

summer undergraduate research fellowship

# SURF<sup>2014</sup>

so many choices so little time...



**NIST**  
National Institute of  
Standards and Technology  
U.S. Department of Commerce

# 2014 Summer Undergraduate Research Fellowship (SURF)

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# SURF Orientation Agenda DRAFT

May 27, 2014

Administration Building, Green Auditorium

- 8:45 AM Badging/Guest Worker Paperwork review
- 9:00 AM Introductions (SURF Directors & students)
- 9:20 AM NIST Overview (Lisa Fronczek)
- 9:40 AM SURF Program (Bob Shull & Clarissa Ferraris)
- What to expect
  - How to get the most out of it
- 10:00 AM Stretch break (Terrell Vanderah)
- 10:10 AM Introduction to Living in Quality Suites  
(Al Scarlett & Kamal Ahmed, Quality Suites)
- 10:30 AM Introduction to the NIST Library (Amanda J Malanowski & Stacy Bruss)
- 10:45 AM Safety
- 11:15 AM Split into groups:  
For those that completed the online training – head off to the cafeteria to sign Guest Researcher & IT paperwork and get lunch
- For all others - Information System Security (Carolyn Schmidt, Office of Chief Information Officer) & Physical Security
- NOTE: This is **not a free lunch**. We will be walking over to the NIST Cafeteria. You can buy your lunch or pack a lunch and bring it with you.*
- 1:50 PM Professional Behavior & Dress (Chris White & Cindi Dennis)
- Dress Code here at NIST, etc.
  - Professional Conduct - Communications, e-Mail, Telephones, & Government Property
- 2:50 PM General Announcements (Lisa Fronczek) & OU-Specific Comments/Instructions
- 3:20 PM Off to Advisors (or to get a NIST badge – for selected bunch of students)  
Listen for an announcement on how you will get to your advisor
- 5:00 PM End of Work day

**HAVE A GREAT SUMMER!!**

# SURF 2014 Program Directors

| <i><b>OU</b></i>     | <i><b>Director</b></i>  | <i><b>Phone</b></i> | <i><b>Building</b></i>           | <i><b>Room</b></i>               | <i><b>Email</b></i>                  |                             |
|----------------------|-------------------------|---------------------|----------------------------------|----------------------------------|--------------------------------------|-----------------------------|
| <b>CNST</b>          | John Unguris            | x3712               | Instr East (216)                 | A239                             | john.unguris@nist.gov                |                             |
|                      | Kartik Srinivasan       | x5938               | Instr East (216)                 | B157                             | kartiks@nist.gov                     |                             |
| <b>EL</b>            | Clarissa Ferraris       | x6711               | Bldg Research (226)              | B360                             | clarissa.ferraris@nist.gov           |                             |
|                      | Lisa Fronczek           | x6633               | Metrology (220)                  | B314                             | lfronczek@nist.gov                   |                             |
|                      | Tania Ullah             | x8410               | Bldg Research (226)              | B108                             | tania.ullah@nist.gov                 |                             |
|                      | Chris White             | x6016               | Bldg Research (226)              | B364                             | christopher.white@nist.gov           |                             |
| <b>ITL</b>           | Isabel Beichl           | X3821               | Technology (225)                 | B152                             | isabel.beichl@nist.gov               |                             |
|                      | David Griffith          | X3512               | Chemistry (222)                  | A205                             | david.griffith@nist.gov              |                             |
|                      | Liz Lennon              | X2832               | Technology (225)                 | B257                             | elizabeth.lennon@nist.gov            |                             |
|                      | Bj Lide                 |                     |                                  |                                  | bjlide@nist.gov;<br>bjlide@gmail.com |                             |
|                      | Charles Sheppard        | x3269               | Technology (225)                 | A221                             | charles.sheppard@nist.gov            |                             |
| <b>MML/NCNR</b>      | Catherine (Kate) Rimmer | X3651               | Adv. Chemical Science Lab. (227) | A149                             | catherine.rimmer@nist.gov            |                             |
|                      | <b>ChemBio</b>          | Chris Szakal        | x3816                            | Instr. West (217)                | A211                                 | christopher.szakal@nist.gov |
|                      |                         | Mary Satterfield    | x5364                            | Adv. Chemical Science Lab. (227) | A213                                 | mary.satterfield@nist.gov   |
| <b>MatSci</b>        | Julie Borchers          | X6597               | NCNR (235)                       | E105                             | julie.borchers@nist.gov              |                             |
|                      | Bob Shull               | x6035               | Materials (223)                  | B150                             | shull@nist.gov                       |                             |
|                      | Terrell Vanderah        | x5785               | Materials (223)                  | B214                             | terrell.vanderah@nist.gov            |                             |
| <b>PML</b>           | Uwe Arp                 | x3233               | Radiation Phys (245)             | B111                             | uwe.arp@nist.gov                     |                             |
|                      | Joe Kopanski            | x2089               | Technology (225)                 | A313                             | joseph.kopanski@nist.gov             |                             |
|                      | Cameron Miller          | x5444               | Admin (101)                      | A1005                            | ccmiller@nist.gov                    |                             |
|                      | Richard Steiner         | X4226               | Physics (221)                    | A259                             | richard.steiner@nist.gov             |                             |
|                      | Paul Lett               | x6559               | Instr East (216)                 | B127                             | paul.lett@nist.gov                   |                             |
| <b>Admin. Coord.</b> | Anita Sweigert          | x4201               | Physics (221)                    | B160                             | anita.sweigert@nist.gov              |                             |



# Transportation

The bus will stop at the following NIST buildings (**in this order**) - both in the morning and evening

1. 215 (AML – circular driveway)
2. 235 (NIST Center for Neutron Research)
3. 223 (Materials)
4. 226 (Building Research)
5. 101 (Admin Bldg.)

## ***AM - Bus to NIST:***

**Tuesday & Wednesday & Thursday (May 27, 28, & 29)** - Two Buses will arrive at Quality Suites to pick up students at 8:00 am. After showing photo ID and obtaining a temporary NIST pass from one of the SURF Directors waiting in the Quality Suites lobby, please board the bus. When the bus fills up, it will leave to make the trip to NIST. Buses not full will only wait 10 minutes before leaving at 8:10 am. On Tuesday, the bus will drop all students off at the Admin Bldg. On Wednesday, the bus will stop at the buildings listed above.

**Friday, May 30 until August 8: Students Will Need to Show Numbered BUS PASSES to Driver upon Boarding (Make sure that you have your NIST ID)**

One Bus to Quality Suites will pick up students with a “**RED SURF BUS PASS**” at **8:00 am**. The Bus will leave for NIST when full. The bus will only wait 10 minutes before leaving at 8:10 am. At **8:45 am** there will be a second pickup of students having a “**GREEN SURF BUS PASS**”.

*The bus will not wait for stragglers! If you are late, you must find your own transportation, walk to Shady Grove Metro and then transfer to the NIST shuttle, take a bus, or walk!*

## ***PM - Bus to Quality Suites:***

***FYI - Buses will wait only 10 minutes at the first stop before leaving for the other stops.***

**Tuesday & Wednesday & Thursday (May 27, 28, & 29)** Two Buses will arrive for afternoon pickups starting at 5:10 pm. All Buses will pick up students in the building order listed above.

**Friday, May 30 until August 8: Students must Show Numbered BUS PASSES to Driver upon Boarding**

Following the building order listed above: 1) At **5:10 pm**, the “**RED SURF BUS PASS**” bus will start afternoon pickups, and 2) At **5:45 pm**, “**GREEN SURF BUS PASS**” bus will start its round.

**ON THURSDAYS ONLY (= seminar days):** Students with a “**RED SURF BUS PASS**” will **ONLY** be picked up at the Administration Building (Bldg. 101) at **5:10 pm** to go back to Quality Suites. **At 5:45 pm** a second pickup of students with “**GREEN SURF BUS PASS**” will start in the usual building order listed above.

### ***General Metrorail and Metrobus Information***

To help you get around the area by Metrorail or Metrobus, the Washington Metropolitan Area Transit Authority has a good website - <http://www.wmata.com>

### ***Metro/Shuttle***

Bus transportation to Washington and other areas of recreational interest is slow and may not be the most cost efficient; Metrorail service to Washington is a more convenient option. The closest Metro station to NIST is Shady Grove station located on the Red Line. Buses from Shady Grove Metro operate to most areas of Gaithersburg during both daytime and evening hours, and NIST operates a special shuttle bus to the station at half-hour intervals during normal working hours.

NIST provides shuttle service for official visitors and staff to and from the Shady Grove Metro Station. The service runs from 6:45 am to 6:00 pm daily between Shady Grove Metro Station and the Administration Building (101) at NIST. The shuttle picks up at the front of the Administration Building, and drops off on the eastside of the Shady Grove Metro). From Metro, look for the NIST shuttle stop at the 4th kiosk on the east side (turn right after exiting the turnstiles, bear right after exiting the pedestrian tunnel) of the Shady Grove Metro Station at 15 and 45 minutes past the hour from 6:45 am to 6:10 pm. The shuttle departs from the front of the NIST Administration Building to head to the Metro station at 5 and 35 minutes past the hour. (e.g., 7:05 a.m.) from 7:00 a.m. – 6:00 p.m. (last run to Metro)



## **Montgomery County Ride-On Buses**

Details on fares and schedules are available at  
<http://montgomerycountymd.gov/content/dpwt/transit/>

Phone: 240-777-7433  
Fax: 240-777-5801  
240-777-5869(TTY)

Montgomery County DPW&T  
Division of Transit Services  
101 Monroe Street, 5th floor  
Rockville, Maryland 20850

Montgomery County Ride-On buses connect with the Metro system at the Shady Grove and Rockville stations, two locations convenient to the SURF housing locations and NIST. Several routes are available for SURF students to reach NIST and places such as Lakeforest Mall, as well as other areas in the County.

*Individual route schedules:*

<http://www.montgomerycountymd.gov/dot-transit/routesandschedules/rideonroutes.html>

*Fare information at:*

<http://www.montgomerycountymd.gov/DOT-Transit/routesandschedules/fares/fares2.html>

Single-ride fare is \$1.80, exact change is required (However, it is \$1.60 if you use the SmarTrip card). Multiple-fare tickets at a discount can be purchased online (see link above) or at the Giant food store across the street from NIST (see map on page 10). NOTE: Monthly passes cost \$45 per month.

**Note: Google maps (maps.google.com) has a nice feature that lets you get directions using public transportation.**

## Security at NIST

The NIST Police, headed by Clark Price, Chief, are REAL police with a federal mandate. If you get into trouble with them or get a speeding ticket, you will have to defend yourself in a Federal court. Please give them the respect that they deserve.

### **Badges**

- Badges (permanent or temporary) **must be worn** whenever you are on campus.
- While you are wearing the temporary SURF badge, you must carry a photo ID on you at all time and be prepared to show it if anyone asked for it.
- Each of you will receive a folder (from your SURF Director) containing your entire set of security forms and an instruction sheet of places and times to be to complete the badge process. The process is a two-step (one-day usually) process starting in the Administration Lobby
  - A trip to the **Office of Security** {Administration Building (101), Room A01} for fingerprinting and processing of paperwork, then
  - A stop by the room next to it, to take a picture for your NIST ID and then you will receive your badge.

### **Parking**

- If you are planning on driving your car to work, you should apply for a NIST Parking permit.
- Things to keep in mind:
  - The NIST Police are responsible for the operation and enforcement of established parking programs at NIST.
  - Enforcement is accomplished through the use of warning notices and violation notices.
  - The NIST Police enforces parking and violation notices are accountable to the U.S. District Court.
- To obtain NIST Parking Permits, you must present a NIST identification card and valid registration for each vehicle.

### **NIST Gates**

Gate A (West Diamond Rd) is staffed 24 hours by police officer out of hours with after-hours access and is open after normal operating hours (6 a.m. – 7:00 p.m.) to those with a current NIST ID. Gate B (Quince Orchard Rd) is open for exit only 11:00 a.m. to 7:00 p.m. Gate C (Quince Orchard Rd) is open for entry only from 6 a.m. to 3:30 p.m. Gate F (Muddy Branch Rd) is open for entry and exit from 7 a.m. to 6:30 p.m.

NOTE: By default, SURFers will **not** have after-hours access to the NIST site. If you must be here occasionally after-hours make sure that your advisor escorts you to the gate because he/she must sign you out.

### ***Wildlife***

NIST is home to about approximately 200 deer, 300 geese, numerous (another word for not counted!) rabbits, groundhogs, birds, and fox. Although these animals are somewhat used to the human traffic around here, **they are wild!** **Please do NOT approach the animals or attempt to feed them.**

The geese nesting season usually spans the period from April through June – so you may encounter some MEAN geese. This means that the goose's nest is nearby and you have walked into his/her territory. If a goose hisses at you, try to back away from it slowly and try a new path.

The deer usually begin having their young – fawns - around mid to late May and continues through early August. Do not worry about fawns that are left by themselves for extended periods of the day. They have not been abandoned – in fact the adult deer leave the young so that they don't attract attention of their predators. The mother deer may check on the baby fawn only one or two times during the day but will pick them up towards the evening.

# Information System Security

## ***NIST Policy on Information Technology Resources Access and Use***

### ***Additional responsibilities***

- Ban on Use of Skype Internet Telephony Software on NIST Computers and Networks
- Use of Dropbox Internet File Hosting Service Prohibited
- Ban on Connecting Personally Owned Computers to the NIST Network
- Use of Cloud Services
- Use of personally owned computers on wireless Visitor Network (VISNet) prohibited
- Automatic E-mail Forwarding is prohibited
- Use of peer-to-peer Music/movie file sharing prohibited
- Use of Windows Vista prohibited
- Safeguarding Personally Identifiable Information
- Incident Reporting, including the Loss of Personally Identifiable Information
- Safeguarding Data on Foreign Travel
- Mobile Devices and Removable Media
- Risk Management
- Web Technologies

### ***Information Technology (IT) Security Support***

IT Knowledge Base <http://itac.nist.gov>

iT Assistance Center <http://itac.nist.gov>

Operating Unit IT Security Officer <https://inet.nist.gov/oism/poc.cfm>

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## ***Policy on Information Technology Resources Access and Use***

*Originally Posted: October 8, 1998*

*Last Updated: October 9, 2003*

**Status:** Approved

### **Policy**

All information technology users must sign a document ([https://inet.nist.gov/oism/directives/upload/memo\\_accessnuse\\_sign1.pdf](https://inet.nist.gov/oism/directives/upload/memo_accessnuse_sign1.pdf)) stating that they acknowledge having read, and agree to abide by, this policy.

### Introduction

NIST provides access to information technology resources, including computers, networks,

and peripheral devices, to support the NIST mission. The following guidelines apply to all who use and access NIST information technology resources.

### Acceptable Use of NIST Information Technology Resources

This section describes uses of NIST information technology systems that are considered acceptable by NIST management. The general criteria used in deciding acceptable use are whether the application is of benefit to NIST, whether it complies with government laws and regulations, and whether it does not adversely affect others. NIST allows the personal use of the Internet as long as it does not interfere with official business, increase cost to NIST or embarrass NIST. Questions about the use of NIST information technology resources that are not explicitly mentioned in this policy should be directed to NIST management.

NIST information technology resources may be used in the conduct of NIST research, in the administration and management of NIST programs, and in the dissemination of the results of NIST work. Examples of such use of NIST information technology include, but are not limited to:

- Computation, modeling and simulation, and support of experiments needed to accomplish NIST research, including research on information technology systems;
- Analysis and storage of data, including experimental data, output from models, and administrative data;
- Visualization of the output from models and experiments;
- Preparation of reports, papers, memos, correspondence, databases, graphics, displays, presentations, and any other products of NIST work;
- Management of NIST operations and staff.

NIST information resources may be used to communicate and exchange information with others located at NIST, and elsewhere, to share information related to the NIST mission. This includes researchers at other institutions, customers in industry and elsewhere, vendors and companies with products of interest to NIST, other government agencies, and the public. Examples of acceptable communications include:

- Disseminating appropriate information related to NIST mission topics electronically to our customers in industry, government, universities, and the public around the world;
- Communicating by electronic mail or other means with research colleagues, customers, other government agencies, and vendors for purposes of NIST business;
- Accessing public information available on the Internet, or elsewhere, related to NIST research and the mission of NIST;
- Obtaining software patches, and updates from vendors, public domain software repositories, and other sources, provided such software is obtained, checked and tested, and installed in accordance with U.S. copyright regulations, the license for that software, and NIST security policies;
- Participation in forums, news groups, and other information exchanges for the purpose of furthering the NIST mission or improving the professional knowledge or skills of NIST staff.

Software from the Internet and other public sources, and installing unnecessary software from any source, increases security risks to NIST networks and computers by potentially including

things such as harmful viruses, back doors, and mechanisms specifically designed to defeat firewall protection. Users must follow the guidelines established by the NIST IT Security Office when downloading software from the Internet:

- Only install software that will be used for work-related functions.
- Only install or run software that was written by well-known, established sources. At a minimum, you should be able to identify the original source of the software and validate that you can locate and communicate with the author or company to discuss problems that might arise.
- Make sure anti-virus software is installed, set to auto-protect, and maintained with current anti-virus definitions before installing any software on NIST computers.
- Scan downloaded files for viruses before installing and running them. Generally 'shrink-wrapped' commercial software should be free from viruses (although some manufacturers have distributed infected software).

NIST software may be installed on non-NIST computers for work-related purposes (e.g. to work from home). NIST software must be removed from non-NIST computers when the information technology user is no longer associated with NIST or when the information technology user no longer needs the software for work-related purposes. This requirement does not apply to NIST software where the software usage license allows for free public distribution.

### ***Acceptable Access to Information Technology Resources***

NIST communications facilities may be used to provide access to NIST information technology systems and those of other organizations for authorized purposes. Examples of authorized access to systems include:

- Access to NIST systems and networks from off-site locations for users with specific needs for such types of access, such as access when on travel or from home;
- Access to academic, government, and industrial computer systems for accomplishing joint projects, where that access is authorized by the owner;
- Access to academic computing facilities for taking courses.

To ensure accountability of actions and resources, each person who has access to a NIST information technology system must have an individual account. Sharing of accounts and passwords or authorization methods is prohibited, except in special cases such as email accounts for the operation of special services supported by a team of people. Access to NIST information technology resources requires formal written authorization by a user's manager. The authorization should specify the duration of the access to the NIST resource, acceptable use of the NIST resource, and a rationale for granting access to NIST information technology resources. A copy of the authorization and a copy of this policy should be given to the user.

General access to public NIST information technology resources, such as Web, bulletin boards, public anonymous ftp, Mosaic, gopher, or other services used by NIST to disseminate information to the public requires no special authorization. However, misuse of these services or attempts to exceed authorized access is subject to the same penalties as other unacceptable uses described below.

## ***Unacceptable Use of NIST Information Technology Resources***

The use of NIST systems and networks in a manner which is unacceptable may subject the person(s) involved to loss of all privileges to use NIST systems, may result in other disciplinary sanctions up to and including dismissal, or may result in criminal prosecution. Unacceptable uses of NIST systems and networks include, but are not limited to:

- Commercial or business use for the profit of an individual, or company, or other use of NIST systems not approved by a NIST manager as essential to the NIST mission;
- Any use of NIST information technology resources in order to obtain access to any network or system at NIST, or elsewhere, for which the person has not been authorized, or in a manner that knowingly violates the policies of the owner of the network or system;
- Any activity that interferes with the legitimate activities of anyone using any NIST systems or networks, or any other network or system which may be accessed from NIST;
- Unauthorized use of a system for which the user has authorized access, including use of privileged commands on a system by a user not authorized to use such commands and unauthorized access to information owned by someone else. For example, no user may access the root account on a Unix system or attempt to become root on the system unless he or she is authorized to do so;
- Deliberate unauthorized destruction of NIST data or other resources;
- Any use of NIST information technology resources to engage in illegal or unethical activities;
- NIST expects users to conduct themselves professionally and to refrain from using NIST resources for activities that are offensive to coworkers or the public. Some examples include the use of NIST IT resources that contain or promote (a) matters directed toward the success or failure of a political party, candidate for partisan political office, or partisan political group, (b) engaging in any action supportive of lobbying the Congress, (c) use of Internet sites that result in an unauthorized charge to the Government, (d) participating in prohibited activities such as discriminatory conduct, gambling, and disseminating chain letters, (e) intentional and unauthorized viewing of sexually explicit or pornographic material, (f) sending personal email that might be construed by the recipient to be an official communication, (g) any activity that would bring discredit on NIST or the Department of Commerce, (h) statements viewed as harassing others based on race, age, creed, religion, national origin, color, sex, handicap, or sexual orientation, (i) any violation of statute or regulation;
- The unauthorized sharing of NIST-owned software or any other NIST information not authorized for disclosure or use by others with anyone not specifically authorized to receive such software or information.
- Failure to follow NIST guidelines for downloading and installing software.

## ***Privacy of Information***

NIST systems and any information on those systems are Government property. Therefore, users of NIST systems should be aware that information transmitted by or stored on NIST systems is not private. In addition, NIST users should also be aware that it is often necessary to monitor network traffic or computer activity to ensure integrity, security or reliable operation of NIST systems. However, any other monitoring is against NIST policy. Casual reading of email messages addressed to others is prohibited.

## ***Enforcement***

Unauthorized or improper use of NIST IT resources by Commerce employees is punishable by penalties as provided in the [Department's Table of Offenses and Penalties](#), which are

incorporated into the [NIST Administrative Manual](#) as [Appendix A](#) to Subchapter 10.11, [Adverse Actions](#). Unauthorized or improper use by contractors, guest researchers, collaborators, and other associates, will result in notifications to their management and NIST sponsor and can result in similar penalties and possible termination of agreements with NIST. Individuals involved with misuse will also be subject to having all computer account access indefinitely suspended at the discretion of NIST management and the NIST CIO.

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### ***Related policy statements***

#### **Use of Skype Internet Telephony Software on NIST Computers and Networks**

Internet telephony, also known as Voice over IP (VoIP), has greatly increased in popularity and use over the past few years. One particular implementation of VoIP, Skype, has been identified to include unacceptably high risks for NIST. Skype uses proprietary peer-to-peer network technology that effectively bypasses firewall protections. Also, due to the way Skype functions, a NIST computer running Skype and the NIST networks to which it is attached could be used to facilitate communications between other external, non-NIST Skype users, which would be a misuse of NIST resources. Because of these unacceptable risks, the **use of the Skype VoIP software is now prohibited** on NIST computers and networks.

#### **Use of Dropbox Internet File Hosting Service Prohibited**

Dropbox is an Internet file hosting application that enables users to share and exchange files through client software which some NIST users have installed on their desktops, or through a web site interface. Due to inherent risks associated with this software, it has been determined that Dropbox is unacceptable for NIST use. If users have needs that cannot be met with existing services, they should work with their OU IT Security Officers (ITSOs), local IT support, and OISM to identify services that can be authorized for NIST use.

#### **Ban on Connecting Personally Owned Computers to the NIST Network**

Personally owned computers present an unnecessarily high security risk to NIST. Therefore, the NIST Chief Information Officer has banned personally owned computers from being brought to NIST and connected to the NIST network. This restriction does not apply to computers remotely accessing NIST networks since security issues with those computers can be mitigated in other ways. This restriction also does not apply to networks specifically designed for personally owned computers. Such networks must prohibit communication to the NIST protected network and must be approved by the NIST Information Technology Security Officer (ITSO).

#### **Connecting NIST-owned or personally-owned computers to the wireless Visitor Network (VISNET) is prohibited**

The wireless Visitor Network is a network infrastructure which was set up for NIST visitors. Hence, OU Lobby Ambassadors are prohibited from issuing credentials to NIST employees and associates to access this visitor resource.



## **Automatic E-mail Forwarding is prohibited**

NIST e-mail accounts configured to automatically forward e-mail messages to external, non-NIST e-mail accounts adversely impact NIST's ability to readily account for the information exchanged through those e-mails. Hence, automatic forwarding of NIST e-mail shall only be permitted with an approved exception from an OU Director or Chief Officer. Users are not permitted to configure email clients to establish filters or rules that automatically forward incoming mail.

## **Reminder that music/movie file sharing is prohibited**

The use of peer-to-peer music/movie file sharing software on the NIST computers and networks is strictly prohibited. Some commonly-used software packages include e-Donkey, LimeWire, Kazaa, Shareaza, BitTorrent and Morpheus. When the use of this software is detected on the network, the relevant management is informed and the computer is to be removed from the network until the software is removed from the computer.

## **Safeguarding Personally Identifiable Information (PII)**

1. No removable devices/media (e.g. flash drives, memory keys, thumb drives, floppy disks, CDs, or DVDs) may be used to store PII under any circumstances.
  - a. Continuity of Operations (COOP) lists may not be stored on any of these electronic media, regardless of whether they are encrypted or not.
2. Laptops and hand-held computers must use full-disk FIPS 140-2 compliant encryption. This is true for all laptops and hand-held computers that go off-site, and for all on-site laptops that store PII.
  - a. All Blackberry devices that utilize the OISM Enterprise Blackberry Service will be encrypted starting today, Thursday, November 9, 2006.
  - b. OISM is developing a deployment strategy for encrypting laptops using Safeboot, the encryption product selected by the Department.
  - c. Until your laptop has been encrypted, you may not remove it from NIST if it contains PII.

Personally Identifiable Information consists of any personal information about an individual, maintained by an agency, including, but not limited to [an individual's] education; financial transactions; medical history; criminal or employment history; and information which can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information which is linked or linkable to an individual. For example, Continuity of Operations (COOP) contact lists contain PII.

To avoid any potential loss, NIST users should remove any unnecessary Personally Identifiable Information from their computers. Essential NIST PII must be kept on campus in a secured location. NIST PII should always be stored on NIST-owned computers, never on personally owned computers or media.

## **Incident Reporting, including the Loss of Personally Identifiable Information**

All NIST users are required to report any suspected or confirmed loss of PII in their possession (whether on government-provided information technology equipment or any other media, including paper) immediately to the Information Technology Assistance Center (ITAC) at 301-

975-5375 (Gaithersburg) or 303-497-5375 (Boulder). Reporting procedures are available online at [http://inet.nist.gov/oism/services/iss\\_incidentreporting.cfm](http://inet.nist.gov/oism/services/iss_incidentreporting.cfm)

### **Safeguarding Data on Foreign Travel**

- You must use a NIST-issued laptop or a NIST-managed Blackberry device to conduct any form of DOC business electronically, regardless of whether travel is official or personal. If you need a laptop while on foreign travel, it must come from a pool of "loaner" laptops specially configured and maintained for foreign travel. BlackBerry devices must be scanned by OISM before and after foreign travel.
- No personally-owned devices (laptops or PDAs) may connect to the NIST IT infrastructure, including webmail, from outside the U.S.
- Only NIST-issued portable media (CD-ROMs, USB drives, diskettes, etc.) encrypted with FIPS 140-2 validated encryption are permitted for use during foreign travel. If you need to receive files on digital media from non-NIST sources to accomplish the purpose of your trip (e.g. jointly editing documents at a standards committee meeting), you must obtain a waiver\* before leaving for the trip.
- ...
- Requirements for PRE- DURING- and POST- Travel

### **Mobile Devices and Removable Media**

***Personally owned Devices and Media.*** Personally owned mobile devices and removable media, even if encrypted, must not be used to store sensitive information and must not be connected to any NIST or DOC owned system or network. For example, personally owned USB drives may not be inserted into NIST computers and personally owned laptops may not be directly connected to internal NIST networks. Personally owned devices may access NIST email remotely through the web-based Outlook Web Access (OWA) service, except during foreign travel.

***PDA and Smartphone Email Access.*** NIST-owned encrypted Blackberry devices supported centrally by the Office of Information Systems Management (OISM) may be used to directly synchronize with NIST email (i.e. download and store email messages and/or attachments). All other PDAs and Smartphones may access NIST email only through the web-based OWA service.

***Encryption Requirements.*** NIST-designated encryption solutions must be used, when applicable (see below). Encryption solutions are required to use a FIPS 140-2 validated cryptographic module. NIST-designated encryption solutions and acceptable alternatives are identified in the NIST IT Assistance Center (iTAC) Knowledge Base (KB) article on [Encryption Solutions](#).

- **Laptops and tablet PCs:** All NIST-owned and other non-personally owned (e.g., owned by a contractor, federal/state/local government, or university) laptops or general purpose tablet PCs used in support of NIST business must be encrypted with full disk encryption or equivalent, regardless of whether they are used to store sensitive information.
- **All other mobile devices and media:** All other mobile devices and media used in support of NIST business must be encrypted with full disk encryption or equivalent if they

are used to store sensitive information. NIST-owned encrypted USB drives are available for government purchase through iTAC.

Related policies (i.e., Directives) are located at:

- **NIST Mobile Device Encryption**  
**Policy:** [http://inet.nist.gov/oism/directives/iss\\_encryption\\_mobiledevice\\_media.cfm](http://inet.nist.gov/oism/directives/iss_encryption_mobiledevice_media.cfm),
- **DOC Safeguarding Data While On Foreign Travel Policy:**  
[http://inet.nist.gov/oism/directives/it\\_foreign\\_travel.cfm](http://inet.nist.gov/oism/directives/it_foreign_travel.cfm), and
- **DOC Removable Media Policy:** <https://inet.nist.gov/oism/upload/CITR-005-RemovMedia.pdf>.

For additional information regarding the policy or relevant OISM services, please contact iTAC (x5375). For questions concerning implementation of these requirements within your Operating Unit (OU), contact your local OU IT Security Officer (**Error! Hyperlink reference not valid.**

Find your OU IT Contacts at ).

## **Risk Management (RM)**

The OISM has a risk management framework which facilitates a NIST-wide process to ensure that all information systems (or computers) are tested for security risks. For new systems and applications in use on NIST systems, you need to be sure that any new applications or services that you require to do your job, are tested PRIOR to going live. This means you need to involve your local information security staff early on in your planning. For existing systems, we are required by law to continuously monitor a minimum set of security controls in place each year. In addition, we're required to assess all security controls when there is a significant change to a system, or at a minimum, every three years.

## **Use of Cloud Services**

OISM is moving forward in our efforts to expand cloud computing throughout NIST. Cloud computing is a new IT service model where computer resources, such as IT applications, databases, and even computer servers, are available via the Internet and are part of a shared, scalable pool that can be provisioned and released automatically. OISM's vision and the strategy to implement cloud computing will continue to evolve over time. OISM has a number of efforts underway that are exploring cloud computing and introducing new IT services that result from these. If you would like to understand more about NIST's cloud computing efforts, participate in one of OISM's ongoing pilots, or explore how cloud computing may impact your area, please reach out to the CIO, Del Brockett, or anyone else within OISM. Note: Any third party application or service used to conduct NIST business; whether there is a fee involved or not, must have a risk assessment conducted and be authorized for use. Contact your OU IT Security Officer for more information.

## **Web Technologies**

The use of Web 2.0 technologies by NIST employees is encouraged. At the same time, employees should be aware of DOC and NIST policies designed to ensure that official NIST Web sites present accurate, credible information and that personal opinions are not misinterpreted as official NIST positions. Here are two references for you:

(1) The [DOC Public Communications Policy](#) (DAO 219-1) says that DOC employees may "freely and openly discuss scientific and technical ideas, approaches, findings, and conclusions based on their official work" with the public provided that the communication is approved through the relevant operating unit's (OUs) internal procedures and does not involve discussion of policy, management, or budget issues without review and approval.

(2) The NIST Web 2.0 policy provides general NIST policy on using such technologies for external official NIST web sites, whether hosted by NIST or by commercial web sites. Employee Web 2.0 activities not related to NIST work are outside the scope of these general policies. Users should reference the [NIST Policy on IT Resources Access and Use](#) for more information on unacceptable access and use of NIST IT resources. For the purpose of the NIST policy, Web 2.0 technologies are defined as RSS feeds, blogs, wikis, social media sites, discussion forums, collaborative research Web sites, comment features for news or videos or other content posted to Web pages, and other ways of directly interacting with the public.

Web 2.0 or social media software and services often present computer security issues beyond those created with static Web pages. Use of Web 2.0 software or services for deploying official NIST Web content must ensure compliance with NIST and DOC information system security policies. For example, software or services must be tested for security vulnerabilities and formally approved prior to use by the OISM (i.e., through the A&A process mentioned previously). In addition, NIST OUs must ensure that NIST-hosted software and services are aligned with the existing and planned NIST information technology infrastructure (i.e., [Technical Reference Model](#)).

### ***Secure File Transfer***

The NIST system <https://nfiles.nist.gov> is a FIPS-certified secure file sharing appliance, created by Accellion, managed by OISM. It uses a combination of email and web technologies to allow users to send and receive file securely to internal users or outside collaborators. All NIST employees with valid General Realm accounts and NIST email addresses can use the appliance. Accounts are created automatically when the user logs in. Inactive accounts are automatically deleted, but the user can re-register any time. Currently, files are deleted automatically after 7 days. Search the Knowledge Base for more information.



### ***Guidance: Picking A Strong Password -- Easy To Remember, Hard To Guess***

Computer security is only as strong as the weakest link. From experience within the computer industry, a significant number of computer break-ins (perhaps the majority) can be traced back to a poorly-chosen password. In most of the cases, passwords are the first weakness tried by an attacker. The password is the most vital part of account security. If an attacker can discover a user's password, he or she can then log in to the system and operate with all the capabilities of that user. Such an attack is usually hard to detect and can last for months.

A strong password should be one that is easy for you to remember and very difficult for others to guess. If the password is too complex, many users write it down leaving their accounts vulnerable.

Below is an example procedure that can help you in picking a strong, policy compliant password.

- Select a 12+ word phrase that would be easy for you to remember but would be difficult for someone else to associate with you (i.e. it isn't a commonly used phrase).  
For example: Our living room carpet is green and red with a yellow border
- Use the first character of each word to create the initial password.  
For example: olrcigarwayb
- Pick one or more of the letters to be capitalized.  
For example: olrCigaRwaYb
- Substitute AND, if used in the phrase, with &, or, +.  
For example: olrCig&R+aYb
- Substitute numbers for words or where they are relevant to the phrase.  
For example: One dog fell to the ground and barked would translate to 1Df2tg&b
- If you don't have a special character (e.g. & or +) or a number in the phrase, add one or two somewhere where it will be easy for you to remember.  
For example: i wish i could remember my password would translate to iwi%crMp

### ***Computer Passwords***

Must be generated or selected using the following criteria:

- A. All passwords must have at least 12 non-blank characters.
- B. All passwords used to control general access must contain at least 2 of the following.
  - one alphabetic character,
  - one numeric character, or
  - one non-alphabetic and non-numeric character (e.g !, %, &, etc.).
- C. All passwords used to control privileged or administrative access must contain all of the following.
  - one alphabetic character,
  - one numeric character, and
  - one non-alphabetic and non-numeric character (e.g !, %, &, etc.).
- D. Passwords used to control privileged or administrative access must be different than passwords used to control general access on any given system.
- E. Passwords must not include control characters and non-printable characters (e.g. enter, or tab, or backspace, or ctrl-c, etc.).

- F. Passwords must not include words in dictionaries, user-IDs, derivatives of user-ID, and common character sequences (e.g. 3456, ghijk, 2468, etc.). Personal details such as spouse's name, license plate, social security number, and birthday must not be used unless accompanied by additional unrelated characters. Common character patterns, even in combinations such as xyz123ab, must not be used.

## **Initial Passwords for the NIST Computer/E-Mail System**

SURFers – If you didn't pick up your password at the orientation, you must go in person with a photo ID to the iTAC office (Building Technology (225), B106) to pick up your password for the mailserver before you can log into your account(s).

### ***Responsibilities***

- All users shall read, understand, and acknowledge understanding of OU and applicable application-specific policies
- Obey copyrights and do not download, install, or access Peer-to-Peer (P2P) file sharing software
- Understand only approved individuals are allowed to download and install approved applications onto DOC information system resources
- Understand and/or discuss the consequences of actions with the user's Supervisor, as defined in DAO 202-751
- Complete general Information Security refresher training annually
- Know the type of data which is handled, and understand measures to protect the data type
- Understand property (or assets) for which user is responsible (i.e., printer, desktop, etc.)
- Understand and be proactive in the management of Federal electronic records, which extends to assurance of appropriate backups of user data
- Report suspected or confirmed security incidents (e.g., loss of Personally Identifiable Information (PII), virus or malicious code attacks, etc.) as procedurally defined
- Cooperate with designated personnel during the investigation of incidents, compliance reviews, audits, evaluations, and/or surveys regarding the security posture of the OU (do not impede)
- Log data extracts of PII or other more sensitive data
- Comply with IT requirements for foreign travel

## **ASSISTANCE**

### **Information Technology Assistance Center (iTAC)**

<https://itac.nist.gov>

[itac@nist.gov](mailto:itac@nist.gov)

Monday through Friday, excluding holidays

7:30am to 5:30pm (local time)

Gaithersburg: 301-975-5375, Boulder: 303-497-5375

### **Organizational Unit IT Security Officer (OU-ITSO)**

<https://inet.nist.gov/oism/poc.cfm>

## **Resources**

OISM web site <https://inet.nist.gov/oism>

IT Security web Site <http://inet.nist.gov/its>

iTAC Knowledge Base, <http://itac.nist.gov>

(use Internet Explorer 7.0 or Mozilla Firefox)

NIST Library IT Security Collection

**If you still have questions**, please call the NIST iTAC (IT Assistance Center)

Email: [itac@nist.gov](mailto:itac@nist.gov)

Webpage: <https://itac.nist.gov>

Location: Building 225, Room B106

Phone: (301) 975-5375

# **NIST Researcher Responsibilities - Laboratory Notebooks**

## **Purpose**

Laboratory notebooks maintained by NIST scientists are important instruments used to document their activities and provide a detailed chronology of their science and technology advancements. Properly maintained notebooks establish the primary written foundation from which future science and technology advancements take place. Not only do notebooks act as roadmaps of creative genius, but they perform a critical role in regard to patents concerning proof of conception, reduction to practice, and inventorship.

Laboratory notebooks should be carefully maintained in accordance with the following guidelines.

## **Policy**

NIST Laboratory staff engaged in measurement and in research and development activities are responsible for maintaining a thorough and accurate record of their work by keeping a laboratory or research notebook.

Staff using electronic media for measurement, research, and development are responsible for maintaining a written notebook that chronologically documents the progress of their activity and indexes work files so that experimental data and results may be retrieved.

All laboratory and technical unit managers are responsible for ensuring that the technical activities of their staff are fully documented and that appropriate control measures are in place so that either paper or electronic records of data and results are retrievable.

Managers are responsible for instructing their staff on appropriate procedures for their unit.

All technical records, including laboratory research notebooks, journals, electronic record, data, calculations, etc., pertaining to NIST activities are official files of the U.S. Government and are the property of the government, not the employee.

Laboratory and technical unit directors are responsible for ensuring that these records are not destroyed or removed from NIST without proper authority including when an employee transfers, retires, or otherwise separates from NIST.

## **Procedure**

NIST laboratory policy recognizes the conflict between the requirement that NIST retain permanent, legal records and the requirement that the researcher not be unnecessarily burdened. There are two major categories of record-keeping for which two separate standards are required. Laboratory and technical unit managers are responsible for determining which of the following two categories describes record-keeping in their units and for establishing and maintaining corresponding practices.

## **Categories of Record Keeping**

Activities that will have little or no impact beyond the daily routine of internal business.



These activities have little or no impact on other people, programs, or external affairs. Records that have been kept historically in handwritten or electronic form should continue to be kept in that form with the following provisions:

### **Standards**

1. Written notebooks must meet the minimal NIST standard, i.e., be permanently bound with pre-numbered pages.
2. Computer records must be identified in the written notebook by the name of the computer file, the date and time of the record and the identity of the responsible employee.

Activities that have a reasonable chance of leading to patentable inventions, publications, external inquiries, or subsequent challenge in the courts.

Included in these are:

R & D activities that may lead to patentable devices or published material.

Other activities, for example, reviews of proposals and calibration reports that might lead to subsequent legal action against NIST or the researcher.

These activities hold both the individual scientist and NIST to a high standard. Subchapter 2.10.06 of the NIST Administrative Manual should be followed when intellectual property issues, such as patents and copyrights are likely to be important.

### **Standards**

1. Records must be accurate, permanent and contemporaneous with research.
2. Records must be protected from compromise, including addition or revision at a later date.
3. Records, including exact dates of discovery, are critical to establish priority of claims in patent litigation.
4. There is no precedent in patent case law where computer-stored data have been used to establish priority of a claim.
5. Notebooks are to be hard covered or spiral bound with pre-printed, sequentially numbered pages, such as the types available from the NIST storeroom.
6. Notebooks must be kept in ink with signed and dated pages required for research likely to lead to patents. Each page should be witnessed and signed by another scientist familiar with the research.
7. Electronic data must be fully described in the notebook and, where feasible, a hard copy kept with the notebook or in some place identified in the notebook.

### **Example Proper Record-keeping**

An employee has made an invention and recorded the conception of the invention, the diligence taken towards reducing the invention to practice, and the reduction to practice. These records enable the government to establish the priority of the invention in the event that it is raised in the courts or in the U.S. Patent and Trademark Office. (Note: This is more important now than ever before because of the recent passage of the GATT-U.S. patent laws. Invention date proofs from

all World Trade Organization countries will now be accepted at the U.S. Patent and Trademark Office.)

The conception of the invention was recorded by describing the invention as completely as possible in words and drawings using ink in the bound notebook. Each page of the notebook was signed and dated by the inventor, and by at least one other co-worker/scientist/supervisor as witness.

The record of the conception of the invention was followed by chronological entries in the notebook describing the steps taken to reduce the invention to practice. These entries were also signed, dated, and witnessed.

When the invention was reduced to practice, the test setup, procedures, and data was described as completely as possible in the bound notebook. Separate chart recordings, photographs, etc. were labeled, dated, and pasted in the notebook or otherwise referenced in the notebook. This record of the reduction to practice was signed and dated with the witnesses stating that they observed and understood the testing.

### **Frequently Asked Questions**

Q: Are NIST scientists required to maintain laboratory notebooks?

A: Yes, see your laboratory Director's policy. (Office of each Laboratory Director)

Q: Why Keep a Notebook?

A: To:

1. Preserve institutional memory;
2. Establish the basis for published documents;
3. Safeguard the intellectual property of NIST, the individual laboratories, CRADA partners, and our customers.

Q: Are there publications regarding keeping a Notebook?

A: Yes:

1. H.M. Kanare, Writing the Laboratory Notebook, American Physical Society, Washington, D.C., 1985.
2. R.D. Foltz, T.A. Penn, Protecting Scientific Ideas and Innovation, CRC Press, Boca Raton, FL., 1990.
3. Physics Laboratory Policy on Laboratory and Research Notebooks, Revised May 19, 1994.

Q: Where can I find additional non-NIST information regarding keeping a Notebook?

A. See "Do's and Don'ts of Record Keeping" –

<http://www-i.nist.gov/div222/InventorHandbook/relations/ec3.htm>

Q: Are there publications regarding keeping a Notebook electronically?

A: Yes,

1. The American Chemical Society (ACS), "Record Keeping Fact Sheet", 1988. For information call (202) 872-4600.
2. The American Chemical Society (ACS), "Electronic Record-Keeping for Patent Purposes: Cautions and Pitfalls," 1990. For information call (202) 872-4600.

Q: Do Notebooks need to be witnessed?

A: Yes, generally by a Co-Worker, but not someone who is a contributor to the research being conducted. By itself, a laboratory notebook is considered to be hearsay; that is, without the testimony of a witness who can attest to the notebook's authenticity and understand its contents, it is not admissible as evidence. There are exceptions to this rule, but generally the person who actually made the entries should be the one to testify regarding the work described in the laboratory records. When this person is not available to testify, a CO-WORKER who has witnessed and signed each page of the notebook can testify regarding its validity.

Each page should be signed and dated by both the scientist and witness. There is no legal rule that an entry must be witnessed on the same day that the entry was made, but prompt witnessing is preferable to waiting and possibly forgetting. NIST Administrative Manual, Subchapter 5.09, Inventions and Patents

Q: Can my inactive laboratory notebooks be retired and safely stored?

A: Yes, when records are no longer needed for current day-to-day reference, they may be transferred to a records storage facility allowing them to be safely stored and efficiently retrieved when necessary. For more information, visit the Forms and Records Management web site.

## Research Notebooks - Supplement

### Why Keep a Notebook<sup>1</sup>

“The information written into a research notebook is used for several purposes. Most importantly, the pages of the notebook are used to preserve the experimental data and observations that are part of any scientific investigation. The notes must be clear, concise, and complete. The properly kept notebook contains unambiguous statements of ‘the truth’ as observed by the scientist. If the notebook is to be of any value, experiments that fail must be recorded as faithfully as those that succeed.”

“The guiding principle for notekeeping is to write with enough detail and clarity that another scientist could pick up the notebook at some time in the future, repeat the work based on the written descriptions, and make the same observations that were originally recorded. If this guideline is followed, even the original author will be able to understand the notes when looking back on them after considerable time has passed.”

“After the data are recorded, the researcher begins to study them. The notebook provides a forum in which data and observations are analyzed, discussed, evaluated, and interpreted. Even though much experimental data is today in printed instrumental output or in computer-readable form, the notebook is still the logical place where such data are summarized and reviewed. This process leads to the writing of reports, technical papers, patent disclosures, and correspondence with colleagues. If the notebook is well organized and adequately indexed, finding the appropriate passages when needed is easy without searching for the page through the notebook.”

“The information recorded<sup>1</sup> in the notebook also can be used to review progress and to plan further work.”

### Why Use a Bound Notebook<sup>2</sup>

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<sup>1</sup> H.W. Kanare, *Writing the Laboratory Notebook*, American Chemical Society, Washington, DC, 1985, pg. 1-3.

“The foremost reason for using a bound notebook rather than a loose-leaf binder or wire-spiral notebook is that the pages are permanently and strongly attached together. Related notes written on different pages will not be separated by accidental loss of separate pieces of paper. In addition, the date of a particular entry is less subject to question if notes are recorded in a consistent style, in chronological order, and with no blank or missing pages.

The industrial researcher whose work may lead to patents, has no choice except to use a bound notebook for all laboratory notemaking.”

### Policy Rational

The formulated standards-of-practice reflect the position of leading U.S. science and technology societies<sup>3</sup> and are consistent which public law requires Federal agencies to create and preserve records that adequately and properly document the transactions and other significant events of the agency.

Two books kept by the NIST Research Information Center specifically discuss research notebooks and intellectual property issues and are particularly valuable for NIST staff who wish further information.

- H.M. Kanare, *Writing the Laboratory Notebook*, American Physical Society, Washington, DC, 1985.
- R.D. Foltz, T.A. Penn, *Protecting Scientific Ideas and Innovation*, CRC Press, Boca Raton, FL, 1990.

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<sup>2</sup> *ibid*

<sup>3</sup> The American Physical Society (APS) Office of Public Affairs issued “Guidelines for Professional Conduct,” on November 3, 1991. It was later published in *Physics Today* (January 1992). Copies of the guidelines can be obtained by contacting the APS Office of Public Affairs at (202) 232-0189.

In 1988 the American Chemical Society (ACS) Department of Governmental Relations and Science Policy issued a brochure entitled “Record Keeping Fact Sheet” containing guidelines for maintaining handwritten research records. The ACS Committee on Patents and Related Matters later issued in 1990 “Electronic Record-Keeping for Patent Purposes: Cautions and Pitfalls.” Copies of either ACS brochures can be obtained by telephoning (202) 872-4600.

## Record Keeping Fact Sheet

1. **DO** keep the record factual.  
**DO** record novel concepts and ideas relating to the work project.  
**DON'T** editorialize.
2. **DO** use a record book with permanent binding.  
**DON'T** use a loose-leaf, spiral-bound or otherwise temporarily bound book that provides for page deletions and insertions.
3. **DO** enter data and information including formulas and/or drawings directly into the record book promptly as generated.  
**DO** sign and date each page of the record book at the time the page is completed.  
**DON'T** rely on memory or use informal loose sheets for entries with the intention of later putting these into the bound record book.  
**DON'T** leave any completed page unsigned and undated.  
**DON'T** postpone signing and dating all completed pages.
4. **DO** use a permanent ink, preferably black, which will reproduce well when photocopied in black and white.  
**DON'T** use a pencil or non-permanent inks.  
**DON'T** use colored inks.
5. **DO** write legibly.  
**DON'T** make entries in handwriting that later on can be subject to interpretation, translation, or wrong meaning.
6. **DO** identify errors and mistakes and explain them.  
**DON'T** ignore errors and mistakes.  
**DON'T** obliterate, delete, or otherwise render errors unreadable.
7. **DO** completely fill each page.  
**DO** sign and date each page immediately after the last entry.  
**DO** draw vertical lines through unused portions of a page where an experiment takes less than a full page.  
**DON'T** leave part of a page blank.
8. **DO** attach support records to the record book where practical; where volume and size prohibit this action, store such records, after properly referencing and cross-indexing, in an orderly form in a readily retrievable manner.  
**DON'T** file supporting records in a haphazard, helter-skelter manner without any record of their relationship or connection to the research reported in the record book.
9. **DO** use standard accepted terms; avoid abbreviations, code names, trademarks, trade names or numbers if possible; if abbreviations, code names, trademarks, trade names or numbers are used, make certain these are defined at least once in every record book.

10. **DO** keep the record book clean; avoid spills and stains.  
**DON'T** subject the pages of the research notebook to chemical or physical destruction from spills.
11. **DO** see that the record is promptly witnessed by a knowledgeable person who understands what is being reported and, preferably, who assisted in or witnessed the work, but who is not a contributor to the research being conducted.  
**DON'T** postpone having notebooks witnessed.  
**DON'T** have notebooks witnessed by someone who is not technically skillful in the art being reported and who does not understand the contents of the record.  
**DON'T** use as a witness someone who has contributed professionally, conceptually or technically to the work being reported.
12. **DO** maintain the confidentiality of the record until properly released.  
**DON'T** treat the record book as a publication that is freely available to the public.
13. **DO** maintain control of an assigned record book at all times, keeping it in a fireproof safe, file or vault when not in use.  
**DON'T** let the book lie open around the laboratory when not in use.  
**DON'T** remove the record book from the company or institution's premises.
14. **DO** index and close out the record book as soon as it is filled or a project is completed and check it back in for filing and storage to the person who issued it.  
**DO** reference the location where the book is being stored to assure ready retrieval.  
**DON'T** keep a closed out and completed record book in the possession of the author.  
**DON'T** file or store a book without referencing its location.
15. **DO** remember the record book is a legal document and should be treated as such and made available to your legal and patent counsel if needed.  
**DON'T** keep a record book beyond the company or institution's established record retention policy for such record.

The American Chemical Society's Committee on Patents and Related Matters has prepared this fact sheet as a guideline for maintaining complete research records. Such records are crucial to the advancement of invention and to the protection of intellectual property rights.

The fact sheet is provided for information purposes only. Copies may be obtained by phoning 202-872-4386 or writing the ACS Department of Government Relations and Science Policy, 1155 16th Street, N.W. Washington, DC 20036.

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## Standards Employees Benefit Association (SEBA)

SEBA (<http://inet.nist.gov/seba/index.cfm>) is a volunteer organization of the employees of the National Institute of Standards and Technology (NIST) dedicated to providing social, recreational, and welfare benefits to its members and other persons who have close association with NIST. SEBA sponsors various welfare, recreation, and entertainment activities throughout the year. As a NIST Associate, you can join SEBA by filling out a Membership Application and paying \$12.00 yearly dues. The SEBA office is located in the basement of the Administration Building, Room A-46, x3313.

### **SEBA Store**

The SEBA Store, located in the basement of the Admin. Bldg, Room A-46, carries things like gifts, candies, NIST Mementos (e.g., shirts, hats, mugs, jackets, and totes), cards, stamps, discount movie tickets for both AMC and Regal Movie theaters. You can also get discount theme park tickets (Hershey Park, Busch Gardens, Paramount's Kings Dominion, Adventure World, Sesame Place, Magic Kingdom), and seasonal merchandise. There are often discounted tickets for the Baltimore Orioles and Washington Nationals Baseball games and opportunities to travel to New York too. Some of the items require SEBA membership. It is opened Monday-Friday, 9:00 a.m.-2:00 p.m.

### **Discount Tickets (prices as of May 27, 2014)**

#### **Theme Park tickets:**

- Hershey Park (Adults \$41.99, Kids 3-8 or over 55 - \$31.99)
- Kings Dominion (\$41.99)
- Busch Gardens
- Six Flags (\$41.99, \*Special Days Tickets for Dates: 6/7-15, 7/5-13, 8/9-8/17 for \$31.99\*)

#### **Museums:**

- Spy Museum (Adults \$18, child \$14)
- Crime & Punishment Museum (Ages 5+ = \$16.95)
- Baltimore Aquarium Tickets (Adults \$32.95 & Child \$20.95)

#### **Movies:**

- AMC – The closest AMC theater located in Washingtonian Rio complex.  
\$8.75 Gold tickets (unrestricted use any time) and \$7.50 Silver Ticket (restricted- i.e., cannot be used during the first two weekends of the release of the movie)
- Regal – There are two not too far away – one in Rockville (off of Rt. 355) and one in Germantown (off of Rt. 270, Exit 15 B)  
\$8.75 (unrestricted use any time) and \$7.50 (restricted- i.e., can not be used during the first two weekends of the release of the movie)

There is also an online web for SEBA items - <http://recgov.org/seba/>

## **SEBA-Sponsored Activities**

### **Fitness Center**

The SEBA Fitness Center (<http://www-i.nist.gov/seba/fitness.htm>) is located in the basement of the Administration Bldg. Weight and aerobic exercise machines are available. Aerobic and fitness classes are also taught in the fitness center – check with the SEBA store for a list of classes currently in session. You must be a member of the gym to use any of the equipment or to join the exercise classes. To join, download a membership application and waiver (<http://www-i.nist.gov/seba/docs/fitnessApp10a.pdf>), and submit the forms and payment to the SEBA Store, Admin/A46. You can also get an application form from the SEBA Store. You must be a SEBA member to join the Fitness Center. An individual membership \$12.50/month.

### **Soccer (<http://inet.nist.gov/seba/soccer.cfm>)**

Scrimmages are very informal and consist of pick-up games with gentlemen's rules (no slide tackling, etc.). There are two sets of small goals to sharpen skills. A full-size set of goals is used for full-field scrimmages. Location: Fields on top of hill South-East of Radiation Physics building (245). Lunchtime games: 12:30 p.m. to 1:30 p.m. - Monday, Wednesday, & Friday (year round). There may be informal evening games.

NIST Guest Researchers Association is hosting a Soccer Tournament this summer. Stay tuned for more information.

Dues: SEBA Membership; Contact: Dick Gates, Coordinator, x3677

### **Softball**

The NIST SEBA Slow Pitch Softball League is welcoming new players of all skill levels! Games are played Tuesdays and Thursdays at 5:30 PM starting April 30th, and each team plays a 15-game schedule ending August 2nd. Meet other league members at our league-wide practices, held at 5:30 PM on Thursday April 18th and Tuesday April 23rd on Field 1 located next to the NIST picnic grove. Contact Doug Meier (x4619 or [dmeier@nist.gov](mailto:dmeier@nist.gov)) for more information.

### **Tennis**

There are two competitive outdoor doubles leagues that one can get involved with at NIST -- the Interagency League and the Intramural League. In interagency matches, the NIST team competes against teams from over 30 federal departments and agencies in the Washington, DC-metro area. The interagency team is composed of the best players from around NIST. Although we are one of the smallest agencies in the federal league, the NIST team has won the hotly-contested Federal Championship several times. In intramural play, four teams within NIST compete against one another, and competition is not so intense. In both leagues, matches consist of five doubles pairings per match, and standings are based upon a team's combined win-loss record. You do not need to join with an established doubles partner and there are no formal tryouts. Although both leagues strive for consistent turnout, you play only as often as your schedule permits. You can play in either league, and some players compete in both. They're always looking to meet new players, so don't hesitate to contact one of the team captains, even if you just want to find someone to hit with.



Intramurals play weekly on local courts about once per week on Mondays or Wednesdays (5:30 p.m.) from mid-May to early August. The Interagency league plays one evening a week (Monday or Tuesdays at 6:00 p.m. at 16th & Kennedy, NW, DC from mid-April to early August.

Dues: SEBA membership plus partial cost of tennis balls or League fees.

Contact: If you are interested in intramural play, contact Howard Yoon, x2482; if you are interested in interagency play, contact Jeff McFadden, x2711.

## **Volleyball**

There is a sand volleyball court near the Supply and Plant Building (301). There used to be an informal lunchtime group that played but the status of this group is uncertain at the printing time. If you are interested, wander over around noon and ask to join in. All will be welcome.

## **Basketball**

There is a court behind the Shops Building and a group usually forms at lunch time to play pickup ball. If you are interested, wander over around noon and ask to join in. All will be welcome.

## **Golf (<http://seba-golf.nist.gov/>)**

The NIST-SEBA Golf Association (<http://seba-golf.nist.gov/>) has been in existence for 40+ years. Our goal is to provide an organized league for NIST employees that promotes enjoyment of the game of golf along with fun and spirited competition. Currently, the league consists of 24 (2 to 4 member) teams. The skill levels range from beginner to seasoned veterans. The league is divided into four separate divisions and we compete for twenty weeks during the summer, generally starting the first or second week of April. Matches are played every Wednesday afternoon at the Poolesville Golf Course (approximately 20-25 minutes from NIST) on a Par 71 course, Yardage: White Tees 3410 (front), 3059 (back). They play nine holes per week. Although the teams will be established by the time you arrive there is a chance to play as a substitute. If you are interested, call Mark Luce (x2159) for more details. Mark can give you information on how to get on the email list to get all requests by teams for subs.

## **Bellydance**

Bellydance, or Raks Sharqi, might be considered the original phys. ed. program for women. This ancient art promotes health through natural stretching and strength exercises, but the unique aspect is the way it is done - often moving only a few muscles at a time. This requires learning control and isolation that can enhance proficiency in many physical activities, such as figure skating and dressage, and the dance itself is feminine, stress-relieving, graceful and fun. While variations of raks sharqi span many Middle Eastern cultures, versions generally classified as "American Cabaret" are most commonly performed in our local restaurants and fairs. Although these informal classes are free, we have to belong to both SEBA and the Fitness Center to use the facilities. Classes are 11:15-12:00 on Fridays, all levels are welcome, and people can come at any time. For more information, contact: Colleen Hood ([colleen.hood@nist.gov](mailto:colleen.hood@nist.gov), X2236)

**Aerobics/Fitness (<http://inet.nist.gov/seba/aerobics.cfm>)**

Several different types of aerobics/fitness classes (e.g., Zumba, Yoga, & Sculpt/Tone) are offered through the week. At the time of printing, it is unknown which classes, if any, have openings. These classes are subsidized by SEBA; however, there is a class fee too. You must belong to both SEBA and the Fitness Center to use the facilities. See the website for more information.

How to prepare an. . .

## Oral Presentation

by Vince Giardina

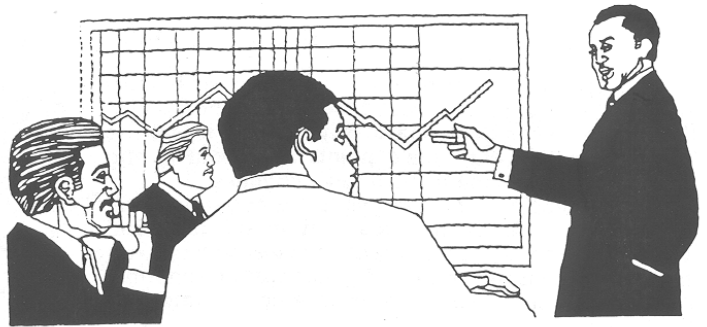
### General

This article will present a few common sense techniques and up-to-date procedures to assist you in presenting technical papers in the most effective manner.

The organization of your paper is important because most listeners cannot concentrate on an oral presentation as well as they can on a written paper. Preliminary planning will greatly assist you in your organization, thereby permitting the audience to easily follow your statements and absorb the content of your paper as you speak.

The ingredients of a good presentation are a good technical subject, carefully organized, well prepared, and forcefully delivered. The success of your presentation will depend to a great extent on how well you learn these principles, which have been found successful by many effective speakers. You have probably spent considerable thought and effort in the preparation of your paper. In essence, similar energies should be assigned to the planning of your oral presentation. Many excellent papers receive poor reception when presented because the authors did not spend enough time planning their presentations. Usually a few simple techniques can transform an otherwise mediocre paper into an excellent one. Effective speaking is having something important to say—something carefully thought out and planned—and saying it with enthusiasm and conviction. Remember that the purpose of your presentation is twofold: to impart objective information on various events, processes, etc.; and to achieve understanding on the part of the audience.

You are speaking because you have something to say and a reason for saying it. Don't place yourself in the embarrassing position of having the listener come away with little or no idea of your main point. You chose a subject in which you are interested and competent. You are willing to impart your experience to others. Plan your presentation, know



your goal and how to reach it. If your presentation has been carefully constructed, your audience will not have trouble in following your thoughts clearly and to their conclusion. Experience with many successful presentations shows that they should cover a clear statement of the problem dealt with, a brief description of the attack, and a forceful review of the conclusions.

Finally, assemble your material into a logical order of presentation and prepare an outline or set of notes that will help organize your thinking. As a rule, the notes should consist of a list of the different items to be discussed rather than a series of complete sentences. They should provide a condensed picture around which you can develop your story.

Unfortunately, many people feel that preparation is unnecessary or that it only involves the hasty scribbling of a few notes on the way to the conference. Usually just sitting down and thinking of what you are going to say and making a simple listing of the major points in your talk is all that is necessary.

Last but not least, *practice* delivering your presentation beforehand. *Practice* your entire speech from your outline. You should actually attempt to incorporate all the gestures you intend to use in the presentation since the audience's attention will be focused upon you during the delivery. One argument in favor of rehearsing your talk is that it will allow you to become familiar with timing. Ordinarily, you are allowed a stipulated amount of time for your paper and an additional period for discussion. Should you feel that this time is insufficient, advise your Session Developer of this when the paper is submitted. A 2,000- to 2,500-word paper usually takes about 20 minutes to present.

As you practice, you will notice that you are actually memorizing your outline and developing an expressive speaking voice. Control of your

speaking voice is by far the most important aspect of holding audience attention. It should be reasonably clear and pleasant. You should learn to vary the quality and volume of your voice in order to gain the desired emphasis on words and ideas in your paper. Appropriate control of your voice will insure you the response you desire and help you achieve your purpose—a successful presentation. You should also remember that your concluding statements are as important as your opening or introductory remarks. Know definitely beforehand what you are going to say at the beginning and at the end. Allow yourself sufficient time for the proper presentation of your conclusions. This is usually the part in which the audience is most interested.

Bear in mind that, like your voice, your posture is important and should come naturally. Good posture

### **The Do's & Don'ts of Oral Presentation**

DO tell your story briefly and in a conversational style. State the subject of your paper clearly and directly. Never allow your audience to say, "What's he talking about?" Mention your main points at the outset and develop your message as your talk continues.

DO develop good speech habits. It is not enough that the audience hears your voice, they must understand what you are saying. Be aware of your speech faults and learn to compensate for them. Try not to use an abnormal voice level. Remember to speak at a normal rate, i.e., 100-120 words per minute.

DO learn to speak extemporaneously. This will enable you to think on your feet as you proceed through your presentation and allow you to speak directly to your audience. Be thoroughly familiar with your outline and its organization.

DO use graphics such as charts, slides, pictures, etc. They will enhance your presentation and clarify the information presented, provided they are effectively used. The use of slides is very desirable since it gets a point across to the audience in much less time and with much less effort than you can with words alone. Be certain they are well designed and legible.

requires you to stand erect—properly balancing your body on both feet. This will allow you to move readily about the platform in a relaxed manner. Try not to appear stiff, nervous or sloppy. When addressing an audience, pause for several seconds before you begin to speak and look directly at the audience. You will probably be nervous at this point, but you will soon find this pause will give you confidence. Stand erect, keep your head up, speak clearly and distinctly, address your remarks to your audience and *not* to your notes, the blackboard, or the projection screen

DO develop good speaking posture. Walk naturally and purposefully when approaching the podium. Stand comfortably erect and reasonably at ease. Do not begin to speak until you feel you have the self-confidence you require. Make the most of your posture and appearance. It is your first introduction with the audience, and you should plan to make a favorable impression.

DO NOT read your paper in full. Prepare a step-by-step outline and use it when practicing aloud. Incorporate all the gestures you plan to use at your presentation. This will not only assist you in introducing the proper animation but aid you in remembering the correct sequence. You will find that the more you practice the less you will have to rely on the outline. Avoid taking your printed paper to the podium—replace it with your outline. This will remove that last minute temptation. Being free of your written paper, you can watch the audience to gain that self-confidence you are seeking, thus enabling you to modify your presentation as you proceed. The read speech is a hazardous undertaking and unless the speaker is fully experienced in what he is doing, it usually falls flat. Should you select to read your paper, it is worth repeating that you should assign a good bit of your time to rehearsal. Moreover, in order to sound genuine and to make a favorable impression, your reading should sound as if you were speaking.

Know your paper well enough to grasp your thoughts at a single glance. Practice will enable you to master any difficult pronunciations and help you to develop a conversational style. It will give you that feeling of sureness and allow you to become so familiar with your paper that you can pursue visual contact with your audience.

DO NOT waste your time on something that is not part of your paper. The audience has some background and interest in your subject and has assembled because they are specifically interested in your experiences. Wit and story telling are not required although at times prepared techniques are necessary to arouse audience interest.

DO NOT prepare extensive notes. List only the high points of your paper and underscore the important headings. They should provide a condensed picture around which you can build your story. Use no more information than can be comfortably typed on one or two standard index cards.

DO NOT stare vacantly at the audience. Learn to shift your gaze as often as possible. Select individuals in the audience and speak to them in a direct and friendly manner. Try to avoid the “fixed” look at one area of the room.

DO NOT walk aimlessly about the podium while speaking. This not only distracts the audience but

prevents them from having the proper feeling for your paper. Move only when your movement tends to enhance your delivery. Properly executed movement heightens attention and tends to improve your presentation.

DO NOT let unconscious gestures such as playing with the pointer, pulling your ear, etc., become chronic habits. Use your hands and arms to emphasize and clarify points and to convey attitudes, but not to distract. Your gestures and facial expressions should be spontaneous. Remember that well-planned bodily actions will tend to relax you during your delivery.

DO NOT let your story “run down” at the end. Keep up the interest (and your voice) until you come to the end—then stop! Include a brief summary of your paper and finish with a good concluding statement.

DO NOT overrun your time. Timing is the normal by-product of your practice session. If the presentation is overtime, it will cut into your discussion period. At times, last minute adjustments may be required. Prepare an accelerated ending so that you can start your concluding statement when you are signed that your time has expired.

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### **Discussion Periods**

Your presentation will normally be planned to allow a discussion period following your talk. After hearing a question, repeat it (using the microphone if one is available) for the audience’s benefit. Give a brief answer that will satisfy both the questioner and audience. Should you not be able to answer an unusual question, always invite the questioner to confer with you after the session. By all means don’t make up an answer, be honest and to the point.

Throughout this article we have intended to bring forth various speaking principles concerning poise, voice, delivery, etc., which will assist you in making

your presentation of the highest caliber. Many of the problems that may confront you as you await your turn on the podium can be avoided by making use of the suggestions put forward here. Many speakers will feel apprehensive during the first few minutes of their presentation, but will soon overcome their fears after they become accustomed to the audience. If this is your first encounter, we strongly urge you to *memorize your opening statement*. This will permit you to gain that much needed confidence as you get “rolling along.” Organize your paper carefully and deliver it clearly and with sufficient enthusiasm to gain your audience’s attention early.

**Reprinted by permission from *AIAA Student Journal*, Vol. 19, No. 2, Summer 1981, American Institute of Aeronautics and Astronautics, New York, pp. 46-48. The author is a former director of Educational Resources for the AIAA.**

# SURF STUDENT PRESENTATIONS

|  |                   |
|--|-------------------|
| <b>Name:</b>   | <b>Grant No.:</b> |
| <b>Academic Institution:</b>   | <b>Major:</b>     |
| <b>Academic Standing as of September 2014 (e.g., Junior, Senior):</b>                |                   |
| <b>Current Career Plans:</b>   |                   |
| <b>Permanent Contact Info &amp; email (e.g., your parent's address, @gmail.com):</b> |                   |
| <b>Current Contact Info (your address at School and your school email address):</b>  |                   |
| <b>NIST Laboratory, Division, and Group:</b>   |                   |
| <b>NIST Research Advisor:</b>  |                   |
| <b>Title of Talk:</b>  |                   |
| <b>Abstract of Talk:</b>   |                   |

You will receive an electronic copy of this template to fill out and return to Anita around the second or third week of July.

## General announcements

### ***E-mail Exploder***

[SURF-2014@nist.gov](mailto:SURF-2014@nist.gov) will reach all of the SURF students and the SURF Directors. The SURF Directors will use it to broadcast e-mail messages out to all of you about upcoming events or requests for information.

[SURF-events@nist.gov](mailto:SURF-events@nist.gov) – is an exploder that you may use to reach all of your fellow SURFers (and a few other students) at once, feel free to use it to arrange group events (e.g., soccer game, trip to DC, Frisbee night, Breakfast for dinner night, etc.). Please don't forget that this is a government e-mail system – use it responsibly.

### ***SURF Facebook Group***

The SURF Facebook Group “SURF 2014 – Gaithersburg” (<https://www.facebook.com/#!/groups/537416516377388/>) offers the SURF students a great way to interact with one another and former SURF students. You can find out where is the best place to visit, the best clubs, and advice on things to do in the area or to even ask for help on your project. Don't be afraid to organize an evening or weekend social event (e.g., visiting DC).

### ***Social Hours***

Each year the SURF students enjoy getting to know their fellow SURFers in a relaxed environment. It is a great way to learn about the folks living in the area or in the other apartment complex. Typically, there is a Social after each of the big General Summer Seminars. The refreshments (e.g., drinks, snacks, & cookies) will be provided by you (the SURFers!) for your fellow SURFers. NOTE: This social is provided as a chance to get to know each other and/or the speaker; therefore, you may not use this as an excuse to leave early. If you do not wish to attend the social, you may be excused to return to do work in your lab.

My day to bring refreshments is: \_\_\_\_\_

The other people in my group are:

### ***Dress Code***

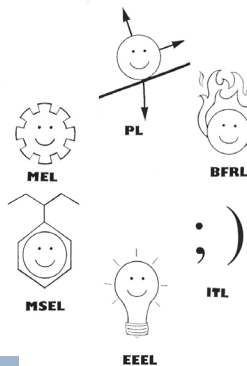
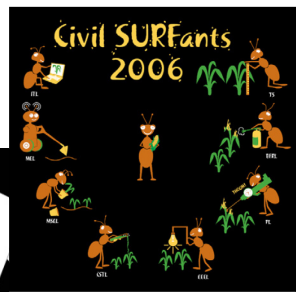
Is there a dress code at NIST? Not really, however, this is a professional place of business and you should dress accordingly. Don't wear clothes with holes. Think business-casual. For those working in a laboratory – you must wear closed-toed shoes! Please check with your advisor for other clothing rules (e.g., long pants or safety glasses). The end-of-the-summer talks are intended to give you the experience of a professional conference; therefore, a more professional dress (i.e., suit, dress shirt/tie, skirt, or dress pants) would be appropriate.

## T-Shirt Design Committee

Every year the SURF students design, print, and produce a t-shirt. Will this year be better than last year? You determine that! As you can see below, the designs are very different. These are just black and white versions of the different design. Most of the designs were quite colorful and gained lots of attention from the NIST population. If you have some good ideas or are creative, we have an excellent graphics artist (Beamie Young) who is willing to work with the t-shirt committee to put those ideas on paper. Keep an eye out for the sign-up e-mail or let Lisa know that you are interestd.



Keep an eye out for the sign-up e-mail or let Lisa know that you are interestd.



2001 T-shirt Design



2005 T-shirt



2009 T-shirt





### ***Library Tours***

There are a NIST Virtual Library Demo and NIST Research Library Tour on Wednesday, May 29<sup>th</sup> and June 11<sup>th</sup> from 10 a.m. – 11 a.m. Meet in the Administration Building, NIST Museum Lobby. A guided tour the NIST Research Library and the NIST Museum. The library tour familiarizes you with the Research Library and its services, while the museum tour introduces you to the many scientific achievements throughout NIST's 100+ year history. This presentation will be given by Keith Martin, NIST Library (x2789 or [keith.martin@nist.gov](mailto:keith.martin@nist.gov))

## **Miscellaneous Information**

### ***Nymeo Federal Credit Union***

The Credit Union at NIST is located in Room 101 in Building 304 (x9811). To join you need a social security number and two pieces of identification. A memo that contains a list of the SURF student names has been sent to the Credit Union, therefore, if you would like to open an account it would be helpful to identify yourself as a SURF student. To open an account, go to the loan officers sitting in the back, rather than the tellers (the loan officers will have a copy of the list). There are two ATM machines here at NIST, one outside of the Credit Union and one on the side of the main lobby in the Administration Building.

### ***Telephone Calls***

#### **Outgoing calls (From NIST)**

If you would like to call another person within the NIST campus, just dial his/her 4 or 5 digit number.

If you would like to call someone outside of the NIST campus, but within the local calling area (most of Washington DC area including northern Virginia) you must dial 9 plus the area code (301 or 240) followed by the 7-digit phone number (e.g. 9-301-555-1212).

FYI – Keep in mind that if you want to call another SURFer from your apartment but outside of the hotel, in Maryland all local calls require you to input 10 digits - the area code and the 7-digit number.

Long distance phones from a NIST phone should be work related! The only exception to that rule would be a phone call to your university either to the administration office or to your advisor's office. If you need to make a long distance call, you must dial 91 plus the area code (301 or 240) followed by the 7-digit phone number (e.g. 9-1-301-555-1212). Dialing "9" gives you an outside line. Personal long-distance calls should be kept to a minimum and you must use a calling card.

#### **Incoming call (Into the NIST campus)**

Only the 4-digit NIST phone numbers are allowed to receive outside phone calls to be made directly to them. If someone asks you for your NIST phone number, just give him/her the 301-975-xxxx (the 4-digit extension). The 5-digit phone numbers are usually reserved for lab

phones; however, occasionally they are also given to temporary employees. If this is the case, you could give out your secretary's phone number and then tell your caller to ask to be transferred to your extension (the 5-digit number).

### ***What should I do before I leave NIST at the end of the summer?***

You will receive more details as the summer comes to a close, but at a minimum, you must:

1. Return NIST Photo ID, parking permits to your SURF Director, Secretary, or NIST Police Office, 101/A16. (You may not keep your NIST ID card – it is property of the Federal Government!)
2. Return all keys to your SURF Director, Secretary, or to Locksmith, 101/B01
3. Return all library books to library

### ***Local Activities – Where can I find something to do?***

There are many opportunities for a variety of activities in the greater Washington D.C. metropolitan area.

For information on Montgomery County, home to NIST, see <http://www.visitmontgomery.com>

If you like hiking and nature, one of our closest attractions is Great Falls and the C&O Canal, just minutes away from Gaithersburg. It hosts terrific river views and challenging hiking (check out the Billy Goat Trail). More information and a hiking map can be found at these two sites:  
<http://www.rundc.com/Doc/MD/Montgomery/C&OGreatFalls.htm>  
<http://www.nps.gov/grfa/index.htm>

For Maryland tourism, go to <http://visitmaryland.org/Pages/Welcome.aspx>. Curious about what events are happening in Maryland, check out:  
<http://calendar.visitmaryland.org/Views/Events/Events.aspx?page=1>

For Washington D.C. events check out their official tourism website <http://www.washington.org>. *By the way, did you know that you can visit the Smithsonian museums free of charge all year long?*

## Health/Medical

For work-related medical treatment, NIST has a medical officer and nursing staff on duty in Room C-33, Administration Building (ext. 5131). They have a list of SURF students!

Since the Health Unit is not a diagnostic facility or geared for total health care, the employee who seeks care for non-occupational problems may only be offered first aid treatment for emergency problems, or palliative care for the relief of minor problems to enable the employee to complete his or her work day.

### **FOR EMERGENCIES CALL x2222**

#### **Area Hospitals**

In **Maryland**: The nearest hospital is Shady Grove Adventist (approximately 5 miles away, <http://www.adventisthealthcare.com/SGAH/sgah.asp>), however the area has at least three other hospitals: Holy Cross, Suburban, and Montgomery General.

In the **District of Columbia**, you can find several hospitals too: Sibley Memorial Hospital, George Washington University Hospital, Georgetown University Hospital, and Columbia Hospital for Women.

With the exception of emergency situations, physician referral is usually necessary for hospital admission.

#### **Walk-in Medical Clinics**

Several "Walk-in" clinics exist in the area. They are staffed by doctors and do not require an appointment. They also participate in most of the major health plans. Fees or co-pays are due at the time of service. Here are a few that are in our area:

#### **Secure Medical Care Clinic**

803 Russell Ave, Suite 1, Gaithersburg, MD 20879 Telephone: 301-869-0700  
Monday – Friday: 8 AM-8 PM, Weekends/holidays: 10 AM-6 PM  
web address: [www.securemedicalcare.com](http://www.securemedicalcare.com) (This is the closest to your apartments!!)

#### **Righttime Care Centers –**

882 Muddy Branch Road, Gaithersburg, MD 20878 Telephone: 888.808.6483  
Open Every Day 7 AM to Midnight  
Web address: <http://www.myrighttime.com/gaithersburg> (This is the closest to the NIST)

#### **Medical Access – Urgent Care**

19504 Amaranth Drive, Germantown, MD 20874  
Monday-Friday, 8:30 a.m. - 7:30 p.m.; Weekends/holidays 10:00 a.m. - 5:00 p.m.  
Telephone: 301-428-1070  
Web address: <http://www.medicalaccessonline.com/hours-location/>

## Calendar & Schedule of Events

\* More events will be scheduled throughout the summer. Check the Technical calendar (<http://nvl.nist.gov/pub/nistpubs/calendars/techcal/techcal.htm>), SURF email, or SURF Facebook group to verify room locations.

SURF Seminars will be followed by a social in the back of the cafeteria or another room as announced. **ALL SURF** students are strongly encouraged to attend to these functions. Seminars will be 3:30 p.m. on Thursday:

- May 30<sup>th</sup> Mike Martin and Q&A at 3:30 PM, immediately followed by a social hosted by the SURF Directors
- June 6<sup>th</sup> "Forensic Science, A Perspective From Experience" by Robert Thompson, Office of Special Programs, NIST

**Abstract:** The presentation will touch on the primary specialties in Forensic Science, more specifically those that are a part of "Criminalistics" which is defined as "the application of scientific techniques in collecting and analyzing physical evidence in criminal cases". Recently the forensic sciences have been tasked with the increased validation and scientific improvement of methods and techniques that have, in some cases, been used over 100 years. NIST Scientists are an important resource in this improvement effort. The SURF students will also have an opportunity to hear of the experience and perspective from a Forensic Scientist that is well removed from the public perception of the "CSI" and "NCIS" worlds.

- June 13<sup>th</sup> "Soft Matter and Polymers: The Materials Science of Squishy Stuff", by Robert M. Briber, Professor and Chair, Materials Science and Engineering Department University of Maryland

**Abstract:** This lecture will discuss the materials science behind the unusual properties of polymers, from commercial plastics to biomolecules. It will incorporate demonstrations and interactive examples.

- June 20<sup>th</sup> "Radiation Forensics: The Value of Studying Bones & Teeth from Radiation Accident Victims" by Marc F. Desrosiers, Research Chemist, PML

**Abstract:** Human skeletal tissues are composed of both organic and inorganic (mineral) portions. For bone and tooth tissue, ionizing radiation (x-rays, gamma rays, high-energy particles) absorbed by the mineral component (hydroxyapatite) results in a chemical change that can be measured by Electron Paramagnetic Resonance (EPR) spectrometry. EPR, has been successfully used to quantify radiation overexposures to radiation accident victims where bone or dental tissues were available for analysis. The presentation will include an introduction to EPR and radiation fundamentals, and describe how this technique was used in two North American radiation accidents. The use this technology to study Russian populations exposed to excessive radiation from Cold War nuclear weapons activities will also be described. The data from these studies are used by the National Cancer Institute to assess the appropriateness of radiation safety guidelines for health care and industrial workers.

- June 27<sup>th</sup> "Graduate Education in the Physical Sciences", by Mike Coplan, Institute of Physical Science and Technology, University of Maryland, College Park

- July 11<sup>th</sup> "Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin" by Larry Weinstein, Old Dominion University

**Abstract:** Why don't we all drive electric cars? Does it really matter if you don't recycle that plastic water bottle? If the Sun were made of gerbils, would the Earth be incinerated? How can we answer these questions without relying on experts? Understanding powers of 10 and guesstimating on your feet are essential skills in today's world, whether you're trying to distinguish between a billion-dollar subsidy and a trillion-dollar stimulus, a megawatt wind turbine and a gigawatt nuclear plant, or parts-per-million and parts-per-billion contaminants. This talk will cover the principles of estimating, introduce the "Goldilocks" categories of answers, and then look at some of the big (and small) questions of our time, including: Paper or plastic? Gasoline or electric cars? Windmills, nuclear power plants, or gerbils?

- July 18<sup>th</sup> "How to give a talk" by Richard Steiner
- July 25<sup>th</sup> "To Mars and Back in 501 Days" by John Carrico, Applied Defense Solutions

**Abstract:** In 2018, there will be a rare opportunity to fly a spacecraft on a fast free-return trajectory to swing by Mars and return to Earth within 501 days. Inspiration Mars is a team of scientists, engineers, and medical professionals studying the feasibility of sending a man and a woman on this mission, which would be the first journey by humans beyond Low Earth Orbit since the last Apollo moon landing in 1972. The speaker will present the technical challenges related to designing the mission's trajectory, spacecraft life support systems, and reentry into the Earth's atmosphere, and will discuss how the team is addressing each of these issues.

- August 2<sup>nd</sup> Wrap-up session to prepare for presentations

**SURF Colloquium – August 6<sup>th</sup> – 9<sup>th</sup>**

**SURF Pizza Party & Last Day – August 9<sup>th</sup>**

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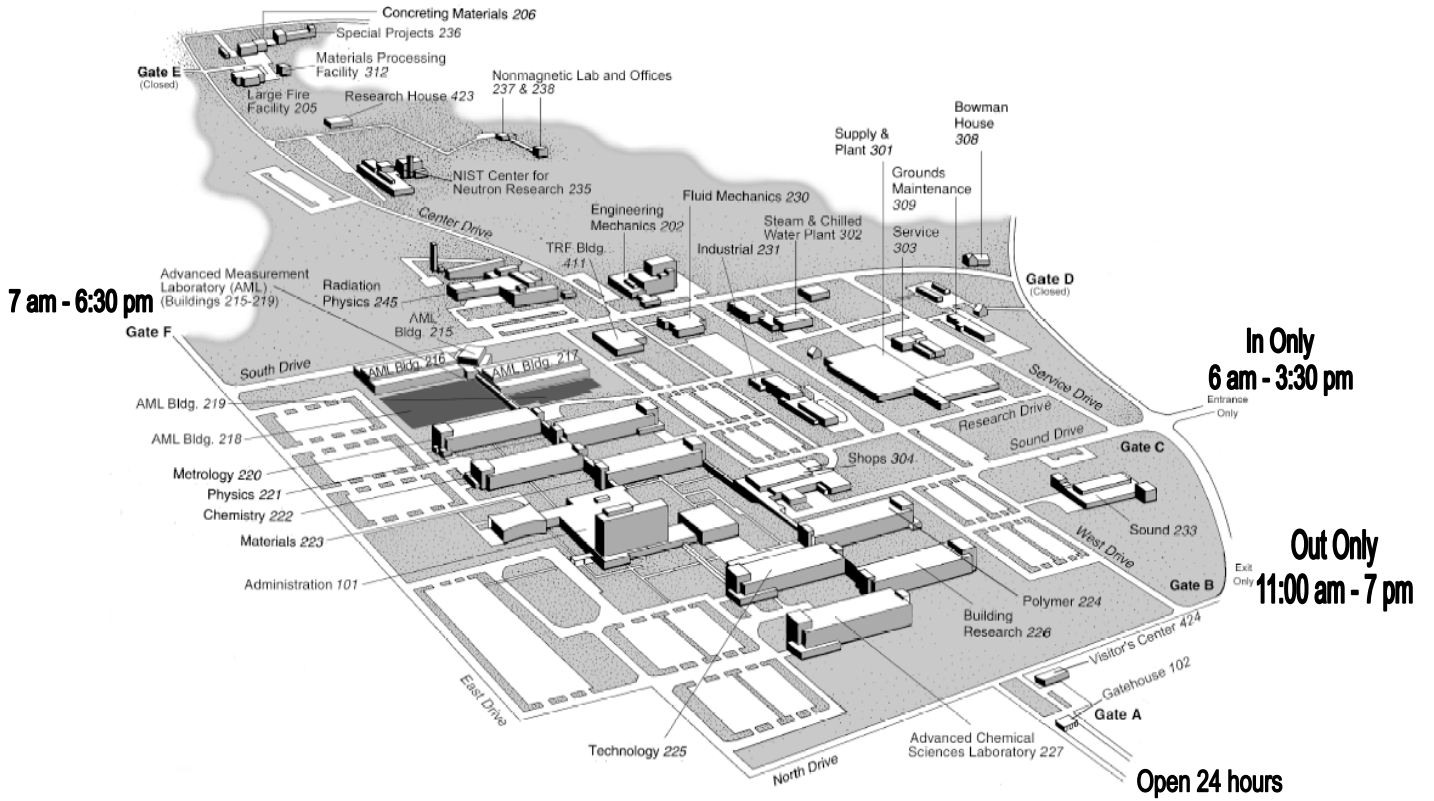
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## Frequently Called Numbers

National Institute of Standards and Technology

| Office                           | Ext.        | Office                                    | Ext.            |
|----------------------------------|-------------|---|-----------------|
| Accidents/Emergency              | 2222        | SURF Directors                            |                 |
| Cafeteria (Bldg. 101)            | 3178        | CNST – John Unguris                       | 3712            |
| Cafeteria (Bldg. 301)            | 5907        | CNST – Kartik Srinivasan                  | 5938            |
| COMSTAR Credit Union             | 9811        | EL – Clarissa Ferraris                    | 6711            |
| Conference Rooms                 | 3317        | EL – Lisa Fronczek                        | 6633            |
| Congressional Affairs            | 3080        | EL – Tania Ullah                          | 8410            |
| Discrimination /Harassment       | 2042        | EL – Chris White                          | 6016            |
| <b>EMERGENCY</b>                 | <b>2222</b> | ITL – Isabel Beichl                       | 3821            |
| Employee Assistance Program      | 5129        | ITL – David Griffith                      | 3512            |
| Ethics                           | 2487        | ITL – Liz Lennon                          | 2832            |
| <b>Fire</b>                      | <b>2222</b> | ITL – Bj Lide                             |                 |
| Fire House (non-emergency)       | 6190        | ITL – Charles Sheppard                    | 3269            |
| Health Unit                      | 5131        | MML-MatSci – Bob Shull                    | 6035            |
| <b>Injuries</b>                  | <b>2222</b> | MML-MatSci – Terrell Vanderah             | 5785            |
|                                  |             | MML-ChemBio – Kate Rimmer                 | 3651            |
| iTAC (PC Assistance)             | 5375        | MML-ChemBio – Chris Szakal                | 3816            |
| Janitorial Services              | 5920        | MML-ChemBio – Mary Satterfield            | 5364            |
|                                  |             | NCNR – Julie Borchers                     | 6597            |
| Legal Office (NIST Counsel)      | 2803        | PML-EE – Joe Kopanski                     | 2089            |
| Library                          | 3052        | PML-EE – Richard Steiner                  | 4226            |
| Locksmith                        | 2808        | PML – Paul Lett                           | 6559            |
| Lost & Found                     | 2805        | PML-Physics – Cameron Miller              | 4713            |
| Mail Services                    | 3326        | PML- Physics – Uwe Arp                    | 3233            |
| Messenger Service                | 5923        |   |                 |
| Motor Pool                       | 5923        | SURF Admin. Coordinator<br>Anita Sweigert | 4201            |
| NIST Main Number                 | 2000        |   |                 |
| NIST Public Inquiries            | 6478        |   |                 |
| Plant Trouble Service Desk       | 6928        |   |                 |
| Police Office<br>(non-emergency) | 2805        |   |                 |
| Public & Business Affairs        | 2762        |   |                 |
|                                  |             |   |                 |
| Radiation Safety                 | 5800        | Telephone repairs                         | 5375            |
| Safety Office                    | 5818        | Tours (NIST- Gaithersburg)                | 3628            |
| SEBA Gift Shop                   | 3313        | Travel (ADTRAV)                           | 2281            |
| Security Office                  | 3304        | Trouble Desk (minor repairs)              | 6928            |
| Shipping & Receiving             | 6053        | Transportation                            | 5922            |
| Status Line (Is NIST open?)      | 8000        | Visual Arts                               | 3302            |
|                                  |             | Visitor Center & Registration             | 8987 or<br>8988 |
| Storeroom (Bldg. 301)            | 6349        | Wildlife Management                       | 6960            |
|                                  |             |   |                 |

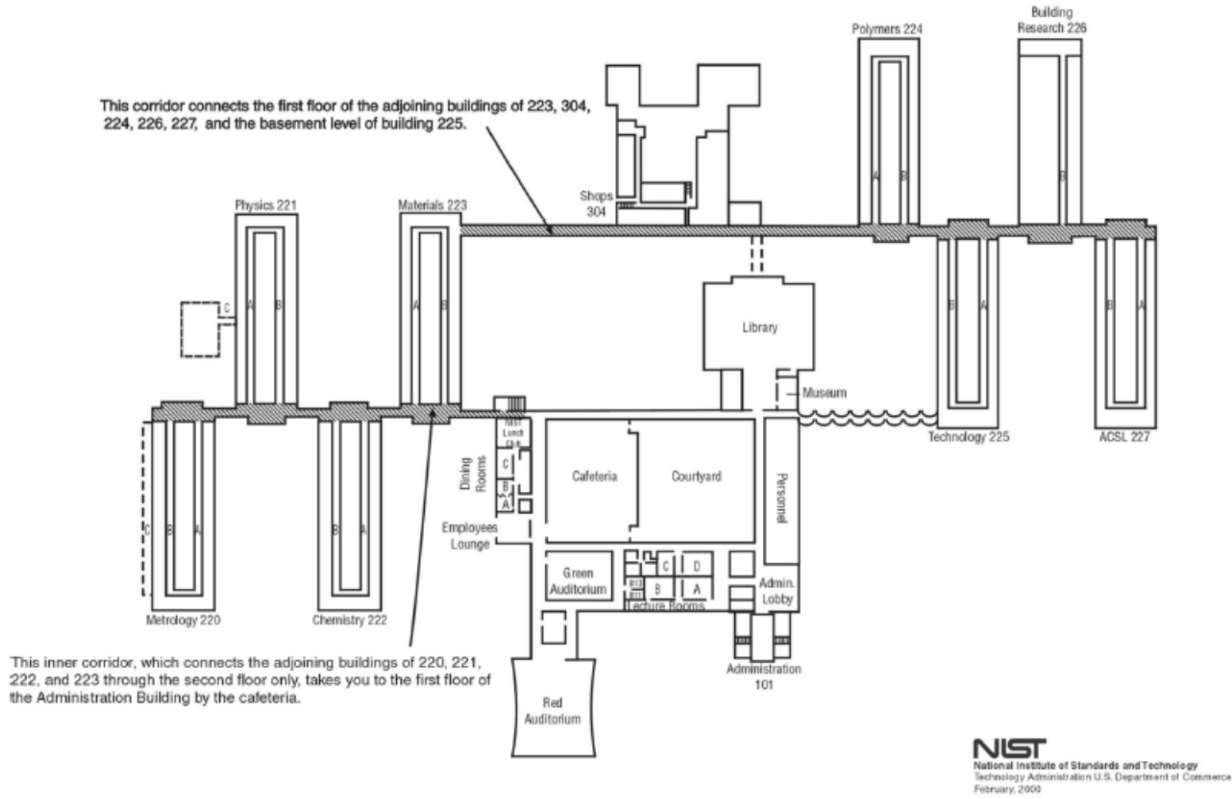
# Maps of NIST Gaithersburg Campus



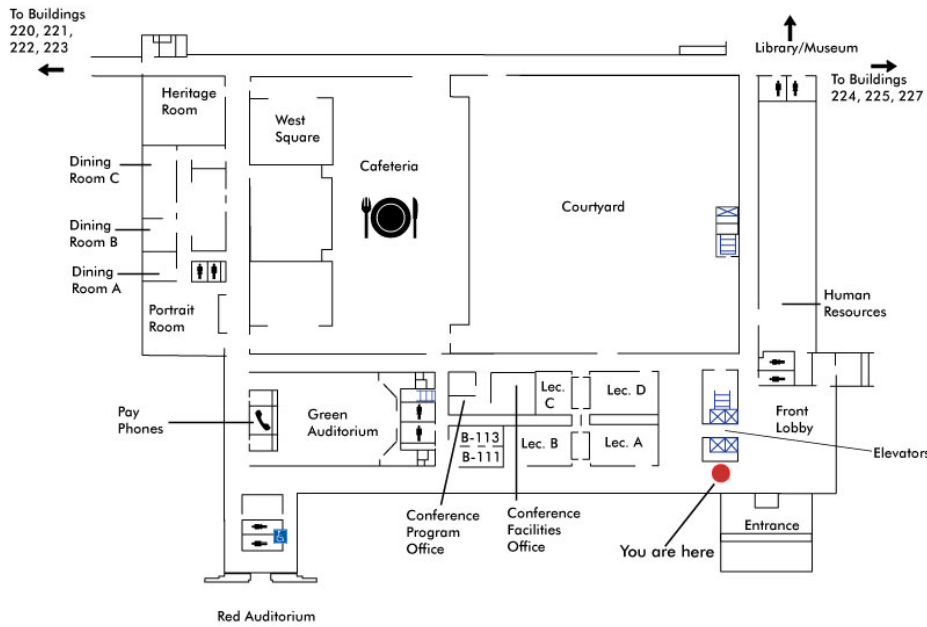
This way to  
Quality Suites



# Schematic of the NIST - Gaithersburg Adjoining Buildings



## 1<sup>st</sup> floor of the Administration Building



Basement of  
Administration  
Building

