

Sidney R. Nagel Biography

December 21, 2023. Patrick Charbonneau

Sidney Robert Nagel (September 28, 1948—) was born in New York, USA, the son of Ernest Nagel, a philosopher of science at Columbia University, and Edith Alexandria Haggstrom, a trained physicist who worked at Columbia University and later taught at the City College of New York.

Nagel studied at Columbia University, where he obtained a BS in Physics (1969), and then pursued graduate studies at Princeton University, obtaining a MA (1971) and a PhD in Physics (1975) for a thesis entitled *Infrared properties of metals and wavevector dependent local field effects*, completed under the supervision of Stephen E. Schnatterly. He was then a postdoctoral scholar with Jan Tauc at Brown University (1974-1976), before joining the Physics Department at the University of Chicago (1976-77), where he climbed the academic ranks (Research Associate, 1976-1977; Assistant Professor, 1977-1981; Associate Professor, 1981-1984; Professor, 1984-1998; Louis Block Professor, 1998-2000; Stein-Freiler Distinguished Service Professor, 2001-). There, he also notably served as Associate Dean for Division of Physical Sciences and the College (1997 – 2000) and as director of Materials Research Laboratory (1987-1991) and of the Materials Research Center (2006-2009).

Nagel trained as an experimental condensed matter physicist and became interested in glasses during his postdoctoral years. He later used both computer simulations and experiments to study a variety of disordered systems. With Andrea Liu, he formulated the jamming phase diagram, a key conceptual framework that notably led to development of the mean-field theory of simple glasses.

Nagel is a fellow of the Alfred P. Sloan Foundation (1979-1981) and of the American Physical Society (APS, 1988) as well as a member of the American Association for the Advancement of Science (1993), the National Academy of Sciences (2003), and the American Philosophical Society (2020). He notably received the Oliver E. Buckley Condensed Matter Prize of the APS (1999) “for his innovative studies of disordered systems ranging from structural glasses to granular materials”, and the APS medal (2023) “for incisive experiments, numerical simulations and concepts that have expanded and unified soft matter physics”. He is also broadly recognized for his excellence in teaching. He received the Quantrell Award for Excellence in Undergraduate Teaching from the University of Chicago (1996) and the Klopsteg Memorial Award from the American Association of Physics Teachers (1998).