CURRICULUM VITAE

Yuriy Gusev, Ph.D.

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EDUCATION

1991-1992 Post-doctorate in Computational Biology for Cancer Research with Dr. David Axelrod, Laboratory of Tumor Genetics, Waksman Institute, Rutgers University, NJ *Project Title*: *Stochastic modeling of ras oncogene effects on cancer cell proliferation.*

1987 Ph.D. in Applied Mathematics and Biology with Dr. Andrey Yakovlev. Central Research Institute of Roentgenology & Radiology, St. Petersburg, Russia
Thesis title: Stochastic modeling and computer simulation of "cript-villus"system of small intestine renewal and regeneration after irradiation.

1982 M.Sc. in Applied Mathematics with concentration in Mathematical Biology,
State University of St. Petersburg, St. Petersburg, Russia

SUMMARY:

- 15 years of interdisciplinary research experience in US academic and industry laboratories in the areas of systems biology, computational biology, bioinformatics, and cancer research.
- Seven years of Cancer Research experience at the Johns Hopkins School of Medicine: managing interdisciplinary research projects in molecular epidemiology and molecular diagnostics of cancer; modeling and computer simulation of mechanisms of carcinogenesis, image analysis of cancer cell morphology
- Two years of experience in genomics/ biotechnology industry with development of applications of novel DNA-based technologies for genomics, cellular analysis and immuno-diagnostics
- Over 40 peer-reviewed publications on mathematical modeling, computer simulation and statistical analysis in Cell and Molecular Biology and Cancer Research; genomics, proteomics, bioinformatics and systems biology of human cancer, microRNA and gene expression profiling, image analysis and molecular biomarkers in Cancer; Strong technical expertise in computerized and automated systems for cell and molecular biology including DNA microarrays, real-time PCR, image and flow cytometry and virtual microscopy
- Extensive Wet Lab experience with cell cultures, immuno-histochemisitry, *in situ* hybridization, and in *situ* PCR techniques. Familiar with: clinical data base management, epidemiology and survival analysis.
- Effective communicator experienced in leading multi-disciplinary projects, with extensive track record of publications, scientific presentations, organization of conferences and workshops.

PROFESSIONAL EXPERIENCE

2001-Present Assistant Professor of Bioinformatics, Department of Surgery, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

2001-Present Adjunct Assistant Professor, Breast Health Institute,
University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

Responsibilities: Conducting independent and collaborative research projects with expertise in bioinformatics, pathway analysis, cell image analysis, quantitative and high throughput methods for cell and molecular biology as applied to immunology and cancer research, participating in education of residents, postdoctoral fellows and medical and graduate students with focus on molecular and cellular studies of human disease. Management of bioinformatics and digital cell imaging core facilities for microRNA, mRNA and protein expression profiling, cell image analysis, microarrays and micro fluidic based assays.

1999-2004 **Lecturer**, Whiting School of Engineering, Part-Time Programs in Biomedical Engineering and Applied Science, Johns Hopkins University, Baltimore, MD

1999-2001 **Senior Research Scientist**, Cellular Analysis Group, Molecular Staging, Inc., New Haven, CT

Responsibilities: *Conducted basic research projects on optimization of novel RCA technologies using quantitative assays and computational models: hybridization kinetics of linear and circular DNA probes, optimization of DNA amplification reactions. Conducted proof of principle studies for potential customers: rolling circle amplification (RCA) applications in molecular pathology and cellular analysis such as immuno-histochemistry, flow cytometry and in situ hybridization. Developed collaborative applications projects with key customers: feasibility studies for novel RCA based signal amplification systems for flow cytometry, ISH and IHC. Provided training and supervision for subordinate scientists. Participated in planning company's research activities and external collaborations in the area of cancer diagnostics, was involved in hiring new research employees. Generated data for conference presentations, posters, seminars and journal articles, represented company on international conferences and workshops.*

1992-1999 **Faculty Research Associate**, Laboratory of Cytometry & Tumor Biology, Department of Surgery Johns Hopkins University School of Medicine, Baltimore, MD

Responsibilities: Conducted multiple funded multi-disciplinary projects on statistical modeling and computer simulation of basic mechanisms of cancer, and molecular diagnostics of breast, pancreas, prostate and liver malignancies, including 5-year NIH master agreement "Diagnostic markers for early stage breast cancer" (as a co-principal investigator). Developed novel mathematical and computer models of basic mechanisms of chromosomal and genetic instability in cancer, developed novel models and methods of statistical analysis of aneuploidy and nuclear pleomorphism in clinical tumor samples. Supervised a team of international research fellows and students in an image cytometry and tumor biology laboratory (post-doctoral fellows, graduate and undergraduate students), provided training in computerized image analysis system CAS200, clinical data base management and biostatistics, computer networking with clinical data systems at Johns Hopkins Hospital. Provided statistical analysis of clinical data bases for Johns Hopkins Breast Center and Johns Hopkins Tumor Registry. Participated in multidisciplinary studies of molecular epidemiology of breast cancer. Generated data for conference presentations, posters, seminars and journal articles. Organized several international conferences and workshops on quantitative methods in cell and molecular biology. Participated as a part-time lecturer in development and teaching a new course for the part-time graduate program in Biomedical Engineering.

1991-1992 **Post-doctoral Fellow** with Dr. D. E. Axelrod, Laboratory of Cell Genetics, Waksman Institute , Rutgers University, NJ

1998-1990 **Scientist, Laboratory Director**, Laboratory of Mathematical Biology and Medicine, Technical University of St. Petersburg, Russia

1987-1998 **Research Fellow**, Department of Biomathematics, Central Research Institute of Roentgenology and Radiology, St. Petersburg, Russia

1981-1985 **Graduate student** of Dr. A. Y. Yakovlev, Department of Biomathematics, Central Research Institute of Roentgenology and Radiology, St. Petersburg, Russia

TRAINING

2004 Virtual Microscopy Applications in Medical Education and Research. Workshop, Bacus Laboratories Inc. & Medical College of Wisconsin, Milwaukee, WI

2002 Quantitative methods of cell image analysis with BLISS system. Workshop, Bacus Laboratories Inc., Chicago, IL

2001 Statistical bioinformatics: Microarray data analysis using GeneSpring software package, advanced workshop, GeneSpring, Inc., Redwood, CA

2000 Molecular Morphology Workshops: Spectral Image Analysis, Automatic kinetic mode ISH, *in situ* PCR, Microarray technologies. 8th International conference and workshops on molecular morphology, University of York, UK

1998 Cyclins and Cell Cycle Proteins. Workshop, Annual Meeting of the Cell Proliferation Society, Baltimore

1996 In situ PCR hands-on workshop. 4th international workshop on molecular morphology, University of Montreal, Montreal, Canada

1995 In Situ Hybridization International Workshop, Oncor Corporation, Tuscon, Arizona

1995 Programming on GPSS/H. Training program at Wolverine Software Corporation, Annandale, VA

1993 Programming on C++. Intensive Course, School of Engineering, Johns Hopkins University

1992 Computer Science Approaches to Molecular Biology Workshop, Rutgers University

1991-92 Computational and Mathematical Biology Seminar Series. Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University

1991 "Genome Day" Workshop on Computational Biology, Waksman Institute and Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University

SUPERVISING/TEACHING EXPERIENCE

1. Core Facilities Director

2002-2006 Co-Director, Bioinformatics and Digital Imaging Core facilities, Cancer Institute, University of Oklahoma

2. Group Leader

2000-2001 Group Leader: Flow Cytometry applications of RCA technologies. Molecular Staging Inc, New Haven, CT

1994-1999 Co-Principal Investigator: NIH master agreement “Diagnostic markers for early stage breast cancer”, Johns Hopkins School of Medicine, Baltimore, MD

3. Lab manager:

1992-1999 Supervisor of image cytometry and tumor biology laboratory: directed a team of international research fellows and graduate students on several research projects, provided training with computerized image analysis system CAS200, database management and statistics on IBM PC, basics of computer networking with clinical data systems at the Johns Hopkins Hospital. Johns Hopkins School of Medicine, Baltimore, MD

4. Lecturer:

2005 University of Oklahoma Health Sciences Center Graduate School, Course: Introduction to Biomedical Informatics. Graduate Program in Medcal Physics

1999-2004 Part-time Lecturer, Course: Cell Mechanics/Computational Cell Biology, Part-Time Graduate Program in Engineering & Applied Science, Whiting School of Engineering, Johns Hopkins University.

1989-90 Undergraduate courses: biostatistics; topics in mathematical biology, St. Petersburg Technical University

5. Graduate Thesis Adviser:

1993-1996 Mentor of Master Degree Thesis on prognostic value of ploidy in pancreatic tumors. Johns Hopkins School of Medicine, Baltimore

6. Workshop organizer/instructor:

1996 Workshop on quantitative immunohistochemistry and image cytometry of breast cancer. Designated site for the Visiting Scholar Award recipient from the New Jersey Commission on Cancer Research. June 19-20,

1996 Baltimore, Maryland
2004 GeneSpring Users Workshop (organizer), August 13, 2004, OUHSC, Oklahoma City, OK
2008 Ingenuity user's workshop (speaker), April 1-2, 2008, Boston, MA

7. Conference Organizer/Coordinator

1997 2nd Annual meeting of Cell Proliferation Society, Baltimore, MD
1998 3d Annual meeting of Cell Proliferation Society, Baltimore, MD
1998 Session organizer. "Tumor Heterogeneity, Angiogenesis and Metastasis", 5th International Conference on Mathematical Population Dynamics, Zakopane, Poland, June 21-26, 1998
2004 Organizing Committee, 1st Annual Symposium of the Oklahoma Bioinformatics Society, Norman , OK
2005 Organizing Committee ,2nd Annual Symposium of the Oklahoma Bioinformatics Society, Oct 28, 2005, Oklahoma City, OK
2006 Organizing Committee,The Third Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, Baton Rouge, Louisiana, March 2nd-4th 2006
2007 Program committee, The fourth annual conference of the MidSouth Computational Biology and Bioinformatics Society, New Orleans, Louisiana, February 1-2, 2007

HONORS:

1. 1991-92 Charles and Johanna Bush Postdoctoral Fellowship, Rutgers - The State University of NJ
2. 1992 Travel Award of the Cell Kinetics Society to present talk at the Annual Meeting of the Society, New Orleans, LU, March 25 - 29 , 1992
3. 1992 Scholarship of the Boston University Corporate Education Center to attend International Educational Conference "C plus C++ in action " in Teaneck, NJ, April 27 - May 1, 1992
4. 1992 NSF Travel Award from the Organizing Committee of the 3rd International Conference on Mathematical Population Dynamics in Pau, France, June 1-5, 1992
5. 1998 NSF travel award for 5th international conference for mathematical population dynamics. Zakopane, Poland, June 21-26, 1998
6. 2005 NSF travel award for international workshop on "*Spatial and Stochastic Phenomena in Gene Regulation and Signaling Pathways*" and International conference "*Mathematical Methods and Models in Biology and Medicine"*, Banach Center, Bedlevo, Poland, May 29-June 3, 2005
7. 2008 Executive Leadership Award, Mid-South Computational Biology and Bioinformatics Society

OTHER PROFFESIONAL ACTIVITIES

GRANT PEER REVIEW COMMITTEES:

Susan G. Komen for the Cure Grants, Bioinformatics and Computational Biology (BCB) review committee 2007 – 2008
NIH IDeA Network for Biomedical Research Excellence, State of Oklahoma grant review board, 2006-2008

CONFERENCES/WORKSHOPS ORGANIZED:

1. Organizing Committee Co-Chair. Fifth annual meeting of the MidSouth Society for Bioinformatics and Computational Biology. MCBIOS2008, Feb. 23-24, 2008, Oklahoma City, Oklahoma
2. Program Committee member. Forth annual meeting of the MidSouth Society for Bioinformatics and Computational Biology . MCBIOS-2007, February 1-2, 2007, New Orleans, Louisiana
3. Organizing committee member. Third Annual Meeting of the MidSouth Society for Bioinformatics and Computational Biology, Baton Rouge, LU, March 6-7, 2006
4. Organizing and Program committee member. Second Annual Symposium of the Oklahoma Bioinformatics Society, Oklahoma Cit,, OK, October 28, 2005
5. Organizing committee member. First Annual Symposium of the Oklahoma Bioinformatics Society Norman, OK, November 12, 2004
6. GeneSpring Users Workshop, August 13, 2004, OUHSC, Oklahoma City, OK

7. Session organizer. "Tumor Heterogeneity, Angiogenesis and Metastasis", 5th International Conference on Mathematical Population Dynamics, Zakopane, Poland, June 21-26, 1998
8. Organizing committee member. Third Annual Meeting of the Cell Proliferation Society March 19-22, 1998 Baltimore, Maryland
9. Organizing committee member. Second Annual Meeting of the Cell Proliferation Society. March 13-16, 1997, Baltimore, Maryland
10. Workshop organizer/ Instructor. Workshop on quantitative immunohistochemistry and image cytometry of breast cancer. Designated site for the Visiting Scholar Award recipients from the New Jersey Commission on Cancer Research. June 19-20, 1996, Baltimore, Maryland

COMMITTEES:
2008 Steering Committee, the Science Advisory Board (international organization with 36,000 members) http://www.scienceboard.net/
2003-present Faculty Program Committee, Graduate Program in Bioinformatics, University of Oklahoma Website: http://www.ou.edu/cas/zoology/Bioinformatics/People.htm
2003-present Associate Member, University of Oklahoma Cancer Institute
2003-present Faculty, Cancer Biology Program, University of Oklahoma Cancer Institute
Website: http://www.ouhsc.edu/oucancercenter/Research/TranslationalResearchTumorModels.asp
2003-present Faculty, Breast Cancer Research Program, University of Oklahoma Cancer Institute
Website: http://www.ouhsc.edu/oucancercenter/Research/BreastCancerTranslationalResearch.asp
1998-2000 Faculty, Faculty Program Committee. Center for Computational Medicine and Biology, School of Medicine & Department of Biomedical Engineering, Johns Hopkins University

MEMBERSHIP:
1. Science Advisory Board 2002 – present; Steering Committee member 2008; http://www.scienceboard.net/community/spotlights.150.html
2. Oklahoma Bioinformatics Society: founding member and vice –president, 2004-present
3. MidSouth Computational Biology and Bioinformatics Society, Board of Directors, Tresurer, 2003-present
4. Society of Mathematical Biology - member (Febr.1993 - present)
5. The International Society of Molecular Morphology - member (1996-present)
6. Cell Proliferation Society (formerly Cell Kinetics Society): Governing Council member/councilor theoretician (1999-2000)

EDITORIALS:
Co-Editor, BMC Bioinformatics Special Issue: Proceedings of the Fifth Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, Oklahoma City, Oklahoma, February 23-24, 2008
Co-Editor, BMC Bioinformatics Special Issue: Proceedings of the Fourth Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, New Orleans, LU, February 1-2, 2007
Co-Editor, BMC Bioinformatics Special Issue: Proceedings of the 3d Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, Baton Rouge, LU, March 6-7, 2006.

JOURNAL REVIEWER:
1. J. of Bioinformatics
2. BMC Bioinformatics
3. J. of Mathematical Biosciences
4. J. of Theoretical Biology
5. International Journal of Artificial Intelligence
6. Cell Proliferation
7. BMC Biology Direct

EDITORIAL BOARDS:
J. Bioinformatics and Biology Insights
BMC Biology Direct

INVITED LECTURES

1. Y. Gusev microRNA and Systems Biology of Cancer: IPA to the rescue! Ingenuity User's workshop, Boston, MA, April 1-2, 2008
2. Y. Gusev The New Kid on the Block: microRNAs in Cancer from a bioinformatics perspective. Molecular Medicine Triconference, Pathway Analysis track, San Francisco, CA, Feb. 28-March 2, 2007
3. Y. Gusev The New Kid on the Block: microRNA profiling in Cancer. The Third Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, Baton Rouge, Louisiana, March 2nd-4th, 2006
4. Y. Gusev Common genes of common cancers: Comparative analysis of known molecular interactions in human cancers. NSF sponsored Workshop: "*Spatial and Stochastic Phenomena in Gene Regulation and Signaling Pathways*" and International conference "*Mathematical Methods and Models in Biology and Medicine"*, Banach Center, Bedlevo, Poland, May 29-June 3, 2005
5. Y. Gusev, J. Hanas, D. Brackett. Making sense of omics data: systems approach to integration of genomics, proteomics and metabolomics data for cancer research. NSF-VBI-Noble Proteomics Workshop August 4-6, 2004, The Noble Foundation, Ardmore, OK
6. 2003 Y. Gusev, M. Lerner, S. Do, D. Brackett Gene Expression Profiling of Transcriptional Response to Sepsis: Time-Course Analysis. University of Oklahoma Discussion Group: Genomics/Proteomics/BioInformatics
7. 2003 Detection of Potential Molecular Markers in Ductal Lavage Fluid and Cells from Breast Cancer Patients. The Intraductal Approach to Breast Cancer International Symposium. Susan Love MD Breast Cancer Research Foundation, Santa Barbara, CA
8. 2002 Introduction to Differential Gene Expression Analysis: Bioinformatics Challenges of Functional Genomics. Opening presentation. Quantitative and Analytic Genetics Club of Oklahoma (QAGCO)
9. 2002 Bioinformatics Challenges of Functional Genomics And Differential Gene Expression Analysis. Opening presentation. University of Oklahoma Discussion Group: Genomics/Proteomics/BioInformatics
10. 2000 Long-term dynamics of chromosomal instability in cancer. Invited talk. International Meeting of Society of Mathematical Biology, Utah University, Salt Lake City, August 3-6, 2000
11. 1999 Segregation Errors, Chromosomal Instability and Ploidy in Cancer. Invited Lecture. Johns Hopkins Bio-Medical Engineering Department, Center for Computational Medicine and Biology Seminar Series, JHU , Baltimore, MD, Feb. 4, 1999
12. 1998 Modeling chromosome segregation errors and instability in cancer. Invited lecture. International Conference on Carcinogenesis. Utah University, Salt Lake City, July 10-15, 1998
13. 1998 Modeling chromosomal instability and its implications for cancer diagnosis and therapy. Invited talk, Fifth International Conference on Mathematical Population Dynamics. Zakopane, Poland, June 21-26, 1998.
14. 1998 Stochastic model of chromosomal instability in carcinogenesis. Invited lecture. Annual Meeting of Biometrical Society, Pittsburgh, March 29-April 1, 1998
15. 1997 Modeling chromosomal instability. Invited talk. Seminar at Dr. Bert Vogelstein's laboratory, Johns Hopkins Oncology Center.
16. 1997 A model of loss of mitotic fidelity and chromosomal instability in carcinogenesis. Invited lecture. The Huntsman Cancer Institute. Utah University. Salt Lake City
17. 1993 Modeling of non-linear population dynamics of normal and tumor cells. Invited lecture, session: Mathematical Modeling of Growth Kinetics. Joint Meeting of the Cell Kinetics Society and the International Cell Cycle Society. April 1993, Richland, Washington

PEER REVIEWED PUBLICATIONS: over 40 papers and book chapters (publications list is attached)

TECHNICAL REPORTS:

1. Annual Tumor Registry Statistical Reports – 1993-1998, Johns Hopkins Hospital Tumor Registry
2. Comparative Survival Analysis of JHH Tumor Registry Data for 1980-1997. Monthly Statistical Reports for Johns Hopkins Hospital Tumor Registry Committee. 1997.

SELECTED CONFERENCE PRESENTATIONS/ABSTRACTS:

1. Y. Gusev microRNA and Systems Biology of Cancer: IPA to the rescue! Ingenuity User's workshop, Boston, MA, April 1-2, 2008
2. Y. Gusev microRNA and Systems Biology of Cancer. MCBIOS-2008, Oklahoma City, Oklahoma, Feb 23-24, 2008
3. Gusev et al. 2007 Computational Analysis of Biological Functions and Pathways Collectively Targeted by Co-expressed microRNAs in Cancer. 15th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) & 6th European Conference on Computational Biology (ECCB),Vienna, Austria: July 21-25, 2007
4. Y. Gusev 2007 The New Kid on the Block: microRNAs in Cancer from a bioinformatics perspective. Molecular Medicine Triconference, Pathway Analysis track, San Francisco, CA, Febr 28-March 2, 2007
5. Y. Gusev et al. 2007 In Search for Common Ground: Functional Analysis of microRNA Expression Patterns in Human Cancers Based on Common Targets Prediction. MCBIOS-2007, February 1-2, 2007, New Orleans, Louisiana
6. Y. Gusev, M.Lerner, J. Hanas, S. Do, S. Lightfoot, M. Bronze, R. Postier, B. Smith, D. Brackett Transcriptional analysis of the innate immune response using systems biology methodology. 29th annual meeting of Shock Society, Broomfield, Co., June 3-6, 2006
7. B. Smith, E. Droke, Y. Gusev, M.Lerner, S. Lightfoot, R. Postier, M. Bronze, D. Brackett Gene expression alterations and hepatic steatosis induced by chronic inflammation are prevented by soy isoflavons. 29th annual meeting of Shock Society, Broomfield, Co., June 3-6, 2006
8. Eun Joo Lee, Yuriy Gusev, Jinmai Jiang, Megan R. Lerner, Wendy L. Frankel, Daniel Morgan, Russell G. Postier, Daniel J. Brackett and Thomas D. Schmittgen 2006 Expression profiling identifies stroma- and tumor-related microRNAs in pancreatic cancer. AACR 97th Annual Meeting, April 1 - 5, 2006
9. Y. Gusev, Eun Joo Lee, Jinmai Jiang, Megan R. Lerner, Wendy L. Frankel, Daniel Morgan, Russell G. Postier, Daniel J. Brackett and Thomas D. Schmittgen *The New Kid on the Block: microRNA profiling in Cancer from a bioinformatics perspective.* The Third Annual Conference of the MidSouth Computational Biology and Bioinformatics Society, Baton Rouge, Louisiana, March 2nd-4th 2006
10. Y. Gusev, Elvin Varughesekutty, Son Do, Daniel Brackett 2005. Common Genes of Common Cancers: Systems Analysis of Molecular Interaction Networks for Common Human Cancers. The Oklahoma Bioinformatics Society Symposium, Oct. 25th 2005, Oklahoma City, OK
11. Y. Gusev , E. Varughesekutty, S. Do, D. Brackett 2005 Common Genes of Common Cancers: Analysis of Known Molecular Interaction Networks in Human Cancers. International Conference on Mathematical Models and Methods in Biology and Medicine, May 29 – June 3, 2005. Banach Center, Bedlevo, Poland.
12. D. Morgan, Y. Gusev, M. Lerner, D. Brackett 2005 Analysis of Hepatic Transcriptional Activity After Endotoxin Exposure. Twenty-Eighth Annual Conference on Shock, Marco Island, Florida June 4-7, 2005
13. Edgerton S, Liu B, Alvarez K, Gusev Y, Thor AD**.** 2004 Modification of Gene Expression in Benign Mammary Gland by Hormonal and Dietary Factors. 27th Annual San Antonio Breast Cancer Symposium, Dec. 8-11, 2004,San Antonio, TX
14. Y. Gusev, Elvin Varughesekutty, Son Do, Daniel Brackett 2004. Systems Bioinformatics Analysis of Molecular Interaction Networks for Common Cancers. The Oklahoma Bioinformatics Society Symposium, Nov. 12 2004, Norman, OK
15. Y. Gusev, Elvin Varughesekutty, Son Do, Daniel Brackett 2004 Making sense of omics data:Systems analysis approach to integration of omics data for cancer research**.** The Second Annual Conference of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS), Little Rock, Arkansas October 7-8, 2004
16. L. E. DeBault, S. A. Lightfoot, Megan R. Lerner, Yuriy Gusev, Daniel L. Morgan, Russell G. Postier, and Daniel J. Brackett 2004 Expression of γ-GTP is Intense in Human Pancreatic Ductal Adenocarcinoma, Slight in Pancreatitis, and Absent in Normal Tissue**.** Experimental Biology 2004 , Apr. 17-21, Washington, DC
17. Y. Gusev, J. Hanas, D. Brackett. Making sense of omics data: systems approach to integration of genomics, proteomics and metabolomics data for cancer research. NSF-VBI-Noble Proteomics Workshop August 4-6, 2004, The Noble Foundation, Ardmore, OK

18.Y. Gusev, M. Lerner, S. Do, D. Brackett 2003 Gene Expression Profiling of Transcriptional Response to Sepsis: Time-Course Analysis. MidSouth Computational Biology and Bioinformatics Society Conference, Little Rock, AR, November 14-16, 2003
19. Y. Gusev and William Dooley 2003 Detection of Potential Molecular Markers in Ductal Lavage Fluid and Cells from Breast Cancer Patients.. The Intraductal Approach to Breast Cancer, International Symposium. Susan Love MD Breast Cancer Research Foundation, Santa Barbara, CA, March 28-30, 2003
20. Y Gusev 2002 Introduction to Differential Gene Expression Analysis: Bioinformatics Challenges of Functional Genomics. Opening Presentation. Quantitative and Analytic Genetics Club of Oklahoma (QAGCO)
21. 2002 Y. Gusev Bioinformatics Challenges of Functional Genomics And Differential Gene Expression Analysis. Opening presentation. OU HSC Discussion Group: Genomics/Proteomics/BioInformatics
22. Y.Gusev 2000 Long-term dynamics of chromosomal instability in cancer. Invited talk. International meeting of Society of Mathematical Biology, Utah University, Salt Lake City, August 3-6, 2000
23. Y. Gusev 1999 Segregation Errors, Chromosomal Instability and Ploidy in Cancer. Invited Lecture. Johns Hopkins Biomedical Engineering Department, Center for Computational Medicine & Biology Seminar Series, JHU , Baltimore, MD, Feb. 4, 1999
24. Y.Gusev 1998 Modeling chromosome segregation errors and instability in cancer. Invited lecture. International Conference on Carcinogenesis. Utah University, Salt Lake City, July 10-15, 1998.
25. Y.Gusev 1998 Modeling chromosomal instability and its implications for cancer diagnosis and therapy. Invited talk, Fifth International Conference on Mathematical Population Dynamics. Zakopane, Poland, June 21-26, 1998.
26. Y.Gusev 1998 Stochastic model of chromosomal instability in carcinogenesis. Invited lecture. Annual Meeting of Biometrical Society, Pittsburgh, March 29-April 1, 1998.
27. Y. Gusev, V. Kaganski, K. Lengauer and W. Dooley 1998 Modeling chromosomal instability in colorectal cancers. Third annual meeting of Cell Proliferation Society, Baltimore March 19-22, 1998, Abstract published in Cell Proliferation
28. Y.Gusev 1997 Model of loss of mitotic fidelity in cancer. International Conference on Mathematical Models in Medical and Health Sciences, Vanderbilt University, Nashville, May 28-31, 1997
29. Y.Gusev 1997 Modeling chromosomal instability. Invited talk. Seminar at Dr. Vogelstein's laboratory, Johns Hopkins Oncology Center, Baltimore, MD
30. Y.Gusev 1997 A model of loss of mitotic fidelity and chromosomal instability in carcinogenesis. Invited lecture. The Huntsman Cancer Institute. Utah university. Salt Lake City
31. Y. Gusev, J. Sample, W. Dooley 1997 Abnormal number of centrosomes and development of aneuploidy and nuclear pleomorphism in breast tumor cells. Seventh International Workshop on chromosomes in solid tumor. Tucson, Arizona
32.Y.Gusev, M.Saji, Y. Takiyama, WC Dooley, MA Zeiger 1997 Development of aneuploidy and nuclear pleomorphism in thyroid follicular cells of TGCT transgenic mice. Seventh International Workshop on chromosomes in solid tumor. Tucson, Arizona
33. Y.Gusev, V. Kaganski, W. Dooley 1997 Model of loss of mitotic fidelity and chromosomal instability in carcinogenesis. Second Annual Meeting of the Cell Proliferation Society. Baltimore, Maryland
34. Y.Gusev, J.Sample, W. Dooley 1997 Abnormal number of centrosomes in breast tumor cells. Second Annual Meeting of the Cell Proliferation Society. Baltimore, Maryland
35. Y.Gusev, M.Saji, Y. Takiyama, W.C. Dooley, M.A. Zeiger 1997 Aneuploidy and nuclear pleomorphism in thyroid follicular cells of TGCT transgenic mice. Second Annual Meeting of the Cell Proliferation Society. Baltimore, Maryland
36. W.Dooley and Y.Gusev 1997 Update on breast cancer proliferation and diagnosis by cutaneous potentiometry. Second Annual Meeting of the Cell Proliferation Society. Baltimore, Maryland
37. Y. Gusev, F. Romantsev, T. Chen, G. Pasternack and W. Dooley 1996 Image analysis of nuclear morphology changes in tumor cells induced by over-expression of pp32. 4th International Conference on Molecular Morphology, Montreal, Canada
38. W Dooley, B. Ronson, Y. Gusev 1996 Correlation of breast skin electro potentials and underlying proliferation changes in breast tissue. 1st annual meeting of Cell Proliferation Society, Toledo, Ohio
39. Y.Gusev and W. Dooley 1996 A molecular biological basis for chromatin architectural changes in tumor cells. 1st annual meeting of Cell Proliferation Society, Toledo, Ohio

40. Y.Gusev and W. Dooley 1995 Stochastic simulation of abnormal cell cycle events. Forth International Conference on Mathematical Population Dynamics, Rice University, Houston, TX, May 23-27, 1995
41. Y. Gusev, A.Tendler, A. Ashcraft, W. Dooley 1995 Model of complex dynamics of breast cancer karyotype: Simulation and in vitro experiments. Sixth International Workshop on Chromosomes in Solid Tumors, February 19-21, 1995, Tucson, Arizona
42. Y. Gusev, A. Tendler, W. Dooley 1994 Chaos and Biological Complexity in Tumor Karyotypes. The Society of Surgical Oncology Meeting 1994, Houston, TX
43. Y.Gusev and W.C. Dooley 1993 Simulation model of chromosome dynamics. 17th Annual Johns Hopkins In-House Cell Biology Symposium. May 27, 1993, Johns Hopkins University, Baltimore, MD
44. Y.Gusev 1993 Modeling of non-linear population dynamics of normal and tumor cells. Invited presentation, session: Mathematical Modeling of Growth Kinetics. Joint Meeting of the Cell Kinetics Society and the International Cell Cycle Society. April 1993, Richland, Washington
45. Y.Gusev and D. E. Axelrod 1992 Models of cell population growth incorporating stochastic inheritance of cell lifetimes. Joint Meeting of the Cell Kinetics Society and the International Cell Cycle Society. March 26-29, New Orleans, LA
46. Y.Gusev 1992 Effect of stochastic inheritance of cell lifetime on dynamics of cell populations. Invited talk on World Congress of Nonlinear Analysts, August 19 - 26, 1992, Tampa, Florida
47. Axelrod D.E. and Y.Gusev 1992 Clonal analysis of heterogeneous populations of tumor and non-tumor cells. 3rd International Conference on Mathematical Population Dynamics, 1-5 June 1992, University of Pau, Pau, France
48. Axelrod D. E. and Y. Gusev, J. W. Gamel 1992 Inheritance of tumor cell resistance to moderate drug doses. Joint Meeting of the Cell Kinetics Society and the International Cell Cycle Society. March 26-29 1992, New Orleans, LA (Abstract published in Cell Proliferation)
49. Y.Gusev and D. E. Axelrod 1992 Simulation of clonal structure and stochastic inheritance in heterogeneous cell populations. 3rd International Conference on Mathematical Population Dynamics, 1-5 June 1992, University of Pau, Pau, France
50. Goot R.E., T.D. Lapshina, Y. Gusev 1992 The model of interaction of cancer tumor and immunity. 3rd International Conference on Mathematical Population Dynamics, 1-5 June 1992, University of Pau, Pau, France

RECENT COLLABORATIONS:

2004-present Thomas D. Schmittgen, Ph.D.,Associate Professor, College of Pharmacy, Ohio State University, Columbus, Ohio. Project: Real-time expression profiling of microRNAs in pancreatic and liver cancers (co-investigator on NCI R21 grant)

2004-2005 Ann Thor, Ph.D., Professor and Chair, Department of Pathology, University of Oklahoma Health Sciences Center, Oklahoma City Project: Modification of Gene Expression in Benign Mammary Gland by Hormonal and Dietary Factors in Transgenic Mice

2004 – 2005 Mamuka Gomartelli, Ph.D., Research Fellow, Department of Biostatistics and Public Health, University of Oklahoma.
Project: Stochastic Modeling of Chromosomal Instability in Cancer Cells

2004 – 2005 Andrey Rzhetsky, Ph.D., Assistant Professor
Department of Biomedical Informatics and Columbia Genome Center, Columbia University, New York City
Project: Analysis of known molecular interaction networks in human cancers

2003 -2004 Lawrence DeBault, Ph.D. , Professor of Pathology, Department of Pathology, University of Oklahoma Health Sciences Center
Project: Comparative Analysis of Expression Patterns of γ-GTP in samples (frozen sections) of Human Pancreatic Ductal Adenocarcinoma,, Pancreatitis, and Normal Pancreatic Tissue.

2002- 2005 Zoltan Lazik, MD , Associate Professor, Department of Pathology, University of Oklahoma Health Sciences Center and John Cheng, Ph.D., Professor, Department of Computer Sciences and Electrical Engineering, University of Oklahoma at Norman. Norman, OK
Project: Virtual microscopy and digital image analysis of cancer cell phenotypes.

2006-pres. Jody Rada, Ph.D., Associate Professor, Eye Institute, OUHSC, Oklahoma City
Project: Differential Gene expression analysis in animal model of eye injury.

LIST OF PUBLICATIONS - Yuriy Gusev, Ph.D.

1. Y. Gusev Computational methods for analysis of cellular functions and pathways collectively targeted by differentially expressed microRNA. Methods, 2008, 44: 61–72, featured at the "Science spotlight" section of the Ingenuity website (March of 2008)
2. J. Jiang, Y. Gusev, I. Andrea, , T. A. Mettler, D. M.Nagorney, D. Brackett, L. R. Roberts and T. D. Schmittgen. microRNA expression in hepatocellular carcinomas associated with hepatitis infection, cirrhosis and patient's survival. Journal of Clinical Cancer Research, 2008; 14 (2). Featured on the cover of the January 15, 2008 issue.
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