

Curriculum Vitae

Dr. Christine Margarete Steenkamp

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Personal information

Born in 1974 in Pretoria, South Africa.

Married, mother of two children born in 2007 and 2009.

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Academic qualifications

- 1992 Matric with distinction at Stellenbosch High School, Stellenbosch, South Africa.
- 1996 BSc in Physics and Chemistry (cum laude) at the University of Stellenbosch (US).
- 1997 BSc Honours in Physics (cum laude) at the US.
- 1999 MSc in Laser Physics (cum laude) at the US. Title of thesis “Development and characterisation of a frequency tunable laser source in the vacuum ultraviolet”. Supervisors Dr. E.G. Rohwer (US) and Prof. P.E. Walters (US).
- 2003 PhD in Laser Physics at the US. Title of dissertation: “Vacuum ultraviolet laser spectroscopy of carbon monoxide molecules in a supersonic gas jet” Promoters: Dr. E.G. Rohwer (US) and Prof. H. Stafast (Institut für physikalische Hochtechnologie, Jena, Germany).

Employment record

1997-2002: Part-time tutor in the Physics Department of the US to pre-graduate students.

1999, 2001: Research at the Max Planck Institut für extraterrestrische Physik in Garching, Germany and the Institut für physikalische Hochtechnologie in Jena, Germany respectively as part of MSc and PhD studies, funded by the National Research Foundation and the Hans Merensky Stipendien Stiftung.

January 2003-December 2007: Full time permanent Lecturer at the Physics Department of the US, responsible for lecturing on senior undergraduate and Honours levels and research in the field of experimental laser spectroscopy.

1 October 2004 – 31 March 2005: Temporal position as post-doctoral researcher at the institute JILA, University of Colorado in Boulder, Colorado, USA during 6 month research leave from the US.

January 2008 to December 2009: Part time (3/8 position) permanent Lecturer at the Physics Department of the US, with similar responsibilities.

January 2010 to present: Part time (3/8 position) permanent Senior Lecturer at the Physics Department of the US, with similar responsibilities.

Research

Fields of expertise: nonlinear optics, experimental laser spectroscopy of molecules, external cavity diode lasers as tunable sources, laser cooling and trapping.

I am currently involved in the following projects: Generation of tunable vacuum ultraviolet laser light four-wave mixing in a heat pipe system. High resolution vacuum ultraviolet spectroscopy, including spectroscopic study of rare isotopomers and forbidden transitions of carbon monoxide. Development of external cavity diode lasers. Saturated absorption spectroscopy and laser cooling and trapping of atomic rubidium. Second harmonic generation at silicon/silicon dioxide interfaces. Femtosecond pump-probe spectroscopy on various molecules.

I have received significant research funding from Young Promising Researchers program at the US (2005-2006), the Thuthuka Programme of the National Research Foundation (2006-2011), the National Laser Centre (2009-2011), the African Laser Centre (2006-2007).

Teaching

Under graduate teaching: Electromagnetism and Special Relativity (3rd year module), Atomic physics (3rd year module), Experimental work (3rd year module).

Post graduate teaching: Nonlinear Optics (Honours/MSc module), Optics experiments (Honours module)

Student supervision

Students who have graduated: 3 PhD, 7 MSc.

Current students: 3 PhD, 4 MSc

Membership of professional associations

Member of the South African Institute of Physics since 2004.

Member of the Organisation for Women in Science for the Developing World (OWSD) since 2011.

Young Affiliate of the Academy of Sciences for the Developing World (TWAS), one of 5 young affiliates from Sub Saharan Africa selected for the period 2010-2014.

Awards and scholarships received

2010 Award for Young Women Scientists in the field of Mathematics and Physics for the African region in 2010 from the Organisation for Women in Science for the Developing World (OWSD, formerly known as TWOWS). This was one of 4 awards for the field of mathematics and physics, one for each OWSD region, that were given for the first time in 2010 to women scientists under the age of 45 from developing countries.

2009 Silver Jubilee Medal of the South African Institute of Physics for outstanding achievement by a younger physicist. This medal has awarded every 2nd year since 1981 to physicists under the age of 35, and I am the second woman to receive the prize.

2003 Recipient of one of the three Women Scientists Fellowships awarded by the Department of Science and Technology.

2000-2002 The Henry Dyer Memorial Scholarship for Ph.D. study of the National Research Foundation.

1999 The US medal for the best achievement in M.Sc. studies.

The John Todd Morisson Research Medal for the best achievement in M.Sc. studies in Physics and Applied Mathematics.

1998-1999 Prestigious scholarship for M.Sc. study from the National Research Foundation.

1997 Freestanding merit bursary for B.Sc. Honours study from the National Research Foundation.

The US Chancellor's Medal for the most meritorious graduand.

The Dean's Medal for the best achievement in the Science Faculty.

The Meiring Naude Medal for the best achievement in Physics Honours.

1993-1996 AECI awards for the best achievement in Chemistry, Physics and Mathematics (1993).

The G.B.B. Rubbi award for achievement in Mathematics (1993 and 1995).

The Merck award for achievement in Chemistry (1996).

Other activities and personal interests

Educating my children is priority. Member of the Mountain Club of South Africa. Sing in a local choir from time to time. Author of a craft guide published in 1992.