Abstract:
This talk will have two parts. First, I will discuss the impact of software in research, and different efforts to measure it. Software is becoming more important in research, both in terms of software that is part of a single research project, and in terms of software that enables many projects. The role of software gives rise to a large set of interrelated challenges, and some of these, such as incentives, citation, metrics, publication, communities, career paths, and catalogs are closely tied to the impact of specific software. While there are many items that can be measured to understand the impact of specific software packages, those that are easiest to measure are not those that provide the most insight. New methods for measuring software’s impact can be created, but it is very hard to bring them into widespread use. Alternatively, we can use measures that we already have in place for papers. Second, I will informally discuss some experiences I had as an NSF program officer, developing and managing programs that support software in what was the Office of Cyberinfrastructure and then the Division of Advanced Cyberinfrastructure.

Bio:
Daniel S. Katz is Assistant Director for Scientific Software and Applications at the National Center for Supercomputing Applications (NCSA), Research Associate Professor in Computer Science, Electrical and Computer Engineering, and the School of Information Sciences, and Faculty Affiliate in Computational Science and Engineering at the University of Illinois and Guest Faculty at Argonne National Laboratory. Dan’s interest is in the development and use of advanced cyberinfrastructure to solve challenging problems at multiple scales. His technical research interests are in applications, algorithms, fault tolerance, and programming in parallel and distributed computing, including HPC, Grid, Cloud, etc. He is also interested in policy issues, including citation and credit mechanisms and practices associated with software and data, organization and community practices for collaboration, and career paths for computing researchers. He is a developer of the Swift and Parsl workflow systems, co-leads FORCE11 Software Citation Activities, and leads the Working towards Sustainable Software for Science: Practice and Experiences (WSSSPE) community.