

**NAME:** David Neil Stivers, Ph.D.

**PRESENT TITLE AND AFFILIATION**

Statistician, Berry Consultants

**CITIZENSHIP AND VISA STATUS:**

US citizen

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**EDUCATION**

**Degrees Earned:**

- Ph.D., Statistics, 1995, Rice University, Houston, Texas, USA
- MA, Statistics, 1992, Rice University, Houston, Texas, USA
- BA, Mathematics, 1989, Rice University, Houston, Texas, USA

**Postgraduate Training:**

- Center for Demographics and Population Genetics, University of Texas Health Science Center at Houston, 1994-1995

**EXPERIENCE (Academic Appointments):**

- Assistant Professor, Department of Biostatistics and Applied Mathematics, University of Texas M.D. Anderson Cancer Center, Houston, Texas, USA 2000-2007
- Assistant Professor of Biometry, Human Genetics Center, School of Public Health, University of Texas Health Science Center at Houston, Houston, Texas, USA 1995-2000
- Postdoctoral Fellow, Human Genetics Center, School of Public Health, University of Texas Health Science Center at Houston, Houston, Texas, USA 1994-1995.
- W. M. Keck Center for Computational Biology Trainee, Rice University, Houston, Texas, USA 1993-1994.
- Research Assistant, Rice University, Houston, Texas, USA, 1989-1993.

**TEACHING (Courses Taught):**

- Statistical Genetics, Co-instructor, School of Public Health, University of Texas Health Science Center-Houston, 1996-1998
- Categorical Data Analysis, Co-instructor, School of Public Health, University of Texas Health Science Center-Houston, 1996-1999
- Elementary Applied Statistics, Instructor, Rice University, 1991
- Elementary Applied Statistics, Teaching Assistant, Rice University, 1990-1993

**HONORS AND AWARDS**

- Coombes KR, Baggerly KA, **Stivers** DN, Wang J, Gold D, Sung HG, and Lee SJ. "Biology-Driven Clustering of Microarray Data: Applications to the NCI60 Data Set". Best Presentation, CAMDA 2001 (Critical Assessment of Techniques for Microarray Data Analysis, Duke University, October 15-16, Durham, NC).
- **Stivers**, DN., Wang J., Rosner, GL., Coombes, KR. Organ-Specific Differences in Gene Expression and UniGene Annotations Describing Source Material. Best Presentation, CAMDA 2002 (Critical Assessment of Techniques for Microarray Data Analysis, Duke University, November 14-15, Durham, NC).

## EDITORIAL AND REVIEW ACTIVITIES

### Journal Reviewer:

- Bioinformatics, BMC Bioinformatics, BMC Biotechnology, BMC Cancer, BMC Genomics, Genetics, Genome Research, Genomics, Human Heredity, J. Theoretical Biology, The Lancet, Mathematical Biosciences

## PROFESSIONAL MEMBERSHIPS/ACTIVITIES

- International Biometrics Society

## PUBLICATIONS

### Articles in Peer-Reviewed Journals:

1. JR Thompson, DN **Stivers**, and KB Ensor. (1991) "Technique for Model Aggregation with Considerations of Chaos." *Mathematical Population Dynamics* (O. Arino, D. E. Axelrod and M Kimmel, eds.), Marcel Dekker, New York, pp. 483-509.
2. M Kimmel and DN **Stivers**. (1994) "A Time-Continuous Branching Process Model of Unstable Gene Amplification." *Bulletin of Mathematical Biology* **56** 337-357.
3. DN **Stivers** and M Kimmel. (1996) "On the Clonal Inheritance Model of Cell Proliferation." *Proceedings of the First World Conference of Nonlinear Analysts*, Tampa, Florida, August 1992, Walter de Gruyter, New York.
4. R Chakraborty, DN **Stivers**, R Deka, LM Yu, MD Shriver, RE Ferrell (1996) "Segregation distortion of the CTG repeats at the myotonic dystrophy locus", *Am J of Hum Genet* **59** 109-18.
5. DN **Stivers** and M Kimmel (1996) "A continuous-time, multi-type generational inheritance branching process model of cell proliferation with clonal memory" *Nonlinear World* **3** 385-99.
6. DN **Stivers** and M Kimmel (1996) "A discrete-time multi-type generational inheritance branching process model of cell proliferation" *Mathematical Biosciences* **137** 25-50.
7. R Chakraborty and DN **Stivers** (1996) "Paternity exclusion by DNA markers: effects of paternal mutations" *Journal of Forensic Sciences* **41** 671-7.
8. R Chakraborty and DN **Stivers** (1996) "Estimation of mutation rates from parentage exclusion data: applications to STR and VNTR loci" *Mutation Research* **354** 41-8.
9. R Deka, PP Majumder, MD Shriver, DN **Stivers**, Y Zhong, LM. Yu EJE Szathmary, R Barrentes, S-J Yin, T Miki, CH Bunker, S McGarvy, S Sakallah, RE Ferrel, R Chakraborty (1996) "Distribution and evolution of CTG repeats at the myotonin protein kinase gene in human populations" *Genome Research* **6** 142-512.
10. C Albarrán, O Garcia, R Deka, A Alonso, P Martin, M Sancho, DN **Stivers**, R Chakraborty (1996) "Analysis of D1S80 VNTR allele polymorphism and association with a nearby flanking sequence polymorphism in two Spanish populations" *Advances in Forensic Haemogenetics* **6** (A. Carracedo. B/ Brinkmann and W. Bär, eds.) Springer-Verlag, Berlin.
11. R Chakraborty, DN **Stivers**, R Deka, LM Yu, MD Shriver and RE Ferrell (1996) "Segregation Distortion of CTG-repeats at the myotonic dystrophy locus" *American Journal of Human Genetics* **59** 109-18.
12. M Kimmel, R Chakraborty, DN **Stivers** and R Deka (1996) "Dynamics of Repeat Polymorphisms under Forward-Backward Mutation Model: Within- and Between-Population Variability at Microsatellite Loci" *Genetics* **143** 549-55.
13. R Deka, PP Majumder, MD Shriver, DN **Stivers**, Y Zhong, LM Yu, R Barrantes, S-J Yin, T Miki, J Hundrieser, CH Bunker, ST McGarvey, S Sakallah, RE Ferrell, and R Chakraborty (1996) "Distribution and evolution of CTG repeats at the myotonic protein kinase gene in human populations." *Genome Res.* **6** 143-154.
14. DN **Stivers** and R Chakraborty (1997) "A Test of Allelic Independence Based On Distributions of Allele Size Differences at Microsatellite Loci" *Human Heredity* **47** 66-75.
15. M Kimmel, R Chakraborty, DN **Stivers**, LJ Davison (1997) "Relative mutation rates at di-, tri-, and tetranucleotide microsatellite loci" *Proc. Nat. Acad. Sci. USA* **97** 1041-6.
16. FK Tan, DN **Stivers**, MW Foster, R Chakraborty, RF Howard, DM Milewicz and FC Arnett, (1998) "HLA haplotypes and microsatellite markers in and around the Fibrillin-1 Gene on Human Chromosome 15q are Associated with Scleroderma in a Native American Population" *Arthritis and Rheumatism* **41** 1729-1737.
17. R Chakraborty and DN **Stivers**. (1998) "Further Response to Mueller and Thompson: Considerations on the Tests of Independence of Alleles that are Relevant for Forensic Applications" Letter in *J. Forensic Science* **43** 448-9.

18. FK Tan, JD Reveille, DN **Stivers**, R Chakraborty, R Howard, and FC Arnett, (1999) "Microsatellite Polymorphisms in and around the major histocompatibility complex region in a Native American population with a high prevalence of scleroderma (systemic sclerosis), *Tissue Antigens* **53** 74-80.
19. R Chakraborty, DN **Stivers**, B Su, Y Zhong, B Budowle. (1999) The utility of STR loci beyond human identification: Implications for development of new DNA typing systems. *Electrophoresis*, **20** 1682-1696.
20. FK Tan, Reveille JD, Arnett FC, DN **Stivers**, Tsao BP. (2000) Poly(ADP)-ribose polymerase and susceptibility to systemic lupus erythematosus and primary antiphospholipid syndrome: comment on the article by Delrieu et al.. *Arthritis Rheum*, **43** 1021-3.
21. X Zhou, FK Tan. DN **Stivers**. FC Arnett. (2000) Microsatellites and intragenic polymorphisms of transforming growth factor beta (TGF- $\beta$ ) and their receptor genes in Native American with systemic sclerosis (scleroderma): A preliminary genetic analysis showing no genetic association. *Arthritis Rheum*, **43**(5) 1068-73.
22. KR Hess, W Zhang, KA Baggerly, DN **Stivers**, KR Coombes. (2001) Microarrays: handling the deluge of data and extracting reliable information. *Trends Biotechnol* , Nov;**19**(11) 463-8.
23. KA Baggerly , KR Coombes, KR Hess, DN **Stivers**, LV Abruzzo, and W Zhang (2001) Identifying differentially expressed genes in cDNA microarray experiments. *J. Computational Biology* **8**(6) 639-59.
24. KR Coombes, WE Highsmith, TA Krogmann, KA Baggerly, DN **Stivers**, LV Abruzzo. (2002) Identifying and Quantifying Sources of Variation in Microarray Data using High-Density cDNA Membrane Arrays. *J. Computational Biology* **9**(4) 655-69.
25. TA Buchholz, D **Stivers**, et al. (2002) Global gene expression changes during neoadjuvant chemotherapy of human breast cancer. *Cancer J* **8**(6) 461-468,
26. L Pusztai, M Ayers, J Stec, E Clark, K Hess, D **Stivers**, A Damokosh, N Sneige, T Buchholz, F Esteva, B Arun, M Cristofanilli, D Booser, M Rosales, V Valero, C Adams, G Hortobagay, W Symmans. (2003) Gene expression profiles obtained from single passage fine needle aspirations (FNA) of breast cancer reliably identify prognostic/predictive markers such as estrogen (ER) and HER-2 receptor status and reveal large scale molecular differences between ER-negative and ER-positive tumors. *Clinical Cancer Research*, Jul;**9**(7) 2406-2415.
27. M Du, RA Irani, DN **Stivers**, SJ Lee, E Travis, (2004) H2-Ea deficiency is a risk factor for bleomycin-induced lung fibrosis in mice, *Cancer Research* **64**:6835-6839.
28. FK Tan, BA Hildebrand, MS Lester, DN **Stivers**, S Pounds, X Zhou, DD Wallis, DM Milewicz, JD Reveille, MD Mayes, L Jin. (2005) Classification analysis of the transcriptome of non-lesional cultured dermal fibroblasts from systemic sclerosis patients with early disease. *Arthritis & Rheumatism* **52**(3) 865-76.
1. U Giri, CL Ashorn, L Ramdas, DN **Stivers**, KR Coombes, El-K. del Naggar, K. Kian Ang, MD Story (2006), Molecular signatures associated with clinical outcome in patients with high-risk head-and-neck squamous cell carcinoma treated by surgery and radiation, *International Journal of Radiation Oncology Biology Physics*, **64**(3) 670-677.
29. X Sun, W Zhang, DN **Stivers**, L Ramdas, LJ Medeiros, AB Glassman, E Taylor, DM Jones, EH Estey, HM Kantarjian, S Vadhan-Raj, CE Bueso-Ramos, Comparative analysis of genes regulated in Acute Myelomonocytic Leukemia with and without inv(16)(p13q22) using oligonucleotide arrays, flow immunophenotyping, and immunohistochemistry (*accepted*) *Modern Pathology*.

#### Invited Articles

- Barton MC, **Stivers** DN. (2002) Microarray analysis of hepatic-regulated gene expression: Specific applications and non-specific problems. *Hepatology* , **35**(3) 525-34.

**In preparation/under revision**

2. JL Carter, D Gold, S Vacha, V Hopwood, PA Lennon, C Chinault, A Killary, D **Stivers**, S Sen, High-Resolution Microarray Profiling of in vitro Human Colon Cancer Metastasis Model *Submitted to Genes Chromosomes and Cancer*.
3. EL Travis, M Wang, DN **Stivers**. Route of administration of bleomycin affects strain susceptibility to pulmonary fibrosis. *Resubmitted to American Journal of Respiratory Cell and Molecular Biology*.
4. DN **Stivers**, D Gold, J Carter, S Sen, Normalization and analysis of array CGH experiments using modality and karyotype information. (*in preparation*)
5. DN **Stivers**, J Mitchell, Adaptive deterministic summarization of graph-based gene ontology (GO) annotations of large gene lists (*in preparation*)
6. KR Coombes, C Clarke, DN **Stivers**, KA Baggerly, JS Morris, SR Hamilton, J Roth, L Mao, B Czerniak, RC Bast Jr., Reproducibility of SELDI spectra across time and laboratories, on a single instrument, (*in preparation*).
7. M Du, X Zhou, JD Allard, DN **Stivers**, G Peltz, EL Travis, Gene Expression Profiling in a Mouse Genetic Model Identifies Candidate Genes for Radiation-Induced Lung Injury, (*under revision*)

**Book Chapters**

- DN **Stivers**, J Wang, GL Rosner, KR Coombes, Organ-specific differences in gene expression and UniGene annotations describing source material. In: *Methods of Microarray Data Analysis II*, Kluwer Academic Publishers, Boston, 2003.
- KA Baggerly, KR Coombes, K Hess, DN **Stivers**, LV Abruzzo, and W Zhang. Pages 53-64 in *Computational and Statistical Approaches to Genomics*, W Zhang and I Shmulevich (eds). Kluwer, Massachusetts, 2002
- L Pusztai, WF Symmans, TA Buchholz, J Stec, M Ayers, E Clark, F Meric, DN **Stivers**, K Hess. Pages 257-275 *Computational and Statistical Approaches to Genomics*, W Zhang and I Shmulevich (eds). Kluwer, Massachusetts, 2002

**Presentations at National or International Conferences**

**Invited:**

1. JR Thompson, DN **Stivers**, "SIMEST: A Technique for Model Aggregation with Considerations of Chaos." Invited talk. September 18, 1989. Department of Statistics, Rice University.
2. DN Stivers "A multi-type branching process model of cell proliferation with clonal inheritance." W. M Keck Seminar on Computational Biology, W. M Keck Center for Computational Biology, February 25, 1994, Houston, Texas.
3. DN Stivers, invited panelist, "Next Millennium: Future of DNA Technology, Fourth Annual National Conference on the Future of DNA: Implications for the Criminal Justice System." May 3-4, 1999, Albuquerque, New Mexico.
4. DN Stivers, "Non-parametric tests for linkage disequilibrium", Oct. 5, 1999, Department of Epidemiology, MD Anderson Cancer Center, Houston, Texas.
5. DN Stivers, "Mixed DNA samples: estimating contributors genotypes", January 20, 2000, Department of Biostatistics, School of Public Health, University of Michigan, Ann Arbor, Michigan.
6. DN Stivers, "Mixed DNA samples: estimating contributors genotypes", January 24, 2000, Department of Statistics, Rice University, Houston, Texas.
7. DN Stivers, "Gene Expression and Microarray Assays: Avoiding Pitfalls", September 8, 2003, Biometry Seminar, School of Public Health, University of Texas health Science Center Houston

**Other, Including Scientific Exhibitions:**

1. JR Thompson, DN Stivers, "The Stabilizing Effect of Noise in Nonlinear Dynamical Systems." Annual Meeting of the Statistical Society of Canada, June 3-6, 1990. Memorial University of Newfoundland, St. Johns, Newfoundland, Canada.
2. DN Stivers and M Kimmel, "A Time-Continuous Branching Process Model of Unstable Gene Amplification." 3rd International Conference on Mathematical Population Dynamics, University of Pau, June 15-19, 1992, Pau, France.
3. DN Stivers and M Kimmel, "A Time-Continuous Branching Process Model of Unstable Gene Amplification." First World Congress of Nonlinear Analysts, August 19-26, 1992, Tampa, Florida.
4. DN Stivers and M Kimmel, "A branching process model of cell proliferation with clonal inheritance and a multi-type extension." Second European Conference on Mathematics Applied to Biology and Medicine, December 15-18, 1993, Lyon, France.

5. DN Stivers "A Multi-type Branching Process Approach to a Clonal Inheritance Model." First World Congress on Computational Medicine, Public Health and Biotechnology, April 24-28, 1994, Austin, Texas.
6. DN Stivers "A continuous time, multi-type generational inheritance branching process model of cell proliferation with clonal memory." 4th International Conference on Mathematical Population Dynamics, Rice University, May 23-27, 1995, Houston, Texas.
7. DN Stivers "Allele specific effects of population substructure at microsatellite loci." American Society of Human Genetics 47th Annual Meeting, October 28-November 1, 1997, Baltimore, Maryland.
8. DN Stivers "Expansions, Contractions and Transmission Bias in Diseases Associated with Trinucleotide Repeats." Seventeenth Annual Conference on Biomedical Engineering Research, February 11-12, 1999, Houston, Texas.
9. DN Stivers "Evaluation of Single Nucleotide Polymorphisms (SNPs) for Human Identification Use." National Institute of Justice Investigate & Forensic Sciences Program Annual Meeting, February 14-15, 1999, Orlando, Florida.
10. DN Stivers, "Analysis and validation of cDNA microarray expression data", March 26, 2001, International Biometrics Society Eastern North American Region Annual Meeting, Charlotte, NC.

**Other Presentations (state, local) Conferences:**

- JR Thompson, DN **Stivers**, "The Stabilizing Effect of Noise in Nonlinear Dynamical Systems." Conference of Texas Statisticians, March 23-24 1990, Houston, Texas.
- DN Stivers, Gene Expression Data Sets: Which Gene List is Correct? Institutional Grand Rounds, M. D. Anderson Cancer Center, Nov. 2002.
- DN Stivers, Statistics and Experimental Design for Gene Expression, Affymetrix Arrays User Workshop, M. D. Anderson Cancer Center, July 25, 2006.

**Posters**

1. DN **Stivers** and M Kimmel, "On the clonal inheritance model of cell proliferation." Annual Meeting of the Society for Mathematical Biology, July 10-13, 1993, Cornell University, Ithaca, New York.
2. DN **Stivers** and M Kimmel, "On the clonal inheritance model of cell proliferation." W. M Keck Center for Computational Biology Fourth Annual Retreat, November 12, 1993, South Shore Harbor, Texas.
3. DN **Stivers** and M Kimmel "Inheritance Models of Cell Proliferation." Molecular and Cell Biochemistry and Biology & Biotechnology Poster Retreat, April 30, 1994, Rice University, Houston, Texas.
4. DN **Stivers** and R Chakraborty "Similarity index from DNA profiles at hypervariable loci revisited." American Society of Human Genetics 45th Annual Meeting, October 24-28, 1995, Minneapolis, Minnesota.
5. DN **Stivers** and R Chakraborty, "Haplotype frequencies from unrelated individuals: Some statistical considerations." 65th Annual Meeting of the American Association of Physical Anthropologists, April 11-13, 1996, Durham, North Carolina.
6. DN **Stivers**, Y Zhong, CL Hanis and R Chakraborty "RELTYPE: A computer program for determining biological relatedness between individuals based on allele sharing at microsatellite loci." American Society of Human Genetics 46th Annual Meeting, October 29-November 2, 1996, San Francisco.
7. FK Tan, DN **Stivers**, MW Foster, R Chakraborty, RF Howard, D Milewicz, FC Arnett, "Microsatellite markers near the fibrillin-1 gene on human chromosome 15q are associated with scleroderma in a Native-America population, American Society of Human Genetics 47th Annual Meeting, October 28-November 1, 1997, Baltimore, MD.
8. DN **Stivers**, Y Zhong, R Chakraborty "Are multilocus matched profiles truly the duplicate records in DNA profiling databases?" Eighth International Symposium on Human Identification, September 17-21, 1997, Scottsdale, Arizona.
9. R Chakraborty, DN **Stivers**, Y Zhong, R Deka., and B Budowle. Effects of genetic admixture in African-Americans and Hispanics of continental United States: Evidence from DNA markers, American Society of Human Genetics 48th Annual Meeting, October 27-31, 1998, Denver, CO.
10. DN **Stivers**, R Chakraborty "Hierarchical structure of multi-locus linkage disequilibrium testing" Ninth International Symposium on Human Identification, October 7-10, 1998, Orlando, Florida.

11. DN **Stivers**, R Deka, B Budowle, R Chakraborty. Estimation of admixture proportions in African-American and Hispanic populations of the continental U.S. using highly polymorphic STR loci. American Society of Human Genetics 49th Annual Meeting, October 19-23, 1999, San Francisco, CA.
12. A Bobrowski, M Kimmel, DN **Stivers**, R Chakraborty. Analysis of joint mismatch distributions of sequences from mitochondrial hyper-variable regions 1 and 2, in a sample of individuals from major world populations. American Society of Human Genetics 49th Annual Meeting, October 19-23, 1999, San Francisco, CA.
13. DN **Stivers**, KA Baggerly, KR Coombes, W Zhang, M Story. Analysis and validation of cDNA microarray expression data. American Society of Human Genetics 51st Annual Meeting, October 12-16, 2001, San Diego, CA.
14. M Du, R Irani, D **Stivers**, SJ Lee, E Travis. The MHC class II antigen E alpha (H2-Ea) gene protects transgenic mice from pulmonary fibrosis. Late-Breaking Research Session, 95th Annual Meeting of the American Association for Cancer Research, March 27-30, 2004, Orlando, Florida.