

Curriculum Vitae

Edward Steven Szekeres, Jr.

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References available upon request

Summary

Dr. Szekeres' educational background and work experience provide a unique fusion of genetics, molecular biology, microbiology, and computer programming; his primary interests include bioinformatics/software development, clinical data management, pharmaceutical project management and clinical research positions that allow him to utilize the combination of those strengths.

Professional Experience

Nov 2006-current, Manager of Production Informatics
454 Life Sciences, Inc., Branford, CT.

Is currently leading a team of informatics scientists associated with the Sequencing Center within 454 Life Sciences which utilizes 454's next generation sequencer to complete projects for commercial and educational institutions. Established an Oracle 10g, Linux based data warehouse for tracking a wide scope of information (technical sequencing metrics, financial metrics, informatics workflow, and performance metrics) and enabling access to this data via a web portal. Development work includes Object Oriented PERL and Linux machine setup and management.

1999-Nov 2006, Manager of Clinical Informatics & Biometrics
CuraGen Corporation, Branford, CT.

- Promotion from Project Leader to Manager of Clinical Informatics & Biometrics, 2005
- Promotion from Senior Research Scientist to Project Leader, 2002
- Promotion from Research Scientist to Senior Research Scientist, 2000
- Outstanding New Employee Award, Dec. 2000

Clinical Informatics & Biometrics:

Led a team charged with management of clinical and safety data from study planning phases through data analysis. This position included management and budgetary responsibilities, generation of team goals, interaction with contract research organizations (CROs) and consultants, clinical database management (Oracle Clinical), medical coding (using Oracle TMS with MedDRA and WHODrug dictionaries) and discrepancy management, data extraction, CRF design, safety system (Oracle AERS), system validation and compliance.

Designed and implemented a fully validated interface system between SAS and Oracle Clinical. This Linux based system allowed for connections to multiple Oracle Clinical databases on either UNIX or Windows platforms with fully automated or manual processing of OC extract views to finalized SAS transport files, as well as serving as a repository for both internal and external finalized study data.

Clinical Project Management:

Served as project manager for the implementation of a clinical data management system (CDMS). Assisted in software evaluation, selection, and project budgeting. Coordinated the installation of the Oracle Pharmaceutical Application suite (Oracle Clinical v4.5, AERS 4.5 and Thesaurus Management System v4.5), including IQ, OQ, and PQ for a fully

validated environment. Performed vendor evaluation and selection for the validation process, and had full system installation and validation finished in a time frame under the industry standard. Authored required Standard Operating Procedures (SOPs) and Guidance documents. Trained as an administrator, operator, and coder (WhoDrug, MedDRA) for the installed Oracle Clinical products. Worked to develop "in house" CDM functionality including study setup, clinical data transfer requirements, clinical protocol review and data entry.

Project and Document Management:

Developed and managed a proprietary object-oriented PERL CGI/web-based high-throughput document generation system for the production of drug development research plans, patent generation, research reports, and other documents. He played an increased role in regulatory and clinical data management as the company focused on later stages of the drug development process.

Sequence analysis, Single Nucleotide Polymorphisms (SNPs):

Based upon his experience with DNA assembly QC, he was assigned to develop a web based data management platform and underlying Oracle database structure for a proprietary SNP detection process (SNPCalling™). This included the development of high-throughput heuristic SNP detection/analysis software utilizing PHRAP generated DNA assemblies, and the accompanying project management tools for storing, categorizing, and managing a SNP database for both internal discovery and external collaborations. As part of this effort he was charged with building a team to address the needs of the SNPCalling™ process, thus he was involved directly in interviewing, hiring, and supervision of two Research Scientists and a Senior Software Engineer. His team played significant roles in other company technology areas, in addition to their primary focus.

DNA sequencing quality control:

He worked to improve project technical report formats for intranet deployment (HTML, Oracle8, PL/SQL) creating dynamic reports tied to underlying database information which provided real time display of key sequencing data. He developed an innovative graphical view of multiple parameters including PHRAP assembly quality scores and nucleotide mismatches that provided a rapid visual overview of an entire assembled gene (PERL, Pro*C, Oracle8, Java) that became a standard for QC, and was presented at the 12th Annual GSAC Conference, September 2000.

1991-(current). Owner/Operator.

FES Digital Solutions, Inc., Guilford, CT.

FES Digital Solutions, Inc. (<http://fesdigital.com>) was established to provide high quality business graphics, web consulting, and software development. Currently handling a range of services covering web marketing, project subcontracting, custom programming, consulting, and web engineering. Initially developed presentation graphics for several consulting firms, and developed and marketed software designed for interfacing music synthesizers to PC's. Provided services for World Wide Web projects including HTML page creation, server management, web hosting, and customized CGI scripting (Xerox, University of Rochester, Cornell University Medical School, NetWorld Systems, Inc., Global Immigration Group, Inc.). Developed and marketed specialized programs for waveform editing for music synthesis, and processing of web site forms.

Developed and is still marketing nationwide a Windows™ based software package to track and report student clinical hours for university/college certification programs in Speech and Language Pathology and Audiology. Experience with Visual Basic, PASCAL, C/C++.

1995-1997 (part-time). Senior Web Engineer.

NetWorld Systems, Inc., Rochester, NY.

Was responsible for corporate level World Wide Web site design and implementation. Fully versed in all levels of HTML coding including interactive forms, advanced page layouts, and data manipulation. Experience with CGI and script programming in C, C++, and PERL. Involved with setup and maintenance of web sites on servers based on UNIX, WindowsNT, Windows95, and Macintosh platforms.

1987-1998. Clinical Technologist, Clinical Microbiology Laboratory.

Strong Memorial Hospital, Rochester, NY.

Experience in all phases of clinical lab operation including computer data entry, specimen processing covering all major types of microbiology procedures (aerobic and anaerobic culturing, tissue processing, gram stain interpretation, viral processing, biohazard procedures, and blood cultures), preliminary culture resulting and interpretation, and communication with doctors. Assigned as lead tech for evening shift before switching to part-time when entering the graduate program, extra duties included scheduling and problem solving. Specialized training completed for the Bac/T Alert automated blood culturing system, and for AFB/TB procedures.

1989-1990. Contract Technician, Eastman Kodak Inc.

TAD Technical Services, Rochester, NY.

Assigned to Chemical Quality Service Division of Eastman Kodak, Inc. Involved in quality control of production and research chemicals, with experience in chemical handling, quality control testing, and sample information processing on a mainframe computer system. Extra duties included scheduling and problem solving. In 1989, was moved to a new position assisting in the coordination of a special project to review vendor testing and generation of Kodak approved test methodologies.

1986-1989. Teaching Assistant, Computer Science Lab.

Monroe Community College, Rochester, NY.

Acted as lab monitor and teaching assistant, and was later promoted to a supervisory role. Responsible for opening, closing, and scheduling of lab. Involved with equipment setup and maintenance. Provided assistance in both hardware and software. Handled tutoring for students in programming with PASCAL and BASIC. Experience with many major software packages (Lotus, Excel, Dbase, various word processors, and graphics/CAD).

1982-1986. General Contracting Worker.

Martin Maintenance Service, Big Moose, NY. (Adirondack Park Region)

General contracting including, construction and maintenance of summer cottages, design and fabrication of small structures, general repair. Experienced in carpentry, plumbing, electrical work, finishing and painting, foundations, small engine repair, tree removal, and roofing.

Education

Ph.D. Biophysics

University of Rochester School of Medicine and Dentistry,
Department of Biochemistry and Biophysics. Rochester, NY.

- Recipient of the 1999 William F. Neuman Award for Biophysics

M.S. in Biophysics

University of Rochester School of Medicine and Dentistry.

A.A.S. in Medical Laboratory Technology

Monroe Community College, Rochester, NY.

- Graduation with honors, recipient of Academic Excellence Medallion.
- Certification by American Society of Clinical Pathologists [ASCP].

B.A. in Biology (concentration in Neurobiology and Behavior)

Cornell University, Ithaca, NY.

Ph.D. Research Overview

Damage to DNA is the consequence of many processes, including exposure to ultraviolet radiation or mutagenic chemicals. If the damage is not corrected, completion of DNA replication (a process essential to the survival of the cell) is compromised. In these situations, specialized cellular mechanisms are activated to either repair the damage, or to bypass the site of the damage at the expense of a potential mutation. While in some cases, a mutation can be advantageous, many times it can have serious side effects such as cancer. Therefore, understanding how and when mutations arise is of great importance. The focus of his research is the regulation of selected cellular damage tolerance mechanisms, utilizing a highly specific model system in the bacterium *Escherichia coli*. In the course of this work he uses techniques such as: oligonucleotide synthesis and assembly, bacterial cloning, plasmid construction, restriction enzyme digests, P1 based gene transduction, DNA sequencing, high pressure liquid chromatography (HPLC), agarose gel electrophoresis, PCR detection of mutants, and other standard molecular biology procedures.

Research Publications

Ozgenic, AI, Szekeres ES Jr., and Lawrence, CW. 2005. *In Vivo* Evidence for a *recA*-Independent Recombination Process in *Escherichia coli* That Permits Completion of Replication of DNA Containing UV Damage in Both Strands. *J. Bact.* **187(6)**:1974-1984.

Szekeres, ES Jr., Woodgate, R., and Lawrence, CW. 1996. Substitution of *mucAB* or *rumAB* for *umuDC* Alters the Relative Frequencies of the Two Classes of Mutations Induced by a Site-Specific T-T Cyclobutane Dimer and the Efficiency of Translesion DNA Synthesis. *J. Bact.* **178(9)**:2559-2563.

Knauf, PA., Ries, EA., Romanow, LA., Bahar, S., Szekeres, ES. 1993. DNDS (4,4'-DINITRO-STILBENE-2,2'-DISULFONATE) Does Not Act as a Purely Competitive Inhibitor of Red-Blood-Cell Band 3-Mediated Anion-Exchange. *Biophysical Journal* **64(2)**:A307.

Presentations

2006 Annual Meeting, Oracle Clinical User Group, September 2006 (*scheduled*).

Tutorial Presentation: "Utilization of Virtualized Computer Platforms for Efficient Training and Testing for Clinical and Safety Data Management Systems", Edward S. Szekeres Jr, CuraGen Corporation, Branford, CT

42nd Annual Meeting, Drug Information Association, June 2006.

Poster: "Utilization of Virtualized Computer Platforms for Efficient Training and Testing For Clinical and Safety Data Management Systems", Edward S. Szekeres Jr, CuraGen Corporation, Branford, CT

12th Annual GSAC Conference, September 2000.

Poster: "Post-Assembly Analysis Methods of Transcript Sequences for Quality Assessment and SNP Candidate Detection", Edward S. Szekeres Jr, Yong Kong, and Martin D. Leach, Bioinformatics, CuraGen Corporation, Branford, CT

Gordon Research Conference on Mutagenesis, June 1998.

Poster: "In Vivo Analysis of Damage Tolerance Pathways in *E. Coli* with Novel Double-Stranded Double-Lesion Constructs".

Other Certifications, Course Work, and Credentials

Past	Member of Drug Information Association (DIA)
Past	Member of Oracle Clinical User Group
APR 2006	Completion of Red Hat Linux Training Series: RH033 Linux Essentials 1, RH133 System Administration 1, and RH253 Linux Networking Services 2
DEC 2005	Drug Information Association, Improving Data Quality Through Effective Coding, 0.6 continuing education units, IACET.
APR 2005	Drug Information Association, 20 th Annual DIA Clinical Data Management Symposium and Exhibition, 1.4 continuing education units, IACET.
JUN 2004	Barnett International, Introduction to Clinical Data Management, 1.5 Continuing Pharmaceutical Education Credits, ACPE.