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James R. Thurmond
Computational Biologist, Scientific and Web Programmer

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Education: Master of Science in Bioinformatics, May 2006
Indiana University, Bloomington, Indiana
GPA: 4.0 on a 4-point scale

50+ hrs of additional graduate credit in mathematics, 1996 – 2000
Western Michigan University, Kalamazoo, Michigan

Master of Arts in Mathematics, August 1993
Southwest Texas State University, San Marcos, Texas

30+ hours of coursework in computer science
UT Austin, WMU, and IU

40+ hrs coursework/graduate credit in biology, 1987 – 1989
University of Texas, Austin, Texas

Bachelor of Arts in Physics, May 1985
University of Texas, Austin, Texas

Work
Experience: *Database Programmer*   **July 2006 – present**
Responsible for database maintenance, perl and Mason web tool maintenance, and tool development and upgrades on the HIV, hepatitis C, hemorrhagic fever, and influenza viral genome sequence databases, at the Los Alamos National Laboratory. Support research with data analysis, model generation, and other computational activities.   Solely responsible for development of several complete DB-driven web-based research tools. Merged a set of HCV and HIV sequence database tools. Work in an linux/apache environment, using version-control software (SVN). Contribute to and participate in academic atmosphere by publishing papers, engaging in research activities, and attending lectures, symposia, and journal clubs. Please visit these LANL websites: http://hiv.lanl.gov, http://hcv.lanl.gov, http://flu.lanl.gov/, http://hfv.lanl.gov (coming soon).

Research Assistant   **January 2005 – May 2006**
Dr. Santiago Schnell, in the School of Informatics at IU, supervised and funded my Capstone project, a web-based tool for analyzing enzyme kinetics data, using a unique and mathematically powerful new algorithm.   Built this project from the ground up, starting with a clean linux PC. Installed Apache server software, wrote all of the HTML and CSS, javascript, perl scripts and CGI, and some fortran code, utilized GnuPlot and other apps, integrating these parts into a working website.
Please visit the BioFitWeb site at http://156.56.92.83/BioFitWeb.htm, or mirrored at http://biofitweb.cox-thurmond.net/BioFitWeb.shtml.

Teacher   **1990 – 2004**
I taught mathematics and science for 15 years, at a wide range of levels and to a great variety of students. My duties have included committee work, new curriculum development, research projects, and management of other teachers. Details of my teaching career are available upon request.

Laboratory Assistant   **1989**
I worked in Dr. Ian Molineux's microbiology laboratory investigating host-phage interactions between *E. coli* and bacteriophage T7. My activities included culturing and plating bacteria and phages, mutating and transfecting with genes of interest, purifying proteins, isolating and sequencing DNA, and analyzing data.

Publications: J. Thurmond, H. Yoon, C. Kuiken, K. Yusim, S. Perkins, J. Theiler, T. Bhattacharya, B. Korber, W. Fischer. *Web-based design and evaluation of T-cell vaccine candidates.* Bioinformatics 24(10):1639-1640, 2008. abstract here

C. Kuiken, P. Hraber, J. Thurmond, K. Yusim. *The hepatitis C sequence database in Los Alamos.* Nucleic Acids Research 2007. abstract here

P Hraber, R Leach, L Reilly, J Thurmond, K Yusim, C Kuiken, and the Los Alamos HIV Database Team. *Los Alamos hepatitis C virus sequence and human immunology databases: An expanding resource for antiviral research.* Antiviral Chemistry and Chemotherapy 18(3):113-124, 2007.

J. Thurmond. S. Schnell. *The condition for pseudo-first-order kinetics to be valid in receptor-ligand associations is derived using phase-plane analysis.* (submission pending)

Skills: *Programming*
Fluent in perl, PHP, C++, java, and several other languages. Familiar with Windows, Unix, Linux, and Mac environments. Well-versed with many technical software packages such as Matlab, Systat, Excel, etc. Experience using version control software.

Web design
Skilled with HTML, javascript, PHP, and CSS. Experience installing and maintaining Apache and Tomcat web server software.

Inter-personal
Excellent communicator, verbally and in writing. Strong collaboration skills. I learn quickly and can teach well.

Projects: *Protein Feature Accent*
Web tool for mapping protein sequence features directly onto an interactive 3-D graphic of the protein structure. Integrated Mason/perl, javascript, java applet. Part of the LANL HIV sequence database website.
http://www.hiv.lanl.gov/content/sequence/PROTVIS/html/protvis.html

Montessori Online Menu
Web application tool package automating parent menu selection and school administration maintenance for a private school in Bloomington, IN. PHP with MySQL database access.
Volunteer project.
http://montessori.dreamhosters.com/index.php (Menu tools are restricted access; ask for account)

Project on African Expressive Traditions
Implemented a database-driven resource for course information on the POAET web site. Webmaster for site.
http://www.indiana.edu/~complit/poaet.html

BioFitWeb
Web application for enzyme kinetics data analysis. Integrates fortran code, perl CGI and GnuPlot scripts, javascript forms, and SQL querying capability administrated on a Linux Fedora system running Apache server software. Capstone project for bioinformatics masters degree.
http://156.56.92.83/BioFitWeb.htm or http://biofitweb.cox-thurmond.net/BioFitWeb.shtml

Sequence Alignment
Perl-CGI web tool for DNA or protein sequence alignment using the Smith-Waterman and Needleman-Wunsch dynamic programming algorithms with a unique weighted scoring system.

Java Application
Towers of Hanoi game implemented with a GUI, full animation of player moves, autoplay and play speed controls.

References: Dr. Carla Kuiken
Staff Scientist, Hepatitis C Virus Sequence Database
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Mailstop K710
Los Alamos National Laboratory
Los Alamos, NM. 87545
E-mail: kuiken@lanl.gov
Telephone: (505) 665-6463

Dr. Bette Korber
Staff Scientist, HIV Sequence Database
Mail to: TA-03, Building 0410
Mailstop K710
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