

NNF Users Meeting, Fall 2018

October 22, 2018

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3-1976

New equipment update

- Raith EBL
 - Capable of feature sizes down to 20nm
 - Can also be used for imaging
- Rite Track spin coater
 - Automated spinning and baking of up to 6" wafers
- Annealsys rapid thermal processor
 - Up to 1300°C; vacuum and O₂ atmosphere available
- BCl₃ line installed on Plasmalab 100 etcher
 - Will be available once lab re-opens
- YES Oven
 - HMDS primer and vacuum bakes
 - Image reversal currently being verified



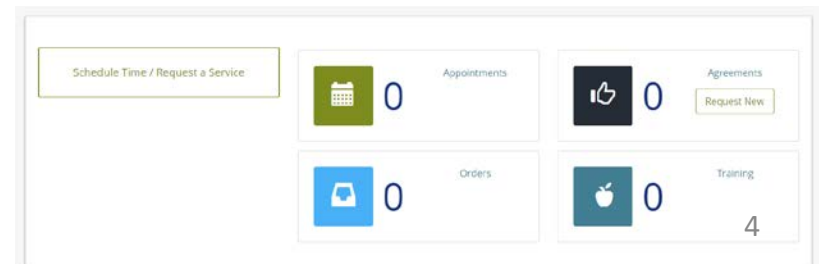
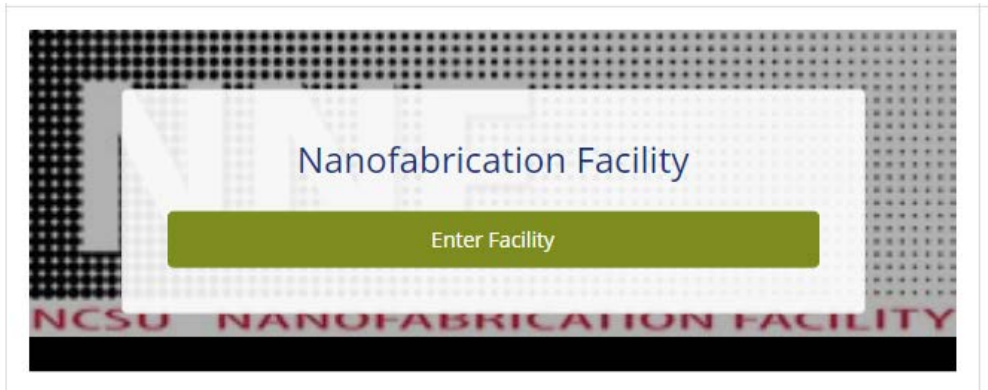
Next round of tools – this fall/winter

- Solvent Spray Tool
 - Ideal for liftoff
- Brush cleaner
 - Can be used for mask cleaning
- Ocean Optics spectrometer
 - Plasma diagnostics
- DAD 323 Dicing saw
 - Will be in the old HF hood location
- Room 106
 - Majority of NNF coursework will be moved to this room
 - Can also serve as backup for critical processes in main cleanroom
 - PECVD capabilities will be available to users (SiO_2 , Si_3N_4)



EUTS → Mendix

- NNF will be transitioning away from the online EUTS system later this year
- The new system (Mendix) will be live January 2, 2019
 - Similar to the system currently used by other University Core Facilities (e.g., AIF)
 - A user training session will be held in December to explain changes in reservations, log-in/out. etc.

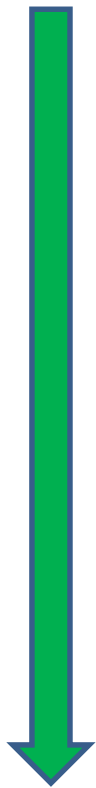


Equipment Training procedure

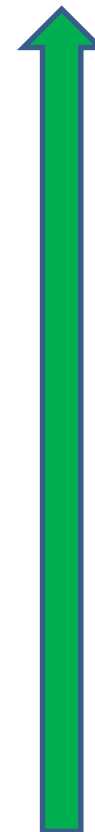
1. Select which tool you will need training on. Only request training on a system needed for your process.
2. Send an email to appropriate staff member requesting training on the tool.
3. Agree upon a time for your training. Verify the tool is available and set up a reservation in EUTS/Mendix for that time.
4. Send a Google Calendar Invite to the trainer to mark the appointment on your calendar.
5. Please show up on time! Trainer will meet you at the tool.

Any problems/issues/questions – please email me at pbarlet@ncsu.edu

Reminder of Proper Gowning Procedure



1. Hair net
2. Face mask
3. Gloves (1st pair)
4. Hood
5. Gown
6. Shoes
7. Clean safety glasses
8. Gloves (2nd pair)



Undergraduate Hires



Jake Gibson



Carmen Procida



Sam Casciani

- NNF will have three undergraduate students helping out in the 2018-2109 academic year
- Welcome Jake, Carmen, and Sam!

Carolina Science Symposium

November 9, 2018

NC State University, Raleigh, NC

Abstract Deadline Nov 2, 2018



- Please consider submitting an abstract to the Carolina Science Symposium
 - Held at McKimmon Center On November 9, 2018
 - NNF is offered a \$250 award to the best poster that references the facility

Other Announcements (1)

- Green CVD tool in the process of being disassembled
 - Phosphine and diborane lines have been removed
 - Cryopump and chamber to be removed in next two weeks
- MRC 245 (old second floor breakroom) being converted to student/industry touch-down space
- MRC 127 being outfitted with electrostatic tile in preparation of establishing electronics testing lab
- Please respect 8pm closing time of the facility
 - No users will be granted access after 7:30pm
 - Those already in facility will be allowed to wrap up their work
- RTNN Ambassadors student program is in the works
 - Volunteer program for interacting with nanotech researchers, companies, etc.

Other Announcements (2)

- NNF has submitted two PowerAmerica Concept Papers
 - One for SiC process block development with X-Fab, one for PA short course development
 - Goal is for NNF to develop competency in SiC power device processing
- NNF is also involved with discussions of NSF Q-AMASE-i effort
 - Optical deposition system and low-temperature electronics testing
- NCSU has selected Omer Oralkan/NNF's MRI pre-proposal for a wafer bonder for submission to NSF
 - Full proposal due to NSF January 2019
- Appointment as Graduate School Affiliate Faculty
 - Please speak to me if you'd like me to serve on your committee

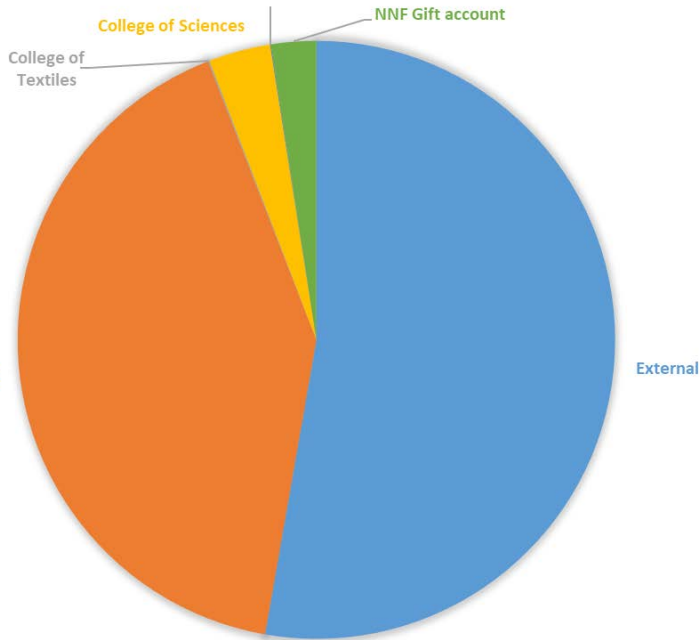
A word on NNF Financials...

- NNF operates financially on a “low-level 3 account,” which means it must have a zero-balance at the end of the fiscal year (June 30)
- This means that more revenue that NNF generates, the more we will have available to spend on tools, repairs, labs supplies, etc.
- Also, more efficient use of the chemicals, supplies, tools, staff time. will leads to more expendable dollars for us to aid you in your research
- **By helping us save money in equipment repair and chemical consumption, you are helping yourself get more supplies and capabilities in NNF!**

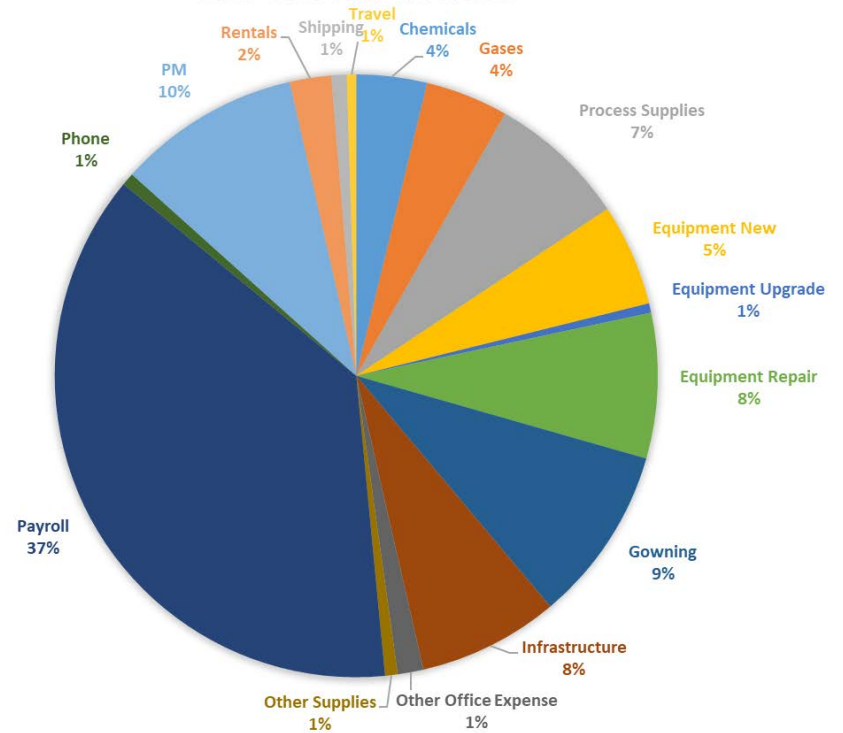
NNF Financial Data for FY 2017-2018

2017-2018 NNF EARNINGS

College of Natural Resources



2017-2018 NNF EXPENSES



Example: NNF earned ~\$323k in FY 2017-2018...

...which means we could spend no more than \$323k in supplies and equipment

Gentle Reminder

When publishing or presenting work that was supported by the NNF tools and/or staff, please be sure to acknowledge us:

This work was performed in part at the NCSU Nanofabrication Facility (NNF), a member of the North Carolina Research Triangle Nanotechnology Network (RTNN), which is supported by the National Science Foundation (Grant ECCS-1542015) as part of the National Nanotechnology Coordinated Infrastructure (NNCI).

This acknowledgement statement can be found on the NNF website:

nnf.ncsu.edu

Thank you!

Concerns/Questions from users?