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EDUCATION

Postdoctoral fellow in Statistical Genetics, 2002 - 2006
University of Alabama at Birmingham (UAB), Birmingham, AL

Ph.D. in Biochemistry and Molecular Biology, 2002
University of Arkansas for Medical Sciences (UAMS), Little Rock, AR

M.S. in Cytology and Genetics, 1993
Novosibirsk State University, Novosibirsk, Russia

RESEARCH AND PROFESSIONAL EXPERIENCE

2002 - 2006 Postdoctoral Fellow
Department of Biostatistics, Section on Statistical Genetics
University of Alabama at Birmingham, Birmingham, AL

1997 - 2002 Graduate Research Assistant
Department of Biochemistry and Molecular Biology
University of Arkansas for Medical Sciences, Little Rock, AR

1995 - 1997 Research Associate
Department of Biochemistry and Molecular Biology
University of Arkansas for Medical Sciences, Little Rock, AR

1993 - 1995 Research Assistant
Institute of Cytology and Genetics, Laboratory of Molecular Cytogenetics
Siberian Division of Russian Academy of Sciences, Novosibirsk, Russia

1991 - 1993 Research Assistant (part-time position)
Institute of Cytology and Genetics, Laboratory of Molecular Cytogenetics
Siberian Division of Russian Academy of Sciences, Novosibirsk, Russia

AWARDS

Sept. 2004 Winner of poster competition in postdoc/junior faculty category, Annual Meeting of the UAB Center for Aging, UAB.

March 1999 Second place diploma and monetary award, Student Research Week, UAMS.

June 1998 Travel award to the Third International Symposium on Molecular Insect Science, Snowbird, UT from the Graduate School, UAMS.

April 1993 Second place diploma and monetary award, XXXI International Scientific Student Conference, Novosibirsk, Russia.

GRANT SUPPORT

Past support

CAGSRF (PI Zakharkin) 3/1/2001 - 2/28/2002
Committee for Allocation of Graduate Student Research Funds, UAMS

Sex-Specific Gene Activity in the Larval Mosquito (Competitive renewal).

CAGSRF (PI Zakharkin) 3/1/2000 - 2/28/2001
Committee for Allocation of Graduate Student Research Funds, UAMS

Sex-Specific Gene Activity in the Larval Mosquito.

Present support

The financial support for my salary comes from the following grant:

NIH T32HL0727757 (PI Allison) 04/01/03 - 03/31/08
NIH/NIDDK

UAB Statistical Genetics Post-Doctoral Training Program.

Pending support

K01 DK074452-01 (PI Zakharkin) 1/1/2007 - 12/31/2012
NIH/NIDDK

Evaluation of regulatory networks methods for studies of metabolic diseases.

REVIEWING ACTIVITY

- BioTechniques
- BMC Bioinformatics
- Circulation
- Computational Statistics and Data Analysis
- Genomics
- Human Heredity
- International Journal of Obesity
- Nutrition
- Statistical Methods in Medical Research

PROFESSIONAL SOCIETY MEMBERSHIP

- The International Society for Computational Biology (ISCB)
- The North American Association for the Study of Obesity (NAASO)

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. **Zakharkin SO**, Kim K, Mehta T, Chen L, Barnes S, Scheirer KE, Parrish RS, Allison DB, Page GP. (2005) Sources of variation in Affymetrix microarray experiments. *BMC Bioinformatics*. 6(1): 214.

2. Hunter GR, Lara-Castro C, Byrne NM, **Zakharkin SO**, Onge M-P St, Allison DB. (2005) Weight loss needed to maintain visceral adipose tissue during aging. *International Journal of Body Composition Research*. 3(2): 55-61.
3. **Zakharkin SO**, Belay A, Fernandez JR, De Luca V, Kennedy JL, Sokolowski MB, Allison DB. (2005) Lack of association between polymorphism of the cyclic GMP - dependent protein kinase gene and obesity. *International Journal of Obesity*. 29(7): 872-874.
4. Redden DT, Shields PG, Epstein L, Wileyto EP, **Zakharkin SO**, Allison DB, Lerman C. (2005) The catechol-o-methyl-transferase (COMT) functional polymorphism and nicotine dependence: An evaluation of non-replicated results. *Cancer Epidemiology, Biomarkers & Prevention*. 14(6): 1384-1389.
5. Szalai AJ, Wu J, Lange EM, McCrory MA, Langefeld CD, Williams A, **Zakharkin SO**, George V, Allison DB, Cooper GS, Xie F, Fan Z, Edberg JC, Kimberly RP. (2005) Single-nucleotide polymorphisms in the C-reactive protein (CRP) gene promoter that affect transcription factor binding, alter transcriptional activity, and associate with differences in baseline serum CRP level. *Journal of Molecular Medicine*. 83(6): 440-447.
6. Trivedi P, Edwards JW, Wang J, Gadbury GL, Srinivasasainagendra V, Kim K, Mehta T, **Zakharkin SO**, Brand JPL, Patki A, Page GP, Allison DB. (2005) HDBStat!: A platform-independent software suite for statistical analysis of high dimensional biology data. *BMC Bioinformatics*. 6(1): 86.
7. Sedelnikova A, Smith CD, **Zakharkin SO**, Davis D, Weiss DS, Chang Y. (2005) Mapping the ρ_1 GABA_C receptor agonist binding pocket: Constructing a complete model. *Journal of Biological Chemistry*. 280(2): 1535-1542.
8. **Zakharkin SO**, Willis RL, Litvinova OV, Jinwal UK, Headley VV, Benes H. (2004) Identification of two *mariner*-like elements in the genome of the mosquito *Ochlerotatus atropalpus*. *Insect Biochemistry and Molecular Biology*. 34(4): 377-386.
9. Yang D, **Zakharkin SO**, Page GP, Brand JPL, Edwards JW, Bartolucci AA, Allison DB. (2004) Applications of Bayesian statistical methods in microarray data analysis. [Invited review] *American Journal of Pharmacogenomics*. 4(1): 53-62.
10. **Zakharkin SO**, Headley VV, Kumar NK, Buck NA, Wheeler DE, Benes H. (2001) Female-specific expression of a hexamerin gene in larvae of an autogenous mosquito. *European Journal of Biochemistry*. 268(22): 5713-5722.
11. Makunin IV, Pokholkova GV, Kholodilov NG, **Zakharkin SO**, Bonaccorsi S, Dimitri P, Zhimulev IF. (1999) A novel simple satellite DNA is co-localized with the *Stalker* retrotransposon in *Drosophila melanogaster* heterochromatin. *Molecular Genetics and Genomics*. 261(2): 381-387.
12. Gordadze AV, Korochkina SE, **Zakharkin SO**, Norton AL, Benes H. (1999) Molecular cloning and expression of two hexamerin cDNAs from the mosquito, *Aedes aegypti*. *Insect Molecular Biology*. 8(1): 55-66.
13. Burmester T, Massey HC Jr, **Zakharkin SO**, Benes H. (1998) The evolution of hexamerins and the phylogeny of insects. *Journal of Molecular Evolution*. 47(1): 93-108.
14. Przybyla-Zawislak B, Dennis RA, **Zakharkin SO**, McCammon MT. (1998) Genes of succinyl-CoA ligase from *Saccharomyces cerevisiae*. *European Journal of Biochemistry*. 258(2): 736-743.
15. Korochkina SE, Gordadze AV, **Zakharkin SO**, Benes H. (1997) Differential accumulation and tissue distribution of mosquito hexamerins during metamorphosis. *Insect Biochemistry & Molecular Biology*. 27(10): 813-824.

16. **Zakharkin SO**, Gordadze AV, Korochkina SE, Mathiopoulos KD, Della Torre A, Benes H. (1997) Molecular cloning and expression of a hexamerin cDNA from the malaria mosquito, *Anopheles gambiae*. *European Journal of Biochemistry*. 246(3): 719-726.
17. Makunin IV, **Zakharkin SO**, Kokoza EV, Pokholkova GV, Kholodilov NG, Zhimulev IF. (1996) [An analysis of the DNA sequence in the region of the breakpoint of the *T(1;2) dor^{var7}* translocation inducing the mosaic-type position effect in *Drosophila melanogaster*]. [Russian] *Tsitologiya i Genetika*. 30(1): 8-14.
18. Makunin IV, Pokholkova GV, **Zakharkin SO**, Kholodilov NG, Zhimulev IF. (1995) [Isolation and characteristics of repeat DNA sequences from precentromere heterochromatin from the second chromosome of *Drosophila melanogaster*]. [Russian] *Doklady Akademii Nauk*. 344(2): 266-269.

MANUSCRIPTS SUBMITTED AND IN PRESS

1. Jinwal UK, **Zakharkin SO**, Litvinova OV, Jain S, Benes H. (2006) Sex-, stage- and tissue-specific regulation by a mosquito hexamerin promoter. *Insect Molecular Biology*, *in press*.
2. **Zakharkin SO**, Kim K, Bartolucci AA, Page GP, Allison DB. Optimal design for measurement evaluation studies. *Submitted*.
3. Sedelnikova A, Harris H, **Zakharkin SO**, Weiss DS. Stoichiometry of a pore mutation that abolishes picrotoxin-mediated antagonism of the GABA_A receptor. *Submitted*.

ARTICLES PUBLISHED IN CONFERENCE PROCEEDINGS

1. Kim K, **Zakharkin SO**, Loraine AE, Allison DB. Picking the most likely candidates for further development: Novel intersection-union tests for addressing multi-component hypotheses in comparative genomics. 2004 Proceedings of the American Statistical Association Joint Statistical Meeting, ENAR Section [CD-ROM], Toronto, Ontario, Canada, August 2004.
2. **Zakharkin SO**. [Molecular-genetic analysis of the eu- and heterochromatin junction in the rearrangement *T(1;2) dor^{var7}* inducing position effect variegation] [Russian] Proceedings of the XXXI International Scientific Student Conference, p.53-58. Novosibirsk, Russia, April 1993.

BOOK CHAPTERS

1. **Zakharkin SO**, Mehta T, Tanik M, Allison DB. Epistemological foundations of statistical methods for high-dimensional biology. In: Allison DB, Page GP, Beasley TM, Edwards JW (Eds). DNA microarrays and statistical genomic techniques: Design, analysis and interpretation of experiments. Chapman & Hall/CRC, Inc. 2006; Boca Raton, FL. p 57-75.
2. Page GP, **Zakharkin SO**, Kim K, Mehta T, Yelisetti P, Chen L, Zhang K. Getting the most from microarray experimentation. In: Ambrosius WT (Ed). Methods in Molecular Biology: Elementary Biostatistics. Humana Press Inc., Totowa, NJ. *In press*.

POSTER PRESENTATIONS

1. **Zakharkin SO**, Kim K, Parrish RS, Mehta T, Barnes S, Allison DB, Page GP. Two color microarrays: Quality control, gene filtering and sources of variation. Third Annual (2006) Conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS), Baton Rouge, LA, March 2006.
2. **Zakharkin SO**, Kim K, Mehta T, Chen L, Barnes S, Scheirer KE, Parrish RS, Allison DB, Page GP. Sources of variation and reproducibility of microarray experiments. 13th Annual Conference on Intelligent Systems for Molecular Biology (ISMB 2005), Detroit, MI, June 2005.

3. **Zakharkin SO**, Kim K, Mehta T, Chen L, Barnes S, Scheirer KE, Allison DB, Page GP. Quantification of sources of variation in microarray experiments. Second Annual (2004) Conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS), Little Rock, AR, October 2004.
4. **Zakharkin SO**, Hunter GR, Lara-Castro C, Byrne NM, Allison DB. Weight loss needed to maintain visceral adipose tissue during aging. Annual Meeting of the UAB Center for Aging, Birmingham, AL, September 2004.
5. **Zakharkin SO**, Page GP, Allison DB, Fuller CM, Gillespie GY, Reddy AT, Mapstone, TB, Benos DJ. Gene expression profiling in pediatric brain tumors using microarray analysis. IUBMB/ASBMB Annual Meeting, Boston, MA, June 2004.
6. **Zakharkin SO**, Belay A, Fernandez J, De Luca V, Kennedy J, Sokolowski M, Allison DB. Cyclic GMP-dependent protein kinase polymorphism and obesity. NAASO's 2003 Annual Meeting, Ft. Lauderdale, FL, October 2003.
7. Hunter G, Lara-Castro C, Byrne N, **Zakharkin SO**, Allison D. Weight loss needed to maintain visceral fat during aging. NAASO's 2003 Annual Meeting, Ft. Lauderdale, FL, October 2003.
8. **Zakharkin SO**, Litvinova OV, Benes H. Role of Doublesex in the female-specific regulation of a mosquito hexamerin gene. Fourth International Symposium on Molecular Insect Science. Tucson, AZ, May/June 2002.
9. **Zakharkin SO**, Sitnikova VV, Benes H. Female-specific regulation of a hexamerin gene from the autogenous mosquito, *Aedes atropalpus*. Keystone Symposium on the Genetic Manipulation of Insects, Taos, NM, February 2001.
10. **Zakharkin SO**, Willis RL, Clarkson JR, Benes H. *Mariner* elements in an autogenous Aedine mosquito species. Keystone Symposium on the Genetic Manipulation of Insects, Taos, NM, February 2001.
11. **Zakharkin SO**, Sitnikova VV, Benes H. Sex-specific gene activity in the larval mosquito. University of Arkansas for Medical Sciences, Student Research Week, Little Rock, AR, March 1999.
12. **Zakharkin SO**, Batcabe JP, Wheeler D, Benes H. Sex-specific and sex-enhanced expression of hexamerins in Aedine mosquitoes. Third International Symposium on Molecular Insect Science, Snowbird, UT, June 1998.
13. Benes H, **Zakharkin SO**, Gordadze AV, Wheeler D. Sex-specific synthesis and accumulation of hexamerins in mosquitoes. Keystone Symposium on Molecular and Cellular Biology: Towards the Genetic Manipulation of Insects. Taos, NM, January 1998.
14. Wheeler DE, Benes H, Buck NA, Gordadze AV, **Zakharkin SO**, Korochkina SE. The role of a female-specific storage protein in mosquito autogeny. Annual Meeting of Entomological Society of America, Louisville, KY, December 1996.
15. Benes H, Wheeler DE, Gordadze AV, Buck NA, **Zakharkin SO**, Korochkina SE. Female-specific expression of mosquito hexamerins: A comparison of autogenous and anautogenous species. International Conference on Regulation of Insect Reproduction, Ceske Budejovice, Czech Republic, September 1996.
16. Benes H, Korochkina SE, Gordadze AV, **Zakharkin SO**. Expression and fate of the hexameric serum proteins in mosquito. XX International Congress of Entomology, Firenze, Italy, August 1996.

ORAL PRESENTATIONS

1. Gene expression profiling of pediatric brain tumors. Postdoctoral Research Day, University of Alabama at Birmingham, Birmingham, AL, March 2006.
2. Sources of variation in microarray experiments. Oklahoma Medical Research Foundation, Oklahoma City, OK, February 2006.
3. Pediatric brain tumors: What can we learn from microarray data? University of Texas Health Science Center at Houston, Human Genetics Center, Houston, TX, October 2005.
4. Optimal design for measurement evaluation studies. Microarray Research Coordination Network Annual Retreat, Mohonk, NY, September 2005.
5. Variability in microarray experiments. Postdoctoral Research Day, University of Alabama at Birmingham, Birmingham, AL, February 2005.
6. Quantification of sources of variation in microarray experiments. University of Alabama at Birmingham, Birmingham, AL, January 2005.
7. Sources of variation in microarray experiments. Microarray Research Coordination Network Annual Retreat, Mohonk, NY, September 2004.
8. Bayesian networks as a tool for analysis of microarray data. Microarray Research Coordination Network Annual Retreat, Mohonk, NY, September 2003.
9. Sex-specific gene activity: implications for mosquito control. University of Alabama at Birmingham, Birmingham, AL, June 2002.
10. Molecular-genetic analysis of the eu- and heterochromatin junction in the rearrangement $T(1;2)$ *dot*^{var7} inducing position effect variegation. XXXI International Scientific Student Conference, Novosibirsk, Russia, April 1993.

REFERENCES

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