

Ethan Strauss

Sr Research Scientist - Bioinformatics

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Education

- **Ph.D. in Plant Sciences.** [University of Maine at Orono](#) (8/90-8/96). Ph.D. thesis titled "Molecular Genetics of VSB717, a Mycovirus of *Rhizoctonia solani*, a Fungal Pathogen of Potato". G.P.A 3.92
- [Oregon Health Sciences University](#), Portland, Oregon (1988). Courses in Molecular Biology and Cancer Biology.
- **B.A. in Biology** (with an emphasis on molecular biology). [Reed College](#), Portland, Oregon (1982-1987). Undergraduate thesis titled "Nitrogen Metabolism in *Candida albicans*: The Construction and Screening of a Genomic Library".
- [University of California at Berkeley](#) (1981-1982 and 1986). Courses in Human Anatomy, Immunology, and Honors research in molecular biology.

History

- Bioinformatics Sr Scientist 1, Promega Corp. 8/2005 to present
- Technical Services Scientist IV, Promega Corp. 9/2003 to 8/2005
- Technical Services Scientist III, Promega Corp. 9/2000 to 9/2003
- Technical Services Scientist II, Promega Corp. 10/98 to 9/2000
- Technical Services Scientist I, Promega Corp. 10/97 to 10/98
- Postdoctoral Research Associate, University of Illinois. 8/96-10/97
- Visiting Instructor of Biology, St. Mary's College of Maryland. 8/95-5/96
- Graduate Student, University of Maine. 9/90-8/96
- Research Assistant, Oregon Health Science University. 1/88-8/90
- Undergraduate, Reed College. 82-87

Scientific Experience

- Sr Research Scientist - Bioinformatics (8/2005 to present) Promega Corporation
 - Translated, liaised, and facilitated communication between Information Technology and Scientific personnel.
 - Scientific lead and algorithm developer for:
 - Mass Spec data analysis software (in development)

- [Find My Gene database.](#)
 - [STR Normalization Manager™](#)
 - Scientific lead and sole programmer for:
 - [FuGENE® HD Protocol Database](#)
 - [Protease-Glo™ Oligonucleotide Designer](#)
 - [Cell ID™ Custom Bin Generator](#)
 - [Flexi® Vector Primer Design](#)
 - [BioMath Calculators](#)
 - Developed numerous applications with Windows and Web interfaces for internal use. These applications used primarily Microsoft SQL Server and C#.Net technology and include:
 - Analysis of stutter and peak balance in Short Tandem Repeat data.
 - Analysis of Small Pool PCR data.
 - Analysis of various aspects of Mass Spec data.
 - Analysis of Codon usage and codon pair frequency
 - Detection and annotation of features on DNA and protein sequences
 - Access to web services from NCBI and EMBL
 - Microsoft SQL Server database and interface to manage ~7000 cDNA inserts and vectors as well as to perform *in silico* cloning experiments.
 - Extensive work on search for human cDNA clones to allow search by gene name, gene alias, accession number, sequence, and keywords. This includes tools for comparison to standard (RefSeq) sequences for the Gene of interest.
 - Microsoft Word and Excel additions providing extensive DNA and protein analysis capabilities and data analysis capabilities.
 - Assisted R&D scientists, and others, in general bioinformatics including:
 - Mass Spec data analysis
 - Primer design for PCR including Promega products such as the Plexor® HY assay.
 - Design of spreadsheets and macros for specific data analyses.
 - Help with use of Vector NTI & LaserGene.
 - ad hoc bioinformatics analyses as needed.
- Technical Services Scientist IV (9/2003-8/2005) Promega Corporation.
 - Led internal team to database Promega's technical service information resources
 - Led internal team rewrite the technical appendix section of Promega's print catalog.
 - Provided technical support for Promega's complete product line via telephone, Fax, and e-mail.
 - Attended conferences as a Promega representative.
 - Provided technical training for new Technical Services Scientists, Field Applications Specialists, and various other Promega employees.
 - Followed ISO9000 procedures.
 - Provided computer support for the technical service department.
 - Developed a number of web based tools for biology
 - Extensive computer use including:
 - FrontPage Explorer & Editor
 - HTML

- JavaScript
 - VBscript
 - Microsoft Word
 - Bioinformatics servers on the web
 - Microsoft Internet Explorer
 - Microsoft Outlook, Microsoft
 - Excel
 - Access
 - A number of different internal software package
- Technical Services Scientist III (9/2000-9/2003) Promega Corporation.
 - Provided technical support for Promega's complete product line via telephone, Fax, and e-mail.
 - Attended conferences as a Promega representative.
 - Served on the High Throughput Screening Business Unit Team.
 - Wrote and Edited technical documents (for instance [Screening for Genetically Modified Organisms in Food Using Promega's Wizard[®] Resin](#))
 - Provided technical training for new Technical Services Scientists, Field Applications Specialists, and various other Promega employees.
 - Followed ISO9000 procedures.
 - Designed web pages for Promega's internal and external web sites using FrontPage.
 - Provided computer support for the technical service department.
 - Learned JavaScript, VBscript, SQL, and developed a number of web based tools for biology .
 - Maintained the FAQ, Biomath, Transfectionasst, and Biolink, sections of Promega's external web page.
 - Served as a "Computer Wizard"
 - Extensive computer use including:
 - JavaScript
 - Microsoft Office
 - Bioinformatics servers on the web
 - A number of different internal software package
- Technical Services Scientist II (9/98-9/2000) Promega Corporation.
 - Provided technical support for Promega's complete product line via telephone, Fax, and e-mail.
 - Wrote and edited literature for Promega
 - Developed and maintained web pages for Promega's internal and external web sites.
- Technical Services Scientist I (10/97-9/98) Promega Corporation. Provided technical support for Promega's complete product line via telephone, Fax, and e-mail. Designed web pages for Promega's internal web site.
- Postdoctoral Research Associate (8/96-10/97). Dr. Schuyler Korban. Department of Environmental Sciences and Natural Resources, University of Illinois at Urbana/Champaign. Investigated fatty acid synthesis in soybean: expression of genes involved in fatty acid synthesis and modification during soybean embryo development. Cloned fatty acid synthase genes. Developed a lab web page (No longer available)
- Visiting Instructor (8/95-5/96). Department of Biology, [St. Mary's College of Maryland](#). Teaching at a small liberal arts college; directed independent student research projects,

participated in departmental and campus-wide faculty meetings, advised students, and developed and taught courses.

- **Courses Taught**

- Contemporary Bioscience (Fall 1995). Introductory biology for non-majors.
- Contemporary Bioscience (Emphasis on agricultural technology) (Spring 1996). This course focused on various technologies, ranging from methods for sustainable agriculture to the use of genetic engineering in crop plants, used in agriculture.
- Biology of Plants (Spring 1996). Introductory botany with laboratory. Physiology, anatomy, development, genetics, and diversity of higher and lower plants and fungi.
- Plant Physiology (Fall 1995). General plant physiology. Original research papers relevant to plant physiology were read and discussed in class. Laboratory exercises were designed to give the students some familiarity with modern plant physiology techniques (i.e. PCR and tissue culture) and instrumentation (i.e. porometers and psychrometers).
- Introductory Biology Laboratory (Fall 1995, and Spring 1996). Laboratory for introductory biology for biology majors
- Graduate Research Assistant (9/90- 8/95). Dr. Stellos Tavantzis. Department of Plant Biology & Pathology, University of Maine. Studied molecular genetics of Potato Virus X (PVX) and PVX resistance in potato. Studied mycovirus genome structure and expression using VSB717, a double-stranded RNA virus of the plant pathogenic fungus *Rhizoctonia solani*, as a model system. Computer analysis of DNA, RNA, and protein sequences. Trained professors, graduate students, postdocs, and technicians in a variety of computer techniques including the use of PCgene, BLAST DNA homology search programs, and various internet tools. Trained undergraduate lab assistants in molecular biology techniques.
- Teaching Assistant. Introductory Botany (1/95-5/95). Dr. Christa Schwintzer and Dr. Benedict Neubauer. Department of Plant Biology & Pathology, University of Maine. Taught plant physiology and plant anatomy laboratories
- Laboratory Coordinator. Introductory Botany (for students with no biology background) (8/94-12/94). Dr. Douglas Gelinas. Department of Plant Biology & Pathology, University of Maine. Designed, scheduled, and taught introductory botany laboratories .
- Teaching Assistant. Introductory Biology Laboratory (4 semesters between 1992 and 1994). Departments of Plant Biology & Pathology, and Zoology, University of Maine. Presented laboratory lectures, designed and graded all lab assignments. Designed of molecular biology and immunology labs for all laboratory sections (about 800 students).
- Research Assistant (1/88-8/90). Dr. Rodney Sparks. Department of Cell Biology and Anatomy, Oregon Health Science University. Studied molecular and cellular biology of differentiation and oncogenesis of murine cells in culture. Trained and supervised lab aides and summer interns in basic cell culture and molecular biology techniques.
- Laboratory Assistant (summers '86 & '87). Dr. John Hearst. Department Chemistry, University California at Berkeley. Studied photosynthesis in photosynthetic bacterium *Rhodobacter capsulata*. Attempted to develop monoclonal antibodies for research on

nucleic acid structure.

Skills

- Programming in C#.Net 3.5, 2.0 & .Net 1.1 including extensive use of SOAP based web services to access data from NCBI and similar data repositories.
- Programming and using VBA macros and vsto in Microsoft Excel & Microsoft word for DNA & protein analysis
- Programmatic manipulation and analysis of DNA, RNA, and Protein sequences.
- Performing DNA analysis with a variety of commercial and freely available tools and packages
- Advanced use of Microsoft Excel for data analysis.
- Use of NCBI (Genbank) data, web site, and web services.
- SQL Server database use.
- Microsoft office use.
- Strong molecular biology skills including: PCR, RT-PCR, Plasmid DNA isolation, Genomic DNA isolation, RNA isolation, Northern blotting, work with radioactivity, restriction digestion, cDNA and genomic DNA library construction and screening, Restriction digestion, in vitro transcription, DNA sequencing with the Sanger method, Mammalian cell culture.

Patents

- European Patent # EP2116601 Vectors for direction cloning, issued November, 2009
- US Patent # US8293503 B2 [Vectors for directional cloning](#), issued October, 2012

Honors and Awards

- Travel grant. National Plant Lipid Cooperative. 1997 Symposium on Biochemistry and Molecular Biology of Plant Fatty Acids and Glycerolipids
- University of Maine Department of Botany Teaching Assistantships (1992-1995).
- University of Maine Graduate School Research Assistantships (1990-1993). These assistantships are competitive university wide.
- University of Maine Association of Graduate Students grants spring and fall 1991, spring and fall 1992, and spring 1995.
- National Science Foundation Predoctoral fellowship 1990 (honorable mention).

Other Experience

- Guest lecturer:
 - Molecular Technologies I, University of Wisconsin Masters in Biotech program
 - Molecular Technologies II, University of Wisconsin Masters in Biotech program
 - Introduction to Bioinformatics , Madison Area Technical College
- Attended:
 - [Powerscripting](#), National Center For Biotechnology Information

- Techniques in Bioinformatics and Comparative Genomics (2000) from the BioPharmaceutical Technology Center
- Bioinformatics course ("Bioinformatics 1") distance learning from the University of Manchester (2000).
- Botany department representative University of Maine Association of Graduate Students (AGS) (1992-1993 and 1994). Served as a member of the graduate student board. Helped to rewrite the AGS constitution. Served as the AGS representative on the university wide health insurance committee.
- Paper session assistant (1992). American Phytopathological Society Northeast regional meeting.
- Committee member (1992). Committee to choose the College of Sciences nominee for the University of Maine Distinguished Professor award.
- Residence Hall Advisor (8/86-5/87) Reed College, Portland Oregon. Acted as liaison between students and administration for 28 students in a co-ed college dormitory. Helped new students to adjust to college life. Organized dorm activities.
- Computer assistant (8/86-5/87) Reed College, Portland Oregon. Assisted students in problems with Macintosh computers and with the UNIX operating system. Repair and recovery of files from crashed disks.
- I have done paid and volunteer work for a number of local, state, and national parks.

Conferences Attended

- Great Lakes Bioinformatics Conference 2013
- National Plant Lipid Cooperative 1997 Symposium on Biochemistry and Molecular Biology of Plant Fatty Acids and Glycerolipids
- Washington Area Section American Society of Plant Physiologists Spring meeting 1996.
- Invited Speaker, Potato Virus Yn (PVYn) Forum. National Farmers Union. Prince Edward Island, Canada. 1993
- American Phytopathology Society Northeastern Division regional meeting 1992.
- Plant Molecular Biology Gordon Research Conference 1992. Joint meeting of the American Society for Cell Biology and The
- American Society for Biochemistry and Molecular Biology 1989

Sequences submitted to Genebank

- [Rhizoctonia solani 717 partitivirus segment 1](#)
- [Rhizoctonia solani 717 partitivirus segment 2](#)
- [Glycine max \(soybean\) beta-ketoacyl-acyl carrier protein synthase III](#)

Presentations and Publications

- A. Capes-Davis, Y. Reid, M. Kline, D. Storts, E. Strauss, et al (2012) [Match criteria for human cell line authentication: Where do we draw the line?](#) Int J Cancer 10, 1002
- S. Saveliev, E. Strauss, M. Rosenblatt and M. Urh (2014) [Yeast and human protein extracts for mass spectrometry method development and instrument validation](#). Promega

Poster

- M. Urh, S. Saveliev, E. Strauss, M. Rosenblatt, R. Jones, M. Ford, D Allen (2013) [Glycoform Profiling from Therapeutic Antibodies at the Protein, Peptide and Cleaved Glycan Level Using Mass Spectrometry](#). Promega Poster
- S. Saveliev, L. Engel, E. Strauss, R. Jones and M. Rosenblatt (2012) [The Advantages to Using Arg-C, Elastase, Thermolysin and Pepsin for Protein Analysis](#)
- S. Wheeler, E. Strauss, and T. Schagat (2008). [Sequencing Primers for Flexi® Vector Inserts](#) eNotes
- E. Strauss (2006) [Designing Your Plexor™ Assay](#) Application Note
- M. Slater, J. Hartnett, N. Betz, J. English, E. Strauss, B. Pferdehirt, and E. Schenborn, (2005) [A New System for Cloning and Expressing Protein-Coding Regions](#) Promega Notes 89, 11-15
- B. Spoth, and E. Strauss, (1999). [Screening for Genetically Modified Organisms in Food Using Promega's Wizard® Resin](#) Promega Notes 73, 23:
- E. E. Strauss, D. K. Lakshman, S. Tavantzis (2000) [Molecular characterization of the genome of a partitivirus from the basidiomycete *Rhizoctonia solani*](#). Journal of General Virology. 81, 549-555
- E. E. Strauss and S. S. Korban (1997) [Cloning of betaketoacyl\[acp\] synthase III \(KAS III\) from soybean](#). National Plant Lipid Cooperative 1997 Symposium on Biochemistry and Molecular Biology of Plant Fatty Acids and Glycerolipids. (poster)
- E. E. Strauss, D. K. Lakshman, S. Tavantzis (1996) Molecular genetics of VSB717, a virus of the phytopathogenic fungus *Rhizoctonia solani*. Washington Area Section American Society of Plant Physiologists Spring meeting 1996 (talk)
- R.L. Sparks, E.E. Strauss, and A.V. Magna (1994) Regulation of differentiation and protein kinase C expression in 3T3 T proadipocytes: Effects of TGF-beta and transformation. Cell Proliferation. 27, 139-151
- R.L. Sparks, B.J. Allen, and E.E. Strauss (1992) TGF-beta blocks early but not late differentiation-specific gene expression and morphologic differentiation of 3T3 T proadipocytes. J. Cell Physiol. 150, 568-577
- R.L. Sparks, E.E. Strauss, A.I. Zygmunt, and T.E. Phelan (1991) The Antidiabetic AD4743 Enhances Adipocyte Differentiation of 3T3 T Mesenchymal Stem Cells. J. Cell Physiol. 146, 101-109
- E.E. Strauss and R.L. Sparks (1990) TGF-beta inhibits early but not late differentiation specific gene expression and morphologic differentiation in 3T3 T proadipocytes. J. Cell Biol. 111, 347a (poster)
- R.L. Sparks, A.I. Zygmunt, and E.E. Strauss (1989) Loss of Differentiation Control in Transformed 3T3 T Proadipocytes. J. Cell Biol. 109, 183a (poster)
- R.L. Sparks and E.E. Strauss (1988) Normal and Tumorigenic/Differentiation-Defective 3T3 T Mesenchymal Stem Cells. J. Cell Biol. 107, 51a (poster)