

## **Susan Jean Johns: Curriculum Vita**

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### **EDUCATION:**

B.S., Chemistry, 1967, Michigan Technological University, Houghton, Michigan

### **WORK EXPERIENCES:**

#### **11/98 - Present: SACS, Specialist**

Provide bioinformatics expertise for the campus PMT grant to identify exons for the studied genes (developed Python software to assist in exon location). Responsible for prototyping the PMT result web pages and organizing the data received from the campus Genomic Core facility for further analysis. Provide instructional expertise, develop materials for, and conduct workshops for the campus PGA grant (workshops given several times a year).

Initially shared responsibility for operation of SACS consulting services, now solely responsible. Initially shared responsibility for conducting SACS informal seminars; now have sole responsibility for them. Create, develop, and deliver materials for the seminar series. Manage and maintain the SACS web site. Maintain SACS-supported databases and put up requested sequence analysis software. Collaborate with SACS users on projects.

Apply Perl and CGI scripting skills to the creation of new SACS web interfaces for various software package components (e.g., GCG, PHYLIP) and individual programs (e.g., MultAlin, MEMSAT), plus other projects (e.g., AutoBlast). The PHYLIP web implementation is one of the few existing in the world. MultAlin is a multiple alignment program with a complex command line format and unique comparison tables. MEMSAT is one of the programs used by the SwissProtein database to determine transmembrane region assignments. Its web page couples the prediction with a TOPO representation of the transmembrane protein. AutoBLAST is a means of automatically submitting a sequence to NCBI for BLAST runs at desired time intervals. It is composed of web, CGI, and crontab components, all of which I created.

#### **8/86 - 8/98: VADMS Center, Washington State University**

I was the principal technical support person for the VADMS Center since its inception, providing the following services: formal and informal instruction and curricula development for VADMS courses; database installation and maintenance; software evaluation and installation; user assistance and consulting; system manager functions; customized sequence analysis software development and daily administrative functions including budgetary control, ordering, and personnel supervision.

My position evolved over the years, starting with the classified staff designation **Research Technologist II** (9/86), changing to **Scientific Programmer III** (8/88), and finally from classified staff to an Administrative Professional designation, **System and Programming Professional** (11/93).

## Other Positions Held:

### **8/85 - 7/86: Computer Programmer for the Molecular Biology Dept. of the BioMedical Center of the University of Uppsala, Uppsala, Sweden**

As a computer programmer, worked on modifications to the UWGCG software package to accept PIR-formatted databases, interfaced a film scanner to a VAX 11/750, ported x-ray analysis software from a VAX to an IBM environment, and interfaced the Staden software package to a digitizer pad for local VAX.

### **1980 - 1985: Research Technologist II, (WSU)**

Carried out sarcoplasmic reticulum studies, laser Raman protein studies, and computer-assisted studies on protein characteristics (secondary structure prediction, isoelectric point, and the utilization of x-ray crystallography data by microcomputer systems).

### **1967 - 1972: Assistant Scientist, Pediatrics Dept., (University of Minnesota)**

Involved in renal disease research.

## PUBLICATIONS:

1. D.H. Osato, C.C. Huang, M. Kawamoto, S.J. Johns, D. Stryke, J. Wang, T.E. Ferrin, I. Herskowitz, K.M. Giacomini. (2003) "Functional Characterization in Yeast of Genetic Variants in the Human Equilibrative Nucleoside Transporter, ENT1," *Pharmacogenetics*. **13(5)**:297-301.
2. Y. Shu, M.K. Leabman, B. Feng, L.M. Mangravite, C.C. Huang, D. Stryke, M. Kawamoto, S.J. Johns, J. DeYoung, E. Carlson, T.E. Ferrin, I. Herskowitz, K.M. Giacomini, Pharmacogenetics Of Membrane Transporters Investigators. (2003) "Evolutionary Conservation Predicts Function of Variants of the Human Organic Cation Transporter, OCT1," *PNAS* **100(10)**:5902-7.
3. M.K. Leabman, C.C. Huang, J. DeYoung, E.J. Carlson, T. Taylor, M. de la Cruz, S.J. Johns, D. Stryke, M. Kawamoto, D.L. Kroetz, T.E. Ferrin, A.G. Clark, N. Risch, I. Herskowitz, K.M. Giacomini. (2003) "Natural Variation in Membrane Transporter Genes Reveals Evolutionary Constraints," *PNAS* **100(10)**:5896-901.
4. D. Stryke, M. Kawamoto, C.C. Huang, S.J. Johns, L.A. King, C.A. Harper, E.C. Meng, R.E. Lee, L. L'Italien, P.T. Chuang, S.G. Young, W.C. Skarnes, P.C. Babbitt, and T.E. Ferrin. (2003) "BayGenomics: A Resource for Gene-Trapped Mouse Embryonic Stem Cells," *Nucleic Acids Res.* **31(1)**:278-81.
5. M.K. Leabman, C.C. Huang, M. Kawamoto, S.J. Johns, D. Stryke, T.E. Ferrin, J. DeYoung, T. Taylor, A. Clark, I. Herskowitz, K.M. Giacomini (2002) "Polymorphisms in a Human Kidney Xenobiotic Transporter, OCT2, Exhibit Altered Function," *Pharmacogenetics*, **12(5)**:395-405
6. B. Feng, M.J. Dresser, Y. Shu, S.J. Johns, K.M. Giacomini. (2001) "Arginine 454 and Lysine 370 Are Essential for the Anion Specificity of the Organic Anion Transporter, rOAT3," *Biochemistry*. **40(18)**:5511-20.
7. A. Urtti, S.J. Johns, and W. Sadée. (2001). "Genomic Structure of Proton-Coupled Oligopeptide Transporter hPEPT1 and pH-Sensing Regulatory Splice Variant," *AAPS Pharmsci*. **3** (1) article 6.
8. J.R. Dutton, S. Johns, and B.L. Miller. (1997). "StuAp is a Sequence-specific Transcription Factor that Regulates Developmental Complexity in *Aspergillus nidulans*," *EMBO J.* **16**: 5710-5721.
9. G.E. Arnold, A.K. Dunker, S.J. Johns, and R.J. Douthart. (1992). "Use of Conditional Probabilities for Determining Relationships Between Amino Acid Sequence and Protein Secondary Structure," *Proteins; Structure, Function, and Genetics* **12**: 382-399.

10. G.E. Arnold, A.K. Dunker, S.J. Johns, and R.J. Douthart. (1990). "The Sequence Attributes Method for Determining Correlations Between Amino Acid Sequence and Protein Secondary Structure," *Current Research in Protein Chemistry*, pp. 405-415.
11. A.K. Dunker, W.E. Johns, R. Rammon, B. Farmer, and S.J. Johns. (1986). "Slightly Bizarre Protein Chemistry: Urea-Formaldehyde Resin from a Biochemical Perspective," *J. Adhesion* **19**: 153.
12. K.C. Toogood, B. Folsom, T. Topping, H. McCutchan, M.J. Dolejsi, S. Johns, G. Stuart, and A.K. Dunker. (1983). "Evidence that Trypsin Digestion Exposes a Channel in the Sarcoplasmic Reticulum Membrane," *Membrane Biochemistry* **5**: 49.

#### **PUBLICATIONS (in press, submitted or in preparation):**

1. C. Pauli-Magnus, C.C. Huang, M. Kawamoto, S.J. Johns, D. Stryke, T.E. Ferrin, J. DeYoung, T. Taylor, E. Carlson, I. Herskowitz, K.M. Giacomini, A.G. Clark, and D.L. Kroetz "Sequence Diversity and Haplotype Structure in the Human MDR1 Gene," *Pharmacogenetics*, inpress

#### **Articles and Chapters in Books:**

1. D. Stryke, C.C. Huang, M. Kawamoto, S.J. Johns, E.J. Carlson, J.A. DeYoung, M.K. Leabman, I. Herkowitz, K.M. Giacomini, and T.E. Ferrin. (2003) "SNP Analysis and Presentation in the Pharmacogenetics of Membrane Transporters Project," in *Pacific Symposium on Biocomputing '03*, ed. by R. B. Altman, A. K. Dunker, L. Hunter, T. A. Jung and T. Klein, World Scientific Press, Inc., NY, pp:535-47.
2. S. J. Johns, S. Thompson, and A. K. Dunker. (1996). "An Introductory Course in Computational Molecular Biology: Rationale, History, Observations and Course Description," in *Pacific Symposium on Biocomputing '96*, ed. by L. Hunter and T. Klein, World Scientific Press, Inc., NY, pp 396-407.
3. S. Thompson, S.J. Johns, and A.K. Dunker. (1996). "Educational Issues in Biocomputing" (Introduction to Session), in *Pacific Symposium on Biocomputing '96*, ed. by L. Hunter and T. Klein, World Scientific Press, Inc., NY, pp 12-13.
4. R.C. Speth, S.M. Thompson, S.J. Johns. (1995). "Angiotension II Receptors: Structural and Functional Considerations," in *Tissue Renin - Angiotension Systems*. A. Mukhopadhyay and M. K. Raizada, editors, Plenum Press, NY, pp.169-192.

#### **Software Publication:**

**TOPO** software included in the graphical version of the EMBOSS package.

#### **CONFERENCES and Workshops:**

1. (Jul. 2003) PGA Conference "From Genome to Disease: A Symposium of High Throughput Biology" at Bethesda, MD.
2. (Dec. 2002) UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
3. (Dec. 2001) UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
4. (Dec. 2000) UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
5. (Aug. 2000) Workshop on Molecular Evolution , MBL, Woods Hole, MA
6. (Dec. 1998) UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.

## **POSTER PRESENTATIONS:**

1. Susan J Johns, Elaine C Meng, Thomas E Ferrin and Patricia C Babbitt (July 2003) "BayGenomics' Bioinformatics Workshops for Protein Analysis" presented at PGA Meeting in Bethesda, MD.
2. Susan Jean Johns (Dec 2002) "SACS: A Bioinformatics Resource," presented at UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
3. Susan Jean Johns (Dec 2001) "TOPO2: Transmembrane Protein Visualization Tool," presented at UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
4. Susan Jean Johns (Dec. 2000). "Finding Exons in PMT Genes," presented at UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
5. Susan Jean Johns and Christopher Botka (Dec. 1999). "Sequence Analysis & Consulting Service: A UCSF Bioinformatics Resource," presented at UCSF Pharmaceutical Chemistry Departmental retreat at Asilomar.
6. Susan J. Johns and Robert C. Speth (June 1997). "TOPO: A Tool for Two-dimensional Representation of Membrane Spanning Proteins," presented at the Gordon Research Conference on Ligand Recognition and Molecular Gating.
7. S.J. Johns (Jan. 1997). "Biocomputing Instruction on a Shoestring," presented at Pacific Symposium on Biocomputing.

## **PROFESSIONAL ACTIVITIES:**

**1/96 & 1/97 Section Co-chair: Pacific Symposium on Biocomputing** - Education section. Organization and direction of symposium subsection concerned with the methodology and curricula for teaching bioinformatics.

## **PROFESSIONAL RECOGNITION:**

Dow Scholar in chemistry for senior year. Elected to Phi Kappa Phi Honor Society. Graduated first in Chemistry Dept., Michigan Technological University (1967).

## **PROFESSIONAL GOALS:**

I would like to pursue the use of computers in solving problems in the field of molecular biology by means of both graphical and computational techniques.