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Oak Ridge National Lab

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University of Cincinnati

### LeeAnn Nickerson

Jefferson County Public Schools

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Sullivan University

### Alexis Rich

Manual High School

### Dr. Tim Sands

Purdue University

### Carl Sullivan

Lexmark

### Dr. Nathan Tice

Eastern Kentucky University

### Dr. Qingzhou Xu

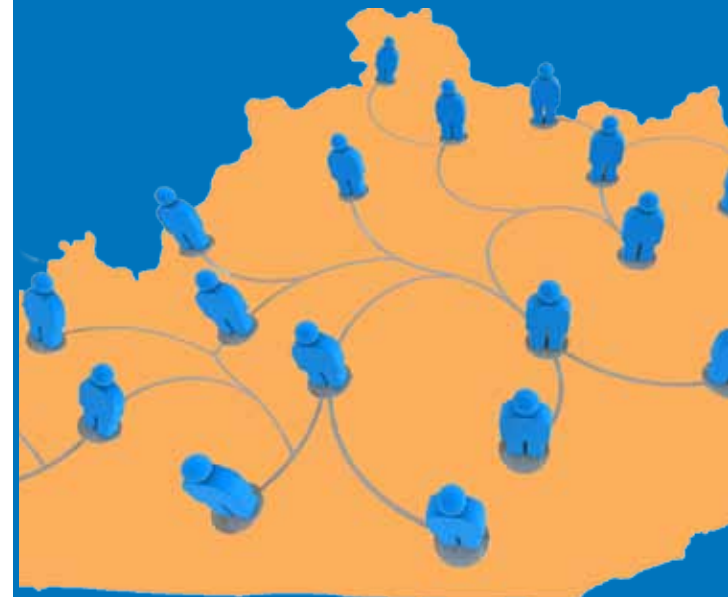
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# KY nanoNET



Connecting Kentucky's  
Micro/Nano Community

Join the Network, visit the  
Ky nanoNET website

[www.kynanonet.org](http://www.kynanonet.org)



### A Virtual eParkway System to Serve the Commonwealth's Micro/Nano Community

The Ky nanoNET (KyNN) is a five-year initiative, funded through the NSF Kentucky EPSCoR Program, for the development of an infrastructure network and support system throughout Kentucky for the specific advancement of micro/nanotechnology and the many fields of research/education that utilize this pervasive technology. The goals of the Ky nanoNET are:

- Better coordinate the many existing micro/nano labs and resources scattered throughout the Commonwealth by developing a comprehensive web-based network and portal system ([www.kynanonet.org](http://www.kynanonet.org))
- Develop a centralized physical core facility for the generation of custom photomasks (KORE)
- Develop a portal-based shared software program (KRUNCH) that will allow researchers across the state access to a wide variety of expensive TCAD tools for general micro/nano/MEMS research and education
- Develop an effective educational outreach program to grow the interest in micro/nanotechnology and MST (math/science/technology) in Kentucky
- Collaborate with industry and state government to promote micro/nanotechnology through the development of programs that promise to impact Kentucky's lagging high-tech economy.

#### Kynanonet.org

Ky nanoNET's eParkway is tying together the numerous research facilities and teams located within the state at the various colleges, universities and industrial links. The Ky nanoNET (KyNN) is developing a network with the purpose of generating an interconnected community of researchers promoting joint collaboration and facilitating the sharing of available infrastructure and information.

#### KRUNCH – The Shared Software Initiative

Through the "KRUNCH" (Kentucky Research Users Nanotechnology Computing Hub) initiative, commercial MEMS and micro/nanotechnology TCAD software packages are freely available to all KyNN academic users, with special outreach to smaller universities. We strive to include as many TCAD software packages as possible in the KyNN network for both Classroom and research environments.

The KyNN is operated out of the University of Louisville Shumaker Research Building, home to the nationally-recognized Micro/Nano Technology Center (MNTC). The MNTC encompasses core facilities for micro and nano fabrication, packaging, metrology & testing. The center includes a 10,000 sq. ft, 7-bay, class 100/1000 cleanroom, the largest in the state of Kentucky.

#### KyNN Participating Nodes:



Eastern Kentucky University Dept. of Chemistry  
<http://www.chemistry.eku.edu/>



UofL Institute for Advanced Materials & Renewable Energy  
<http://louisville.edu/iamre>



Morehead RF Micro Characterization Lab  
<http://www.moreheadstate.edu/>



Murray State Microelectronics Lab  
<http://www.murraystate.edu/qacd/cos/phy/facilities.html>



Nova Center WKU  
<http://www.largechamber.com>



Sullivan University College of Pharmacy  
<http://www.sullivan.edu/pharmacy/NANO-index.asp>



UK Catalyst Research and Testing Center  
<http://crtc.caer.uky.edu/index.html>



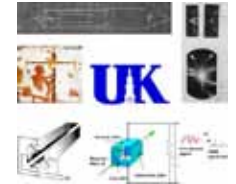
UK Center for Nanoscale Science & Engineering  
<http://www.engr.uky.edu/~cense>



UK Imaging Facility  
<http://www.mc.uky.edu/Sharedresource/electron/index.html>



Center for Advanced Materials (CAM)  
<http://www.kynsepcor.org/cam/>



UK Mass Spectrometry Facility  
<http://www.research.uky.edu/ukmsf/index.html>



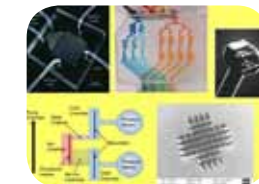
UofL Micro/Nano Technology Center  
<http://louisville.edu/micronano>



UofL Rapid Prototyping Center  
<http://louisville.edu/speed/rpc/>



UofL Wireless & IC Design Laboratory  
<http://crunch.spd.louisville.edu/naber/index.html>



Bioengineering Initiatives UK and UofL  
<http://louisville.edu/speed/engineeringplatforms>

#### KORE – A Statewide Core Infrastructure Improvement Program for Mask Generation

The goal of this component of the KyNN is to establish a true "KORE" (Kentucky Optical REsources) facility for providing custom high-resolution photomasks to all researchers and educators within the Commonwealth and beyond.