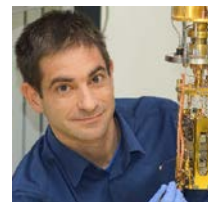


Office: 2.18a  
 Department of Physics  
 University of Basel  
 Klingelbergstrasse 82  
 4056 Basel  
 Switzerland

Web: [poggiolab.unibas.ch](http://poggiolab.unibas.ch)  
 ORCID: [0000-0002-5327-051X](https://orcid.org/0000-0002-5327-051X)  
 ResearcherID: [B-5821-2008](https://pubs.acs.org/author/5821-2008)  
 Google Scholar: [Martino Poggio](https://scholar.google.com/citations?user=MartinoPoggio)  
 Email: [martino.poggio@unibas.ch](mailto:martino.poggio@unibas.ch)  
 Tel: +41 61 207 37 61



## Background

---

*Birth* 05 Mar. 1978 in Tübingen, Germany  
*Citizenship* Italy, USA  
*Languages* English, Italian, Portuguese, German

## Education

---

*10 Dec. 2005* Ph.D. in Physics, University of California, Santa Barbara  
*11 Dec. 2003* M.A. in Physics, University of California, Santa Barbara  
*08 Jun. 2000* B.A. *magna cum laude* in Physics, Harvard University  
*08 Jun. 1996* Diploma *summa cum laude*, Roxbury Latin, West Roxbury, MA, USA

## Experience

---

*Jan. 2014 - Present* Associate Professor of Physics, University of Basel  
*Jan. 2009 - Dec. 2013* Assistant Professor of Physics, University of Basel  
*Jan. 2006 - Dec. 2008* Post-doctoral Researcher, IBM Almaden / Stanford (manager: Dr. Dan Rugar)  
*Sep. 2000 - Dec. 2005* Graduate Researcher, UC Santa Barbara (advisor: Prof. David Awschalom)

## Selected Awards and Honors

---

*2013* European Research Council (ERC) Starting Grant  
*2010* Cozzarelli Prize for outstanding PNAS paper  
*2006 - 2008* Stanford Center for Probing the Nanoscale (CPN) Post-doctoral Fellowship  
*2000, 2001* UCSB Parsons Graduate Fellowship for outstanding graduate students  
*2000* UCSB Condensed Matter Graduate Fellowship  
*1998, 2000* Harvard College Scholarship for academic performance  
*1997, 1999* John Harvard Scholarship for academic performance  
*1996* Valedictorian of the Roxbury Latin School

## Peer-reviewed Publications

---

- 2018*
48. *Coherent two-mode dynamics of a nanowire force sensor*  
 F. R. Braakman, N. Rossi, G. Tütüncüoğlu, A. Fontcuberta i Morral, and M. Poggio  
[\*Phys. Rev. Appl.\* \*\*9\*\*, 054045 \(2018\).](#)
  47. *Observation of end-vortex nucleation in individual ferromagnetic nanotubes*  
 A. Mehlin, B. Gross, M. Wyss, T. Schefer, G. Tütüncüoğlu, F. Heimbach,  
 A. Fontcuberta i Morral, D. Grundler, and M. Poggio  
[\*Phys. Rev. B\* \*\*97\*\*, 134422 \(2018\).](#)
  46. *Imaging stray magnetic field of individual ferromagnetic nanotubes*  
 D. Vasyukov, L. Ceccarelli, M. Wyss, B. Gross, A. Schwarb, A. Mehlin, N. Rossi,  
 G. Tütüncüoğlu, F. Heimbach, R. R. Zamani, A. Kovács, A. Fontcuberta i Morral,  
 D. Grundler, and M. Poggio  
[\*Nano Lett.\* \*\*18\*\*, 964 \(2018\).](#)

- 2017
45. *Electric field sensing with a scanning fiber-coupled quantum dot*  
D. Cadeddu, M. Munsch, N. Rossi, J. Claudon, J.-M. Gérard, R. J. Warburton, and M. Poggio  
*Phys. Rev. Appl.* **8**, 031002 (2017).
44. *Imaging magnetic vortex configurations in ferromagnetic nanotubes*  
M. Wyss, A. Mehlin, B. Gross, A. Buchter, A. Farhan, M. Buzzi, A. Kleibert, G. Tütüncüoğlu, F. Heimbach, A. Fontcuberta i Morral, D. Grundler, and M. Poggio  
*Phys. Rev. B* **96**, 024423 (2017).
43. *Resonant driving of a single photon emitter embedded in a mechanical resonator*  
M. Munsch, A. Kuhlmann, D. Cadeddu, J.-M. Gérard, J. Claudon, M. Poggio, and R. J. Warburton  
*Nat. Commun.* **8**, 76 (2017).  
Related articles: *Uni News*, 14 July 2017.
42. *Vectorial scanning force microscopy using a nanowire sensor*  
N. Rossi, F. R. Braakman, D. Cadeddu, D. Vasyukov, G. Tütüncüoğlu, A. Fontcuberta i Morral, and M. Poggio  
*Nat. Nanotechnol.* **12**, 150 (2017).  
Related articles: *Uni News*, 17 October 2016; *Neue Zürcher Zeitung*, 18 October 2016; *Physics* **9**, 124 (2016); *APS News* **25** (10), November 2016.
- 2016
41. *Role of the electron spin in determining the coherence of the nuclear spins in a quantum dot*  
G. Wüst, M. Munsch, F. Maier, A. V. Kuhlmann, A. Ludwig, A. D. Wieck, D. Loss, M. Poggio, and R. J. Warburton  
*Nat. Nanotechnol.* **11**, 885 (2016).  
Related article: *Uni News*, 11 July 2016.
40. *Dynamic cantilever magnetometry of individual CoFeB nanotubes*  
B. Gross, D. P. Weber, D. Ruffer, A. Buchter, F. Heimbach, A. Fontcuberta i Morral, D. Grundler, and M. Poggio  
*Phys. Rev. B* **93**, 064409 (2016).
39. *Time-resolved nonlinear coupling between orthogonal flexural modes of a pristine GaAs nanowire*  
D. Cadeddu, F. R. Braakman, G. Tütüncüoğlu, F. Matteini, D. Ruffer, A. Fontcuberta i Morral, and M. Poggio  
*Nano Lett.* **16**, 926 (2016).
38. *A fiber-coupled quantum-dot on a photonic tip*  
D. Cadeddu, J. Teissier, F. R. Braakman, J. M. Gérard, J. Claudon, R. J. Warburton, M. Poggio, and M. Munsch  
*Appl. Phys. Lett.* **108**, 011112 (2016).
- 2015
37. *Magnetization reversal of an individual exchange-biased permalloy nanotube*  
A. Buchter, R. Wölbing, M. Wyss, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, D. Ruffer, F. Matteini, G. Tütüncüoğlu, F. Heimbach, A. Kleibert, A. Fontcuberta i Morral, D. Grundler, R. Kleiner, D. Koelle, and M. Poggio  
*Phys. Rev. B* **92**, 214432 (2015).
36. *Permanent reduction of dissipation in nanomechanical Si resonators by chemical surface protection*  
Y. Tao, P. Navaretti, R. Hauert, U. Grob, M. Poggio, and C. L. Degen  
*Nanotechnology* **26**, 465501 (2015).

35. *Stabilized skyrmion phase in MnSi nanowires detected by dynamic cantilever magnetometry*  
A. Mehlin, F. Xue, D. Liang, H. Du, M. J. Stolt, S. Jin, M. Tian, and M. Poggio  
[Nano Lett.](#) **15**, 4839 (2015).
- 2014
34. *Nonlinear motion and mechanical mixing in as-grown GaAs nanowires*  
F. R. Braakman, D. Cadeddu, G. Tütüncüoğlu, F. Matteini, D. Ruffer, A. Fontcuberta i Morral, and M. Poggio  
[Appl. Phys. Lett.](#) **105**, 173111 (2014).
33. *Manipulation of the nuclear spin ensemble in a quantum dot with chirped magnetic resonance pulses*  
M. Munsch, G. Wüst, A. Kuhlmann, F. Xue, A. Ludwig, D. Reuter, A. D. Wieck, M. Poggio, and R. J. Warburton  
[Nat. Nanotechnol.](#) **9**, 671 (2014).  
Related article: [Uni News](#), 16 September 2014.
32. *Quantum dot opto-mechanics in a fully self-assembled nanowire*  
M. Montinaro, G. Wüst, M. Munsch, Y. Fontana, E. Russo-Averchi, M. Heiss, A. Fontcuberta i Morral, R. J. Warburton, and M. Poggio  
[Nano Lett.](#) **14**, 4454 (2014).
31. *Boundary between the thermal and statistical polarization regimes in a nuclear spin ensemble*  
B. E. Herzog, D. Cadeddu, F. Xue, P. Peddibhotla, and M. Poggio  
[Appl. Phys. Lett.](#) **105**, 043112 (2014).
30. *Vortex lattice melting of a NbSe<sub>2</sub> single grain probed by ultrasensitive cantilever magnetometry*  
L. Bossoni, P. Carretta, and M. Poggio  
[Appl. Phys. Lett.](#) **104**, 182601 (2014).
- 2013
29. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*  
P. Peddibhotla, F. Xue, H. I. T. Hauge, S. Assali, E. P. A. M. Bakkers, and M. Poggio  
[Nat. Phys.](#) **9**, 631 (2013).  
Related article: [Uni News](#), 26 August 2013.
28. *Charge noise and spin noise in a semiconductor quantum device*  
A. Kuhlmann, J. Houel, L. Greuter, A. Ludwig, A. D. Wieck, M. Poggio, and R. J. Warburton  
[Nat. Phys.](#) **9**, 570 (2013).  
Related articles: [Nat. Phys.](#) **9**, 538 (2013); [Uni News](#), 02 October 2013.
27. *Nanoscale multifunctional sensor formed by a Ni nanotube and a scanning Nb nanoSQUID*  
J. Nagel, A. Buchter, F. Xue, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, D. Ruffer, E. Russo-Averchi, R. Huber, P. Berberich, A. Fontcuberta i Morral, D. Grundler, R. Kleiner, D. Koelle, M. Poggio, and M. Kemmler  
[Phys. Rev. B](#) **88**, 064425 (2013).
26. *Reversal mechanism of an individual Ni nanotube simultaneously studied by torque and SQUID magnetometry*  
A. Buchter, J. Nagel, D. Ruffer, F. Xue, D. P. Weber, O. F. Kieler, T. Weimann, J. Kohlmann, A. B. Zorin, E. Russo-Averchi, R. Huber, P. Berberich, A. Fontcuberta i Morral, M. Kemmler, R. Kleiner, D. Koelle, D. Grundler, and M. Poggio  
[Phys. Rev. Lett.](#) **111**, 067202 (2013).

- 2012
25. *Cantilever magnetometry of individual Ni nanotubes*  
D. P. Weber, D. Ruffer, A. Buchter, F. Xue, E. Russo-Averchi, R. Huber, P. Berberich, J. Arbiol, A. Fontcuberta i Morral, D. Grundler, and M. Poggio  
*Nano Lett.* **12**, 6139 (2012).
24. *Feedback cooling of cantilever motion using a quantum point contact transducer*  
M. Montinaro, A. Mehlin, H. S. Solanki, P. Peddibhotla, S. Mack, D. D. Awschalom, and M. Poggio  
*Appl. Phys. Lett.* **101**, 133104 (2012).
23. *Probing single-charge fluctuations at a GaAs/AlAs interface using laser spectroscopy on a nearby InGaAs quantum dot*  
J. Houel, A. V. Kuhlmann, L. Greuter, F. Xue, M. Poggio, B. D. Gerardot, P. A. Dalgarno, A. Badolato, P. M. Petroff, A. Ludwig, D. Reuter, A. D. Wieck, and R. J. Warburton  
*Phys. Rev. Lett.* **108**, 107401 (2012).
- 2011
22. *Measurement of statistical nuclear spin polarization in a nanoscale GaAs sample*  
Fei Xue, D. P. Weber, P. Peddibhotla, and M. Poggio  
*Phys. Rev. B* **84**, 205328 (2011).
21. *A geometry for optimizing nanoscale magnetic resonance force microscopy*  
Fei Xue, P. Peddibhotla, M. Montinaro, D. P. Weber, and M. Poggio  
*Appl. Phys. Lett.* **98**, 163103 (2011).
- 2010
20. *Force-detected nuclear magnetic resonance: recent advances and future challenges*  
M. Poggio and C. L. Degen  
*Nanotechnology* **21**, 342001 (2010).
19. *Frequency domain multiplexing of force signals with application to magnetic resonance force microscopy*  
T. H. Oosterkamp, M. Poggio, C. L. Degen, H. J. Mamin, and D. Rugar  
*Appl. Phys. Lett.* **96**, 083107 (2010).
- 2009
18. *Isotope-selective detection and imaging of organic nanolayers*  
H. J. Mamin, T. H. Oosterkamp, M. Poggio, C. L. Degen, C. T. Rettner, and D. Rugar  
*Nano Lett.* **9**, 3020 (2009).
17. *Nuclear double resonance between statistical spin polarizations*  
M. Poggio, H. J. Mamin, C. L. Degen, M. H. Sherwood, and D. Rugar  
*Phys. Rev. Lett.* **102**, 087604 (2009).  
Related article: *Physics* **16**, March 2009.
16. *Nanoscale magnetic resonance imaging*  
C. L. Degen, M. Poggio, H. J. Mamin, C. T. Rettner, and D. Rugar  
*Proc. Natl. Acad. Sci. U.S.A.* **106**, 1313 (2009).  
Related articles: *Nature News*, 12 January 2009; *The New York Times*, 13 January 2009, p. D3; *Technology Review*, 13 January 2009; *The Stanford Report*, 28 January 2009; *Nat. Nanotechnol.* **4**, 76 (2009); *Proc. Natl. Acad. Sci. U.S.A.* **106**, 2477 (2009); *Nat. Methods* **6**, 192 (2009); *Nat. Biotechnol.* **27**, 254 (2009); *Nature* **458**, 844 (2009).
- 2008
15. *An off-board quantum point contact as a sensitive detector of cantilever motion*  
M. Poggio, M. P. Jura, C. L. Degen, M. A. Topinka, H. J. Mamin, D. Goldhaber-Gordon, and D. Rugar  
*Nat. Phys.* **4**, 635 (2008).

14. *Nuclear spin relaxation induced by a mechanical resonator*  
C. L. Degen, M. Poggio, H. J. Mamin, and D. Rugar  
*Phys. Rev. Lett.* **100**, 137607 (2008).
- 2007
13. *Role of spin noise in the detection of nanoscale ensembles of nuclear spins*  
C. L. Degen, M. Poggio, H. J. Mamin, and D. Rugar  
*Phys. Rev. Lett.* **99**, 250601 (2007).
12. *Feedback cooling of a cantilever's undamental mode below 5 mK*  
M. Poggio, C. L. Degen, H. J. Mamin, and D. Rugar  
*Phys. Rev. Lett.* **99**, 017201 (2007).
11. *Nuclear magnetic resonance force microscopy with a microwire rf source*  
M. Poggio, C. L. Degen, C. T. Rettner, H. J. Mamin, and D. Rugar  
*Appl. Phys. Lett.* **90**, 263111 (2007).
10. *Nuclear magnetic resonance imaging with 90-nm resolution*  
H. J. Mamin, M. Poggio, C. L. Degen, and D. Rugar  
*Nat. Nanotechnol.* **2**, 301 (2007).  
Related articles: *Technology Review*, 23 April 2007; *USA Today*, 29 April 2007;  
*Physics News Update*, Number 824 #1 (2007); *Nat. Nanotechnol.* **2**, 267 (2007);  
*Nature* **450**, 1130 (2007).
9. *Confinement engineering of s-d exchange interactions in Ga<sub>1-x</sub>Mn<sub>x</sub>As/Al<sub>y</sub>Ga<sub>1-y</sub>As quantum wells*  
N. P. Stern, R. C. Myers, M. Poggio, A. C. Gossard, and D. D. Awschalom  
*Phys. Rev. B* **75**, 045329 (2007).
- 2005
8. *Structural, electrical, and magneto-optical characterization of paramagnetic GaMnAs quantum wells*  
M. Poggio, R. C. Myers, N. P. Stern, A. C. Gossard, and D. D. Awschalom  
*Phys. Rev. B* **72**, 235313 (2005).
7. *Spin dynamics in electrochemically charged CdSe quantum dots*  
N. P. Stern, M. Poggio, M. H. Bartl, E. L. Hu, G. D. Stucky, and D. D. Awschalom  
*Phys. Rev. B* **72**, 161303 (2005).
6. *Antiferromagnetic s-d exchange coupling in GaMnAs*  
R. C. Myers, M. Poggio, N. P. Stern, A. C. Gossard, and D. D. Awschalom  
*Phys. Rev. Lett.* **95**, 017204 (2005).
5. *High-field optically detected nuclear magnetic resonance in GaAs*  
M. Poggio and D. D. Awschalom  
*Appl. Phys. Lett.* **86**, 182103 (2005).
- 2004
4. *Spin transfer and coherence in coupled quantum wells*  
M. Poggio, G. M. Steeves, R. C. Myers, N. P. Stern, A. C. Gossard, and D. D. Awschalom  
*Phys. Rev. B* **70**, 121305 (2004).
- 2003
3. *Local manipulation of nuclear spin in a semiconductor quantum well*  
M. Poggio, G. M. Steeves, R. C. Myers, Y. Kato, A. C. Gossard, and D. D. Awschalom  
*Phys. Rev. Lett.* **91**, 207602 (2003).  
Related article: *Physics News Update*, Number 622 #2 (2003).

- 2002                    2. *Quantum information processing with large nuclear spins in GaAs semiconductors*  
M. N. Leuenberger, D. Loss, M. Poggio, and D. D. Awschalom  
[Phys. Rev. Lett. \*\*89\*\*, 207601 \(2002\).](#)
- 2001                    1. *Spin coherence and dephasing in GaN*  
B. Beschoten, E. Johnston-Halperin, D. K. Young, M. Poggio, J. E. Grimaldi, S.  
Keller, S. P. DenBaars, U. K. Mishra, E. L. Hu, and D. D. Awschalom  
[Phys. Rev. B \*\*63\*\*, 121202 \(2001\).](#)

## News & Opinion

---

- 2013                    2. *Sensing from the bottom up*  
M. Poggio  
[Nat. Nanotechnol. \*\*8\*\*, 482 \(2013\).](#)
- 2004                    1. *Francis Harry Compton Crick*  
T. Poggio and M. Poggio  
[Phys. Today \*\*57\*\* \(11\), 80 \(2004\).](#)

## Book Chapters

---

- 2018                    3. *Force-detected Nuclear Magnetic Resonance*  
M. Poggio and B. E. Herzog  
[Micro and Nano Scale NMR: Technologies and Systems, J. Anders and J. Korvink, Eds., Wiley \(2018\), pp. 381-420.](#)
- 2014                    2. *Hybrid Mechanical Systems*  
P. Treutlein, C. Genes, K. Hammerer, M. Poggio, P. Rabl  
[Cavity Optomechanics, M. Aspelmeyer, T. Kippenberg, F. Marquardt, Eds., Springer \(2014\), pp. 327-351.](#)
- 2012                    1. *Magnetic Resonance Force Microscopy*  
M. Poggio and C. L. Degen  
[Encyclopedia of Nanotechnology, B. Bhushan, Ed., Springer-Verlag \(2012\).](#)

## Conference Proceedings

---

- 2006                    1. *Nuclear and ion spins in semiconductor nanostructures*  
M. Poggio, R. C. Myers, G. M. Steeves, N. P. Stern, A. C. Gossard, and  
D. D. Awschalom  
[Physica E \*\*35\*\*, 264 \(2006\).](#)

## Other Publications

---

- 2018                    4. Force-detected nuclear magnetic resonance  
M. Poggio  
[De Physicus \*\*2\*\*, 59 \(2018\).](#)
- 2010                    3. *Taking MRI to the nanoscale by force*  
M. Poggio  
[nanotechweb.org, 26 August 2010.](#)
- 2005                    2. *Spin Interactions Between Conduction Electrons and Local Moments in Semiconductor Quantum Wells*  
M. Poggio  
[Ph.D. Thesis in Physics.](#)



- 1994                    1. *Cooperative physics of fly swarms: an emergent behavior*  
 M. Poggio and T. Poggio  
[M.I.T. A.I. Memo 1512 \(1994\)](#).

### Invited Talks at Conferences and Workshops

---

- Jul. 2018            49. *Magnetization configurations and reversal of individual ferromagnetic nanotubes*  
 International Conference on Magnetism (ICM), San Francisco, USA
- May 2018            48. *Quantum sensing with nano-SQUIDs*  
 Quantum Systems and Technology, Monte Verità, Switzerland
- Feb. 2018            47. *Nanomechanics and nanomagnetism*  
 Spin mechanics 5 & Nano-MRI 6, École de Physique des Houches, Chamonix,  
 France
- Feb. 2018            46. *Scanning probe microscopy with quantum sensors*  
 QSIT General Meeting, Arosa, Switzerland
- Jan. 2018            45. *Mechanical sensing of nanomagnetic systems*  
 XXII Swiss NMR Symposium, Zürich, Switzerland
- Dec. 2017            44. *Mechanical sensing of nanomagnetic systems*  
 Opto- and Nanomechanics Research Group (MecaQ) Annual Meeting, Paris, France
- Sep. 2017            43. *Mechanical sensing of nanomagnetic systems*  
 Foundations and Applications of Nanomechanics, Trieste, Italy
- Jul. 2017            42. *Magnetization configurations and reversal in ferromagnetic nanotubes*  
 13th International Workshop on Magnetism & Superconductivity at the  
 Nanoscale, Tarragona, Spain
- Mar. 2017            41. *Force sensing with nanowires*  
 Trends in Nanoscience 2017, Kloster Irsee, Germany
- Feb. 2017            40. *Mechanical sensing of nanomagnetic systems*  
 Frontiers of Nanomechanical Systems, La Thuile, Italy
- Nov. 2016            39. *Vectorial scanning force microscopy using a nanowire sensor*  
 German-Japanese Workshop on Hybrid Quantum Systems, Berlin, Germany
- Jun. 2016            38. *Vectorial scanning force microscopy using a nanowire sensor*  
 Swiss Nano Convention, Basel, Switzerland
- Oct. 2015            37. *Sensing with multi-functional nanowires*  
 8<sup>th</sup> Nanowires Workshop (2015), Barcelona, Spain
- Sep. 2015            36. *Scanning nanowire sensors*  
 Swiss Nanoscience Institute Annual Meeting, Lenzerheide, Switzerland
- Aug. 2015            35. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*  
 The 8<sup>th</sup> International School and Conference on Spintronics and Quantum  
 Information Technology (SpinTech VIII), University of Basel, Switzerland
- Jul. 2015            34. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*  
 5<sup>th</sup> NanoMRI Conference, Institute for Quantum Computing, Waterloo, Canada

- Jun. 2015 33. *Measuring nanometer-scale spin systems by ultrasensitive cantilever magnetometry*  
Spin Mechanics 3, Munich, Germany
- Sep. 2014 32. *Coupling nanomechanics to solid-state spin*  
School on nano-optomechanics, Strasbourg, France
- Sep. 2014 31. *Quantum dot opto-mechanics in a fully self-assembled nanowire*  
Quantum Technologies Based on Hybrid Emitter/Solid-state Systems, Strasbourg, France
- Jun. 2014 30. *Cantilever magnetometry of individual ferromagnetic nanotubes*  
International Seminar of Nanomechanical Systems (NEMS 2014), Paris, France
- Mar. 2014 29. Plenary Talk: *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*  
55<sup>th</sup> Experimental Nuclear Magnetic Resonance Conference (ENC), Boston, USA
- Nov. 2013 28. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
544<sup>th</sup> Wilhelm und Else Heraeus-Seminar: Interactions with the Nanoworld: Local Probes with High Time, Energy and Force Resolution, Bad Honnef, Germany
- Oct. 2013 27. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*  
Wide-bandgap Semiconductor Nanosstructures, Nice, France
- Jul. 2013 26. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*  
Quantum Nano- and Micromechanics, Monte Verità, Switzerland
- Jul. 2013 25. *Harnessing nuclear spin polarization fluctuations in a semiconductor nanowire*  
3<sup>rd</sup> Workshop on Nanoscale Spin and Charge Dynamics, Cluj, Romania
- May 2013 24. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
International Workshop on Magnetic Nanowires and Nanotubes 2013, Kaub, Germany
- Sep. 2012 23. Plenary Talk: *Recent progress in force-detected MRI*  
Advanced Magnetic Resonance for the Study of Dynamics in Biomolecules and Materials, Halle, Germany
- Sep. 2011 22. *Recent progress in force-detected MRI*  
Recent Advances in Broad-Band Solid-State NMR of Correlated Electronic Systems, Trogir, Croatia
- Jul. 2011 21. *Recent progress in force-detected MRI*  
Magnetic Resonance Microsystems, Freiburg, Germany
- Feb. 2011 20. *Magnetic resonance imaging with nanomechanics*  
Advanced Atomic Force Microscopy Techniques, Karlsruhe, Germany
- Oct. 2010 19. *Towards nano-MRI in mesoscopic transport systems*  
Workshop on Quantum Spintronics, Maratea, Italy
- Jul. 2010 18. *Towards nano-MRI in mesoscopic transport systems*  
3<sup>rd</sup> Nano-MRI Research Conference, Domaine du Tremblay, France
- Jun. 2010 17. Plenary Talk: *Magnetic resonance imaging with nanomechanics*  
Annual Meeting of the Swiss Physical Society, Basel, Switzerland



- Feb. 2010 16. *Magnetic resonance imaging with nanomechanics*  
Edgar Lüscher Seminar 2010: Neues aus der Festkörperphysik, Klosters, Switzerland
- Nov. 2009 15. *Magnetic resonance imaging with nanomechanics*  
National School on the Physics of Matter: Physics of Spin in Materials, Chiavari, Italy
- Jul. 2009 14. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
International Workshop and School on Solid State Based Quantum Information Processing, Herrsching, Germany
- Jun. 2009 13. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Spin and Charge Properties of Low Dimensional Systems, Sibiu, Romania
- Jun. 2009 12. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Swiss Nano 2009, Basel, Switzerland
- Jan. 2009 11. *Nanomechanics in the quantum world*  
Nanoscience in the Snow, Eigergletscher, Switzerland
- May 2008 10. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
The 3<sup>rd</sup> Advanced Materials Failure Analysis Workshop, Phoenix, USA
- Jul. 2007 9. *Nuclear magnetic resonance imaging with 90-nm resolution*  
International Conference on Electronic Properties of Two-dimensional Systems and Modulated Semiconductor Structures, Genoa, Italy
- Mar. 2006 8. *Measurement of the s-d exchange coupling in GaMnAs quantum wells*  
American Physical Society March Meeting, Baltimore, USA
- Feb. 2006 7. *Manipulation of nuclear and ion spins in semiconductor nanostructures*  
14<sup>th</sup> International Winterschool on New Developments in Solid State Physics – Charges and spins in nanostructures: basics and devices, Mauterndorf, Austria
- Jul. 2005 6. *Local manipulation of nuclear spins in a semiconductor quantum well*  
International Conference on Quantum Electronics 2005 and the Pacific Rim Conference on Lasers and Electro-Optics 2005 (IQEC/CLEO-PR 2005), Tokyo, Japan
- Jun. 2005 5. *Local manipulation of nuclear spins in semiconductor nanostructures*  
Gordon Research Conference on Magnetic Resonance, New London, USA
- Oct. 2004 4. *Optoelectronic manipulation of spins in quantum wells: harnessing local magnetic interactions*  
International Workshop sponsored by the Nanoscale Science and Engineering Center: Frontiers in Nanoscale Science and Technology, Harvard University, USA
- Mar. 2004 3. *Local manipulation of nuclear spin in a semiconductor quantum well*  
American Physical Society March Meeting, Montreal, Canada
- Jan. 2004 2. *Local manipulation of nuclear spin in a semiconductor quantum well*  
The 34<sup>th</sup> Winter Colloquium on the Physics of Quantum Electronics, Snowbird, USA
- Jul. 2003 1. *Local manipulation of nuclear spin in a semiconductor quantum well*  
International Conference on Magnetism, Rome, Italy

## Invited Colloquia and Seminars

---

- May 2018      33. *Nanomechanics and nanomagnetism*  
Condensed Matter Physics Seminar, EPF, Lausanne, Switzerland
- May 2018      32. *Mechanical sensing of nanomagnetic systems*  
Seminar, Laboratory for Advanced Microscopies, University of Zaragoza, Spain
- Dec. 2017      31. *Mechanical sensing of nanomagnetic systems*  
Physics Department Seminar, University of Augsburg, Germany
- Jun. 2017      30. *Nanomechanics and nanomagnetism*  
Department Seminar, CNRS Grenoble, France
- Jun. 2017      29. *Nanomechanics and nanomagnetism*  
Physics Department Colloquium, University of Ulm, Germany
- Dec. 2015      28. *Nanometer-scale magnetometry*  
Seminar of Biomedical Magnetic Resonance, Institute for Biomedical Engineering, ETH, Zürich, Switzerland
- Mar. 2015      27. *Nanometer-scale Magnetometry*  
Seminar, Leibniz Institute for Solid State and Materials Research (IFW), Dresden, Germany
- Feb. 2015      26. *Nanometer-scale Magnetometry*  
Seminar of the 3. Physikalisches Institut, University of Stuttgart, Germany
- Dec. 2014      25. *Nanometer-scale Magnetometry*  
Nanoscale Science Department Seminar, Max-Planck Institute for Solids State Research, Stuttgart, Germany
- Apr. 2014      24. *Nano- and opto-mechanics of fully self-assembled nanowires*  
Institute for Terahertz Science and Technology Seminar, University of California, Santa Barbara, USA
- Jun. 2013      23. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Seminar, Bruker BioSpin AG, Fällenden, Switzerland
- Jan. 2013      22. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Physics Department Seminar, Leeds University, UK
- Oct. 2012      21. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Quantum Nanoscience Seminar, Delft University of Technology, Netherlands
- Jul. 2012      20. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Physics Department Colloquium, University of Stuttgart, Germany
- Jun. 2012      19. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Physics Department Colloquium, Technical University of Dresden, Germany
- Apr. 2012      18. *Nano-mechanics, nano-magnetometry, and nano-MRI*  
Physics Department Colloquium, University of Tübingen, Germany
- Jan. 2012      17. *Recent progress in force-detected MRI*  
Atomic, Mesoscopic, and Optical Physics Seminar, University of Cambridge, UK

- Jul. 2011 16. *Recent progress in force-detected MRI*  
Condensed Matter Seminar, Technical University, Munich, Germany
- May 2010 15. *Magnetic resonance imaging with nanomechanics*  
The Zürich Physics Colloquium, ETH, Zürich, Switzerland
- May 2010 14. *Magnetic resonance imaging with nanomechanics*  
Physics Department Seminar, University of Pavia, Italy
- Apr. 2009 13. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Physics Department Seminar, University of Pisa, Italy
- Apr. 2009 12. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Physics Department Seminar, University of Genoa, Italy
- Mar. 2009 11. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Science & Technology Seminar, IBM Zürich Research Laboratory, Switzerland
- Mar. 2009 10. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Physics Department Seminar, University of Geneva, Switzerland
- Mar. 2009 9. *Ultra-sensitive force detection applied to magnetic resonance imaging*  
Physics Seminar, CNRS, Grenoble, France
- Feb. 2009 8. *Adventures in ultra-sensitive force detection*  
Physics Department Colloquium, University of Basel, Switzerland
- Feb. 2009 7. *Adventures in ultra-sensitive force detection*  
Solid State Physics Seminar, ETH, Zürich, Switzerland
- Mar. 2008 6. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
Physics Department Seminar, University of Basel, Switzerland
- Jan. 2008 5. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
Physics Department Seminar, University of Minnesota, Minneapolis, USA
- Nov. 2007 4. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
Physics Department Seminar, University of Pittsburgh, USA
- Oct. 2007 3. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
(with Dr. Christian Degen)  
Colloquium, IBM Almaden Research Center, San Jose, USA
- Jul. 2007 2. *Ultrasensitive force detection applied to nuclear magnetic resonance*  
Condensed Matter Seminar, Ludwig Maximilians University, Munich, Germany
- May 2004 1. *Manipulating nuclear spins in semiconductors: a future information storage technology?*  
Materials Structures and Devices Focus Center Teleseminar Series, teleconference

### Contributed Talks

---

- Dec. 2017 12. *Quantum Sensing*  
NCCR Quantum Science and Technology: Site Visit, ETH, Zürich, Switzerland
- Nov. 2014 11. *Quantum Sensing*  
NCCR Quantum Science and Technology: Site Visit, ETH, Zürich, Switzerland

- Dec. 2013 10. *Quantum Sensing*  
NCCR Quantum Science and Technology: Site Visit, ETH, Zürich, Switzerland
- Aug. 2013 9. *Harnessing Nuclear Spin Polarization Fluctuations in a Semiconductor Nanowire*  
The 7th International School and Conference on Spintronics and Quantum Information Technology (SpinTech VII), Chicago, USA
- Jan. 2011 8. *Towards nano-MRI in mesoscopic transport systems*  
NCCR Quantum Science and Technology: First General Meeting, Arosa, Switzerland
- Apr. 2010 7. *Coupling nanomechanics with mesoscopic transport*  
NCCR Nanoscale Science: Site Visit, University of Basel, Switzerland
- Aug. 2008 6. *Nanometer-scale magnetic resonance imaging*  
American Chemical Society National Meeting, Philadelphia, USA
- Mar. 2008 5. *Using a quantum point contact as a sensitive detector of cantilever motion*  
American Physical Society March Meeting, New Orleans, USA
- Mar. 2007 4. *Nuclear magnetic resonance imaging with 90-nm resolution*  
American Physical Society March Meeting, Denver, USA
- Mar. 2005 3. *Spin transfer and coherence in coupled quantum wells*  
American Physical Society March Meeting, Los Angeles, USA
- Mar. 2003 2. *Electronic manipulation of nuclear spin in semiconductor quantum wells*  
American Physical Society March Meeting, Austin, USA
- Mar. 2002 1. *Electron spin dynamics and resonant nuclear depolarization in semiconductor nanostructures*  
American Physical Society March Meeting, Indianapolis, USA

## Poster Presentations

---

- Feb. 2008 15. *Using a quantum point contact as a sensitive detector of cantilever motion*  
Gordon Research Conference on Mechanical Systems in the Quantum Regime, Ventura, USA
- Mar. 2007 14. *Feedback damping and magnetic friction in ultra-soft cantilevers*  
The 3rd Annual Nanoprobes Workshop Center for Probing the Nanoscale (CPN), Stanford University, USA
- Dec. 2006 13. *Feedback damping and magnetic friction in ultra-soft cantilevers*  
Workshop on Quantum Electro Mechanical Systems (QEM-2), Morro Bay, USA
- Jun. 2006 12. *Nuclear magnetic resonance imaging with 90-nm resolution*  
Magnetic Resonance Force Microscopy: Routes to Three-Dimensional Imaging of Single Molecules, The Kavli Institute at Cornell for Nanoscale Science, Cornell University, USA
- May 2006 11. *Nuclear magnetic resonance force microscopy*  
National Science Foundation (NSF) Site Visit, Center for Probing the Nanoscale (CPN), Stanford University, USA
- May 2006 10. Prize Winner: *Nuclear magnetic resonance force microscopy*  
The 2nd Annual Nanoprobes Workshop Center for Probing the Nanoscale (CPN), Stanford University, USA

- Aug. 2005      9. *Antiferromagnetic s-d exchange coupling in GaMnAs quantum wells*  
The 3rd International School and Conference on Spintronics and Quantum Information Technology (SpinTech III), Awaji Island, Hyogo, Japan
- Apr. 2005      8. *Antiferromagnetic s-d exchange coupling in GaMnAs quantum wells*  
Materials Structures and Devices (MSD) Focus Center Review, MIT, USA
- Nov. 2004      7. *Spin transfer and coherence in coupled quantum wells*  
DARPA/DMEA Center for Nanoscience Innovation for Defense (CNID) Review Meeting, UCLA, USA
- Jul. 2004      6. *Electrical control of carrier spin dynamics in coupled quantum wells*  
The 3rd International Conference on Physics and Applications of Spin-related Phenomena in Semiconductors (PASPS III), Santa Barbara, USA
- Jun. 2004      5. *Optoelectronic manipulation of nuclear spin in a semiconductor quantum well*  
DARPA QuIST Program Review Meeting, Beverly Hills, USA
- Mar. 2003      4. *Magnetic and electronic manipulation of nuclear spin in a semiconductor quantum well*  
Gordon Research Conference on Quantum Information Science, Ventura, USA
- Jul. 2002      3. *Electron spin dynamics and resonant nuclear depolarization in semiconductor nanostructures*  
International School of Physics "Enrico Fermi": Course CLI (Quantum Phenomena in Mesoscopic Systems), Villa Monastero, Varenna, Italy
- Jul. 2001      2. *Spin coherence and dephasing in GaN*  
The 2nd Stig Lundqvist Research Conference on the Advancing Frontiers of Condensed Matter Physics: "Non-Conventional Systems and New Directions", The Abdus Salam International Centre, Trieste, Italy
- May 2001      1. *Spin coherence and dephasing in GaN*  
The 1st International School and Conference on Spintronics and Quantum Information Technology (SpinTech I), Maui, USA

## Outreach Talks

---

- Mar. 2018      5. *Nanometer-scale magnetic resonance imaging*  
Swiss Young Physicists' Tournament, University of Basel, Switzerland
- Nov. 2017      4. *Nanotecnologia: come e perché*  
TecDay, Liceo Cantonale di Lugano 1, Lugano, Switzerland
- Nov. 2015      3. *Nanotecnologia: come e perché*  
TecDay, Liceo Cantonale di Lugano 2, Lugano, Switzerland
- Jan. 2013      2. *Magnetresonanztomographie auf den Nanometer genau*  
Saturday Morning Physics, University of Basel, Switzerland
- Feb. 2012      1. *What is nanomechanics?*  
The Physics of Everything: From Astrophysics to Biophysics to Nanoscience In Dialogue Series, International School Basel, Reinach, Switzerland

## Courses Taught

---

<i>Fall 2018</i>	19. Introduction to Nanomechanics (Masters-level, in English)
<i>Spring 2018</i>	18. Physics II for Physicists (Bachelors-level, in English)
<i>Fall 2017</i>	17. Physics I for Biologists (Bachelors-level, in English)
<i>Spring 2017</i>	16. Fundamental Electronics (Masters-level, in English)
<i>Fall 2016</i>	15. Physics I for Biologists (Bachelors-level, in English)
<i>Spring 2016</i>	14. Fundamental Electronics (Masters-level, in English)
<i>Fall 2015</i>	13. Physik I für Studierende der Biologie (Bachelors-level, in German)
<i>Spring 2015</i>	12. Fundamental Electronics (Masters-level, in English)
<i>Fall 2014</i>	11. Physik I für Studierende der Biologie (Bachelors-level, in German)
<i>Spring 2014</i>	10. Fundamental Digital Electronics (Masters-level, in English)
<i>Fall 2013</i>	9. Fundamental Analog Electronics (Masters-level, in English)
<i>Spring 2013</i>	8. Fundamental Digital Electronics (Masters-level, in English)
<i>Fall 2012</i>	7. Fundamental Analog Electronics (Masters-level, in English)
<i>Spring 2012</i>	6. Introduction to Nanomechanics (Masters-level, in English)
<i>Fall 2011</i>	5. Fundamental Electronics (Masters-level, in English)
<i>Spring 2011</i>	4. Optics of Solid-state Nanostructures (Masters-level, in English)
<i>Fall 2010</i>	3. Introduction to Nanomechanics (Masters-level, in English)
<i>Spring 2010</i>	2. Optics of Solid-state Nanostructures (Masters-level, in English)
<i>Fall 2009</i>	1. Introduction to Nanomechanics (Masters-level, in English)

## Post-doctoral Researchers Supervised

---

<i>2014 - Present</i>	5. Boris Groß
<i>2014 - 2018</i>	4. Denis Vasyukov
<i>2013 - Present</i>	3. Floris Braakman
<i>2011 - 2014</i>	2. Hari Shankar Solanki
<i>2009 - 2013</i>	1. Fei Xue

## Ph.D. Students Supervised

---

<i>2018 - Present</i>	15. Hinrich Mattiat
<i>2018 - Present</i>	14. David Jaeger
<i>2017 - Present</i>	13. Giulio Romagnoli
<i>2017 - Present</i>	12. Simon Philipp
<i>2016 - Present</i>	11. Lorenzo Ceccarelli
<i>2016 - Present</i>	10. Thibaud Ruelle
<i>2014 - Present</i>	9. Nicola Rossi
<i>2014 - Present</i>	8. Marcus Wyss
<i>2013 - 2018</i>	7. Davide Cadeddu
<i>2012 - 2017</i>	6. Benedikt Herzog
<i>2012 - 2017</i>	5. Andrea Mehlin
<i>2011 - 2015</i>	4. Arne Buchter
<i>2009 - 2014</i>	3. Dennis Weber
<i>2009 - 2014</i>	2. Michele Montinaro
<i>2009 - 2013</i>	1. Phani Peddibhotla

## Masters Students Supervised

---

<i>2015 - 2016</i>	4. Alexander Schwarb
<i>2014 - 2015</i>	3. Kavian Davallou
<i>2011 - 2012</i>	2. Andrea Mehlin
<i>2011 - 2012</i>	1. Benedikt Herzog

## Membership & Service

---

- 2015 - Present*      Scientific Committee Member of NCCR Quantum Science and Technology (QSIT)
- 2009 - Present*      Grant reviewer: Swiss National Science Foundation, European Research Council, National Science Foundation (USA), Israel Science Foundation, Chilean National Commission for Scientific and Technological Research, Netherlands Organization for Scientific Research, and Natural Sciences and Engineering Research Council of Canada.
- 2005 - Present*      Journal reviewer: Physical Review Letters, Physical Review A, Physical Review B, Physical Review Applied, Applied Physics Letters, Nature Physics, Nature Nanotechnology, Nature Photonics, Nature Communications, Nano Letters, Small, Nanotechnology.
- 2001 - Present*      Member of the American Physical Society