

Orientation:
Birck Nanotechnology Center

March 2014



BNC Concept

- Engaging **interdisciplinary, societal-scale** challenges and opportunities in healthcare, information access, energy, and the environment with approaches enabled by nanoscale science and engineering
- Community encompassing a very broad span of disciplines in the same space
- Best facility and tools
- Fluid...no “ownership” of space
- Sustainable financial model



BNC Overview

- A **multidisciplinary** center for **collaborative** research
- **160+** affiliated faculty representing **25** academic departments
- **40** faculty, **44** staff and **200+** students resident in the building
- **420** “users” from **117** different research groups



Major Research Themes

- *NanoPhotonics* (metamaterials)
- *Computational Nanotechnology* (home of NSF nanoHUB)
- *NanoElectronics* (Carbon/Graphene, 2D electronics)
- *Bio-Nanotechnology* (with Bindley Bioscience Center)
- *MEMS/NEMS, Nano metrology* (RF and Sensors)
 - *Nano-Plasma* (RF electronics and actuators/control)
- *Nano-Energy* (thermal/thermoelectrics, batteries)
 - *Network for Photovoltaic Technology*
(theory/experiments)
- *Nano Health/Safety* (Weaver/Jurss)



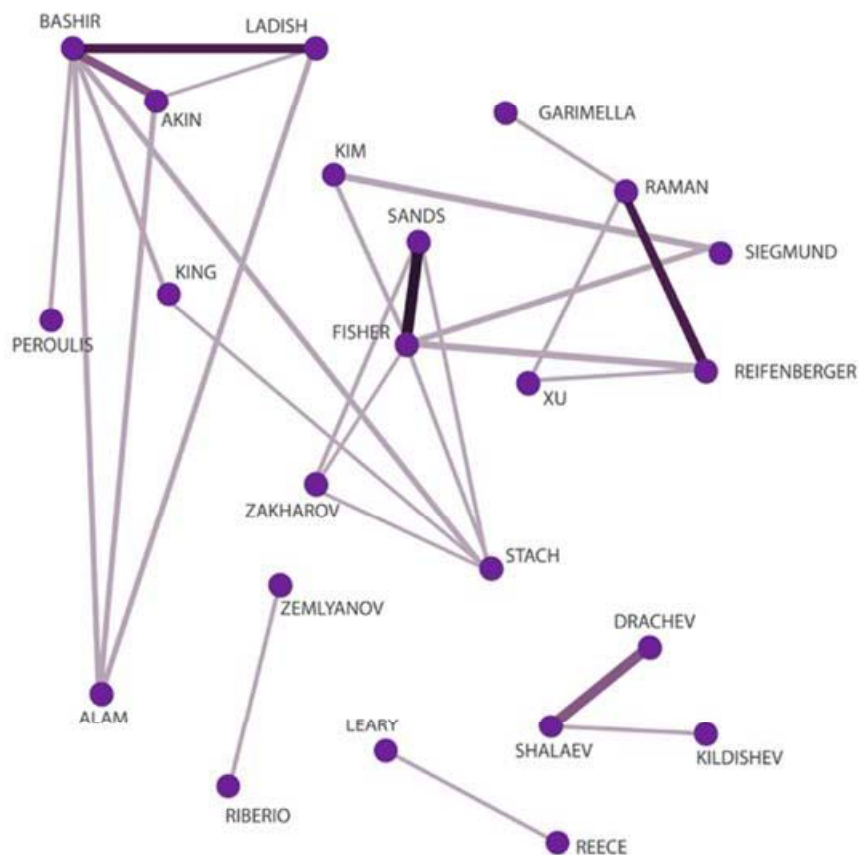
New Center Initiatives

- *Nano-manufacturing*
- *In-vivo, in-vitro devices*
- *Discovery to commercialization*

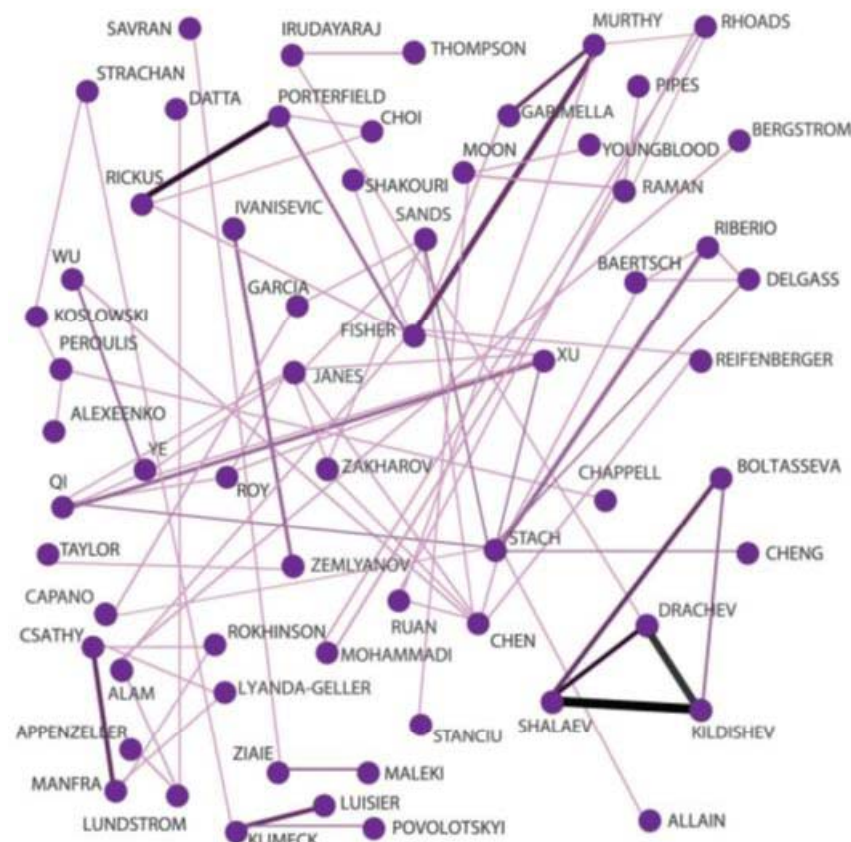


The BNC research network

2006



2011



Joint publications among BNC resident faculty, affiliated faculty and staff scientists SCI journals; Web of Science database



Birck Nanotechnology Center

Leadership



Director:
Ali Shakouri



Deputy Director:
Dimitrios Peroulis

- Suggestions for new shared equipment/facilities
- Suggestions to streamline our operation
- Strategic research directions
- Engage industry
- Technology commercialization ideas



Birck Nanotechnology Center

Engineering Staff



Engineering Staff



- Mike Courtney: *Optical Lithography, Photomasks*



- John Coy: *Epitaxy, XRD, Coral, CVD*



- Geoff Gardner: *Plasma Etch, Molecular Beam Epitaxy*



Engineering Staff



- Dan Hosler:

Thermal Processes, Machining



- Dave Lubelski:

*Physical Vapor Deposition,
Recharge*



- Aamer Mahmood: *Processing, Characterization*



Engineering Staff



- Tim Miller:

UPW, Fume Hoods, Cleanroom Training



- Bill Rowe:

E-Beam Lithography, Microscopes



- Kenny Schwartz: *Physical Vapor Deposition, Process Gases*



Engineering Staff



- Bill Sheldon: *Plasma Etch, Processing Services*



- Gale Lockwood: *Wire Bonding*



Recharge Analysis

- Recharge answers the question:
 - How much do we charge to use equipment and lab/cleanroom facilities?
- Process:
 - Look at all expenses over a year, and the number of uses on each piece of equipment, and find the 'break-even' cost to maintain the tool



- Birck is a multi-user facility
 - Strictly research . . . no classrooms
 - No department affiliations
 - Over 300 unique users
- Citizenship is Key!
 - Shared equipment
 - Shared space



Open Door Policy

- We encourage constructive comments & ideas on how we can improve and make the Birck research experience better
- Please feel free to let us know of both good and bad issues, procedures, protocols, etc.
- Our door is always open . . .

Ron Reger: BRK 2289, 4-6667



Thanks, and enjoy your time with us!



Birck Nanotechnology Center

Facility Staff



John Weaver, Facility Manager

I'm responsible for strategic planning and facility issues

If you need to move equipment into the BNC – laboratory or cleanroom – please see me



I can help you find the right place for the equipment and help you obtain the necessary approvals



Building Operations



- Oversees Research Space Modification
- Manages Research Tool Install Process
- Responsible for Research Space Ambient Control
- Retain Research Space Ambient Trend Data
- Manage BNC Design Specifications & Performance
- Maintains Building Operations Contingency Plans
- Responsible for Building Preventative Maintenance
- Engineering Support for Research Space Issues



- Cleanroom Contamination Monitoring & Control
- Building EMI Monitoring
- Supports Research Tool Installs
- Hazardous Waste & Environment System Owner
- Interface with Trades Needed in Research Space
- Minor Lab Modifications
- Cleanroom Control Sensor Calibration



Building Operations



- Office Layout & Modification
- PIC Requests
- Telephone Requests
- BNC General Training (BNC 105)
- Building access Keys & Cards
- Police Issues
- Janitorial Issues
- Pest Control Issues



- Shipping Receiving
- Building Access Keys & Cards
- Salvaged Equipment
- Enter Work Orders
- Escort In Restricted Areas
- Unlock doors during working hours
- Support Minor Lab Modifications



Birck Nanotechnology Center

Safety Orientation





Stephen Jurss
BNC Safety Manager

- MSDS review
- Hazardous processes review
- BNC 150 trainer
- Emergency Response Supervisor
- Gas Detection System Oversight



Safety Staff



Lisa Reece
***Process and Equip. Owner/
BNC BioSafety Officer***

- BNC Biosafety Officer – Trainer for 208, 208A
- Oversight of BSL 2 labs (2043, 2087)
- Lab Director for IN CTSI
- Trainer - Bio-labs related equipment
 - Cell Culture



Ira Young
Process Logistics

- Supplies consumables and chemicals to both the cleanroom and labs
- Handles hazardous waste collection (containers and labels)
- Handle laundering of cleanroom garments
- Stockroom – AFM tips, tweezers, goggles, etc.



Safety Staff



Guy Telesnicki
Research Assistant

- Bio-cleanroom – training and operations
- Roll-to-Roll system in 1039



Mike Bayless
Engineering Assistant

- Assist Process Engineers in maintenance and repair of equipment
- Trainer- metallization (Lesker and PVD Evaporators)



- Equipment Installation requirements
- High hazard potential processing
- Special waste handling (nano-materials)



First Report of Injury

- Injury – Complete a First Report of Injury (FROI) <http://www.purdue.edu/rem/>
 - [First Report of Injury \(FROI\) Form](#)
 - [Instructions for Completing the First Report of Injury Form](#)



Birck Nanotechnology Center

Business Services



Business Services Staff



Donna Brown:
Business Manager



Cindy Sanders:
Account Clerk



Joanna Allen:
Account Assistant



Gillian Anderson:
Account Clerk



We are here to help!
Room 1014

Business Services Staff



Natosha Whisler:
Recharge Clerk

Coral Uploads
Vendor Set up
Account changes
External vendors
Set up



Christy Daugherty:
Account Clerk

Concur support



Recharge

- Know your account
- Working on multiple projects?
- Log Out



Purchasing

- Ariba or Credit Card?
- Approvals required
- Over \$10K – get us involved early



Travel

- Plan ahead
- Prior approval
- Concur support
- Expense report



Birck Nanotechnology Center

Secretarial Support



Secretarial Support



Heather Anthrop

Secretary IV

Location: Atrium

Phone: 47053

Email: hanthrop@purdue.edu

Our goal is to provide
outstanding customer
service.



Jaime Turner

Administrative Assistant to
the Director of Birck

Location: room 1027

Phone: 43509

Email: jjturner@purdue.edu



Nancy Black

Secretary IV

Location: room 2287

Phone: 48675

Email: blackn@purdue.edu

Travel forms, order supplies, printing posters, weekly emails
(seminars), desk request, ...



NSAC



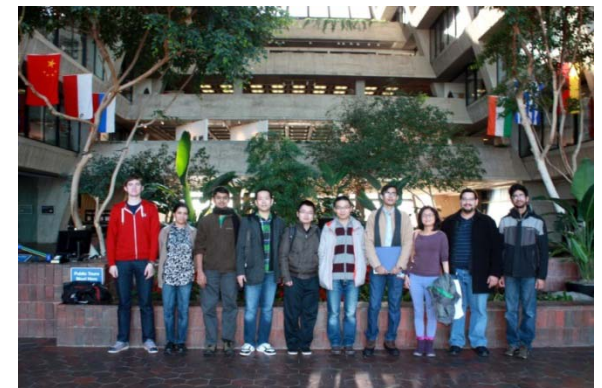
NANOTECHNOLOGY STUDENT ADVISORY COUNCIL
PURDUE UNIVERSITY



What is NSAC?

NSAC is an organization of graduate students at Purdue University who are interested in nanotechnology research . . . currently working in the

Birck Nanotechnology Center



Goals of NSAC

Goals of NSAC

- to increase research awareness
- to nurture professional growth
- to cultivate a sense of community
- to help provide a safe and productive laboratory working environment

Committees:

- *Research Awareness*
 - Field trips, Friday poster sessions, NanoDays
- *Professional Development*
 - Student seminars, workshops, leadership awards
- *Social and Hospitality*
 - Weekly socials, off-campus gatherings, major events
- *Policies and Procedures*
 - Liaison between students & staff



Interested? Join us!



URL: nano.purdue.edu/NSAC



www.facebook.com/groups/BirckNSAC/



[@NSACpurdue](https://twitter.com/NSACpurdue)

nsac@purdue.edu

