ENTREZ AND TRANSGENIC FISH: EXPLORING GENOMIC DATABASES ON THE WEB

Courtney Shaw
Smithsonian Institution Libraries
National Museum of Natural History
Washington, DC 02560-0154
cshaw@sil.si.edu

ABSTRACT: In today's world the literature is full of articles on the human genome, gene therapy, and transgenic plants. At the Smithsonian, especially at the Laboratory for Molecular Systematics researchers are looking at tissue samples for their DNA and submitting information into Genbank.Lectures on storing them have been given at Society for the Study of Natural History Collections (SPNHC). At the National Zoological Park through NOAHS (New Opportunities in the Health Sciences) gene pools are being broadened through artificial insemination. Moreover, as the zoologists present their papers at conferences and write their articles often there are comparative references of morphological and visual studies to their genetic components. At the Smithsonian and everywhere sequence data has been integrated into others forms of research. Thus, I wish to inform those librarians who might not be that familiar with the genomic databases
about them.

In my lecture I will introduce the audience to the National Center for Biotechnology Information and its genomic databases, especially GenBank, using the Entrez browser to access information on nucleotide and protein sequences. I will take the audience through a GenBank record, discussing its components and contributors. I will then point out the other components of Entrez, including ways to submit data to NCBI through Sequin and Bankit, making comparisons of unknown sequences with known ones in GenBank using BLAST, and looking at other formatting options, e.g. FASTA I will show the Taxonomic tables, as well as the three-dimensional structures possible through downloadable software available from NCBI. Finally, I will show the bibliographic links to the molecular biology section of PubMed (the National Library of Medicine's user friendly Medline.). I will then mention related Web links, including those dealing with bioethics.

My means of showing its capabilities will be to use subjects of curiosity and usefulness to the marine library world-those fish used for biotechnical applications, i.e. transgenic fish, because of their how rate of reproduction and fairly simple genomic structure, especially Zebrafish.

The PowerPoint presentation for this paper can be accessed at http://www.sil.si.edu/staff/IAMSLIC/