A. & Jin, Y. 2010. Resistance to race TTKSK of *P. graminis* f. sp. *tritici* in Triticale (X Triticosecale). BGRI Technical Workshop, St. Petersburg, Russia (30-31 May) (poster).



75. Rouse, M.N., Steffenson, B.J., Pretorius, Z.A., Carson, M. & Jin, Y. 2010. Races of *Puccinia graminis* f. sp. *tritici* identified from the 2009 Njoro stem rust nursery. BGRI Technical Workshop, St. Petersburg, Russia (30-31 May) (poster).
76. Park, R., Fetch, T., Hodson, D., Jin, Y., Nazari, K., Prashar, M. & Pretorius, Z. 2010. International surveillance of wheat rust pathogens - progress and challenges. BGRI Technical Workshop, St. Petersburg, Russia (30-31 May) (invited oral paper by RP).
77. Visser, B., Herselman, L., Park, R.F., Karaoglu, H., Bender, C.M. & Pretorius, Z.A. 2010. Characterization of two new stem rust races within the Ug99 lineage in South Africa. BGRI Technical Workshop, St. Petersburg, Russia (30-31 May) (invited oral paper by ZAP).
78. Crouch, J.A., Sakthikumar, S., Cuomo, C. & Pretorius, Z. 2010. A panel of SNP- based real-time PCR probes for the rapid and accurate detection of Ug99. 8<sup>th</sup> International Wheat Conference, St. Petersburg, Russia (1-4 June) (poster).
79. Pretorius, Z.A. & Negussie, T. 2011. The expression of *Sr21* to South African Ug99 and related races. BGRI Technical Workshop, St. Paul, MN (13-16 June) (poster).
80. Hodson, D.P., Nazari, K., Park, R.F., Hansen, J., Lassen, P., Arista, J., Fetch, T., Hovmoller, M., Jin, Y., Pretorius, Z.A., Sonder, K. & Szabo, L. 2011. Crossing borders: the global dimension of rust monitoring. North American Rust Workers Meeting, St. Paul, MN (12 June) (oral presentation by DPH).
81. Hodson, D.P., Nazari, K., Park, R.F., Hansen, J., Lassen, P., Arista, J., Fetch, T., Hovmoller, M., Jin, Y., Pretorius, Z.A. & Sonder, K. 2011. Putting Ug99 on the map: an update on current and future monitoring. BGRI Technical Workshop, St. Paul, MN (13-16 June) (oral presentation by DPH).
82. Terefe, T. & Pretorius, Z.A. 2011. Races of *Puccinia graminis* f. sp. *tritici* detected in South Africa in 2010. BGRI Technical Workshop, St. Paul, MN (13-16 June) (poster).
83. Bender, C.M., Pretorius, Z.A. & Prins, R. 2011. Adult plant stem rust responses of a doubled haploid wheat population tested under greenhouse conditions. BGRI Technical Workshop, St. Paul, MN (13-16 June) (poster).
84. Agenbag, G., Pretorius, Z.A., Boyd, L.A., Bender, C.M. & Prins, R. 2011. Dissecting adult plant stripe rust resistance in the wheat cultivar Cappell Desprez. BGRI Technical Workshop, St. Paul, MN (13-16 June) (poster).
85. Agenbag, G.M., Pretorius, Z.A., Boyd, L., Bender, C.M. & Prins, R. 2011. Implementation of QTL mapping outputs in South African wheat breeding programs. ITMI Congress, CIMMYT, Mexico (poster).
86. Visser B, Szabo LJ, Herselman L and Pretorius ZA, 2011. Genetic variation within race Ug99 of *Puccinia graminis* f. sp. *tritici* in South Africa. EPS Montreal International Gene Conference, Montreal, Canada, 3-4 November 2011.
87. Visser, B., L. Szabo, T. Terefe and Z. Pretorius. 2012. Evaluation of a SNP-based qPCR identification system for the Ug99 race group using field collections of *Puccinia graminis* f. sp. *tritici* in South Africa. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (poster).
88. Pretorius, Z.A., R. Prins, P.K. Malaker, D. Thapa, R.F. Park and G.L. Cisar. 2012. Assessment of stem rust resistance in wheat lines from Bangladesh and Nepal. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (poster).
89. Terefe, T., Pretorius, Z.A. & Visser, B. 2012. Recently identified races of *Puccinia triticina* on bread wheat in South Africa. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (poster).
90. Champouret, N., Moscou, M., Bouyiokukas, C., Steuernagel, B., Hernandez-Pinzon, I., Green, P., Kaufman, J., Olivera, P.D., Pretorius, Z., Millet, E., Steffenson, B.J., Ward, E.R. & Wulff, B.B.H. 2012. A pipeline for cloning resistance genes effective against African *Puccinia graminis tritici* races from the diploid wheat relative *Aegilops sharonensis*. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (invited talk and reviewed paper in proceedings).
91. Hodson, D.P., Gronbech-Hansen, J., Lassen, P., Alemayehu, Y., Arista, J., Sonder, K., Kosina, P., Moncada, P., Nazari, K., Park, R.F., Pretorius, Z.A., Szabo, L.J., Fetch, T. & Y.Jin. 2012. Tracking the wheat rust pathogens. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (invited talk and reviewed paper in proceedings).
92. Du Plessis, A., Van der Linde, M., Van Biljon, A., Minnaar-Ontong, A., Wentzel, B., Pretorius, Z. & Herselman, L. Molecular and biochemical characterisation of rust resistant wheat lines. 4<sup>th</sup> BGRI Technical Workshop, Beijing, China, 2-4 September 2012 (poster).
93. Bender, C.M., B. Visser and Z.A. Pretorius. 2013. The rusts of *Secale africanum* in South Africa. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
94. Herselman, L., M.J.P. van der Linde, S.L. Sydenham and Z.A. Pretorius. 2013. Development of wheat lines with complex resistance to rusts. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August

- (poster).
95. Kaufman, J., N. Champouret, P. Green, I. Hernandez-Pinzon, B. Wulff, E. Ward, E. Millet, Z. Pretorius and B. Steffenson. 2013. Genetics of resistance to African *Pgt* races in Sharon goatgrass. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  96. Koekemoer, F.P., S. de Groot, D. Lesch, R. Wessels and Z.A. Pretorius. 2013. Approaches to breeding for rust resistance at Sensako, South Africa. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (invited talk).
  97. Manisterski, J., P. Ben-Yehuda, H. Sela, E. Millet, Z.A. Pretorius, J.C. Scott and B.J. Steffenson. 2013. Identification of novel genes for resistance to African *Pgt* races in *Aegilops* spp. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  98. Millet, E., Z.A. Pretorius and B.J. Steffenson. 2013. Introgression of resistance to African *Pgt* races from Sharon goatgrass (*Aegilops sharonensis*) into wheat. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  99. Pretorius, Z.A., E. Wessels, K. Wolmarans and R. Prins. 2013. Resistance to *Pgt* race TTKSF in the wheat cv. Matlabas. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  100. Prins, R., G.M. Agenbag, Z.A. Pretorius, S. Dreisigacker and L.A. Boyd. 2013. A North-South partnership identifies genetic biodiversity for durable rust resistance in African wheat genotypes. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (invited talk).
  101. Rahmatov, M., S. Andersson, R. Wanyera, B. Steffenson, M. Rouse, Z. Pretorius, M. Hovmøller, K. Nazari and Eva Johansson. 2013. Wheat-alien chromosome addition lines for stem rust and yellow rust resistances. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  102. Terefe, T.G. and Z.A. Pretorius. 2013. Variation among *Puccinia graminis* f. sp. *tritici* isolates from wheat in South Africa, 2011 and 2012. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  103. Visser, B., L. Herselman and Z.A. Pretorius. 2013. SSR analysis of herbarium specimens of *Puccinia graminis* f. sp. *tritici* in South Africa. 5<sup>th</sup> BGRI Technical Workshop, New Delhi, 19-22 August (poster).
  104. Ward, R., Robert L. Bowden, Marcia S. Chaves, Tom Fetch, Makhdoom Hussain, Yue Jin, Robert Park, Thomas Payne, Indu Sharma, Michael Pumphrey, Zakkie A Pretorius, Mathew R Rouse, Ravi P. Singh, Brian Steffenson, Les J. Szabo and Steven S. Xu. 2014. Harnessing Genetic Diversity to Protect World Wheat from Stem Rust. XXII International Plant and Animal Genome Conference, San Diego, USA (10-15 January) (talk and poster).
  105. Lan, C., Ravi P. Singh, Sybil A Herrera-Foessel, Julio Huerta-Espino, Gary M Rosewarne, Zakkie A Pretorius, Bhoja R Basnet, Violeta Calvo-Salazar. *YrF*: a Race-Specific Resistance Gene to Stripe Rust in Francolin#1. XXII International Plant and Animal Genome Conference, San Diego, USA (10-15 January 2014) (talk).
  106. Castelyn, H.D., B. Visser, C.M. Bender and Z. A. Pretorius. 2014. Quantification of fungal colonization in wheat lines with adult plant stem rust resistance. 6<sup>th</sup> BGRI Technical Workshop, Cd Obregon, Mexico, 22-24 March 2014 (poster).
  107. Pretorius, Z.A., B.J. Steffenson and E. Millet. Field responses of wheat lines with resistance to African *Pgt* race PTKST introgressed from *Aegilops sharonensis*. 6<sup>th</sup> BGRI Technical Workshop, Cd Obregon, Mexico, 22-24 March 2014 (poster).
  108. Visser, B., L.J. Szabo, L. Herselman and Z.A. Pretorius. Application of the Ug99 SNP assay on herbarium stem rust specimens. 6<sup>th</sup> BGRI Technical Workshop, Cd Obregon, Mexico, 22-24 March 2014 (poster).
  109. Terefe, T., T.J. Tsilo, J. Le Roux, B. Visser and Z.A. Pretorius. Breeding for resistance to stem rust in South Africa. 6<sup>th</sup> BGRI Technical Workshop, Cd Obregon, Mexico, 22-24 March 2014 (poster).
  110. Pretorius, Z.A., Lan, C., Bender, C.M., Singh, R.P., Knight, V. & Kloppers, F.J. 2014. Can crop sensing detect stripe rust resistance loci in wheat? 2<sup>nd</sup> International Wheat Stripe Rust Symposium, Izmir, Turkey, 28 April – 1 May (oral).
  111. Van Schalkwyk, HJ, Pretorius, ZA, Boyd, LA, Saunders, DGO, Van der Walt, A, Slabbert, R, Van Heerden, CJ, Uauy, C, Prins, R. 2014. Next generation sequencing of South African stripe rust pathotypes. [Poster presentation]. Presented at TGAC summer school: A walk through bioinformatics, Norwich Research Park, Colney, Norwich, Norfolk, NR4 7UH, United Kingdom AND NoCaSS – Norwich and Cambridge Student Symposium on Plant and Microbial Sciences, The Sainsbury Lab, Cambridge, CB2 1NN, UK.

112. Pretorius, Z.A., Visser, B., Terefe, T. & Prins, R. 2014. Discovery, mutation and spread of Ug99: a South African perspective. II Workshop on surveillance of race Ug99 in South America and breeding wheat for resistance. Porto Alegre, Brazil, 8-10 October (invited oral presentation).
113. Pretorius, Z.A., G. Maree, C.M. Bender and B. Visser. 2015. Phenotypic and genotypic characterization of South African *Pgt* race 2SA55 7<sup>th</sup> BGRI Technical Workshop, Sydney, Australia, 17-20 Sept (poster).
114. Soko, T., R. Prins and Z.A. Pretorius. 2015. Are Zimbabwean wheat cultivars protected against *Pgt* race Ug99? 7<sup>th</sup> BGRI Technical Workshop, Sydney, Australia, 17-20 Sept (poster).
115. Selinga, T.I., T.G. Terefe, L. Herselman, Z.A. Pretorius and B. Visser. 2015. Monitoring the South African leaf rust population through a combined phenotyping and SSR genotyping approach. 7<sup>th</sup> BGRI Technical Workshop, Sydney, Australia, 17-20 Sept (poster).
116. Hodson, D.P., R.F. Park, J. Grønbech-Hansen, P. Lassen, K. Nazari, Y. Jin, M. Hovmøller, L. Szabo, Z.A. Pretorius, T. Fetch, M. Meyer, J.A. Cox, C.A. Gilligan, L. Burgin, M. Hort. 2015. A decade of stem rust surveillance: How far have we come and where are we going? 7<sup>th</sup> BGRI Technical Workshop, Sydney, Australia, 17-20 Sept (oral by 1<sup>st</sup> author).
117. Prins, R., S. Dreisigacker, Z. Pretorius, E. Wessels, H. van Schalkwyk, C. Smit, C. Bender, D. Singh, & L. Boyd. 2015. Stem rust resistance QTL validation of marker-trait associations detected by GWAS. International Wheat Conference, Sydney, Australia, 21-25 Sept 2015 (poster).
118. Acevedo, M., Jason D. Zurn, Matthew N. Rouse, Yue Jin, Shiaoman Chao, Meriem Aoun, Ruth Wanyera, Godwin Macharia, Peter Njau, Zacharias A. Pretorius, J. Michael Bonman, and Robert Brueggeman. 2015. Characterization of stem rust resistance in two spring wheat landraces. International Wheat Conference, Sydney, Australia, 21-25 Sept 2015 (poster).
119. Maré, A., L. Herselman, Z. Pretorius. 2015. Evaluation of wheat lines containing different combinations of stem, leaf or stripe rust resistance genes. International Wheat Conference, Sydney, Australia, 21-25 Sept 2015 (poster).
120. Prins, R., A. Martin, G.M. Agenbag, F.G. Potgieter, F. Smit, Z.A. Pretorius. 2015. Stem rust resistance in South African barley. 17<sup>th</sup> Australian Barley Technical Symposium, Manly, Australia, 13-16 Sept 2015 (poster).
121. Van Schalkwyk, H.J., R. Prins, Z.A. Pretorius, L.A. Boyd, C. Uauy & D.G.O. Saunders. Placement of South African stripe rust in a global context and development of diagnostic tools for genotyping field samples. 7<sup>th</sup> BGRI Technical Workshop, Sydney, Australia, 17-20 Sept (invited oral by 1<sup>st</sup> author).
122. Visser, B., L Herselman and ZA Pretorius. 2015. Microsatellite characterization of South African *Puccinia striiformis* races. 14<sup>th</sup> International Cereal Rusts and Powdery Mildews Conference, Helsingor, Denmark, 5-8 July 2015 (poster).
123. Maree, G.J., C.M. Bender, R. Prins, T.G. Negussie and Z.A. Pretorius. 2015. Microphenotype of stripe rust infection in wheat lines containing different resistance loci. 14<sup>th</sup> International Cereal Rusts and Powdery Mildews Conference, Helsingor, Denmark, 5-8 July 2015 (poster).
124. Castelyn, H.D., L.L. du Preez, B. Visser & Z. A. Pretorius. 2015. An integrated approach to understanding adult plant resistance: histology and molecular features of stem rust on wheat. 14<sup>th</sup> International Cereal Rusts and Powdery Mildews Conference, Helsingor, Denmark, 5-8 July 2015 (invited oral by 1<sup>st</sup> author).
125. Zurn, J.D., M. N. Rouse, S. Chao, M. Aoun, G. Macharia, Z. A. Pretorius, J. M. Bonman, and M. Acevedo. 2016. Identification of Stem Rust Resistance Genes in Wheat Landrace PI362698. APS Rust Symposium, Florida, USA 8-9 March 2016.
126. Van Schalkwyk, H.J., R. Prins, Z.A. Pretorius, L.A. Boyd, C. Uauy, & D.G.O. Saunders. 2016. Pathogenomic analysis of South African stripe rust populations. International Society for Molecular Plant-Microbe Interactions XVII, Portland, Oregon, USA, July 17-21, 2016 (talk).
127. Castelyn, H.D., Boyd, L.A., Ereful, E., Visser, B. & Pretorius, Z.A. 2016. Evaluating next-generation sequencing platforms for the transcriptomic analysis of stem rust infected adult wheat plants. EMBL-EBI Bioinformatics training workshop, Cambridge, UK (poster).

#### 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 SENSAKO 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". Allgro 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).
  45. 'Koringsiektes / Wheat diseases'. Sensako farmers' day, Bergville (14 October 2010, compiled by ZAP, presented by CM Bender).
  46. 'Roesweerstand in koring'. Allgro Seed Symposium, Sparkling Waters (10 May 2011).
  47. 'Roessiektes van koring'. Allgro Seed Symposium, Magaliespark (14 March 2013, C.M. Bender & Z.A. Pretorius).
  48. "South African stripe rust: The trace, the race and the chase!" Van Schalkwyk, HJ; Prins, R; Pretorius, ZA; Boyd, LA; Uauy, C; Saunders, DGO. (2015). The Sainsbury Laboratory – Wheat diseases day, Norwich, UK. 22 May 2015 (poster presentation).
  49. "Plant Wars Episode I: The Fungal Menace". Van Schalkwyk, HJ; Prins, R; Pretorius, ZA; Boyd, LA; Uauy, C; Saunders, DGO. (2015). JIC Crop Genetics departmental seminar series, Norwich, UK. 30 March 2015 (oral presentation by HJvS).

#### PHOTOGRAPHIC IMAGES

- *Sr31* virulence (CDL website [www.crl.umn.edu/](http://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](http://www.saspp.co.za), March 2001).
- Bean rust and common blight ([www.saspp.co.za](http://www.saspp.co.za), March 2002).
- Stem rust of wheat (Food Security 2:113-132, 2010).
- Stem rust of wheat (Ground Cover [Australia] 2010).
- Stem rust of wheat (ICARDA June 2010).

#### ENTREPRENEURIAL PROJECTS

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

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