

CURRICULUM VITAE

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EDUCATION:

- 2002 Ph.D., Physics, University of California, Berkeley
Thesis: SQUID-Detected NMR and MRI in Microtesla Magnetic Fields
- 1998 M.S., Physics, University of California, Berkeley
- 1993 A.B., *magna cum laude*, Physics, Harvard University

EMPLOYMENT:

- 2006- Assistant Professor of Physics, University of Wisconsin-Madison
- 2004-2006 Postdoctoral Fellow, University of California, Santa Barbara
- 2003-2004 National Research Council Postdoctoral Fellow, National Institute of Standards and Technology, Boulder, Colorado
- 2002-2003 Postdoctoral Fellow, Lawrence Berkeley National Laboratory
- 1997-2002 Graduate Research Assistant, University of California, Berkeley and Lawrence Berkeley National Laboratory
- 1996-1997 Graduate Teaching Assistant, University of California, Berkeley

HONORS:

- 1996 Graduate Student Teaching Award, UC Berkeley
- 1993 *Phi Beta Kappa*, Harvard University

PUBLICATIONS AND PATENTS:

1. M. Steffen, M. Ansmann, R.C. Bialczak, N. Katz, E. Lucero, **R. McDermott**, M. Neeley, E. M. Weig, A. N. Cleland, and J.M. Martinis, Measurement of the Entanglement of Two Superconducting Qubits via State Tomography, *Science* **313**, 1423 (2006).
2. N. Katz, M. Ansmann, R.C. Bialczak, E. Lucero, **R. McDermott**, M. Neeley, M. Steffen, E. M. Weig, A. N. Cleland, J.M. Martinis, and A. N. Korotkov, Coherent State Evolution in a Superconducting Qubit from Partial-collapse Measurement, *Science* **312**, 1498 (2006).
3. M. Steffen, M. Ansmann, **R. McDermott**, N. Katz, R.C. Bialczak, E. Lucero, M. Neeley, E.M. Weig, A.N. Cleland, and J.M. Martinis, State Tomography of Capacitively Shunted Phase Qubits with High Fidelity, *Phys. Rev. Lett.* **97**, 050502 (2006).
4. J.M. Martinis, K.B. Cooper, **R. McDermott**, M. Steffen, M. Ansmann, K.D. Osborn, K. Cicak, S. Oh, D.P. Pappas, R.W. Simmonds, and C.C. Yu, Decoherence in Josephson Qubits from Dielectric Loss, *Phys. Rev. Lett.* **95**, 210503 (2005).
5. **R. McDermott**, R.W. Simmonds, M. Steffen, K.B. Cooper, K. Cicak, K.D. Osborn, S. Oh, D.P. Pappas, and J.M. Martinis, Simultaneous State Measurement of Coupled Josephson Phase Qubits, *Science* **307**, 1299 (2005).
6. S. Oh, K. Cicak, **R. McDermott**, K.B. Cooper, K.D. Osborn, R.W. Simmonds, M. Steffen, J.M. Martinis, and D.P. Pappas, Low-Leakage Superconducting Tunnel Junctions with a Single-Crystal Al_2O_3 Barrier, *Supercond. Sci. Technol.* **18**, 1396 (2005).
7. J. Clarke, **R. McDermott**, A. Pines, and A.H. Tribesinger, SQUID detected NMR and MRI at Ultralow Fields, U.S. Patent No. 6,885,192 (2005).
8. K.B. Cooper, M. Steffen, **R. McDermott**, R.W. Simmonds, S. Oh, D.A. Hite, D.P. Pappas, and J.M. Martinis, Observation of Quantum Oscillations between a Josephson Phase Qubit and a Microscopic Resonator Using Fast Readout, *Phys. Rev. Lett.* **93**, 180401 (2004).
9. K.M. Lang, D.A. Hite, R.W. Simmonds, **R. McDermott**, D. P. Pappas, and J. M. Martinis, Conducting Atomic Force Microscopy for Nanoscale Tunnel Barrier Characterization, *Rev. Sci. Instrum.* **75**, 2726 (2004).

10. **R. McDermott**, S-K. Lee, B. ten Haken, A.H. Trabesinger, A. Pines, and J. Clarke, Microtesla MRI with a Superconducting QUantum Interference Device, *Proc. Natl. Acad. Sci.* **101**, 7857 (2004).
11. **R. McDermott**, N. Kelso, S-K. Lee, M. Mössle, M. Mück, W. Myers, B. ten Haken, H.C. Seton, A.H. Trabesinger, A. Pines, and J. Clarke, SQUID-Detected Magnetic Resonance Imaging in Microtesla Magnetic Fields, *J. Low Temp. Phys.* **135**, 793 (2004).
12. A.H. Trabesinger, **R. McDermott**, S-K. Lee, M. Mück, J. Clarke, and A. Pines SQUID-detected Liquid State NMR in Microtesla Fields, *J. Phys. Chem. A* **108** 957 (2004).
13. **R. McDermott**, A.H. Trabesinger, M. Mück, E.L. Hahn, A. Pines, and J. Clarke, Liquid-State NMR and Scalar Couplings in Microtesla Magnetic Fields, *Science* **295** 2247 (2002).
14. A. Wong-Foy, S. Saxena, A.J. Moule, H.M.L. Bitter, J.A. Seeley, **R. McDermott**, J. Clarke, and A. Pines, Laser-polarized Xe-129 NMR and MRI at Ultralow Magnetic Fields, *J. Mag. Reson.* **157** 235 (2002).
15. S. Saxena, A. Wong-Foy, A.J. Moule, J.A. Seeley, **R. McDermott**, J. Clarke and A. Pines, Resolution of ^{129}Xe Chemical Shifts at Ultralow Magnetic Field, *J. Am. Chem. Soc.* **123**, 8133 (2001).
16. Y.R. Chemla, H.L. Grossman, Y. Poon, **R. McDermott**, R. Stevens, M.D. Alper, and John Clarke, Ultrasensitive Magnetic Biosensor for Homogeneous Immunoassay, *Proc. Natl. Acad. Sci.* **97**, 14268 (2000).
17. T.J. Shaw, J.W. Chan, S.-H. Kang, **R. McDermott**, J.W. Morris, Jr., and J. Clarke, Scanning SQUID Microscope Differentiation of Ferromagnetic Steel Phases, *Acta Materialia* **48**, 2655 (2000).
18. K. Schlenga, **R. McDermott**, J. Clarke, R.E. de Souza, A. Wong-Foy and A. Pines, Low-Field Magnetic Resonance Imaging with a High- T_c dc Superconducting Quantum Interference Device, *Appl. Phys. Lett.* **75**, 3695 (1999).
19. R.E. de Souza, K. Schlenga, A. Wong-Foy, **R. McDermott**, A. Pines and J. Clarke, NMR and MRI Obtained with High Transition Temperature dc SQUIDS, *J. Brazilian Chem. Soc.* **10**, 132 (1999).
20. A. Kittel, K.A. Kouznetsov, **R. McDermott**, B. Oh, John Clarke, C. Soble and V. Matijasevic, High- T_c Superconducting Second-Order Gradiometer, *Appl. Phys. Lett.*, **73**, 2197 (1998).