**Dr. James A. Phillips**
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## Education

Ph.D. 1996: Physical Chemistry, University of Minnesota - Twin Cities
Thesis Advisor: Dr. Kenneth Leopold

B.A., *Cum Laude*, 1991: Middlebury College, Middlebury, VT
*Major*: Chemistry; *Concentration*: Music Composition
Thesis Advisor: Dr. Sunhee Choi

## Leadership Experience

2021 - *present* **Academic Program Director**, 2023 National Conference on Undergraduate Research

Leading design and implementation of the NCUR program via oversight of four sub-groups: (Student) Program Design, Abstract Review, Plenary Sessions, and FAN/Faculty Development. Highlights and accomplishments:

- Co-wrote original bid letter (Spring of 2018), after serving on the NCUR Oversight Committee (NOC) for five years. Preliminary bid leveraged community and campus strengths to secure opportunity for full bid.
- Co-wrote full bid as member of the Bid Development Team, and in this context, proposed major conference planning themes: Scholarship in the arts (and connections to data-driven projects), Research at two-year colleges, Human health and wellbeing, and Sustainability.
- Co-presented bid: 2018 at Kennesaw State (unsuccessful), 2019 at Montana State (successful).
- Facilitated Plenary Speaker Selection: Built a notably diverse "Plenary Planning Team" and finalized the speaker list and schedule. Program features intersectional themes connecting EDI, Sustainability, Human health, and a culminating talk by a UWEC Rhodes Scholar titled, "Research as Your Springboard".
- Oversaw the design of the Faculty Administrator Network (FAN) faculty development programs. Co-developed new formats for this presentation series with the FAN lead (initially conceived during bid process when lead was UWEC Research Office Director).
- Led the Design of the Student Presentation Program: Built cross-disciplinary faculty (and staff) "Program Design Team". Worked directly as lead of this group, which created a program spanning all academic disciplines and featuring a wide range of presentation formats – far beyond talks and posters. Worked closed with arts programming team to create a series of "Special Collaborative Arts Project" sessions.
- Co-Led the design and implementation of the abstract review workflow. Built team for this phase of the project; worked directly with IT lead and software vendor to implement workflow protocol, recruited and inventoried reviewers from all disciplines – over 500 in total, to review approximately 3200 abstracts.
- Promotions: Worked with communications team to develop and implement promotional strategies, appeared in several promotional videos
- Networking: Visited every department on the UWEC campus to recruit faculty/staff expertise needed for review abstracts and moderate presentation sessions, as well as facilitate NCUR engagement. Presented to University Senate on two occasions to present NCUR logistics as related to the course schedule and campus operations. Connected with UWEC-Mayo Clinic collaboration leads to get support for plenaries and abstract review. Recruited several NCUR sponsors, through various contacts (mostly former research students).

2019 - 2022 **Department Chair,** Chemistry (and Biochemistry), University of Wisconsin - Eau Claire

Mission: Led development of the Department Mission Statement, facilitated department name change (adding "Biochemistry"). Oversaw implementation of External Advisory Board.

Enrollment and Retention: Charged group with developing a coordinated retention/advising effort that initiated the development of: first-year experience offerings, course-embedded advising modules, engagement events, and a peer-mentoring program.

Promotions & Communications: Redesigned a communications/recruiting plan, emphasizing key promotional and identity themes (research, job placement, and award-winning faculty), as well as strategies for spreading these messages (web content, print materials, social media, and newsletter). Collaborated with UWEC Communications and hired design intern to develop new promotional martials and update web content. Launched "professional identity" and EDI campaign ("Chemists and Careers", on web and in print). Designed and placed welcoming and promotional banners in department hallways. Re-launched Department Newsletter: *The Periodical*. (*Work continues as Chair of Communications Committee.*)

EDI Initiatives: Launched a new first-year scholarship program (Opportunity Scholars"). Hosted EDI specialist (from ACS OXIDE initiative). Charged committee with developing EDI plan.

Program Updates: Updated learning outcomes and assessment plan; initiated work on aligning courses, oversaw programmatic changes to ACS majors (including name changes). Implemented General Chemistry Coordinator position (enhancing both consistency and staffing efficiency).

Problem Solving: Re-established regular meeting/retreat schedule to address program review recommendations. Facilitated (full) catch-up on overdue curricular paperwork. Managed a range of issues stemming from COVID. Laid ground work for spaces in new science building. Facilitated participation in a system-wide lab safety audit. Managed on-going staffing issues.

Professional Development: Attended the Research Corporation "Academic Leadership Workshop", at ACS Headquarters, Washington, DC, February, 2019. Engaged in mock interview for College Dean post, attended sessions on program development and problem solving, and participated in 360-degree Leadership Review.

## Faculty Appointments and Accomplishments

2007 - *present* **Professor,** Dept. Chemistry and Biochemistry, University of Wisconsin - Eau Claire
2003 - 2007 **Associate Professor,** Department of Chemistry, University of Wisconsin - Eau Claire
1998 - 2003 **Assistant Professor,** Department of Chemistry, University of Wisconsin - Eau Claire

Teaching/Curriculum Development: Taught physical, general, and environmental chemistry courses. Developed three environmental chemistry courses for GE/LE audiences (one is now on-line), as well as an interdisciplinary Community Education course on Global Climate Change. Numerous other interdisciplinary teaching collaborations. Integrated policy and EDI modules into LE courses. Wrote manual for physical chemistry lab (twice); completed a 2-year revision of an integrated physical/analytical lab (and embedded a research module). Integrated computational modules into general and physical chemistry lab courses; wrote an invited monograph on the latter. Co-designed minor: *Environment, Society and Culture*. Mentor of 53 undergraduate research students, w/ 75 off-campus conference presentations.

Scholarship: Maintaining an active, externally-funded research program studying condensed-phase effects on the structural properties of molecular complexes. Methods include: FTIR spectroscopy, matrix isolation, and computations. Obtained over $1,500,000 in external grant funds. Published 25 peer-reviewed manuscripts as a P.I. (with 58 UWEC undergraduate co-author citations). Published *Feature Articles* in *Journal of Physical Chemistry A (2002)* and *Theoretical Chemistry Accounts (2017)*.

Service/Advising: College/University: *College of Arts & Sciences Curriculum Committee* (past Chair), *University Assessment Committee*, *University Liberal Education Committee*, Senator (*Faculty Personnel Committee* (co-developed post-tenure review policy)*, Executive Committee*, *Faculty Nominating Committee*, *Network for Excellence in Teaching* Council. Served on UWEC Strategic Planning Group II (*Transforming Learning*), which catalyzed a major liberal education reform effort. Department: Developed Communications Plan, Assessment Plan (reported on it at College Retreat, 2012). Curriculum, Student Affairs, and Searches (member & Chair). Faculty advisor for: The *UWEC Conservationists*, *College Democrats*, *Sharing Our Strength,* and the *ACS Student Affiliate*. Student Advising: Chemistry majors, Chemical Education majors, and Chemistry-Business Majors. Numerous outreach lectures.

## Professional Experience – Prior

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| 1996 – 1998 | **NOAA Postdoctoral Research Fellow**, University of Colorado – Boulder<br>Mentor: Dr. Veronica Vaida<br>Project Title: *Molecular Complexes and Overtone Pumping in Atmospheric Chemistry* |
| 1992 - 1996 | **Graduate Research**, University of Minnesota - Twin Cities<br>Thesis Title: *Structure and Dynamics of Partially Bound Molecular Complexes* |
| 1991 - 1993 | **Teaching Assistant**, University of Minnesota - Twin Cities<br>Taught in general and physical chemistry courses. Served as Head TA for p-chem lab course. |
| 1990 - 1991 | **Undergraduate Research**, Middlebury College, Middlebury, VT<br>Thesis Title: *MCD Studies of Model Nickel Porphyrins* (highest-honors designation) |

## Awards and Honors

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| 2020 | ChemCUR Outstanding Mentorship Award, *CUR Chemistry Council* |
| 2019, 2013, 1999 | Voted "Professor of the Year" by *UWEC Chemistry Students* |
| 2015 | Excellence in Mentoring Research, Scholarship, or Creative Activity Award, *UWEC* |
| 2013 | Career Teaching Excellence Award, *UWEC College of Arts & Sciences* |
| 2004 - 2009 | Henry Dreyfus Teacher-Scholar, *Camille and Henry Dreyfus Foundation* |
| 2004 | Technology for Innovation in Education (TIE) Fellowship, *UWEC - TLTDC* |
| 2003 | Outstanding Student Organization Advisor Award Nominee, *UWEC* |
| 2001 | Inducted as Honorary Member of *Golden Key Honor Society* |
| 1996 - 1998 | *NOAA* Climate and Global Change Postdoctoral Fellowship |
| 1995 | Overend Award, *Chemistry Department, University of Minnesota* |
| 1995 | Rao Prize, *The Ohio State International Symposium on Molecular Spectroscopy* |
| 1991 - 1992 | Graduate Fellowship, *Chemistry Department, University of Minnesota* |
| 1991 | Outstanding Senior Chemistry Major Certificate, *American Institute of Chemists* |
| 1991 | Highest Honors thesis designation, *Department of Chemistry, Middlebury College* |

## Professional Affiliations & Service

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| *Memberships*: | *M.E.R.C.U.R.Y. Consortium* member (2012 - *present*); Executive Board (2020 - *present*)<br>*Council on Undergraduate Research* (2010 - *present*)<br>*American Chemical Society* (1995 - *present*) |
| *ACS Exams:* | Member of ACS Physical Chemistry (PH21) Examination Committee (2017 - 2021). |
| *Service Boards:* | CUR Councilor (Chemistry Division) and *NCUR Oversight Committee* Member (2011-2017).<br>ACS (INOR) Session Chair (2018).<br>NCUR Session Chair (2015).<br>Organizer/Session Chair for *UW System Symposium on Undergraduate Research* (2001 & 2003). |
| *Program Review*: | Program approval evaluation visitor for ACS-CPT; CUR Program Review Consultant; ad hoc Program Reviewer: Evaluated and wrote recommendation reports for a total of five chemistry programs at various institutions. Review team member for internal evaluation of UWEC's Public Health Professions Department. |
| *Peer Review*: | Journals: *Journal Physical Chemistry, Journal of the American Chemical Society, Chemical Physics Letters, Theoretical Chemistry Accounts, ChemPhysChem, Computational and Theoretical Chemistry, and Z.Anorg. Allg. Chem. (i.e., Zeitschrift für Anorganische und Allgemeine Chemie)*.<br>Grants: *National Science Foundation (Chemical Structure Dynamics and Mechanism-A panelist, 2018)*, *Research Corporation*, and ACS-PRF. |

**External Research Support:** *15 external grants for a total of over $1.5M in funds for research, in addition to numerous internal grants awarded by UWEC's Office or Research and Sponsored Programs.*

"*RUI: Condensed-Phase Effects on the Structural and Energetic Properties of Nitrogen Donor – SOx Complexes";* *NSF-RUI-Chemistry*, 9/1/22 to 8/30/25, ($313,276).

*RUI: Continued Studies of Condensed-Phase Effects on the Structural Properties of Molecular Complexes*"; *NSF-RUI-Chemistry*, *NSF-RUI-Chemistry*, 9/1/16 - 8/31/22, ($246,592, plus $22,055 in supplemental funds).

"*RUI: Continued Studies of Condensed-Phase Effects on the Structural Properties of Molecular Complexes*"; *NSF-RUI-Chemistry*, 9/1/16 - 8/31/22, ($246,592, plus $22,055 in supplemental funds).

"Continued Studies of the Structure, Bonding, and Energetic Properties Friedel-Crafts Intermediates: RF–$BF_3$"; *Petroleum Research Fund-Type UR*, 1/1/13 - 8/31/17, ($65,000).

"RUI: Continued Studies of Condensed-Phase Structural Effects in Complexes of $BCl_3$ and Group IV Lewis Acids"; *NSF-RUI-Chemistry*, 7/1/12 - 1/30/17, ($227,330).

"RUI: Continued Studies of Condensed-Phase Effects on the Structural Properties of Nitrile Donor-Acceptor Complexes"; *NSF-RUI-Chemistry*, 9/1/07 - 8/31/10, ($189,000).

"Condensed Phase Effects on the Structural Properties of Friedel-Crafts Intermediates: RF–$BF_3$"; *Petroleum Research Fund-Type B*, 6/2/07 - 8/31/10, ($55,000).

"Continued Studies of Condensed Phase Effects in Nitrile Donor-Acceptor Complexes"; Henry Dreyfus Teacher-Scholar Award, *Camille and Henry Dreyfus Foundation*, 12/1/04 - 11/30/09, ($60,000).

"RUI: Condensed Phase Effects on the Structure and Bonding of Nitrile Donor-Acceptor Complexes"; *NSF-RUI-Chemistry*, 7/1/04 - 6/30/07, ($183,000).

"RUI: Acquisition of an FTIR Spectrometer and Sampling Accessories for Faculty-Student Collaborative Research in Chemistry"; *NSF-MRI-Chemistry*, 8/31/02 - 8/31/05, ($66,674).

"Molecular Complexes in Cryogenic Matrices: UV Spectra, Photochemistry, and Microsolvation of $H_2O$-$SO_x$ and $H_3N$-$SO_x$"; *Research Corporation Cottrell College Science Award*, 7/1/02 - 6/30/04, ($37,000).

"Spectroscopic Studies of Molecular Complexes in Cryogenic Matrices: Further Insight into Structure, Bonding, and Medium Effects"; *Petroleum Research Fund - Type B*, 5/15/02 - 8/31/05, ($50,000).

"Laboratory Investigations of Charge Transfer Initiated Photochemistry in the Earth's Atmosphere"; *Research Corporation Cottrell College Science Award*, 7/1/99 - 6/30/02, ($35,500).

"Spectroscopic and Photochemical Investigation of Molecular Complexes: Fundamental Issues, and Implications for Atmospheric Photochemistry"; *Petroleum Research Fund - Type GB*, 5/15/99 - 8/31/02, ($25,000).

**Publications** (* *designates UWEC undergraduate co-authors*)

Principle author of 25 peer-reviewed articles as PI since 1998 (11-35 below), with 58 UWEC student co-author citations.

35. "Matrix Effects on Hydrogen Bonding and Proton Transfer in Fluoropyridine - HCl Complexes"; C. Soares,*, A. R. Ley,* C.B. Zehner,* P.W. Treacy,*, J.A. Phillips *Phys. Chem. Chem. Phys.* **2022**, 24, 2371.

34. "Structural and Energetic Properties of OC–$BX_3$ Complexes: Unrealized Potential for Bond-Stretch Isomerism"; J.A. Munos*, D. T. Lowney*, J.A. Phillips, *Phys. Chem. Chem. Phys.* **2021**, 23, 14678.

33. "Structural and Energetic Properties of $RMX_3$-$NH_3$ Complexes", J.A. Phillips, A.R. Ley*, P.W. Treacy*, B.M. Wahl*, B.C. Zehner*, K.J. Donald, and S. Gillespie, *Int. J. Quantum Chem.* **2020**; e26383.

32. "Modeling Reaction Energies and Exploring Noble Gas Chemistry in the Physical Chemistry Laboratory", J.A. Phillips, in, "Using Computations to Teach Chemical Concepts", ACS Monograph Series, ACS Publications, **2019**.

31. "On the Interactions of Nitriles and Fluoro-Substituted Pyridines with Silicon Tetrafluoride: Computations and Thin Film IR Spectroscopy", N.J. Hora,* B.M. Wahl,* C. Soares,* S.A. Lara,* J.R. Lanska,* and J.A. Phillips, *J. Molec. Struct.* **2018**, *1157*, 679.

30. "Structural and Energetic Properties of Haloacetonitrile–$BCl_3$ Complexes: Computations and Matrix-IR Spectroscopy"; J.A. Phillips, S.J. Danforth,* N.J. Hora,* J.R. Lanska,* and A.W. Waller,* *J. Phys. Chem. A* **2017**, *121*, 9252–9261.

29. "Structural and Energetic Properties of Nitrile – $BX_3$ Complexes: Substituent Effects and their Impact on Condensed-Phase Sensitivity"; J.A. Phillips, *Theor. Chem Accts. (Feature Article)* **2017**, *136(1)*:16.

28. "Structural and Energetic Properties of Haloacetonitrile – $GeF_4$ Complexes"; A.W. Waller,* N.M. Weiss,* D.A. Decato, and J.A. Phillips, *J Mol. Struct.* **2017**,*1130*, 984.

27. "Infrared Spectrum of $CH_3CN$–HCl in Solid Neon, and Modeling Matrix Effects in $CH_3CN$–HCl and $H_3N$–HCl"; N.M. Weiss,* A.W. Waller,* and J.A. Phillips, *J Mol. Struct.* **2016**, *1105,* 341-349.

26. "Quantum chemical and matrix-IR characterization of $CH_3CN$–$BCl_3$: A complex with two distinct minima along the B–N bond potential"; J.P. Wrass,* D. Sadowsky, K.M. Bloomgren,* C.J. Cramer, J.A. Phillips, *Phys. Chem. Chem. Phys.* **2014***, 16*, 16480.

25. “Structural and Energetic Properties of Acetonitrile – Group IV (A & B) Halide Complexes”; H.M. Helminiak,* R.R. Knauf,* S.J. Danforth,* J.A. Phillips, *J. Phys. Chem. A* **2014**, *118*, 4266.

24. “Condensed-Phase Effects on the Structural Properties of $FCH_2CN–BF_3$ and $ClCH_2CN–BF_3$: A Matrix-Isolation and Computational Study”; A.R. Buchberger,* S.J. Danforth ,* K.M. Bloomgren,* J.A. Rohde,* E.L. Smith,* C.C.A. Gardener,* J.A. Phillips, *J. Phys. Chem. B* **2013**, *117,* 11687.

23. “Structural and Energetic Properties of Alkylfluoride–$BF_3$ Complexes in the Gas Phase and Condensed-Phase Media: Computations and Matrix Infrared Spectroscopy”; R.R. Knauf,* H.M. Helminiak,* J.P. Wrass,* T.M. Gallert,* J.A. Phillips, *J. Phys. Org. Chem.* **2012**, *25*, 493.

22. “Structure, Bonding, and Energetic Properties of Nitrile - Borane Complexes: RCN–$BH_3$”; E.L. Smith,* D. Sadowsky, C. J. Cramer, J.A. Phillips, *J. Phys. Chem. A* **2011**, *115*, 1955.

21. “A Short – Yet Very Weak Dative Bond: Structure, Bonding, and Energetic Properties of $N_2–BH_3$”; E.L. Smith,* D. Sadowski, J.A. Phillips, C.J. Cramer, D.J. Giesen, *J. Phys. Chem. A* **2010**, *114*, 2628.

20. “Mechanism of the Iron-Mediated Alkene Aziridination Reaction: Experimental and Computational Investigations”; K.L. Klotz,* L.M. Slominski,* M.E. Riemer,* J.A. Phillips, J.A. Halfen, *Inorg. Chem.* **2009**, *48*, 801-3.

19. “Structural Properties of $CH_3CN–SO_2$ in the Gas Phase and Condensed-Phase Media via Density Functional Theory and Infrared Spectroscopy”; A.A. Eigner,* J.P. Wrass,* E.L. Smith*, C.C. Knutson*, J.A. Phillips, *J. Molec. Struct.* **2009**, *919*, 312-320.

18. “The B-N Distance Potential of $CH_3CN–BF_3$ Revisited: Resolving the Experiment-Theory Structure Discrepancy and Modeling the Effects of Low-Dielectric Environments”; C.J. Cramer, J.A. Phillips, *J. Phys. Chem. B* **2007**, *111*, 1408.

17. “IR spectrum of $CH_3CN–BF_3$ in Solid Neon: Matrix Effects on the Structural Properties of a Lewis Acid-Base Complex”; A.A. Eigner,* J.A. Rohde,* C.C. Knutson,* J.A. Phillips, *J. Phys. Chem. B* **2007**, *111*, 1402.

16. “Large Gas - Solid Structural Differences in Complexes of Halo-acetonitriles with Boron Trifluoride”; J.A. Phillips, J.A. Halfen, J.P. Wrass,* C.C. Knutson,* and C.J. Cramer, *Inorg. Chem.* **2006**, *45*, 722-731.

15. “Quantum Chemical Characterization of the Structural Properties of HCN–$BF_3$”; J.A. Phillips, C.J. Cramer *J. Chem. Theo. Comp.* **2005**, *1*, 827-833.

14. “Condensed Phase Effects on the Structure and Bonding of $C_6H_5CN$-$BF_3$ and $(CH_3)_3CCN$-$BF_3$: IR Spectra, Crystallography, and Computations”; J.A. Phillips, D.J. Giesen, N.P. Wells,* J.A. Halfen, C.C. Knutson,* J.P. Wrass,* *J. Phys. Chem. A* **2005**, *109*, 8199 - 8208.

13. “Structure, Bonding, and Vibrational Frequencies of $CH_3CN$-$BF_3$: New Insight into Medium Effects, and the Discrepancy between the Experimental and Theoretical Geometries”; D.J. Giesen, J.A. Phillips, *J. Phys Chem. A* (Feature Article) **2003**, *107*, 4009.

12. “Infrared Spectrum of $CH_3CN$-$BF_3$ in Solid Argon”; N.P. Wells*, J.A. Phillips, *J. Phys. Chem. A,* **2002**, *106*, 1518.

11. “Integrated Intensities of O-H Stretching Bands: Fundamentals and Overtones in Vapor-Phase Alcohols and Acids"; K.R. Lange,* N.P. Wells,* K.S. Plegge,* J.A. Phillips, *J. Phys. Chem. A*, **2001**, *105*, 3481.

10. “Partially Formed Bonds in HCN-$SO_3$ and $CH_3CN$-$SO_3$: Comparing Donor-Acceptor Complexes of $SO_3$ and $BF_3$”; W.A. Burns, J.A. Phillips, M. Canagaratna, H. Goodfriend, K.R. Leopold, *J. Phys. Chem. A* **1999**, *103*, 7445.

9. “Structure of the van der Waals Isomers of the Halosulfuric Acids: Microwave Spectrum of HX-$SO_3$”; M. Canagaratna, J.A. Phillips, H. Goodfriend, D.L. Fiacco, M.E. Ott, B. Harms, K.R. Leopold,*J. Mol. Spec.* **1998**, *192*, 338.

8. “Integrated Intensities of OH Vibrational Overtones in Alcohols”; J.A. Phillips, J.J. Orlando, G.S. Tyndall, V. Vaida, *Chem. Phys. Lett.* **1998**, *296*, 377.

7. “Microwave Spectrum, Structure, and Tunneling of the Nitric Acid - Water Complex”; M. Canagaratna, J.A. Phillips, M.E. Ott, K.R. Leopold, *J. Phys. Chem.* **1998**, *102*, 1498.

6. “Partially Bonded Molecules from the Solid State to the Stratosphere”; K.R. Leopold, M. Canagaratna, J.A. Phillips, *Accts. Chem. Res.* ***1997***, *30*, 57.

5. “Crystal Structure of Dimethylamine - Sulfur Dioxide"; J.A. Phillips, D. Britton, K.R. Leopold, *J. Chem. Cryst.* **1996**, *26*, 531.

4. “Structure and Bonding of the of the Sulfamic Acid Zwitterion: Microwave Spectrum of $H_3N$-$SO_3$”; M. Canagaratna, J.A. Phillips, H. Goodfriend, K.R. Leopold, *J. Am. Chem. Soc.* **1996**, *118*, 5290.

3. “Microwave and ab Initio Investigation of HF-$BF_3$”; J.A. Phillips, M. Canagaratna, H. Goodfriend, A. Grushow, J. Almlöf, K.R. Leopold, *J. Am. Chem. Soc.* **1995**, *117*, 12549.

2. “Microwave Detection of a Key Intermediate in the Formation of Atmospheric Sulfuric Acid: Structure of $H_2O$-$SO_3$”; J.A. Phillips, M. Canagaratna, H. Goodfriend, K.R. Leopold, *J. Phys. Chem.* **1995**, *99*, 501.

1. “Magnetic Circular Dichroism Studies on the Stereochemistry and Coordination Behavior of Ni Porphyrins”; S. Choi, J.A. Phillips, W. Ware Jr., C. Wittschieben, C.J. Medforth, K.M. Smith, *Inorg. Chem.* **1994**, *33*, 3873.

## Invited Lectures

"*Fluoropyridine-HCl and Friends: H-bonding and Proton Transfer in Fluoropyridine-HCl Complexes*", ACS Central WI Section Meeting, Eau Claire, WI, March 2022.

"Condensed-Phase Effects on the Structural and Energetic Properties of Molecular Complexes: Computations and Low-Temperature IR Spectroscopy", Chemistry Seminar, U of MN–Duluth, February, 2018.

"Effects of Bulk, Inert Condensed Phases on the Structural Properties of Nitrile Donor-Acceptor Complexes"
*Chemistry Seminar*, Augsburg College; November, 2013.
*Chemistry Seminar*, Concordia College; November, 2013.

"Condensed Phase Effects on the Structural Properties of Nitrile Complexes: $BF_3$ vs. $BH_3$ vs. $BCl_3$";
*Chemistry Seminar*, Marquette University; April, 2012.

"Why do the Structures of certain Molecular Complexes change so radically in Condensed Phases?";
*Chemistry Seminar*, Middlebury College; September, 2010.

"Probing the Effects of Inert, Condensed-Phase Media on the Structural Properties of $CH_3CN$-$BF_3$ and its Analogs";
*Chemistry Seminar*, University Wisconsin-Oshkosh; November, 2008.

"Condensed Phase Effects on the Structural Properties of Nitrile Donor-Acceptor Complexes: Measurements and Models";
*Chemistry Seminar*, University of Wyoming; March, 2006.

"The Structural Properties of $CH_3CN$-$BF_3$: Reconciling Experiment and Theory, and Probing the Effects of Inert, Condensed-Phase Media";
*Physics Seminar*, University Wisconsin-Eau Claire; March, 2006.

"Condensed Phase Effects on Structure and Bonding in Nitrile Complexes of Boron Trifluoride"; *Invited Talk* (PHYS: General Papers II): *36th Great Lakes Regional Meeting of the ACS*; Peoria, IL; October, 2004.

"What is the Structure of $CH_3CN$-$BF_3$ in Solid Argon?"; *Invited 'Short talk': Gordon Research Conference on the Chemistry and Physics of Matrix Isolated Species*; Lewiston, ME; July, 2003.

"Shake, Rattle and Roll: Probing Subtle Aspects of Molecular Structure with Vibrational Spectroscopy";
*Faculty Forum*, University of Wisconsin - Eau Claire; February, 2002.

"Probing Subtle Aspects of Molecular Structure with Vibrational Spectroscopy";
*Physical Chemistry Seminar*, University of Iowa; February, 2002.

"Molecular Complexes and Overtone Pumping in Atmospheric Chemistry";
*Chemical Physics After Dark*; University of Colorado; December, 1997.

"Adventures in Dative Bond Chemistry";
*Chemistry Seminar*, Middlebury College; September, 1995.
*Physical Chemistry Seminar*, University of Minnesota; March, 1995.

## ***Student Presentations*** *(off campus only, * designates undergraduate researchers)*

75. "Continuing Studies of Medium Effects in Pyridine-Silicon Tetrafluoride Complexes", Becca Adams*, Poster: *21st MERCURY Conference*; Furman University, Greenville, SC; July, 2022.

74. "Matrix Effects on O-HX Hydrogen Bond Strength: DFT Predictions and Infrared Spectroscopy", Jacob Hahr*, Poster: *21s MERCURY Conference*; Furman University, Greenville, SC; July, 2022.

73. "Structural and Energetic Properties of Fluoropyridine–HF Complexes", Elliot Past*, Poster: *21s MERCURY Conference*; Furman University, Greenville, SC; July, 2022.

72. "Hydrogen Bonding and Proton Transfer in Fluoro-Pyridine–HBr Complexes", Tate Sayer*, Poster: *21s MERCURY Conference*; Furman University, Greenville, SC; July, 2019.

71. "The Structural and Energetic Properties of O--HX Complexes", Jacob Hahr*, and James A. Phillips, Poster: *National Conference on Undergraduate Research* (virtual), April, 2022.

70. "The Structural and Energetic Properties of O--HX Complexes", Diego Lowney*, Jacob Hahr*, Poster: *20th MERCURY Conference* (virtual) July, 2021.

69. "A Computational and Experimental Examination of the Structural and Energetic Properties of OC–BX3 Complexes"; Jordan Munos* and James A. Phillips, Poster: *National Conference on Undergraduate Research* (virtual), April, 2021.

68. "Designing Ge-N Donor Acceptor Complexes That Change Structure in Solid-State or in Solution";
Keisha Kappel*, and James A. Phillips, Poster: *National Conference on Undergraduate Research* (virtual), April, 2021.

67. "Quantum chemical characterization of OC–$BX_3$ Complexes", Rachel Ammann, Keisha Kappel*, and Jordan Munos*,
Poster: *18th MERCURY Conference*; Furman University, Greenville, SC; July, 2019.

66. "Structural and Energetic Properties of OC–$BX_3$ Complexes (X=F, Cl)", Jordan Munos* and James Phillips, UW System Symposium on Undergraduate Research and Creative Activity, Green Bay, WI, April 2019.

65. "Revisiting the Properties of Fluoro-Pyridine-$SiF_4$ Complexes: Condensed-Phase Structural Changes," Rachel Mooney* and James Phillips, Poster: *265th National Meeting of the American Chemical Society*; Orlando, FL; April, 2019.

64. "Exploring the Structural and Energetic Properties of $H_3N$–$GeX_3CH_3$ Complexes via IR Spectroscopic and Computational Methods", Patrick Treacy* and James Phillips, Poster: *265th National Meeting of the American Chemical Society*; Orlando, FL; April, 2019.

63. "Analysis of the Structural and Energetic Properties of Pyridine-$SiCl_4$ Complexes via Computations and IR Spectroscopy"; Brittany Zehner* and James Phillips, Poster: *265th National Meeting of the American Chemical Society*; Orlando, FL; April, 2019.

62. "Ammonia-$SiX_3R$ Complexes: Exploring Properties via Computational Modeling and Low-Temperature IR Spectroscopy"; Anna Ley* and James Phillips, Poster: *265th National Meeting of the American Chemical Society*; Orlando, FL; April, 2019.

61. "Structural and Energetic Properties of Pyridine – $GeCl_4$"; Natneal Shiferaw* and James Phillips, Poster: *17th MERCURY Conference*; Furman University, Greenville, SC; July, 2018.

60. "A Computational and IR Spectroscopic Investigation of Structural and Energetic Properties of $H_3N$–$GeX_3CH_3$ Complexes", Patrick Treacy* and James Phillips, Poster: *17th MERCURY Conference*; Furman University, Greenville, SC; July, 2018.

59. "Computational and IR Spectroscopic analysis of the Structural and Energetic Properties of Pyridine-$SiCl_4$ Complexes"; Brittany Zehner* and James Phillips, Poster: *17th MERCURY Conference*; Furman University, Greenville, SC; July, 2018.

58. "An Investigation of Ammonia-$SiX_3R$ Complexes via Computational Modeling and Low-Temperature IR Spectroscopy"; Anna Ley* and James Phillips, Poster: *17th MERCURY Conference*; Furman University, Greenville, SC; July, 2018.

57. "Revisiting the Structural and Energetic Properties of Fluoro-Pyridine-SiF4 Complexes: Condensed Phase Structural Changes," Rachel Mooney* and James Phillips, Poster: *17th MERCURY Conference*; Furman University, Greenville, SC; July, 2018.

56. "Structural and Energetic Properties of Pyridine-HCl Complexes via Computations and IR Spectroscopy;" Camilla Soares* and James Phillips, Oral Presentation: *UW System Symposium on Undergraduate Research and Creative Activity*; Green Bay, WI; April, 2018.

55. "Structural and Energetic Properties of Lewis Acid-Base Complexes"; Ben Wahl* and James Phillips, Oral Presentation: *UW System Symposium on Undergraduate Research and Creative Activity*; Green Bay, WI; April, 2018.

54. "A Computational Study of Ammonia – $SiX_3R$ Complexes"; Anna Ley* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; University of Central Oklahoma, Edmond, OK; April, 2018.

53. "Computational Exploration of the Structural and Energetic Characteristics $NH_3$–$GeX_3R$ Complexes"; Patrick Treacy* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; University of Central Oklahoma, Edmond, OK; April, 2018.

52. "Computational and Spectroscopic Investigation of Pyridine-Silicon Tetrachloride Properties"; Brittany Zehner* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; University of Central Oklahoma, Edmond, OK; April, 2018.

51. "Structural and Energetic Properties of $H_3N$–$GeCl_3CH_3$ and Analogous Lewis Acid-Base Complexes (N–$MX_3$-R)", Benjamin Wahl,* Patrick Treacy,* Anna Ley,* Brittany Zehner,* James Phillips, Poster: *16th MERCURY Conference*; Furman University, Greenville, SC; July, 2017.

50. "Structural and Energetic Properties of Pyridine-$SiCl_4$ via Computations and IR Spectroscopy" Anna Ley,* Brittany Zehner,* Patrick Treacy,* Ben Wahl,* and Jim Phillips, Poster: *16th MERCURY Conference*; Furman University, Greenville, SC; July, 2017.

49. "Structural and Energetic Properties of Pyridine-HCl Complexes via Computations and IR Spectroscopy," Camilla Soares* and James A. Phillips, Poster: *16th MERCURY Conference*; Furman University, Greenville, SC; July, 2017.

48. "Structural and Energetic Properties of $H_3N$-$MX_3R$ Complex: Effect of the Halogen", Robert Huber,* Anna Ley,* Muriel Metko,* and James A. Phillips Poster: *UW System Symposium on Undergraduate Research and Creative Activity*; Stevens Point, WI; April, 2017.

47. "Structural and Energetic Properties of $H_3N$-$MX_3R$ Complex: Effect of the Metal"; Benjamin Wahl,* Katelyn Weeks,* Mark Ostroot,* and James A. Phillips, Poster: *UW System Symposium on Undergraduate Research and Creative Activity*; Stevens Point, WI; April, 2017.

46. "Structural properties of $H_3N$–$MX_3R$ Molecular Complexes: Effects of Organic Substituents", Patrick Treacy,* Brittany Zehner,* and James Phillips, Poster: *UW System Symposium on Undergraduate Research and Creative Activity*; Stevens Point, WI; April, 2017.

45. "Structural and Energetic Properties of Pyridine-HCl Complexes via Computations and IR Spectroscopy", Camilla Soares,* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; University of Memphis, Memphis, TN; April, 2017.

44. "Structural and Energetic Properties of Pyridine-$SiCl_4$ Complexes", Skylee Lara,* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; University of Memphis, Memphis, TN; April, 2017.

43. "A Computational Study of Competing Ionization Pathways in Friedel-Crafts Reactions"; John Lanska* and James A. Phillips, Poster: *15th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2016.

42. "Structural and Energetic Properties of Pyridine–$SiCl_4$ Complexes"; Skylee Lara* and James A. Phillips, Poster: *15th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2016.

41. "Predicting Structural and Energetic Properties of N-donor - Methyltrifluorogermane Complexes (N-$MX_3R$)"; Benjamin M. Wahl* and James A. Phillips, Poster: *15th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2016.

40. "An IR and Computational Study of the Pyridine-HCl Complex and Its Fluorinated Analogs"; Camilla Soares* and James A. Phillips, Poster: *15th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2016.

39. "Structural and Energetic Properties of $H_3N$–$GeF_3CH_3$ and Analogous Lewis Acid-Base Complexes (N–$MX_3$-R)"; Benjamin M. Wahl* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; UNC-Asheville, Asheville, NC; April, 2016.

38. "An IR and Computational Study of the Pyridine-HCl Complex and Its Fluorinated Analogs"; Camilla Soares* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; UNC-Asheville, Asheville, NC; April, 2016.

37. "A Computational Study of Competing Ionization Pathways in Friedel-Crafts Reactions"; John Lanska* and James A. Phillips, Oral Presentation: *National Conference on Undergraduate Research*; UNC – Asheville, Asheville, NC; April, 2016.

36. "Condensed-Phase Effects on the Structural Properties of Nitrile – $SiF_4$ Complexes: A Low-Temperature IR and Computational Study"; Nicholas J. Hora* and James A. Phillips, Poster: *249th National Meeting of the American Chemical Society*; Boston, MA; August, 2015.

35. "A Computational Study of Friedel-Crafts Intermediates: RX'–$MX_3$"; John Lanska* and James A. Phillips, Poster: *14th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2015.

34. "Condensed-Phase Effects on the Structural Properties of Nitrile – $SiF_4$ Complexes: A Low-Temperature IR and Computational Study"; Nicholas J. Hora* and James A. Phillips, Poster: *14th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2015.

33. "What is the Most Stable Isomer of the Ammonia – Methyl Trifluorogermane Complex"; Benjamin M. Wahl* and James A. Phillips, Poster: *14th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2015.

32. "A Comparison of Nitrogen Donor – HCl Complexes"; Camilla Soares* and James A. Phillips, Poster: *14th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2015.

31. "Structural and Energetic Properties of Propane Nitrile and Benzonitrile – $SiF_4$ Complexes"; Nicholas J. Hora* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Eastern Washington University, Cheney, WA; April, 2015.

30. "Structural and Energetic Properties of Haloacetonitrile – Germanium Tetrafluoride Complexes"; Anna W. Waller* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Eastern Washington University, Cheney, WA; April, 2015.

29. "A Computational Study of Complexes Relevant to the Freidel-Crafts Reaction"; John R. Lanska* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Eastern Washington University, Cheney, WA; April, 2015.

28. "A Computational Study of IR Frequency Shifts in $CH_3CN$–HCl"; Nicole M. Weiss* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Eastern Washington University, Cheney, WA; April, 2015.

27. "A Low-Temperature Spectroscopy and Computational Study of $CH_3CN$-HCl"; Anna W. Waller,* Nicole M. Weiss,* and James A. Phillips, Poster: *13th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2014.

26. "Structural and Energetic Properties of $FCH_2CN$-$BCl_3$ and $ClCH_2CN$-$BCl_3$ via Low-Temperature IR Spectroscopy and Computations"; Anna Waller,* Nicolas Hora,* John R. Lanska,* and James A. Phillips, Poster: *13th MERCURY Conference*; Bucknell University, Lewisburg, PA; July, 2014.

25. "Structural Properties of Halo-acetonitrile–$BCl_3$ Complexes via Computations and Low-temperature IR Spectroscopy"; Samuel Danforth,* Kaitlin Bloomgren,* James A. Phillips, Poster: *245th National Meeting of the American Chemical Society*; New Orleans, LA; April, 2013.

24. "Condensed-Phase Effects on the Structural Properties of $ClCH_2CN$–$BF_3$ and $FCH_2CN$–$BF_3$: A Computations and Matrix-IR Study"; Amanda Buchberger,* Samuel Danforth,* Kaitlin Bloomgren,* James A. Phillips, Poster: *245th National Meeting of the American Chemical Society*; New Orleans, LA; April, 2013.

23. "Structural and Energetic Properties of HCN–$BCl_3$ and HCN–$BBr_3$ via Computations"; Kaitlin Bloomgren,* Samuel J. Danforth,* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; UW-Lacrosse, Lacrosse, WI; April, 2013.

22. "Structural Properties of Donor-Acceptor Complexes with Potential Nanotechnology Applications"; Heather M. Helminiak* and James A. Phillips, Poster: *Posters on the Hill*; Washington, DC; April, 2012.

21. "Characterization of bonding interactions by Density Functional Theory in stable $O_4$ complexes"; Michael McAnally* and James A. Phillips, Poster: *Midwest Theoretical Chemistry Conference*; Madison, WI. June, 2012.

20. "Cooperative Effects in the Mechanism of Friedel-Crafts Reactions"; Samuel J. Danforth* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Weber State University, Ogden, UT; March, 2012.

19. "Condensed-Phase Effects on the Structural Properties of $ClCH_2CN$–$BF_3$ and $FCH_2CN$–$BF_3$"; Amanda R. Buchberger* and James A. Phillips, Poster: *National Conference on Undergraduate Research*; Weber State University, Ogden, UT; March, 2012.

18. "Condensed-phase Effects on the Structural Properties of Friedel-Crafts Intermediates: RF'–$BF_3$"; Heather M. Helminiak,* Robin R. Knauf,* and James A. Phillips, Poster: *American Chemical Society National Meeting*; San Francisco, CA; March, 2010.

17. "Structural Properties of the Acetonitrile – Boron Trichloride Complex via Low Temperature IR Spectroscopy and Computations"; John P. Wrass* and James A. Phillips, Poster: *American Chemical Society National Meeting*; San Francisco, CA; March, 2010.

16. "Condensed-Phase Effects on the Structural Properties of Halogen and Interhalogen Complexes of Acetonitrile: $CH_3CN$–$X_2$ and $CH_3CN$–XY"; Elizabeth A. Schinke,* Kaitlin J. Kronenberg,* and James A. Phillips, *Great Lakes Regional Meeting of the American Chemical Society*; Chicago, IL; May, 2009.

15. "Gas Phase Structural and Energetic Properties of the Acetonitrile Complexes of Halogens and Interhalogens"; Kaitlin Kronenberg* and James A. Phillips, Poster: *National Conference on Undergraduate Research*, Dominican University, San Rafael, CA; April, 2007.

14. "Gas Phase Structural Properties of Nitrile Donor - Borane Complexes and $N_2$-$BH_3$"; Elizabeth Smith* and James A. Phillips, Poster: *Great Lakes Regional Meeting of the American Chemical Society*; Milwaukee, WI; May, 2006.

13. "Structural Properties of $CH_3CN$-$SO_2$ in the Gas Phase, Solid State, and Inert Condensed Phase Media"; Audrey Eigner* and James A. Phillips, Oral Presentation: *Great Lakes Regional Meeting of the American Chemical Society*; Milwaukee, WI; May, 2006.

12. "IR Spectrum of $CH_3CN$-$BF_3$ in Solid Nitrogen: Implications for Matrix Effects on Structure and Bonding"; C.C. Knutson*, J.A. Phillips, Poster: *Great Lakes Regional Meeting of the American Chemical Society*; Peoria, IL; October, 2004.

11. "Structure and Bonding, of Halo-acetonitrile-$BF_3$ Complexes: Solid-State IR Spectra, Crystal Structures, and Computations"; J.P. Wrass,* C.C. Knutson,* J.A. Phillips, Poster Presentation: *Great Lakes Regional Meeting of the ACS;* Peoria, IL; October, 2004.

10. "Structure, Bonding, and Vibrational Frequencies of Halo-Acetonitrile-$BF_3$ Complexes"; J.P. Wrass,* J.A. Phillips, Poster: *UW System Symposium on Undergraduate Research and Creative Activity*; Oshkosh, WI; April, 2004.

9. "Vibrational Frequencies of $H_3N$-$SO_2$ and $H_3N$-$SO_3$: Implications for Matrix Effects on Structure and Bonding"; C.C. Knutson,* J.A. Phillips, Poster: *UW System Symposium on Undergraduate Research and Creative Activity*; Oshkosh, WI; April, 2004.

8. "Infrared Spectroscopy of Nitrile Donor - Boron Trifluoride Complexes: Further Insight into Structure Bonding and Medium Effects"; N.P. Wells,* J.A. Phillips, Poster: *Great Lakes Regional Meeting of the American Chemical Society*; Minneapolis, MN; June, 2002.

7. "Unraveling Substituent and Conformational Effects in the Local Mode OH Vibrational Spectra of Ethanol and its Singly Halogenated Analogs"; C.H. Fenner,* J.A. Phillips, Poster: *Great Lakes Regional Meeting of the ACS*; Minneapolis, MN; June, 2002.

6. "A Comparative Study of the Matrix Isolation Infrared Spectra of Nitrile Donor - Boron Trifluoride Complexes"; N.P. Wells,* J.A. Phillips, Poster: *National Conference on Undergraduate Research*; Whitewater, WI; April, 2002.

5. “Unraveling Substituent and Conformational Effects in the Local Mode OH Vibrational Spectra of Ethanol and its Singly Halogenated Analogs”; C.H. Fenner,* J.A. Phillips, Poster: *National Conference on Undergraduate Research*; Whitewater, WI; April, 2002.

4. “Vibrational Spectroscopy of Partially Bonded Complexes: A Matrix Isolation Infrared Study of $CH_3CN–BF_3$”; N.P. Wells,* J.A. Phillips, Oral Presentation: *Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 2001.

3. “Structure and Bonding in the Nitrile Complexes of Boron Trifluoride: A Matrix Isolation Infrared of $CH_3CN–BF_3$”; N.P. Wells,* J.A. Phillips, Oral Presentation: *UW System Symposium on Undergraduate Research and Creative Activity*; Eau Claire, WI; April, 2001.

2. “Structure and Bonding in the Nitrile Complexes of Boron Trifluoride: An Infrared and X-ray Crystallographic Study”; N.P. Wells,* J.A. Phillips, Oral Presentation: *National Conference on Undergraduate Research*; Lexington, KY; April, 2001.

1. “Integrated Intensities of OH Stretching Bands”; K.R. Lange,* K.S. Plegge,* N.P. Wells,* J.A. Phillips, Oral presentation: *Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 2000.

## **Conference Presentations** – AS PI (* *designates UWEC undergraduate co-authors*)

“Structural and Energetic Properties of the 1:1 and 2:1 complexes of pyridine with $MX_4$ Lewis Acids”; Oral Presentation: *American Chemical Society National Meeting*; Chicago; August, 2022.

“*AIM Analyses of H-bonding and Proton Transfer: Pyridine - HX*”; Oral Presentation: *American Chemical Society National Meeting*; Chicago; August, 2022.

“Optimizing the Structural Response in Nitrogen Donor - $MX_3R$ complexes: Computations and Low-Temperature IR Spectra”; On-Demand Oral Presentation: *ACS Fall Virtual National Meeting and Expo*; August, 2020.

“Structural & Energetic Properties of $H_3N–MX_3R$ complexes: Computations and Low-Temperature IR Spectra”; Oral Presentation, 256$^{th}$ ACS National Meeting; Boston; August, 2018.

“Condensed-Phase Effects on the Structural and Energetic Properties of Molecular Complexes: Computations and Low-Temperature IR Spectroscopy”; Oral Presentation, *254$^{th}$ ACS National Meeting*; Washington, DC; August 2017.

“Computations in the physical chemistry laboratory: Modeling reaction energies and exploring noble gas chemistry”; Oral Presentation (CHED 85), *254$^{th}$ ACS National Meeting*; Washington, DC; August 2017.

“The Nitrogen-Borane Complex: A weak donor-acceptor bond with a short B-N distance”; Elizabeth L. Smith,* and James A. Phillips, Oral Presentation: *39th Great Lakes Regional Meeting of the American Chemical Society*; Chicago, IL; May, 2009.

“Computational Chemistry as a Teaching Tool: Examples from Teaching and Research”; Oral presentation (CHED #451): *232$^{nd}$ American Chemical Society National Meeting and Exposition*; San Francisco, CA; September, 2006.

“Condensed phase effects on the structural properties of nitrile donor - acceptor complexes: A survey of results from experiment and theory”; Poster presentation (PHYS #562): *232$^{nd}$ American Chemical Society National Meeting and Exposition*; San Francisco, CA; September, 2006.

“Modeling the effects of inert gas matrices on the structural properties of $CH_3CN-BF_3$”; James A. Phillips and Christopher J. Cramer, Oral Presentation (#274): *37th Great Lakes Regional meeting of the American Chemical Society*; Milwaukee, WI; May, 2006.

“Condensed Phase Effects on Structure and Bonding on $CH_3CN-BF_3$ and Related Complexes”; Poster Presentation: *Special Symposium on Computational Chemical Dynamics*, Minnesota Supercomputing Institute; Minneapolis, MN; October, 2004.

“Structure and Bonding of the Nitrile Complexes of Boron Trifluoride: Matrix Isolation IR Spectroscopy, Crystallography, and Computations”; J.A. Phillips, Poster: *Gordon Research Conference on the Chemistry and Physics of Matrix-Isolated Species*; Lewiston, ME; July, 2003.

“Substituent Effects in the O-H Vibrational Intensities of Vapor Phase Alcohols and Acids”; K.R. Lange*, K.S. Pleege*, N.P. Wells*, J.A. Phillips, Oral Presentation: *The 56th Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 2001.

“Integrated Intensities of OH Vibrational Overtones in Alcohols”; J.A. Phillips, J.J. Orlando, G.S. Tyndall, V. Vaida, Oral Presentation: *The 54th Ohio State International Symposium on Molecular Spectroscopy*, Columbus, OH; June, 1999.

“Integrated Band Strengths for OH Stretching Overtones in Alcohols”; Oral Presentation: *The Rocky Mountain Symposium on Photons and Chemistry*; Estes Park, CO; April, 1998.

“Photofragmentation Through Vibrational Overtones in the Atmosphere”; J.A. Phillips, J. Donaldson, V. Vaida, J. Orlando, G. Tyndall, Poster Presentation: *The University of Colorado Atmospheric Chemistry Symposium*; Boulder, CO; November, 1997.

“Temperature and Pressure Dependence of the Near UV Absorption Cross Section of $HNO_3$”; J. A. Phillips, V. Vaida, Oral Presentation: *The 52nd Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 1997.

“Partially Bonded Molecules in Atmospheric Chemistry”; J.A. Phillips, M. Canagaratna, K.R. Leopold, Poster Presentation: *The University of Colorado Atmospheric Chemistry Symposium*; Boulder, CO; December, 1996.

“Gas Phase Structure of a Friedel-Crafts Intermediate: Microwave Spectrum of $CH_3F-BF_3$”; J.A. Phillips, M. Canagaratna, M.E. Ott, K.R. Leopold, Oral Presentation: *The 51st Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 1996.

“Partially Bonded Molecules in Atmospheric and Solution Phase Chemistry”; J.A. Phillips, M. Canagaratna, H. Goodfriend, A. Grushow, K.R. Leopold, Poster presentation: *The 16th Austin Symposium on Molecular Structure*; Austin, TX; March, 1996.

“Partially Bonded Molecules in Atmospheric and Solution Phase Chemistry”; J.A. Phillips, M. Canagaratna, H. Goodfriend, A. Grushow, K.R. Leopold, Poster presentation: *The 12th Informal Conference on Photochemistry*; Minneapolis, MN; June, 1996.

“Microwave Spectrum and Structure of $H_2O-SO_3$"; J.A. Phillips, M. Canagaratna, H. Goodfriend, K.R. Leopold, Oral presentation: *The 50th Ohio State International Symposium on Molecular Spectroscopy*, Columbus, OH; June, 1995.

“Microwave Spectrum and Structure of $HF-BF_3$”; J.A. Phillips, H. Goodfriend, A. Grushow, M. Canagaratna, K.R. Leopold, Oral presentation: *The 49th Ohio State International Symposium on Molecular Spectroscopy*; Columbus, OH; June, 1994.

## Outreach

*Presentation:* "Studying College Chemistry: What? Where? and Why?"

*Glenbrook North High School Chemistry Courses, Glenbrook, IL, October, 2022.*
*Cary Grove High School Chemistry Courses, Cary, IL, October, 2022.*
*Chippewa Falls High School Chemistry Courses, Chippewa Falls, WI, March, 2022.*

*Lecture:* "The Climate According to Dr. Jim: The Scientific Basis for Global Climate Change":
"Thursday's at The U", UW-Baron County (Rice Lake, WI); November, 2016.
"Sustainability Series", Itasca Community College (Grand Rapids, MN); October, 2009.
"Ask A Scientist", Acoustic Café, (Eau Claire, WI); April, 2008.
Faculty visitor, Putnam Hall, UWEC; April, 2008.
*Sustainability Group Meeting*, WI DNR, Eau Claire Regional Office; November, 2006.
*UWEC Conservationists* meetings; April, 2005 & April, 2002.
*Eau Claire Area Sierra Club* meeting, Eau Claire, WI; April, 2004.
Local Section Meeting, *Central Wisconsin Section of the American Chemical Society*; April, 2003.
*Earth Week Lecture Series*, University of Wisconsin - Eau Claire; April, 2003.
Scientific Overview, *Wisconsin IMPACT Interfaith Response to Global Warming*; September, 2002.

*Media Appearances:*

"Megacryometeor" KARE, June 2021
"Panelist: The Future of Energy" (WUEC's Westside); April, 2011.
"News 18" (WQOW Eau Claire), discussion of energy policy; October, 2008.
"In-Focus" (Eau Claire Community TV) discussing atmospheric $CO_2$; July, 2007.
"Panelist: The Value of a Liberal Arts Education" (WUEC's Westside); March, 2006.
"Northland Adventures" (WQOW TV, Eau Claire, WI) for a climate segment; November, 2005.
"Live at Five" (WEAU TV, Eau Claire, WI) re: *Wisconsin Interfaith Response to Global Warming*; September, 2002.
"TV Notions" (Eau Claire Community TV) discussing climate change; October, 2002 & March, 2003.

*Panelist at "A Conversation on Climate Change," Unitarian Universalist Congregation of Eau Claire, May 2019.*

*UWEC Community Education: "Global Climate Change: Science and Society",* October, 2017. (3.97/4.00 Instructor Rating)

*Presentation:* "Thoughts and Observations on Selecting a College, Studying Chemistry, and Student Life at UWEC";
*Lakeville South High School Chemistry Courses, Lakeville, MN, May, 2009-2012.*

*Presentation:* "Preparing Yourself and Your Application"; *Careers at Primarily Undergraduate Institutions Symposium*,
NSF-RSEC Program, University of Minnesota, September, 2003.

*Lecture:* "The Atmosphere: A Chemist's Appreciation, and Lessons for Stewardship"; *National Chemistry Week*,
UWEC ACS Student Affiliate, October, 2003.

*Speaker*: *Eau Claire Community Earth Day Celebration*, April, 2003 (Organizing Committee Chair for the event, 2005-2008).

*Lecture:* "Ozone: A Paradigm for Modern Atmospheric Chemistry"; UWEC Update in Chemistry, April, 2000.

*Presentation:* "Graduate School: Applying, Attending, & Surviving"; UWEC ACS Student Affiliate Meeting, September, 1999.

*Panelist:* "Choosing a Career in Academia", *Preparing Future Faculty*, University of Minnesota; June, 1999.

*Discussion:* "Is There an Arctic Ozone Hole?"; *Breakfast with a Professor*, UWEC Honors Program; April, 1999.

*Judge: South Middle School Science Fair*, Eau Claire, WI; 1999-2001, 2004, 2008, 2009, (Demo show coach in 2011).