

Thomas D. Varberg

Department of Chemistry
Macalester College
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St. Paul, MN 55105

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RESEARCH INTERESTS

Physical chemistry and chemical physics. Laser spectroscopy and electronic structure of gaseous free radicals and transition metal compounds in the optical and far-infrared regions. Spectroscopy of large organic molecules of astronomical interest.

EDUCATION

University of Oxford, United Kingdom
NSF-NATO Postdoctoral Fellow 1992-1993

National Institute of Standards and Technology, Boulder, CO
Postdoctoral Fellow 1990-1992

Massachusetts Institute of Technology, Cambridge, MA
Ph.D., Physical Chemistry, 1990

Hamline University, St. Paul, MN
B.A., Chemistry with Honors, *summa cum laude*, 1985

ACADEMIC & PROFESSIONAL EXPERIENCE

Macalester College
Professor of Chemistry 2003-
Chair of Chemistry 2001-2006
Associate Professor of Chemistry 1999-2003
Assistant Professor of Chemistry 1992-1999

University of Sydney, Sydney, Australia
Visiting Professor of Chemistry (sabbatical) 2007-2008

University of British Columbia, Vancouver, Canada
Visiting Associate Professor of Chemistry (sabbatical) 2000

National Institute of Standards and Technology, Boulder, CO
Visiting Scientist (sabbatical) 1997

AWARDS & HONORS

Henry Dreyfus Teacher-Scholar Award, Dreyfus Foundation 1998-2003
Hamline University First Decade Alumni Award 1994
NATO Postdoctoral Fellowship, National Science Foundation 1992-1993
American Institute of Chemists Foundation Award 1985
Inducted into *Phi Beta Kappa* 1984
National Merit Scholarship 1981-1985
Member: American Chemical Society, Council on Undergraduate Research, Project Kaleidoscope F21

**RESEARCH
PUBLICATIONS**

(*undergraduate
coauthor)

23. M. A. Roberts*, C. G. Alfonzo*, K. J. Manke*, W. M. Ames*, D. B. Ron*, and T. D. Varberg, "Hyperfine Structure in the Electronic Spectrum of ReO," *Molecular Physics*, **105**, 917–921 (2007).
22. P. J. Hodges, J. M. Brown and T. D. Varberg, "The Ultraviolet Spectrum of the CoCl₂ Radical, Studied at Vibrational and Rotational Resolution," *Journal of Chemical Physics*, **124**, 204302-1–10 (2006).
21. A. Shayesteh, R. J. Le Roy, T. D. Varberg and P. F. Bernath, "Multi-isotopologue Analyses of New Vibration–Rotation and Pure Rotation Spectra of ZnH and CdH," *Journal of Molecular Spectroscopy*, **237**, 87–96 (2006).
20. T. D. Varberg and J. C. Roberts*, "The Isotopic Dependence of the Spin–Rotation Interaction: The Rotational Spectrum of Cadmium Hydride in Its $X^2\Sigma^+$ State," *Journal of Molecular Spectroscopy*, **223**, 1–8 (2004).
19. C. T. Kingston, A. J. Merer and T. D. Varberg, "The Electronic Spectrum of NiCN in the Visible Region," *Journal of Molecular Spectroscopy*, **215**, 106–127 (2002).
18. T. D. Varberg, F. Stroh and K. M. Evenson, "Far-Infrared Rotational and Fine-Structure Transition Frequencies and Molecular Constants of ¹⁴NO and ¹⁵NO in the $X^2\Pi$ ($v = 0$) State," *Journal of Molecular Spectroscopy*, **196**, 5–13 (1999).
17. T. D. Varberg, J. C. Roberts*, K. A. Tuominen* and K. M. Evenson, "The Far-Infrared Spectrum of Deuterium Iodide," *Journal of Molecular Spectroscopy*, **191**, 384–386 (1998).
16. F. A. Tezcan*, T. D. Varberg, F. Stroh and K. M. Evenson, "Far-Infrared Rotational Spectra of ZnH and ZnD in the $X^2\Sigma^+$ ($v = 0$) State," *Journal of Molecular Spectroscopy*, **185**, 290–295 (1997).
15. N. M. Lakin, T. D. Varberg and J. M. Brown, "The Detection of Lines in the Microwave Spectrum of Indium Hydroxide, InOH, and Its Isotopomers," *Journal of Molecular Spectroscopy*, **183**, 34–41 (1997).
14. M. Bellini, P. De Natale, M. Inguscio, T. D. Varberg and J. M. Brown, "Precise Experimental Test of Models for the Breakdown of the Born–Oppenheimer Separation: The Rotational Spectra of Isotopic Variants of Lithium Hydride," *Physical Review A*, **52**, 1954–1960 (1995).
13. R. J. Low, C. J. Whitham, T. D. Varberg and B. J. Howard, "The Microwave Spectrum of the Open-Shell Complex ArNO₂," *Chemical Physics Letters*, **222**, 443–449 (1994).
12. J. M. Brown, T. D. Varberg, K. M. Evenson and A. L. Cooksy, "The Fine-Structure Intervals of ¹⁴N⁺ by Far-Infrared Laser Magnetic Resonance," *Astrophysical Journal*, **428**, L37–L40 (1994).
11. T. D. Varberg, K. M. Evenson and J. M. Brown, "Detection of OH⁺ in Its $a^1\Delta$ State by Far-Infrared Laser Magnetic Resonance," *Journal of Chemical Physics*, **100**, 2487–2491 (1994).
10. T. D. Varberg and K. M. Evenson, "The Pure Rotational Spectra of CuH and CuD in Their Ground States Measured by Tunable Far-Infrared Spectroscopy," *Journal of Molecular Spectroscopy*, **164**, 531–535 (1994).
9. K. V. Chance, T. D. Varberg, K. Park and L. R. Zink, "The Far-Infrared Spectrum of HI," *Journal of Molecular Spectroscopy*, **162**, 120–126 (1993).

8. R. J. Low, T. D. Varberg, J. P. Connelly, A. R. Auty, B. J. Howard and J. M. Brown, "The Hyperfine Structures of CuCl and CuBr in Their Ground States Studied by Microwave Fourier Transform Spectroscopy," *Journal of Molecular Spectroscopy*, **161**, 499–510 (1993).
7. T. D. Varberg and K. M. Evenson, "Laser Spectroscopy of Carbon Monoxide: A Frequency Reference for the Far-Infrared," *IEEE Transactions on Instrumentation and Measurement*, **42**, 412–414 (1993).
6. T. D. Varberg and K. M. Evenson, "The Rotational Spectrum of OH in the $v = 0-3$ Levels of Its Ground State," *Journal of Molecular Spectroscopy*, **157**, 55–67 (1993).
5. T. D. Varberg, J. A. Gray, R. W. Field and A. J. Merer, "Reanalysis and Extension of the MnH $A^7\Pi-X^7\Sigma^+$ (0,0) Band: Fine Structure and Hyperfine-Induced Rotational Branches," *Journal of Molecular Spectroscopy*, **156**, 296–318 (1992).
4. T. D. Varberg and K. M. Evenson, "Accurate Far-Infrared Rotational Frequencies of Carbon Monoxide," *Astrophysical Journal*, **385**, 763–765 (1992).
3. T. D. Varberg, R. W. Field and A. J. Merer, "Elucidation of Electronic Structure by the Analysis of Hyperfine Interactions: The MnH $A^7\Pi-X^7\Sigma^+$ (0,0) Band," *Journal of Chemical Physics*, **95**, 1563–1576 (1991).
2. T. D. Varberg, R. W. Field and A. J. Merer, "Hyperfine Structure of the MnH $X^7\Sigma^+$ State: A Large Gas-to-Matrix Shift in the Fermi Contact Interaction," *Journal of Chemical Physics*, **92**, 7123–7127 (1990).
1. T. D. Varberg, E. J. Hill and R. W. Field, "Laser Spectroscopy of CoH: Spin-Orbit Splitting of the Ground State," *Journal of Molecular Spectroscopy*, **138**, 630–637 (1989).

**OTHER
REVIEWED
PAPERS**

2. T. M. Halverson and T. D. Varberg, "Molecular Vibrations and Symmetry," Interdisciplinary Lively Applications Project (ILAP), for the NSF-funded *Consortium for Mathematics and its Applications* (1997).
1. T. M. Halverson and T. D. Varberg, "Hydrogen Collisions," Interdisciplinary Lively Applications Project (ILAP), for the NSF-funded *Consortium for Mathematics and its Applications* (1997).

BOOKS

3. D. E. Varberg and T. D. Varberg, *Algebra and Trigonometry: A Graphing Approach*, Prentice-Hall, Englewood Cliffs, NJ (1996).
2. D. E. Varberg and T. D. Varberg, *College Algebra: A Graphing Approach*, Prentice-Hall, Englewood Cliffs, NJ (1996).
1. D. E. Varberg and T. D. Varberg, *Precalculus: A Graphing Approach*, Prentice-Hall, Englewood Cliffs, NJ (1995).

**CONFERENCE
PAPERS**

(presenter
underlined)

19. T. D. Varberg, T. R. Vervoort*, and K. J. Manke*, "Electronic Spectrum of Tantalum Hydride," *American Chemical Society 233rd National Meeting*, Chicago, IL, March 25–29, 2007.
18. T. D. Varberg, M. A. Roberts*, C. G. Alfonzo*, K. J. Manke*, W. M. Ames*, and D. B. Ron*, "Hyperfine Structure in the Electronic Spectrum of ReO," *American Chemical Society 231st National Meeting*, Atlanta, GA, March 26–30, 2006.
17. T. D. Varberg, M. A. Roberts*, C. G. Alfonzo*, W. M. Ames*, and D. B. Ron*, "Hyperfine Structure in the Electronic Spectrum of ReO," *28th International Symposium on Free Radicals*, Leysin, Switzerland, September 4–9, 2005.

16. T. D. Varberg and R. J. LeRoy, "Isotope Dependence and Born–Oppenheimer Breakdown in Mid- and Far-Infrared Spectra of Cadmium Hydride," *27th International Symposium on Free Radicals*, Taipei, Taiwan, July 25–30, 2004.
15. T. D. Varberg, J. C. Roberts*, L. R. Zink and K. M. Evenson, "The Rotational Spectra of CdH and CdD in the Far-Infrared," *American Chemical Society 223rd National Meeting*, Orlando, FL, April 7–12, 2002.
14. T. D. Varberg, "Highly Accurate Transition Frequencies and Molecular Constants by Tunable Far-Infrared (TuFIR) Spectroscopy," *The Ken Evenson Symposium*, Boulder, CO, March 15–16, 2001.
13. T. D. Varberg, F. Stroh and K. M. Evenson, "Pure Rotational and Fine-Structure Transitions of Nitric Oxide (NO) in Its Ground Vibrational State," *25th International Symposium on Free Radicals*, Flagstaff, AZ, August 15–20, 1999.
12. T. D. Varberg, F. Stroh and K. M. Evenson, "Pure Rotational and Fine-Structure Transitions of Nitric Oxide (NO) in the Far-Infrared," *53rd International Molecular Spectroscopy Symposium*, Columbus, OH, June 15–19, 1998.
11. T. D. Varberg, J. C. Roberts*, K. A. Tuominen* and K. M. Evenson, "The Far-Infrared Spectrum of Deuterium Iodide," *53rd International Molecular Spectroscopy Symposium*, Columbus, OH, June 15–19, 1998.
10. T. D. Varberg, J. C. Roberts*, L. R. Zink and K. M. Evenson, "The Rotational Spectra of CdH and CdD in the Far-Infrared," *24th International Symposium on Free Radicals*, Tällberg, Sweden, August 17–22, 1997.
9. T. D. Varberg, "Laser Spectroscopic Techniques in the Far-Infrared," *Minnesota Academy of Sciences 64th Annual Meeting*, St. Paul, MN, April 26–27, 1996.
8. T. D. Varberg and A. T. Schwartz, "Young Turks and Old Turkeys: A Dialog Across the Tenure Divide," *American Chemical Society 209th National Meeting*, Anaheim, CA, April 2–7, 1995.
7. T. D. Varberg, F. A. Tezcan*, F. Stroh, K. M. Evenson and J. M. Brown, "Far-Infrared Rotational Spectra of ZnH and ZnD," *American Chemical Society 209th National Meeting*, Anaheim, CA, April 2–7, 1995.
6. T. D. Varberg, R. J. Low, J. P. Connelly, A. R. Auty, B. J. Howard and J. M. Brown, "Fourier Transform Microwave Spectroscopy of CuCl and CuBr," *American Chemical Society 207th National Meeting*, San Diego, CA, March 13–18, 1994.
5. T. D. Varberg, K. M. Evenson and J. M. Brown, "Detection of OH⁺ in Its $a^1\Delta$ State by Far-Infrared Laser Magnetic Resonance," *Annual Meeting of the High Resolution Spectroscopy Group of the Royal Society of Chemistry*, Oxford, UK, December 20–22, 1992.
4. T. D. Varberg and K. M. Evenson, "Laser Spectroscopy of Carbon Monoxide: A Frequency Reference for the Far-Infrared," *18th Conference on Precision Electromagnetic Measurements*, Paris, France, June 9–12, 1992.
3. T. D. Varberg, E. J. Hill and R. W. Field, "High Resolution Spectroscopy of CoH and CoD," *44th International Molecular Spectroscopy Symposium*, Columbus, OH, June, 1989.
2. T. D. Varberg, J. A. Gray and R. W. Field, "The Electronic Structure of Gas Phase MnH," *42nd International Molecular Spectroscopy Symposium*, Columbus, OH, June, 1987.
1. T. D. Varberg, J. A. Gray and R. W. Field, "The Electronic Structure of Gas Phase MnH," *American Chemical Society 191st National Meeting*, Denver, CO, April, 1986.

**CO-AUTHORED
CONFERENCE
PAPERS**

23. K. J. Manke*, T. R. Vervoort* and T. D. Varberg, "Using Laser Spectroscopy to Obtain and Analyze Hyperfine Resolved Spectra of TaO," *8th Annual Beckman Scholars Symposium*, Irvine, CA, July 27–30, 2006.
22. K. J. Manke*, T. R. Vervoort* and T. D. Varberg, "Determining the Electronic Structure of TaO Using Laser Spectroscopy," *Minnesota Academy of Sciences 73rd Annual Meeting*, St. Paul, MN, April 28–29, 2006.
21. K. J. Manke*, T. R. Vervoort* and T. D. Varberg, "Determining the Electronic Structure of TaO Using Laser Spectroscopy," *American Chemical Society 231st National Meeting*, Atlanta, GA, March 26–30, 2006.
20. K. J. Manke*, T. R. Vervoort* and T. D. Varberg, "Determining the Electronic Structure of TaO Using Laser Spectroscopy," *Pew Undergraduate Research Symposium*, Chicago, IL, November 4–6, 2005.
19. M. A. Roberts*, C. G. Alfonzo* and T. D. Varberg, "Laser Spectroscopy of Rhenium Oxide," *Pew Undergraduate Research Symposium*, St. Louis, MO, November 5–7, 2004.
18. R. J. LeRoy and T. D. Varberg, "Isotope Dependence and Born–Oppenheimer Breakdown in Mid- and Far-Infrared Spectra of Cadmium Hydride," *59th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 13–18, 2004.
17. P. J. Hodges, J. M. Brown and T. D. Varberg, "The Electronic Spectrum of CoCl₂ in the Gas Phase," *59th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 13–18, 2004.
16. D. J. Clouthier, A. J. Merer, S. J. Rixon and T. D. Varberg, "The $B^2\Sigma^+ - X^2\Sigma^+$ Electronic Transitions of LaNH and LaND," *56th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 11–15, 2001.
15. C. T. Kingston, A. J. Merer and T. D. Varberg, "Laser Spectroscopy of Nickel Cyanide, NiCN, in the Visible Region," *56th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 11–15, 2001.
14. D. J. Clouthier, A. M. Merer, S. J. Rixon and T. D. Varberg, "The Electronic Spectra of LaNH and LaND," *55th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 12–16, 2000.
13. J. C. Roberts*, K. A. Tuominen* and T. D. Varberg, "Observation and Analysis of the Rotational Spectrum of Deuterium Iodide (DI) in Its Ground Vibrational State," *42nd Annual Minnesota ACS Undergraduate Research Symposium*, St. Paul, MN, April 18, 1998.
12. T. M. Halverson and T. D. Varberg, "Molecular Collisions," *American Mathematical Society 104th Annual Meeting*, Baltimore, MD, January 7–10, 1998.
11. T. M. Halverson and T. D. Varberg, "Molecular Vibrations and Symmetry in Linear Algebra," *American Mathematical Society 104th Annual Meeting*, Baltimore, MD, January 7–10, 1998.
10. J. C. Roberts* and T. D. Varberg, "Using Laser Spectroscopy to Identify the Rotational Energy Levels of Cadmium Hydride and Deuteride," *Pew Undergraduate Research Symposium*, Chicago, IL, November 14–16, 1997.
9. R. Casaes* and T. D. Varberg, "Setting Up a Laser Spectroscopy Laboratory Interfaced with LabVIEW," *Pew Undergraduate Research Symposium*, Chicago, IL, November 10–12, 1995.
8. F. A. Tezcan*, T. D. Varberg, F. Stroh and K. M. Evenson, "Tunable Far-Infrared Laser Spectroscopy of ZnH and ZnD in Their Ground Vibrational States," *Pew Undergraduate Research Symposium*, St. Louis, MO, October 14–16, 1994.

7. F. Stroh, T. D. Varberg and K. M. Evenson, "Accurate Far-Infrared Frequencies for Pure Rotational and Fine-Structure Transitions in the $^2\Pi$ Electronic Ground State of Nitric Oxide, NO," *49th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 13–17, 1994.
6. R. J. Low, T. D. Varberg, J. P. Connelly, A. R. Auty, B. J. Howard and J. M. Brown, "The Hyperfine Structure of CuCl in Its Ground and Excited Vibrational States Studied by Fourier Transform Microwave Spectroscopy," *49th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 13–17, 1994.
5. R. J. Low, C. J. Whitham, T. D. Varberg and B. J. Howard, "The Microwave Spectrum of the Open-Shell Complex ArNO₂," *49th International Symposium on Molecular Spectroscopy*, Columbus, OH, June 13–17, 1994.
4. M. Bellini, J. M. Brown, P. De Natale, T. D. Varberg and M. Inguscio, "Far-Infrared Pure Rotational Spectrum of ^7LiH and Its Isotopomers," *13th Colloquium on High Resolution Molecular Spectroscopy*, Riccione, Italy, September 13–17, 1993.
3. B. J. Howard, R. J. Low, T. D. Varberg and C. J. Whitham, "Microwave Spectra of the Open Shell ArNO₂ Complex," *13th Colloquium on High Resolution Molecular Spectroscopy*, Riccione, Italy, September 13–17, 1993.
2. K. V. Chance, T. D. Varberg, K. Park and L. R. Zink, "The Far-Infrared Spectrum of HI," *13th Colloquium on High Resolution Molecular Spectroscopy*, Riccione, Italy, September 13–17, 1993.
1. R. J. Low, T. D. Varberg, B. J. Howard and J. M. Brown, "Pulsed Microwave Spectroscopy of CuCl and CuBr," *Southern Universities Spectroscopy Symposium*, Reading, UK, March 31, 1993.

**INVITED
LECTURES**

16. "Far-Infrared Spectroscopy of Transient Species: Interrogating Small Molecules with Long Wavelengths," *Department of Chemistry, Gustavus Adolphus College*, St. Peter, MN, March 26, 2004.
15. "Molecular Spectroscopy in the Far-Infrared Region: Probing Small Molecules with Long Wavelengths," *Pensacola (FL) Section of the American Chemistry Society*, March 30, 1999.
14. "Molecular Spectroscopy in the Far-Infrared Region: Probing Small Molecules with Long Wavelengths," *Department of Chemistry, Hamline University*, St. Paul, MN, March 17, 1999.
13. "Group Theory and Molecular Vibrations" [joint with Tom Halverson], *Chemistry and Mathematics/Computer Science Departments, Macalester College*, St. Paul, MN, April 28, 1998.
12. "Far-Infrared Spectroscopy of Cadmium Hydride and Zinc Hydride: What Do the Hyperfine Interactions Tell Us?" *National Institute of Standards and Technology*, Boulder, CO, June 6, 1997.
11. "Interrogating Small Molecules with Long Wavelengths: Microwave and Far-Infrared Spectroscopy of Transient Species," *Department of Chemistry, Carleton College*, Northfield, MN, February 9, 1996.
10. "Far-Infrared Laser Spectroscopy of Small Molecules and Ions," *Department of Chemistry, University of Ulm*, Germany, June 16, 1995.
9. "Life in Oxford Between 6 and 18 GHz: Fourier Transform Microwave Spectroscopy of Small Molecules," *Department of Chemistry, Hamline University*, St. Paul, MN, December 8, 1993.

8. "Life in Oxford Between 6 and 18 GHz: Fourier Transform Microwave Spectroscopy of Small Molecules," *National Institute of Standards and Technology*, Boulder, CO, July 23, 1993.
7. "Far-Infrared Laser Spectroscopy of Diatomic Molecules and Ions," *European Laboratory for Nonlinear Spectroscopy (LENS)*, Florence, Italy, April 21, 1993.
6. "Far-Infrared Laser Spectroscopy of Diatomic Molecules and Ions," *Department of Physical Chemistry, University of Cambridge*, United Kingdom, February 11, 1993.
5. "Far-Infrared Laser Spectroscopy of Diatomic Molecules and Ions," *Institute for Applied Physics, University of Bonn*, Germany, September 22, 1992.
4. "Laser Spectroscopy of MnH: Hyperfine Interactions," *Department of Chemistry, University of Colorado*, Boulder, CO, March 20, 1991.
3. "Laser Spectroscopy of MnH: Hyperfine Interactions," *National Institute of Standards and Technology*, Boulder, CO, December 4, 1990.
2. "Laser Spectroscopy of Transition Metal Monohydrides: Some Recent Results for CoH," *Institute for Physics, University of Stockholm*, Sweden, June 16, 1988.
1. "A Proposed Mechanism for the Cool Flame Phenomenon in Saturated Hydrocarbons," *3M Research Laboratories*, St. Paul, MN, January 20, 1984.

**EXTERNAL
RESEARCH
FUNDING**

2007–2008	\$ 50,000	<i>American Chemical Society</i> Petroleum Research Fund Type UFS Grant
2005–2008	\$ 220,758	<i>National Science Foundation</i> Research at Undergraduate Institutions (RUI) Grant
2005–2006	\$ 147,537	<i>National Science Foundation</i> Major Research Instrumentation (MRI) Grant [with K. Wirth, J. Doyle, J. Rife, & R. Rogers]
2002–2005	\$ 258,871	<i>National Science Foundation</i> Major Research Instrumentation (MRI) Grant
1998–2003	\$ 60,000	<i>Dreyfus Foundation</i> Henry Dreyfus Teacher–Scholar Award
1996–1998	\$ 22,538	<i>National Science Foundation</i> Instrumentation for Laboratory Instruction (ILI) Grant [with K. Wirth & J. Doyle]
1995–1999	\$ 20,000	<i>American Chemical Society</i> Petroleum Research Fund Grant
1994–1996	\$ 52,000	<i>Research Corporation</i> Cottrell College Science Award
1992–1993	\$ 41,000	<i>National Science Foundation</i> NATO Postdoctoral Fellowship

**INTERNAL
RESEARCH
FUNDING**

Wallace travel grants to support international collaborations (1995, 1997, 2003, 2006)

Beltmann Fund grants to provide student summer research stipends (1994 [2], 1995, 1997, 1998, 1999, 2001, 2002)

Summer Research Collaboration Program research grants (2002, 2004 [2], 2005)

Beckman Scholar award [to K. J. Manke ('07), 2005–2007]

**RESEARCH
STUDENTS**

<i>Student</i>	<i>Graduate School Attended</i>	<i>Area of Specialty</i>
Akif Tezcan ('95)	Ph.D. ('01), Caltech	Biochemistry
Jennifer Giaccai ('95)	M.S. ('98), Johns Hopkins	Materials science
Raphael Casaes ('96)	Ph.D. ('03), UC–Berkeley	Physical chemistry

John Roberts ('98)	Ph.D., U of Minnesota	Pharmaceutics
Kai Tuominen ('98)	M.D. ('03), U of Minnesota	Medicine
Justin Johnson ('99)	Ph.D. ('04), UC-Berkeley	Physical chemistry
Katie Kong ('00)	Ph.D., U of Washington	Finance
Melissa Kelly ('00)	M.S. ('03), Caltech	Chemical physics
Alex Plionis ('02)	Ph.D. ('07), U of Texas	Nuclear engineering
Leah Appelhans ('02)	Ph.D., Yale U	Organometallic chemistry
John Froehlich ('03)	Ph.D., UC-Davis	Analytical chemistry
Jonathan Scheff ('03)	—	(Self-employed)
David Ron ('03)	—	Civil engineering
Will Ames ('04)	Ph.D., U of Iowa	Physical chemistry
Melanie Roberts ('05)	Ph.D., U of Colorado	Physical chemistry
Guillermo Alfonzo ('05)	Ph.D., U of Minnesota	Chemical engineering
Kara Manke ('07)		
Tyson Vervoort ('07)		
Ben Knurr ('09)		
Elissa Butler ('10)		

**COURSES
TAUGHT**

General Chemistry I and II
Accelerated General Chemistry
Physical Chemistry I and II
Analytical Chemistry
Instrumental Analysis (co-taught with R. Hoye or J. Carlson)
Topics in Chemical Physics (co-taught with J. Doyle, Physics)
Research in Physical Chemistry
First-year seminar courses: General Chemistry I, General Chemistry II

SERVICE

Faculty/staff committees

President's Information Technology Priorities Committee (2005)
Member, Academic Leadership Seminar (2004–05)
Presidential Inauguration Planning Committee (2003–04)
Commencement Planning Committee (2002–07)
Faculty Personnel Committee (2007, 2000–02)
Campus Judicial Forum (1995–98)
Petitions Committee (1995–98)
Library Advisory Committee (1995–97)

Appointed positions

Faculty Marshal (2001–07)
Chemistry Department Chair (2001–06)
Faculty Grievance Officer (2002–06)
United Funds Campaign Co-Coordinator (2003, 2002)

Invited addresses/panels

Moderator for Macalester's inaugural Civic Forum (2007)
Faculty speaker for Spring Sampler (2006, 2005)
Address entitled "*Great Expectations*" at Macalester's 16th Presidential Inauguration (2004)
Faculty panelist for Admissions brunches for high school counselors (2004, 2003)
Invited address for the "Coming Out as a Person of Faith" series (2003)
Faculty panelist for a Council on Religious Understanding program (2003)
Respondent to President McPherson's "core values" address (1999)
Address at the celebration of Wayne Roberts's term as Provost (1999)
After-dinner talk on the tenure process for the Macalester Board of Trustees (1998)
Several invited addresses to Macalester Christian Fellowship

Faculty search committees

Chemistry (2005 [chair], 2004 [chair], 2000, 1999, 1994)
Biology (1999)

Staff search committees/interviews

Associate Dean of Students (2004, 2002)
Chemistry Laboratory Supervisor (2004, 2002, 1992)
Divisional Instruments Technician (2000)
Divisional Materials Stockroom Supervisor (1999)

Departmental service

Staff Supervisor of Chemistry Laboratory Supervisor, Materials Stockroom Supervisor,
and Departmental Coordinator (2001–06)
Departmental Library Representative (1994–96)
Departmental Computer Liaison (1993–99)
Faculty Advisor to ACS Student Affiliates Chapter (1993–2007)

Divisional and college service

Faculty Advisor to Macalester Christian Fellowship (2005–present)
Director of the Beckman Scholars Program (2002–06)
Organized St. Paul Saints game and picnic for science summer research students and
mentors (2006, 2005, 2004, 2001, 1999, 1998)
Organized Young Science Faculty picnic (2001, 1999, 1998, 1997)
Co-organized Wallace faculty seminar on computational science (1998)

External service

Mentor, Preparing Future Faculty program (2003–04)
Organized 42nd Annual Minnesota ACS Undergraduate Research Symposium (1998)
Referee for *Journal of Molecular Spectroscopy*, *Journal of Physical Chemistry*, and *The Astrophysical
Journal*
Grant proposal referee for the National Science Foundation, the ACS Petroleum
Research Fund, and the U.S. Civilian Research and Development Foundation

Phi Beta Kappa (Epsilon Chapter at Macalester College)

President (2000–02)
Vice-President (1999–2000)
Chair, Members-in-Course Selection Committee (1994–96)