

Matthew Cody Nitschke

Department of Mathematics  
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**Education:**

**M.S. Physics, May 2005**

Thesis: *Lie Algebras in Classical and Quantum Mechanics*  
University of North Dakota, Grand Forks, North Dakota  
Advisor: Dr. William Schwalm

**B.S. Physics and Mathematics, August 2003**

University of North Dakota, Grand Forks, North Dakota

**Experience:**

Instructor, Summer 2006 and Spring 2007

- College Algebra
- Finite Math

Teaching Assistant, September 2005-Present

Calculus Recitation

Research Assistant, Summer 2003

UND Josephson Junction Research Group

- Studied theoretical Josephson Junctions and applications
- developed computational compute Programming
- Studied the fundamentals of Quantum Computing

Undergraduate Laboratory Instructor, September 2001 - May 2005

- Develop Instructional Lectures
- Provide Detailed Explanations of Experiments

Research/Laboratory Assistant, August 1998 - August 2002

UND Low Alpha Lead Research Group

- Utilized and cleaned Surface-barrier detectors for use in Alpha Spectroscopy
- Developed and Operated a "fish-grid" detector
- Aided in the development of a way to prepare large area Lead samples for alpha particle assay
- Performed alpha particle spectroscopy measurements using particle detector

software

**Awards/Honors/Activities:**

David Beach Memorial Scholarship (2000)  
North Dakota EPSCoR Research Grant (1998)  
Research Assistantship, University of North Dakota(Spring 2004)  
Teaching Assistantship, North Dakota State University (August 2005 - Present)  
American Mathematical Society (AMS)  
Mathematical Association of America (MAA)

**Publications:**

*Generating Two-Dimensional Oscillator Matrix Elements Sorted by Angular Momentum*, W.Schwalm, MC Nitschke, and P.Reis, Journal of Physics A **38**(2005), 95659573

**Presentations:**

*Preparation of Large Area, lead Samples of Micron Thickness for Analysis by Alpha Particle Spectroscopy*, Cody Nitschke and Dr. Glenn Lykken, University of North Dakota; a poster presented at the *7th Annual North Dakota EPSCoR Poster Session*, Fargo, ND 28JULY99

*Low-Alpha Lead: Analysis of Micron-Thick Slices and Contamination During Smelting*, Justin Hustoff, Cody Nitschke, Ben Ziegler, and Dr. Glenn Lykken, University of North Dakota; a poster presented at the 2nd Annual Biennial Joint EPSCoR Conference on Stimulating Competitive Research, Fargo ND, 10SEPT99.

*Low-Alpha Lead and Microtome Sliced Lead for Assessment of Alpha Particle Emissions for Computer Chip Manufacturing*, Cody Nitschke, Ben Ziegler, Aaron Kempenich, Dr. Glenn Lykken, and Dr. Berislav Momcilovic, University of North Dakota and the Institute for Medical Research and Occupational Health, Croatia; an oral presentation presented for the A. Roger Dension Competition at the Joint Meeting of the Minnesota, North Dakota, and South Dakota Academies of Science, Moorhead MN, 29APR2000.

*Metallurgic Impurities Affect Micron Slicing of Lead for Assessment of Alpha Particle Emissions in Computer Chip Manufacturing*, Cody Nitschke, Dr. Glenn Lykken, and Dr. B. Momcilovic, Dept. of Physics, University of North Dakota, Institute for Medical Research and Occupational Health, Zagreb Croatia; a poster presented at the 48th Annual Midwest Solid State Physics Conference and Solid State Theory Symposium, Grand Forks ND, 14OCT2000.

*Clean Galena, Contaminated Lead, and Soft Errors in Memory Chips*  
G.I. Lykken, J. Hustoff, B. Ziegler, and B. Momchilovic; published in the  
*Journal of Electronic Materials*, vol 29, issue 10, 2000.

*Electric Circuits and Symmetry Reduction* Cody Nitschke,  
University of North Dakota a talk presented at the North Central Section  
meeting of the Mathematical Association of America, Winona MN, 24APR2004.

*Example of a Solvable 3-Body Problem* Cody Nitschke,  
University of North Dakota, a talk presented at the North Central Section  
meeting of the Mathematical Association of America, Fargo, ND 30OCT2004.

*Example of a Solvable 3-Body Problem* Cody Nitschke and W.Schwalm,  
University of North Dakota, a talk presented at the University of North Dakota  
Graduate Scholarly Forum, Grand Forks ND, 23FEB2005

*A Pedestrian Study of the Roots in  $y$  of the Polynomial*  
 $p(x) = (5x^2 - 1)y^5 + 17xy^3 + 4x^2y - x^2 + 1$  as functions of  $x$  Cody Nitschke,  
University of North Dakota, a talk presented at the North Central Section  
meeting of the Mathematical Association of America, Northfield MN, 23APR2005.

#### References:

Dr. Glenn Lykken (Professor and former research advisor)  
(701) 777 - 3519  
glenn\_lykken@und.nodak.edu

Dr. William Schwalm (Professor and former advisor)  
(701) 777-3530  
wschalm@sage.und.nodak.edu

Michael Olson (radio station manager and supervisor)  
(701) 772-8951

Dr. Anthony Bevelacqua (Professor)  
(701)777-2883  
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Dr. Graeme Dewar (Professor)  
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