

# nanoHUB user behavior: moving from retrospective statistics to actionable behavior analysis

Gerhard Klimeck<sup>1</sup>, Gustavo A. Valencia-Zapata<sup>1</sup>, Nathan Denny<sup>2</sup>, Lynn K. Zentner<sup>1</sup>, Michael G. Zentner<sup>1,2</sup>

<sup>1</sup>Network for Computational Nanotechnology

<sup>2</sup>Rosen Center for Advanced Computing

Purdue University, West Lafayette, IN 47907, USA

## ABSTRACT

nanoHUB annually serves 17,000+ registered users with over 1 million simulations. In the past, we have used data analytics to demonstrate that nanoHUB *can* be a powerful scientific knowledge sharing platform. We used *retrospective data analytics* to show how simulation tools were used in structured education and how simulation tools were used in novel research. With the use of such *retrospective analytics*, we have made strategic decisions in terms of tool and content developments and justified continued nanoHUB investments by the US National Science Foundation (NSF). As we migrate towards a sustainable nanoHUB we must embrace similar processes pursued by in similar platforms such as Uber or AirBnB: we need to create *actionable data analytics* that can rapidly support user experience and help grow the supply in the two-sided market platform – we need to improve the experience of providers as well as end-users. This paper describes some aspects on how we pursue user behavior analysis inside the virtual worlds of nanotechnology simulation tools. From such user behavior we plan to derive actionable analytics that influence user behaviors as they interact with nanoHUB.

**Keywords**— *nanoHUB; HUBzero; science gateways; user behavior; analytics; cluster; meander; education*

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