

Prof. David B. Haviland

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Birth date: July 22, 1961

Dual Citizenship: USA and Sweden. Permanent resident in Sweden since 1989

Education & Employment:

Prof. of Nanostructure Physics	Royal Inst. of Technology (KTH)	1997-Present
Post Doc, Docent, Lektor	Chalmers University of Technology	1989-1997
Ph.D in Physics	University of Minnesota	1984-1989
Fulbright Scholar	University of Göttingen, Germany	1983-1984
BS in Physics	Union College	1979-1983

Scientific Interests:

My interests lie in the basic physics and applied physics of mesoscopic condensed matter. We develop experimental and theoretical methods to probe nonlinear dynamical systems by measurement and analysis of intermodulation (frequency mixing). This work spans fundamental studies of quantum limited amplification and vacuum noise correlations at microwave frequencies, to precise measurement of viscous and elastic surface forces with the Atomic Force Microscopy. I also contribute to the developing field of circuit quantum electrodynamics with work on Josephson junction chains. I have worked on spin-dependent transport in magnetic tunnel junctions and the adaptation of nanofabrication technology for applications in cell biology.

Publications:

For a current list of publications and citation statistics
 See my [Google Scholar page](#)

Prizes, Honors, Societies:

Member Swedish Royal Academy of Sciences, class for Physics, 2011-present
 Wallmarkska prize 2008 – for contributions to Mesoscopic Physics.
 Fulbright Scholar, 1983-9184
 Phi Beta Kappa society – dedicated to liberal learning, member since 1983
 American Physical Society, 1985 - present

Scientific advisor to PhD's students.

1. Shan Jolin – PhD expected fall 2021
2. Riccardo Borgani - PhD expected, fall 2018
3. Per Anders Thorén - PhD expected, spring 2018
4. Danel Forchheimer – PhD. Feb. 2015
5. Daniel Platz – PhD. June. 2013
6. Adem Ergul - PhD Dec. 2013
7. Erik Tholén – PhD Dec. 2009
8. Jochen Walter – Licenciante Nov. 2004, Ph.D. Nov. 2006
9. Silvia Corlevi – Licenciante Oct. 2004, , Ph.D. June 2006
10. Jonas Rundqvist – Licenciante Feb. 2003, Ph.D. Dec. 2005
11. Mattias Urech – (w/ Vlad Korenivski) Lic. Feb. 2001, Ph.D. March 2006
12. Jan Johansson – (w/ Vlad Korenivski) Lic. Dec. 2000, PhD. Jan 2004
13. Peter Ågren – Lic. June 2000, Ph.D. Oct. 2002
14. Karin Andersson – Lic. Jan. 2000, Ph.D. Sept. 2002
15. Chi Dong Chen – (w/ Per Delsing, Chalmers) Ph.D. 1994

Scientific advisor to Masters Students:

1. Riccardo Borgani, 2013
2. Viktor Jonsson, 2012
3. Vivien Schuler, 2010
4. Daniel Platz, 2007
5. Adem Ergül, 2007
6. Fabian Gregis, 2006
7. Evelyene Doherty, 2006
8. Frank Weber, 2005
9. Erik Tholen, 2005
10. Jochen Walter, 2001
11. Jonas Rundqvist, 2000

Scientific advisor to Post Docs:

1. Thomas Weissl (presently at KTH)
2. Si Mohammed Sah (post doc in Denmark)
3. Carsten Hutter (own Startup company)
4. David Schäffer (ABB Corporate Reserach)
5. Devrim Pesen (Izmir Universiy, Turkey)
6. Wiebke Guchiard (Université Joseph Fourier-CNRS, Grenoble)
7. Michio Watanabe (NEC basic Research Labs, Tskuba Japan)
8. Volker Schollmann (Phillips Research)

Courses taught:

Thermal, Statistical and Modern Physics, 2nd year Computer Science Students.
Modern Physics, 2nd year Physics students.
Microcosmic Physics, 2nd year Computer Science Students.
Mesoscopic Physics, advanced undergraduate course
Quantum Fluctuations and Dissipation, (team teaching) graduate course.
Introduction to Electron Beam Lithography, graduate course.
Introduction to Scanning Probe Microscopy, graduate course.
Advisor for several undergraduates in their 'candidate' degree project.

Director and Scientist, Albanova Nano-Fabrication Laboratory:

I have coordinated several large grant proposals involving several faculty members, which were funded by the Wallenberg Foundation (8M SEK in 1998, and 10M SEK in 2001, 35M SEK 2012). With this money we have built up a first class, Nanofabrication facility at Albanova which presently serves about 50 graduate students from Physics, Microelectronics, Chemistry and Biotechnology, at both KTH and Stockholm University. I have invested a great deal time and energy in to the management, graduate student training, and technical workings of this laboratory.

Committees, Coordination and other Commissions of trust:

Several funding committees for various funding agencies
Board Member, leadership group, Dept. of Physics / Appl. physics, KTH, 97 - pres.

International collaborative projects, funded projects:

EU project SCOPE (PI, coordinator, 08-11)
EU project SQUBIT and SQUBIT-2 (PI, member, 99-05)
EU project SETamp (PI, member, 97-00)
EU project CHARGE (PI, coordinator, 96-00)

Swedish national grants, individual and collaborative, funded projects:

VR individual: Dynamic response of soft material interfaces (16-19)
KAW: Quantum states of photons and relativistic physics on a chip (15-19)
KAW: Dynamic nanotechnology for the study of cells and biosurfaces (12-16)
Olle Engkvist foundation: Imaging biological forces at the nanometer scale (12-16)
VR Energy: Recombination and nanostructure in organic solar cells (13-16)
VR individual: Intermodulation in microresonators..., (PI, 08-11)
Wennergren Foundation: Sabbatical support, one year at UMASS, Amherst, MA, USA
VR individual: Quantum Phase Transitions and QED in 1D JJ arrays (PI, 06-08)
SSF: Center for Nanodevices and Quantum Computing (PI, member, 02-07)
SSF: framework grant ,Magneto-Electronic Nano-Device Physics (PI, coord., 02-07)
VR individual: Nano-patterned proteins on a conducting substrate (PI, 01-03)
VR individual: Investigation Many Body Elect. Transport w/ Coulomb Int. (PI, 98-04)
Göran Gustafsson equipment grants: (PI, 1997 and 1999)
TFR: Coulomb Blockade in Non-Tunnel-Junction Nanstructures (PI, 00-03)
SSF graduate school in Quantum Devices (97-02)

Reviews and academic evaluations:

Review work for scientific journals, PRL, PRB, APL, JAP, Nature Phys. ...
Opponent or member of thesis committee, typically 1-3 times per year.
Review for academic positions, typically 1-3 times per year.
Review of proposals, EU, Finish Academy, Isreal Sci. Found. VR, etc.