Welcome to NACK’s Webinar

Nanotech Works - Alumni Success Stories

NACK is an NSF-funded ATE Resource Center supporting faculty in Nanotechnology Education

Hosted by MATEC Networks
www.matecnetworks.org
NACK is the NSF ATE National Center for Nanotechnology Applications and Career Knowledge

The NACK National Center is located at Penn State University

Funded, in part, by a grant from the National Science Foundation. DUE-08020498
In the **Chat Box**, please type the name of your school or organization, your location, and how many people are attending with you today.
Participant’s Box

Allows you to non-verbally respond to the presenter’s comments.
Let the presenter know if you like what they say with a smile or clap. Raise a hand if you have a question – and then type it into the chat box.
This webinar will have a Poll. Please answer:
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E. Other (please type where in chat box)
NACK’s Webinar Presenter
Dr. Karen Halvorson

Presented by Karen Halvorson, ED.D.
NACK Alumni Network Coordinator
Dakota County Technical College
Nano-Link Center
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480-219-6760
Nanotech Works: Student Success Stories

Outline of Presentation
Introducing Careers in Nanotech...Karen Halvorson
Student Success Stories
- Brandon Harris
- Paul Pennington
- Ines Martin
- Lage von Dissen
- Harley Hart
Alumni Network Resources...Ramie Chackan
Hot Jobs in Nanotech

According to the National Science Foundation (NSF), more than 2 million jobs and 6 million supporting positions will be generated in nanotechnology by 2015.

Data Source: National Science Foundation 2010
Nanotechnology Products
Today & Tomorrow

• Products where nanotechnology plays a key role will grow by an estimated $1 trillion per year by 2015.
• The rate of market increase is expected to show a 25% increase per year.
• By 2020, there will be an estimated $3 trillion in products that incorporate nanotechnology as a key performance component.
• The nanotechnology markets and related jobs are expected to double every three years.

Data Source: Michail Roco 9/30/2010
Examples of Companies That Have Hired Graduates for Micro- and Nanotechnology Jobs

**Biological/Biotech/Medical/Pharmaceuticals**
Bioforce Nanosciences; Boston Applied Technologies; Boston Scientific; Cetero Research Group; GlaxoSmithKline; Harvest Foods; Hershey Medical Center; Ionic Fusion Corporation; Johnson & Johnson; Pace Analytical Services; Philips Medical Systems; Phillips Plastics; Upsher-Smith.

**Chemical/Materials**
3M; Adhesives Research; Advanced Gas Technologies; Advanced Powder Products; Alcoa; Bergquist; Boston Scientific; Crystalplex; Dupont; Illuminex; Ionic Fusion Corporation; Merck; NaturalNano, Inc; Pace Analytical Services; RJA Dispursions; Westmoreland Mechanical Testing & Research.

**Environmental/Energy**
BP Solar; Cosmos Technologies; EnerG2; First Energy; GTS; Neah Power Systems; NDSCS; Plextronics; PPL; Solarity; Spectrum Technologies, Inc.

**Electronics/Communications/Optics**
3M; Advanced Research Corporation; Advantech; Apogee Photonics/CYOICS; Applied Materials Corporation; Carbon NanoProbes; Cyoptics; EnerG2; Fairchild Semiconductor; General Dynamics Robotic Systems; Hutchinson Technologies; Intel Corporation; Keystone Communications; Lockheed Martin

**Components/Devices/Industrial Processing/Equipment**
Carbon NanoProbes; Correge Sensors; Cummins Engines; Dana Corporation; Filtration Systems; Fincor Automation; Hysitron; Judson Technologies; Lutron Electronics; Maxima Technologies; Probes Unlimited.

Data Source: NACK Alumni Network 2010
## Job Titles for Nanotech Careers

<table>
<thead>
<tr>
<th>Biological Laboratory Technician</th>
<th>Nanobiotech Researcher</th>
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</thead>
<tbody>
<tr>
<td>Biofuels Technician</td>
<td>Metrology Technician</td>
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<tr>
<td>Chemical Laboratory Technician</td>
<td>Nanoelectronics Expert</td>
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<tr>
<td>Microscope Operator</td>
<td>Nanofabrication Technician</td>
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<tr>
<td>Scanning Probe Operator</td>
<td>Nano Lab Technician</td>
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<tr>
<td>Scientist Specialist</td>
<td>Nanomaterials Research Associate</td>
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<tr>
<td>Solid State Technician</td>
<td>Nanoscale Fabrication Technician</td>
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<tr>
<td>Cleanroom Technician</td>
<td>Nanoscience Technician</td>
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<tr>
<td>Deposition Technician</td>
<td>Nanotechnologist</td>
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<tr>
<td>Device Technician</td>
<td>Process Technician</td>
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<tr>
<td>Equipment Maintenance Technician</td>
<td>Production Technician</td>
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<tr>
<td>Engineering Technician</td>
<td>Production Scientist</td>
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<tr>
<td>Etch Technician</td>
<td>Quality Control Technician</td>
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<tr>
<td>Failure Analysis Technician</td>
<td>Research Assistant</td>
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<tr>
<td>Laboratory Technician/Manager</td>
<td>Scanning Technician</td>
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<tr>
<td>Lithography Technician</td>
<td>Test Technician</td>
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<tr>
<td>Medical Lab Technician</td>
<td>Thin Films Technician</td>
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<tr>
<td>Materials Science Lab Technician</td>
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<tr>
<td>Medical Devices Technician</td>
<td>Vacuum Technician</td>
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<tr>
<td>Microfabrication Technician</td>
<td></td>
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</tbody>
</table>

*Data Source: NACK Alumni Network, 2010*
## Projected Earnings

<table>
<thead>
<tr>
<th>Degree Duration</th>
<th>Earnings Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-Year Associates Degree</td>
<td>$30,000 - $50,000</td>
</tr>
<tr>
<td>Four-Year Bachelors Degree</td>
<td>$35,000 - $65,000</td>
</tr>
<tr>
<td>Six-Year Master’s Degree</td>
<td>$40,000 - $80,000</td>
</tr>
<tr>
<td>Eight-Year Doctoral Degree</td>
<td>$75,000 - $100,000</td>
</tr>
</tbody>
</table>

Data Source: P.S.U. Center for Nanotechnology Education and Utilization
Nanotechnology Associate Degree Programs

PLUS Programs under Development
Brandon Harris

- Graduate of Penn State Capstone Program via Pennsylvania College of Technology, A.A.S. in Electronics and Computer Engineering Technology, Nanofabrication emphasis
- Working at Fairchild Semiconductor in Mountain Top, Pennsylvania
- Job Title: Etch Process Engineer
- Enrolled at Wilkes University in Wilkes Barre, Pennsylvania to earn B.S. in Chemistry
- Niche: Semiconductor manufacturing
Paul Pennington

- Graduate of Dakota County Technical College in Rosemount, Minnesota; Capstone Program at University of Minnesota; A.A.S. in Nanoscience Technology
- Working at 3M in St. Paul, Minnesota
- Job Title: Lab Technician
- Niche: Nano Composite Materials
Ines Martin

- Graduate of Penn State Capstone Program via Bucks County Community College, A.A.S. in Nanofabrication Technology
- Enrolled at Drexel University in Philadelphia, Pennsylvania to earn M.S./B.S. degree
- Major: Materials Science and Engineering with specialty in Nanomaterials
- Current research: multi-component nanowires for electronic and photonic devices
- Niche: Nanomaterials
Lage von Dissen

- Graduate of Dakota County Technical College in Rosemount, Minnesota; Capstone Program at the University of Minnesota; A.A.S. Nanoscience Technology
- Working at the Nanofabrication Center at the University of Minnesota located in Minneapolis, Minnesota
- Job Title: Principal Laboratory Technician/Process Engineer
- Niche: nanoelectronics, nanomaterials, and nanobio
- Enrolled at University of Minnesota to earn B.S. in Chemistry
Harley Hart

- Graduate of Pennsylvania State University Capstone Program via Community College of Allegheny County, A.A.S. in Manufacturing Technology--Nanofabrication
- Working at the West Virginia Shared Research Facilities in Morgantown, West Virginia
- Job Title: Staff technologist
- Niche: Multidisciplinary
Harley Hart

ALCOA Technical Center
  • www.alcoa.com

Seagate Technology
  • www.seagate.com

Plextronics, Inc.
  • www.plextronics.com

West Virginia University Shared Research Facilities
  • sharedresearchfacilities.wvu.edu
Questions for Panelists?
NACK Alumni Network

- Ramie Chackan
- Career Specialist for NACK Alumni Network
- Director of Career Services for Dakota County Technical College in Rosemount, Minnesota
The National Center for Nanotechnology Applications and Career Knowledge (NACK) at Pennsylvania State University invites all undergraduate degree (associate and baccalaureate) nanoscience technology graduates from colleges and universities across the country to join our NACK Nanotechnology Alumni Network.

**PURPOSE**

The NACK Alumni Network is designed to help nanoscience graduates enhance their professional opportunities, inform them of educational opportunities, and connect them with networking groups.

**BENEFITS**

- Provide online networking opportunities
- Access career resources
- Connect students to alumni mentors
- Keep alumni informed of current events
- Share success stories

**SIGN UP NOW**

NanoMe.org Alumni

NACK Center

NSF
Alumni Network Resources

- Website for alumni of nanotechnology undergraduate education programs across the nation
Alumni Network Resources

- Website for alumni of nanotechnology undergraduate education programs across the nation
- Accessed through NACK website (nano4me.org/alumni)
Alumni Network Resources

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• Shares alumni profiles and success stories
Alumni Network Resources

- Website for alumni of nanotechnology undergraduate education programs across the nation
- Accessed through NACK website (nano4me.org/alumni)
- Shares alumni profiles and success stories
- Connects current nano students to alumni mentors
Alumni Network Resources

• Provides online networking opportunities
Alumni Network Resources

- Provides online networking opportunities
- Offers Career Resource Services for alumni, current nano students, industry and academia
Alumni Network Resources

- Provides online networking opportunities
- Offers Career Resource Services for alumni, current nano students, industry and academia
- Identifies transfer agreements
Alumni Network Resources

• Provides online networking opportunities
• Offers Career Resource Services for alumni, current nano students, industry and academia
• Identifies transfer agreements
• Contains information on nano trends and events
Check Out the NACK Alumni Network
www.nano4me.org/alumni
Questions?
How Can We Better Serve You?

Whether you are joining us live or watching the recorded version of this webinar, please take 1 minute to provide your feedback and suggestions.

http://questionpro.com/t/ABkVkZJhhf
Thank you for attending

NACK’s Webinar

Nanotech Works - Alumni Success Stories

You may find additional resources and free curriculum for nanotechnology at www.nano4me.org and click Educators.
Upcoming NACK Workshops

April 5-7  Hands-on Introduction to Nanotechnology for Educators

May 2 -5  Nanotechnology Course Resources I: Safety, Processing, and Materials

Aug  8-11 Nanotechnology Course Resources II: Patterning, Characterization, and Applications

Go to nano4me.org/educators for further information.
Upcoming NACK Workshops

May 9 – 13  Micro Nano Technology Conference

Go to nano4me.org/educators for further information.
Webinar Recordings

To access this recording or slides, visit

www.matecnetworks.org

Keyword Search:

NACK Alumni Success Stories

You may also find over 100 resources in the NetWorks Digital Library by using the Keyword Search: nanotechnology
NACK Upcoming Webinars

April 29: Nanotechnology in Medicine

May 26: Recruiting Under-Represented Minorities

Visit www.nano4me.org and click Educators and then the Webinar tab for more details about these and other upcoming webinars.
Certificate of Participation

If you attended the live version of this 1.5 hour webinar and would like a certificate of participation, please email Sue Barger at sbarger@engr.psu.edu
Thank you for attending

NACK’s Webinar

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TechSpectives Blog

Webinars

All this and more at www.matecnetworks.org