

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

David A. Reis, assistant professor of physics, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of physics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	1999	University of Rochester
M.A.	1995	University of Rochester
B.A.	1993	University of California, Berkeley

Professional Record:

2001 – present	Assistant Professor, Department of Physics, University of Michigan
1999 – 2001	Postdoctoral Fellow, Center for Ultrafast Optical Science, University of Michigan

Summary of Evaluation:

Teaching – Professor Reis is a thoughtful and effective instructor who readily takes on new challenges and confidently meets them. His teaching record demonstrates enthusiasm for and dedication to his students. He has successfully taught a broad array of courses, putting special effort into modernization of the junior level optics course. Students give him high ratings and positive comments. He has spent a large amount of time in research instruction and has been an effective research mentor for students at all levels. He has served on many thesis committees and been graduate supervisor for six students.

Research – Professor Reis is one of the leaders of ultrafast x-ray studies of condensed matter. His expertise also includes accelerator and optical physics. His publications include several of the most significant papers that have appeared recently in this field. His unique accomplishment, and lasting contribution, has been to recognize the central role of the dynamics of atomic motion in structural phase transitions and his seminal results are likely to stand as a landmark in the field. They resolve one of the classic long-standing theoretical issues of the Peierls transition relating to the role of anharmonicity. His insightful paper on this topic was published in *Science* in 2005.

Recent and Significant Publications:

- “Ultrafast x-ray scattering in solids,” with A. M. Lindberg in *Light Scattering in Solids IX: Novel Materials and Techniques*, M. Cardona and R. Merlin (eds.), Springer-Verlag, 2006.
- “Atomic-scale visualization of inertial dynamics,” with A. M. Lindenberg, et al., *Science*, 308, 2005, pp. 392-395.
- “Effect of lattice anharmonicity on high-amplitude phonon dynamics in photoexcited bismuth,” with E.D. Murray, et al., *Physical Review B*, 72(6), 2005, p. 060301.
- “Transient strain driven by a dense electron-hole plasma,” with M. F. DeCamp, et al., *Physical Review Letters*, 91(16), 2003, p. 165502.

Service – Professor Reis has made significant contributions to Michigan and to the research community. At the departmental level he has served on the graduate student qualifying exam committee and organized the AMO seminar, among other assignments. He has also served on the organizing committee or was a session chair for eight national or international conferences.

External Reviews:

Reviewer (A)

“...David Reis’ research accomplishments place him in a very elite group. ... It is difficult to imagine a stronger candidate for promotion and tenure.”

Reviewer (B)

“...Dr. Reis is blazing a new sub-field of solid state physics. He is not only [a] person working in this new field, but he is one of about 4 or 5 leaders of this sub-field. Time resolved X-ray diagnostics will have a large impact on solid state physics, chemical physics and bio-physics.”

Reviewer (C)

“By any measure, David’s achievements in the area of condensed matter physics have been exceptional. He has pioneered a new area of study and used his new technical developments in optical/x-ray pump-probe methods (in which he is a world-leader) to investigate problems of broad scientific interest... ..he has clearly demonstrated the levels of independence, creativity and leadership in the field that would earn him tenure at any excellent university.”

Reviewer (D)

“...Reis has been an excellent and internationally recognized leader in the field of ultrafast laser interaction with materials. He has organized workshops and acted as team leader for the LCLS [Linac Coherent Light Source] effort, a position that requires coordination of a large group of scientists...”

Reviewer (E)

“...Dr. Reis is among the most talented scientists [of his generation] working at the interface of condensed matter physics and x-ray science. His work has indeed helped in defining the frontiers in this emerging and growing field.”

Reviewer (F)

“David Reis is well known as a leader and driving force in the emerging field of time-resolved hard X-ray diffraction as a means of accessing dynamics in condensed matter physics. The body of his research as a primary investigator...demonstrates his extraordinary capability as an experimentalist.”

Reviewer (G)

“I am also impressed by Dave’s teaching record and his commitment to teaching and to the students in his classroom. ... The fact that he has already supervised three Ph.D. students so early in his career is an additional indication of Dave’s ability as a teacher at all levels.”

Reviewer (H)

"...based on his creative, novel, and original scientific contributions documented in prestigious and high impact journals, his evident enthusiasm for teaching and a clear vision for his future career, I reiterate my unqualified enthusiasm for David Reis's promotion to the rank of Associate Professor."

Reviewer (I)

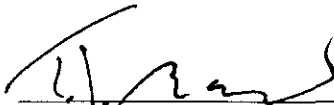
"...he has outstanding communication skills, excellent scientific judgment, and most importantly, he is able to interact positively with other scientists in the field of ultrafast x-ray science to generate large national and international collaborations."

Reviewer (J)

"David Reis has played a key role in the development of this field...he is highly esteemed and his achievements are quite outstanding. ... The scientific success of David Reis is illustrated by a number of outstanding scientific papers in high ranking physics and general science journals. On a list of the most significant papers in the field of ultrafast X-ray science David Reis' name appears many times."

Summary of Recommendation

Professor Reis is one of the leaders in his research area, and has made valuable contributions to our teaching mission. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor David A. Reis be promoted to the rank of associate professor of physics, with tenure, in the College of Literature, Science, and the Arts.



Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science, and the Arts

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