Prof. Donna T. Strickland
Professor in the Department of Physics and Astronomy at the University of Waterloo; Nobel Laureate in Physics 2018

Most important awards, prizes and academies

Honours and awards: 2021 Honorary Member European Academy of Science and Arts; 2020 International Member, National Academy of Science (USA); 2020 Fellow, The Royal Society (UK); 2020 Photonics Pioneer Award, Fitzpatrick Institute of Physics, Duke University; 2019 Companion of the Order of Canada; 2019 Inducted into International Women's Forum Hall of Fame; 2019 Fellow of the Royal Society of Canada (RSC); 2019 Julio Pelaez Award to Women Pioneers in Physics, Chemistry and Mathematics, Fundación Tatiana Perez de Guzman el Bueno; 2019 Golden Plate of Achievement, Academy of Achievement; 2019 Honourary Fellow of the Institute of Physics (IoP), UK; 2019 Honourary Fellow of the Canadian Academy of Engineering (CAE); 2019 Honourary Doctorate, International University Menendez Pelayo (UIMP); 2019 Honourary Doctorate, McMaster University; 2019 George Eastman Medal, University of Rochester; 2019 Distinguished Scholar Award, University of Rochester; 2019 Honourary Doctorate, Institute National de la Recherche Scientifique (INRS); 2019 Fellow of SPIE, The international society for optics and photonics; 2018 Nobel Prize for Physics; 2008 Fellow of the OSA, The Optical Society; 2000 Cottrell Scholars Award, Research Corporation; 1999 Premier's Research Excellence Award;

1998 Alfred P. Sloan Foundation Fellowship; 1981-1985 NSERC Graduate Scholarship; 1981 Dean's Honour List.

Professional activities: 2021- Committee, National Academy of Sciences, Engineering and Medicine (NASEM) High Energy Density Physics (HEDP); 2021- Reviewer, Russian Science Foundation; 2021- Member, ICFO Scientific Advisory Board, Barcelona, Spain; 2020- Member, Growth Technology Advisory Board, Applied Materials, Inc.; 2020- Member, Ontario Rhodes Scholarship Selection Committee; 2020- Member, Board of Directors, Council of Canadian Academies; 2019- Member, LLE advisory committee, University of Rochester; 2019- Member, Scientific Advisory Board, U.S. Department of Energy's LaserNetUS; 2018- Chair, Presidential Advisory Committee, OSA, The Optical Society; 2017-Member, International Photonics Advocacy Coalition, OSA; 2015-2018 Director of Academic Affairs, Canadian Association of Physicists; 2015-2018 Chair, Nominating Committee, OSA, The Optical Society; 2014-2017 Optics Editor, Physics Reports, Elsevier; 2014 Past-President, OSA, The Optical Society; 2013-2018 Chair, ALLS (Advanced Laser Light Source) scientific committee; 2013 President, OSA, The Optical Society; 2012 President-Elect, OSA, The Optical Society; 2012 Co-General Chair, Frontiers in Optics, Annual Meeting of OSA, Rochester, NY; 2011 Vice President, OSA, The Optical Society; 2010 Co-Program Chair, Frontiers in Optics, Annual Meeting of OSA, Rochester, NY; 2008-2011 OSA's appointed VP to the International Committee on Optics; 2007-2008 Associate Researcher, INO (Institute National d'Optique); 2007-2009 Member, Polanyi Prize committee; 2006-2007 Member, Executive Committee, OSA, The Optical Society; 2006 Panelist, Ontario Graduate Scholarship Panel; 2005-2007 Director-at-Large, Optical Society of America; 2005 Chair, R.W. Wood Prize committee, OSA, The Optical Society; 2004-2010 Topical Editor, Ultrafast Phenomena, Optics Letters; 2004 -2006 Member of Membership and Education Services Council, OSA; 2004-2007 Co-Director, Education Program for Photonics Professionals (EP3), University of Waterloo; 2004-2007 Member, Ontario Photonics Consortium (OPC) Executive Committee; 2004 Chair of Ultrafast Symposium, Photonics North 2004, Regional SPIE conference; 2003-2004 Member, Advanced Laser Light Source (ALLS) Technical Committee; 2003 Chair, Archie McMahon Prize committee for Optics and Photonics News; 2003 Co-chair of Cross-Border Workshop on Laser Science, Waterloo; 2002 Co-chair of Ultrafast Symposium, Opto-Canada 2002, Regional SPIE conference; 2002 Member of Program Committee of International Conference on Ultrafast Phenomena; 2001-2004 Curriculum Developer, Education Program for Photonics Professionals (EP3), University of Waterloo; 2001 Member, Archie McMahon Prize committee for Optics and Photonics News; 2000-2003 Member of Editorial Advisory Committee for Optics and Photonics News; 2000 President of Southwestern Ontario Local Section of OSA, Optical Society of America.

Summary of scientific research

Donna Strickland is a professor in the Department of Physics and Astronomy at the University of Waterloo and is one of the recipients of the Nobel Prize in Physics 2018 for developing chirped pulse amplification with Gérard Mourou, her PhD supervisor at the time. They published this Nobel-winning research in 1985 when Strickland was a PhD student at the University of

Rochester.

Strickland earned a B.Eng. from McMaster University and a PhD in optics from the University of Rochester. Strickland was a research associate at the National Research Council Canada, a physicist at Lawrence Livermore National Laboratory and a member of technical staff at Princeton University. In 1997, she joined the University of Waterloo, where her ultrafast laser group develops high-intensity laser systems for nonlinear optics investigations.

Strickland served as the president of the Optical Society (OSA) in 2013 and is a fellow of OSA, SPIE, the Royal Society of Canada and the Royal Society. She is an honorary fellow of the Canadian Academy of Engineering and the Institute of Physics and an international member of the US National Academy of Science. Strickland was named a Companion of the Order of Canada.

Main publications

"Investigation of long wavelength mid-infrared generation in the tight focusing limit", X. Su, M. Lyu, T. Hoang, Z. Xu, Y. Zheng and D. Strickland, *Opt. Express* 27 (18), 24952 (2019); "Nobel Lecture: Generating high-intensity ultrashort optical pulses", D. Strickland, *Rev. Mod. Phys.* 91 (3), 030502 (2019); "The role of laser fluence and ambient environments in femtosecond laser induced breakdown spectroscopy and surface morphology of Mg and Zr". A. Hayat, S. Bashir, D. Strickland, B. Wales, S. Tuairqi, and J. Sanderson, *Journal of App. Phys.* 125, (8) 083302 (2019); "Chirped Pulse Amplification" Invited book chapter, *Handbook of Laser Technology and Applications*, CRC press, submitted August 2018; "A Compact High-average-power Femtosecond Fiber-coupled Two-color CPA System", Xinyang Su, Tuyen Hoang, Pin Long, Yi Zheng, and Donna Strickland, *IEEE Journal of Selected Topics in Quantum Electronics*, 24, pp. 1-5 (2018); "Laser propagation and formation of cavitation bubbles in crystalline lens", R.P. Sharma P.K. Gupta, R.K. Singh, and D. Strickland, *Opt. Lett.* 41, 1423-1426 (2016); "Quantum enhanced second order nonlinearity in graphene: the role of wave momentum and DC biasing", S.M. Raeis-Zadeh, D. Strickland, and S. Safavi-Naeini, *IEEE J. Quant. Electron.*, 52, 8500107 (2016); "Long wavelength mid-infrared from mixing two colors from a fiber amplifier", Siyuan Bian, Sébastien Loranger, Raman Kashyap Donna Strickland, *Micro- and Nanotechnology Sensors, Systems, and Applications VII*, edited by Thomas George, Achyut K. Dutta, M. Saif Islam, Proc. of SPIE Vol. 9467, 9467-90 (2015); "Effect of Multiphoton Ionization on Performance of Crystalline Lens", P.K. Gupta, R.K. Singh, D. Strickland, M.C.W. Campbell and R.P. Sharma, *Opt. Lett.* 39, 6775-6778 (2014); "Effect of Two-Photon Stark Shift on the Multi-Frequency Raman Spectra", H. Yan and D. Strickland, *Appl. Sci.* 2014, *4*, 390-401; doi:10.3390/app4030390 (invited paper for special issue).

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