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Joe Becker

Education

2015–Present **Doctor of Philosophy**, *Texas A&M University*, College Station, TX.
- Physics

2005–2012 **Bachelor of Arts**, *University of Colorado*, Boulder, CO.
- Physics

2005–2012 **Bachelor of Arts**, *University of Colorado*, Boulder, CO.
- Mathematics

2001–2005 **International Baccalaureate Diploma**, *Poudre High School*, Fort Collins, CO.

Academic Background

Physics Advanced Physics/Optics Lab, Electronics Lab, Quantum Mechanics, Electricity and Magnetism, Classical Mechanics, Thermodynamics, Error Analysis, Statistical Mechanics, Solid State Physics, General Relativity

Mathematics Calculus, Mathematical Analysis, ODE & PDE, Complex Analysis, Fourier Analysis, Linear Algebra, Probability Theory, Mathematical Statistics

Computer Science Data Structures, Algorithms

Research Experience

2015–Present **Graduate Research Assistant**, *Texas A&M University*, Professor Alexsei Zheltikov.
- Research into nitrogen-vacancy diamond optically detected magnetic resonances.

2014–2015 **Research Assistant**, *National Institute of Standards and Technology*, Scott B. Papp & Scott A. Diddams.
- Researched low noise stimulated Brillouin scattering lasing using silica microrod resonators.
- Whispering gallery mode micro-resonator construction and analysis.

2012–2013 **Research Assistant**, *Liquid Crystal Materials Research Center*, Professors Noel Clark, Matthew Glaser, & Joseph Maclennan.
- Designed and conducted scientific measurements on free-suspended liquid crystal films.
- Studied quasi-two-dimensional diffusion constants with liquid crustal island and meniscus interactions.

2011 **Summer Internship**, *Tech-X Corporation*, Peter Stoltz Ph.D.
- Conducted a verification study on Nautilus, the fluid plasma modeling software.

2006–2008 **Research Assistant**, *University of Colorado at Boulder: High Energy Physics BaBar Group*, Professors James G. Smith & William T. Ford.
- Measured quasi-twobody decays $B^0 \to a_0(1450)^- \pi^+$, $B^0 \to a_0(1450)^- K^+$, and $B^0 \to \eta\rho^0$ for the BaBar collaboration.

Teaching Experience

2015 **Teaching Assistant**, *Physics 218: Mechanics*, Texas A&M University, Department of Physics and Astronomy.
- Lead four recitation/laboratory sections of first semester physics.
- Assisted students in problem solving and laboratory techniques.

Publications

2016 **S. M. Blakley, A. B. Fedotov, *J. Becker*, N. Altangerel, I. V. Fedotov, P. Hemmer, M. O. Scully, A. M. Zheltikov**, *"Stimulated fluorescence quenching in nitrogen-vacancy centers of diamond: temperature effects"*.
Optics Letters **41**(9):2077 (2016)

2016 **W. Loh, *J. Becker*, D. Cole, A. Coillet, F. Baynes, S. Papp, S. Diddams**, *"A microrod-resonator Brillouin laser with 240 Hz absolute linewidth"*.
New J. Phys. **18**(2016) 045001

2007 **The BABAR Collaboration, B. Aubert, et al**, *"Search for Neutral B-Meson Decays to a0pi, a0K, etarho0, and etaf0"*.
Phys. Rev D **75**, 111102 (2007)

Presentations

2016 **I.V. Fedotov, S. Blakley, A.A. Lanin, E.E. Serebryannikov, L.V. Doronina-Amitonova, N.A. Safronov, *J. Becker*, Y.G. Ermakova, D.A. Sidorov-Biryukov, V.V.Belousov, A.B. Fedotov, S.Ya.Kilin, K. Sakoda, P. Hemmer, V.L. Velichansky, M.O. Scully, A.M. Zheltikov**, *"Spin on a fiber: Quantum Sensing on a Fiber Platform"*.
International Frequency Control Symposium 2015

2015 ***J. Becker*, W. Loh, F. Baynes, D. Cole, F. Quinlan, H. Lee, K. Vahala, S. Papp, S. Diddams**, *"Toward Chip Integrated Ultra-Low-Noise Lasing Using a Microrod Resonator"*.
International Frequency Control Symposium 2015

2015 **W. Loh, *J. Becker*, F. Baynes, D. Cole, F. Quinlan, H. Lee, K. Vahala, S. Papp, S. Diddams**, *"Low-Noise Stimulated Brillouin Lasing in a Microrod Resonator"*.
Conference on Lasers and Electro-Optics 2015

Relevent skills

OS	Linux/Unix, Windows, DOS	Programming	C/C++, Python, Perl, IDL
Scientific	Matlab, Maple, Mathematica, Matplotlib, LabView, OriginPro	Typography	LaTeX, Microsoft Office, Inkscape
Miscellaneous	Precision Machining		