

Materials Training Requirements

| Tool ID   | Description                                     | Room                | Active CNS Enrollment | LISE/CNS Safety Training | Materials North Safety Orientation | CNS Biosafety Form FM009 | CNS Laser Safety Form FM007 | CNS Nanoparticles Safety Form FM008 | CNS X-ray Safety Form FM004 | Soft Materials Cleanroom Safety Training | Cleanroom Orientation | SEM Training | FIB Basic Training |
|-----------|---|---------------------|-----------------------|--------------------------|------------------------------------|--------------------------|-----------------------------|-------------------------------------|-----------------------------|--|-----------------------|--------------|--------------------|
| HAR007    | XPS System                                      | B15F                | x                     | x                        |                                    |                          |                             |                                     |                             |  |                       |              |                    |
| XRA003    | XRF Analysis System                             | B15F                | x                     | x                        |                                    |                          |                             |                                     |                             |  |                       |              |                    |
| FIB2      | Focused Ion Beam, NVision40, FIB2               | B15H                | x                     | x                        |                                    |                          |                             |                                     |                             |  |                       | x            | *2                 |
| SPM1      | Atomic Force Microscope, Asylum I               | G04                 | x                     | x                        | x                                  |                          |                             |                                     |                             |  |                       |              |                    |
| SPM2      | Atomic Force Microscope, Coax                   | G04                 | x                     | x                        | x                                  |                          |                             |                                     |                             |  |                       |              |                    |
| SPM2      | camera, afm coax                                | G04                 | x                     | x                        | x                                  |                          |                             |                                     |                             |  |                       |              |                    |
| SPM4      | Confocal Raman/SNOM/AFM System                  | G04                 | x                     | x                        | x                                  |                          | *1                          |                                     |                             |  |                       |              |                    |
| MET-3     | FTIR SYSTEM                                     | G04                 | x                     | x                        | x                                  |                          |                             |                                     |                             |  |                       |              |                    |
| MS-18     | Microscope, Optical, Confocal, Olympus FLUOVIEW | G04                 | x                     | x                        | x                                  |                          | x                           |                                     |                             |  |                       |              |                    |
| MS03      | Microscope, Optical, TIRF                       | G04                 | x                     | x                        | x                                  |                          | x                           |                                     |                             |  |                       |              |                    |
|           | FREEZER, Fisher Scientific                      | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| Biohood-1 | Biohood, NUAIR                                  | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| Biohood-2 | Biohood, NUAIR                                  | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|           | C02 Incubator, Thermo Electron                  | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| HAR035    | C02 Incubator, Thermo Electron                  | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|           | CENTRIFUGE, Thermo Electron                     | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|           | Cryo-chamber, Thermo Electron Cryo Plus         | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|           | Freezer, Thermo Scientific                      | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|           | hydroclave, Barnstead / Harvey                  | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| frosty    | ice maker, Scotsman                             | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| HAR028    | Micromanipulator System, Brinkman               | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| HAR022    | Microscope, Optical, Nikon                      | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| MS04      | Microscope, optical, fluorescence, SMZ1500      | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
| HAR028    | Microscope, Optical, Inverted, Cell, Leica      | G05<br>BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |

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|---------|--|------------------|-----------------------|--------------------------|------------------------------------|--------------------------|-----------------------------|-------------------------------------|-----------------------------|--|-----------------------|--------------|--------------------|
| HAR036  | Reciprocal Shaking bath, heated, Thermo Electron | G05 BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|         | Refrigerator, large, Thermo Electron             | G05 BioMaterials | x                     | x                        | x                                  | x                        |                             |                                     |                             |  |                       |              |                    |
|         | CENTRIFUGAL MIXER, Thinky                        | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
|         | Freeze Dryer, VirTis                             | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| LZR2    | Laser Prototyping System, VersaLaser             | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| NPF-1   | Particle Size Analyzer, Beckman Coulter          | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| NPF-4   | PLANETARY BALL MILL, Retsch                      | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
|         | PLASMA CLEANER, SPI                              | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| PL4     | PROFILOMETER, STYLUS, TENCOR                     | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| SW1     | Saw, Automatic Dicing, Disco                     | G06              | x                     | x                        | x                                  |                          |                             |                                     |                             |  |                       |              |                    |
|         | Wet Bench, acid, SLF                             | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
|         | Wet Bench, Solvent                               | G06              | x                     | x                        | x                                  |                          |                             | *1                                  |                             |  |                       |              |                    |
| FIB3    | Focused Ion Beam, Zeiss NVision40                | G07 Metrology    | x                     | x                        |                                    |                          |                             |                                     |                             |  |                       | x            | *2                 |
| XRA002  | Micro CT X-Ray System                            | G27              | x                     | x                        |                                    |                          |                             |                                     | x                           |  |                       |              |                    |
| OL2     | Mask Aligner, AB-M                               | SMCR             | x                     | x                        |                                    |                          |                             |                                     |                             | x  |                       |              |                    |
| RIE-3   | Plasma Cleaner, Anatech                          | SMCR             | x                     | x                        |                                    |                          |                             |                                     |                             | x  |                       |              |                    |
| FH-6A   | Wet bench, acid, FH-6A                           | SMCR             | x                     | x                        |                                    |                          |                             |                                     |                             | x  |                       |              |                    |
| FH-2SP  | Wet Bench, photoresist spinners,                 | SMCR             | x                     | x                        |                                    |                          |                             |                                     |                             | x  |                       |              |                    |
| FH-1S/D | Wet Bench, Solvent, FH-1S/D                      | SMCR             | x                     | x                        |                                    |                          |                             |                                     |                             | x  |                       |              |                    |

1 Required for certain projects.

2 Basic FIB required for advanced training