

# COLLIN MEIERBACHTOL

2120 Engineering Building  
East Lansing, MI 48823  
<meierbac@egr.msu.edu>

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## EDUCATION

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**Michigan State University, East Lansing, MI** **August 2007 – Present**  
Department of Electrical and Computer Engineering  
*M.S.E.E. Expected May 2009 in III-V semiconductor theory, applications, design, and production*  
Advisors: Dr. Terence Brown, Dr. Percy Pierre

**Gustavus Adolphus College, St. Peter, MN** **Class of 2007**  
Physics Department  
*B.A. in Physics awarded May 27, 2007*  
Advisor: Dr. Charles Niederriter

**Northfield Senior High School, Northfield, MN** **Class of 2003**  
*High School Diploma awarded June 7, 2003*

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## RESEARCH EXPERIENCE

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**Michigan State University, East Lansing, MI** **August 2007 - Present**  
Molecular Beam Epitaxy Laboratory, Engineering Research Complex  
Advisor: Dr. Terence Brown

- Helped bring recycled GEN-II MBE system online
- Used MBE to grow III-V Nitride-based semiconductor structures
- Tested grown structures using various analytical methods

**University of Minnesota – Twin Cities Campus, Minneapolis, MN** **Summer 2006**  
Experimental and Applied Optics Laboratory  
Department of Electrical Engineering and Computer Science  
Advisors: Dr. James Leger, Dr. Sang-Hyuhn Oh

- Theoretically modeled surface plasmon resonance (SPR) response from thin film structures
- Set up optical experiment to construct polarization and investigate SPR
- Observed and verified SPR via radial polarization

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## TEACHING EXPERIENCE

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**Gustavus Adolphus College, St. Peter, MN**  
Physics Department

“General Physics I & II” **September 2004 – May 2007**  
Tutored and advised non-physics majors in basic areas of kinematics, inertia, electromagnetism, and general theory of relativity.

“Electronics and Instrumentation I” **February 2006 & February 2007**  
Laboratory assistant to physics majors in areas of basic circuit design and construction, digital logic design and implementation, and electronics.

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## PUBLICATIONS

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**C. Meierbachtol**, T. Brown, "Dopant Characterization in Nitrogen- and Boron-Doped Type IIb Diamond via Spectroscopic Methods," [Not yet submitted].

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## CONFERENCES / PRESENTATIONS

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**C. Meierbachtol**, T. Brown, *Simulating a High Electron Mobility Transistor – Surface Plasmon Resonance Coupled Device*, 2008 Spring Symposium of the American Vacuum Society – Michigan Chapter, The University of Toledo, Toledo, OH, 28 May 2008.

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## RELEVANT COURSES

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### Michigan State University, East Lansing, MI

- Theory of Modern Electronic Devices
- Electromagnetism I & II
- Introduction to Scanning Electron Microscopy (SEM)
- Introduction to Physical Electronics
- Quantum Mechanics I

### Gustavus Adolphus College, St. Peter, MN

- Electronics and Instrumentation I\* & II\*\*
- Experimental Modern Physics\*
- Applied Mathematics for Physics and Engineering
- Advanced Mathematical Methods of Physics
- \* *Weekly laboratory along with lecture course*
- Quantum Mechanics
- Vector Calculus
- Electromagnetic Theory
- Theory of Complex Variables
- \*\* *Project Requirement*
- Optics\*
- Linear Algebra

### Northfield Senior High School, Northfield, MN

- Advanced Placement Physics (Score: 4 of 5)
- Advanced Placement Calculus (Score: 5 of 5)

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## HONORS AND AWARDS

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- GAANN Fellow in Enabling Technologies for Wireless Sensor Networks 2007 – 2010
- Graduated Cum Laude (3.698 of 4.000) from Gustavus Adolphus College May 27, 2007
- Lee Nobel Science Scholarship 2006 - 2007
- Gustavus Presidential Scholarship 2003 – 2007
- Gerald and Julia Swanson Scholarship 2004 – 2006
- Richard M. Fuller Award May 2004
- Gustavus Dean's List Fall 2003 – Fall 2004

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## MEMBERSHIPS

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- Phi Beta Kappa – Epsilon Chapter of Minnesota May 2007 –
- Sigma Pi Sigma Honor Society May 2007 –