

David R. Musicant

Department of Computer Science

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Positions

- Professor of Computer Science, Carleton College, 2013-present.
- Associate Professor of Computer Science, Carleton College, 2006-present.
- Visiting Professor of Computer Science, University of Minnesota, 2010-2011.
- Assistant Professor of Computer Science, Carleton College, 2000-2006.
- Visiting Professor of Computer Science, University of Wisconsin-Madison, spring of 2004.
- Visiting Professor of Computer Science, University of Minnesota, summers of 2001 and 2002.
- Research Assistant, Computer Sciences Department, University of Wisconsin-Madison, 1997-2000.
- Teaching Assistant, Computer Sciences Department, University of Wisconsin-Madison, 1999.
- Senior Consultant, Icon InfoSystems, 1996-1997.
- Operations Research Consultant, ZS Associates, 1994-1996.
- Teaching Assistant, Mathematics Department, University of Wisconsin-Madison, 1992-1994.
- Summer Scholar, Grumman Corporation, Aircraft Systems Division, summers of 1992-1993.
- Teaching Assistant, Mathematics Department, Michigan State University, 1989-1992.

Education

- Ph.D. in Computer Sciences, University of Wisconsin-Madison, 2000.
- M.S. in Computer Sciences, University of Wisconsin-Madison, 1994.
- M.A. in Mathematics, University of Wisconsin-Madison, 1994.
- B.S. in Physics, Michigan State University, 1992.
- B.S. in Mathematics, Michigan State University, 1992.

Publications and Edited Volumes (Carleton student authors underlined)

- David Musicant, Abha Laddha, Tom Choi. Open-Ended Robotics Exploration Projects for Budding Researchers. Proceedings of the 2017 AAAI Conference on Artificial Intelligence.
- Shilad W. Sen, Heather Ford, David R. Musicant, Mark Graham, Oliver S.B. Keyes, Brent Hecht. Barriers to the Localness of Volunteered Geographic Information: *CHI 2015: Proceedings of the 2015 SIGCHI Conference on Human Factors in Computing Systems*. Won honorable mention award.
- David R. Musicant and S. Selcen Guzey. Engaging High School Students in Modeling and Simulation through Educational Media. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Kansas City, MO, March 6, 2015.
- Heather Ford, David R. Musicant, Shilad Sen, Nathaniel Miller. Getting to the Source: Where Does Wikipedia Get Its Information From? *WikiSym '13: Proceedings of the 9th International Symposium on Wikis and Open Collaboration*, 2013.
- Rachel Adams, Alex Kuntz, Morgan Marks, William Martin, David R. Musicant. Keeping Wiki Content Current via News Sources. *IUI '13 Companion: Proceedings of the Companion Publication*

of the 2013 International Conference on Intelligent User Interfaces, 2013, Association for Computing Machinery, pp. 51-52.

- Laurie Smith King, David R. Musicant, Tracy Camp, Paul Tymann, Brad Miller (Editors). *SIGCSE '12: Proceedings of the 43rd ACM Technical Symposium on Computer Science Education*. February 29-March 3, 2012. Association for Computing Machinery, 2012.
- David R. Musicant, Yuqing Ren, James A. Johnson, John Riedl. Mentoring in Wikipedia: A Clash of Cultures. *WikiSym '11: Proceedings of the 7th International Symposium on Wikis and Open Collaboration*, 2011, pp. 173-182.
- Shyong (Tony) K. Lam, Anuradha Uduwage, Zhenhua Dong, Shilad Sen, David R. Musicant, Loren Terveen, John Riedl. WP:Clubhouse? An Exploration of Wikipedia's Gender Imbalance. *WikiSym '11: Proceedings of the 7th International Symposium on Wikis and Open Collaboration*, 2011, pp. 1-10. **Won award for best full paper.**
- Thomas J. Cortina, Ellen L. Walker, Laurie Smith King, David R. Musicant, Lester McCann (Editors). *SIGCSE '11: Proceedings of the 42nd ACM Technical Symposium on Computer Science Education*. March 9-12, 2011. Association for Computing Machinery, 2011.
- Gary Lewandowski, Steven Wolfman, Thomas J. Cortina, Ellen L. Walker, David R. Musicant (Editors). *SIGCSE '10: Proceedings of the 41st ACM Technical Symposium on Computer Science Education*. March 10-13, 2010. Association for Computing Machinery, 2010.
- Deborah S. Gross, Robert Atlas, Jeffrey Rzeszotarski, Emma Turetsky, Janara Christensen, Sami Benzaid, Jamie Olson, Thomas Smith, Leah Steinberg, Jon Sulman, Anna Ritz, Benjamin Anderson, Catherine Nelson, David R. Musicant, Lei Chen, David C. Snyder, James J. Schauer. ENCHILADA: Environmental Chemistry through Intelligent Atmospheric Data Analysis, 25:6, pp. 760-769, June 2010.
- David R. Musicant, Robert Atlas, Janara M. Christensen, Jamie F. Olson, Jeffrey M. Rzeszotarski, Emma R. D. Turetsky. Supervised Learning by Training on Aggregate Outputs (expanded version of below paper). Technical report, September 2009.
- David Barbella, Sami Benzaid, Janara Christensen, Bret Jackson, Victor Qin, David Musicant. Proceedings of The International Conference on Data Mining (DMIN '09), Editors: Robert Stahlbock, Sven F. Crone, and Stefan Lessmann. CSREA Press, 2009, pages 305-311.
- D.R. Musicant, Janara M. Christensen, Jamie F. Olson. Supervised Learning by Training on Aggregate Outputs. Proceedings of the Seventh IEEE International Conference on Data Mining, IEEE Press, 2007, pages 252-261.
- Amy Csizmar Dalal, D.R. Musicant, Jamie Olson, Brandy McMenamy, Sami Benzaid, Ben Kazez, Erica Bolan. Predicting User-Perceived Quality Ratings from Streaming Media Data. Proceedings of the 2007 IEEE International Conference on Communications (ICC-2007), IEEE Press, 2007, pp. 65-72.
- D.R. Musicant. A Data Mining Course for Computer Science: Primary Sources and Implementations. Proceedings of the 2006 ACM SIGCSE Conference, Houston TX, pages 538-542.
- Benjamin J. Anderson, Deborah S. Gross, D.R. Musicant, Anna M. Ritz, Thomas G. Smith, Leah E. Steinberg. Adapting K-Medians to Generate Normalized Cluster Centers. Proceedings of the Sixth SIAM International Conference on Data Mining, Joydeep Ghosh, Diane Lambert, David Skillcorn, Jaideep Srivastava, editors, Society for Industrial and Applied Mathematics, Bethesda, MD, 2006, pages 165-175.

- Benjamin J. Anderson, D.R. Musicant, Anna M. Ritz, Andrew Ault, D.S. Gross, Melanie Yuen, Markus Gälli. User-Friendly Clustering for Atmospheric Data Analysis. Technical report, August 2005.
- B.-C. Chen, L. Chen, R. Ramakrishnan, D.R. Musicant. Learning from Aggregate Views. Proceedings of the 22nd International Conference on Data Engineering, Ling Liu, Andreas Reuter, Kyu-Young Whang, Jianjun Zhang, editors, Atlanta, GA, 2006, page 3.
- D. R. Musicant. Support Vector Machines Illuminated. Encyclopedia of Data Warehousing and Mining, Idea Group Publishing, 2005, pp. 1071-1076.
- R. Ramakrishnan, J. J. Schauer, L. Chen, Z. Huang, M. Shafer, D. S. Gross, D. R. Musicant. The EDAM Project: Mining Atmospheric Aerosol Datasets. International Journal of Intelligent Systems, July 2005 (Volume 20 Issue 7), pp. 759-787.
- Z. Huang, L. Chen, J.-Y. Cai, D. S. Gross, D. R. Musicant, R. Ramakrishnan, J. J. Schauer, S. J. Wright. Mass Spectrum Labeling: Theory and Practice. Proceedings of the Fourth IEEE International Conference on Data Mining, IEEE Press, 2004, pages 122-129.
- D.R. Musicant, Alexander Feinberg. Active Set Support Vector Regression. IEEE Transactions on Neural Networks, Vol. 15, No. 2, March 2004, pp. 268-275.
- D.R. Musicant, V. Kumar, A. Ozgur. Optimizing F-Measure with Support Vector Machines. Proceedings of the Sixteenth International Florida Artificial Intelligence Society Conference, I. Russell and S. Haller, editors, AAAI Press 2003, 356-360.
- Sebastian Celis, D.R. Musicant. Weka-Parallel: Machine Learning in Parallel. Technical report, August 2002.
- P.S. Bradley, O.L. Mangasarian, D.R. Musicant. Optimization Methods in Massive Datasets. *Handbook of Massive Datasets*, J. Abello, P.M. Pardalos, and M.G.C. Resende, editors, Kluwer Academic Publishers, 2002, pp. 439-472.
- O.L. Mangasarian, D.R. Musicant. Large Scale Kernel Regression via Linear Programming. *Machine Learning* 46, January 2002, 255-269.
- Brad Davis, Ethan Sommer, D.R. Musicant. NCV: A Machine Learning Environment for Parallel Evaluation. Technical report, August 2001.
- O.L. Mangasarian, D.R. Musicant. Lagrangian Support Vector Machines. *Journal of Machine Learning Research* Volume 1, March 2001, pp. 161-177.
- O.L. Mangasarian, D.R. Musicant. Active Set Support Vector Machine Classification. *Advances in Neural Information Processing Systems* 13, Todd K. Leen, Thomas G. Dietterich, and Volker Tresp, editors. MIT Press, Cambridge, MA, 2001, pages 577-583.
- O.L. Mangasarian, D.R. Musicant. Data Discrimination via Nonlinear Generalized Support Vector Machines. *Complementarity: Applications, Algorithms and Extensions*, M.C. Ferris, O.L. Mangasarian and J.-S. Pang, editors, Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001, pages 233-251.
- O.L. Mangasarian, D.R. Musicant. Robust Linear and Support Vector Regression. *IEEE Transactions on Pattern Analysis and Machine Intelligence* Volume 22, September 2000, pp. 950-955.
- D.R. Musicant. Data Mining via Mathematical Programming and Machine Learning. Ph.D. Thesis, University of Wisconsin-Madison. July, 2000.

- O.L. Mangasarian, D.R. Musicant. Successive Overrelaxation for Support Vector Machines. *IEEE Transactions on Neural Networks Special Issue on VC Learning Theory and Applications*, Vol. 10 No. 5, 1999, pp. 1032-1037.

Conference Presentations (presenters italicized, Carleton student authors underlined)

- *Eric Walker*, Julia Connelly, *David R. Musicant*. Elegit: Git Learning Tool for Students. Demo presented at the 2017 ACM SIGCSE Technical Symposium on Computer Science Education.
- *David R. Musicant*, S. Selcen Guzey. Engaging High School Students in Modeling and Simulation through Educational Media. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Kansas City, MO, March 6, 2015.
- *Heather Ford*, *David R. Musicant*, Shilad Sen, Nathaniel Miller. Getting to the Source: Where Does Wikipedia Get Its Information From? WikiSym '13: The 9th International Symposium on Wikis and Open Collaboration, 2013.
- Rachel Adams, Alex Kuntz, Morgan Marks, William Martin, *David R. Musicant*. Keeping Wiki Content Current via News Sources. IUI '13: International Conference on Intelligent User Interfaces, 2013 (demonstration).
- *David R. Musicant*, Yuqing Ren, James A. Johnson, John Riedl. Mentoring in Wikipedia: A Clash of Cultures. WikiSym '11: The 7th International Symposium on Wikis and Open Collaboration, 2011.
- *Shyong (Tony) K. Lam*, Anuradha Uduwage, Zhenhua Dong, Shilad Sen, *David R. Musicant*, Loren Terveen, John Riedl. WP:Clubhouse? An Exploration of Wikipedia's Gender Imbalance. WikiSym '11: The 7th International Symposium on Wikis and Open Collaboration, 2011.
- *David R. Musicant*. The Whole Enchilada: Environmental Chemistry Through Intelligent Atmospheric Data Analysis. Invited keynote given at the First International Workshop on Climate Informatics, New York, NY, August 26, 2011.
- *Todd Neller*, Ingrid Russell, Dave Musicant, Zdravko Markov. Clue Deduction: An Introduction to Satisfiability Reasoning. The Second AAAI 2011 Symposium on Educational Advances in Artificial Intelligence (EAAI-11), San Francisco, CA, August 9-10, 2011 (poster).
- *Jonas Boustedt*, *Robert McCartney*, *Josh Tenenberg*, *Edward F. Gehringer*, *Raymond Lister*, *David R. Musicant*. It Seemed Like A Good Idea At The Time. Special session at Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Milwaukee, WI, March 13, 2010.
- *David R. Musicant*, Janara M. Christensen, Jamie F. Olson. Supervised Learning by Training on Aggregate Outputs. Seventh IEEE International Conference on Data Mining, Omaha, NE, October 31, 2007.
- *Jonas Boustedt*, *Robert McCartney*, *Josh Tenenberg*, *Titus Winters*, *Stephen Edwards*, *Briana B. Morrison*, *David R. Musicant*, *Ian Utting*, *Carol Zander*. It Seemed Like A Good Idea At The Time. Special session at Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Houston, TX, March 9, 2007.
- *Amruth Kumar*, *David Musicant*, *Doug Baldwin*, *Ellen Walker*. Mechanics of Undergraduate Research at Liberal Arts Colleges -- Lessons Learned. Panel presentation at Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Houston, TX, March 8, 2007.

- *Jamie F. Olson*, David R. Musicant, and *Leah E. Steinberg*. Environmental Chemistry Through Intelligent Atmospheric Data Analysis. Demo at ACM SIGKDD International Conference in Data Mining. Philadelphia, PA, August 21, 2006.
- *Benjamin J. Anderson*, Deborah S. Gross, David R. Musicant, *Anna M. Ritz*, *Thomas G. Smith*, *Leah E. Steinberg*. Adapting K-Medians to Generate Normalized Cluster Centers. SIAM International Conference on Data Mining (SDM), Bethesda, MD, April 20, 2006.
- *David R. Musicant*. A Data Mining Course for Computer Science: Primary Sources and Implementations. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Houston, TX, March 4, 2006.
- *Melanie Yuen*, *Andrew Ault*, Deborah S. Gross, *Ben Anderson*, *Anna Ritz*, David R. Musicant, James J. Schauer, Lei Chen, Bee-Chung Chen, Raghu Ramakrishnan. Analysis of Complex Real-Time Atmospheric Data Sets: A Data Mining Approach. American Chemical Society National Meeting, San Diego, CA, March 2005 (poster).
- *David R. Musicant*, Jeff Ondich. A Model for a Liberal Arts Project-Based Capstone Experience. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), St. Louis, Missouri, February 25, 2005 (poster).
- *David R. Musicant*, *Andrew Exley*. Easy Integration of LEGO Mindstorms into Vacuum World Simulations. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Norfolk, Virginia, March 5, 2004 (poster).
- *David R. Musicant*, V. Kumar, A. Ozgur. Optimizing F-Measure with Support Vector Machines. Sixteenth International Florida Artificial Intelligence Society Conference, St. Augustine, Florida, May 13, 2003.
- *Sebastian Celis*, David R. Musicant. Weka-Parallel: Machine Learning in Parallel. Association for Computing Machinery Special Interest Group in Computer Science Education Technical Symposium (ACM SIGCSE), Reno, Nevada, February 19-23, 2003 (poster).
- *Rachel Kirby*, *Lillian Kittredge*, *Sarah Allen*, *Janet Campbell*, *Ester Gubbrud*, David R. Musicant, Jeff Ondich. Extracting Questions from Discussion Groups Via Text Mining. Grace Hopper Celebration of Women in Computing, Vancouver, BC, October 10-11, 2002 (poster).
- *David R. Musicant*, *Alexander Feinberg*. ASVR: Active Set Support Vector Regression. Neural Information Processing Systems Workshop on New Perspectives in Kernel-Based Learning Methods, Whistler/Blackcomb, British Columbia, Canada, December 7, 2001 (poster).
- *David R. Musicant*, O.L. Mangasarian. LSVM: Lagrangian Support Vector Machines. Neural Information Processing Systems Workshop on New Perspectives in Kernel-Based Learning Methods, Breckenridge, Colorado, December 1, 2000.
- *David R. Musicant*, O.L. Mangasarian. Active Set Support Vector Machine Classification. Neural Information Processing Systems, Denver, Colorado, November 28, 2000 (poster).
- *David R. Musicant*, O.L. Mangasarian. Support Vector Machine Regression. International Symposium on Mathematical Programming, Atlanta, Georgia, August 10, 2000.
- *David R. Musicant*, O.L. Mangasarian. Support Vector Machines for Data Fitting and Classification. University of Wisconsin Data Mining Institute Annual Review, Madison, Wisconsin, June 2, 2000.
- *David R. Musicant*, O.L. Mangasarian. Massive Support Vector Regression. Neural Information Processing Systems Support Vector Machine Workshop, Breckenridge, Colorado, December 3, 1999.

- *David R. Musicant*, O.L. Mangasarian. Massive Support Vector Regression. Institute for Operations Research and the Management Sciences Spring 2000 Meeting, Salt Lake City, Utah, May 7, 2000.
- *David R. Musicant*, O.L. Mangasarian. Nonlinear Data Discrimination via Generalized Support Vector Machines. Institute for Operations Research and the Management Sciences Fall 1999 Meeting, Philadelphia, Pennsylvania, November 9, 1999.
- *David R. Musicant*, O.L. Mangasarian. Nonlinear Data Discrimination via Generalized Support Vector Machines. International Conference on Complementarity Problems, Madison, Wisconsin, June 12, 1999.

Published Book Review

- D.R. Musicant. Review of *Advances in Distributed and Parallel Knowledge Discovery*, edited by Hillol Kargupta and Philip Chan. In *ACM Intelligence* 12:3, Fall 2001, 52-54.

Software (Carleton student authors underlined)

- Tate Bosler, Caleb Braun, Julia Connelly, Graham Earley, Hailey Jones, Kiley Maki, Nathaniel Sauerberg, Derek Shang, Eric Walker, David R. Musicant. Elegit. 2015-present (active developed). Available at <http://elegit.org>.
- Benjamin Anderson, Robert Atlas, Sami Benzaid, Tom Bigwood, Janara Christensen, David R. Musicant, Catherine Nelson, Jamie Olson, Jeffrey Rzeszotarski, Anna Ritz, Ilari Shafer, Thomas Smith, Leah Steinberg, Jon Sulman, Emma Turetsky. Enchilada: Environmental Chemistry through Intelligent Data Analysis. Available at <http://www.cs.carleton.edu/enchilada/>.
- Andrew Exley, D. R. Musicant. VacuumBot: Easy Integration of LEGO Mindstorms into Vacuum World Simulations. 2004. Available at <http://vacuumbot.sourceforge.net/>.
- Sebastian Celis, D.R. Musicant. Weka-Parallel: Machine Learning in Parallel. 2002. Available at <http://weka-parallel.sourceforge.net/>.
- D.R. Musicant, Alexander Feinberg. ASVR: Active Set Support Vector Regression. 2001. Available at <http://www.mathcs.carleton.edu/faculty/dmusican/asvr/>.
- D.R. Musicant, O.L. Mangasarian. LSVM: Lagrangian Support Vector Machine. 2000. Available at <http://www.cs.wisc.edu/dmi/lsvm/>.
- D.R. Musicant, O.L. Mangasarian. ASVM: Active Set Support Vector Machine. 2000. Available at <http://www.cs.wisc.edu/dmi/asvm/>.
- D.R. Musicant. MATLAB/CPLEX MEX-Files. 2000. Available at <http://www.mathcs.carleton.edu/faculty/dmusican/cplex/>
- D.R. Musicant. NDC (Normally Distributed Clustered) Data Generator. 1998. Available at <http://www.cs.wisc.edu/~musicant/data/ndc/>.
- D.R. Musicant. Bug fix / enhancement to the educational tool *BlueJ* (created at Monash University). My update to BlueJ was integrated into the release, and my contribution is documented at <http://www.bluej.org/help/changes.html>.

Grants Received

- NSF CE21 Program, “Educational Media to Advance Computer Science (EMACS),” 2013, \$250,000. With Richard Hudson (Twin Cities Public Television), Siddika S. Guzey (University of Minnesota), and Kathleen O’Donnell (Twin Cities Public Television).
- NSF-IIS Program, “Mentoring in Wikipedia: Improving the Experience for Newcomers”, 2010, \$36,343. With Prof. John Riedl (University of Minnesota).
- Howard Hughes Medical Institute Research Grant to support development of the software package Enchilada. \$60,000 used for paying a professional software developer. With Deborah Gross (Carleton College).
- Howard Hughes Medical Institute Research Grant for curriculum development of Creative Robotics course. \$5000 stipend to cover expenses and two weeks of work for two faculty members. With Stephen Mohring (Carleton College).
- Howard Hughes Medical Institute Research Grant, “Prediction of Streaming Multimedia Quality using Data Mining Techniques”. Stipend to pay students Erica Bolin and Jamie Olson for summer 2005. With Amy Csizmar Dalal (Carleton College).
- NSF-ITR Program, “Collaborative Focused Mining of Atmospheric Aerosol Datasets: Integration of Mass Spectrometry and Environmental Monitoring”, 2003, \$287,587. With Deborah Gross (Carleton College), Raghu Ramakrishnan (U. Wisconsin-Madison), and Jamie Schauer (U. Wisconsin-Madison).
- Computing Research Association Committee on the Status of Women in Computing Research (CRA-W) Collaborative Research Experience for Women in Undergraduate Computer Science and Engineering (CREW), "Extracting Questions from Discussion Groups by Text Mining." Stipend (\$3150) to pay students during 2002-2003. With Jeff Ondich (Carleton College).
- Howard Hughes Medical Institute Research Grant, “Machine Learning via Parallel Programming”. Stipend to pay student Sebastian Celis for summer 2002.
- Computing Research Association Committee on the Status of Women in Computing Research (CRA-W) Collaborative Research Experience for Women in Undergraduate Computer Science and Engineering (CREW), “Document Summarization by Text Mining.” Stipend (\$3000) to pay students during 2001-2002. With Jeff Ondich (Carleton College).
- Howard Hughes Medical Institute Research Grant, “Active Set Support Vector Regression.” Stipend to pay student Alex Feinberg for summer 2001.

Grant Applications (attempted but not funded)

- NSF DRK Program, “Bridging the Gap,” 2012. With Richard Hudson (Twin Cities Public Television), Siddika S. Guzey (University of Minnesota), and Kathleen O’Donnell (Twin Cities Public Television).
- NSF CE21 Program, “CS 10K: Bridging the Gap,” 2012. With Richard Hudson (Twin Cities Public Television), Siddika S. Guzey (University of Minnesota), and Kathleen O’Donnell (Twin Cities Public Television).
- NSF CRIF Program, “Collaborative Research: CRIF: Cyberinfrastructure for Environmental Chemistry through Intelligent Analysis of Atmospheric Data Sets in Real-Time,” 2008. With Deborah Gross (Carleton College), Jamie Schauer (U. Wisconsin-Madison), and Rich Maclin (U. Minnesota-Duluth).
- HASTAC/MacArthur Foundation, "Interactive Arts and Creative Technology," 2007. With Stephen Mohring (Carleton College).

- NSF CreativeIT Program, "Interactive Arts and Creative Technology," 2007. With Stephen Mohring (Carleton College).
- NASA Intelligent Data Systems Program, "Subset Mining: A New Approach to Compositional Analysis," 2003. With Deborah Gross (Carleton College), Barry Huebert (U. Hawaii), Raghu Ramakrishnan (U. Wisconsin-Madison), and Jamie Schauer (U. Wisconsin-Madison).
- Dreyfus Foundation Postdoctoral Program in Environmental Chemistry, "Aerosol Mass Spectrometry at Carleton College: A Postdoctoral Opportunity in Acquisition and Analysis of Complex Environmental Data Sets at a Liberal Arts College." With Deborah Gross (Carleton College).
- HSARPA (Homeland Security Advanced Research Projects Agency), "Rapid Automated Biological Identification System using Aerosol Time of Flight Mass Spectrometry (RABIS using ATOFMS)," 2003. With Deborah Gross (Carleton College), Raghu Ramakrishnan (U. Wisconsin-Madison), and a number of colleagues from a variety of other institutions including TSI, Inc.
- NSF-STEP Program, "Key Factors: Attracting Women Undergraduates to Computer Science", 2002. With Jeff Ondich (Carleton College).
- NSF-PGE Program, "DEM: Building Community and Addressing Misconceptions of Computer Science Through Early Collaborative Undergraduate Research Experiences," 2002. With Jeff Ondich (Carleton College) and a number of colleagues at peer institutions.

Student Researchers Supervised

- Tate Bosler and Nathaniel Sauerberg. Elegit. Spring 2017, Fall 2017.
- Caleb Braun. Elegit. Fall 2016, Winter 2017, Spring 2017.
- Hailey Jones. Elegit. Fall 2016, Winter 2017.
- Julia Connelly: Elegit. Spring 2016, Summer 2016, Fall 2016.
- Eric Walker: Elegit. Fall 2015, Winter 2016, Spring 2016, Summer 2016, Fall 2016
- Derek Shang: Elegit. Winter 2016, Spring 2016
- Graham Earley and Kiley Maki. Elegit. Spring 2015, Summer 2015, Fall 2015, Winter 2015, Spring 2016
- Josie Bealle and Andrew Yang. Atmospheric pollution analysis. Fall 2014-Winter 2015.
- Daniel Barter, Julia Kroll, and Morgan Marks. Wikipedia citation reliability. Summer 2013.
- Rachel Adams, Alex Kuntz, Morgan Marks, and Will Martin. Wikipedia content recommendation. Summer 2012.
- David Long, Michael Groeneman, Laurel Orr. Wikipedia content recommendation. Summer 2011.
- Jeff Rzeszotarski. EDAM Project (Exploratory Data Analysis and Monitoring). Interdisciplinary work with Deborah Gross in Chemistry Department. Fall 2008.
- Rob Atlas, Jeff Rzeszotarski, Emma Turetsky. EDAM Project (Exploratory Data Analysis and Monitoring). Interdisciplinary work with Deborah Gross in Chemistry Department. Summer 2008.
- Sami Benzaid, Janara Christensen, Emma Turetsky. EDAM Project (Exploratory Data Analysis and Monitoring). Interdisciplinary work with Deborah Gross in Chemistry Department. Summer, Fall, Winter, Spring 2007-2008.

- Janara Christensen, Jamie Olson, Thomas Smith, Leah Steinberg. EDAM Project (Exploratory Data Analysis and Monitoring). Interdisciplinary work with Deborah Gross in Chemistry Department. Summer, Fall, Winter, Spring 2006-2007.
- Anna Ritz, Thomas Smith. EDAM Project (Exploratory Data Analysis and Monitoring). Interdisciplinary work with Deborah Gross in Chemistry Department. Summer, Fall, Winter, Spring 2005-2006.
- Erica Bolin, Jamie Olson. Prediction of Streaming Multimedia Quality using Data Mining Techniques. Summer 2005. (with Amy Csizmar Dalal)
- Jon Sulman. EDAM Project. Winter, Spring 2005.
- Ben Kazez. CodeSearch: Smart software searching. Joint supervision with Dave Hoadley of VI Engineering, Farmington Hills, MI. Winter, Spring 2005.
- Taylor Valore. CodeSearch: Smart software searching. Joint supervision with Dave Hoadley of VI Engineering, Farmington Hills, MI. Fall 2004.
- Ben Anderson, Anna Ritz. EDAM Project. Summer, Fall, Winter, Spring 2004-2005.
- Ben Anderson, Kate Nelson. EDAM Project. Fall, Winter, Spring 2003-2004.
- Alina Badus, Marie Joiner, Rachel Kirby, Lillie Kittredge. Detecting frequently asked questions via text mining. Fall, Winter, Spring 2002-2003. (with Jeff Ondich)
- Sebastian Celis. Weka-Parallel: Machine learning in parallel. Summer 2002.
- Grant Anderson. Optimizing neural networks using genetic algorithms. Spring 2002.
- Sarah Allen, Janet Campbell, Ester Gubbrud, Rachel Kirby, and Lillie Kittredge. Detecting frequently asked questions via text mining. Fall, Winter, Spring 2001-2002. (with Jeff Ondich)
- Alex Feinberg. ASVR: Active set support vector regression. Summer 2001.
- Ethan Sommer. Detecting email spam with machine learning techniques. Spring 2001.
- Shaun Reynolds. Parallelizing cross validation in MATLAB. Spring 2001.
- Brian Patterson and Justin Thomson. Analyzing mortgage insurance data with support vector machines. Winter, Spring 2001.
- Ester Gubbrud. Implementing data mining algorithms under the OLE-DB framework. Winter 2001.
- Brad Davis and Ethan Sommer. NCV: A machine learning environment for parallel evaluation. Winter 2001.

Students Receiving Graduate School Research Fellowships

- Janara Christensen, NSF Graduate Fellowship, 2008 (research assistant)
- Anna Ritz, NSF Graduate Fellowship, 2008 (research assistant)
- Ben Sowell, NDSEG Fellowship, 2008 (comps advisee, database prof/now his research area)

Student Employees Supervised

- George Kachergis. Prototyping designs, constructions, and assignments for robotics course. Planned for Summer 2005.
- Jason Oswald. Porting Minibase software to Redhat Linux. Summer 2001.

Graduate Students Mentored

- Aysel Ozgur, University of Minnesota. Mentored during visiting status at University during summers of 2001 and 2002.

Courses Taught

- Art, Interactivity, and Robotics
- The Structure of the Internet
- Explorations in Computer Science
- Introduction to Computer Science
- Data Structures
- Programming Language Design and Implementation
- Mathematics of Computer Science
- Artificial Intelligence
- Database Systems
- Data Mining
- Robotics
- Introduction to Statistics
- Parallel and Distributed Computing

Comps (Capstone) Projects Advised

- Constructing a spam filter
- Building a web search engine
- Building a recommender system for choosing courses and for Netflix Prize
- Explaining support vector machines
- Protein folding prediction
- CS mini-course construction
- Movie recommender systems / Netflix Prize
- Wikipedia recommender system
- Virtual orchestra
- Automatic bug fixer
- Scenic route planner
- Interactive itinerary planner
- Heart rate monitor app

Professional Activities

- Supporter/Exhibitor Liaison for ACM SIGCSE 2015-present.
- “Getting to the Source: Where Does Wikipedia Get Its Information From?” Carleton Connects; talk given at Carleton alumni. Tuesday, March 25, 2014.
- “Getting to the Source: Where Does Wikipedia Get Its Information From?” Talk given at Carleton faculty retreat. September 10, 2013.
- Symposium co-chair for ACM SIGCSE 2012.
- Program co-chair for ACM SIGCSE 2011.
- Panel reviewer for NSF TUES program, July 2010.
- Publications Coordinator for ACM SIGCSE 2010.

- Presented invited talk to University of Minnesota GroupLens Laboratory, April 2009.
- Student Volunteer co-Coordinator for ACM SIGCSE 2009.
- Program Committee, Florida AI Research Society Conference, 2006, 2007.
- Presented invited talk to St. Johns University data mining class, May 2007.
- Student Aide co-Coordinator for ACM SIGCSE 2007.
- Program Committee, International Conference on Knowledge Discovery and Data Mining, 2004-2005, 2007.
- Presented invited talk to University of Minnesota Duluth Computer Science Department, December 2004.
- Associate Editor for journal *Neurocomputing*, June 2004 - 2006.
- Interviewed by ZS Alumni Spotlight, summer 2004.
- Presented two invited talks to University of Wisconsin-Madison Machine Learning group, April 2004.
- Presented invited talk to St. Olaf College Mathematics Department, March 2004.
- Program Committee, International Conference on Data Mining, 2002-2003.
- Presented invited talk to Gustavus Adolphus College Math/Computer Science Department, October 2000.
- Interviewed by *java.sun.com* newsletter, and quoted throughout article "Teaching Java™ Technology with BlueJ," by Dana Nourie. Available at <http://java.sun.com/features/2002/07/bluej.html>.
- Member of ACM and special interest groups SIGKDD and SIGCSE.

College Activities

- Director of Carleton Summer Computer Science Institute, 2013-present.
- Computer Science Instructor for Carleton Summer Teaching Institute, June, 2001-present.
- Education and Curriculum Committee co-chair, 2015-2016.
- Education and Curriculum Committee member, 2014-2015.
- Computer Science representative to Science Planning Group, 2013-2015.
- Science Subcommittee of the Master Facilities Planning Committee, 2013-2014.
- Grants Committee, 2012-2013.
- Strategic Planning Working Group, "Preparing Students for Careers and Lives after Graduation," 2011-2012.
- Education and Curriculum Committee, 2009-2010.
- Attended "Assess We Can" faculty workshop, December, 2009.
- Academic Standing Committee, 2007-2009. Chair, 2008-2009.
- Ran workshop on advising with Al Montero, August 2006. Obtained funding for it from the Associated Colleges of the Midwest.
- Arts Planning Committee: February 2006 - summer 2007.
- Faculty Council, 2004-2006.
- College Council, 2004-2006.
- Member of ad-hoc committee on car policy, spring 2005.
- Co-presented "Ignoring the Obvious: The Search for the Perfect Comps", Faculty Scholarship Forum, October 2004.
- Attended "Chance Notions" faculty workshop, December, 2003.

- Attended PERC faculty seminar, September, 2003.
- Read for Carleton writing portfolio, June 2003 & June 2004.
- Faculty member of Cognitive Studies Concentration.
- Faculty seminar in bioinformatics, 2002.
- Fellowships Committee, 2003-2004.
- Judicial Hearing Board, 2001-2003.
- Bass player for student blues band "Government Ewell." 2000-2002.
- Halloween Office Contest Judge, October, 2002.
- Interviewed by Carleton Voice for article about intelligence, September, 2002.
- Participant in focus group discussions regarding Mellon Life Cycles Grant, March, 2001.
- Attended Carleton New Faculty December Teaching Workshop, December, 2000.
- Attended student / alumni networking event at Minneapolis Club, October, 2000.
- Participant in panel discussion for graduating seniors on graduate school, October, 2000.

Department Activities

- Computer Science Department Chair, 2009-2010, 2011-2013.
- Department Career Coordinator, 2004-2009.
- Coach of Carleton College Programming Contest Team, 2000-2009. Carleton's 2002 "A" Team ranked fourth in North Central region (top ranking liberal arts school). Carleton's 2003 "Iterators" Team ranked ninth in North Central region (top ranking liberal arts school).
- Computer Science Colloquium Coordinator, 2001-2003.
- Adviser for the Carleton student chapter for the Association of Computing Machinery, 2001-2004.
- Computer Science Hiring Committee, 2002-2003, 2004-2005, 2009-2010.