

CURRICULUM VITAE

Christopher A. Baumann
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EDUCATION

- Ph.D., August, 1982, The University of Florida, Gainesville, Florida. Major: physical chemistry. Research advisor: Professor William Weltner, Jr. Dissertation title: "*Low Temperature Electron Spin Resonance Spectroscopy of High Spin Molecules*".
- B.S., June, 1978, Oregon State University, Corvallis, Oregon. Major: chemistry.

RESEARCH/TEACHING POSITIONS

- **Professor, The University of Scranton, Department of Chemistry**, September, 1998- present; Associate Professor, September, 1989- September, 1998; Assistant Professor, September, 1984- September, 1989. Teaching biophysical chemistry, general chemistry, introductory chemistry, natural science (honors program), physical chemistry lab, advanced inorganic chemistry, graduate intermediate physical chemistry, and graduate advanced quantum mechanics. Research topics: photochemistry at surfaces, matrix isolation spectroscopy. Mentor for twenty nine undergraduate (one in progress) and twenty three (two in progress) graduate (M.A./M.S.) thesis students.
- **Postdoctoral Fellow, Indiana University**, Bloomington, September 1982- September 1984, with Professor G.E. Ewing. Research topic: infrared spectroscopy of physically adsorbed molecules.
- **Research assistant, The University of Florida**, Summer, 1979; August, 1980- May, 1982, with Professor W. Weltner, Jr.
- **Teaching assistant, The University of Florida**, September, 1978- May 1979; September 1979- August 1980; Summer, 1982. Instructor for physical and general chemistry laboratories and general chemistry discussion sections.

RESEARCH EXPERIENCE

Presently studying the photochemistry of small molecules in condensed phases (adsorbates and inert gas matrices). Our goal is to be able to direct the chemistry of these species by taking advantage of surface electric fields, cage effects and surface/matrix-assisted relaxation processes. The contributions of these phenomena are studied via conventional spectroscopic methods (IR, UV-visible, LASER induced fluorescence).

PROFESSIONAL AFFILIATIONS

- American Physical Society, Division of Chemical Physics.
- American Chemical Society, Division of Physical Chemistry.
- American Association for the Advancement of Science.
- Sigma Xi, (Club President 1987-8)
- Phi Lambda Upsilon (Chemistry Honor Society)

ACTIVITIES

- Director of the Graduate Programs in Chemistry, 1991-2021.
- Graduate Dean's Conference, 1991-2015.
- Graduate Programs Council, 2019-2021.
- College of Arts and Sciences Dean's Conference, 2016-2021.
- University Comprehensive Resource Review Advisory Committee, 2017-2018.
- University Strategic Enrollment Planning Working Group for Graduate & Other Programs, 2018-2019.
- Faculty Senate, 2010-2.
- Faculty Senate Academic Policy Committee, 2010-3.
- Assistant Director of The Honors Program (acting director, Spring 1995, 2002), 1991-2002.
- Board of Rank and Tenure, University of Scranton, 1990-2; 1994-6.
- Chair, Departmental Faculty Search Committee, 1997, 2001.
- Faculty Affairs Council, Pension Committee, 1993-5.
- General Education Task Force, 1991-2.
- Middle States Self-Study, General Education Task Force, 1986.
- Middle States Self-Study, Plant and Facilities Study Group, 1996.
- University Board on Undergraduate General Education, Science Subcommittee, 1987.
- Moderator, Phi Lambda Upsilon, 1987-90, 2004-5.
- Faculty Research Committee, 1987-90.
- Faculty Development Board, 1986-1989, 2000-2003.
- Honors Council, 1989-2002.
- Department Coordinator, Harry S. Mullin, M.D. Lecture Series, 1989-1992, 1994.
- Library Advisory Committee, 1986-93.
- University Bookstore Committee, 1986-9.
- Judge, Pennsylvania Junior Academy of Sciences, 1985-92.

PERSONAL

Born: December 22, 1955, Portland, Oregon. Wife: Lisa Ahrens Baumann. Children: Avery Elizabeth Baumann, Austin Reese Baumann.

PUBLICATIONS

*-graduate student coauthor

**-undergraduate student coauthor

“Matrix Isolation and Density Functional Theory Study of Bis(trifluoromethyl)dioxodiazine: A Photodimer of Trifluoronitrosomethane.”
Brendan C. Haynie**, Megan J. Morgan*, and Christopher A. Baumann,
Journal of Physical Chemistry A **2005**, *109*, 5307-5315.

“Spectra and Photochemistry of Trifluoronitromethane Adsorbed on Alkali Halide Films.”
Mariaelena Galie**, Janine M. Rusnock*, Michael E. Yevich**, and Christopher A. Baumann,
Journal of Physical Chemistry B **1997**, *101*, 8304-8314.

“Spectra and Photochemistry of Trifluoronitrosomethane Adsorbed on Alkali Halide Films.”
Leanna C. Giancarlo**, Brendan C. Haynie**, Kevin M. Miller**, James M. Reynolds**, Janine M. Rusnock*, and Christopher A. Baumann,
Journal of Physical Chemistry **1996** *100*, 15539-15550.

“Infrared Spectroscopy and Thermodynamic Measurements of CO on NaCl Films.”
Hugh H. Richardson, Jr., Christopher Baumann, and George E. Ewing,
Surface Science **1987** *185*, 15-35.

“ESR of Chromium Metal Atoms and Molecules in Matrices.”
R.J. Van Zee, C.A. Baumann, and W. Weltner, Jr.,
Journal of Chemical Physics **1985** *82*, 3912-3920.

“HCr, LiCr, and NaCr Molecules: ESR and Ground State Properties.”
R.J. Van Zee, C.A. Baumann, and W. Weltner, Jr.,
Chemical Physics Letters **1985** *113*, 524-529.

“ESR of Bimetallic Transition Metal Molecules. II: MnAg, CrZn, and Diatomics Attempted But Not Observed.”
C.A. Baumann, R.J. Van Zee, and W. Weltner, Jr.,
Journal of Physical Chemistry **1984** *88*, 1815-1820.

“ESR of Bimetallic Transition Metal Molecules at 4 K. I: CrCu, CrAg, and CrAu.”
C.A. Baumann, R.J. Van Zee, and W. Weltner, Jr.,
Journal of Chemical Physics **1983** *79*, 5272-5279.

“ESR of Mn₂ and Mn₅ Molecules in Rare Gas Matrices.”
C.A. Baumann, R.J. Van Zee, S.V. Bhat, and W. Weltner, Jr.,
Journal of Chemical Physics **1983** *78*, 190-199.

“High Spin Molecules: Electron Spin Resonance of Manganese Halides and Sulfide at 4K.”

C.A. Baumann, R.J. Van Zee, and W. Weltner, Jr.,
Journal of Physical Chemistry **1982** 86, 5084-5093.

“ESR of the High-Spin ($S=25/2$) Mn_5 Molecule.”

C.A. Baumann, R.J. Van Zee, S.V. Bhat, and W. Weltner, Jr.,
Journal of Chemical Physics **1982** 76, 5636-5637.

“ESR of GdF_3 and Related Molecules at 4 K.”

C.A. Baumann, R.J. Van Zee, K. Zeringue, and W. Weltner, Jr.,
Journal of Chemical Physics **1981** 75 5291-5296.

“The Antiferromagnetic Mn_2 Molecule.”

R.J. Van Zee, C.A. Baumann, and W. Weltner, Jr.,
Journal of Chemical Physics **1981** 74, 6977-6978.

PRESENTATIONS

“Photochemistry of Matrix-Isolated Biacetyl-Water Complexes.”

Christine Salvatore* and C. A. Baumann

Presented at the Gordon Conference on Photochemistry, Stonehill College, July, 2015.

“Infrared Spectra and Calculated Binding Energies of γ -Butyrolactone Dimers and Trimers.”

Eric Willis** and C. A. Baumann

Presented at the Sixty-Ninth International Symposium on Molecular Spectroscopy, The University of Illinois, June, 2014.

“Long-wavelength Photochemistry of Matrix-Isolated Biacetyl.”

Nathan G. Kuchmas* Erin E. Gatrone* and C.A. Baumann

Presented at the Gordon Conference on Photochemistry, Stonehill College, July, 2013.

“Fluorescence of Matrix-Isolated Biacetyl.”

Erin E. Gatrone*, Nathan G. Kuchmas* and C.A. Baumann

Presented at the Sixty-Sixth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2011.

“Long-wavelength Photochemistry of Matrix-Isolated Biacetyl.”

Nathan G. Kuchmas* and C.A. Baumann

Presented at the Sixty-Fifth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2010.

“Photochemistry of Matrix-Isolated Vinyl Acetate.”

Krista Cohen* and C.A. Baumann

Presented at the Gordon Conference on Photochemistry, Bryant University, July, 2009.

“Photochemistry of Matrix-Isolated Vinyl Acetate.”

Krista Cohen* and C.A. Baumann

Presented at the Sixty-Fourth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2009.

“Concentration, Matrix, and Wavelength Dependence in the Photolysis Efficiency of Matrix-Isolated Biacetyl.”

C. A. Baumann

Presented at the Sixty-Third Symposium on Molecular Spectroscopy, The Ohio State University, June, 2008.

“The Ketene Channel in the Photochemistry of Matrix-Isolated Biacetyl.”

C. A. Baumann

Presented at the Gordon Conference on Photochemistry, Bryant University, July, 2007.

“Infrared Spectrum of Matrix-Isolated Methylhydroxycarbene.”

C. A. Baumann

Presented at the Sixty-Second Symposium on Molecular Spectroscopy, The Ohio State University, June, 2007.

“Concentration Dependence of the Photochemistry of Matrix-Isolated Nitromethane.”

Angela M. Jaramillo** and C. A. Baumann

Presented at the Sixty-First Symposium on Molecular Spectroscopy, The Ohio State University, June, 2006.

“Photochemistry of Biacetyl Isolated in Inert Gas Matrices.”

Christopher Baumann, Shawn Finney** and Jared Varaly*

Presented at the Gordon Conference on Photochemistry, Bryant University, July, 2005.

“Infrared Spectra of *gamma*-Butyrolactone Dimers and Trimers Isolated in Inert Gas Matrices.”

Jonathan Roslund** and C. A. Baumann

Presented at the Sixtieth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2005.

“Infrared Spectra and Photochemistry of Biacetyl-water Complexes Isolated in Inert Gas Matrices.”

Christine Salvatore* and C. A. Baumann

Presented at the Fifty-Ninth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2004.

“Infrared Spectra and Photochemistry of *gamma* butyrolactone and *gamma* butyrolactone-*d*₆ Isolated in Inert Gas Matrices.”

Jonathan Roslund**, and C. A. Baumann

Presented at the Fifty-Eighth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2003.

"Infrared Spectrum and Photochemistry of Glyoxal Adsorbed on Alkali Halide Films."

James Collins*, John Telechowski*, and C. A. Baumann

Presented at the Fifty-Seventh Symposium on Molecular Spectroscopy, The Ohio State University, June, 2002.

"Photochemistry of Biacetyl-*d*₆ Isolated in Inert Gas Matrices."

Jared Varaly* and C. A. Baumann

Presented at the Fifty-Sixth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2001.

"Infrared Spectra of Acetonitrile and Related Compounds Adsorbed on Alkali Halide Films."

Denise Mahalidge*, N. Satish Chandra*, Candice Taylor*, and C. A. Baumann

Presented at the Fifty-Fifth Symposium on Molecular Spectroscopy, The Ohio State University, June, 2000.

"Photochemistry of Biacetyl Isolated in Inert Gas Matrices."

Shawn Finney** and C. A. Baumann

Presented at the Fifty-Fourth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1999.

"Infrared Spectrum of Biacetyl Adsorbed on Alkali Halide Films."

Roy Gernhardt*, Richard Morgan*, and C. A. Baumann

Presented at the Fifty-Fourth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1999.

"Photochemistry of Biacetyl Adsorbed on Alkali Halide Films."

Roy Gernhardt*, Richard Morgan*, and C. A. Baumann

Presented at the Fifty-Fourth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1999.

"Production and Infrared Spectrum of a Photodimer of Trifluoronitrosomethane (CF₃NO) Isolated in Inert Gas Matrices."

Megan Morgan* and C. A. Baumann

Presented at the Fifty-Third Symposium on Molecular Spectroscopy, The Ohio State University, June, 1998.

"Infrared Spectroscopy and Photochemistry of Nitromethane Adsorbed on Alkali Halide Films: Conformers and Quenching."

Toni Green** , Angela Jaramillo** , and C. A. Baumann

Presented at the Fifty-Second Symposium on Molecular Spectroscopy, The Ohio State University, June, 1997.

"Photochemistry of Nitromethane Adsorbed on Alkali Halide Films."

Toni Green** , Angela Jaramillo** , Gerald Wayton* , and C. A. Baumann

Presented at the Fifty-Second Symposium on Molecular Spectroscopy, The Ohio State University, June, 1997.

"Infrared Spectroscopy and Photochemistry of Nitromethane Adsorbed on Alkali Halide Films."

Margaret Cullen** , Gerald Wayton* , and C. A. Baumann

Presented at the Fifty-First Symposium on Molecular Spectroscopy, The Ohio State University, June, 1996.

"Photochemistry of Matrix-Isolated Trifluoronitrosomethane (CF₃NO)."

Megan Morgan* and C. A. Baumann

Presented at the Fifty-First Symposium on Molecular Spectroscopy, The Ohio State University, June, 1996.

"Photochemistry of Trifluoronitrosomethane (CF₃NO) Adsorbed on Noble Gas Solids."

Brendan C. Haynie** and C. A. Baumann

Presented at the Fiftieth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1995.

"Infrared Spectrum of CF₃H Adsorbed on Alkali Halide Films."

C. A. Baumann

Presented at the Forty-Ninth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1994.

"Infrared Spectrum and Photochemistry of Adsorbed CF₃NO₂."

J. Rusnock* , and C. A. Baumann

Presented at the Forty-Eighth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1993.

"Photochemistry of Adsorbed Nitrosotrifluoromethane (CF₃NO)."

J. Rusnock*, L. Giancarlo**, and C. A. Baumann

Presented at the Forty-Seventh Symposium on Molecular Spectroscopy, The Ohio State University, June, 1992.

"Infrared Spectra of H₂O, D₂O, and HDO on Alkali Halide Films."

L. Giancarlo**, B. Stone, and C. A. Baumann

Presented at the Forty-Fifth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1990.

"Infrared Spectra of H₂O and D₂O on Sodium Chloride Films."

J. Reynolds**, K. Pensak**, B. Stone, and C. A. Baumann

Presented at the Forty-Third Symposium on Molecular Spectroscopy, The Ohio State University, June, 1988.

"Spectra and Isotherms of Nitrosotrifluoromethane (CF₃NO) on Sodium Chloride Films."

J. Reynolds**, K. Miller**, K. Pensak**, and C. A. Baumann

Presented at the Forty-Third Symposium on Molecular Spectroscopy, The Ohio State University, June, 1988.

"Infrared Spectroscopy of Physisorbed Molecules on Alkali Halide Surfaces."

C. A. Baumann, W. C. Schinzer, and G. E. Ewing

Presented at the Thirty-Eighth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1983.

"Bi-Metallic Molecules: ESR of Manganese- and Chromium-Containing Species."

C. A. Baumann, R. J. Van Zee, and W. Weltner, Jr.

Presented at the Thirty-Seventh Symposium on Molecular Spectroscopy, The Ohio State University, June, 1982.

"ESR of the High-Spin (S=25/2) Mn₅ Molecule."

C. A. Baumann, R. J. Van Zee, S. V. Bhat, and W. Weltner, Jr.

Presented at the Thirty-Seventh Symposium on Molecular Spectroscopy, The Ohio State University, June, 1982.

"Transition Metal Diatomics: an ESR Overview."

C. A. Baumann, R. J. Van Zee, and W. Weltner, Jr.

Presented at the Thirty-Fifth Annual Meeting of the Florida Section of the American Chemical Society, Orlando, May, 1982.

"High Spin Molecules: S=3 Manganese Monohalides and S=5/2 Dihalides."

C. A. Baumann, R. J. Van Zee, and W. Weltner, Jr.

Presented at the Thirty-Sixth Symposium on Molecular Spectroscopy, The Ohio State University, June, 1981.

GRANTS

"Fourier Transform Infrared Spectroscopy"

Submitted to Thomson Consumer Electronics, November, 1995.

(co-PI: Dr. Donna Narsavage-Heald)

Received: Nicolet 520P FTIR spectrometer and Spectra-Tech IR-Plan Microscope.

"Integration of Fourier Transform Infrared Spectroscopy into the Undergraduate Curriculum" NSF-ILI (Instrumentation and Laboratory Improvement), June, 1992.

(co-PI: Dr. David Marx)

Amount: \$21,250

"Surface Photochemistry on Alkali Halide Films"

American Chemical Society, Petroleum Research Fund Type B Grant: December, 1987.

Amount: \$20,000

American Chemical Society, Petroleum Research Fund Type SF Grant: January, 1986.

(summer visiting faculty)

Amount: \$4,000

"Surface Photochemistry"

American Chemical Society, Petroleum Research Fund Type G Grant: July, 1985.

Amount: \$15,000