

Abstract: Strategies for Community Building in Science Gateways

nanoHUB's experiments and experiences over 15 years

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ABSTRACT

Operated by the Network for Computational Nanotechnology (NCN), nanoHUB.org [1] has been serving the nanotechnology and nanoscience community as a science gateway for 15 years with easy access to computational codes for research and education as well as other educational and technical resources [2, 3]. From the beginning, nanoHUB has carefully instrumented statistics collection which not only allow NCN to monitor and report on the impact of the gateway and its community-contributed content, but which also provide some insight into user behavior. nanoHUB serves 1.4 million visitors annually with more than 15,000 users running over 1 million simulation jobs in the last year. The goals of most gateways revolve around providing or hosting high quality content which draws and grows a vibrant community. nanoHUB operates on a model of community-contributed and community-vetted content, so a key requirement for the gateway is to provide easy deployment for authors contributing content and mechanisms for users to review and rate that content. nanoHUB currently hosts over 5500 items of content including over 400 simulation codes. This content has been contributed by over 2200 authors from the community. With a user base orders of magnitude greater than the number of authors on nanoHUB, there is a huge opportunity to not only grow content through conversion of users to content authors, but also a path to user retention. A key goal for nanoHUB and other science gateways is to become embedded into the day to day workflow of their users and one way to do that is to intensify the involvement of users with the site. That involvement can take a variety of forms from encouraging casual users to progress to more intensive use and/or content contribution to enabling collaboration and participant with the site. This approach and the inherent benefits and concerns are in many ways similar to those experienced by other online communities [4]. nanoHUB provides mechanisms for users to engage with the site in non-passive ways beyond accessing

content. Users can post (and answer questions) directly on the home pages of content items or in a general forum for the site. They can rate and write reviews on content they have used. They can post wishes for enhancement to the site or to simulation code, with the latter being directed to the code developers. They can participate in public and private online groups and in collaborative spaces called projects. nanoHUB currently uses a "virtual economy" incentive system where users earn and spend a virtual currency called "nanos" for activities on the site and after several years of using this incentive system, nanoHUB is re-evaluating its efficacy and applicability to a science community. Outside the online environment, nanoHUB continues a strong outreach program to engage new nano-related communities and to cultivate new users and contributors beyond the current user base. In this talk, we will further elaborate on the mechanisms nanoHUB has utilized to foster community growth, engagement, and retention as well as evaluate the level of success of each method.

Keywords—*nanoHUB; gateways; nanotechnology; community*

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