Stanford

Thomas Devereaux

Director of Stanford Institute for Materials and Energy Sciences (SIMES) and Professor of Photon Science

Photon Science Directorate

Bio

BIO

Professor Devereaux received his Ph.D. in Physics from the University of Oregon in 1991, M.S. from University of Oregon in 1988, and B.S from New York University in 1986.

Professor Devereaux is currently the Director of the Stanford Institute for Materials and Energy Sciences (SIMES), a professor in the Photon Science Faculty at SLAC National Accelerator Laboratory and Stanford University and a Senior Fellow of the Precourt Institute for Energy. SIMES is a joint institute between Stanford main campus and SLAC, a national laboratory, focusing on scientific foundations related to the energy challenge facing our society.

Professor Devereaux was a Post-doctoral Fellow at the Max Planck Institut, Stuttgart, (1991-1993), a Post-doctoral Fellow at the University of California, Davis, CA, (1993-1996), an Assistant Professor at The George Washington University, Washington, DC, (1996-1999), and an Associate Professor (1999-2006) and Professor (2006-2007) at the University of Waterloo, Waterloo, ON, Canada

His main research interests lie in the areas of theoretical condensed matter physics and computational physics. His research effort focuses on using the tools of computational physics to understand quantum materials. The goal of his research is to understand equilibrium and ultrafast non-equilibrium electron dynamics via a combination of analytical theory and numerical simulations to provide insight into materials of relevance to energy science. His group carries out numerical simulations on SIMES' high-performance compute cluster, the National Energy Research Scientific Computing Center (NERSC), and other US computational facilities. The specific focus of the group is the development of numerical methods and theories of photon-based spectroscopies of strongly correlated materials.

ACADEMIC APPOINTMENTS

- Professor, Photon Science Directorate

HONORS AND AWARDS

- Fellowship, U. S. Department of Education (1989-1991)
- Junior Scholar Incentive Award, George Washington University (1998)
- Research Fellowship, Alexander von Humboldt Foundation (2002-2006)
- Premier's Research Excellence Award, Province of Ontario (2003)
- Scientist Research Fellowship, Embassy of France (2005 & 2006)
- Fellow, American Physical Society (2008)

PROFESSIONAL EDUCATION

- Ph.D., University of Oregon , Physics (1991)
- M.S., University of Oregon , Physics (1988)
- B.S., New York University , Mathematics & Physics (1986)

LINKS

- Devereaux Group: http://www.stanford.edu/group/photontheory/
- Stanford Institute for Materials and Energy Sciences: http://simes.stanford.edu/
- SLAC National Accelerator Laboratory: https://www6.slac.stanford.edu/
- Precourt Institute for Energy: https://energy.stanford.edu

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My main research interests lie in the areas of theoretical condensed matter physics and computational physics. My research effort focuses on using the tools of computational physics to understand quantum materials. Fortunately, we are poised in an excellent position as the speed and cost of computers have allowed us to tackle heretofore unaddressed problems involving interacting systems. The goal of my research is to understand electron dynamics via a combination of analytical theory and numerical simulations to provide insight into materials of relevance to energy science. My group carries out numerical simulations on SIMES' high-performance supercomputer and US and Canadian computational facilities. The specific focus of my group is the development of numerical methods and theories of photon-based spectroscopies of strongly correlated materials.

Teaching

COURSES

2017-18

- Condensed Matter Seminar: APPPHYS 470 (Aut, Win, Spr)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Matthias Hepting, Yifan Jiang, Yehonatan Schattner

Doctoral Dissertation Advisor (AC)

Yuan Chen

Publications

PUBLICATIONS

- **All-optical materials design of chiral edge modes in transition-metal dichalcogenides** *NATURE COMMUNICATIONS*
  Claassen, M., Jia, C., Moritz, B., Devereaux, T. P.
  2016; 7
- **Distinctive orbital anisotropy observed in the nematic state of a FeSe thin film** *PHYSICAL REVIEW B*
  Zhang, Y., Yi, M., Liu, Z., Li, W., Lee, J. J., Moore, R. G., Hashimoto, M., Nakajima, M., Eisaki, H., Mo, S., Hussain, Z., Devereaux, T. P., Shen, et al
  2016; 94 (11)
- **Superconducting Gap Anisotropy in Monolayer FeSe Thin Film** *PHYSICAL REVIEW LETTERS*
  Zhang, Y., Lee, J. J., Moore, R. G., Li, W., Yi, M., Hashimoto, M., Lu, D. H., Devereaux, T. P., Lee, D., Shen, Z.

2016; 117 (11)

- **Using RIXS to Uncover Elementary Charge and Spin Excitations** *PHYSICAL REVIEW X*
  Jia, C., Wohlfeld, K., Wang, Y., Moritz, B., Devereaux, T. P.
  2016; 6 (2)
- **Characterizing the three-orbital Hubbard model with determinant quantum Monte Carlo** *PHYSICAL REVIEW B*
  Kung, Y. F., Chen, C., Wang, Y., Huang, E. W., Nowadnick, E. A., Moritz, B., Scalettar, R. T., Johnston, S., Devereaux, T. P.
  2016; 93 (15)
- **Nonequilibrium Dynamical Mean-Field Theory for the Charge-Density-Wave Phase of the Falicov-Kimball Model** *JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM*
  Matveev, O. P., Shvaika, A. M., Devereaux, T. P., Freericks, J. K.
  2016; 29 (3): 581-585
- **Using Nonequilibrium Dynamics to Probe Competing Orders in a Mott-Peierls System** *PHYSICAL REVIEW LETTERS*
  Wang, Y., Moritz, B., Chen, C., Jia, C. J., van Veenendaal, M., Devereaux, T. P.
  2016; 116 (8)
- **Raman and fluorescence characteristics of resonant inelastic X-ray scattering from doped superconducting cuprates** *SCIENTIFIC REPORTS*
  Huang, H. Y., Jia, C. J., Chen, Z. Y., Wohlfeld, K., Moritz, B., Devereaux, T. P., Wu, W. B., Okamoto, J., Lee, W. S., Hashimoto, M., He, Y., Shen, Z. X., Yoshida, et al
  2016; 6
- **Origin of the low critical observing temperature of the quantum anomalous Hall effect in V-doped (Bi, Sb)2Te3 film.** *Scientific reports*
  Li, W., Claassen, M., Chang, C., Moritz, B., Jia, T., Zhang, C., Rebec, S., Lee, J. J., Hashimoto, M., Lu, D., Moore, R. G., Moodera, J. S., Devereaux, et al
  2016; 6: 32732-?
- **Three-dimensional charge density wave order in YBa2Cu3O6.67 at high magnetic fields** *SCIENCE*
  Gerber, S., Jang, H., Nojiri, H., Matsuzawa, S., Yasumura, H., Bonn, D. A., Liang, R., Hardy, W. N., Islam, Z., Mehta, A., Song, S., Sikorski, M., Stefanescu, et al
  2015; 350 (6263): 949-952
- **Doping evolution of spin and charge excitations in the Hubbard model** *PHYSICAL REVIEW B*
  Kung, Y. F., Nowadnick, E. A., Jia, C. J., Johnston, S., Moritz, B., Scalettar, R. T., Devereaux, T. P.
  2015; 92 (19)
- **Magnetic excitations and phonons simultaneously studied by resonant inelastic x-ray scattering in optimally doped Bi1.5Pb0.55Sr1.6La0.4CuO6+delta** *PHYSICAL REVIEW B*
  Peng, Y. Y., Hashimoto, M., Sala, M. M., AMORESE, A., Brookes, N. B., Dellea, G., Lee, W., Minola, M., Schmitt, T., Yoshida, Y., Zhou, K., Eisaki, H., Devereaux, et al
  2015; 92 (6)
- **Origin of strong dispersion in Hubbard insulators** *PHYSICAL REVIEW B*
  Wang, Y., Wohlfeld, K., Moritz, B., Jia, C. J., van Veenendaal, M., Wu, K., Chen, C., Devereaux, T. P.
  2015; 92 (7)
- **Fidelity study of superconductivity in extended Hubbard models** *PHYSICAL REVIEW B*
  Plonka, N., Jia, C. J., Wang, Y., Moritz, B., Devereaux, T. P.
  2015; 92 (2)
- **Position-Momentum Duality and Fractional Quantum Hall Effect in Chern Insulators.** *Physical review letters*
  Claassen, M., Lee, C. H., Thomale, R., Qi, X., Devereaux, T. P.
  2015; 114 (23): 236802-?
- **Position-Momentum Duality and Fractional Quantum Hall Effect in Chern Insulators** *PHYSICAL REVIEW LETTERS*
  Claassen, M., Lee, C. H., Thomale, R., Qi, X., Devereaux, T. P.
  2015; 114 (23)
- **Classification of collective modes in a charge density wave by momentum-dependent modulation of the electronic band structure** *PHYSICAL REVIEW B*
  Leuenberger, D., Sobota, J. A., Yang, S., Kemper, A. F., Giraldo-Gallo, P., Moore, R. G., Fisher, I. R., Kirchmann, P. S., Devereaux, T. P., Shen, Z.
  2015; 91 (20)

- **Renormalization of spectra by phase competition in the half-filled Hubbard-Holstein model** *PHYSICAL REVIEW B*
  Nowadnick, E. A., Johnston, S., Moritz, B., Devereaux, T. P.
  2015; 91 (16)

- **Fractionalization, entanglement, and separation: Understanding the collective excitations in a spin-orbital chain** *PHYSICAL REVIEW B*
  Chen, C., van Veenendaal, M., Devereaux, T. P., Wohlfeld, K.
  2015; 91 (16)

- **Spin Chain in Magnetic Field: Limitations of the Large-N Mean-Field Theory** *14th European Conference on Physics of Magnetism (PM)*
  Wohlfeld, K., Chen, C., van Veenendaal, M., Devereaux, T. P.
  POLISH ACAD SCIENCES INST PHYSICS.2015: 201–3

- **Probing LaMO3 Metal and Oxygen Partial Density of States Using X-ray Emission, Absorption, and Photoelectron Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Hong, W. T., Stoerzinger, K. A., Moritz, B., Devereaux, T. P., Yang, W., Shao-Horn, Y.
  2015; 119 (4): 2063-2072

- **Interface ferroelectric transition near the gap-opening temperature in a single-unit-cell FeSe film grown on Nb-Doped SrTiO3 substrate.** *Physical review letters*
  Cui, Y., Moore, R. G., Zhang, A., Tian, Y., Lee, J. J., Schmitt, F. T., Zhang, W., Li, W., Yi, M., Liu, Z., Hashimoto, M., Zhang, Y., Lu, et al
  2015; 114 (3): 037002-?

- **Interface Ferroelectric Transition near the Gap-Opening Temperature in a Single-Unit-Cell FeSe Film Grown on Nb-Doped SrTiO_{3} Substrate.** *Physical review letters*
  Cui, Y., Moore, R. G., Zhang, A., Tian, Y., Lee, J. J., Schmitt, F. T., Zhang, W., Li, W., Yi, M., Liu, Z., Hashimoto, M., Zhang, Y., Lu, et al
  2015; 114 (3): 037002-?

- **Direct spectroscopic evidence for phase competition between the pseudogap and superconductivity in Bi2Sr2CaCu2O8+delta** *NATURE MATERIALS*
  Hashimoto, M., Nowadnick, E. A., He, R., Vishik, I. M., Moritz, B., He, Y., Tanaka, K., Moore, R. G., Lu, D., Yoshida, Y., Ishikado, M., Sasagawa, T., Fujita, et al
  2015; 14 (1): 37-42

- **Theory of Floquet band formation and local pseudospin textures in pump-probe photoemission of graphene.** *Nature communications*
  Sentef, M. A., Claassen, M., Kemper, A. F., Moritz, B., Oka, T., Freericks, J. K., Devereaux, T. P.
  2015; 6: 7047-?

- **Direct characterization of photoinduced lattice dynamics in BaFe2As2.** *Nature communications*
  Gerber, S., Kim, K. W., Zhang, Y., Zhu, D., Plonka, N., Yi, M., Dakovski, G. L., Leuenberger, D., Kirchmann, P. S., Moore, R. G., Chollet, M., Glownia, J. M., Feng, et al
  2015; 6: 7377-?

- **Balancing Act: Evidence for a Strong Subdominant d-Wave Pairing Channel in Ba0.6K0.4Fe2As2** *PHYSICAL REVIEW X*
  Boehm, T., Kemper, A. F., Moritz, B., Kretzschmar, F., Muschler, B., Eiter, H., Hackl, R., Devereaux, T. P., Scalapino, D. J., Wen, H.
  2014; 4 (4)

- **Numerical exploration of spontaneous broken symmetries in multiorbital Hubbard models** *PHYSICAL REVIEW B*
  Kung, Y. F., Chen, C., Moritz, B., Johnston, S., Thomale, R., Devereaux, T. P.
  2014; 90 (22)

- **Interfacial mode coupling as the origin of the enhancement of T-c in FeSe films on SrTiO3** *NATURE*
  Lee, J. J., Schmitt, F. T., Moore, R. G., Johnston, S., Cui, Y., Li, W., Yi, M., Liu, Z. K., Hashimoto, M., Zhang, Y., Lu, D. H., Devereaux, T. P., Lee, et al
  2014; 515 (7526): 245-U207

- **Beyond Planck-Einstein quanta: Amplitude-driven quantum excitation** *PHYSICAL REVIEW B*
  Shen, W., Devereaux, T. P., Freericks, J. K.
  2014; 90 (19)

- **Asymmetry of collective excitations in electron- and hole-doped cuprate superconductors** *NATURE PHYSICS*
  Lee, W. S., Lee, J. J., Nowadnick, E. A., Gerber, S., Tabis, W., Huang, S. W., Strocov, V. N., Motoyama, E. M., Yu, G., Moritz, B., Huang, H. Y., Wang, R. P., Huang, et al
  2014; 10 (11): 883-889

- **Distinguishing Bulk and Surface Electron-Phonon Coupling in the Topological Insulator Bi2Se3 Using Time-Resolved Photoemission Spectroscopy** *PHYSICAL REVIEW LETTERS*
  Sobota, J. A., Yang, S., Leuenberger, D., Kemper, A. F., Analytis, J. G., Fisher, I. R., Kirchmann, P. S., Devereaux, T. P., Shen, Z.
  2014; 113 (15)
- **Exact solution for high harmonic generation and the response to an ac driving field for a charge density wave insulator** *PHYSICAL REVIEW B*
  Shen, W., Kemper, A. F., Devereaux, T. P., Freericks, J. K.
  2014; 90 (11)
- **Effect of dynamical spectral weight redistribution on effective interactions in time-resolved spectroscopy** *PHYSICAL REVIEW B*
  Kemper, A. F., Sentef, M. A., Moritz, B., Freericks, J. K., Devereaux, T. P.
  2014; 90 (7)
- **Ultrafast electron dynamics in the topological insulator Bi2Se3 studied by time-resolved photoemission spectroscopy** *JOURNAL OF ELECTRON SPECTROSCOPY AND RELATED PHENOMENA*
  Sobota, J. A., Yang, S., Leuenberger, D., Kemper, A. F., Analytis, J. G., Fisher, I. R., Kirchmann, P. S., Devereaux, T. P., Shen, Z.
  2014; 195: 249-257
- **Energy gaps in high-transition-temperature cuprate superconductors** *NATURE PHYSICS*
  Hashimoto, M., Vishik, I. M., He, R., Devereaux, T. P., Shen, Z.
  2014; 10 (7): 483-495
- **Direct observation of bulk charge modulations in optimally doped Bi1.5Pb0.6Sr1.54CaCu2O8+delta** *PHYSICAL REVIEW B*
  Hashimoto, M., Ghiringhelli, G., Lee, W., Dellea, G., AMORESE, A., Mazzoli, C., KUMMER, K., Brookes, N. B., Moritz, B., Yoshida, Y., Eisaki, H., Hussain, Z., Devereaux, et al
  2014; 89 (22)
- **Exact solution for Bloch oscillations of a simple charge-density-wave insulator** *PHYSICAL REVIEW B*
  Shen, W., Devereaux, T. P., Freericks, J. K.
  2014; 89 (23)
- **Bandgap closure and reopening in CsAuI3 at high pressure** *PHYSICAL REVIEW B*
  Wang, S., Kemper, A. F., Baldini, M., SHAPIRO, M. C., Riggs, S. C., Zhao, Z., Liu, Z., Devereaux, T. P., Geballe, T. H., Fisher, I. R., Mao, W. L.
  2014; 89 (24)
- **Angle-resolved photoemission spectroscopy study of HgBa2CuO4+delta** *PHYSICAL REVIEW B*
  Vishik, I. M., Barisic, N., Chan, M. K., Li, Y., Xia, D. D., Yu, G., Zhao, X., Lee, W. S., Meevasana, W., Devereaux, T. P., Greven, M., Shen, Z.
  2014; 89 (19)
- **Nonequilibrium "Melting" of a Charge Density Wave Insulator via an Ultrafast Laser Pulse.** *Physical review letters*
  Shen, W., Ge, Y., Liu, A. Y., Krishnamurthy, H. R., Devereaux, T. P., Freericks, J. K.
  2014; 112 (17): 176404-?
- **Real-space visualization of remnant mott gap and magnon excitations.** *Physical review letters*
  Wang, Y., Jia, C. J., Moritz, B., Devereaux, T. P.
  2014; 112 (15): 156402-?
- **Dynamic competition between spin-density wave order and superconductivity in underdoped Ba1-xKxFe2As2** *NATURE COMMUNICATIONS*
  Yi, M., Zhang, Y., Liu, Z., Ding, X., Chu, J., Kemper, A. F., Plonka, N., Moritz, B., Hashimoto, M., Mo, S., Hussain, Z., Devereaux, T. P., Fisher, et al
  2014; 5
- **Charge-orbital-lattice coupling effects in the dd excitation profile of one-dimensional cuprates** *PHYSICAL REVIEW B*
  Lee, J. J., Moritz, B., Lee, W. S., Yi, M., Jia, C. J., Sorini, A. P., Kudo, K., Koike, Y., Zhou, K. J., Monney, C., Strocov, V., Patthey, L., Schmitt, et al
  2014; 89 (4)
- **Persistent spin excitations in doped antiferromagnets revealed by resonant inelastic light scattering.** *Nature communications*
  Jia, C. J., Nowadnick, E. A., Wohlfeld, K., Kung, Y. F., Chen, C., Johnston, S., Tohyama, T., Moritz, B., Devereaux, T. P.
  2014; 5: 3314-?
- **Persistent spin excitations in doped antiferromagnets revealed by resonant inelastic light scattering.** *Nature communications*

Jia, C. J., Nowadnick, E. A., Wohlfeld, K., Kung, Y. F., Chen, C., Johnston, S., Tohyama, T., Moritz, B., Devereaux, T. P.
2014; 5: 3314-?

- **Dynamic competition between spin-density wave order and superconductivity in underdoped Ba(1-x)K(x)Fe2As2.** *Nature communications*
  Yi, M., Zhang, Y., Liu, Z., Ding, X., Chu, J., Kemper, A. F., Plonka, N., Moritz, B., Hashimoto, M., Mo, S., Hussain, Z., Devereaux, T. P., Fisher, et al
  2014; 5: 3711-?
- **Examining Electron-Boson Coupling Using Time-Resolved Spectroscopy** *PHYSICAL REVIEW X*
  Sentef, M., Kemper, A. F., Moritz, B., Freericks, J. K., Shen, Z., Devereaux, T. P.
  2013; 3 (4)
- **Tunneling spectroscopy for probing orbital anisotropy in iron pnictides** *PHYSICAL REVIEW B*
  Plonka, N., Kemper, A. F., Graser, S., Kampf, A. P., Devereaux, T. P.
  2013; 88 (17)
- **Existence of Orbital Order and its Fluctuation in Superconducting Ba(Fe1-xCox)(2)As-2 Single Crystals Revealed by X-ray Absorption Spectroscopy** *PHYSICAL REVIEW LETTERS*
  Kim, Y. K., Jung, W. S., Han, G. R., Choi, K., Kim, K., Chen, C., Devereaux, T. P., Chainani, A., Miyawaki, J., Takata, Y., Tanaka, Y., Oura, M., Shin, et al
  2013; 111 (21)
- **Direct Optical Coupling to an Unoccupied Dirac Surface State in the Topological Insulator Bi2Se3** *PHYSICAL REVIEW LETTERS*
  Sobota, J. A., Yang, S., Kemper, A. F., Lee, J. J., Schmitt, F. T., Li, W., Moore, R. G., Analytis, J. G., Fisher, I. R., Kirchmann, P. S., Devereaux, T. P., Shen, Z.
  2013; 111 (13)
- **Time-dependent charge-order and spin-order recovery in striped systems** *PHYSICAL REVIEW B*
  Kung, Y. F., Lee, W., Chen, C., Kemper, A. F., Sorini, A. P., Moritz, B., Devereaux, T. P.
  2013; 88 (12)
- **Electron-mediated relaxation following ultrafast pumping of strongly correlated materials: model evidence of a correlation-tuned crossover between thermal and nonthermal states.** *Physical review letters*
  Moritz, B., Kemper, A. F., Sentef, M., Devereaux, T. P., Freericks, J. K.
  2013; 111 (7): 077401-?
- **Electron-Mediated Relaxation Following Ultrafast Pumping of Strongly Correlated Materials: Model Evidence of a Correlation-Tuned Crossover between Thermal and Nonthermal States** *PHYSICAL REVIEW LETTERS*
  Moritz, B., Kemper, A. F., Sentef, M., Devereaux, T. P., Freericks, J. K.
  2013; 111 (7)
- **Mapping of unoccupied states and relevant bosonic modes via the time-dependent momentum distribution** *PHYSICAL REVIEW B*
  Kemper, A. F., Sentef, M., Moritz, B., Kao, C. C., Shen, Z. X., Freericks, J. K., Devereaux, T. P.
  2013; 87 (23)
- **Role of Lattice Coupling in Establishing Electronic and Magnetic Properties in Quasi-One-Dimensional Cuprates** *PHYSICAL REVIEW LETTERS*
  Lee, W. S., Johnston, S., Moritz, B., Lee, J., Yi, M., Zhou, K. J., Schmitt, T., Patthey, L., Strocov, V., Kudo, K., Koike, Y., van den Brink, J., Devereaux, et al
  2013; 110 (26)
- **Determinant quantum Monte Carlo study of the two-dimensional single-band Hubbard-Holstein model** *PHYSICAL REVIEW B*
  Johnston, S., Nowadnick, E. A., Kung, Y. F., Moritz, B., Scalettar, R. T., Devereaux, T. P.
  2013; 87 (23)
- **Doping evolution of the oxygen K-edge x-ray absorption spectra of cuprate superconductors using a three-orbital Hubbard model** *PHYSICAL REVIEW B*
  Chen, C., Sentef, M., Kung, Y. F., Jia, C. J., Thomale, R., Moritz, B., Kampf, A. P., Devereaux, T. P.
  2013; 87 (16)
- **Real-Time Manifestation of Strongly Coupled Spin and Charge Order Parameters in Stripe-Ordered La_{1.75}Sr_{0.25}NiO_{4} Nickelate Crystals Using Time-Resolved Resonant X-Ray Diffraction.** *Physical review letters*
  Chuang, Y. D., Lee, W. S., Kung, Y. F., Sorini, A. P., Moritz, B., Moore, R. G., Patthey, L., Trigo, M., Lu, D. H., Kirchmann, P. S., Yi, M., Krupin, O., Langner, et al
  2013; 110 (12): 127404-?

- **Real-Time Manifestation of Strongly Coupled Spin and Charge Order Parameters in Stripe-Ordered La1.75Sr0.25NiO4 Nickelate Crystals Using Time-Resolved Resonant X-Ray Diffraction** *PHYSICAL REVIEW LETTERS*
  Chuang, Y. D., Lee, W. S., Kung, Y. F., Sorini, A. P., Moritz, B., Moore, R. G., Patthey, L., Trigo, M., Lu, D. H., Kirchmann, P. S., Yi, M., Krupin, O., Langner, et al
  2013; 110 (12)

- **Hot electron transport in a strongly correlated transition-metal oxide** *SCIENTIFIC REPORTS*
  Rana, K. G., Yajima, T., Parui, S., Kemper, A. F., Devereaux, T. P., Hikita, Y., Hwang, H. Y., Banerjee, T.
  2013; 3

- **Theoretical description of high-order harmonic generation in solids** *NEW JOURNAL OF PHYSICS*
  Kemper, A. F., Moritz, B., Freericks, J. K., Devereaux, T. P.
  2013; 15

- **Measurement of Coherent Polarons in the Strongly Coupled Antiferromagnetically Ordered Iron-Chalcogenide Fe1.02Te using Angle-Resolved Photoemission Spectroscopy** *PHYSICAL REVIEW LETTERS*
  Liu, Z. K., He, R., Lu, D. H., Yi, M., Chen, Y. L., Hashimoto, M., Moore, R. G., Mo, S., Nowadnick, E. A., Hu, J., Liu, T. J., Mao, Z. Q., Devereaux, et al
  2013; 110 (3)

- **Alternative route to charge density wave formation in multiband systems** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Eiter, H., Lavagnini, M., Hackl, R., Nowadnick, E. A., Kemper, A. F., Devereaux, T. P., Chu, J., Analytis, J. G., Fisher, I. R., Degiorgi, L.
  2013; 110 (1): 64-69

- **Competition Between Antiferromagnetic and Charge-Density-Wave Order in the Half-Filled Hubbard-Holstein Model** *PHYSICAL REVIEW LETTERS*
  Nowadnick, E. A., Johnston, S., Moritz, B., Scalettar, R. T., Devereaux, T. P.
  2012; 109 (24)

- **Uncovering selective excitations using the resonant profile of indirect inelastic x-ray scattering in correlated materials: observing two-magnon scattering and relation to the dynamical structure factor** *NEW JOURNAL OF PHYSICS*
  Jia, C. J., Chen, C., Sorini, A. P., Moritz, B., Devereaux, T. P.
  2012; 14

- **X-ray Emission Spectroscopy of Cerium Across the gamma-alpha Volume Collapse Transition** *PHYSICAL REVIEW LETTERS*
  Lipp, M. J., Sorini, A. P., Bradley, J., Maddox, B., Moore, K. T., Cynn, H., Devereaux, T. P., Xiao, Y., Chow, P., Evans, W. J.
  2012; 109 (19)

- **Phase competition in trisected superconducting dome** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Vishik, I. M., Hashimoto, M., He, R., LeeB, W., Schmitt, F., Lu, D., Moore, R. G., Zhang, C., Meevasana, W., Sasagawa, T., Uchida, S., Fujita, K., Ishida, et al
  2012; 109 (45): 18332-18337

- **Pulsed high harmonic generation of light due to pumped Bloch oscillations in noninteracting metals** *PHYSICA SCRIPTA*
  Freericks, J. K., Liu, A. Y., Kemper, A. F., Devereaux, T. P.
  2012; T151

- **Quantum Dynamics of the Hubbard-Holstein Model in Equilibrium and Nonequilibrium: Application to Pump-Probe Phenomena** *PHYSICAL REVIEW LETTERS*
  De Filippis, G., Cataudella, V., Nowadnick, E. A., Devereaux, T. P., Mishchenko, A. S., Nagaosa, N.
  2012; 109 (17)

- **Quasiparticle interference and the interplay between superconductivity and density wave order in the cuprates** *PHYSICAL REVIEW B*
  Nowadnick, E. A., Moritz, B., Devereaux, T. P.
  2012; 86 (13)

- **Superconductivity distorted by the coexisting pseudogap in the antinodal region of Bi1.5Pb0.55Sr1.6La0.4CuO6+delta: A photon-energy-dependent angle-resolved photoemission study** *PHYSICAL REVIEW B*
  Hashimoto, M., He, R., Vishik, I. M., Schmitt, F., Moore, R. G., Lu, D. H., Yoshida, Y., Eisaki, H., Hussain, Z., Devereaux, T. P., Shen, Z.
  2012; 86 (9)

- **Phase fluctuations and the absence of topological defects in a photo-excited charge-ordered nickelate** *NATURE COMMUNICATIONS*

Lee, W. S., Chuang, Y. D., Moore, R. G., Zhu, Y., Patthey, L., Trigo, M., Lu, D. H., Kirchmann, P. S., Krupin, O., Yi, M., Langner, M., Huse, N., ROBINSON, et al
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