

**BIOGRAPHICAL SKETCH**

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NAME Phillip Stafford, PhD	POSITION TITLE Assc. Research Prof., Arizona State University
eRA COMMONS USER NAME PSTAFFORD	

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Goethe Institute	ZdaF, KS	1987	German
University of Arkansas	BS, BS	1989	Microbiology, Botany
Washington University	PhD	1999	Molecular Pathology
Norris Cotton Cancer Center	Post-doc	1997-1999	Cancer Biology
Dartmouth College	Post-doc	1999-2000	Genetics
Marine Biological Laboratories	Post-doc	2000-2001	Neurobiology

**Professional Experience**

1980-1987	Biological Computing, Agrihealth (Guardian Antibiotics) Inc., Springdale, AR
1989-1993	Lab Coordinator, Peterson Industries Dept. of Genetics, Decatur, AR
1997-2001	Postdoctoral Fellow, Dartmouth Medical School (Hanover, NH), Norris Cotton Cancer Center (NCCC, Lebanon, NH) and the Marine Biological Laboratories (MBL, Woods Hole, MA)
1998-present	Editor and contributor, WH Freeman Publishers, NY, NY
1998-2002	Sr. Scientist, Dept of Statistical Informatics, Motorola Life Sciences, Northbrook, IL
2002-2003	Director of Biostatistics, Amersham/Pharmacia, Tempe, AZ
2003-present	Adjunct Professor of Biostatistics, WP Carey School of Business, ASU, Tempe, AZ
2003-2006	Director Biostatistics, Translational Genomics Research Institute, Phoenix, AZ
2006-present	Associate Professor, AZ Biodesign, Center for Innovations in Medicine, ASU, Tempe, AZ

**Honors, Awards, Professional Societies**

2003	ASA, American Statistical Association, Arizona State University, Tempe, AZ
2002	Blackbelt Statistics, Motorola University, Schaumburg, IL
2001	ISCB, International Society for Computational Biology, Motorola Life Sciences, Northbrook, IL
1997-9	Cancer Biology Training Grant, Norris Cotton Cancer Center; NIH Fellowship, Dartmouth Med. School
1993	Sigma Xi national chapter
1992	Phi Kappa Phi national chapter
1992	Graduate Scholarship, Peterson Industries Dept. of Genetics, Decatur, AR

**Relevant Publications: Articles**

1. Warner S, Han H, [Stafford P](#), Hurley L, Von Hoff DV: "Comparing Aurora A and Aurora B as Molecular Targets for Growth Inhibition of Pancreatic Cancer Cells", *in press* Molecular Cancer Therapeutics.
2. [Stafford P](#) and Brun M: "Normalization Affects Classification Error and Biological Interpretation", *in revision* NAR Methods.
3. [Stafford P](#), Chen Y: "Expression Technology – a Critical Review of the Nature, Performance, and Interpretation of Expression Microarrays", IEEE Signal Processing Journal, Special Issue on Signal Processing Methods in Genomics and Proteomics, ed. Edward Dougherty, Gustavo Stolovitsky, Ioan Tabus, Xiaodong Wang, New York, 2006.
4. [Stafford P](#): "Molecular Profiling Technologies", *in*: Biochips as Pathways to Drug Discovery, ed. Gary Hardiman and Andrew Carmen, Marcel Dekker, Inc., New York, 2006.
5. [Stafford P](#), Kim S, Bittner M, Suh E: "Integrated Approach for Computational Systems Biology". *in*: Genomic Signal Processing and Statistics", ed. E. Dougherty, I. Shmulevich, J. Chen, Z. J. Wang, Hindawi Publishing Corporation, New York, NY, 2005.

6. Puffenberger EG, Hu-Lince D, Parod JM, Craig DW, Dobrin SE, Conway AR, Donarum EA, Strauss KA, Dunckley T, Cardenas JF, Melmed KR, Wright CA, Morton DH, Liang W, Stafford P and Stephen DA: "Mapping of Sudden Infant Death with Dysgenesis of Testes Syndrom (SIDDT) by a SNP Genome Scan and Identification of *TSPYL* loss of Function", *PNAS*, **101(32)**:11689-11694, 2004.
7. Brown JR, Stafford P, Langford GM: "Short-range axonal/dendritic transport by myosin-V, a model for vesicle delivery to the synapse", *J. Neurobiol.*, **58(2)**:175-88, 2004.
8. Stafford P: Cover art, Feb. 5 *Journal of Neurobiology*, 2004.
9. Stafford P, and Liu P: "Microarray Technology Comparison, Statistical Analysis, and Experimental Design", *in: Microarrays: Methods and Applications: Nuts and Bolts, Ch. 15, DNA Press*, 2003.
10. Brown J, Simonetta K, Sandberg L, Stafford P, Langford GM: "Recombinant globular tail fragment of myosin-V blocks vesicle transport", *Biol. Bulletin* **201**:240-241, 2001.
11. Stafford P, Brown J and Langford GM: "Interaction of actin- and microtubule-based motors in squid axoplasm probed with antibodies to myosin V and kinesin" *Biol. Bulletin* **199**:203-205, 2001.
12. Molyneaux B, Mulcahey M, Stafford P, Langford G: "Cloning and characterization of squid Myosin V" *Cell Motil. Cytoskel* **46**:108-115, 2000.
13. Stafford P: Cover art, June *Cell Motility and the Cytoskeleton*, 2000.
14. Stafford P: "NCBI, EBI, DDBJ: International DNA Database Consortium" *in Encyclopedia of Life Sciences*, Macmillan Publishers Limited, 2000.
15. Langford G, Stafford P: "Vesicle Transport Assay" *in Encyclopedia of Life Sciences*, Macmillan Publishers Limited, 2000.
16. Snay-Hodge C, Stafford P, Cole CN: "Dbp5p is a shuttling transport factor that interacts with Rat7p/Nup159p and Gle1p and suppresses the mRNA export defect of *xpo1-1* cells" *EMBO* **18**:5778-5889, 1999.
17. Stafford P: "Detection of genes involved in growth-form selection of *Candida albicans*" ASM publications: *International Collection of Microbial Resources for Teaching and Learning*, 1999.
18. Stafford P: "Dimorphism in *Candida albicans*" ASM publications: *International Collection of Microbial Resources for Teaching and Learning*, 1999.
19. Stafford P: "Genes involved in dimorphic growth of the human pathogen *Candida albicans*" *Fungal Genetics Newsletter* **21(3)**:303-10, 1997.
20. Stafford P: "Genes Associated with Dimorphism in the Human Pathogen *Candida albicans*", University of Arkansas Press, Dissertation, 1997

#### Invited Abstracts:

1. Stafford P: "Integrating Datasets from Different Genomic Platforms", 2006 Australian Health and Medical Research Congress, Melbourne, Victoria, Australia, Nov. 29, 2006
2. Stafford P: "Translating Genomics to Clinical Practice", 2006 Australian Health and Medical Research Congress, Melbourne, Victoria, Australia, Nov. 30, 2006.
3. Stafford P: "arrayCGH Resolution Enhancement Through Concurrent Analysis of Expression Data", 2005 Hangzhou International Conference on Drug Metabolism, Zhejiang University, Hangzhou, China, Oct. 18-20, 2005.
4. Stafford P and Hostetter, G: "oligoCGH Analysis of Colorectal Polyps Identify Genomic Markers Indicating Pre-Carcinoma and Recurrence Status", The 64<sup>th</sup> Annual Meeting of the Japanese Cancer Association, Sapporo City, Hokkaido, Japan, Sep 14-16, 2005.
5. Hostetter G, Gooden C, Watanabe A, Kim S, Stafford P, Bittner M, Trent J, Alberts D: "Accessing Paraffin Tissues to Generate Molecular Profiles Predictive of Neoplastic Progression in Colorectal Adenomas Using oligoCGH", *Oncogenomics* 2005, San Diego, CA, Feb. 2-5. 2005.
6. Stafford P: "Swaley's Syndrome: From SNP Marker to Identified Truncation", Silicon Genetics User's Conference, Tokyo, Japan, Oct. 5-7, 2004.
7. Stafford P: "Integration of Agilent and Affymetrix Microarray Data at a Multidiscipline Cancer Institute", *Systems Biology – From Genome to Phenome*, Melbourne, Victoria, Australia, May 3-14, 2004.
8. O'Connel M, Haaland P, Jae L, Stafford P: "Variance functions and test statistics adjustments in the differential expression analysis of microarray data", *ASA* 2003, New Orleans, LA, March 21-24, 2004.

9. Kim YH, Wilson P, Boswick B, Liao J, Callan O, Stafford P, Berthold MR, Ortolani M, Snodgrass HR: "Change of gene expression profiles in stable renal tubule epithelial cell lines as biomarkers of drug-specific toxicities", 42<sup>nd</sup> Meeting for the Society of Toxicology, Salt Lake City, UT, March 12-15, 2003.
10. Dorris DR, Nguyen A, Gieser L, Lockner R, Lublinsky A, Patterson M, Stafford P, Sendera TJ, Elghanian R, and Mazumder A: "Amersham Biosciences CodeLink™ microarray: An accurate expression-profiling platform with solution-phase hybridization behavior". Chips-Hits Conf., Philadelphia, PA, Nov. 28-30, 2002.
11. Stafford P: "New analytical methods in microarray data analysis, including hardware models for terabyte analysis", 3<sup>rd</sup> Annual Insightful Technology Conference, Seattle, WA, Nov. 7-8, 2002.
12. Stafford P, Langford G, Brown J: "A structural and biochemical analysis of Myosin V/Kinesin Interactions", ASCB General Meeting, Washington DC, Dec. 6-9, 2001.
13. Stafford P, Liu P, Aslam J, Cormier J, Stein C, Gross R: "A novel algorithm inspired by Markov chains for cluster prediction", TIGR 5<sup>th</sup> Annual Conf. in Computational Genetics, Baltimore, MD, Nov. 28-Dec. 1, 2001.
14. Stafford P: "Failure mode analysis of SNP probe design using logistic regression modeling", Microarray Data Analysis, Alexandria, VA, Sept. 19-21, 2001.
15. Stafford P, Brown J, Langford G: "Myosin V Interacts with Kinesin in the squid giant axon", ASCB General Meeting, San Francisco, CA, Dec. 9-13, 2000 (*in JCB*, Nov. 2000)
16. Stafford P: "Educational Applications of HTML-based Classes", WH Freeman Editors Meeting, Boston, MA. June 6, 2000.
17. Stafford P, Cole CN: "hnRNP proteins associated with Dbp5p – helicase cofactors?" Cold Spring Conference: Eukaryotic mRNA Processing, Cold Spring Harbor, NY, Aug 25-29, 1999.
18. Hammell CM, Gross S, Zenklusen D, Heath C, Stafford P, Stutz F, Moore C, Cole CN: "Coupling of mRNA termination, 3' cleavage and export", EMBO: RNA Structure/Function, Prague, Poland, Aug. 18-23, 1999.
17. Colot HC, Hodge C, Stafford P, Cole CN: "Dbp5p, a DEAD-box helicase required for mRNA export, interacts with nuclear pore components and with novel factors" Cold Spring Conference: Dynamic Organization of Nuclear Function, Cold Spring Harbor, NY, Oct. 12-15, 1998.
18. Stafford P: "Nuclear proteins expressed during dimorphism in *Candida albicans*", 19<sup>th</sup> Fungal Genetics Conference, Monterey, CA, Mar. 18-23, 1997.
19. Stafford P, Rhoads DD: "Characterization of genes regulating dimorphism in *Candida albicans*" ASM General Meeting, New Orleans, LA, Nov. 15-19, 1993.

### Research Projects Ongoing or Completed during the last 5 Years

Targets to Therapeutics in Pancreatic Cancer. This project seeks to identify one therapeutic per year that targets the genetic vulnerabilities in Pancreatic Cancer. The analysis challenges include modeling gene regulatory networks with siRNA and arrayCGH analysis and typing these to relevant phenotypic clinical data.

- Principal Investigator: Dan Von Hoff
- Core B Co-PI and Biostatistician: Phillip Stafford (10%)
- Agency: NIH
- Type: PO1 CA109552-01
- Period: June 1, 2005 – May 31, 2010

Validation of Genes that Modulate Doxorubicin Therapy. The major goals in this project are (1) to identify genes that, when silenced by high-throughput siRNA, synergistically increase the cytotoxic sensitivity to Doxorubicin in human breast cancer cell lines, and (2) to characterize and systematically investigate the mechanisms of sensitization, (3) finally to test increased sensitivity in mice when these genes are targeted in living tumors.

- Principal Investigator: Spyro Mousses
- Biostatistician: Phillip Stafford (5%)
- Agency: NIH
- Type: 1 RO1 CA111432-01
- Period: Dec. 2004 – Nov. 2009

Cross-discipline Investigation of Melanoma Invasiveness in cancer cells undergoing differential motility development in response to pH. This project investigates the transcriptional response to pH of melanoma cell lines that enhance metastasis using expression, oligoCGH, protein and SNP data.

- Principal Investigator: Robert Gilles, PhD, MD; CoPI: Phillip Stafford, Matthew Rain
- Biostatistician: Phillip Stafford
- Agency: Agilent Technologies, Santa Clara, CA
- Type: Independent
- Period: Sept. 15, 2004 – Sept. 15, 2006 renewable

Vesicle Transport in Axonal Vesicle Trafficking via MyoV and non-neuronal kinesin using high performance digital interference light microscopy. The long-term objectives of this project were to identify and characterize the myosin motor responsible for vesicle transport on actin filaments in neurons; whether myosin V and kinesin co-localized on ER vesicles and inhibition of myosin V activity blocked vesicle transport on actin filaments.

- Principal Investigator: George M. Langford, PhD
- Principal Research Scientist: Phillip Stafford (50%)
- Agency: National Science Foundation/ Division of Molecular and Cellular Biosciences
- Type: Research Grant (years 1-4)
- Period: August 15, 1995 – July 31, 2000

Nucleocytoplasmic Transport of mRNA in Yeast investigates the function of a highly conserved and essential mRNA helicase that couples 3' mRNA processing and mRNA export. The goal of this project was characterization of a highly conserved and DEAD-box helicase in yeast and mammals, DBP5p. The helicase links 3' mRNA processing and export by associating with processed mRNP's at CFI and transporting them to the cytoplasmic fibrils of oncogene CAN/Nup214p.

- Principal Investigator: Charles N. Cole, PhD
- Biochemist and Computational Researcher: Phillip Stafford (50%)
- Agency: National Institutes of Health
- Type: RO1 (GM33998 Years 1-3)
- Period: August 15, 1997 to December 31, 2000.

Cancer Biology and Carcinogenesis (Broad spectrum study of cancer biology, pharmacology, oncogenesis). The principle goal of the training grant was to provide a strong background in cancer biology and cancer awareness while studying other areas of cell biology and biochemistry. This approach invited discoveries from outside the domain of typical cancer research, in this case using yeast genetics.

- Principal Investigator: Alan R. Eastman, MD, PhD
- Principal Scientist: Phillip Stafford (50%)
- Agency: National Institutes of Health
- Type: 5-T-32 (CA09658)
- Period: August 15, 1994 to December 31, 2000.