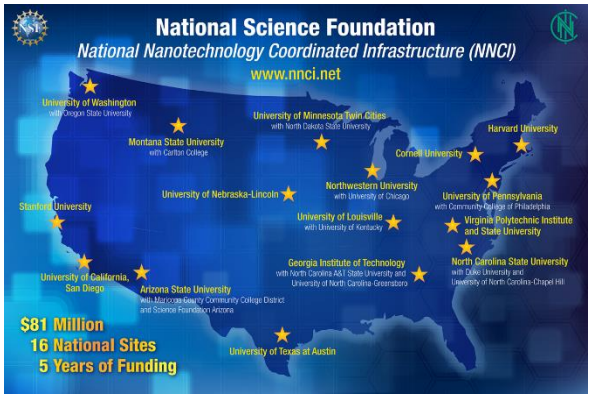
The NSF NNCI KY Multiscale Manufacturing Site – Open for Business

Kevin Walsh[1] and Todd Hastings[2]
[1]*University of Louisville, College of Engineering*
[2]*University of Kentucky, College of Engineering*

Abstract



The Kentucky Multiscale Manufacturing site is part of the National Science Foundation's prestigious National Nanotechnology Coordinated Infrastructure (NNCI) network. The goal of this 16-site national network is to provide state-of-the-art advanced manufacturing capabilities to industry, start-ups and academia all throughout the United States. The state of Kentucky was selected among over 100 applicants in 2016 to become part of this comprehensive NSF initiative. KY Multi-scale is a collaboration between UofL and UK focused on integrating advanced manufacturing technologies over widely different length scales. KY Multiscale combines micro/nano fabrication processes with the latest in 3D printing and additive manufacturing to allow researchers to explore nanotechnology solutions to real-life problems in important areas such as healthcare, energy, the environment, communication, and security. KY Multiscale is the first open-access user facility nationwide with a focus on 3D micro/nano fabrication and true multi-scale integration. In addition to having access to sophisticated tools and expertise, KY Multiscale conducts novel research addressing multi-scale manufacturing and integration challenges with a particular focus on the interfaces between different length scales, materials and manufacturing processes.

Biography

Kevin Walsh is the Associate Dean of Research for the Speed School of Engineering. He is also the Fife Endowed Professor of Electrical and Computer Engineering and the founder of the UofL Micro/NanoTechnology Center, which is part of the NSF NNCI. Dr. Walsh has published over 150 technical papers in the areas of micro/nanotechnology, sensors, semiconductors, microelectronics, and MEMS. His research group has received over $35M of external research funding from DoD, DOE, NSF, NASA, NIH and industry. Prof. Walsh has 12 awarded patents and is the co-founder of 4 technical start-up companies. Dr. Walsh has taught over 20 different courses, advised over 30 completed theses, and has twice been presented with the School's top Research Award. In 2014, he was inducted into the National Academy of Inventors.