Barrett O. Wells
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PROFESSIONAL PREPARATION:

Undergraduate

Stanford University	Department of Physics	B.S.	1986

Graduate

Cornell University	Department of Materials Science and Engineering		
Stanford University	Department of Applied Physics	M.S.	1990
Stanford University	Department of Applied Physics	Ph.D.	1992

Postdoctoral

Mass. Inst. Tech (MIT)	Department of Physics	1992-1996

APPOINTMENTS:

Assoc. Dept Head, Ugrad Ed.	University of Connecticut – Physics	2009-2015
Professor	University of Connecticut – Physics	2009-present
Associate Professor	University of Connecticut – Physics	2004-2009
Assistant Professor	University of Connecticut - Physics	1999-2004
Asst. Professor in Residence	University of Connecticut – Physics	1998-1999
Guest Researcher	Brookhaven National Laboratory.	1998-1999
Member - Technical Staff	The Boeing Corporation	1996-1998
Research Associate	Southwall Corporation, CA	1987

AWARDS:

Elected to Connecticut Academy of Science and Engineering (CASE)

Cottrell Scholar, Research Corporation of America.

CAREER Award, National Science Foundation

Sloan Foundation Research Fellow

Sigma Xi, University of Connecticut Chapter,

Sage Fellow, Cornell University

Phi Beta Kappa, Stanford University

OTHER PROFESSIONAL ACTIVITIES

NSERC (Canada) review committee for Physics Research Tools and Instrumentation, Member 2014-15

Guest Professor, MaMASELF (Masters program in materials science under the Erasmus-Mundus program of the European Union) 2014

Divisional Associate Editor for Condensed Matter Physics, *Physical Review Letters*. 2014 – present.

Visiting Scientist, Paul Scherrer Institute, Villigen, Switzerland, 2012.

Organizer: *International Workshop for New Opportunities in Hard X-ray Photoelectron Spectroscopy*, Brookhaven National Laboratory, May 22-24, 2009

Organizer: *Workshop in Honor of Joseph I. Budnick on the Occasion of his 75th Birthday,* University of Connecticut, September 27, 2004.

Organizer: *Workshop on Complex Materials*, Brookhaven National Lab, May 1999.

Scientific Committee, Conference: Quantum in Condensed Matter, Ischia, Italy, May 27-June 1, 2013

Canadian Light Source Peer Review Committee, 2010-present

DOE Proposal Study Panel, Advanced Light Source, Lawrence Berkeley National Laboratory, Department of Energy. 2003-2011.

DOE Beamline Review Committee: IR/UV/Soft-X-Ray Spectroscopy, National Synchrotron Light Source, Brookhaven National Laboratory. March 7, 2008

DOE-BES Early Career Proposal Panel, 2009, 2013

NIST Proposal Reviewer, National Center for Neutron Research, National Institute of Standards and Technology. 2008-present.

NSF Review Panel for Superconductivity, March 2011

NSF Review Panel for Materials Research Fellowships, July 2009,

DOE Proposal Reviewer, Stanford Synchrotron Radiation Laboratory, Department of Energy. 2007, 2009, 2012

DOE Proposal Reviewer, National Synchrotron Light Source, Brookhaven National Laboratory. 2002-2006, 2008-2009.

Consultant to the Connecticut Science Center (Science Museum) (2002)

Referee for Nature, Physical Review Letters, Physical Review B, Journal of Applied Physics, Applied Physics Letters, Journal of Superconductivity, Journal of Materials Science, National Science Foundation – Division of Materials Research, Department of Energy – Basic Energy Sciences, National Sciences and Engineering Research Council of Canada (NSERC), Swiss National Science Foundation.

RESEARCH INTERESTS:

My group studies the behavior of materials with strong electron-electron interactions, including phenomena such as high temperature superconductivity, magnetism, and ferroelectricity. We are interested in the fundamental science that underlies the behavior of materials essential to future technology. One area of interest is how valence charges doped into Mott Insulators change the electronic properties and the phases present; both of which appear to depend upon the nature of the dopant ion itself. This is a new, emerging paradigm for explaining the basic physics of these important but poorly understood materials.

Our group is materials and problem based, as we tackle the full spectrum of a problem from material synthesis to advanced measurements, often and large scale facilities. One specialty of our group is the control of oxygen concentration in oxide materials. This includes discovering superconductivity in $FeTeO_x$ – which can be synthesized only in film-form, electronic phase separation in $La_{2-x}Sr_xCuO_{4+y}$, and magnetic phase separation in $SrCoO_{3-y}$. Another specialty is the growth of nanostructured films and the exploration of phenomena controlled by strain, low-dimensionality, and constraint of epitaxy. More recently we have synthesized films of perovskite $BaCrO_3$ that cannot form in bulk and shown it is a Mott insulator. We apply a wide range of experimental probes to materials made in our laboratory making use of UConn-IMS equipment and large user facilities at national and international laboratories.

Some research highlights include: first ARPES studies of the symmetry of the superconducting gap in high temperature superconductors, discovery of oxygen staging in super-oxygenated La_2CuO_{4+y}, discovery of large-scale electronic phase separation in high temperature superconductors, control of structural phase transitions via strain and epitaxy in oxide films, discovery of a new Fe based high temperature superconductor, establishing that the length scale of electronic phase separation depends upon the mobility of dopant ions, the synthesis of the film-stabilized Mott insulator $BaCrO_3$.

GRADUATE STUDENTS ADVISED

Masters Degree Recipients: Jeroen Thompson 2003, Hashini Mohottala 2003, Changkun Xie 2005, Samuel Emery 2008, Naim Majdalani 2009, Franz Rueckert 2009, Lahiru Narangammana 2010, Zhihai Zhu 2012, Zhiwei Zhang 2013.

Doctor of Philosophy Recipients:

Feizhou He, 2005 – currently Staff Scientist at the Canadian Light Source, Saskatoon, Canada.

Hashini Mohottala, 2006 – currently Associate Professor at University of Hartford, CT.
Received the University of Connecticut Provost's award for "Outstanding Academic Achievement by a Graduating Woman"

Changkun Xie, 2008 – currently Technical Staff at Canberra Industries, Meriden, CT.

Samuel Emery, 2011 – currently at Naval Surface Warfare Lab, Indian Head MD

Yuefeng Nie, 2011 – currently Assistant Professor Univ. of Nanjing, China.

Franz Rueckert, 2013 – currently Assistant Professor, Wentworth Institute of Technology.

Lahiru Narangammana, 2014 – currently postdoc at SLINTEC, Sri Lanka.

Postdoctoral Scholar: Zikri Yusof 1999-2002 – currently staff scientist Argonne Natl. Lab.

Continuing students: Zhihai Zhu, Zhiwei Zhang, Armani Jayakody

SERVICE HIGHLIGHTS

Advisor to the Society of Physics Students, UConn Chapter, 2003-2011; 2015-present

University Academic Vision – Advanced Materials and Manucfacturing Strategic Area Advising Team 2013

CLAS Academic Vision Committee 2013

IMS Advisory Committee 2012-present

Associate Department Head for Undergraduate Education, 2009-2015

Chair, Teaching Assignment Committee, 2007-2008

Chair, Development Committee, 2004-2008

CLAS Dean's External Funding Advisory Committee 2004-2006

Chair, Condensed Matter Seminars, 1999-2005

Chair of Search Committee for IMS-Condensed Matter Physics Position – hired Menka Jain 2008

Chair of Search Committee for Condensed Matter Theory Position – hired Shan-Wen Tsai 2007

Regular Physics Representative at UConn Open Houses and Majors Fairs, 2004-present.

Phi Beta Kappa Undergraduate Committee 2000-2004

University of Connecticut liaison to the American Physical Society program for Career and Professional Development. 1999-2004

Women in Science and Engineering for the Girl Scouts of America, organized Physics presentation. 2003

MAJOR FUNDING

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 12/01/99 – 11/30/02, $185,855

Sloan Foundation Research Fellowship, 9/16/00 – 9/15/02, $40,000

University of Connecticut Research Foundation, "Commissioning a New Laser-Based Film Growth Facility for Complex Oxides" 06/01/01 – 05/31/02, $21,555

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 12/01/02 – 11/30/05, $210,000

National Science Foundation - CAREER Award, "Functional Oxide Films for Spectroscopy", 6/01/03 – 5/31/09, $450,000

Research Corporation, Cottrell Scholar Fellowship, " Interactive Classroom for Physics Majors and Interactive Electrons in Functional Oxide Films" 06/01/03 – 12/31/08, $75,000

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems - Supplement" 12/01/04 – 11/30/05, $30,000

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 12/01/05 – 11/30/08, $255,000

Department of Energy, BES Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 12/01/08 – 11/30/11, $288,220

University of Connecticut Research Foundation, "Measuring the oxygen content of oxide films" 01/01/09 – 12/31/09, $21,379

National Science Foundation - DMR, "Phase Separation and Magnetism in Strained Films of Transition Metal Oxides", 6/01/09 – 12/31/13, $ 392,676

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 12/01/11 – 12/31/14, $330,000

Department of Energy Grant No. DE-FG02-00ER45801, "Charge Inhomogeneity in Correlated Electron Systems" 01/01/15 – 12/31/17, $350,000

PUBLICATIONS:

- Published over 90 peer reviewed journal articles.
- Over 6000 citations (Google Scholar).

1. L.K. Narangammana, Z.W. Zhang, J.I. Budnick, W.A. Hines, J.W. Lynn, Ch. Niedermayer, E.E. Alp, W. Bi, M.Y. Hu, J. Zhao, D.G. Hinks, D.E. Brown, B.O. Wells, "Excess magnetism in superconducting films of FeTeOx" in preparation
2. L. K. Narangammana, Y. F. Nie, F. J. Rueckert, J. I. Budnick, W. A. Hines, G. Gu, and B. O. Wells, "Control of crystalline morphology and superconductivity in growth of $FeTeO_x$ superconducting films" in preparation.
3. F.J. Rueckert, F. Z. He, B. Dabrowski, W. A. Hines, J. I. Budnick, and B. O. Wells "Charge order in $SrCoO_3$ investigated through resonant soft x-ray scattering" to be submitted to *Phys. Rev. Lett*.
4. Z. H. Zhu, F. J. Rueckert, J. I. Budnick, Ch. Niedermayer, L. Keller, Luetkens, B. Dabrowski, O. Wells, "Distinct Local Magnetic Structures in Single Crystalline $SrCoO_{3-y}$" to be submitted to *Phys. Rev. Lett*.
5. Vahid Farrokhi, Bekim Bajrami, Reza Nemati, Adam J. McShane, Franz Rueckert, Barrett Wells, Xudong Yao, "Development of Structural Marker Peptides for Cystic Fibrosis Transmembrane Conductance Regulator in Cell Plasma Membrane by Reversed-Footprinting Mass Spectrometry". Anal Chem 87 (17), 8603–8607 (2015).
6. L. Udby, J. Larsen, N. B. Christensen, M. Boehm, Ch. Niedermayer, H. E. Mohottala, T. B. S. Jensen, R. Toft-Petersen, F. C. Chou, N. H. Andersen, K. Lefmann, B. O. Wells "Measurement of unique magnetic and superconducting phases in superoxygenated high-Tc cuprates" *Phys. Rev. Lett*. **111**, 227001 (2013).
   Web: http://link.aps.org/doi/10.1103/PhysRevLett.111.227001
7. L. K. Narangammana, X. Liu, Y. F. Nie, F. J. Rueckert, J. I. Budnick, W. A. Hines, G. Gu, and B. O. Wells, "Low temperature crystal structure and large lattice discontinuity at Tc in superconducting $FeTeO_x$ films" *Appl. Phys. Lett*. **103**, 102604 (2013).
   Web: http://dx.doi.org/10.1063/1.4820479
8. Espinal, Anais; Yan, Yonggao; Zhang-, Lichun; Espinal, Laura; Morey, Aimee; Wells, Barry; Aindow, Mark; Suib, Steven "Substrate Control of Anisotropic Resistivity in

Heteroepitaxial Nanostructured Arrays of Cryptomelane Manganese Oxide on Strontium Titanate" *Small* **10**, 66-72 (2013) .
Web: http://dx.doi.org/10.1002/smll.201300713

9. F. J. Rueckert, Y. F. Nie, C. Abughayada, S. A. Sabok-Sayr, H. E. Mohottala, J. I. Budnick, W. A. Hines, B. Dabrowski, and B. O. Wells "Suppression of magnetic phase separation in epitaxial $SrCoO_X$ films" *Appl. Phys. Lett*. **102**, 152402 (2013).
Web: http://dx.doi.org/10.1063/1.4801646
10. Z. H. Zhu, F. J. Rueckert, J. I. Budnick, W. A. Hines, M. Jain, H. Zhang, and B. O. Wells "Magnetic and electronic structure of the film-stabilized Mott insulator $BaCrO_3$" *Phys. Rev. B* **87**, 195129 (2013). Web: http://link.aps.org/doi/10.1103/PhysRevB.87.195129
11. D. Telesca, Y. Nie, J.I. Budnick, B.O. Wells, B. Sinkovic "Surface valence states and stoichiometry of non-superconducting and superconducting FeTe films" *Surf. Sci*. **606**, 1056-1061 (2012). Web: http://dx.doi.org/10.1016/j.susc.2012.02.026
12. D. Telesca, B.O. Wells, B. Sinkovic, "Structural reorientation of PLD grown La_2NiO_4 thin films" *Surf. Sci*. **606**, 865-871 (2012).
Web: http://dx.doi.org/10.1016/j.susc.2012.02.001
13. D. Telesca, Y. Nie, J. I. Budnick, B. O. Wells, and B. Sinkovic, "Impact of valence states on the superconductivity of iron telluride and iron selenide films with incorporated oxygen" *Phys. Rev. B* **85**, 214517 (2012).
Web: http://link.aps.org/doi/10.1103/PhysRevB.85.214517
14. C. K. Xie, Y. F. Nie, B. O. Wells, J. I. Budnick, W. A. Hines, and B. Dabrowski "Magnetic phase separation in $SrCoO_x$ $(2.5 \leq x \leq 3)$" *Appl. Phys. Lett*. **99**, 052503 (2011).
Web: http://dx.doi.org/10.1063/1.3622644
15. Y. F. Nie, D. Telesca, J. I. Budnick, B. Sinkovic,R. Ramprasad and B. O. Wells, "Superconductivity and Properties of $FeTeO_x$ Films", *J Phys Chem Solids* **72**, 426 (2011).
Web: http://dx.doi.org/10.1016/j.jpcs.2010.10.045
16. J. C. Woicik, C. K. Xie, and B. O. Wells, "Effect of strain on the local perovskite structure: $La_{0.5}Sr_{0.5}CoO_3$" *J. Appl. Phys.* **109**, 083519 (2011)
Web: http://link.aip.org/link/doi/10.1063/1.3564934
17. S.B. Emery, C.-J. Cheng, D. Kan, F.J. Rueckert, S.P. Alpay, V.Nagarajan, I. Takeuchi, B.O. Wells, " Phased Coexistence Near a Morphotropic Phase Boundary in Sm-Doped $BiFeO_3$ Films" *Appl. Phys. Lett.* **97**, 152902 (2010)
Web: http://apl.aip.org/resource/1/applab/v97/i15/p152902_s1
18. L. Udby, P.K. Willendrup, E. Knudsen, Ch. Niedermayer, U. Filges, N.B. Christensen, E. Farhi, B.O. Wells and K. Lefmann, "Analysing neutron scattering data using McStas virtual experiments" *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **634**, S138-S143 (2011)
Web: http://www.sciencedirect.com/science/article/B6TJM-50CVPVN-N/2/28effc1e046738be80b1021d8448dd28
19. Y. F. Nie, D. Telesca, J. I. Budnick, B. Sinkovic, and B. O. Wells, "Superconductivity induced in iron telluride films by low-temperature oxygen incorporation" *Phys Rev B* **82**, 020508 -R (2010)
Web: http://link.aps.org/doi/10.1103/PhysRevB.82.020508
20. Anais E. Espinal, Lichun Zhang, Chun-Hu Chen, Aimee Morey, Yuefeng Nie, Laura Espinal, Barrett O. Wells, Raymond Joesten, Mark Aindow, and Steven L. Suib, "Nanostructured arrays of semiconducting octahedral molecular sieves by pulsed-laser deposition" *Nature Materials* **9**, 54 (2010).
Web: http://www.nature.com/nmat/journal/v9/n1/abs/nmat2567.html

21. Y. F. Nie, E. Brahimi, J. I. Budnick, W. A. Hines, M. Jain, and B. O. Wells, "Suppression of superconductivity in FeSe films under tensile strain" *Appl. Phys. Lett.* **94**, 242505 (2009). Web: http://link.aip.org/link/?APPLAB/94/242505/1
22. L. Udby, N.H. Andersen, F.C. Chou, N.B. Christensen, S.B. Emery, K. Lefmann, J.W. Lynn, H.E. Mohottala, Ch. Niedermayer, B.O. Wells, "Magnetic ordering in electronically phase separated Sr/O co-doped $La_{2-x}Sr_xCuO_{4+y}$" *Phys. Rev. B* **80**, 014505 (2009). Web: http://link.aps.org/doi/10.1103/PhysRevB.80.014505
23. S.B. Emery and B.O. Wells, "Properties of Phase Separated, Super-Oxygenate $La_{2-x}Sr_xCuO_{4+y}$" *J Supercond Nov Magn*, **22**, 33 (2009). Web: http://www.springerlink.com/content/h167323kp02907n4/
24. C.K. Xie, J.I. Budnick, W.A. Hines, B.O. Wells, and J.C. Woicik, "Strain-induced change in local structure and its effect on the ferromagnetic properties of $La_{0.5}Sr_{0.5}CoO_3$ thin films" *Appl. Phys. Lett.* **93**, 182507 (2008). Web: http://link.aip.org/link/?APPLAB/93/182507/1
25. Hashini E. Mohottala, B. O. Wells, J. I. Budnick, W. A. Hines, Ch. Niedermayer, and F. C. Chou, "Flux pinning and phase separation in oxygen rich $La_{2-x}Sr_xCuO_{4+y}$ system" *Phys. Rev. B* **78**, 064504 (2008). Web: http://link.aps.org/abstract/PRB/v78/e064504
26. C. K. Xie, J. I. Budnick, W. A. Hines, B. O. Wells, Feizhou He, and A. R. Moodenbaugh, "Direct evidence for the suppression of charge stripes in epitaxial $La_{1.67}Sr_{0.33}NiO_4$ films" *Phys. Rev. B* **77**, 201403(R) (2008). Web: http://link.aps.org/abstract/PRB/v77/e201403
27. B. S. Allimi, S. P. Alpay, C. K. Xie, B. O. Wells, J. I. Budnick, and D. M. Pease, "Resistivity of V_2O_3 thin films deposited on a-plane (110) and c-plane (001) sapphire by pulsed laser deposition" *Appl. Phys. Lett.* **92**, 202105 (2008). Web: http://link.aip.org/link/?APPLAB/92/202105/1
28. Changkun Xie, J. I. Budnick, and B. O. Wells, J. C. Woicik, "Deconvolution of strain and finite size effect on the ferromagnetic properties of $La_{0.5}Sr_{0.5}CoO_3$ thin films" *Appl. Phys. Lett.* **91**, 172509 (2007). Web: http://link.aip.org/link/?APPLAB/91/172509/1
29. Z. Yusof, B. O. Wells, T. Valla, P. D. Johnson, A. V. Fedorov, Q. Li, S. M. Loureiro, and R. J. Cava, " Angle-resolved photoemission study of the metal-insulator transition in bismuth cobaltates" *Phys. Rev. B* **76**, 165115 (2007). Web: http://link.aps.org/abstract/PRB/v76/e165115
30. I.B. Misirlioglu, S.P. Alpay, Feizhou He, and B.O. Wells, "Stress Induced Monoclinic Phase in Epitaxial $BaTiO_3$ on MgO" *J. Appl. Phys.* **99**, 104103 (2006). Web: http://link.aip.org/link/?JAPIAU/99/104103/1
31. Hashini E. Mohottala, Barrett O. Wells, Joseph I. Budnick, William A. Hines, Christof Niedermayer, Christian Bernhard, FangCheng Chou, A.R. Moodenbaugh, "Phase Separation in Superoxygenated $La_{2-x}Sr_xCuO_{4+y}$" *Nature Materials* **5**, 377 (2006). Web: http://www.nature.com/nmat/journal/v5/n5/pdf/nmat1633.pdf
32. Feizhou He and B. O. Wells, "Lattice strain in epitaxial $BaTiO_3$ thin films" *Appl. Phys. Lett.* **88**, 152908 (2006). Web: http://link.aip.org/link/?APPLAB/88/152908/1
33. Hashini E. Mohottala, B.O. Wells, J.I. Budnick, W.A. Hines, Ch. Niedermayer, C. Bernhard, A.R. Moodenbaugh, and F.C. Chou, "Electronic phase separation in $La_{2-x}Sr_xCuO_{4+y}$" *Physica B* **374-375**, 199 (2006).
34. F. He, B. O. Wells, and S. M. Shapiro, "Strain Phase Diagram and Domain Orientation in $SrTiO_3$ Thin Films" *Physical Review Letters* **94**, 176101 (2005).

Web: http://link.aps.org/abstract/PRL/v94/e176101
35. F. He, B. O. Wells, Z.-G. Ban, S. P. Alpay, S. Grenier, S. M. Shapiro, W. Si, A. Clark and X. X. Xi, "Structural Phase Transitions in Epitaxial Perovskite Films" *Phys. Rev. B* **70**, 235405 (2004). Web: http://link.aps.org/abstract/PRB/v70/e235405
36. Z.-G. Ban, F. He, S.P. Alpay, B.O. Wells, and X.X. Xi, "Multiple Relaxation Mechanisms in $SrTiO_3$ / $SrRuO_3$ Heterostructures" *Appl. Phys. Lett*. **84**, 4848 (2004). Web: http://link.aip.org/link/?APPLAB/84/4848/1
37. F. He, B.O. Wells, S.M. Shapiro, M. v. Zimmermann, A. Clark, and X. X. Xi, "Anomalous phase transition in strained $SrTiO_3$ thin films" *Appl. Phys. Lett.* **83**, 123 (2003). Web: http://link.aip.org/link/?APPLAB/83/123/1
38. T. Valla, P. D. Johnson, Z. Yusof, B. Wells, Q. Li, S. M. Loureiro, R. J. Cava, M. Mikami, Y. Mori, M. Yoshimura, and T. Sasaki, "Coherence-incoherence and dimensional crossover in layered strongly correlated metals" *Nature **417**, 627 (2002). Web: http://www.nature.com/nature/journal/v417/n6889/pdf/nature00774.pdf*
39. B.O. Wells, Z. Yusof, T. Valla, A.V. Fedorov, P.D. Johnson, C. Kendziora, Sha Jian, and D.G. Hinks, "Overdoped cuprates as quasiparticle liquids" *Surface Rev. and Lett*. **9**, 1091 (2002).
40. Z. M. Yusof, B. O. Wells, T. Valla, A. V. Fedorov, P. D. Johnson, Q. Li, C. Kendziora, Sha Jian, and D. G. Hinks, "Quasiparticle liquid in the highly overdoped $Bi_2Sr_2CaCu_2O_{8+\delta}$" *Phys. Rev. Lett.* **88**, 167006 (2002).
Web: http://link.aps.org/abstract/PRL/v88/e167006
41. C. Kim, F. Ronning, A. Damascelli, D. L. Feng, and Z.-X. Shen, B. O. Wells, Y. J. Kim, R. J. Birgeneau, and M. A. Kastner, L. L. Miller, H. Eisaki and S. Uchida, "Anomalous temperature dependence in the photoemission spectral function of cuprates" *Phys. Rev. B* **65**, 174516 (2002).
42. P. D. Johnson, T. Valla, A. V. Fedorov, Z. Yusof, B. O. Wells, Q. Li, A. R. Moodenbaugh, G. D. Gu, N. Koshizuka, C. Kendziora, Sha Jian, and D. G. Hinks, "Doping and temperature dependence of the mass enhancement observed in the cuprate $Bi_2Sr_2CaCu_2O_{8+\delta}$" *Phys. Rev. Lett.* **87**, 177007 (2001).
43. Y. J. Kim, R. J. Birgeneau, F. C. Chou, M. Greven, M. A. Kastner, Y. S. Lee, B. O. Wells, A. Aharony, O. Entin-Wohlman, I. Ya. Korenblit, A. B. Harris, R. W. Erwin, G. Shirane, "Neutron scattering study of $Sr_2Cu_3O_4Cl_2$" *Phys. Rev. B* **64**, 254435 (2001).
44. T. Valla, A.V. Fedorov, P.D. Johnson, B.O. Wells, S.L. Hulbert, Q. Li, G.D. Gu, and N. Koshizuka, "Evidence for quantum critical behavior in a photoemission study of optimally doped $Bi_2Sr_2CaCu_2O_{8+\delta}$" *Science* **285**, 2110 (1999).
45. R. J. Birgeneau, M. Greven, M. A. Kastner, Y. S. Lee, B. O. Wells, Y. Endoh, K Yamada, and G. Shirane, "Instantaneous spin correlations in La_2CuO_4" *Phys. Rev. B* **59**, 13788 (1999).
46. Y.S. Lee, M. Greven, B.O. Wells, R.J. Birgeneau, and G. Shirane, "Spin correlations in the two-dimensional spin-5/2 Heisenberg antiferromagnet Rb_2MnF_4" *Euro. Phys. J B* **5**, 15 (1998).
47. P. Blakeslee, R.J. Birgeneau, F.C. Chou, R. Christianson, M.A. Kastner, Y.S. Lee, and B.O. Wells, "Electrochemistry and staging in $La_2CuO_{4+\delta}$" *Phys. Rev. B* **57**, 13915 (1998).
48. C. Kim, Z.-X. Shen, T. Tohyama, Y. Shibata, S. Maekawa, B.O. Wells, Y.J. Kim, R.J. Birgeneau, and M.A. Kastner, "Systematics of the ARPES spectral function of cuprates : insulator, hole- and electron doped superconductors" *Phys. Rev. Lett.* **80**, 4245 (1998).

49. Y. Endoh, R.J. Birgeneau, M.A. Kastner, Y.S. Lee, G. Shirane, S. Wakimoto, B.O. Wells, K. Yamada, "Phase-separation, staging and spin fluctuations in La_2CuO_{4+y}" *Physica C* **282-287**, 170 (1997).
50. P.W. Leung, B.O. Wells, and R.J. Gooding, "Dispersion relation and spectral functions of the t-J model and the antiferromagnetic insulator $Sr_2CuO_2Cl_2$" *Physica C* **282-287**, 1793 (1997).
51. P.W. Leung, B.O. Wells, R.J. Gooding, "Comparison of 32-site exact diagonalization results and ARPES spectral functions for the antiferromagnetic insulator $Sr_2CuO_2Cl_2$" *Phys. Rev. B* **56**, 6320 (1997).
52. B.O. Wells, Y.S. Lee, M.A. Kastner, R.J. Christianson, F.C. Chou, R.J. Birgeneau, K. Yamada, Y. Endoh, and G. Shirane, "Structural phase transitions and incommensurate spin fluctuations in the La_2CuO_{4+y} system" *Science* **277**, 5329 (1997).
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54. B.O. Wells, R.J. Birgeneau, F. C. Chou, Y. Endoh, M. Greven, M. Kastner, G. Shirane, J.M. Tranquada, K. Yamada, "Intercalation and staging behavior in super-oxygenated $La_2CuO_{4+\delta}$" *Z. Phys. B* **100**, 535 (1996).
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93. P.A.P. Lindberg, Z.-X. Shen, D.S. Dessau, B.O. Wells, A. Borg, W. Ellis, D.B. Mitzi, I. Lindau, W.E. Spicer and A. Kapitulnik, "The electronic structure of $Bi_{2.0}Sr_{1.8}Ca_{0.8}La_{0.3}Cu_{2.1}O_{8+\delta}$ superconductors studied using ultraviolet and x-ray photoelectron spectroscopy" *Physica C* **159**, 649-653 (1989).
94. P.A.P. Lindberg, Z.-X. Shen, B.O. Wells, D.S. Dessau, D.B. Mitzi, I. Lindau, W.E. Spicer and A. Kapitulnik, "Reaction of Rb and oxygen overlayers with single-crystalline $Bi_2Sr_2CaCu_2O_8$ superconductors" *Phys. Rev. B* **39**, 2890 (1989).
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96. Z.-X. Shen, P.A.P. Lindberg, B.O. Wells, D.B. Mitzi, I. Lindau, W.E. Spicer and A. Kapitulnik, "Valence Band and core level photoemission study of single crystal $Bi_2Sr_2CaCu_2O_8$ superconductors" *Phys. Rev. B* **38**, 11820 (1988).

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RESEARCH PRESENTATIONS – Since beginning at UConn, fall 1999.

1. 09/29/2015, Gaithersberg, MD – Invited
   2015 Experimental Condensed Matter Physics Principal Investigators' Meeting
   "Charge inhomogeneity in correlated electron systems: charge order or not"
2. 06/01/2015, Shanghai, China – Invited
   1st International Conference on the Electronic Structure of Complex Quantum Matter and Microstructure
   "Electronic Order and Electronic Phase Separation in Doped Mott Insulators"
3. 04/15/2-15, University of Waterloo – Invited
   Condensed Matter Seminar
   "Electronic Order and Electronic Phase Separation in Doped Mott Insulators"
4. 01/09/2015, Boston, MA - Invited
   8th North American Mossbauer Symposium
   "Magnetism and Superconductivity in Oxygenated Films of FeTe"
5. 09/15/2014, Montpellier, France
   Institut Charles Gerhardt, University of Montpellier
   Invited colloquium
   "Charge doping strategies to explore electronic phase separation"
6. 03/07/2014 Denver, CO
   March Meeting of the American Physical Society
   "Local structure in magnetically phase separated $SrCoO_{3-y}$"
7. 03/05/2014 Denver, CO
   March Meeting of the American Physical Society
   "The low temperature magnetic structure of superconducting FeTeOx films"
8. 10/29/2013 Canadian Light Source, Saskatoon, Canada - Invited
   Colloquium,
   "Electronic Phase Separation – Control Via Dopant Mobility"
9. 09/23/2013 Gaithersberg, MD – Invited
   DOE-BES Experimental Condensed Matter Physics PI Meeting
   "Charge Inhomogeneity in Correlated Electron Systems"
10. 08/06/2013 University of Toronto, Canada – Invited
    Physics Department Seminar
    "Electronic Phase Separation – Control Via Dopant Mobility"
11. 05/31/2013 Ischia, Italy – Invited
    Quantum in Complex Matter: Superconductivity, Magnetism and Ferroelectricity
    "Electronic Phase Separation – Control Via Dopant Mobility"
12. 03/18/2013 Baltimore MD
    March Meeting of the American Physical Society
    "Magnetic Structure and Phase Separation in Epitaxial SrCoOx Thin Films"
13. 03/18/2013 Baltimore MD
    March Meeting of the American Physical Society

"Observation of a c-axis collapse in superconducting FeTeOx films below Tc"

14. 03/18/2013 Baltimore MD
    March Meeting of the American Physical Society
    "Perovskite BaCrO3: completing a materials system with an anomalous Mott transition"
15. 06/19/2012, Copenhagen, Denmark - Invited
    Physics Colloquium, Neils Bohr Institute, University of Copenhagen
    "Electronic Phase Separation – Similar Features in Dissimilar Materials"
16. 05/21/2012, Fribourg Switzerland - Invited
    Condensed Matter Physics Seminar, Fribourg University
    "Electronic Phase Separation – Similar Features in Dissimilar Materials"
17. 05/10/2012, Villigen, Switzerland - Invited
    Laboratory for Neutron Science, Paul Scherrer Institute, Colloquium
    "Electronic Phase Separation – Similar Features in Dissimilar Materials"
18. 03/02/2012, Boston, MA
    March Meeting of the American Physical Society
    "Long Range Ordering in Oxygen Doped $SrCoO_x$"
19. 02/29/2012, Boston, MA
    March Meeting of the American Physical Society
    "Growth conditions for pulsed laser deposited $FeTeO_y$ superconducting thin films and observation of a low temperature structural transition"
20. 08/11/2011, Rockville, MD - Invited
    DOE - BES Experimental Condensed Matter Physics Principal Investigators Meeting
    "Phase Diagrams for Iron-Chalcogenide Superconducting Films"
21. 07/13/2011, Rome, Italy – Invited
    7th International Conference on Stripes and High Tc Superconductivity STRIPES 11
    "Phase Diagram for Iron-Chalcogenide Superconducting Films"
22. 04/21/2011, Las Vegas, NV – Invited
    Villa Conference on Iron Pnictide Superconductors
    "Phase Diagram for Superconductivity in FeTeOx and FeSeOx Films"
23. 03/24/2011, Dalls, TX
    March Meeting of the American Physical Society
    "Magnetic Phase Separation in Oxygen Doped $SrCoO_{3-y}$"
24. 03/24/2011, Dallas, TX
    March Meeting of the American Physical Society
    "ARPES study of FeTe single crystal and $FeTeO_x$ films
25. 03/22/2011, Dallas, TX
    March Meeting of the American Physical Society
    "Oxygen staging in phase separated $La_{2-x}Sr_xCuO_{4+y}$"
26. 11/15/2010, Warrenton, VA – Invited
    X-Ray Scattering Contractors Meeting, Department of Energy
    "Superconductivity Induced in Iron Telluride Films by Low Temperature Oxygen Incorporation"
27. 10/12/2010, Piscataway, NJ – Invited
    Rutgers University, Condensed Matter Physics Seminar
    "Superconductivity Induced in FeTe Films
28. 07/22/2010 Erice, Italy – Invited

Superstripes 2010
Induced Superconductivity in Iron Telluride Films

29. 03/17/2010 Portland, OR
    March Meeting of the American Physical
    "Magnetic phase separation in $SrCoO_{2.5+x}$ "
30. 03/17/2010 Portland, OR
    March Meeting of the American Physical Society
    "Induced Superconductivity in Iron Telluride Films"
31. 03/15/2010 Portland, OR
    March Meeting of the American Physical Society
    "Synchrotron X-ray Study of Thin Film Samarium Doped $BiFeO_3$ at the Morphotropic Phase Boundary"
32. 03/05/2010, San Francisco, CA
    Materials Research Society (MRS) Spring Meeting,
    "Nanostructured arrays of semiconducting octahedral molecular sieves by pulsed laser deposition". Paper Number 753398
33. 05/27/2010, Shanghai, China
    Spectroscopy of Novel Superconductors 9
    "Superconductivity Induced in Iron Telluride Films by Low Temperature Oxygen Incorporation"
34. 03/20/2009, Pittsburgh, PA
    March Meeting of the American Physical Society
    "Superconductivity of Iron Selenide Thin Films"
35. 03/18/2009, Pittsburgh, PA
    March Meeting of the American Physical Society
    "Weak flux pinning in the phase separated $La_{2-x}Sr_xCuO_{4+y}$ system"
36. 03/16/2009, Pittsburgh, PA
    March Meeting of the American Physical Society
    "Phase Separation and Magnetism in High Temperature Superconductors"
37. 10/20/08 University of Toronto – Invited
    Condensed Matter Seminar
    "Nano and macro scale charge inhomogeneity in high temperature superconductors"
38. 09/18/2008 West Virginia University – Invited
    Physics Department Colloquium
    "Electronic Phase Separation in High Temperature Superconductors"
39. 07/29/2008, Erice, Italy – Invited
    Stripes 08: Quantum Phenomena in Complex Matter
    "Properties of Phase Separated, Super-Oxygenated $La_{2-x}Sr_xCuO_{4+y}$"
40. 07/11/2008, Tuscon, AZ – Invited
    Cottrell Scholar Conference
    "Promoting an Interactive Classroom in Advanced Majors Classes"
41. 03/11/2008, New Orleans, LA
    March Meeting of the American Physical Society
    "Phase Separation and Magnetism in High Tc Superconductors"
42. 03/10/2008, New Orleans, LA
    March Meeting of the American Physical Society

"Separation of the strain and finite size effect on the ferromagnetic properties of $La_{0.5}Sr_{0.5}CoO_3$ thin films"

43. 10/20/2007, Storrs, CT
    New England Sectional Meeting of the American Physical Society
    "New Insights Into the Role of Magnetism in High Temperature Superconductivity"
44. 10/19/2007, Storrs, CT
    New England Sectional Meeting of the American Physical Society
    "Direct Evidence for the Suppression of Charge Stripes in Epitaxial $La_{1.67}Sr_{0.33}NiO_4$ Films"
45. 05/18/2007, Houston, TX
    The International Conference on Strongly Correlated Electron Systems
    "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
46. 03/07/2007, Denver, CO
    March Meeting of the American Physical Society
    "Suppression of charge stripes in highly strained, epitaxial $La_{5/3}Sr_{1/3}NiO_4$ films"
47. 02/23/2007 University of Vermont – Invited
    Physics Department Colloquium
    "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
48. 12/17/2006, Rome, Italy – Invited
    Stripes06: the Fifth International Conference on Quantum Phenomena in Complex Matter
    "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
49. 11/03/2006, Crete Greece
    First Workshop on Controlling Mesoscopic Phase Separation
    "Staging and phase separation in high temperature superconductors"
50. 07/10/2006, Dresden, Germany
    Materials and Mechanisms of Superconductivity VIII
    "New Aspects of Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
51. 05/10/2006, Paul Scherrer Institute – Invited Plenary Talk
    SINQ User's Meeting 2006 "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
52. 03/17/2006, Baltimore, MD
    March Meeting of the American Physical Society
    "Strain effects on the magnetic properties of epitaxial $SrRuO_3$ thin films"
53. 03/16/2006, Baltimore, MD
    March Meeting of the American Physical Society
    "Flux Pinning and Critical Current Density in $La_{2-x}Sr_xCuO_{4+y}$"
54. 05/12/2005 Brookhaven National Laboratory – Invited
    Condensed Matter Seminar
    "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
55. 04/30/2005 Vancouver, Canada – Invited
    ARPES 2005 – New Frontiers
    "New Materials: Electronic Phase Separation and Non-Equilibrium Structures"
56. 04/05/2005 University of Kentucky – Invited
    Condensed Matter Seminar
    "Electronic Phase Separation in $La_{2-x}Sr_xCuO_{4+y}$"
57. 03/25/2005, Los Angeles, CA
    March Meeting of the American Physical Society
    "Strain Phase Diagram of $SrTiO_3$ Thin Films"

58. 03/23/2005, Los Angeles, CA
    March Meeting of the American Physical Society
    "Phase diagram and stage ordering in $La_{2-x}Sr_xCuO_{4+y}$"
59. 03/25/2004, Montreal, Canada
    March Meeting of the American Physical Society
    "Substrate Effects on Phase Transitions in Epitaxial Perovskite Thin Films"
60. 03/23/2004, Montreal, Canada
    March Meeting of the American Physical Society
    "Phase diagram and stage ordering in $La_{2-x}Sr_xCuO_{4+d}$"
61. 02/11/2004 University of Toronto – Invited
    Condensed Matter Seminar
    "Nature of Charge Carriers in Bad Metals"
62. 02/09/2004 McMaster University – Invited
    Physics Department Colloquium
    "Nature of Charge Carriers in Bad Metals"
63. 09/26/2003 Boston University – Invited
    Condensed Matter Seminar
    "Detecting Quasiparticles in Bad Metals"
64. 07/11/2003 – Invited
    Cottrell Scholars Conference, Tucson, AZ
    "Interactive Classroom for Physics Majors"
65. 05/20/2003, Brookhaven National Laboratory
    National Synchrotron Light Source 2003 Annual Users' Meeting
    "Anomalous Phase Transition in Strained $SrTiO_3$ Thin Films"
66. 03/06/2003, Austin, TX
    March Meeting of the American Physical Society
    "Anomalous Phase Transition in Strained $SrTiO_3$ Thin Films"
67. 03/02/2002, Austin, TX – Invited
    New Faculty Workshop – American Physical Society
    "The Interactive Class Room for Physics Majors"
68. 10/15/2002 Montauk, NY
    Conference on Low Energy Electron Spectroscopies
    "Quasiparticles in Overdoped High Temperature Superconductors"
69. 10/12/2002 Lawrence Berkeley Laboratory – Invited
    Workshop on Scientific Opportunities Using Ultra-high Resolution Soft X-Rays
    "ARPES Studies of a Two-Dimensional Correlated Metal"
70. 05/20/2002 Brookhaven National Laboratory
    National Synchrotron Light Source 2002 Annual Users' Meeting
    "Metal-Insulator Transition in a d-band perovskite"
71. 03/18/2002, Indianapolis, IN
    March Meeting of the American Physical Society
    "Metal-Insulator Transition in Bismuth Cobaltates"
72. 03/0/2002, Brookhaven Laboratory, Upton, NY- Invited
    Brookhaven National Laboratory Nanocenter Workshop
    "Equipment for Strongly Correlated Oxide Nanomaterials"
73. 11/09/2001, Irvine, CA – Invited

Thirteenth Annual Symposium on Frontiers of Science – U.S. National Academy of Sciences
"Quasiparticles and Transport in Materials with Strongly Correlated Electrons"

74. 07/25/2001, Trieste, Italy
Thirteenth International Conference on Vacuum Ultraviolet Radiation Physics
"Overdoped Cuprates as Quasiparticle Liquids"
75. 08/10/2000 Univ. California-Berkeley
Eighth International Conference on Electronic Spectroscopy and Structure
"ARPES Measurement on Highly Overdoped $Bi_2Sr_2CaCu_2O_8$"
76. 05/22/2001 Brookhaven National Laboratory
National Synchrotron Light Source 2001 Annual Users' Meeting
"A Quasiparticle Liquid in Highly Overdoped $Bi_2Sr_2CaCu_2O_8$"
Award: Best Contributed Presentation – Division of Materials Research
77. 5/15/2001 Chicago, IL
Sixth Conference on Spectroscopies of Novel Superconductors
"Highly Overdoped $Bi_2Sr_2CaCu_2O_{8+\delta}$ as a Quasiparticle Liquid"
78. 03/16/2001, Seattle, WA
March Meeting of the American Physical Society
"Novel Phase Transitions in Strained Films of $SrTiO_3$"
79. 03/15/2001, Seattle, WA
March Meeting of the American Physical Society
"ARPES measurement of Highly Overdoped $Bi_2Sr_2CaCu_2O_{8+\delta}$"
80. 12/01/2000, University of Rhode Island – Invited
Physics Departmental Colloquium
"Search for a Fermi Liquid State in Overdoped Copper Oxide Superconductors"
81. 03/29/2000, Queen's University, Canada – Invited
Physics Departmental Colloquium
"Layered Copper Oxides: Bad Metals But Good Superconductors"
82. 12/02/1999, Boston, MA – Invited
Fall Meeting of the Materials Research Society
"Anomalous Structural Phase Transitions in $SrTiO_3$ Thin Films"