

CURRICULUM VITAE

PERSONAL:

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EDUCATION:

1984 B.Sc. in physics, Tel Aviv University, Tel Aviv, Israel (Magna cum Laude)
1987 M.Sc. in physics, Tel Aviv University, Tel Aviv, Israel (Magna cum Laude)
1992 Ph.D. in theoretical physics, Tel Aviv University, Tel Aviv, Israel

CAREER:

1992-1994 Postdoctoral fellow in physics, Theoretical Division, Los Alamos National Laboratory
1994-1996 Postdoctoral fellow in physics, Nuclear Division, Lawrence Berkeley Laboratory
1996-1997 Postdoctoral fellow in physics, Theoretical Division, Los Alamos National Laboratory
1997-1999 Staff member theoretical physicist, X-Division and Theoretical Division, Los Alamos National Laboratory
1999-2001 Sloan Fellowship in Computational Molecular Biology, Department of Molecular Biophysics and Biochemistry, Yale University
2001-2003 Anna Fuller fellow, Department of Genetics and Department of Molecular Biophysics and Biochemistry, Yale University
2003-present Assistant Professor, Department of Cell Biology, NYU School of Medicine

AWARDS:

1987-1988 Minerva Fellowship at the Goethe-Universitaet, Frankfurt/Main
1996-1997 Minerva Fellowship awarded at Heidelberg University, Germany
1999-2001 Sloan/Department of Energy Fellowship in Computational Biology
2001-2002 Anna Fuller Foundation Award for Cancer Bioinformatics
2004 CAP Foundation Conference Travel Award (APIII)
2006-2008 Susan G. Komen Breast Cancer Foundation Award

MEMBERSHIP AND APPOINTMENTS:

International Society for Computational Biology
New York Academy of Sciences
Courtesy appointment at the Courant Institute of Mathematical Science
Member of the Biostatistics and Bioinformatics Core, Yale SPORE in Skin Cancer
Visiting scientist at the department of dermatology, Yale University

EDUCATIONAL RESPONSIBILITIES:

Member of the NYU Computational Biology Doctoral Program (COB) committee
Introduction lectures on topics in computational biology and bioinformatics to students in the MD/PhD and PhD programs
Attend and evaluate public seminar presentations by COB students
Interviewing candidates for MD/PhD and COB programs
COB Program Curriculum meetings
COB Admissions and Selection Committee

Mentoring of Graduate Students and Postdoctoral Fellows:

Present Students:

Advisor to Mariann Micsinai, Computational Biology Ph.D. student

Former Postdoctoral Fellows:

Kim H.: Currently a postdoctoral fellow at the Brigham and Women's Hospital

Zhou Y.: Currently a postdoctoral fellow at University of Arkansas

Present Postdoctoral Fellow/ research scientists:

Parisi F, Ph.D. (University of Lusanne)

Wang J.: Ph.D. (Beijing University)

Ph.D. Committees:

Chairperson – administrative director on committee for Diego Acosta Alvear

Member on committees for Maureen Nemetski, Hong Wang, Alex Pearlman and Peter Waltman

COMMITTEE SERVICE:

Computational Biology Doctoral Program (COB) committee, NYU

Genomics Oversight Committee, NYU

CTSA "Data Services" committee, NYU

User Committee for Genomics and Bioinformatics, NYU

Research IT Advisory Committee, NYU

SERVICE TO EXTERNAL ORGANIZATIONS:

Member of the Oak Ridge Scientific Advisory Committee for the Center of Molecular and Cellular Systems

Member of the Yale Center of Excellence in Molecular Hematology Advisory Board

Member of the organizing committee for a 3-month program at the Institute for Pure and Applied Mathematics (IPAM) on "Mathematics of Search and Knowledge Engines" and Chair of the organizing committee of a one week workshop on the Search and Knowledge Building for Biological Datasets

External referee for the PhD Thesis of Mattia Pellizola at the Milano-Bicocca University

External reviewer for the NIH Erythrocyte & Leukocyte Biology (ELB) Study Section

External reviewer for the Israel Science Foundation

Program Committee Member of the Second DREAM (Dialogue on Reverse Engineering

Assessments and Methods) Conference

Reviewer for BMC journals, Bioinformatics journal, PNAS, Genome research, ISMB, Pattern Recognition Letters, Journal of Proteome Research, Journal of Bioinformatics and Computational Biology

MAJOR RESEARCH INTERESTS:

Developing and implementing mathematical, statistical, data mining, graph theory and physical approaches to elucidate principles governing the dynamics and structures of biological networks using a variety of high throughput genomics and proteomics experimental data from collaborating laboratories and data repositories.

INVITED SEMINARS

4/2005 New York University, Genomes in Action Inaugural Symposium
6/2005 Yale University, Department of Biophysics and Biochemistry
6/2005 IBM, Department of Functional Genomics and Systems Biology
2005 NYU SOM, NYUCI 3rd Annual Retreat
8/2005 The Weizmann Institute, Department of Applied Math and Computer Science
10/2005 Columbia University, Department of Applied Math and Applied Physics
6/2006 NYU Genomics Group Seminar & Workshop Series
7/2006 Yale Center of Excellence in Molecular Hematology Inaugural Symposium
7/2007 International University of Bremen, Germany, course in a summer school
10/2007 Cold Spring Harbor
11/2007 Institute of Applied Mathematics, UCLA
12/2007 Princeton PICASso seminar series, Princeton
5/2008 M.D. Anderson Cancer Center
6/2008 NIEHS, North Carolina

PUBLICATIONS:

1. Y. Kluger and J. M. Eisenberg, The isoscalar charge form factor in nuclei of $A=2,3$ obtained in the Skyrme model, *Int. J. Mod.Phys. A* 3 (1988) 2127-2142
2. J. M. Eisenberg, Y. Kluger, and A. Rosenhauer, Transport Equations for the Quark-Gluon Plasma, in *The Nuclear Equation of State, Part B*, W. Greiner and H. Stoecker, eds. (Plenum, New York, 1989) p. 501
3. Kluger Y, Eisenberg JM, Svetitsky B, Cooper F, and Mottola E. Pair Production In A Strong Electric Field. *Phys. Rev. Lett* 1991; 67: 2427.
4. Kluger Y, Eisenberg JM, Svetitsky B, Cooper F, and Mottola E. Fermion Pair Production In A Strong Electric Field. *Phys Rev* 1992; D 45: 4659.
5. Cooper F, Eisenberg JM, Kluger Y, Mottola E, Svetitsky B. Particle Production in the central rapidity region. *Phys Rev* 1993; D 48: 190.
6. Kluger Y, Svetitsky B, and Eisenberg JM. Pair production in a strong electric field: an initial value problem in quantum field theory. *Int J Mod Phys* 1993; E 2: 333-380.
7. Cooper F, Habib S, Kluger Y, Mottola E, Paz JP, Anderson P. Non-equilibrium quantum fields in the large N expansion. *Phys Rev* 1994; D 50: 2848.
8. F. Cooper, J. Dawson, Y. Kluger, and H. Shepard, Time evolution of the quark-gluon plasma, *Nucl. Phys. A* 566 (1994) 395c
9. Berman, G, Bulgakov E, Holm D, and Kluger Y. Large Dynamical chaos in $SU(2)\times U(1)$ theory. *Phys Lett* 1994; A 194: 251.
10. Y. Kluger, Back-reaction beyond the mean field approximation, *Proceedings of the Nato Advanced Institute on Hot and Dense Nuclear Matter*, Edited by W. Greiner et al., Plenum Press, New York, 1994.

11. Y. Kluger, F. Cooper, E. Mottola, J.P. Paz and A. Kovner, Quantum evolution of the disoriented chiral condensate, Nucl. Phys. A590 (1995) 581c.
12. F. Cooper, J. Dawson, S. Habib, Y. Kluger, D. Meredith and H. Shepard, Semiquantum chaos and the large N expansion, Physica D 83 (1995) 74.
13. Cooper F, Kluger Y, Mottola E, and Paz JP. Quantum evolution of the disoriented chiral condensate. Phys Rev 1995; D 51: 2377.
14. Habib S, Kluger Y, Mottola E, and Paz JP. Dissipation and Decoherence in Mean Field Theory. Phys Rev Lett 1996; 76: 4660.
15. Cooper F, Kluger Y, and Mottola E. Anomalous transverse distribution of pions as a signal for the production of the disoriented chiral condensates. Phys Rev 1996; C 54: 3298.
16. Cooper F, Habib S, Kluger Y, Mottola E. Nonequilibrium dynamics of symmetry breaking in ϕ^4 theory. Phys Rev 1997; D55: 6471.
17. Kluger Y, Koch V, Randrup J, and Wang XN. Dileptons from Disoriented Chiral Condensates. Phys Rev 1997; C57: 280.
18. Kluger Y, Mottola E, and Eisenberg JM. Quantum Vlasov equation and its Markov limit. Phys Rev 1998; D58
19. Christendat D, Yee A, Dharamsi A, Kluger Y, Savchenko A, Cort JR, Booth V, Mackereth CD, Saridakis V, Ekiel I, Kozlov G, Maxwell KL, Wu N, McIntosh LP, Gehring K, Kennedy MA, Davidson AR, Pai EF, Gerstein M, Edwards AM, and Arrowsmith CH. Structural proteomics of an archaeon. Nat Struct Biol, 2000; 7: 903-9.
20. Christendat, D., Yee, A., Dharamsi, A., Kluger, Y., Gerstein, M., Arrowsmith, C.H., and Edwards, A.M., Structural proteomics: prospects for high throughput sample preparation. Prog Biophys Mol Biol, 2000. 73(5): p. 339-45.
21. Bertone P*, Kluger Y*, Lan N, Zheng D, Edwards AM, Arrowsmith CH, Montelione GT, and Gerstein M. SPINE: An Integrated Tracking Database and Data Mining Approach for Prioritizing Feasible Targets in High-throughput Structural Proteomics. NAR, 2001; 29: 2884-98. *These authors contributed equally.
22. Subrahmanyam YV, Yamaga S, Prashar Y, Lee HH, Hoe NP, Kluger Y, Gerstein M, Goguen JD, Newburger PE, Weissman SM. RNA expression patterns change dramatically in human neutrophils exposed to bacteria. Blood 2001; 97: 2457-68.
23. Lian Z, Wang L, Yamaga S, Bonds W, Barclay Y, Kluger Y, Gerstein M, Newburger PE, Berliner N, Weissman SM. Genomic and proteomic analysis of myeloid differentiation program. Blood 2001; 98: 513
24. Lian Z, Kluger Y, Greenbaum DS, Tuck D, Gerstein MB, Berliner N, Weissman SM, Newburger PE. Genomic and proteomic analysis of the myeloid differentiation program. II: Global analysis of gene expression during induced differentiation in the MPRO cell line. Blood 2002; 100: 3209-3220.
25. Kluger Y, Basri R, Chang JT, and Gerstein MB. Spectral Biclustering of Microarray Data: Co-clustering Genes and Conditions, Genome Research 2003; 13: 703-716.
26. Qian J*, Kluger Y*, Yu H*, Gerstein MB. Spatial artifacts in microarray data: spurious correlations and techniques to remove them. Accepted for publication in Biotechniques 2003; 35:42-4, 46, 48. * These authors contributed equally to the work.
27. Tsukahara Y, Lian Z, Zhang X, Whitney C, Kluger Y, Tuck D, Yamaga S, Nakayama Y, Weissman SM, Newburger PE. Gene expression in human neutrophils during activation and priming by bacterial lipopolysaccharide. J Cell Biochem 2003; 89: 848-861.
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31. Zhang X, Kluger Y, Poddar R, Whitney C, DeTora A, Weissman S, Newburger PE. Gene expression in mature neutrophils: Early responses to inflammatory stimuli, *Journal of Leukocyte Biology* 2004; 75: 358
32. Kluger Y, Tuck DP, Chang JT, Nakayama Y, Poddar R, Kohya N, Lian Z, Abdelhakim Ben Nasr H, Halaban R, Krause DS, Zhang X, Newburger PE, Weissman SM. Lineage Specificity of Gene Expression Patterns. *PNAS* 2004; 101: 6508-6513
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34. Kluger Y, Lian Z, Zhang X, Newburger PE, Weissman SM. A panorama of lineage-specific transcription in hematopoiesis. *Bioessays* 2004; 26: 1276-87.
35. Kluger HM, Chelouche L, Kluger Y, McCarthy MM, Kiriakova, Camp GR, Rimm DL, Price JE. Using a Xenograft Model of Human Breast Cancer Metastasis to Find Genes Associated with Clinically Aggressive Disease, *Cancer Research* 2005, 65(13):5578-87
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38. Kim, H., Hu, W., Kluger, Y. Unraveling condition specific gene transcriptional regulatory networks in *Saccharomyces cerevisiae*, *BMC Bioinformatics* 2006, 7:165
39. Tuck, D., Kluger, H., Kluger, Y. Characterizing disease states from topological properties of transcriptional regulatory networks, *BMC Bioinformatics* 2006, 7:236
40. Kluger, Y., Kluger, H., Tuck, D., Association between pathways in regulatory networks, 28th IEEE EMBS Annual International Conference (peer review), 2006, New York City, New York, USA
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42. Zhou Y., Ferguson J., Chang J.T., Kluger Y., Inter and intra combinatorial regulation by Transcription factors and MicroRNAs, *BMC Genomics* 2007;8(1):396
43. Acosta-Alvear D, Zhou Y, Blais A, Tsikitis M, Lents NH, Arias C, Lennon CJ, Kluger Y, Dynlacht BD. XBP1 controls diverse cell type- and condition-specific transcriptional regulatory networks. *Mol Cell* 2007 27 (1):53-66
44. Kluger, A. N., Nir, D., & Kluger, Y., Personal Position Repertoire (PPR) from a bird's eye view. *Journal of Constructivist Psychology*, 21:223-238, 2008
45. M. M. McCarthy; E. Pick; Y. Kluger; B. Gould-Rothberg; R. Lazova; R. L. Camp; D. L. Rimm; H. M. Kluger. HSP90 as a marker of progression in melanoma. *Annals of Oncology* 2007; doi: 10.1093/annonc/mdm545
46. Y. Nadler, R. L. Camp, J. M. Giltane, C. Moeder, D. L. Rimm, H. M. Kluger, and Y. Kluger, "Expression patterns and prognostic value of Bag-1 and Bcl-2 in breast cancer," *Breast Cancer Research* 2008, 10:R35.
47. Y. Nadler, R. L. Camp, C. Schwartz, D. L. Rimm, H. M. Kluger, and Y. Kluger, "Expression of Aurora A (but not Aurora B) is Predictive of Survival in Breast Cancer," *Clinical Cancer Research* 14, 4455-4462, July 15, 2008.

48. C. Van Oevelen, J. Wang, Y. Kluger*, and B.D. Dynlacht*. Genome-wide analysis suggests how mammalian Sin3 dictates nucleosome architecture and gene expression. *Molecular Cell*, 32(3) pp. 359 - 370.
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51. Nadler Y, Gonzalez, AM, Camp RL, Rimm DL, Kluger HM, Kluger Y ,Growth factor receptor-bound protein-7 (GRB7) as a prognostic marker and therapeutic target in breast cancer, accepted for publication in *Annals of Oncology*

SELECTED RECENT ABSTRACTS

Kluger Y., Tuck D., Global Regulation of Gene Expression meeting, March 23-26, 2006, Cold Spring Harbor
Characterizing disease states from topological properties of transcriptional regulatory networks

Kluger Y., Tuck D. Global Regulation of Gene Expression meeting, March 17-20, 2005, Cold Spring Harbor
Localization of cancer related genes in the transcriptional gene regulatory network

Mattoon, D; Love, B; Kluger, Y; Michaud, G; Schweitzer, B; Predki, P; Ritter, G; Halaban, R
"Melanoma biomarker discovery through serum antibody profiling on protein microarrays [Abstract]". *Clinical immunology* 2006 AUG;119(4):S28-S28

Molinaro, A; Krauthammer, M; Kluger, Y; Cheng, E; Deng, M; Mor, G; Brailey, L; Sznol, M; Kluger, H; Ariyan, S; McNiff, J; Narayan, D; Shivakumar, P; Pelizzola, M; Kovacs, D; Picardo, M; Halaban, R "Genome wide expression profiles associated with 5-Aza-2'-deoxy-cytidine-induced apoptosis in melanoma cells [Abstract]". *Journal of investigative dermatology* 2007 APR;127(2):S28-S28

A. Pearlman, S. Cohen, Y. Kluger, H. Ostrer "R-pipeline for the robust analysis of arrayCGH data": ASHG 57th Annual Meeting