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|  | <b>National Evolutionary Synthesis Center</b><br><b>2024 West Main Street, Suite A200</b><br><b>Durham, NC 27705</b> |  | Revision #: 1.1                          |
|   |  |  | Approval Date: 9/19/2006                 |
|   |  |  | Last Reviewed/<br>Update Date: 7/24/2013 |
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# Information Technology Support

## 1. Purpose / Background

This document outlines the range of IT and informatics staff support NESCent provides so as to ensure that the needs and expectations of sponsored scientists align with NESCent's informatics resources and capabilities. Sponsored scientists include all short and long-term visiting fellows at NESCent, including PIs and participants of NESCent-sponsored meetings. NESCent's finite IT resources must be allocated to a large number of different projects, so if, as a sponsored scientist, you anticipate that human, software, or hardware resource needs may go beyond the basic level of support, please contact Karen Cranston (karen.cranston@nescent.org) to discuss your needs.

## 2. Hardware Resources

### 2.1 Computer Hardware

NESCent provides shared workstations for use by resident scientists as well as meeting and working group participants. The machines can be booted into either a Mac OSX or Windows operating system, and are equipped with a variety of office productivity and commonly-used scientific software.

For high-performance computing, sponsored scientists may use the [Duke Shared Cluster Resource](#), on which NESCent maintains a significant share of nodes with high-priority access, and a variety of installed software packages. Some of the nodes in our share are especially equipped for high-memory applications. Sponsored scientists who anticipate using the cluster should notify [help@nescent.org](mailto:help@nescent.org) at least 3 weeks in advance of when it is needed.

NESCent can also provide loaner PC and Macintosh laptops for visitors on site. Sponsored scientists who anticipate using loaner laptops should register their need in advance at [help@nescent.org](mailto:help@nescent.org) to allow reservation of the equipment.

### 2.2 Office Hardware

NESCent maintains a variety of shared equipment for printing (black & white or color), scanning, photocopying, faxing, etc. Instructions on how to use these are communicated to meeting participants and incoming fellows prior to or at the start of a meeting or fellowship.

### 2.3 Network

All offices, conference rooms, and break-out spaces are covered by wifi wireless network access points, including access to Eduroam. Access to the wireless network does not require pre-registration. Offices and conference rooms also have wall jacks for wired Ethernet network access. Instructions on how to use the network are communicated to sponsored scientists fellows prior to or at the start of their visit.

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## 2.4 Audio/Video and Conferencing Capabilities

NESCent has three meeting rooms available for A/V and conferencing needs that accommodate between 10-16 on-site participants, plus a seminar area for larger meetings (the capacity of which is dependent on the seating arrangement). On-site presenters can use video projection equipment (resolution 1024x768 or better) or large LCD monitors (>40" diameter), depending on the meeting room. The center also utilizes audio, web, and video conference technologies to facilitate collaboration with remote participants. A portable audio and videoconferencing unit ('Polycom') is available for use in four of the conference rooms. NESCent also has a conference room specially equipped for audio/video conferencing located in the Grey building adjacent to Erwin Mill. This room can accommodate up to 10 on-site participants, and supports most A/V and conferencing needs, including electronic presentations, screen sharing, full room audio, web, and video conferencing. Sponsored scientists who anticipate a need for A/V conferencing or who expect to have remote meeting participants should consult [NESCent's Multimedia and Audio/Video Conferencing Support Policy](#) and accordingly register their anticipated needs in advance at [help@nescent.org](mailto:help@nescent.org).

## 3. Software Resources

### 3.1 Hosted Services

NESCent maintains an environment for hosting collaborative sites, mailing lists, databases, web-applications, and source code development. In particular, NESCent runs the following services.

- Apache web server with support for PHP, Perl, Python and Ruby on Rails
- JBoss Java application server
- MySQL 5.x and PostgreSQL 8.x relational database management systems
- Mailman for managing mailing lists
- MediaWiki and [Wikispaces](#) for electronic collaborative workspaces
- Gallery for photo albums

IT will assist sponsored scientists to use these services on an as-needed basis. IT will also assist with using source code version control, issue trackers, wikis, and other resources for collaborative software development and documentation that are hosted by independent providers, such as Github, Bitbucket, Google Code, and SourceForge. NESCent IT maintains an [umbrella organization on Github](#) that sponsored scientists can choose for hosting their source code repository. Contact [help@nescent.org](mailto:help@nescent.org) to submit a request for support or a consultation.

### 3.2 Scientific Software

NESCent IT acquires, installs, and, where necessary, licenses scientific software on resident scientists' workstations, on shared workstations, and on the high-performance compute cluster. Sponsored scientists should communicate their

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anticipated needs for analysis software to [help@nescent.org](mailto:help@nescent.org) as early as possible to allow time for licensing and setup, especially for software needed on the high-performance compute cluster.

### 3.3 Collaboration Tools

To facilitate effective electronic communication, sharing of documents, discussion notes, reports, slide presentations, and other material, NESCent Informatics sets up a mailing list and deploys a Wiki-type electronic collaborative workspace for all working groups. The electronic workspace is pre-loaded with content specific to the meeting participants, and a tutorial can be delivered to meeting participants on-site. Resident scientists can also request mailing lists and Wiki-type electronic workspaces to be set up for themselves and their collaborators.

## 4. Custom Informatics Support

NESCent Informatics staff are generally available for consultation regarding informatics projects, and can assist with small projects (e.g. developing scripts, releasing data and code). Sponsored scientists interested in informatics support should contact Karen Cranston ([karen.cranston@nescent.org](mailto:karen.cranston@nescent.org)) for a consultation. The staff have particular expertise in the following technologies and areas:

- Programming languages: C, C++, Java, Perl, PHP, Python, R, Ruby
- Database platforms: PostgreSQL
- Statistics platforms: R
- Web application platforms: PHP, J2EE (JSP, JSTL, Servlets), Spring, Ruby on Rails, Django (Python)
- Middleware platforms: Hibernate, RESTlet, Active Objects (Ruby)
- Stand-alone GUI applications: Java/Swing
- User-experience design
- Open source software
- Data management and publication
- Ontologies, including use of OWL

To best allocate NESCent's limited development resources towards enabling the scientific goals of the projects it sponsors, NESCent's Informatics team will typically only aim to develop prototype, rather than production-level, databases and web interfaces. NESCent also is not able to serve as a long-term host of community informatics resources. NESCent can, however, assist in submitting grant applications for projects that require greater informatics effort..