

**Thomas R. Lemberger, Professor of Physics**

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**EDUCATION:**

B.S., M.S. and Ph.D. Degrees in Physics: Univ. of Illinois, Urbana – 1973, 75, and 78.

**PREVIOUS POSITIONS:**

Professor, OSU, 1993-present.  
Associate Professor, OSU, 1987-92; Assistant Professor, OSU, 1981-86.  
Acting Director, OSU Materials Research Laboratory, 1988-89.  
Postdoc, University of California, Berkeley, CA, 1978-81.

**AWARDS and DISTINCTIONS:**

IBM Corporation Postdoctoral Fellowship, 1978-79.  
NSF Travel Award to attend NATO Advanced Study Institute, 1980.  
Alfred P. Sloan Foundation Fellowship, 1983.  
Visiting Professor, University of Paris - Sud, Orsay, France, April-July, 1985.  
Invited Visiting Professor, University of Paris-Sud, Orsay, France, June 1-30, 2009.

Advisors: Ph.D.: Donald M. Ginsberg (Illinois); Postdoc.: John Clarke (Berkeley)

External Collaborators: Qi Li and Xiaoxing Xi, Penn State Univ.; Michio Naito, NTT, Japan; Sung-Ik Lee, POSTECH, Korea; Brian Maple, UCSD; J. Mannhart, U. Augsburg; Kathryn Levin, U. Chicago; Dale Van Harlingen, U. Ill.; J.C. Campuzano, UIUC; J. Orenstein, UC Berkeley; Steven Dodge, Simon Fraser U.; I. Bozovic, Brookhaven.

I have supervised 15 students to the Ph.D. degree and supervised three postdocs.

Recent Ph.D. Students: Yuri Zuev, Ph.D. Au 2005, now at Oak Ridge Nat'l Lab.  
Iulian Hetel, Ph.D. Sp. 2007, now at Intel Corp. in Portland, OR.

## Selected Recent Publications.

1. “Evidence for a nodeless gap from the superfluid density of optimally doped  $Pr_{1.85}Ce_{0.15}CuO_{4-y}$  films”, John A. Skinta, TRL, T. Greibe, M. Naito, Phys. Rev. Lett. 88, 207003 (2002).
2. “Evidence for a transition in the pairing symmetry of the electron-doped cuprates  $Pr_{1.85}Ce_{0.15}CuO_{4-y}$ ”, John A. Skinta, Mun-Seog Kim, TRL, T. Greibe, M. Naito, Phys. Rev. Lett. 88, 207005 (2002).
3. “Reflection of two-gap nature in magnetic penetration depth of  $MgB_2$  film”, Mun-Seog Kim, John A. Skinta, TRL, W.N Kang, H.-J Kim, E.-M. Choi, and S.I. Lee, Phys. Rev. B 66, 064511 (2002).
4. “The cuprate pseudogap: competing order parameters or precursor superconductivity,” J. Stajic, A. Iyengar, K. Levin, B.R. Boyce, and TRL, Phys. Rev. B 68, 024520 (2003).
5. “Magnetic penetration depth measurements of  $Pr_{2-x}Ce_xCuO_4$  films on buffered substrates: evidence for a nodeless gap”, Phys. Rev. Lett. 91, 087001 (2003).
6. “Penetration Depth Study of Very Thin Superconducting Nb Films”, TRL, I. Hetel, J. Knepper, and F.Y. Yang, Phys. Rev. B 76, 094515 (2007).
7. “Quantum Critical Behaviour in the Superfluid Density of Strongly Underdoped Ultrathin Cuprate Films”, I. Hetel, TRL, and M. Randeria, Nature-Physics 3, 700-702 (2007).
8. “Crossover from 2D to 3D behaviour in the superfluid density of thin  $YBa_2Cu_3O_{7-\delta}$  films”, Y.L. Zuev, J.A. Skinta, M.-S. Kim, TRL, E. Wertz, K. Wu, and Q. Li, proceedings of Fluctuations & Phase Transitions in Superconductors, Nazareth Ilit, Israel, June 2007; Physica C 468(4), 276-279 (2008).
9. “Superfluid density of superconductor-ferromagnet bilayers”, TRL, I. Hetel, A. Hauser, and F.-Y Yang, 52<sup>nd</sup> Magnetism and Magnetic Materials Conf., Tampa, FL, Nov. 2007; J. Appl. Phys. 103, 07C701 (2008).
10. “Growth control of GaAs nanowires using pulsed laser deposition with arsenic overpressure”, X. W. Zhao, TRL, and F. Y. Yang, Nanotechnology 18, 485608 (2007).
11. “Doping dependent superfluid density in  $La_{2-x}Sr_xCuO_4$  films”, I. Hetel, TRL, A. Tsukada, and M. Naito, in preparation.