	National Evolutionary Synthesis Center 2024 West Main Street, Suite A200 Durham, NC 27705		Revision #: 1.1
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IT Support Policy

1. Purpose / Background

This document applies to all short-term and long-term visiting fellows at NESCent, including PIs and participants of NESCent-sponsored meetings. Collectively these are referred to as 'sponsored science' or 'sponsored scientists'. The document outlines the range of IT and informatics support NESCent can provide so as to ensure that the needs and expectations of sponsored scientists align with NESCent's informatics resources and capabilities.

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 IT support, please contact the Associate Director for Informatics (Todd Vision, tjv@bio.unc.edu, 919-843-4507) 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 machine(s) can be booted into either a Mac OSX or Windows operating system, and is equipped with a variety of office productivity, statistical, and evolutionary as well as basic bioinformatics analysis software.

For high-performance computing, sponsored scientists can be granted access to 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 support@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 support@nescent.org to allow reservation of the equipment.

2.2 Office Hardware

NESCent maintains shared and fully networked common office devices, like color and b/w printers, copier, scanner, and fax. Instructions on how to use

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these will be 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 802.11g-compatible wi-fi wireless network access points. Offices and conference rooms also have wall jacks for wired Ethernet network access. Instructions on how to use the network will be communicated to meeting participants and incoming fellows prior to or at the start of a meeting or fellowship.

2.4 Audio/Video and Conferencing Capabilities


NESCent has five meeting rooms available for A/V and conferencing needs, accommodating between 10-16 on-site participants. 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.

3. Software And Application Infrastructure

3.1 Hosting Services Environment

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-based web server
- PHP4 (apache-module based) and PHP5 (cgi-based)
- JBoss application server (for J2EE/EJB applications), including Tomcat (for JSP/Servlet applications)
- MySQL 5.x and PostgreSQL 8.x relational database management systems

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- Subversion source code repository
- Mailman for managing mailing lists
- MediaWiki for electronic collaborative workspaces
- Gallery for photo albums

IT will assist sponsored scientists to use these services on an as-needed basis. Contact support@nescent.org to allow NESCent proper planning and allocation of resources.

3.2 Scientific Software

Sponsored scientists should communicate their anticipated needs for analysis software to support@nescent.org as early as possible to allow time for licensing and setup, especially for software needed on the high-performance compute cluster. NESCent IT acquires, installs, and, where necessary, licenses scientific software on resident scientists' workstations, on shared workstations, and on the high-performance compute cluster.


3.3 Collaborative Tools And Workspace

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. Database And Application Development

NESCent Informatics staff can provide support in data modeling, database schema design and instantiation, and in programming middleware, web applications, and stand-alone applications. The staff can also help with developing analysis workflows and scripts. Supported platforms include:

- 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
- GIS programming: ArcGIS

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NESCent Informatics can provide consulting and limited development time in support of sponsored science. Scientific visitors who anticipate requiring application, database, or workflow development in support of their project should contact Todd Vision (tjv@bio.unc.edu), preferably before accepting their award, to discuss how to meet their needs.

In order to maximize the number of sponsored scientists whose needs the programming staff can support, NESCent's Informatics team will typically only aim to develop prototype, rather than production-level, databases and web interfaces. If accomplishing the research goals of a funded proposal requires an enterprise-scale production-type system, NESCent will assist in applying for the appropriate support at the San Diego Supercomputing Center's Data Central, or in submitting a grant application to support additional software development staff.

The following examples may serve as an orientation of the kinds of custom-programmed applications that the Informatics staff can develop: [Maximum Bodysize Evolution Database](#), [Primate Life Histories Database](#)