

Robert R. McLeod

Contact Information

Robert R. McLeod, Ph.D.
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Education

1995	University of Colorado <i>Doctorate of Philosophy in Electrical Engineering</i>	Boulder, CO 4.00 GPA
1989	University of California <i>Masters of Science in Engineering Applied Science</i>	Davis, CA 3.73 GPA
1984	Montana State University <i>Bachelors of Science summa cum laude, Honors Program</i>	Bozeman, MT 3.95 GPA
1985	<i>Masters of Science in Electrical Engineering</i>	4.00 GPA

Professional Experience

2003- 2006-	University of Colorado <i>Assistant Professor</i> <i>Director, Colorado Center for Information Storage</i>	Boulder, CO
1999-2001 2001-2003	JDS Uniphase <i>Senior Manager, Passive Components</i> <i>Director, Photonic Subsystems</i>	San Jose, CA
1996-1997 1997-1999	Siros Technologies <i>Systems Engineer</i> <i>Manager of Head/Media Group</i>	San Jose, CA
1993 - 1996	Optoelectronic Data Systems <i>Vice President</i>	Boulder, CO
1986-1991	Lawrence Livermore National Lab <i>Member of Technical Staff</i>	Livermore, CA

Honors and Awards

2002	JDS Uniphase CEO Award for Excellence
1992	Defense Science and Engineering Fellow
1982	Phi Kappa Phi

Publications

Peer Reviewed Journal Papers (citations)

1. A. C. Sullivan and M. W. Grabowski, R. R. McLeod, "3D Direct-write lithography into photopolymer," *Applied Optics* **46**, pp. 295-301, 2007
2. M. R. Ayres and R. R. McLeod, "Scanning transmission microscopy using a position-sensitive detector," *Applied Optics* **45**, pp. 8410-8418, 2006.
3. R. R. McLeod and S. K. Walter, "Acousto-optic parallel read/write head for optical disk data storage," *Applied Optics* **45**, pp. 7065-7072, 2006.
4. R. R. McLeod and T. Honda, "Improving the spectral resolution of wedged etalons and linear variable filters with incidence angle," *Optics Letters* **30**, pp. 2647-2649, 2005.
5. (10) R. R. McLeod, A. J. Daiber, M. E. McDonald, T. L. Robertson, T. Slagle, S. L. Sochava, and L. Hesselink, "Microholographic multilayer optical disk data storage," *Applied Optics* **44**, pp. 3197-3207, 2005.
6. (3) T. Honda, A.C. Liu, J. Valera, J. Colvin, K. Sawyer, R.R. McLeod, "Diffraction-compensated free-space WDM add-drop module with thin-film filters," *IEEE Photonics Technology Letters* **15**, pp. 69 -71, 2003.
7. (1) R. McLeod, S. Blair, and K. Wagner, "Variational approach to orthogonally-polarized optical soliton interaction with cubic and quintic nonlinearities", *Physica Scripta* **59**, pp. 365-373, 1999.
8. (2) R. McLeod, K. Wu, K. Wagner, and R.T. Weverka, "Acousto-optic photonic crossbar switch, Part I: Design", *Applied Optics* **35**, pp. 6331-6353, 1996.
9. (17) S. Blair, K. Wagner and R. McLeod, "Material figures-of-merit for spatial soliton interactions in the presence of absorption", *Journal of the Optical Society of America B* **13**(10), pp. 2141-2153, 1996.
10. (76) R. McLeod, K. Wagner and S. Blair, "3+1 dimensional optical soliton dragging logic", *Physical Review A* **52**(4), pp. 3254-3278, 1995.
11. (23) S. Blair, K. Wagner, R. McLeod, "Asymmetric spatial soliton dragging," *Optics Letters* **19** (23), p 1943-1945, 1994.
12. (15) M. J. Barth, R. R. McLeod, and R.W. Ziolkowski, "A near and far-field projection algorithm for finite-difference time-domain codes," *Journal of Electromagnetic Waves and Applications* **6**, pp. 5-18, 1992.
13. A. Gautesen, R.W. Ziolkowski, and R.R. McLeod, "Solution to the Scattering of Electromagnetic Waves from a Dielectric Semi-Cylinder," *SIAM Journal on Applied Mathematics* **51**, p. 1556, 1991.

Peer Reviewed Book Chapters

1. T. Weverka, K. Wagner, R.R. McLeod, K. Wu, "Low-Loss Acousto-Optic Photonic Switch," in *Acousto-Optic Signal Processing*, Marcel Dekker, NY, 1994.

Patents, Issued

1. J. Shen, R. R. McLeod, D. E. Crafts, B. Fondeur, Y. Ding, P-C Sun, USP 7,035,505, "Optical performance monitor," April 25, 2006
2. T. Honda, R. R. McLeod, USP 7,031,610, "Diffraction-compensated integrated WDM," April 18, 2006
3. B.L. Heffner; R. McLeod, USP 6,765,665 , "Optical bit rate detector," July 20, 2004
4. L. Hesselink, R.R. McLeod, S.L. Sochava, USP 6,614,741, "Optical data storage by selective localized alteration of a format hologram in a holographic storage disk," Sept 2, 2003
5. M. McDonald, R. McLeod A. Daiber, USP 6,563,779, "Tracking error signal generation using confocally filtered detection", May 13, 2003
6. A. Daiber, R. McLeod, R. Snyder, USP 6,549,664, "Sparse modulation codes for holographic data storage", April 15, 2003
7. X.D. He, R. McLeod, H.W. Mao, Q. Guo, K. Tai, K.W. Chang, USP 6,545,805, "Polarization-dependent retroreflection mirror device", April 8, 2003
8. M. Lipson, S. Sochava, L. Hesselink; B. Cumpston, R. McLeod, C. Claude, USP 6,512,606, "Optical storage media and method for optical data storage via local changes in reflectivity of a format grating", Jan 28, 2003
9. R. McLeod, A. Cohen, USP 6,437,916, "Strain-stabilized birefringent crystal", Aug 20, 2002
10. A. Daiber, R. McLeod, T. Honda, USP 6,322,933, "Volumetric track definition for data storage media used to record data by selective alteration of a format hologram", Nov 27, 2001
11. M. McDonald, R. McLeod, USP 6,288,986, "Focus error signal generation using a birefringent plate with confocal detection", Sept 11, 2001
12. M. McDonald, R. McLeod, USP 6,269,057, "Focus error signal generation using a birefringent lens with confocal detection", July 31, 2001
13. R. McLeod, USP 6,256,271, "Focus error signal generation using two polarizers in confocal configuration", Jul. 3, 2001
14. L. Hesselink, R. McLeod, S. Sochava, W. Phillips, USP 6,212,148, "Optical data storage by selective localized alteration of a format hologram", Apr. 3, 2001
15. R. McLeod, M. McDonald, USP 6,111,828, "Focus error signal generation using confocally filtered detection", Aug. 29, 2000
16. R. McLeod, S. Sochava, A. Daiber, M. McDonald, L. Hesselink, I. Sander, T. Slagle, USP 6,020,985, "Multilayer reflection microhologram storage in tape media", Feb. 1, 2000

Patents, Pending

1. R. R. McLeod, "Three-Dimensional Direct Write Lithography", US patent filed June 2006
2. R. R. McLeod and E. D. Moore, "Monolithic Waveguide Arrays", US patent filed May 2006

Invited Conference Presentations

1. R. R. McLeod, "3D Etch-a-Sketch[®] : Building complex optical circuits in photopolymer," *IEEE Engineering the Future of Colorado - Pioneering Engineering efforts in Colorado, Annual Colorado Tech Summit*, Denver, CO, September 2006.
2. R. R. McLeod, M. Wolkin, V. Morozov, K. A. Sawyer, "Packaging of micro-optics components to meet Telcordia standards," *Optical Fiber Communication Conference*, pp. 326-327, Anaheim, CA, March 2002.
3. R. McLeod, K. Tai, G. Lei, K. Sawyer, "Micro-Optic Passive Devices: An All-Glass Fabrication Technique," *IEEE Lasers and Electro-Optics Society International Workshop on Fibers and Optical Passive Components*, Pavia, Italy June 2000.
4. R. McLeod, "WDM Component Packaging Design Methodology", *CPMT/LEOS Workshop on Fiber-Optics, Optoelectronics, Photonics Assembly, Packaging and Manufacturing*, Vail, CO, September 1999.

Peer Reviewed Conference Proceedings

1. A. C. Sullivan, M. R. Ayres, R. R. McLeod, "Phase and absorption metrology for thick photopolymer devices," *Proceedings of SPIE Volume: 6335, Organic Holographic Materials and Applications IV*, San Diego, CA, 12 pages, September 2006.
2. A. C. Sullivan, M. W. Grabowski, R. R. McLeod, "Impact of initiation species on index distribution in diffusion photopolymers," *Proceedings of SPIE Volume: 6335, Organic Holographic Materials and Applications IV*, San Diego, CA, 9 pages, September 2006.
3. M.R. Ayres, R.R. McLeod, "Volumetric Phase Metrology for Optical Data Storage," *Optical Data Storage Topical Meeting 2006*, pp. 132- 134, Montreal, CA, April 2006.
4. C. D. Anderson, R. R. McLeod, M. W. Grabowski, A. C. Sullivan, "Photopolymer Waveguide to Fiber Coupling via 3D Direct-Write Lithography," in *Integrated Photonics Research and Applications/Nanophotonics 2006 Technical Digest*, 3 pages (Optical Society of America, Washington, DC, 2006), ITuD4
5. M. W. Grabowski, A. C. Sullivan, R. R. McLeod, "3D Direct-Write Waveguides in Diffusion Photopolymers," in *Integrated Photonics Research and Applications/Nanophotonics 2006 Technical Digest*, 3 pages (Optical Society of America, Washington, DC, 2006), ITuD5
6. R. R. McLeod, A.J. Daiber, M.E. McDonald, S. L. Sochava, T. Honda, T.L. Robertson, T. Slagle, L. Hesselink, "Holographic storage without holography: Optical data storage by localized alteration of a format hologram ," *International Symposium on Optical Memory and Optical Data Storage*, Honolulu, HI, Paper MB1, 2005.
7. S. Kim, L. Gao, and K. H. Wagner, R. T. Weverka, and R. McLeod, "Acousto-Optic Tunable Filter Using Phased-Array Transducer with Linearized RF to

- Optical Frequency Mapping," Proc. SPIE Vol. 5953, 59530M, *Acousto-optics and Photoacoustics*, September 2005.
8. R. R. McLeod, A.J. Daiber, M.E. McDonald, S. L. Sochava, T.L. Robertson, T. Slagle, L. Hesselink, "Micro-holographic multi-layer optical disk data storage," *International Symposium on Optical Memory and Optical Data Storage*, Paper MB3, Honolulu, HI, July 2005.
 9. R. R. McLeod, S. K. Walter, "Acousto-optic parallel read/write head for optical disk data storage," *International Symposium on Optical Memory and Optical Data Storage*, Paper WB3, Honolulu, HI, July 2005.
 10. L. Gao, K. H. Wagner, R. McLeod, "Dispersion-Managed Light Bullets and Their Interactions," *OSA Nonlinear Guided Waves and Their Applications Technical Digest*, Dresden, Germany, Sept 2005.
 11. A. C. Sullivan, M. W. Grabowski, R. R. McLeod, "Tomographic Reconstruction of 3D Index Structures in Photopolymer," *Integrated Photonics Research and Applications Technical Digest*, San Diego, CA, April 2005.
 12. Lu Gao, Robert McLeod, Kelvin H. Wagner, "Ultrafast all-optical wavelength conversion based on (3+1)-D optical soliton dragging interaction", Proc. SPIE Vol. 5556, p. 57-67, *Photonic Devices and Algorithms for Computing VI*, Denver, CO, August 2004
 13. Robert R. McLeod, Amy C. Sullivan, Matthew Grabowski, "Direct-write waveguides in volume photopolymers," *Integrated Photonics Research and Applications*, Paper JWB24, San Francisco, CA, June 2004.
 14. Robert R. McLeod, Amy C. Sullivan, Matthew W. Grabowski, Timothy F. Scott, "Hybrid integrated optics in volume holographic photopolymer", *Proc. SPIE Vol. 5521, 55-62, Organic Holographic Materials and Applications II*, Denver, CO, October 2004
 15. T. Honda, A.C. Liu, J. Valera, J. Colvin, R. R. McLeod, K. Sawyer, "Diffraction-compensated free-space wavelength add/drop module with thin-film filters," *Optical Fiber Communication Conference and Exhibit*, pp. 323- 324, Mar 2002
 16. X. Li, F. Dimov, W. Phillips, L. Hesselink, and R. McLeod, "Parallel Associative Search by Use of a Volume Holographic Memory", *Proceedings of 29th Applied Imagery Pattern Recognition Workshop*, pp.78-83, Washington, DC, October 2000.
 17. J. Gamo-Aranda, R. R. McLeod, P. R. Horche, K. H. Wagner, "Rapid reconfiguration in an acousto-optic crossbar interconnection network," *Proc. SPIE Vol. 3805, Photonic Devices and Algorithms for Computing*, p. 11-18, October 1999.
 18. J. Gamo, P. R. Horche, R. McLeod, K. Wagner, "Dynamic switching of an acousto-optic photonic crossbar," *Proceedings of Advances in Acousto-Optics AAO'99*, pp. 27-28, Florence, Italy, June 1999.
 19. S. Blair and K. Wagner and R. McLeod, "(2+1)-D spatio-temporal solitary-wave dragging," *OSA topical meeting on Nonlinear Optics: Materials, Fundamentals, and Applications*, pp. 482-484, Maui HI, July 1996.
 20. R. McLeod, K. Wagner, and S. Blair, "Robust light bullet dragging logic," *1995 OSA topical meeting on Optical Computing*, Salt Lake City UT, March 1995.

21. R. McLeod, K. Wagner, and S. Blair, "Collisions of stable spatio-temporal solitons," *1995 OSA topical meeting on nonlinear optical guided waves*, Dana Point, CA, February 1995.
22. S. Blair, K. Wagner, and R. McLeod, Orthogonally polarized soliton interactions for all optical logic, *1995 OSA topical meeting on nonlinear optical guided waves*, Dana Point, CA, February 1995.
23. Robert McLeod, Steve Blair, and Kelvin Wagner, "Asymmetric light bullet dragging logic," *Optical Computing 1994*, Edinburgh Scotland, August 1994.
24. K. Wagner and B. McLeod, "Spatial Soliton Dragging Gates and Light Bullets," *OSA Topical Mtg. on Optical Computing*, Palm Springs CA, March 1993.
25. B. McLeod, R.T. Weverka, K.Y. Wu, K. Wagner, A. Mickelson, R. Roth, "Acoustooptic Crossbar Photonic Switch," *OSA Topical Mtg. on Photonics in Switching*, Palm Springs CA, March 1993.
26. R. R. McLeod, R. J. Hawkins, "Using the Finite Difference Time Domain Method as a Design Tool," *Integrated Photonics Research, OSA Technical Digest Series Vol. 10*, pp. 38-39, paper MB17, New Orleans, LA, April 1992.
27. R. J. Hawkins, R. R. McLeod, J.S. Kallman, R.P. Ratowsky, M.D. Feit, J. A. Fleck, Jr., "New Directions in Photonics Simulations: Lanczos Recursion and Finite-Difference Time-Domain," *Seventh IMACS International Conference on Computer Methods for Partial Differential Equations*, New Brunswick, New Jersey, June 1992.
28. R. J. Hawkins and R. McLeod, "Finite-difference time-domain simulations of linear integrated photonic devices," *IEEE Antennas Propagation Society International Symposium Digest*, vol. 1, pp. 261., New York, July 1992,
29. R. McLeod, R.J. Hawkins, J.S. Kallman, "Simulation of planar integrated photonics devices with the LLNL time-domain finite-difference code suite," *Integrated Photonic Research/Gradient Index Optic System (IPR/GIOS) Workshop*, Monterey, CA, April 1991.
30. Barth, Marvin; Pennock, Steve; Ziolkowski, Richard; McLeod, R., "Modeling pulse driven antenna systems with finite differences," *6th Annual Review of Progress in Applied Computational Electromagnetics*, Monterey, CA, March 1990.
31. B. K. Cabral, G. W. Laguna, R. R. McLeod, S. L. Ray, S. T. Pennock, R. L. Berger, and M. F. Bland. Interactive pre and post-processing tools for finite-difference time-domain codes," *IEEE Antennas and Propagation Society International Symposium*, pp. 1098-1099, San Jose, CA, June 1989.
32. J.F. DeFord, G.D. Craig, R. McLeod, "The AMOS (Azimuthal Mode Simulator) Code," *Proceedings of the 1989 IEEE Particle Accelerator Conference*, pp. 1181-1183, Chicago, IL, March 1989.
33. S. T. Pennock, R. R. McLeod, and H. G. Hudson, "Finite-difference time-domain modeling of electromagnetic radiation from an electron beam," *5th Annual Review of Progress in Applied Computational Electromagnetics*, volume 1, pp. 360-372, Monterey, CA, March 1989.
34. R. R. McLeod, S. T. Pennock, and M. J. Barth, "Time domain analysis of waveguide fed antennas," in *Proceedings of the 1989 URSI Radio Science Meeting.*, p. 269, June 1989.

35. McLeod, R. R.; Berger, R. L.; Bacon, L. D. "Time domain modeling of electromagnetic coupling," *4th National Conference on High Power Microwave (HPM) Technology for Defense Applications*, Monterey, CA, May 1988.
36. McLeod, R. R.; Hudson, H. G.; King, R. J., "Magnitude and phase calibration of microwave sensors," *National Radio Science Meeting*, Boulder, CO, January 1986.
37. B.R. McLeod, R.R. McLeod, "Experimental Measurements on a large-scale Helmholtz Coil – Broken Bone Model," *5th Annual BRAGS*, Boston, Massachusetts, October 1985

Peer Reviewed Conference Proceedings (in review)

1. R. R. McLeod, "Localized 3D data storage," *invited*, Optical Data Storage 2007

Seminars and Invited Presentations

1. R. R. McLeod, C. Anderson, E. Moore, M. W. Grabowski, A. C. Sullivan, "Hybrid Integrated Photonics," on-site seminar, Lockheed Martin, Louisville, CO, May 2006.
2. R. R. McLeod, E. Moore, A. C. Sullivan, M. Grabowski, C. Anderson, "Hybrid Integrated Photonics in 3D Photopolymers: Integrating nanophotonics into complex systems," NIST Nanoscience and Applications Conference, Boulder, CO October 2005.
3. R. R. McLeod, "Hybrid Integrated Photonics in 3D Photopolymer," on-site seminar, Lawrence Livermore National Laboratory, Livermore, CA August 2005.
4. R. R. McLeod, "Hybrid Integrated Photonics in 3D Photopolymer," on-site seminar, Intel Corporation, San Jose, CA August 2005.
5. R. R. McLeod, "Hybrid Integrated Photonics," on-site seminar, JDS Uniphase, San Jose, CA, June 2004.
6. R. R. McLeod, "Hybrid Integrated Photonics Development at CU," on-site seminar, Coherent Technologies, Louisville, CO, October 2003.
7. "CDMA Search of holographic digital data storage," on-site seminar, StorageTek, Louisville, CO, October 2003.
8. R. R. McLeod, "Optical Data Storage and Communications Devices in 3D Photopolymers," Optical Sciences and Engineering Program Seminar, Boulder, CO, September 2003.
9. R. R. McLeod, "Next Generation Telecom Components", Stanford Center for Novel Opto-Electronic Materials Annual Meeting, Stanford, CA, September 2000.

Unclassified Government Reports

1. R. R. McLeod, "Temporal scattering and reflection software users manual, version 2.3" Report UCRL-MA--104861-Ver.2-3, Lawrence Livermore National Laboratories, Livermore, CA, 1992.
2. R. R. McLeod, "Temporal scattering and reflection software, Users Manual," Report UCID-21637, Lawrence Livermore National Laboratories, Livermore, CA, 1989.

3. R.J. King, H.G. Hudson, R.R. McLeod, "EM laboratories for linear coupling," Report UCID-20954, 8 pages, Lawrence Livermore National Lab, Livermore, CA, January 1987.
4. R.R. McLeod, H.G. Hudson, H.S. Cabayan, R.J. King, "Experiments in high power microwave susceptibility simulation issues," Report UCID-20851, 16 pages, Lawrence Livermore National Lab, Livermore, CA, July 1986.

Research Grants and Contracts (University of Colorado only)

Research Equipment and Facilities Grants Awarded, all as PI except #6

1. CU College of Engineering: "Photopolymer Testing and Packaging," Total: \$15,000, Award date: March 2005.
2. ILX Lightwave University Donation Program: "Optical Circuits Lab Instrumentation," Total \$10,000, Award date: August 2005.
3. InPhase Technologies: "Optical data storage equipment donation", Total: \$53,000, Award date: January 2005
4. JDS Uniphase: "Integrated Optics Research Facility," Total: \$871,612, Award date: August 2003.
5. Engineering Excellence Fund, "Undergraduate Optics Lab Computer and Remote Instrumentation," Total \$25,750, February 2006
6. CU Provost and College of Engineering, "Augmentation of Shared Nano-Scale Characterization Facility for Advanced Materials and Biological Systems", Total: \$80,000, Award Date: November, 2006, *Co-PI with Rafael Piestun*
7. CU Provost and College of Engineering, "Recirculated Chilled Water for Lasers in ECE and Optics Research and Teaching," \$200,000, Award Date: November 2006

Total Equipment and Facilities Grants (McLeod portion only): **\$1,215,362**

Research Grants and Contracts Awarded, all as PI

1. National Science Foundation, "Hybrid integrated optoelectronic systems," Phase IB Total: \$25,000, Duration: January 2007 – June 2007.
2. National Science Foundation, "3D Lithography of Thick Photopolymers for Imaging and Photonic Crystal Waveguides," Phase I Total: \$89,921. Duration: January 2007 – December 2007
3. National Science Foundation, "Hybrid RF/Optical ICs for High-Bandwidth Spread-Spectrum Communications," Total: \$499,996, Co-PIs Z. Popovic and D. Anderson, McLeod portion: \$244,953, Duration: January 2007 – December 2010.
4. Intel Corporation, "Plastic PHY Interconnect Technology," Total: \$231,000, Duration: August 2006 – July 2009
5. dBm Optics, "Design of system and development of algorithms for interferometric measurement of chromatic dispersion and polarization mode dispersion," Total: \$25,000, May 2006 – December 2007
6. National Science Foundation, "Hybrid integrated optoelectronic systems," Phase I Total: \$50,000, Duration: January 2006 – December 2006.

7. Science Applications International Corporation, "Parallel Polymer Waveguide Array Development," Total: \$50,000, Duration: July 2005 – December 2006
8. Engineering Excellence Fund, "Optical Circuits Lab Instrumentation," Total: \$15,000, Duration: July 2005 – July 2007
9. CU Council on Research and Creative Work, "Imaging via Flexible Polymer Fiber Arrays," Total: \$7,000, Duration: May 2005 – May 2006
10. US Army Medical Research and Materiel Command, "Innovative portable human computer interface system for performance monitoring prediction and eye movement robotic control," Phase I Total: \$39,899, Duration: January 2005 – October 2005
11. CU Council on Research and Creative Work, "Hybrid Integrated Photonics," Total: \$5,000, Duration: July 2004 – July 2005
12. Colorado Center for Information Storage, "Parallel Track and Layer Read/Write Head for Optical Disks," Total: \$64,963, Duration: July 2004 – July 2005
13. StorageTek, Inc, "CDMA Search of Holographic Databases," Total: \$40,867, Duration: January 2004 – January 2005
14. Philip Anthony Charitable Trust, "Hybrid Integrated Photonics," Total: \$50,000, Duration: January 2004 – January 2005

Total Grants and Contracts Awarded (R. McLeod share only): **\$916,628**

Total Equipment, Facilities, Grants and Contracts: **\$2,131,990**

Proposals Declined, Pending or Awarded, Aug 2003-present, as PI: **43**

Proposals Declined, Pending or Awarded, Aug 2003-present, as Co-PI: **14**

Graduate student advising

Graduated students

1. Sarah K. Walter, Master of Science in Electrical and Computer Engineering, Thesis Title: *Parallel read/write system for optical data storage*, University of Colorado, May 2005
2. Charles D. Anderson, Master of Science in Electrical and Computer Engineering, Thesis Title: *Photopolymer waveguide to fiber coupling via 3D direct-write lithography*, University of Colorado, August 2006

Current graduate students

1. Mark R. Ayres, Doctor of Philosophy in Electrical and Computer Engineering, Research area: *Volume phase metrology, data coding and noise sources for holographic data storage*. Comprehensive Exam scheduled Fall 2006, expected graduation date May 2007.
2. Amy C. Sullivan, Doctor of Philosophy in Physics, Research area: *Direct write lithography of polymer integrated optics and optical diffraction tomography*. Comprehensive Exam scheduled Fall 2006, expected graduation date May 2007.

3. Matthew W. Grabowski, Doctor of Philosophy in Physics, Research area: *3D and time dependent modeling of photopolymer development*. Expected graduation date May 2008.
4. Eric Moore, Doctor of Philosophy in Electrical and Computer Engineering, Research area: *3D lithography of photopolymer, discrete diffraction in 2D waveguide arrays*. Expected graduation date May 2008.

Ph.D. student research rotations hosted

1. Libby Heeb, Ph.D. Chemistry, Topic: *Thiol-ene polymers for volume phase lithography*, Fall 2004
2. Eric Moore, Ph.D. ECE, Topic: *3D parallel waveguide arrays in photopolymer*, Fall 2004
3. David Goldstein, Ph.D. Chemistry, Topic: *Measurement of Polymerization Kinetics of thiol-ene photopolymers* Spring 2005
4. Laura Haynes, Ph.D. Chemistry, Topic: *2D and 3D waveguide arrays in photopolymer*, Fall 2005
5. Kimberly Kester, Ph.D. Chemistry, Topic: *Termination kinetics for optimization of thiol-ene polymerization*, Fall 2005
6. Matthew Kirchner, Ph.D. Physics, Topic: *Parallel-write waveguide to fiber coupling in volume photopolymers*, Fall 2006
7. Kristen Vogelhuber, Ph.D. Chemistry, Topic: *Holographic metrology of epoxy-based volume photopolymers*, Spring 2007
8. Greg Berman, Ph.D. ECE, Topic: *Diffraction Unlimited Lithography*, Spring 2007

Undergraduate research associates 2003-present: Mrnal Shukla, Devin Mayer, Wei-Chu Liao, Wei-Shen Liao, Ben Mauser, Matanya Horowitz

Teaching

1. *ECEN 4616/5616, Optoelectronic System Design*, Fall 03, Spring 05, Fall 06
 - 271 page text online at <http://ece.colorado.edu/~mcleod/teaching/oesd.html>
 - Course/instructor rating: A-/A+ (2003), A/A (2005)
2. *ECEN 5606, Optical Lab*, Spring 2004, Co-taught with Steve Cundiff, Jun Ye, and Carol Cogswell. Individual instructor FCQ ratings not available.
 - 106 page text online at <http://ece.colorado.edu/~mcleod/teaching/aol.html>
3. *ECEN 6006, Special Topics: Numerical Methods in Photonics*, Fall 2004
 - New course development
 - 243 page text online at <http://ece.colorado.edu/~mcleod/teaching/nmip.html>
 - Course/instructor rating: A/A+
4. *ECEN 3400, Electromagnetic Fields and Waves*, Fall 2005
 - Enrollment: 56
 - Course/instructor rating: A/A+
5. *ECEN 4606/5166, Guided Wave Optics*, Spring 2006
 - 184 page text online at <http://ece.colorado.edu/~mcleod/teaching/gwo.html>
 - Course/instructor rating: A-/A+(5166), A+/A+(4606)

Professional Service**External**

1. Technical Program Committee Member, OSA Integrated Photonics Research and Applications, 2007
2. Technical Program Committee Member and Session Chair, IEEE/OSA/SPIE Optical Data Storage Conference, 2005-present
3. NSF Proposal Review Panel Member, Engineering Directorate, 2005
4. Optics Resource Volunteer to science teachers in Colorado disadvantaged schools through the NSF/OSA/SPIE/MESA Hands On Optics program, 2005-present
5. Board of Directors Member and Annual Meeting Chair, Colorado Photonics Industry Association, 2004-present
6. Technical Program Committee Member and Session Chair, SPIE Organic Holographic Materials and Applications Conference, 2004-present
7. Technical Program Committee Member, IEEE LEOS Workshop on Fiber Optic Passive Components, 2002
8. Reviewer for Applied Optics, Journal of Quantum Electronics, Optics Communications, Optics Letters, Optics Express

Internal

1. Director, Colorado Center for Information Storage, 2006-present
2. Chair, Campus-wide Optics Initiative Strategy Committee, 2006
3. ECE representative, College Nano Characterization Facility advisory board, 2006
4. ECE Executive Committee Member, 2005-present
5. Member, NSF I/UCRC Photopolymerization Center, 2004-present
6. Executive Committee Member, Hybrid Signal Electronics GAANN fellowship program, 2004-present
7. Co-chair of Optics, Materials, Devices and Solid State prelim exam (2003, 2005)
8. Member, Optical Sciences and Engineering Program, 2003-present
9. Member of 18 graduate student committees in ECE, Chem E, and Physics, 2003-present.
10. Member, Search Committee for senior optics faculty, 2006