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Education

- 1978 Ph.D. Physical Chemistry, Oregon State University
Thesis advisor -- T. Darrah Thomas (retired)
Dissertation: "X-ray Photoelectron Spectroscopy of Small Molecules in the Gas Phase"
- 1973 A.B. Chemistry/Chemical Physics, University of California at San Diego

Professional Experience

- 2000-present Laboratory Fellow -- Pacific Northwest National Laboratory
- 2009-2017 Wiley Research Fellow -- Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory
- 2004-present Affiliate Professor of Chemistry -- Department of Chemistry, University of Washington, Seattle, Washington
- 1992-2000 Senior Staff Scientist and Technical Group Leader -- Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory
- 1992-present Affiliate Professor of Materials Science and Engineering -- Department of Materials Science and Engineering, University of Washington, Seattle, Washington
- 1987-92 Research Scientist -- Boeing High Technology Center, Seattle, Washington
- 1982-86 Assistant and Associate Professors of Chemistry -- Department of Chemistry, Bethel University, St. Paul, Minnesota
Visiting Scientist and Research Professor -- Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota
- 1977-82 Assistant Professor of Chemistry and Physics -- George Fox University, Newberg, Oregon
Visiting Scientist -- Department of Applied Physics and Electrical Engineering, Oregon, Graduate Institute, Beaverton, Oregon

Honors

- 2019 Winner of the Medard W. Welch Award from the American Vacuum Society, "*For pioneering contributions to understanding the origin and influence of heterogeneities, defects, and disorder in complex oxide epitaxial films and heterostructures.*"
- 2015 Elected Fellow of the American Physical Society, "*For pioneering contributions in the growth and properties of crystalline oxide films, particularly the fundamental relationships between composition and structure, and the resulting electronic, magnetic, and photochemical properties.*"
- 2014 Selected as an Outstanding Referee of the Physical Review and Physical Review Letters journals by the American Physical Society.
- 2009 Elected Fellow of the American Association for the Advancement of Science, "*For seminal contributions to understanding and controlling thin film epitaxial growth and pioneering studies of resident electronic, magnetic and photochemical behavior.*"
- 2004 Recipient of the E.W. Mueller Award for outstanding achievements in surface science from the Laboratory for Surface Studies at the University of Wisconsin - Milwaukee
- 2002 Recipient of 2002 Federal Laboratory Consortium Excellence in Technology Transfer Award for "*Molecular Beam Epitaxy Semiconductor Wafer Development.*"
- 1996 Elected Fellow of AVS -- Science and Technology of Materials, Interfaces and Processing, "*For the development of Auger and x-ray photoelectron diffraction as unique probes of surface structures, and their application to a broad range of problems involving metals, semiconductors, and metal oxides.*"

- 1977 Elected Member of Sigma Xi, the Scientific Research Society
 1969 Elected Lifetime Member of the California Scholarship Federation

Professional Societies

American Physical Society
 American Vacuum Society
 American Association for the Advancement of Science
 Materials Research Society
 Sigma Xi

Service and Professional Activities

- 2018 – present Chairman of the External Advisory Committee for the Molecular Engineering Materials Center, an NSF Materials Research Science and Engineering Center at the University of Washington.
- 2017-2018 Member of Program Committee – Lawrence Symposium on Epitaxy
- 2017- present Proposal reviewer for Deutsche Forschungsgemeinschaft , the German Research Foundation.
- 2017-2018 Member of the International Advisory Board of Symposium CK, "*Functional Magnetic Oxides*", of 14th International Ceramics Congress and the 8th Forum on New Materials, Salsomaggiore Terme, Italy, June 2018.
- 2016-present Member of Science Advisory Board and Series Editor for World Scientific Publishing and author of a volume entitled, "*Modern Thin Film Characterization*", which is part of a series entitled, "*The World Scientific Materials Science Handbook of Thin Film Deposition with Application to Different Metals, Materials Compounds and Groups*".
- 2015 Organized and presided over the *2015 Synthesis and Processing Science Principal Investigators Meeting* for the DOE OBES Division of Materials Science and Engineering, Gaithersburg, MD, November 2015.
- 2015 – 2019 Member at Large, Executive Committee of the Division of Materials Physics of the American Physical Society
- 2014 On-site review team member, Argonne National Laboratory DOE BES Materials Science and Engineering programs.
- 2013 - 2014 Program Co-Chair for the 9th *International Workshop on Oxide Surfaces (IWOX-IX)*, Lake Tahoe, CA – January 5-10, 2014.
- 2013 - 2014 Member of the International Advisory Board of Symposium CK "*Functional Magnetic Oxides*" of the *International Ceramics Congress*, Montecatini Terme, Italy, June 8-20, 2014.
- 2010 - 2016 Member of the Surface, Interface and Atomic-Scale Science editorial advisory board for *Journal of Physics – Condensed Matter*.
- 2008 Co-editor for a focus issue of *New Journal of Physics* entitled "Diluted Magnetic Semiconductors", 2008.
- 2008 Co-organizer, Joint European Magnetic Symposia '08, Dublin, Ireland – September 14-19, 2008
- 2007 - 2008 Member of Program Committee -- 15th International Conference on Molecular Beam Epitaxy, Vancouver, BC – August 3-8, 2008.
- 2006 - 2007 Member of Advisory Committee – NSF MRSEC at Yale University.
- 2006 - 2007 Program Chair for the 5th International Workshop on Oxide Surfaces (IWOX-V), Lake Tahoe, CA – January 8-12, 2007.
- 2005 - 2015 Member of Advisory Committee – NSF MRSEC at the University of California at Santa Barbara.
- 2005 Member of the technical review panel for the Naval Research Laboratory Materials Technology program.
- 2005 Member of the technical review panel for University of Illinois at Champaign-Urbana Materials Research Laboratory.
- 2005 - present Member of the International Steering Committee for the International Workshop on Oxide Surfaces (IWOX).
- 2004-present Proposal reviewer for Department of Energy Basic Energy Sciences, Office of Naval Research, and the National Science Foundation

2003 - 2006	Member of executive committee of the Electronic Materials and Processing Division of the AVS – Science and Technology of Materials, Interfaces and Processing.
200 - 2004	Member of executive committee of the Magnetic Interfaces and Nanostructures Division of the AVS -- Science and Technology of Materials, Interfaces and Processing.
2002	Member of the Organizing Committee – 2002 Materials Research Society Fall Meeting Symposium entitled “Crystalline Oxides on Silicon”
2001	Member of the Organizing Committee – 2001 European Materials Research Society Symposium on Ultrathin Epitaxial Oxides, Strasbourg, France,
1999	Organized Minisymposium on the Physics and Chemistry of Oxide Surfaces, held in conjunction with the First Annual Users Meeting of the Environmental Molecular Sciences Laboratory at PNNL
1998	Panel member for Workshop on Scientific Directions at the Advanced Light Source, Lawrence Berkeley National Laboratory
1997	Reviewer for Physics Research Programs at Linfield College and Linfield Research Institute
1997 - 2005	Member of the International Steering Committee --- International Conference on the Structure of Surfaces (ICSOS)
1994 - 1999	Member of the Editorial Board --- Journal of Vacuum Science and Technology A
1993 - 2011	Member of the Editorial Board --- Applied Surface Science
1993	Member -- Judging Panel for M.M. Traum Student Competition of the Surface Science Division of the American Vacuum Society
1994	Chair -- Pacific Northwest Section of the AVS
1993	Vice-Chair -- Pacific Northwest Section of the AVS
1993 - 94	Member of the Executive Committee -- Electronic Materials and Processing Division of the American Vacuum Society
1993	Member -- Technical review panel for the Naval Research Laboratory Annual Review of the Fundamentals of Materials Behavior program
1993	Co-Organizer and Proceedings Editor -- Symposium entitled “Magnetic Ultrathin Films -- Interfaces and Characterization” at the Spring Materials Research Society Meeting.
1992 - 1993	Program Committee Member -- Physics and Chemistry of Semiconductor Interfaces Conference
1990 - 1991	Publicity Committee Chair -- Local Arrangements Committee, 38 th Annual Symposium of the American Vacuum Society
1989 - 1990	Member -- Compound Semiconductor Technology Advisory Committee-Washington Technology Center
1988 - 1989	Member -- local committee for the 1989 Physical Electronics Conference of the American Physical Society.
1988 - 1992	Puget Sound Area Coordinator -- Pacific Northwest Chapter of the AVS
1984 - present	Proposal Referee -- Divisions of Solid-State Chemistry and Materials Science, National Science Foundation, US Department of Energy, Office of Basic Energy Sciences, Office of Naval Research, Army Research Office
1984 - present	Referee – Science, Nature, Nat. Mat., Phys. Rev. Lett., Phys. Rev. B, Surf. Sci., App. Surf. Sci., Surf. Sci. Rep., J. Vac. Sci. Technol. A&B, App. Phys. Lett., J. App. Phys., Thin Solid Films, J. Mat. Res., Europhys. Lett., Chem. Phys. Lett., J. Chem. Phys., J. Mag. Mag. Mat.
1983 - 86	Surface Science Consultant -- Data Recording Products Division, 3M Company, St. Paul, Minnesota

Recent Teaching Experience

- Short courses taught at the Department of Materials Science and Engineering, Nanjing University, People’s Republic of China:
 1. “*Epitaxial Oxide Film Growth and Related Surface Science Techniques*”, November 2008.
 2. “*Surface and Interface Analysis*”, November 2010 and 2012.
 3. “*Spectroscopic, Diffractive and Atomic Scale Imaging Investigations of Crystalline Surfaces and Heterostructures*”, November 2014 and 2016.

- Special topics graduate course entitled “*Fabrication and Characterization of Nanomaterials*”, an NSF funded course run annually by PNNL, the University of Washington and Washington State University (2004-2008).

Current Research Interests

- Epitaxial growth and materials properties of metal oxide crystalline films and multilayers by oxygen-plasma-assisted molecular beam epitaxy, pulsed laser deposition, and metal organic chemical vapor deposition.
- Electronic and magnetic structure of oxide epitaxial films and oxide/oxide and oxide/metal superlattices, and oxide/semiconductor interfaces.
- Photophysics and photochemistry of well-defined oxide surfaces.

Patents

3. S.A. Chambers, “Spinel Structured Metal Oxide on a Substrate and Method of Making Same by Oxygen Plasma Assisted Molecular Beam Epitaxy”, U.S. Patent 7,001,459 B2, issued 21 February 2006.
2. D. Jennison, A. Bogicevic, J. Kelber, S.A. Chambers, “Method of Adhesion Between an Oxide Layer and a Metal Layer”, U.S. Patent 6,790,476, issued 14 September 2004.
1. Y. Liang, H. Luo, J. Dashbach, S.A. Chambers, “Structure Having Spatially Photo-Excitable Electron-Hole Pairs and Method of Manufacturing Same”, U.S. Patent 6,534,782, issued 18 March 2003.

Books edited

3. “Crystalline Oxide-Silicon Heterostructures and Oxide Optoelectronics”, Editors: D. Ginley, S. Guha, S. Carter, S.A. Chambers, R. Droopad, H. Hosono, D.C. Paine, D.G. Schlom, J. Tate, Materials Research Society Symposium Proceedings (2002).
2. “Ultrathin Epitaxial Oxides” Editors: G. Granozzi, S.A. Chambers, H.-J. Freund, Proceedings of Symposium N, E-MRS 2001 Spring Conference, Strasbourg, France, June 5-8, 2001; Special Issue *Thin Solid Films*, 400, 1-176 (2001).
1. “Magnetic Ultrathin Films, Multilayers and Surfaces, Interfaces and Characterization”, Editors: B.T. Jonker and S.A. Chambers, Materials Research Society Symposium Proceedings (1993).

Invited Book Chapters/Review Articles

22. Scott A. Chambers, “X-ray Photoelectron Spectroscopy”, invited book chapter for Materials Characterization Methods for Epitaxial Films and Heterostructures, World Scientific, eds. A.A. Demkov and S.A. Chambers, World Scientific, in press (2021).
21. Steven R. Spurgeon and Scott A. Chambers, “Atomic-scale Characterization of oxide interfaces and superlattices using scanning transmission electron microscopy”, *Encyclopedia of Interface Chemistry: Surface Science and Electrochemistry*, Elsevier. (2018) 38–48. DOI:10.1016/B978-0-12-409547-2.12877-X.
20. Scott A. Chambers, “Probing perovskite interfaces and superlattices with x-ray photoemission spectroscopy”, invited book chapter for Hard X-ray Photoelectron Spectroscopy (HAXPES), ed. Joseph C. Woicik, Springer Series in Surface Sciences, Vol. 59, pp. 341-380 (2016).
19. S.A. Chambers, “Understanding the Mechanism of Conductivity at the LaAlO₃/SrTiO₃(001) Interface”, invited Prospective for *Surf. Sci.* **605**, 1133 (2011).
18. S.A. Chambers, M.H. Engelhard, V. Shutthanandan, Z. Zhu, T.C. Droubay, L. Qiao, P.V. Sushko, T. Feng, H. D. Lee, T. Gustafsson, E. Garfunkel, A. Shah, J. –M. Zuo, “Instability, Intermixing and Electronic Structure at the LaAlO₃/SrTiO₃(001) Interface”, *Surf. Sci. Rep.* **65**, 317 (2010).
17. S.A. Chambers, “Epitaxial Growth and Properties of Doped Transition Metal and Complex Oxide Films”, *Adv. Mater.* **22**, 219 (2010).
16. J.M.D. Coey and S.A. Chambers, “Oxide Dilute Magnetic Semiconductors – Fact or Fiction?”, MRS Bulletin entitled *Whither Oxide Electronics?*, ed. R. Ramesh and D.G. Schlom, Vol. 33, No. 11, pp. 1053-1058, November 2008.
15. S.A. Chambers, “Molecular Beam Epitaxial Growth of Doped Transition Metal Oxide Semiconductors”, invited review article for *J Physics: Cond. Mat.* **20**, 264004 (2008).
14. S.A. Chambers, “Advances in the Surface Science of TiO₂ – A Global Perspective”, invited review article for *J. Surf. Sci. Jpn.*, **28**, 561 (2007).
13. S.A. Chambers, S.H. Cheung, V. Shutthanandan, S. Thevuthasan, M.K. Bowman, A.G. Joly, “Properties of Structurally Excellent N-doped TiO₂ Rutile”, special issue of *Chemical Physics* entitled *Doping and*

- Functionalization of Photoactive Semiconducting Metal Oxides*, ed. C. DiValentin, U. Diebold, A. Selloni, **339**, 27 (2007).
12. S. A. Chambers, T.C. Droubay, C.M. Wang, K.M. Rosso, S.M. Heald, D.A. Schwartz, K.R. Kittilstved, D.R. Gamelin, "Ferromagnetism in Oxide Semiconductors", *Materials Today* **9**, 28 (2006).
 11. Scott A. Chambers, "Ferromagnetism in Thin-Film Oxide and Nitride Semiconductors and Dielectrics", *Surf. Sci. Rep.* **61**, 345 (2006).
 10. Scott A. Chambers, Timothy C. Droubay and Tiffany C. Kaspar, "Epitaxial Growth and Properties of Magnetically Doped TiO₂", Ch. 7 in *Thin Films and Heterostructures for Oxide Electronics*, ed. Satish Ogale, Kluwer Academic Publishers (2005).
 9. S.A. Chambers and R.F.C. Farrow, "Some New Possibilities for Ferromagnetic Semiconductors", MRS Bulletin entitled *New Materials for Spintronics*, ed. Y.K. Yoo and S.A. Chambers, Vol. 28, No. 10, pp. 729-733, October 2003.
 8. S.A. Chambers, "High Temperature Magnetic Oxide Semiconductor Films and Their Potential Role in Spintronics", *Materials Today* **5**, 34 (2002).
 7. S.A. Chambers, "Structure of Thin Epitaxial Oxide Films and Their Surfaces", Ch. 7 in *The Chemical Physics of Solid Surfaces*, Vol. 9 (Oxide Surfaces), ed. D.P. Woodruff (2001).
 6. G.E. Brown, Jr., S.A. Chambers, J.E. Amonette, J.R. Rustad, T. Kendelewicz, P. Liu, C.S. Doyle, D. Grolimund, N.S. Foster-Mills, S.A. Joyce, and S. Thevuthasan, "Interaction of Aqueous Chromium Ions with Iron Oxide Surfaces", *ACS Symp. Series* **778**, 212 (2001).
 5. S.A. Chambers, "Epitaxial Growth and Properties of Thin Film Oxides", *Surf. Sci. Rep.* **39**, 105-180 (2000).
 4. Andrew R. Felmy, Donald R. Baer, Scott A. Chambers, David A. Dixon, Donald M. Friedrich, Robert G. Riley, and James R. Rustad, "Need and Approach for a Basic Research Program on Determining the Molecular Form and Reactivity of Contaminants in the Subsurface", Ch. 8 in *Environmental Materials and Interfaces*, World Scientific Publishing, ed. D.R. Baer (1998).
 3. S.A. Chambers, "Chemical, Structural and Electronic Characterization of Compound Semiconductor Surfaces and Interfaces by X-ray Photoelectron Spectroscopy and Diffraction Techniques", Ch. 12 in *Handbook of Compound Semiconductors - Growth, Processing, Characterization, and Devices* ed. P.H. Holloway and G.E. McGuire, Noyes Publications (1995).
 2. S.A. Chambers, "Elastic Scattering and Interference of Backscattered Primary, Auger, and X-ray Photoelectrons at High Kinetic Energy: Principles and Applications", *Surf. Sci. Rep.* **16**, 261-332 (1992).
 1. S.A. Chambers, "Epitaxial Film Crystallography by High-energy Auger and X-ray Photoelectron Diffraction", in *Advances in Physics* **40**, 357-415 (1991).

Refereed Journal Publications

313. Le Wang, Zhenzhong Yang, Xinmao Yin, Sandra D Taylor, Xu He, Chi Sin Tang, Mark E. Bowden, Jiali Zhao, Jiaou Wang, Jishan Liu, Daniel E. Perea, Linda Wangoh, Andrew T. S. Wee, Hua Zhou, Scott A. Chambers and Yingge Du, "Spontaneous Phase Segregation of Sr₂NiO₃ and SrNi₂O₃ during SrNiO₃ Heteroepitaxy", *Sci. Adv.*, in press (2021).
312. M. Rose, B. Šmíd, M. Vorokhta, I. Slipukhina, M. Andrä, H. Bluhm, T. Duchoň, M. Ležaić, S. A. Chambers, R. Dittmann, D. N. Mueller and F. Gunkel, "Identifying Ionic and Electronic Charge transfer at Oxide Heterointerfaces", *Adv. Mater.* 2004132 (2020). DOI: [10.1002/adma.202004132](https://doi.org/10.1002/adma.202004132)
311. Jishan Liu, Endong Jia, Kelsey A. Stoerzinger, Le Wang, Yining Wang, Zhenzhong Yang, Dawei Shen, Mark H. Engelhard, Mark E. Bowden, Zihua Zhu, Scott A. Chambers, and Yingge Du, "Dynamic Lattice Oxygen Participation on Perovskite LaNiO₃ Surfaces During Oxygen Evolution Reaction", *J. Phys. Chem. C* **124**, 15386 (2020). <https://dx.doi.org/10.1021/acs.jpcc.0c04808>.
310. Le Wang, Zhenzhong Yang, Mark E. Bowden, John W. Freeland, Peter V. Sushko, Steven R. Spurgeon, Bethany Matthews, Widitha S. Samarakoon, Hua Zhou, Zhenxing Feng, Mark H. Engelhard, Yingge Du, and Scott A. Chambers, "Hole-Trapping-Induced Stabilization of Ni⁴⁺ in SrNiO₃/LaFeO₃ Superlattices", *Adv. Mater.*, 2005003 (2020). DOI: [10.1002/adma.202005003](https://doi.org/10.1002/adma.202005003).
309. Scott A. Chambers and Donald R. Baer, "Introductory Guide to the Application of XPS to Epitaxial Films and Heterostructures", *J. Vac. Sci. Technol.*, A **38**, 061201 (2020). DOI: [10.1116/6.0000465](https://doi.org/10.1116/6.0000465).
308. Lei Pan, Alexander Grutter, Xiaoyu Che, Tomohiro Nozaki, Alex Stern, Mike Street, Bing Zhang, Brian Casas, Qing Lin He, Eun Sang Choi, Steven M. Disseler, Dustin A. Gilbert, Gen Yin, Qiming Shao, Peng Zhang, Peng Deng, Yingying Wu, Xiaoyang Liu, Xufeng Kou, Sahashi Masashi, Xiaodong Han,

- Christian Binek, [Scott Chambers](#), Jing Xia, Kang L. Wang, “Exchange Interaction at a Quantum Anomalous Hall Insulator/Antiferromagnet Heterostructure”, *Adv. Mater.* **32**, 3001460 (2020). DOI: [10.1002/adma.202001460](https://doi.org/10.1002/adma.202001460).
307. Peter V. Sushko and [Scott A. Chambers](#), “Extracting Band Edge Profiles at Semiconductor Heterostructures from Hard X-ray Core-Level Photoelectron Spectra”, *Scientific Reports* **10**, 13028 (2020). <https://doi.org/10.1038/s41598-020-69658-9>.
306. [Scott A. Chambers](#) and Yingge Du, “Experimental Determination of Electron Attenuation Lengths in Complex Materials by Means of Epitaxial Film Growth: Advantages and Challenges”, *J. Vac. Sci. Technol. A* **38**, 043409 (2020). DOI: [10.1116/6.0000291](https://doi.org/10.1116/6.0000291).
305. Mark D. Scafetta, Tiffany C. Kaspar, Mark E. Bowden, Steven R. Spurgeon, Bethany Matthews, [Scott A. Chambers](#), “Reversible Oxidation Quantified by Optical Properties in Epitaxial $\text{Fe}_2\text{CrO}_{4+\delta}$ Films on (001) MgAl_2O_4 ”, *ACS Omega* **5**, 3240 (2020). <https://dx.doi.org/10.1021/acsomega.9b03299>.
304. M. Wu, S. Q. Chen, C. W. Huang, X. Ye, H. P. Zhou, X. C. Huang, Kelvin H. L. Zhang, W. S. Yan, L. H. Zhang, K. Kim, Y. Du, [S.A. Chambers](#), J.-C. Zheng, and H.-Q. Wang, “Modulation of the electronic states of perovskite SrCrO_3 thin films through low-energy hydrogen plasma implantation approaches”, *Front. Phys.* **15**, 13601 (2020). <https://doi.org/10.1007/s11467-019-0923-2>.
303. [Scott A. Chambers](#) and Peter V. Sushko, “The influence of crystalline order and defects on the absolute work functions and electron affinities of TiO_2 - and SrO -terminated n - $\text{SrTiO}_3(001)$ ”, *Phys. Rev. Mater.* **3**, 125803 (2019). DOI: [10.1103/PhysRevMaterials.3.125803](https://doi.org/10.1103/PhysRevMaterials.3.125803).
302. [Scott A. Chambers](#) and Peter V. Sushko, “Probing Energy Landscapes in Multilayer Heterostructures: Challenges and Opportunities”, *APL Mater.* **7**, 110904 (2019). <https://doi.org/10.1063/1.5129155>.
301. Jishan Liu, Endong Jia, Le Wang, Kelsey A. Stoerzinger, Hua Zhou, Chi Sin Tang, Xinmao Yin, Xu He, Eric Bousquet, Andrew Wee, [Scott A. Chambers](#), and Yingge Du, “Tuning the Electronic Structure of LaNiO_3 through Alloying with Strontium to Enhance Oxygen Evolution Activity”, *Adv. Sci.* **6**, 1901073 (2019). DOI: [10.1002/advs.201901073](https://doi.org/10.1002/advs.201901073).
300. Lei Chang, Le Wang, Lu You, Zhenzhong Yang, Amr Abdelsamie, Qinghua Zhang, Yang Zhou, Lin Gu, [Scott A. Chambers](#), and Junling Wang, “Tuning Photovoltaic Performance of Perovskite Nickelates Heterostructures by Changing the A-Site Rare-Earth Element”, *ACS Appl. Mater. Int.* **11**, 16191 (2019). DOI: [10.1021/acscami.9b01851](https://doi.org/10.1021/acscami.9b01851).
299. Zheng Hui Lim, Nicholas F. Quackenbush, Aubrey Penn, Matthew Chrysler, Mark Bowden, Zihua Zhu, James M. Ablett, Tien-lin Lee, James M. LeBeau, Joseph C. Woicik, Peter V. Sushko, [Scott A. Chambers](#), Joseph H. Ngai, “Charge Transfer and Built-in Electric Fields Between a Crystalline Oxide and Silicon”, *Phys. Rev. Lett.* **123**, 026805 (2019). DOI: [10.1103/PhysRevLett.123.026805](https://doi.org/10.1103/PhysRevLett.123.026805).
298. Mark D. Scafetta, Zhenzhong Yang, Tiffany C. Kaspar, [Scott A. Chambers](#), “Epitaxial growth and atomic arrangement in Fe_2CrO_4 on crystal symmetry matched (001) MgAl_2O_4 ”, *J. Vac. Sci. Technol. A* **37**, 031511 (2019). DOI: [10.1116/1.5093537](https://doi.org/10.1116/1.5093537).
297. Le Wang, Yingge Du, Peter V. Sushko, Mark E. Bowden, Kelsey A. Stoerzinger, Steven M. Heald, Mark D. Scafetta, Tiffany C. Kaspar, [Scott A. Chambers](#), “Hole-Induced Electronic and Optical Transitions in $\text{La}_{1-x}\text{Sr}_x\text{FeO}_3$ Epitaxial Thin Films”, *Phys. Rev. Mater.* **3**, 025401 (2019). DOI: [10.1103/PhysRevMaterials.3.025401](https://doi.org/10.1103/PhysRevMaterials.3.025401).
296. Le Wang, Kelsey A. Stoerzinger, Lei Chang, Xinmao Yin, Yangyang Li, Chi Sin Tang, Endong Jia, Mark E. Bowden, Zhenzhong Yang, Amr Abdelsamie, Lu You, Rui Guo, Jingsheng Chen, Andrivo Rusydi, Junling Wang, [Scott A. Chambers](#), Yingge Du, “Strain Effect on Oxygen Evolution Reaction Activity of Epitaxial NdNiO_3 Thin Films”, *ACS Adv. Mater. Int.* **11**, 12941 (2019). DOI: [10.1021/acscami.8b21301](https://doi.org/10.1021/acscami.8b21301).
295. Paul S. Bagus, Connie J. Nelin, C. R. Brundle, [Scott A. Chambers](#), “A New Mechanism For XPS Line Broadening: The 2p-XPS of Ti(IV) ”, *J. Phys. Chem. C* **123**, 7705 (2019). DOI: [10.1021/acs.jpcc.8b05576](https://doi.org/10.1021/acs.jpcc.8b05576).
294. Tiffany C. Kaspar, Peter V. Sushko, Steven R. Spurgeon, Mark E. Bowden, David J. Keavney, Ryan B. Comes, Sahar Saremi, Lane Martin, [Scott A. Chambers](#), “Electronic structure and band alignment of LaMnO_3 / SrTiO_3 polar / non-polar heterojunctions”, *Adv. Mater. Int.* **1**, 1801428 (2018). DOI: [10.1002/admi.201801428](https://doi.org/10.1002/admi.201801428).
293. Kelsey A. Stoerzinger, Le Wang, Yifan Ye, Mark Bowden, Ethan J. Crumlin, Yingge Du, [Scott A. Chambers](#), “Linking surface chemistry to photovoltage in Sr-substituted LaFeO_3 for water oxidation”, *J. Mater. Chem. A* **6**, 22170 (2018). DOI: [10.1039/c8ta05741a](https://doi.org/10.1039/c8ta05741a).

292. Y. Du, P.V. Sushko, S.R. Spurgeon, M.E. Bowden, J.M. Ablett, T.-L. Lee, N.F. Quackenbush, J.C. Woicik, S.A. Chambers, “Layer-resolved band bending at the n -SrTiO₃(001)/ p -Ge(001) interface”, *Phys. Rev. Mater.* **2**, 094602 (2018). DOI: [10.1103/PhysRevMaterials.2.094602](https://doi.org/10.1103/PhysRevMaterials.2.094602).
291. Le Wang, Kelsey A. Stoerzinger, Lei Chang, Jiali Zhao, Yangyang Li, Chi Sin Tang, Xinmao Yin, Mark E. Bowden, Zhenzhong Yang, Haizhong Guo, Lu You, Rui Guo, Jiaou Wang, Kurash Ibrahim, Jingsheng Chen, Andriwo Rusydi, Junling Wang, Scott A. Chambers, Yingge Du, “Tuning Bifunctional Oxygen Electrocatalysts by Changing A-site Rare-Earth Element in Perovskite Nickelates”, *Adv. Funct. Mater.* **28**, 1803712 (2018). DOI: [10.1002/adfm.201803712](https://doi.org/10.1002/adfm.201803712).
290. Tamas Varga, Timothy C. Droubay, Libor Kovarik, Dehong Hu, and Scott A. Chambers, “Controlling the Structure and Ferroic Properties of Strained Epitaxial NiTiO₃/Al₂O₃ Thin Films by Post-Deposition Annealing”, *Thin Solid Films* **62**, 47 (2018). <https://doi.org/10.1016/j.tsf.2018.07.030>.
289. Shih-Chieh Lin, Cheng-Tai Kuo, Ryan Comes, Julien E. Rault, Jean-Pascal Rueff, Slavo Nemšák, Amina Taleb, Jeffrey B. Kortright, Julia Meyer-Ilse, Eric Gullikson, Peter Sushko, Steven R. Spurgeon, Matthias Gehlman, Lukasz Plucinski, Scott A. Chambers, and Charles S Fadley, “Interface composition and potential profile of LaCrO₃/SrTiO₃ determined by standing-wave excited photoemission spectroscopy”, *Phys. Rev. B* **98**, 165124 (2018). DOI: [10.1103/PhysRevB.98.165124](https://doi.org/10.1103/PhysRevB.98.165124).
288. J.C. Woicik, J.M. Ablett, N.F. Quackenbush, A.K. Rumaiz, C. Weiland, T.C. Droubay, S.A. Chambers, “Charge-transfer excitations in the photo-ionization of NiO”, *Phys. Rev. B.* **97**, 245142 (2018). DOI: [10.1103/PhysRevB.97.245142](https://doi.org/10.1103/PhysRevB.97.245142).
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Invited and Plenary Talks

230. "Extracting Quantitative Band-edge Profiles from Buried Heterojunctions from Hard X-ray Photoelectron Spectra", Department of Chemistry, University of North Texas, November 2020.
229. "X-ray Photoelectron Spectroscopy – A Rich Source of More Than Just Chemical Information", AVS Prairie Chapter Virtual Student Chapter, October 2020.
228. "Extracting Quantitative Band-edge Profiles from Buried Heterojunctions from Hard X-ray Photoelectron Spectra", Center for Quantum Materials and Department of Physics, University of Minnesota, November 2019.
227. "Defect-Mediated Coupling of Built-in Potentials at Buried Interfaces Involving Epitaxial Complex Oxides", 66th International Symposium of the American Vacuum Society, Columbus, Ohio, October 2019.
226. "Extracting Quantitative Band-edge Profiles from Buried Heterojunctions from Hard X-ray Photoelectron Spectra", Symposium C, Fall Meeting of the European Materials Research Society, Warsaw, Poland, September 2019.
225. "Potential Gradients and Band Alignment at the *n*-SrTiO₃/*p*-Ge(001) Interface – Implications for the Hydrogen Evolution Reaction", Symposium A, Fall Meeting of the European Materials Research Society, Warsaw, Poland, September 2019.
224. "Idealized Outcomes and Synthetic Realities – Worrying About What Atoms Actually Do in Oxide Heteroepitaxy", 19th International Conference on Crystal Growth and Epitaxy (ICCGE-19), Keystone, Colorado, July 2019.
223. "Interstitial O Defects and their Effect as Traps in *n*-SrTiO₃(001)", 30th International Conference on Defects in Semiconductors (ICDS 30), Seattle, Washington, July 2019.
222. "Extracting Band-Edge Profiles for Epitaxial Complex Oxide/Semiconductor Heterostructures from Hard X-ray Core-level Spectra", 8th International Conference on Hard X-ray Photoelectron Spectroscopy (HAXPES 2019), Paris, France, June 2019.
221. "Direct Measurement of Band Edge Profiles at Epitaxial Oxide/Semiconductor Heterojunctions", Department of Physics, Temple University, Philadelphia, Pennsylvania, October 2018.
220. "Epitaxial Oxide Heterostructures for Understanding Visible Light Harvesting and Water Photoelectrolysis", Energy Institute and Department of Electrical Engineering, Technion – Israel Institute of Technology, Haifa, Israel, October 2018.
219. "Direct Measurement of Band Edge Profiles at Epitaxial Oxide/Semiconductor Heterojunctions", Department of Physics, University of Geneva, Switzerland, October 2018.
218. "Interconversion of intrinsic defects in SrTiO₃(001)", 18th annual Conference on Electronic and Advanced Materials (EAM 18), Orlando, Florida, January 2018.
217. "High-energy resolution x-ray photoemission and ultraviolet photoemission as probes of electronic structure at complex oxide heterostructures", 24th International Workshop on Oxide Electronics, Chicago, Illinois, October 2017.
216. "Pushing the Envelope on Understanding and Suppressing the Atom and Ion Diffusion Across Complex Oxide Interfaces", 21st American Conference on Crystal Growth and Epitaxy (ACCGE-21) and 18th US Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-18) and 3rd Symposium on 2D Electronic Materials and Symposium on Epitaxy of Complex Oxides, Santa Fe, New Mexico, August 2017.
215. "Exploring new functional oxides for photoelectrochemistry by means of molecular beam epitaxy", 3rd Functional Oxide Thin Films for Advanced Energy and Information Technology Conference, Rome, Italy, July 2017.
214. "Exploring new functional oxides for photoelectrochemistry by means of molecular beam epitaxy", Materials Department, University of Cambridge, June 2017.
213. "Understanding complex phenomena at complex oxides interfaces by STEM/EELS/EDS and theoretical modeling", Psi-K workshop: Atomic scale materials microscopy: theory meets experiment, York, United Kingdom, June 2017.
212. "Integration of Oxide Semiconductors with Traditional Semiconductors - A New Twist", focus session entitled, "Oxide Semiconductors for Novel Devices", German Physical Society Meeting, Dresden, Germany, March 2017.

211. “Band Alignment at the SrZr_xTi_{1-x}O₃/p-Ge(001) Heterojunction and Surface Reactivity toward Water”, Electronic Materials and Applications 2017, Orlando, Florida, January 2017.
210. “Functionality by design or default? Establishing Meaningful Structure-Property Relationships Using MBE-Grown Oxide Films”, School of Physical Science and Technology, Shanghai Technical University, Shanghai, China, November 2016.
209. “Functionality by design or default? Establishing Meaningful Structure-Property Relationships Using MBE-Grown Oxide Films” 19th International Conference on Molecular Beam Epitaxy, Montpellier, France, September 2016.
208. ”Electronic and Optical Properties of Epitaxial p -Sr_xLa_{1-x}CrO₃/ n -SrTiO₃(001) Heterostructures”, IUVSTA76-ASEVA-27 Workshop on Structure of Ultrathin Films of Oxides on Metal Surfaces, Ávila, Spain, June 2016.
207. “Understanding the Complexities of Complex Oxide Heteroepitaxy by Means of STEM/EDS/EELS and APT”, Workshop on Atomic Structure of Nanosystems From First-Principles Simulations and Microscopy Experiments (AS-SIMEX 2016), Helsinki, Finland, May 2016.
206. “Magnetism and Nanoscale Structural and Compositional Irregularities in MBE-grown La₂MnNiO₆ on SrTiO₃(001)”, Department of Physics, University of York UK, May 2016.
205. ”Magnetism and Nanoscale Structural and Compositional Irregularities in MBE-grown La₂MnNiO₆ on SrTiO₃(001)”, Materials Department, University of Manchester, UK, May 2016.
204. “The presence and influence of defects in epitaxial perovskite pn heterojunctions – p -Sr_{0.1}La_{0.9}CrO₃ / n -SrNb_{0.013}Ti_{0.987}(001)”, Thomas Young Centre, University College London, UK, May 2016.
203. “Magnetism and Nanoscale Structural and Compositional Irregularities in MBE-grown La₂MnNiO₆ on SrTiO₃(001)”, EMA 2016, Orlando, FL, January 2016.
202. “All epitaxial small-gap perovskite oxide p - n junctions”, University of Cambridge, Cambridge, England, UK, May 2015.
201. “All epitaxial small-gap perovskite oxide p - n junctions”, Department of Material Science and Engineering, University of Washington, Seattle, WA, March 2015.
200. ”Thermal and photoconductivity at the of p -Sr_xLa_{1-x}CrO₃ / n -SrTiO₃(001) interface”, APS March Meeting, San Antonio, TX, March 2015.
199. “Redox-induced metal-insulator transition in MBE-grown SrCrO₃”, 32nd International Conference on the Physics of Semiconductors, August 2014, Austin TX.
198. “Relationship between composition, structure and magnetic properties in MBE-grown La₂MnNiO₆ double perovskite films”, 13th International Ceramics Congress, International Conference on Modern Materials and Technologies, Montecatini Terme, Tuscany, Italy, June 2014.
197. “Synthesizing designer oxides as thin films – the transition metal calls the shots!” Solids4Fun graduate program, Technical University of Vienna, Vienna, Austria, June 2014.
196. “Fundamental investigations of doped complex oxides for the purpose of visible light harvesting --Sr_xLa_{1-x}CrO₃” Department of Materials Science and Engineering, Nanjing University, Peoples Republic of China, November 2013.
195. ”Fundamental investigations of mixed metal oxides for the purpose of visible light harvesting –Sr_xLa_{2-x}CrO₃”, Department of Physics and Astronomy, Washington State University, Pullman, WA, October 2013.
194. “Advances in metal/oxide interface science – the power of a few in-diffused metal atoms”, Thomas Young Centre and Imperial College London, U.K., May 2013.
193. ”Fundamental investigations of mixed metal oxides for the purpose of visible light harvesting – α -Cr_xFe_{2-x}O₃ and Sr_xLa_{2-x}CrO₃”, Department of Chemistry, University College London, U.K., May 2013.
192. ”Optical absorption and photoconductivity of epitaxial α -(Fe_{1-x}Cr_x)₂O₃ thin films”, American Chemical Society Meeting, New Orleans, LA, April 2013.
191. “Electronic and optical properties of epitaxial LaCrO₃”, Materials Research Outreach Program, University of California at Santa Barbara, Santa Barbara, CA, February 2013.
190. “Understanding the driver(s) behind conductivity at polar/nonpolar perovskite interfaces”, Department of Physics, University of Texas at Austin, September 2012.
189. “Interactions between chemical shifts, multiplet splitting and shake-up in core-level photoemission spectra for simple and complex oxides”, Symposium entitled “*Progress in electronic and vibrational*

- spectroscopy of catalytic materials and catalytic reactions*”, 244th American Chemical Society, Philadelphia, PA, August 2012.
188. “Understanding the driver(s) behind conductivity at polar/nonpolar perovskite interfaces”, Laboratory for Surface Modification, Department of Physics, Rutgers University, Piscataway, NJ, August 2012.
 187. “Understanding the driver(s) behind conductivity at polar/nonpolar perovskite interfaces”, Workshop entitled “*Novel conducting oxide materials for energy and optoelectronic applications*”, Department of Physics, University of Dublin, Trinity College, June 2012.
 186. “Strain dependence of the band gap in epitaxial LaCrO₃”, Spring Symposium of the Materials Research Society, San Francisco, CA, April 2012.
 185. “Interdiffusion, unintentional doping, and electronic reconstruction at polar/nonpolar oxide interfaces”, APS March Meeting, Boston, MA, March 2012.
 184. “Unraveling the mystery of conductivity at polar/nonpolar perovskite interfaces”, SPIE Photonics West, San Francisco, CA, January 2012.
 183. “Unraveling the mystery of conductivity at polar/nonpolar perovskite interfaces”, 8th International Workshop on Oxide Surfaces (IWOX-VIII), Baqueira, Spain, January 2012.
 182. “Unraveling the mystery of conductivity at polar/nonpolar perovskite interfaces”, Department of Materials Science and Engineering, Nanjing University of Posts and Telecommunications, Nanjing, PRC, November 2011.
 181. “Unraveling the mystery of conductivity at polar/nonpolar perovskite interfaces”, Department of Physics, University of Science and Technology of China, Hefei, PRC, November 2011.
 180. “MBE growth and properties of LaCrO₃ on SrTiO₃(001)”, London Centre for Nanotechnology, University College London, United Kingdom, May 2011.
 179. “Unraveling the mystery of conductivity at polar/nonpolar perovskite interfaces”, Department of Physics, University of Texas at Austin, May 2011.
 178. “MBE growth and properties of LaCrO₃ on SrTiO₃(001)”, 2011 Villa Conference on Complex Oxide Heterostructures, Las Vegas, NV, April 2011.
 177. “Thermodynamic instability and electronic structure at the LaAlO₃/SrTiO₃ interface”, Symposium 3 (Nano Phenomena and Interfacial/Surface Effects in Electronic Ceramics) Electronic Materials and Applications 2011, Orlando, FL, January 2011.
 176. “Thermodynamic instability at the LaAlO₃/SrTiO₃ interface – implications for electronic structure”, Symposium K, Oxide Nanoelectronics, Materials Research Society Fall Symposium, Boston, MA, November 2010.
 175. “Epitaxial film growth methods & x-ray photoelectron spectroscopy in the study of advanced photocathode materials”, Photocathode Physics for Photoinjectors Workshop, Brookhaven National Laboratory, Upton, New York, October 2010.
 174. “Properties of MBE-grown Fe-doped and (Fe, N) co-doped TiO₂ Rutile Epitaxial Films”, Annual Meeting of the European Cooperation in Science and Technology–Inorganic Oxides: Surfaces and Interfaces, Torino, Italy, October 2010.
 173. “Detecting Compositional ‘Defects’ at Complex Oxide Interfaces -- LaAlO₃/SrTiO₃(001)”, Workshop entitled *Analysis and Control of Defects in Complex Oxides*, Argonne National laboratory, Argonne, Ill, July 2010.
 172. “Epitaxial Growth and Properties of *n*-type Co-ZnO: Does True Dilute Magnetic Semiconductor Behavior Exist?” Army Research Office Workshop entitled *Perspectives on ZnO Materials and Devices for Optoelectronics*, Riverside, CA, July 2010.
 171. “Small Molecule Photochemistry at N-doped TiO₂ Epitaxial Film Surfaces”, Joint Northwest/Rocky Mountain Regional Meeting of the American Chemical Society, Pullman, WA, June 2010.
 170. “Small Molecule Photochemistry at N-doped TiO₂ Epitaxial Film Surfaces”, 70th Physical Electronics Conference on the Physics and Chemistry of Surfaces and Interfaces, Milwaukee, WI, June 2010.
 169. “Structure, Composition and Electronic Properties at the LaAlO₃/SrTiO₃(001) Interface”, Department of Physics, University of Warwick, UK, May 2010.
 168. “Structure, Composition and Electronic Properties at the LaAlO₃/SrTiO₃(001) Interface”, Department of Chemistry, Oxford University, UK, May 2010.
 167. “Structure, Composition and Electronic Properties at the LaAlO₃/SrTiO₃(001) Interface”, Department of Physics, University College London, UK, May 2010.

166. "Conductivity at the Interface of Two Band Insulators", Department of Chemistry, Division of Physical Chemistry, University of Washington, March 2010.
165. "Challenges in interface characterization for oxide heteroepitaxy", Lawrence Symposium on Epitaxy. Scottsdale, AZ, February 2010.
164. "Epitaxial oxide films by pulsed laser deposition – growth subtleties and final properties" Department of Materials Science and Engineering, Nanjing University, Peoples Republic of China, November 2009.
163. "Epitaxial oxide films by pulsed laser deposition – growth subtleties and final properties" Departments of Chemistry and Materials Science, Oregon State University, Corvallis, Oregon, October 2009.
162. "Visible Light Photochemistry in Epitaxial N-doped TiO₂ Anatase", Nano and Giga Challenges in Electronics, Photonics and Renewable Energy and 14th Canadian Semiconductor Technology Conference, Hamilton, Ontario, Canada, August 2009.
161. "Intrinsic properties of phase-pure Co and Mn-doped ZnO epitaxial films", 5th International School and Conference on Spintronics and Quantum Information Technology, Krakow, Poland, July 2009.
160. "Crystallographic and Polymorphic Dependence of Visible-Light Photoactivity in Epitaxial TiO_{2-x}N_x Anatase and Rutile", Spring MRS Symposium, San Francisco, CA, April 2009.
159. "Crystallographic and Polymorphic Dependence of Visible-Light Photoactivity in Epitaxial TiO_{2-x}N_x Anatase and Rutile", Materials Research Outreach Program, UC Santa Barbara, February 2009.
158. "Statistical Analysis of Dopant Distributions and Segregation Issues in Transition Metal Oxide Nanoparticles and Epitaxial Films", 56th IUVESTA Workshop on Template mediated growth of Nanostructures, Schlaining, Burgenland, Austria, November 2008.
157. "Statistical Analysis of Dopant Distributions and Segregation Issues in Transition Metal Oxide Nanoparticles and Epitaxial Films", Department of Physics, Washington State University, Pullman, WA October 2008.
156. "Spin Electronics and the Materials Challenge", Department of Physics, Portland State University, February 2008.
155. "Growth and properties of epitaxial Co- and Mn-doped ZnO films." 52nd Annual Conference on Magnetism and Magnetic Materials in Tampa, Florida, November 2007 (given by Tiffany Kaspar in my absence).
154. "Spin Electronics and the Materials Challenge", Department of Materials Science and Engineering, Nanjing University, Peoples Republic of China, November 2007.
153. "Growth and Properties of High-Quality Epitaxial N-doped TiO₂ Rutile and Anatase Grown by Molecular Beam Epitaxy", School of Chemistry and Chemical Engineering, Nanjing University, Peoples Republic of China, November 2007.
152. "Complexities and Surprises in the Epitaxial Growth of Pure and Doped TiO₂", 54th International Symposium of the AVS, Seattle, WA, October 2007.
151. "Fundamental Studies of Doping and Properties Modification in Oxide Semiconductor Epitaxial Films", Brookhaven National Laboratory, Upton, NY, September 2007.
150. "Ferromagnetism in Co and Cr-doped TiO₂ Anatase – The Role of Structural Defects", 15th International Congress on Crystal Growth, Salt Lake City, Utah, August 2007.
149. "Fundamental Investigations of Cation and Anion Doping in Oxide Semiconductor Epitaxial Films", Institute of Physics, University of Zürich, Switzerland, June 2007.
148. "Fundamental Investigations of Cation and Anion Doping in Oxide Semiconductor Epitaxial Films", IBM Research Workshop on the Science and Technology of Oxide Materials, IBM Research, Zürich, Switzerland, June 2007.
147. "High Resolution *In-Situ* XPS & UPS as Probes of Composition and Electronic Structure in Oxide Semiconductor MBE Film Growth", Surface Analysis 2007, Minneapolis, MN, June 2007.
146. "Room Temperature Ferromagnetism and Structure in Doped ZnO Epitaxial Films", 14th Semiconducting and Insulating Materials Conference, Fayetteville, AR, May 2007.
145. "N incorporation, Defects and Electronic Structure in Epitaxial N-doped TiO₂ Rutile", 2007 Spring Meeting of the Materials Research Society, San Francisco, CA, April 2007.
144. "Progress and Pitfalls in the Search for High-T_c Diluted Magnetic Oxide Semiconductors", Hitachi Global Storage, San Jose, CA, January 2007.
143. "Electron Mediated Ferromagnetism in Epitaxial Co-doped ZnO", SPIE Photonics West 2007, San Jose, CA, January 2007.

142. "Photochemistry, Surface Chemistry and the Origin of Biological Molecules", School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, PRC, October 2006.
141. "Photochemistry, Surface Chemistry and the Origin of Biological Molecules", School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing, PRC, October 2006.
140. "Photochemistry, Surface Chemistry and the Origin of Biological Molecules", Department of Physics, Fudan University, Shanghai, PRC, October 2006.
139. "Semiconductor Spintronics and the Materials Challenge", Department of Physics, Fudan University, Shanghai, PRC, October 2006.
138. "Progress and Pitfalls in the Search for High-T_c Diluted Magnetic Oxide Semiconductors", Department of Chemistry and Claredon Physics Laboratory, Oxford University, Oxford, UK, September 2006.
137. "Progress and Pitfalls in the Search for High-T_c Diluted Magnetic Oxide Semiconductors", Gordon Conference on Magnetic Nanostructures, The Queen's College, Oxford, UK, September 2006.
136. "Progress and Pitfalls in the Search for High-T_c Diluted Magnetic Oxide Semiconductors", University College London, London, UK, August 2006.
135. "Synchrotron Based Measurements of Magnetically Doped Transition Metal Oxides", invited plenary lecture at the 2006 Advanced Photon Source Users Meeting, Argonne, Ill, May 2006.
134. "Fundamental Investigations of Candidate Ferromagnetic Oxide Semiconductors", Department of Chemistry, University of Washington, Seattle, WA, February 2006.
133. "Fundamental Investigations of Candidate Ferromagnetic Oxide Semiconductors", Webinar for several Midwestern universities, February 2006.
132. "Fundamental Investigations of Candidate Ferromagnetic Oxide Semiconductors", Department of Physics, University of California at Riverside, Riverside, CA, December 2005.
131. "Growth, Electronic and Magnetic Properties of Doped ZnO Epitaxial and Nanocrystalline Films", AVS 52th International Symposium & Exhibition, Boston, Massachusetts, November 2005.
130. "Fundamental Investigations of Candidate Ferromagnetic Oxide Semiconductors", Materials Department, University of California at Santa Barbara, Santa Barbara, CA, October 2005.
129. "Growth, Electronic and Magnetic Properties of Doped ZnO Epitaxial and Nanocrystalline Films", 3rd SOXESS Workshop on ZnO and Related Compounds, Gallipoli, Italy, September 2005.
128. "Soft X-ray Absorption and Emission Spectroscopies as Probes of Metal Dopants and Clusters", Keynote Lecture at the 15th Annual Goldschmidt Conference, Moscow ID, May 2005.
127. "Magnetically Doped Transition Metal Oxides – Facts, Fantasies and Outlook", Department of Materials Science, University of Illinois at Champaign-Urbana, May 2005.
126. "Magnetically Doped Transition Metal Oxides – Facts, Fantasies and Outlook", Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh PA, April 2005.
125. "Magnetically Doped TiO₂ – Diluted Magnetic Semiconductor, Granular Metallic Ferromagnetic, or Something Else?" 4th International Symposium on Transparent Oxide Thin Films for Electronics and Optics (TOEO-4) – Toyko, Japan, April 2005.
124. "Structure and Photochemistry at Oxide/Oxide Heterojunctions", Symposium entitled *Growth and Catalysis of Metal Overlayers* at the American Chemical Society National Meeting, San Diego CA, March 2005.
123. "Magnetically Doped Transition Metal Oxide Epitaxial Films -- Structure, Magnetic Properties and Unresolved Issues", Department of Physics, University of British Columbia, Vancouver, BC, February 2005.
122. "Fundamental Investigations of Magnetically Doped Oxides", Symposium H: Functional and Multifunctional Oxide Films, Materials Research Society Fall Meeting, Boston, MA December 2004.
121. "Structural, Electronic and Magnetic Properties of Magnetically Doped Transition Metal Oxides from Synchrotron Methods", Advanced Light Source Users Meeting, Berkeley, CA, October 2004.
120. "Spintronics and the Materials Challenge", NSF MRSEC: Quantum and Spin Phenomena in Nanomagnetic Structures, 2nd Research Review and Symposium on Emerging Challenges in Nanomagnetism, University of Nebraska at Lincoln, September 2004.
119. "Spin Electronics and the Materials Challenge II - Semiconductor Based Spintronics", E.W. Mueller Award lecture at the University of Wisconsin at Milwaukee, August 2004.
118. "Spin Electronics and the Materials Challenge I - Metal Based Spintronics", E.W. Mueller Award lecture at the University of Wisconsin at Milwaukee, August 2004.

117. "Photochemistry, Surface Chemistry, and the Origin of Biological Molecules", E.W. Mueller Award lecture at the University of Wisconsin at Milwaukee, August 2004.
116. "Fundamental Investigations of Photochemistry at Epitaxial Oxide Nanostructures", E.W. Mueller Award lecture at the University of Wisconsin at Milwaukee, August 2004.
115. "Photoemission and the Band Offset Problem – Some Surprises", E.W. Mueller Award lecture at the University of Wisconsin at Milwaukee, August 2004.
114. "Fundamental Investigations of Photocatalysis at Oxide/Oxide and Oxide/Si Heterojunctions", Gordon Conference on Inorganic Chemistry, Newport, Rhode Island, July 2004.
113. "Heteroepitaxy of Ferromagnetic Oxide Semiconductors on Si", *Office of Naval Research Workshop on Frontiers of Epitaxial Engineering*, Moab, Utah, May 2004.
112. "Spintronics and the Materials Challenge", Workshop entitled *Emerging Opportunities in Complex Photonic Materials*, Northwestern University, Evanston, Ill, April 2004.
111. "Nucleation, Growth and Properties of Magnetically Doped TiO₂ Anatase and Rutile, International Conference on Metallurgical Coatings and Thin Films, San Diego, CA, April 2004.
110. "Epitaxial Growth and Properties of Co- and Cr-doped TiO₂ Anatase", Paul Drude Institute of Solid-State Electronics, Berlin, Germany, March 2004.
109. "Fundamental Investigations of Photocatalysis at Oxide/Oxide and Oxide/Si Heterojunctions", German Science Society International Symposium entitled *Transition Metal Oxides – Clusters, Surfaces and Solids – Structure, Dynamics and Reactivity*, Berlin, Germany, March 2004.
108. "Spintronics and the Materials Challenge", Department of Physics, University of California at Davis, Davis, CA, February 2004.
107. "Determining Band Offsets for Oxide/Si Heterojunctions by X-ray and Ultraviolet Photoemission – A Surprising Challenge", 31st Conference on the Physics and Chemistry of Semiconductor Interfaces, Kailua-Kona, HI, January 2004.
106. "Determining the Valence Band Maximum for Semiconducting Oxides from Photoemission – New Insights into an Old Problem", 5th Motorola Workshop on Computational Materials, Austin TX, November 2003.
105. "Determining the Valence Band Maximum for Semiconducting Oxides from Photoemission – New Insights into an Old Problem", Post Deadline Session of the Surface Science Division, AVS 50th International Symposium, Baltimore, Maryland, November 2003.
104. "Nucleation, Growth, Electronic and Magnetic Properties of Epitaxial Co-doped TiO₂ Anatase", 55th Pacific Coast Regional and Basic Science Division Fall Meeting of the American Ceramic Society, Oakland CA, October 2003.
103. "Nucleation, Growth, Electronic and Magnetic Properties of Epitaxial Co-doped TiO₂ Anatase", IEEE NANO 2003, San Francisco CA, August 2003.
102. "Nucleation, Growth, Electronic and Magnetic Properties of Epitaxial Co-doped TiO₂ Anatase", Department of Materials Science and Engineering, University of Washington, Seattle, WA, May 2003.
101. "Structural, Magnetic and Electronic Properties of Epitaxial Co-doped Anatase", Spring Meeting of the Materials Research Society, San Francisco, CA, April 2003.
100. "Band Offset Investigations of Novel Oxide/Si Heterojunctions by High Resolution X-Ray Photoemission Spectroscopy", workshop entitled *Growth, Structure, and Electrical Properties of High-k Gate Dielectrics: Atomistic Modeling vs. Experiment*, sponsored by the European Science Foundation, held at IBM Zurich Research Laboratory, Zurich, Switzerland, March 2003.
99. "Nucleation, Growth, Electronic and Magnetic Properties of Epitaxial Co-doped TiO₂ Anatase", Department of Physics, University of Zurich, Switzerland, March 2003.
98. "Growth and Properties of Epitaxial Co-doped TiO₂ Anatase", March Meeting of the American Physical Society, Austin TX, March 2003.
97. "Synthesis and Properties of Epitaxial Co-doped TiO₂ Anatase", 3rd International Workshop on Oxide Surfaces (IWOX-3), Sapporo, Japan, January 2003.
96. "Ferromagnetism in Epitaxial Co-doped TiO₂ Anatase, Diluted Magnetic Semiconductor or Metallic Clusters?" Fall Meeting of the Materials Research Society, Boston, MA, December 2002.
95. "Co-doped TiO₂ Anatase – An Exciting New Diluted Magnetic Semiconductor for Spintronics", Department of Applied Physics, Yale University, New Haven, CT, December 2002.

94. "Heteroepitaxy and Properties of Co-doped TiO₂ Anatase", Department of Physics, University of Central Florida, Orlando, Florida, October 2002.
93. "Heteroepitaxy and Properties of Co-doped TiO₂ Anatase", 9th International Workshop on Oxide Electronics, St. Petersburg, Florida, October 2002.
92. "Epitaxial Growth and Properties of Ferromagnetic Co-doped TiO₂ Anatase", Electronic Materials Conference, Santa Barbara, California, June 2002.
91. "Co-doped TiO₂ Anatase – An Exciting New Diluted Magnetic Semiconductor for Spintronics", Canadian Society for Chemistry Annual Symposium, Vancouver, British Columbia, June 2002.
90. "Ferromagnetic Oxide Semiconductors and Their (Potential) Role in Spintronics", University of California at Riverside, Riverside, California, April 2002.
89. "Ferromagnetic Oxide Semiconductors and Their (Potential) Role in Spintronics", University of Washington, Joint Institute for Nanotechnology, Seattle, Washington, February 2002.
88. "The Influence of Calcium Carbonate Coatings on Redox Chemistry at the Chromate/Magnetite Interface", 2001 Users Meeting of the LBNL Advanced Light Source, Berkeley California, October 2001.
87. "Band Discontinuity Measurement and Control at Epitaxial Oxide/Si Interfaces", MRS Workshop entitled *Dielectric Science and New Functionality in Device Physics for Crystalline Oxides on Semiconductors (COS)*, Chattanooga, Tennessee, September 2001.
86. "MBE Growth and Properties of Epitaxial Co Ferrite", Symposium entitled Ultrathin Epitaxial Oxides, 2001 European Materials Research Society Meeting, Strasbourg, France, June 2001.
85. "Fundamental Studies of Iron Oxide Surface Structure and Reactivity", Symposium entitled Advances in Oxide and Sulfide Mineral Surface Chemistry at the 2001 V.M. Goldschmidt Conference, Roanoke, Virginia, May 2000.
84. "Electronic Structure of Ultrathin Oxide Films on Metals – The Role of Oxide Ionicity", March Meeting of the American Physical Society, Seattle, Washington, March 2001.
83. "Oxide Surface Electronic Structure from High-Resolution Metal 2p Spectra", 2nd International Workshop on Oxide Surfaces (IWOX-2), Taos, New Mexico, January 2001.
82. "Oxide Surfaces and Interfaces in Next-Generation Electronics and Magnetics", 47th International Symposium of the American Vacuum Society, Boston, Massachusetts, October 2000.
81. "Surface Structure and Redox Chemistry of Well-Defined Iron Oxides", Department of Chemical Engineering, Yale University, New Haven, Connecticut, September 2000.
80. "Proximity Effects in the Electronic Structure of Metal/Oxide Interfaces", Annual Meeting of the Pacific Northwest Chapter of the American Physical Society, Eugene, Oregon, May 2000.
79. "Surface Structure and Redox Chemistry of Well-Defined Iron Oxides", 83rd National Conference of the Canadian Society of Chemistry, Calgary Alberta, Canada, May 2000.
78. "A Success Story from 'Molecular-Level Processes Governing the Interaction of Contaminants with Iron Oxides'", Environmental Management Science Program National Workshop, Atlanta, Georgia, April 2000.
77. "Surface Structure and Redox Chemistry of Model Iron Bearing Minerals", Departments of Biology and Chemistry, George Fox University, Newberg, Oregon, February 2000.
76. "MBE Growth and Materials/Magnetic Properties of Epitaxial Iron Oxides", IBM Almaden Research Center, San Jose California, October 1999.
75. "Structure and Redox Chemistry of Well-Defined Iron Oxide Surfaces", Annual Users Meeting of the LBNL Advanced Light Source, Berkeley, California, October 1999.
74. "Surface Structure of MBE-Grown Fe₃O₄(001) and α-Fe₂O₃(001) by Photoelectron Diffraction and Scanning Tunneling Microscopy", 6th International Conference on the Structure of Surfaces, Vancouver, BC, Canada, July 1999.
73. "How to Find a Molecule on a Surface – Formic Acid on TiO₂(110)", Department of Physics, Tulane University, New Orleans, Louisiana, April 1999.
72. "Surface Geometric/Electronic Structure and Formate Chemisorption on MBE-Grown Nb_xTi_{1-x}O₂(110)", Fritz-Haber Institut der Max-Planck-Gesellschaft, Berlin, Germany, February 1999.
71. "Structure and Reactivity of MBE-Grown Fe Oxides", 1st International Conference on Oxide Surfaces, Elmau, Germany, January 1999.
70. "Molecular Beam Epitaxial Growth and Surface Structure Determination of Fe and Mn Oxides", Center for Catalysis and Surface Structure, Northwestern University, Evanston, Illinois, October 1998.

69. "Surface Structure Determination of MBE Grown Iron and Manganese Oxides", National Meeting of The American Chemical Society, Boston MA, August 1998.
68. "Surface and Interface Structure of MBE-Grown Fe and Mn Oxides", Department of Physics, University of Maine, Orono, Maine, May 1998.
67. "Surface and Interface Structure of MBE-Grown Fe and Mn Oxides", Naval Research Laboratories, Washington D.C., May 1998.
66. "Chemisorption Geometry, Binding, and Decomposition of Formic Acid on TiO₂(110)", Department of Physics, Linfield College, and Linfield Research Institute, McMinnville, Oregon, July 1997.
65. "MBE Growth and Surface Structure Determination of Stable Iron Oxides", 1997 Spring Meeting of the Materials Research Society, San Francisco, California, April 1997.
64. "Surface Geometric/Electronic Structure and Organic Chemisorption on MBE-Grown Nb_xTi_{1-x}O₂(110)", Molecular Environmental Science in the Soft X-ray Region Workshop, Lawrence Berkeley National Laboratory, March 1997.
63. "Molecular Beam Epitaxial Growth and Surface Science of Model Nb_xTi_{1-x}O₂(110) Surfaces", Physik Institut der Universitat Zurich, Zurich, Switzerland, February 1997.
62. "Molecular Beam Epitaxial Growth and Surface Science of Model Nb_xTi_{1-x}O₂(110) Surfaces", Department of Physics, University of Uppsala, Uppsala, Sweden, January 1997.
61. "Geometric and Electronic Structure Determination of Nb Dopant Atoms and Chemisorbed Formic Acid on MBE-Grown TiO₂(110) and (100)", Laboratory of Materials Science, Departments of Physics and Applied Physics, University of Turku, Turku, Finland, September 1996.
60. "Chemisorption Geometry, Binding, and Decomposition of Formic Acid on TiO₂(110)", Workshop on X-ray Spectroscopies of Environmental Interfaces: Theory and Experiment, Pacific Northwest National Laboratory, Richland, Washington, September 1996.
59. "Photoelectron and Auger Electron Diffraction of Surfaces, Interfaces and Epitaxial Films -- An Overview", Congress of the International Union of Crystallography, Seattle, Washington, August 1996.
58. "MBE Growth, Characterization, and Small Molecule Chemisorption on Model Catalyst and Mineral Surfaces", Department of Geology and Environmental Science, Stanford University, Stanford, California, April 1996.
57. "Strain, Structure and Electronic States in MBE Grown (Ti,Nb)O₂ Mixed Rutile", Spring Meeting of the Materials Research Society, San Francisco, California, April 1996.
56. "Molecular Beam Epitaxial Growth of Ceramic/Ceramic and Ceramic/Metal Interfaces", Pacific Northwest Regional Meeting of the American Ceramics Society, Seattle, Washington, November 1995.
55. "Molecular Beam Epitaxy of Oxide/Oxide and Oxide/Metal Interfaces", 42nd National American Vacuum Society Symposium, Minneapolis, Minnesota, October 1995.
54. "Auger Electron Spectroscopy as a Compositional Probe in Molecular Beam Epitaxy", Conference on Monitoring and Control Techniques for Intelligent Epitaxy Conference, Banff, Alberta, Canada, June, 1995.
53. "Oxide Epitaxy and Environmental Surface Science", 18th Surface/Interface Research Meeting of the Northern California Chapter of the American Vacuum Society, Santa Clara, California, June 1995.
52. "MBE Growth of Lattice-Matched MgO/Cr_{0.7}Mo_{0.3}/MgO(001) Superlattices", Materials Physics Division, Naval Research Laboratory, Washington, D.C., May 1995.
51. "X-ray Photoelectron Diffraction Studies of Bulk and Epitaxially Grown Oxides", Department of Physics, Uppsala University, Uppsala, Sweden, April 1995.
50. "X-ray Photoelectron Diffraction Studies of Bulk and Epitaxially Grown Oxides", Physical Electronics Corporation, Eden Prairie, Minnesota, March 1995.
49. "Oxide Epitaxy and Environmental Surface Science", Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, March 1995.
48. "Synthesis of Model Oxide Surfaces by Molecular Beam Epitaxy", Department of Physics, Linfield College, McMinnville, Oregon, September 1994.
47. "High-Energy Auger and X-ray Photoelectron Diffraction", Departments of Chemistry and Physics, University of British Columbia, Vancouver, British Columbia, November 1993.
46. "High-energy X-ray Photoelectron Diffraction Studies of Evolving Heteroepitaxial Interfaces", Annual Symposium of the Canadian Association of Physics, Vancouver, British Columbia, June 1993.

45. "High-energy X-ray Photoelectron Diffraction Studies of Evolving Heteroepitaxial Interfaces", First International Workshop on Photoelectron Diffraction, Gwatt, Switzerland, April 1993.
44. "Schottky Barrier Height Control at Epitaxial NiAl/GaAs(001) Interfaces by Means of Variable-Bandgap Interlayers", 39th National American Vacuum Society Symposium, Chicago, Illinois, November 1992.
43. "Imaging Atoms at Surfaces by Means of Auger and Photoelectron Spectroscopy--Fact, Fiction, and Controversy", Montana State University, NSF Science Teaching Institute in the Rockies, Bozeman, Montana, June 1992.
42. "Atomic Structure and Electronic States at Compound Semiconductor Surfaces Studied by X-ray Photoelectron Spectroscopy and Diffraction", Montana State University, NSF Nobel Faculty Enhancement Workshop, Bozeman, Montana, June 1992.
41. "Formation, Structure and Properties of Epitaxial Transition Metal Aluminides on III-V Compound Semiconductors", University of Washington, Department of Materials Science and Engineering, Seattle, Washington, April 1992.
40. "Formation, Structure and Properties of Epitaxial Transition Metal Aluminides on III-V Compound Semiconductors", Battelle Pacific Northwest Laboratories, Richland, Washington, March 1992.
39. "X-ray Photoelectron and Auger Electron Diffraction Investigations of Surfaces and Interfaces", Battelle Pacific Northwest Laboratories, Richland, Washington, February 1992.
38. "X-ray Photoelectron and Auger Electron Diffraction Investigations of Surfaces and Interfaces", IBM Almaden Research Center, San Jose, California, January 1992.
37. "Auger and X-ray Photoelectron Diffraction and Implications for Quantitative Surface Analysis", 4th Topical Conference on Quantitative Surface Analysis associated with the 38th National American Vacuum Society Symposium, Seattle, Washington, November 1991.
36. "X-ray Photoelectron and Auger Electron Diffraction Investigations of Semiconductor Surfaces and Interfaces", Department of Physics, Washington State University, Pullman, Washington, October 1991.
35. "X-ray Photoelectron and Auger Electron Diffraction Investigations of Semiconductor Surfaces and Interfaces", Lawrence Livermore National Laboratory, Livermore, California, August 1991.
34. "Lattice-site- and Chemical-state-specific X-ray Photoelectron Diffraction", Workshop entitled "Spectroscopic Imaging, Diffraction and Holography with X-ray Photoemission" associated with the 1991 Users Meeting of the Advanced Light Source, Lawrence Berkeley Laboratory, Berkeley, California, August 1991.
33. "Studies of Semiconductor Interface Structure by X-ray Photoelectron Diffraction", Surface Science Colloquium, University of Washington, February 1991.
32. "Studies of Semiconductor Interface Structure by X-ray Photoelectron Diffraction", 18th Annual Conference on the Physics and Chemistry of Semiconductor Interfaces, Long Beach, California, January 1991.
31. "Photoelectron Diffraction Investigations of Compound Semiconductor Surface and Interface Structures", Department of Physics, Montana State University, Bozeman, Montana, December 1990.
30. "Structure, Chemistry, and Electronic States at Epitaxial Metal/GaAs(001) Interfaces", Department of Physics, Montana State University, Bozeman, Montana, December 1990.
29. "Structure, Chemistry, and Electronic States at Epitaxial Metal/GaAs(001) Interfaces", Symposium on Surfaces and Interfaces, Pacific Coast Regional Meeting of the American Society of Ceramics, Seattle, Washington, October, 1990.
28. "Epitaxial Metalizations on GaAs(001)--From Interface Characterization to Test Structure Fabrication", National Symposium of The Electrochemical Society, Seattle, Washington, October 1990.
27. "A Critique of Angular Distribution Auger Microscopy (ADAM)", Annual Symposium of the American Vacuum Society Pacific Northwest Section, Vancouver, B.C., September 1990.
26. "Forward Focussing and Diffraction Effects in Angle-resolved X-ray Photoelectron and Auger Electron Spectroscopies", Third International Conference on the Structure of Surfaces, Milwaukee, Wisconsin, July 1990.
25. "Epitaxial Film Crystallography by Photoelectron Diffraction", March Meeting of the American Physical Society, Anaheim, California, March 1990.
24. "Epitaxial Growth of NiAl on GaAs(001): Structure, Interface Chemistry, and Electronic Properties", Bell Communications Research, Red Bank, New Jersey, October 1989.

23. "X-ray Photoelectron Diffraction and Spectroscopy Investigations of Semiconductor Interfaces", Department of Physics, University of Rochester, Rochester, New York, October 1989.
22. "Schottky Barrier Height Control at GaAs Interfaces", Department of Computer and Electrical Engineering, University of California at San Diego, La Jolla, California, July 1989.
21. "Atomic Geometry and Fermi-level Movement at Metal/GaAs Interfaces", Department of Chemistry, University of Wisconsin at Madison, Madison, Wisconsin, March 1989.
20. "High-energy Auger and X-ray Photoelectron Diffraction in Ultrathin Epitaxial Films", Physics Department, Simon Fraser University, Burnaby, British Columbia, December 1988.
19. "Effective Control of the Schottky Barrier Height at Metal/GaAs Interfaces", Materials Science Institute, University of Oregon, Eugene, Oregon, October 1988.
18. "Effective Control of the Schottky Barrier Height at Metal/GaAs Interfaces", Materials Science Seminar Series, Oregon State University, Corvallis, Oregon, October 1988.
17. "Atomic Geometry and Band Bending at Semiconductor Interfaces", Gordon Research Conference in Electron Spectroscopy, Wolfeboro, New Hampshire, July 1988.
16. "Auger and Photoelectron Diffraction in Ultra-thin Epitaxial Films", Surface Science Symposium, 43rd Northwest Regional Meeting of the American Chemical Society, Spokane, Washington, June 1988.
15. "Auger and Photoelectron Diffraction in Ultra-thin Epitaxial Films", Materials and Chemical Sciences Division, Lawrence Berkeley Laboratory, Berkeley, California, May 1988.
14. "Epitaxy of Ge on GaAs(001)", 14th Annual Spring Symposium of the Pacific Northwest Section of the Electrochemical Society, Seattle, Washington, April 1988.
13. "Auger Electron Diffraction as a Surface Structural Probe", Department of Physics, University of Washington, Seattle, Washington, November 1987.
12. "Structure Determination of Metal/Semiconductor Interfaces," Department of Materials Science and Engineering, University of Washington, Seattle, Washington, April 1987.
11. "Structure and Chemistry at Metal/Metal and Metal/Semiconductor Interfaces," Boeing Electronics High Technology Center, Seattle, Washington, September 1986.
10. "Determination of Atomic Positions at Metal/Metal and Metal/Semiconductor Interfaces," Thin Films Division, 3M Company, St. Paul, Minnesota, August 1986.
9. "Chemical, Structural, and Electronic Characterization of Microelectronic Interfaces," Perkin Elmer (Physical Electronics Division), Eden Prairie, Minnesota, April 1986.
8. "Determination of Atomic Positions at Metal/Metal and Metal/Semiconductor Interfaces," Microelectronic and Information Sciences Center, University of Minnesota, Minneapolis, March 1986.
7. "Angle-Resolved Auger Electron Emission as a Probe of Metal-Semiconductor Interfaces," Department of Physics, Montana State University, Bozeman, Montana, June 1985.
6. "The Chemistry of Metal-Semiconductor Interfaces: Interdiffusion and Metal Cluster Induced Reactions," Seminar, Department of Chemistry, Oregon State University, Corvallis, Oregon, December 1984.
5. "Angle Resolved Auger Electron Emission from LaB₆(001) With and Without Chemisorbed Oxygen," International Symposium on Electron-, X-ray-, and Ion-Spectroscopies and Their Application to Surface Chemistry, Honolulu, Hawaii, December 1983.
4. "Surface Characterization of Flexible Magnetic Media," Seminar, Data Recording Products Division, 3M Company, St. Paul, Minnesota, November 1983.
3. "Cesium and Oxygen Coadsorption on LaB₆ Single Crystals," Seminar, Department of Chemistry, Lewis and Clark College, Portland, Oregon, March 1982.
2. "Cesium and Oxygen Coadsorption on LaB₆ Single Crystals," Seminar, Department of Chemistry, Oregon State University, November 1981.
1. "X-ray Photoelectron Spectroscopy--Principles and Applications", Oregon Graduate Center, Beaverton, Oregon, December 1977

