

# Oleg G. Shpyrko

## Curriculum Vitae

(as of Oct. 20, 2013)

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Department of Physics, MC 0319  
University of California, San Diego  
9500 Gilman Dr., La Jolla, CA 92093-0319

Email: [oshpyrko@physics.ucsd.edu](mailto:oshpyrko@physics.ucsd.edu)  
Phone: 858-534-3066  
Web page: <http://oleg.ucsd.edu>

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## RESEARCH INTERESTS

**Experimental condensed matter physics using scattering probes.** X-ray synchrotron scattering and nanoscale imaging. Strongly Correlated Systems: Metal-Insulator Transition, Magnetism in Correlated Oxides, Charge and Spin Density Wave systems, Search for Novel High-Temperature Superconducting materials. Magnetic Thin Films and Nanostructures, Magnetoelectric heterostructures, Magnesium-Ion Battery materials. Surface and interfacial properties of liquids, soft and biologically relevant materials. Dynamics and structure of materials in nanoscale confinement. Light scattering and microscopy studies of capillary phenomena and self-assembly.

## PROFESSIONAL EXPERIENCE

<b>ASSOCIATE PROFESSOR</b> , University of California San Diego Department of Physics	2013-present
<b>ASSISTANT PROFESSOR</b> , University of California San Diego Department of Physics	2007 – 2013
<b>CNM Distinguished Postdoctoral Fellow</b> , Argonne National Laboratory Center for Nanoscale Materials. Advisor: Prof. Eric D. Isaacs	2005 – 2007
<b>Postdoctoral Fellow</b> , Harvard University Division of Engineering and Applied Sciences. Advisor: Prof. Peter S. Pershan	2004 – 2005
<b>Ph.D. in PHYSICS</b> , Harvard University Department of Physics. PhD Advisor: Prof. Peter S. Pershan Ph.D. Thesis committee: David Weitz, Frans Spaepen	June, 2004

## HONORS AND AWARDS

<b>NSF CAREER FACULTY AWARD</b>	2010
<b>HELLMAN FACULTY FELLOW</b>	2009
<b>UC SAN DIEGO FACULTY CAREER DEVELOPMENT AWARD</b>	2009
<b>ROSALIND FRANKLIN YOUNG INVESTIGATOR AWARD</b>	2008
<b>CNM DISTINGUISHED POSTDOCTORAL FELLOW</b> , Argonne National Lab	2005 – 2007
<b>R.E. MARSHAK FELLOWSHIP</b> , University of Rochester	1995 – 1996
<b>EXCIMER FELLOWSHIP</b> , Moscow Institute of Physics and Technology, Russia	1994 – 1995
<b>LEBEDEV PHYSICS INSTITUTE (FIAN) FELLOWSHIP</b> , Moscow, Russia	1994 – 1995
<b>SOROS INTERNATIONAL FOUNDATION FELLOWSHIP</b> , Moscow, Russia	1993 – 1994
<b>SILVER MEDAL, XXIV INTERNATIONAL PHYSICS OLYMPIAD, USA</b>	1993

## PROFESSIONAL SERVICE

<b>Advisory Board Member, Structural Dynamics, AIP</b>	2013-present
<b>Assembly Representative (alt.), UCSD Academic Senate</b>	2012-2014
<b>Advanced Photon Source Proposal Review Panel, Argonne Nat'l Lab</b>	2008 – 2011
<b>Advanced Light Source Proposal Study Panel, Lawrence Berkeley National Lab, Berkeley, CA</b>	2009 – present
<b>Member (elected), LCLS User Organizing Committee, SLAC, Stanford, CA</b>	2009 – 2013
<b>Member (elected), APS User Organizing Committee, Argonne National Lab, IL</b>	2012-present
<b>Organizer, International Winter School on Superconductivity, Hong Kong</b>	2012-present
<b>Organizer, Focus Topic, APS March Meeting, Portland, Oregon, 2010</b>	2009 – 2010
<b>Faculty Advisor, UCSD Undergraduates Society for Physics Students (SPS)</b>	2012-present
<b>Member, Committee of Visitors, Materials Science and Engineering (MSE) Division of Dept. Of Energy-BES</b>	2012
<b>Reviewer for NSF, DOE, AFOSR</b>	2008-present
<b>Member, Beam Advisory Team, CHX (XPCS) Beamline NSLS-II, BNL</b>	2008 – present
<b>Organizer, UCSD Young Physicist Program (YPP)</b>	2007-present
<b>Chair, Beam Advisory Team for CSX (Soft X-ray) Beamline, NSLS-II, BNL</b>	2012-present
<b>Lecturer, Research Course on New X-Ray Sciences, DESY Hamburg, Germany</b>	2010, 2014
<b>Lecturer, 2012 School for Liquid Surface X-ray Scattering, Argonne, IL</b>	2012
<b>Lecturer, 2007 School for Liquid Surface X-ray Scattering, Argonne, IL</b>	2007
<b>Organizer, Boston Area Undergraduate Physics Competition</b>	1999 – 2005
<b>Member, UCSD Physics Graduate Admission Committee</b>	2009-2013
<b>Professional Referee. Nature Materials, Physical Review Letters, Physical Review B, Europhysics Letters, Journal of Physical Chemistry, Journal of Chemical Physics, Journal of Applied Physics, Journal of Alloys and Compounds</b>	2003-present
<b>Member, American Physical Society, Materials Research Society</b>	1998 – present

## MENTORING and ADVISING

### Postdoctoral Mentoring:

Andrej Singer (2013-present)

Edwin Fohtung (2010-2013), presently LANCE Assistant Professor at New Mexico State University/Los Alamos National Lab

Jyoti Mohanty (2008-2009), presently Assistant Professor IIT, Hyderabad, India

### Research Student Advising:

**Graduate:** (10 students supervised in total)

Ashish Tripathi (Ph.D., 2012) – currently postdoc at LaTrobe University, Australia

Yeling Dai (Ph.D., 2013)

Sebastian Dietze (Ph.D.)

Jong Woo Kim (Ph.D.)

Moses Marsh (Ph.D.)

Leandra Boucheron (Ph.D.)

Jacob Stanley (Ph.D.)

Andrew Ulvestad (Ph.D.)

James Wingert (Ph.D.)

**Visting Graduate Students:**

Loic Jacot Descombes (M. Sc. project, ETH Zurich), Marion Fuhrmann (M.Sc., Ecole Nationale Supérieure des Mines, Saint-Etienne, France)

**Undergraduate:** (16 undergraduate students supervised in total)

Sarah Garcia, Michael Folkerts, Kevin Duggento, Andrew McLeod, Samuel Stanwyck, LLuvia Rodriguez, Anashe Bandari, Magnus Heinz, Veronica Burnett, David Kirzenblatt, Charles Neil, Brandon Stephenson, Gurleen Bal, Eva Isaacs, James Wingert, Christopher Parzyck

**Graduate Committee Member, UC San Diego:**

Michael Verde (Nanoengineering), Hyung-Man (Josh) Cho (Nanoengineering), Colin McElroy (Physics), Siming Wang (Physics), Vince Chen (Physics), Kevin Huang (Materials Science), Jonathan Sepan (Physics), Ching Kit Chan (Physics, Ph.D. 2012), YanJin Kuang (Materials Science), Yicong Ma (Physics), Marko Lubarda (Ph.D., 2012, ECE), Marco Escobar (ECE), Jimmy Kan (Materials Science), Sifang You (Physics), Feifei Wei (Physics), Brian Chapler (Physics), Reza Farsian (Physics, Ph.D. 2012), Misha Erekhinsky (Physics), Christopher Palmer (Physics), Stephanie Moyermann (Physics), Keith Chan (Materials Science, Ph.D. 2011), Matthew Krems (Ph.D., 2010, Physics), Slaven Moro (Electrical Engineering, Ph.D. 2011), Mikas Remeika (Physics), Erik Shipton (Physics, Ph.D. 2011), Yaniv Rosen (Physics), Kevin D. Smith (M. Sc. 2008, Materials Science), Casey E. Chiang (Chemistry)

**PUBLICATIONS**

1. “Synchrotron X-ray Studies of Rapidly Evolving Morphology of Self-Assembled Nanoparticle Films under Lateral Compression”, Yeling Dai, Binhua Lin, Mati Meron, Kyungil Kim, Brian Leahy, Thomas A. Witten and Oleg G. Shpyrko, Langmuir ASAP, DOI: 10.1021/la403252d (2013)
2. “Metastability and microscopic avalanche dynamics in charge-density waves of chromium” H. C. Kim, J. M. Logan, O. G. Shpyrko, P.B. Littlewood and E. D. Isaacs, Phys. Rev. B 88, 140101(R) (2013)
3. “Ferromagnetism in partially oxidized CuCl” Thomas Saerbeck, Juan Pereiro, James Wampler, Jacob Stanley, James Wingert, Oleg G. Shpyrko and Ivan K. Schuller, J. Magn. & Magn. Mater., 346, 161–165, (2013)
4. "Capillary wave dynamics of thin polymer films over submerged nanostructures" K. J. Alvine, Y. Dai, H. Ro, C. L. Soles, S. Narayanan, A. R. Sandy and O. G. Shpyrko, Phys. Rev. Lett. 109, 207801 (2012)
5. “Collective pinning dynamics of charge density waves in 1T-TaS<sub>2</sub>”, J.-D. Su, A. R. Sandy, J. Mohanty, O. G. Shpyrko and M. Sutton, Phys. Rev. B 86, 205105 (2012)
6. “Quantitative imaging of lattice distortions in epitaxial semiconductor heterostructures using x-ray Bragg ptychography” S. O. Hruszkewycz, M. V. Holt, C. E. Murray, J. Bruley, J. Holt, A. Tripathi, O. G. Shpyrko, I. McNulty, M. J. Highland, P. H. Fuoss, Nano Lett. 12, 5148 (2012)
7. "Probing the 3D strain inhomogeneity and equilibrium elastic properties of single crystal Ni nanowires" E. Fohtung, J. W. Kim, K. T. Chan, Ross Harder, Eric E. Fullerton, and O. G. Shpyrko, Appl. Phys. Lett. 101, 033107 (2012)

8. “Antiferromagnetic Domain Wall Engineering in Chromium Films” J. M. Logan, H. C. Kim, D. Rosenmann, Z. Cai, R. Divan, O. G. Shpyrko and E. D. Isaacs, Appl. Phys. Lett. 100, 192405 (2012)
9. “A comparative study of Langmuir Surfactant Films: Grazing Incidence X-ray Off-Specular Scattering vs. X-ray Specular Reflectivity” Yeling Dai, Binhua Lin, Mati Meron, Kyungil Kim, Brian Leahy and Oleg G. Shpyrko, J. Appl. Phys. 110, 102213 (2011)
10. “Dichroic Coherent Diffractive Imaging” A. Tripathi, J. Mohanty, S. Dietze, O. G. Shpyrko, E. Shipton, E. Fullerton, S.S. Kim and Ian McNulty, Proc. Nat. Acad. Sci. 108, 13393 (2011)
11. “Nanoscale decoupling between the electronic and structural transitions in vanadium dioxide”, M. M. Qazilbash, A. Tripathi, B.-G. Chae, B. J. Kim, H.-T. Kim, Z. Cai, M. V. Holt, J. M. Maser, F. Keilmann, O. G. Shpyrko and D. N. Basov, Phys. Rev. B 83, 165108 (2011)
12. “Governing Factors in Stress Response of Nanoparticle Films on Water Surface” Kyungil Kim, Brian D. Leahy, Yeling Dai, Oleg Shpyrko, Janet S. Soltau, Matthew Pelton, Mati Meron, Binhua Lin, J. Appl. Phys. 110, 102218 (2011)
13. “Influence of Noise and Missing Data on Reconstruction Quality in Coherent X-ray Diffractive Imaging” A. Tripathi, O. Shpyrko, and I. McNulty, AIP Conf. Proc. 1365, 305 (2011)
14. “Bending rigidity of crystalline mono- and bilayer surface phases of the Au<sub>82</sub>Si<sub>18</sub> liquid eutectic” S. Mechler, S. E. Stoltz, E. Yahel, P. S. Pershan, O. G. Shpyrko, S. Sellner, B. Lin and M. Meron, Phys. Rev. Lett. 105, 186101 (2010)
15. “Local Structural Probes”, O. G. Shpyrko, McGraw Hill 2010 Yearbook of Science & Technology (2010)
16. “Surface Structure of the Liquid Au<sub>72</sub>Ge<sub>28</sub> Eutectic Phase: X-ray Reflectivity” P. S. Pershan, S. E. Stoltz, S. Mechler, O. G. Shpyrko, V. S. K. Balagurusamy, A. Yu. Grigoriev, M. Meron and B. Lin, Phys. Rev. B 80, 125414 (2009)
17. “Surface structure of liquid Bi and Sn: An x-ray reflectivity study” P. S. Pershan, S. Stoltz, O. G. Shpyrko, Moshe Deutsch, V. S. K. Balagurusamy, M. Meron, B. Lin and R. Streitel, Phys. Rev. B 79, 115417 (2009)
18. “Infrared spectroscopy and nano-imaging of the insulator-to-metal transition in vanadium dioxide” M. M. Qazilbash, M. Brehm, G. O. Andreev, A. Frenzel, P.-C. Ho, Sun Jin Yun, Byung-Gyu Chae, Bong-Jun Kim, Hyun-Tak Kim, A. V. Balatsky, O. G. Shpyrko, M. B. Maple, F. Keilmann and D. N. Basov, Phys. Rev. B 79, 075107 (2009)
19. “Crystalline surface phases of the liquid Au-Si eutectic alloy” O. G. Shpyrko, R. Streitel, V. S. K. Balagurusamy, A. Yu. Grigoriev, M. Deutsch, B. M. Ocko, M. Meron, B. Lin and P. S. Pershan Phys. Rev. B 76, 245436 (2007)
20. “Pressure-Tuned Spin and Charge Ordering in an Itinerant Antiferromagnet” Y. Feng, R. Jaramillo, G. Srajer, J. C. Lang, Z. Islam, M. S. Somayazulu, O. G. Shpyrko, J. J. Pluth, H.-k. Mao, E. D. Isaacs, G. Aeppli, T. F. Rosenbaum Phys. Rev. Lett. 99, 137201 (2007)
21. “Direct measurement of antiferromagnetic domain fluctuations” O. G. Shpyrko, E. D. Isaacs, J. Logan, Y. Feng, R. Jaramillo, H. C. Kim, T. F. Rosenbaum, G. Aeppli, M. Sprung, S. Narayanan and A. Sandy

*Nature* 447, 68 (2007)

22. “A Reply to the Comment by Frederic Caupin”, K. J. Alvine, O. G. Shpyrko, P. S. Pershan, K. Shin and T. P. Russell

*Phys. Rev. Lett.* 98, 259602 (2007)

23. “Microscopic and Macroscopic Signatures of Antiferromagnetic Domain Walls” R. Jaramillo, T. F. Rosenbaum, E. D. Isaacs, O. G. Shpyrko, P. G. Evans, G. Aeppli and Z. Cai

*Phys. Rev. Lett.* 98, 117206 (2007)

24. “X-ray Reflectivity Studies of Atomic-level Surface-segregation in a Liquid Eutectic Alloy of AuSn” V. S. K. Balagurusamy, R. Streitel, O. G. Shpyrko, P. S. Pershan, M. Meron, B. Lin

*Phys. Rev. B* 75, 104209 (2007)

25. “Surface Freezing in Gold-Silicon liquid alloy”

O. G. Shpyrko, R. Streitel, V. S. K. Balagurusamy, A. Yu. Grigoriev, M. Deutsch, B. M. Ocko, M. Meron, B. Lin and P. S. Pershan

*Science* 313, 77 (2006)

26. “Capillary filling of anodized alumina nanopore arrays”

K. J. Alvine, O. G. Shpyrko, P. S. Pershan, K. Shin and T. P. Russell

*Phys. Rev. Lett.* 97, 175503 (2006)

27. “Solvent Mediated Assembly of Nanoparticles Confined in Mesoporous Alumina”

K. Alvine, D. Pontoni, O. G. Shpyrko, P. S. Pershan, D. J. Cookson, K. Shin, T. P. Russell, M. Brunnbauer, F. Stellacci and O. Gang

*Phys. Rev. B* 73, 125412 (2006)

28. “Surface induced atomic scale demixing in BiSn eutectic alloy”

O. G. Shpyrko, A. Grigoriev, R. Streitel, D. Pontoni, P.S. Pershan, B.M. Ocko, M. Deutsch,

*Phys. Rev. Lett.* 95, 106103 (2005)

29. “Surface oxidation of liquid Sn” A. Grigoriev, O. G. Shpyrko, C. Steimer, P. S. Pershan, B. M. Ocko, M. Deutsch, B. Lin, J. Gebhardt, M. Meron and T. Graber

*Surf. Sci.* 575, 223 (2005)

30. “Anomalous layering at the liquid Sn surface”

O. G. Shpyrko, A. Grigoriev, J.C. Steimer, P.S. Pershan, B.M. Ocko, M. Deutsch, B. Lin, J. Gebhardt, M. Meron and T. Graber

*Phys. Rev. B* 70, 224206 (2004)

31. “Surface Layering in Liquids: The Role of Surface Tension”

O. G. Shpyrko, M. Fukuto, P.S. Pershan, I. Kuzmenko, B.M. Ocko and M. Deutsch

*Phys. Rev. B* 69, 245423 (2004)

32. “X-ray Study of the Liquid Potassium Surface: Structure and Capillary Wave Excitations”

O. G. Shpyrko, P. Huber, P.S. Pershan, B.M. Ocko, H. Tostmann and M. Deutsch

*Phys. Rev. B* 67, 115405 (2003)

33. “Short-Range Wetting at Liquid Gallium-Bismuth Alloy Surfaces: X-ray Reflectivity Measurements and Square Gradient Theory”, P. Huber, O. G. Shpyrko, P. S. Pershan, B. M. Ocko, E. DiMasi, M. Deutsch,

*Phys. Rev. B* 68, 085409 (2003)

34. “Tetra Point Wetting at the Free Surface of Liquid Ga-Bi”, P. Huber, O. G. Shpyrko, P. S. Pershan, B. M. Ocko, E. DiMasi, and M. Deutsch,

*Phys. Rev. Lett.* 89, 035502 (2002)

35. “Wetting at the Free Surface of a Liquid Gallium-Bismuth Alloy Close to the Monotectic Point” P. Huber, O. G. Shpyrko, P. S. Pershan, E. DiMasi, B. M. Ocko, H. Tostmann and M. Deutsch

*Colloids & Surfaces A*. 206, 515 (2002)

36. "Pairing Interactions and Gibbs Adsorption at the Liquid Bi-In Surface" E. DiMasi, H. Tostmann, O. G. Shpyrko, P. Huber, B. M. Ocko, P. S. Pershan, M. Deutsch and L. E. Berman *Phys. Rev. Lett.* 86, 1538 (2001)

37. "Resonant X-Ray Scattering from the Surface of a Dilute Hg-Au Alloy" E. DiMasi, H. Tostmann, B. M. Ocko, P. Huber, O. G. Shpyrko, P. S. Pershan, M. Deutsch and L. E. Berman *Mat. Sci. V* Vol. 590. Eds. Mini, Perry and Stock. MRS (2000)

38. "Microscopic Structure of the Wetting Film at the Surface of Liquid Ga-Bi Alloys" H. Tostmann, E. DiMasi, O. G. Shpyrko, P. S. Pershan, B.M. Ocko and M. Deutsch *Phys. Rev. Lett.* 84, 4385 (2000)

39. "Surface Induced Order in Liquid Metals and Binary Alloys" E. DiMasi, H. Tostmann, O. G. Shpyrko, M. Deutsch, P.S. Pershan and B. M. Ocko *J. Phys. Cond. Matt.* 12, 209 (2000)

40. "Surface Structure of Liquid Metals and the Effect of Capillary Waves: X-Ray Studies on Liquid Indium"

H. Tostmann, E. DiMasi, P. S. Pershan, B. M. Ocko, O. G. Shpyrko and M. Deutsch *Phys. Rev. B* 59, 783 (1999)

41. "Microscopic Surface Structure of Liquid Alkali Metals"

H. Tostmann, E. DiMasi, P. S. Pershan, B. M. Ocko, O. G. Shpyrko and M. Deutsch *Phys. Rev. B* 61, 7284 (1999)

42. "Surface Phases in Binary Liquid Metal Alloys: an X-ray Study"

H. Tostmann, E. DiMasi, O. G. Shpyrko, P. S. Pershan, B. M. Ocko and M. Deutsch *Ber. Bunsenges. Phys. Chem.* 102, 1136-1141 (1999)

## **INVITED PRESENTATIONS (Selected, 2007 - present)**

1. Magnetism Cross-Cut Review, ALS, Lawrence Berkeley National Lab, October 21, 2013
2. Physics Colloquium, University of Florida, Gainesville, FL, October 17, 2013
3. Workshop on Scientific Opportunities using High Repetition Rate X-ray Sources with 1-10 ps Bunch Length, SLAC, Stanford, CA, Oct. 4, 2013.
4. Frontiers in Quantum Solids: Combining Soft X-rays and Ultra-fast Techniques, SLAC, Stanford, CA, Oct. 4, 2013.
5. Plenary Talk, LCLS/SSRL Users Meeting, Stanford, CA, October 3, 2013
6. Liquid and Amorphous Materials (LAM-15) Conference, Beijing, China, September 2013
7. Physics Colloquium, Northern Illinois University, Carbondale, IL, Sept. 2013
8. Workshop Advanced Analysis of X-Ray and Neutron Scattering Data: Getting from data to science, National Science Foundation (NSF) Scientific Software Innovation Institute for Advanced Analysis of X-Ray and Neutron Scattering Data (SIXNS), Columbia University/BNL, NY Aug 14, 2013
9. Hard X-ray Nanoprobe (HXN) Breakout Session, NSLS-II First-Experiments Workshop, Brookhaven National Lab, Upton, NY Aug 13, 2013
10. Session on Coherence, Dynamics, and Polarization, NSLS-II First-Experiments Workshop, Brookhaven National Lab, Upton, NY Aug 12, 2013
11. DOE-BES Advisory Committee (BESAC) Light Sources Subcommittee Meeting, Bethesda, MD, July 11, 2013

12. California NanoSystems Institute (CNSI) Seminar, Univ. California Santa Barbara, CA, May 31, 2013
13. Ptycho 2013, International workshop on the state and future of ptychography, Hohenkammer, Germany, May 6 2013
14. China/US Winter School and Workshop on Search for Superconductivity, Hong Kong, Jan. 22, 2013
15. Materials Science Division Seminar, Argonne National Lab, Argonne, IL, January 10, 2013
16. IME Colloquium, University of Chicago, January 9, 2013
17. Workshop on Diffraction Limited Storage Rings, Spring-8, Japan, Dec. 12, 2012
18. Physics Colloquium, SUNY Stony Brook, October 2, 2012
19. Physics Colloquium, College of William and Mary, Sep.9, 2012
20. Next Generation Light Source Workshop, Berkeley National Lab, Aug. 28, 2012
21. Annual Oxide Interfaces Workshop, Harvard University, Cambridge, MA August 7-8, 2012
22. DARPA PULSE Workshop, Arlington, VA, July 17, 2012
23. Condensed Matter Seminar, Brookhaven National Laboratory, May 2012
24. X-rays in 4<sup>th</sup> Dimension Workshop, Chicago, IL, May 2012
25. Applied Physics & Photon Sciences Seminar, Stanford University, March 2012
26. Nanoengineering Seminar, UC San Diego, April 2012
27. Condensed Matter Seminar, SUNY Stony Brook, Feb. 2012
28. Physics Colloquium, Universidad Autonoma Madrid, Spain, October 2011
29. Physics Colloquium, Iowa State University, September 2011
30. Physics Colloquium, UC San Diego, September 2011
31. Gordon Conference on X-ray Science, August, 2011
32. Workshop on New Frontiers in Soft X-ray Scattering and Imaging: COSMIC, Berkeley, CA August 2011
33. XDL Workshop "Diffraction Microscopy, Holography and Ptychography using Coherent Beams," Cornell University, June 2011
34. DOE BES Contractors Meeting, Warrenton, VA, October 2010
35. "Nanoscale X-ray Imaging of Novel Materials", Workshop on Evolution and Control of Complexity, Argonne National Lab, October 2010
36. Condensed Matter Seminar, UC San Diego, October 2010
37. "X-ray and Infrared Nano-Imaging in Search for Novel Superconductors", China-US Workshop on Novel Superconductors, Beijing, China Sept. 2010
38. APS Upgrade Liquid Surface Scattering Workshop, Argonne, IL, August 2010
39. Tenth International Conference on X-ray Microscopy (XRM-2010), Chicago, IL, August 2010
40. AFOSR Workshop on Search for Novel Superconductivity, Washington DC, August, 2010
41. The 11<sup>th</sup> International Surface X-ray and Neutron Scattering (SXNS-11) Evanston, IL, July 2010
42. Next Generation Light Source (NGLS) Condensed Matter Workshop, ALS, Lawrence Berkeley National Lab, May 2010
43. Colloquium, Physics Department, University of Kiel, Germany, March 2010
44. Research Course on New X-Ray Sciences, DESY Hamburg, Germany, March 2010
45. "Applications of X-ray Photon Correlation spectroscopy" 2<sup>nd</sup> School and Workshop on X-ray Micro and Nanoprobes (XMNP2009), Palinuro Salerno, Italy, June 2009

46. "Fundamental aspects of X-ray Photon Correlation spectroscopy" 2<sup>nd</sup> School and Workshop on X-ray Micro and Nano probes (XMNP2009), Palinuro Salerno, Italy, June 2009
47. "A novel methodology for an enlightened search for new superconductors." International Workshop on the Search for New Superconductors, Kanagawa, Japan, May 2009
48. "Domain wall dynamics in antiferromagnetic Chromium", UCLA Physics Seminar, April 2009
49. "Surface freezing in liquid binary alloys", NSF Review of Consortium for Advanced Radiation, University of Chicago, Argonne, IL, May 2008
50. "Domain wall dynamics in antiferromagnetic Chromium", Workshop on Nanoscale phenomena near phase transitions, Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL, May 2008
51. "Dynamics in Quantum Antiferromagnets", Rosalind Franklin Young Investigator Award Presentation, Advanced Photon Source, Argonne National Laboratory, Argonne, IL May 2008
52. "Domain Wall Dynamics in Antiferromagnetic Chromium", Advanced Light Source Seminar, Lawrence Berkeley National Laboratory, Berkeley, CA, April 2008
53. "Phase defects in spin-ordered materials", NSLS-II Coherent Diffraction Imaging workshop, Brookhaven National Laboratory, Upton, NY, March 2008
54. "XPCS Study of Antiferromagnetic Domain Dynamics in Chromium", NSLS-II XPCS workshop, Brookhaven National Laboratory, Upton, NY, January 2008
55. "XPCS Study of Antiferromagnetic Domain Dynamics in Chromium" DOE Review of Advanced Photon Source, Argonne, IL, December 2007
56. "Studies of Capillary Dynamics with X-ray Diffuse Scattering", Liquid Surface X-ray Scattering School, Argonne National Laboratory, Argonne, IL, November 2007
57. "XPCS Studies of Antiferromagnetic Domain Wall Dynamics in Elemental Chromium" SSRL/LCLS Users Meeting and Workshops, New Opportunities in Imaging and X-ray Microscopy, Stanford University, Menlo Park, CA, October 2007
58. "XPCS Studies of Antiferromagnetic Domain Wall Fluctuations" DOE Review of Advanced Photon Source, Argonne National Lab, Argonne, IL, September 2007
59. "Domain Wall Dynamics in Quantum Antiferromagnets", CNM Users Meeting, X-ray Nanoprobe Workshop, Argonne, IL, May 2007
60. "XPCS Study of Antiferromagnetic Domain Wall Dynamics", Coherence-2007, International Workshop on Phase Retrieval and Coherent Scattering, Monterey, CA, July 2007
61. "Dynamics of Spin Density Wave Domains in Chromium", The International Conference on Strongly Correlated Electron Systems, Houston, TX, May 2007
62. "Domain Wall Dynamics in Quantum Antiferromagnets", CNM Users Meeting, Argonne, IL, May 2007
63. "Dynamics in quantum magnets", APS Users Seminar, Argonne, IL, April 2007
64. "Dynamics in quantum magnets", Colloquium, University of Illinois at Urbana-Champaign, IL, March 2007
65. "Dynamics of domain walls in Chromium", Physics Colloquium, Iowa State University, Ames, IA, February 2007
66. "Dynamics of domain walls in Chromium", Condensed Matter Seminar, UC San Diego, La Jolla, CA, January 2007

**Funding:**

Current: NSF CAREER, DOE, AFOSR MURI, AFOSR

Past: Hellman Foundation, UCSD Career Development Award, Argonne LDRD