

**Daniel S. Dessau**  
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### **A. Professional Preparation**

Rice University (Houston, Texas)	Physics BA and Electrical Engineering BS	1987
Stanford University (Stanford, CA)	Applied Physics PhD	1993

### **B. Appointments**

Mar 21– present	Joint Appointment, National Renewable Energy Labs, Golden, CO
Jan 16 – Mar 2022	Director, Center for Experiments on Quantum Materials, Boulder, CO
Jan 15 – present	Adjunct Fellow, JILA, University of Colorado and NIST
Jan 13 – present	Fellow, Materials Science and Engineering Program, University of Colorado
Dec 09 – present	Fellow, Renewable and Sustainable Energy Institute, University of Colorado and NREL
June 07 – present	Professor, Department of Physics, University of Colorado, Boulder
June 07 – Aug 10	Professor and Associate Chair, Physics Department, University of Colorado, Boulder
June 02 – May 07	Associate professor, Physics Department, University of Colorado, Boulder
June 00 – Dec 14	Member, JILA, University of Colorado and NIST
Aug 95 – May 02	Assistant Professor, Physics Department, University of Colorado, Boulder
Aug 93 – Aug 95	DOE Distinguished Postdoctoral Research Fellow, Stanford Synchrotron Radiation Laboratory.

### **C. Publications (Out of ~140, with over 12500 citations, h-index 50)**

1. Haoxiang Li, Peipei Hao, Junjie Zhang, Kyle Gordon, A. Garrison Linn, Xinglong Chen, Hong Zheng, Xiaoqing Zhou, J.F. Mitchell, D. S. Dessau “Electronic structure and correlations in planar trilayer nickelate  $\text{Pr}_4\text{Ni}_3\text{O}_8$ ” *Sci Advances* 9, eade4418 (2023)
2. C.A. Paz de Araujo, Jolanta Celinska, Chris R. McWilliams Lucian Shifren, Greg Yeric, X.M. Henry Huang, Saurabh Vinayak Suryavanshi, Glen Rosendale, Valeri Afanas'ev, Eduardo C. Marino, Dushyant Madhav Narayan, Daniel S Dessau “Universal Non-Polar Switching in Carbon-Doped Transition Metal Oxides (TMOs) and Post TMOs” *APL Materials* 10, 040904 (2022); <https://doi.org/10.1063/5.0073513>
3. Chaowei Hu, Lei Ding, Kyle N. Gordon, Barun Ghosh, Haoxiang Li, Shang-Wei Lian, A. Garrison Linn, Hung-Ju Tien, Cheng-Yi Huang, P. V. Sreenivasa Reddy, Bahadur Singh, Amit Agarwal, Arun Bansil, Su-Yang Xu, Hsin Lin, Huibo Cao, Tay-Rong Chang, Dan Dessau, Ni Ni “Realization of an intrinsic, ferromagnetic axion insulator in  $\text{MnBi}_8\text{Te}_{13}$ ” *Science Advances* Vol. 6, no. 30 eaba4275 (2020)
4. T.J. Reber, J.A. Waugh, N.C. Plumb, S. Parham, Y. Cao, Z. Sun, Q. Wang, J.S. Wen, Z.J. Xu, G. Gu, Y. Yoshida, H. Eisaki, Y. Aiura, G.B. Arnold, D. S. Dessau. “A Unified Form of Low-Energy Nodal Electronic Interactions in Hole Doped Cuprate Superconductors” *Nature Communications* 10, Article number: 5737 (2019)
5. Xiaoqing Zhou, Kyle Gordon, Kyung-Kwan Jin, Haoxiang Li, Dushyant Narayan, Hengdi Zhao, Hao Zheng, Huaqing Huang, Gang Cao, Nikolai D. Zhigadlo, Feng Liu, and Daniel S. Dessau, “Observation of Topological Surface State in High Temperature Superconductor  $\text{MgB}_2$ ” *Phys. Rev. B* 100, 184511 (2019)
6. Haoxiang Li, Xiaoqing Zhou, Stephen Parham, Theodore J. Reber, Helmuth Berger, Gerald Arnold, Daniel S. Dessau, “Coherent organization of electronic correlations as a mechanism to enhance and stabilize high temperature cuprate superconductivity” *Nature Communications* 9, 26 (2018) doi:10.1038/s41467-017-02422-2

7. S. Parham, H. Li, T.J. Nummy, J.A. Waugh, X.Q. Zhou, J. Griffith, J. Schneeloch, R.D. Zhong, G. D. Gu, and D.S. Dessau “Ultrafast Gap Dynamics and Electronic Interactions in a Photoexcited Cuprate Superconductor” *Physical Review X* 7, 041013 (2017) <https://doi.org/10.1103/PhysRevX.7.041013>
8. Yue Cao, Qiang Wang, Justin A. Waugh, Theodore J. Reber, Haoxiang Li, Xiaoqing Zhou, Stephen Parham, Nicholas C. Plumb, Eli Rotenberg, Aaron Bostwick, Jonathan D. Denlinger, Tongfei Qi, Michael A. Hermele, Gang Cao, Daniel S. Dessau “Hallmarks of the Mott-Metal Crossover in the Hole Doped  $J=1/2$  Mott insulator  $\text{Sr}_2\text{IrO}_4$ ”. *Nature Communications* 7,11367 (2016) doi:10.1038/ncomms11367
9. Yue Cao, Justin Waugh, Xiuwen Zhang, Jun-Wei Luo, Qiang Wang, Theodore J. Reber, SungKwan Mo, ZhiJun Xu, Genda Gu, Matthew Brahlek, Namrata Bansal, Alex Zunger, Seongshik Oh, Daniel S. Dessau. “Mapping the orbital wavefunction of the surface states in three-dimensional topological insulators” *Nature Physics* 9, 499–504 (2013) DOI:10.1038/nphys2685
10. T. J. Reber, N. C. Plumb, Z. Sun, Y. Cao, Q. Wang, K. McElroy, H. Iwasawa, M. Arita, J. S. Wen, Z. J. Xu, G. Gu, Y. Yoshida, H. Eisaki, Y. Aiura, and D. S. Dessau “The Non-Quasiparticle Nature of Fermi Arcs in Cuprate High- $T_c$  Superconductors” *Nature Physics* 8, 606–610 (2012)
11. Jacob D. Koralek, John F. Douglas, Nicholas C. Plumb, Zhe Sun, Alexei Fedorov, Margaret Murnane, Henry Kapteyn, Stephen Cundiff, Yoshihiro Aiura, Kazu Oka, Hiroshi Eisaki, Daniel S. Dessau “Laser Based Angle-Resolved Photoemission, the Sudden Approximation, and Quasiparticle-Like Spectral Peaks in  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ ” *Phys. Rev. Letters* 96, 017005 (2006) DOI: 10.1103/PhysRevLett.96.01700
12. Y.D. Chuang, A. D. Gromko, D. S. Dessau, T. Kimura, Y. Tokura “Fermi Surface Nesting and Nanoscale Fluctuating Charge/Orbital Ordering in Colossal Magnetoresistive Oxides” *Science*, Vol. 292, Issue 5521, 1509-1513, May 25, 2001(Originally published in *Science Express* as 10.1126/science.1059255 on April 26, 2001)

#### **D. Synergistic Activities**

1. Co-Chair (2022), Chair (2023) – Selection Committee for first two Mildred Dresselhaus Prizes in Nanoscience or Nanomaterials, American Physical Society
2. Chair – Fund raising committee for the Millie Dresselhaus Fund for Science and Society, American Physical Society (2018-2022)
3. Past-Chair (2018), Chair (2017), Vice-Chair (2016), Chair-Elect (2015), Division of Materials Physics, American Physical Society
4. Principle Investigator - NSF REU Program "Research Experience for Undergrads at Physics /JILA" 2000-present.
5. Co-chair: NSF-DMR Workshop on Midscale Instrumentation to Accelerate Progress in Quantum Materials (2017). Report at [https://www.nsf.gov/mps/dmr/MIQM\\_report\\_v15.pdf](https://www.nsf.gov/mps/dmr/MIQM_report_v15.pdf)
6. Boulder Summer School for Condensed Matter. Co-organizer - School on Superconductivity (Summer 2014)
7. Workshop on Strong Correlations and Angle Resolved Photoemission Spectroscopy – Primary Organizer: Berkeley, (2011) Co-Organizer: Brookhaven (2022) Oxford (2019), Hiroshima (2017), Paris (2015), Hamburg (2013), Zurich (2009), Dresden (2007), Dresden (2005)