1. Do not remove any tools or manuals from the lab. These must be kept in the lab for the lab to operate efficiently.

2. Do not remove any supplies. These are purchased for use in SR B14 only.

3. You must read and understand the Nanoelectronics Lab “Emergency Plan” outlined below.

4. You must be properly trained and have approval from Alan Seabaugh before using any equipment in B14. For more information, read the “Equipment Training Procedure” outlined below.

5. Help keep the lab in working order for all users.

You must email Alan Seabaugh if you:

   A. discover anything that is broken

   B. discover that we are short on any supplies

   C. observe someone not following these procedures

6. You must read, understand, sign, date and return the “Lab Personnel Personal Protective Equipment (PPE) Knowledge Certification Form” provided below.

7. Do not bring any food into the lab. Additional details are outlined in the “Food and Drink Policy” below.

8. You must know the location and understand the operation of the two eye washes, safety shower, and spill kit.

9. Do not bring new chemicals into the lab without prior approval from Alan Seabaugh.
10. After you receive approval to bring in a new chemical, you are responsible for printing out, three-hole punching, and adding the MSDS for the new chemical into the red MSDS binder on the table to the right of the fume hood. After you add the MSDS, email Alan Seabaugh to report that this task has been completed.

11. All chemicals (even those you have purchased before) must be logged into our online chemical inventory system using the “Chemical Inventory Form”. 
http://www3.nd.edu/~nano/facilities/facilities.htm

12. You must read and understand the material safety data sheet (MSDS) before using a chemical.

13. You must understand the emergency information posted to the right of the door in SR B14.

NEXT STEPS:

1. Copy these rules into an email, state whether or not you agree to these rules, and send to Alan Seabaugh.

2. Read, understand, sign, date and return the PPE Knowledge Certification Form to Alan Seabaugh (You may submit a signed hard copy, email a photo of the signed document, or email a copy with your electronic signature.)

3. Request instrument training by emailing Alan Seabaugh.

Updated 01.30.17
In case of Emergency

Step 1: Call 911 (574-631-5555 from a cell phone)
Step 2: If necessary, evacuate the lab or building
Step 3: Call Alan Seabaugh
   Alan: 574-631-4473 (office); 574-485-7816 (cell)
Step 4: Send an Emergency Email Notification to:
   SRB14 Google Group
   Email address: SRB14-LIST@ND.EDU

What is the purpose of step 4?

- to notify all B14 users of the emergency
- in the event of evacuation, to make sure that all users are accounted for

In case of Evacuation

Step 1: Exit the building
Step 2: Send an Emergency Email Notification to SRB14 Google Group
   Email address: SRB14-LIST@ND.EDU

Updated 04.18.17
To obtain card swipe access to the Nanoelectronics Lab, Stinson-Remick B14, you must be trained. First, contact Alan Seabaugh and request access. After approval, you will be put in contact with the student/postdoc who is in charge of the equipment that you need.

You are not authorized to use any piece of equipment in SR B14 independently until you receive final approval from Alan Seabaugh.

After you have completed training with the student/postdoc, schedule an examination with Alan Seabaugh (depending on the equipment). The purpose of this exam is for you to demonstrate competency on the specific piece of equipment. Prior to this meeting you should go over the documents that describe the equipment in detail on the Nanoelectronics Lab facilities webpage:

http://www3.nd.edu/~nano/facilities/facilities.htm

You should be able to demonstrate competency with the procedures and equipment. For example, to demonstrate competency on the probe stations:

1. You should know where the probe station vacuum switches are and how they are used.

2. You should know the three probe types, when to use the various probes, how defective probes are disposed of, how probes are cleaned, and how to replace them. You should be ready to demonstrate that you can do these tasks.

3. You should be able to explain how the triaxial guarding in current-voltage measurement system works and why it is needed.

Once you have passed this training, agreed to the “Rules for Accessing the Nanoelectronics Lab”, signed the “PPE Knowledge Certification form” you can get card access by filling out the form on this website: https://keys.ee.nd.edu/

Access will then be approved by Alan Seabaugh.

Updated 01.30.17
P.I. Alan Seabaugh  
Lab: SR B14  
Department: Electrical Engineering

Date: 01-30-2017

NOTE: (1) Closed-toed shoes are required to work in this lab.

(2) You must be properly trained and have approval from Alan Seabaugh before using any equipment in B14, including the fume hood for wet chemistry.

❖ Scenario: Using solvents

PPE Required: goggles, gloves (either latex or nitrile, depending on the solvent), fume hood

Purpose of PPE: To protect your eyes, hands, and lungs from a solvent splash or spill and vapors

❖ Scenario: Using Acids/Bases

PPE Required: goggles, gloves, lab coat, fume hood

Purpose of PPE: To protect your eyes, hands, arms, and lungs from an acid/base splash or spill and vapors

❖ Scenario: Filling the Cascade probe station dewar with liquid nitrogen

PPE Required: Insulated gloves, goggles, lab coat

Purpose of PPE: To protect your hands, eyes and arms from a liquid nitrogen splash or spill

❖ Scenario: Using a drill or solder iron

PPE Required: goggles; if you have long hair, pull it back with a hair band
Purpose of PPE: To protect your eyes from flying debris; to prevent your hair from getting caught in the drill

❖ Scenario: Removing items from the hot plate or vacuum oven

PPE Required: goggles, latex or nitrile gloves at $23 < T < 60 \degree C$; insulated gloves at $T > 60 \degree C$

Purpose of PPE: to protect your eyes from hot materials that could splatter and to protect your hands from burns

❖ Scenario: Using the glovebox

PPE Required: Clean gloves (either latex or nitrile)

Purpose of PPE: To keep the inside of the glovebox gloves clean, and to protect you from glovebox gloves that are potentially contaminated.

❖ Scenario: Changing the coolant in the Temptronic ThermoChuck cooling unit

PPE Required: goggles and gloves

Purpose of PPE: to protect your hands and eyes from coolant

❖ Scenario: Using any one of the four probe stations or the optical microscope

PPE Required: None

By signing below, I certify that I understand: what PPE I am required to use in this lab, its limitations, how to put on, take off, care for and maintain this PPE.

Signature  NetID  Date

I certify that the above employee(s) understand the required items listed above as indicated by his/her signature and/or performance to me.

PI or designee

Signature_________________________Date________
1. No food is to be consumed in the lab

2. No drinks are to be placed on lab benches or work surfaces.

First and foremost, rules 1 and 2 address health and safety concerns. The researchers in SR B14 work with many new materials with unknown long-term health effects.

Second, these organic substances present significant contamination concerns for our devices. This must be avoided.

Note: Regarding rule 2, you may wish to have water or coffee when you are in a sustained period of testing. It is ok to bring a water bottle or coffee into B14, HOWEVER, it cannot be on a lab bench, computer desk, or sitting on or adjacent to any equipment or carts. Place your drinks in your backpack or computer bag. Then, step outside to drink, and return the drinks to your backpack or computer bag between uses. If the liquid is not in a thermos or bottle it is ok to place it temporarily on the bookshelf next to the door. Be sure to empty any containers and put them in the trash before you leave.

If you find any food or drinks left out in B14, please move them to the sink area and send an email to Seabaugh.1@nd.edu.

Updated 01.30.17
Emergency Information

The user understands the:

- emergency info posted at the door and evacuation meeting location.
- location and use of the two eye washes.
- location and use of the safety shower.
- location and use of the spill kit.
- location and use of PPE.

Equipment

The user has completed training with the student/postdoc assigned to the specific piece of equipment.

The user has completed their final test on the equipment with Alan Seabaugh

Chemicals

The user understands how to log new chemicals into the chemical inventory

The user understands the location of the MSDS for each chemical

Forms to Complete

The student has read, signed and returned via email the “Rules you must agree to follow for access”

The student has read, signed and returned the PPE Certification Form

Updated 01.30.17