Curriculum Vitae of Victor M. Yakovenko

I certify that this Curriculum Vitae is accurate and complete.

Signature:_____ March 10, 2024

1 Personal Information

Victor M. Yakovenko
Department of Physics, University of Maryland, College Park, MD 20742-4111, USA
Professor, promoted July 1, 2004
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Education

1984 – 1987 : Landau Institute for Theoretical Physics, Moscow
Ph.D. in theoretical physics, advisor: L. P. Gor'kov
1978 – 1984 : Moscow Physical-Technical Institute
M.S. in physics, advisor: S. A. Brazovskii
1976 – 1978 : Ukraine-wide Physical-Mathematical Boarding High School, Kyiv

Employment

7/1/2004 – present : Full Professor, Department of Physics, University of Maryland
7/1/1999 – 6/30/2004 : Associate Professor, Department of Physics, University of Maryland
8/17/1993 – 6/30/1999 : Assistant Professor, Department of Physics, University of Maryland
1991 – 1993 : Research Associate, Department of Physics and Astronomy, Rutgers University, advisor: E. Abrahams
1987 – 1991 : Research Scientist, Landau Institute for Theoretical Physics, Moscow, department of I. E. Dzyaloshinskii

Visiting Positions

1–2/2009 : Santa Fe Institute and Los Alamos National Laboratory, Santa Fe, New Mexico
8–11/2008 : Laboratoire de Physique Théorique et Modèles Statistiques, Université Paris-Sud, Orsay
8/1991 : Interdisciplinary Research Center in Superconductivity, Cambridge University, Britain
4–8/1990 : Institute for Scientific Interchange, Turin, Italy
5–7/1989 : Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France

Participation in long-term workshops at the Kavli Institute for Theoretical Physics, Santa Barbara, California

8/2009 : "The Physics of Higher Temperature Superconductivity"
4–5/2009 : "Low Dimensional Electron Systems"
12/2007 : "Sr_2RuO_4 and Chiral p-wave Superconductivity"
3–4/2005 : "Quantum Phase Transitions"
5–6/2004 : "Exotic Order and Criticality in Quantum Matter"
10–12/2002 : "Realistic Theories of Correlated Electron Materials"

2 Research, Scholarly, and Creative Activities

The name of **V. M. Yakovenko** is printed in **bold** for the books and articles where he is the most senior author.

2.a Books

1. **V. M. Yakovenko**, "Theory of the quantum Hall effect in quasi-one-dimensional conductors", invited Chapter 17 in the book *The Physics of Organic Superconductors and Conductors*, Springer series in Material Sciences, vol. 110, edited by A. G. Lebed, ISBN 978-3-540-76667-4, Springer (2008), pages 529–550.
2. **V. M. Yakovenko**, "Econophysics, Statistical Mechanics Approach to", invited review article in the book *Encyclopedia of Complexity and Systems Science*, edited by R. A. Meyers, ISBN 978-0-387-75888-6, Springer (2009).
3. A. F. Cottrell, P. Cockshott, G. J. Michaelson, I. P. Wright, and **V. M. Yakovenko**, "Classical Econophysics", Routledge series Advances in Experimental and Computable Economics, ISBN 978-0-415-47848-9, Routledge (2009).
4. **V. M. Yakovenko**, "Statistical mechanics approach to the probability distribution of money", invited Chapter 7 in the book *New Approaches to Monetary Theory: Interdisciplinary perspectives*, edited by Heiner Ganssmann, ISBN 978-0-415-59525-4, Routledge (2011), pages 104–123.
5. **V. M. Yakovenko**, "Applications of statistical mechanics to economics: Entropic origin of the probability distributions of money, income, and energy consumption", invited Chapter 4 in the book *Social Fairness and Economics: Economic essays in the spirit of Duncan Foley*, edited by Lance Taylor, Armon Rezai, and Thomas Michl, ISBN 978-0-415-53819-0, Routledge (2013), pages 53–82.
6. **V. M. Yakovenko**, "Statistical Mechanics Approach to Econophysics", invited review article in the online *Encyclopedia of Complexity and Systems Science*, edited by R. A. Meyers, 2nd edition, Springer (2022), `https://doi.org/10.1007/978-3-642-27737-5_169-2`

2.b Articles in Refereed Journals

1. S. A. Brazovskii, N. N. Kirova, and V. M. Yakovenko, "Electronic excitations in quasi-one-dimensional conductors", Journal de Physique Colloque C3 **44**, 1525–1530 (1983).
2. S. A. Brazovskii, N. N. Kirova, and V. M. Yakovenko, "On the possible superfluidity of bipolarons on the junction surface", Solid State Communications **55**, 187–191 (1985).
3. S. A. Brazovskii and V. M. Yakovenko, "On the theory of phase transitions in organic superconductors", Journal de Physique Lettres **46**, L111–L116 (1985).
4. S. A. Brazovskii and V. M. Yakovenko, "On the theory of organic superconducting materials", Soviet Physics-JETP **62**, 1340–1352 (1985).
5. S. A. Brazovskii and V. M. Yakovenko, "On the theory of superconducting phase in organic conductors", Journal de Physique **47**, 175–180 (1986).
6. S. A. Brazovskii and V. M. Yakovenko, "Magnetic oscillations in organic superconductors (theory)", JETP Letters **43**, 134–137 (1986).

7. **V. M. Yakovenko**, "A theory of magnetic-field-induced phase transitions in quasi-one-dimensional conductors", Europhysics Letters **3**, 1041–1047 (1987).
8. **V. M. Yakovenko**, "A theory of magnetic-field-induced phase transitions in quasi-one-dimensional conductors", Soviet Physics-JETP **66**, 355–365 (1987).
9. I. E. Dzyaloshinskii and V. M. Yakovenko, "A weak coupling theory for La_2CuO_4", Soviet Physics-JETP **67**, 844–849 (1988).
10. I. E. Dzyaloshinskii and V. M. Yakovenko, "A weak coupling theory for La_2CuO_4: $\ln^2$-parquet approach", Journal of Molecular Electronics **4**, 193–198 (1988).
11. I. E. Dzyaloshinskii and V. M. Yakovenko, "A weak coupling theory for La_2CuO_4: $\ln^2$-parquet approach", International Journal of Modern Physics B **2**, 667–677 (1988).
12. S. A. Brazovskii and V. M. Yakovenko, "Possible superconductivity at the surface of a contact of insulating La_2CuO_4", JETP Letters **48**, 172–175 (1988).
13. S. A. Brazovskii and V. M. Yakovenko, "Possible superconductivity on the junction surface of dielectric La_2CuO_4", Physics Letters A **132**, 290–292 (1988).
14. S. A. Brazovskii and V. M. Yakovenko, "Possible superconductivity on the junction surface of dielectric La_2CuO_4", International Journal of Modern Physics B **2**, 1073–1077 (1988).
15. **V. M. Yakovenko**, Comment on "Extreme quantum limit in a quasi-two-dimensional organic conductor", Physical Review Letters **61**, 2276 (1988).
16. G. E. Volovik, A. Solovyov, and V. M. Yakovenko, "Spin and statistics of soliton in a superfluid ^{3}He-A film", JETP Letters **49**, 65–67 (1989).
17. G. E. Volovik and V. M. Yakovenko, "Fractional charge, spin and statistics of solitons in superfluid ^{3}He-A film", Journal of Physics: Condensed Matter **1**, 5263–5274 (1989).
18. **V. M. Yakovenko**, "Spin, statistics and charge of solitons in (2+1)-dimensional theories", Fizika (Zagreb) **21**, suppl. 3, 231–233 (1989).
19. **V. M. Yakovenko**, "Quasi-one-dimensional conductors in magnetic field: Physical consequences of "non-standard" theoretical approach", Fizika (Zagreb) **21**, suppl. 3, 44–47 (1989).
20. **V. M. Yakovenko**, "Chern–Simons terms and **n**-field in Haldane's model for quantum Hall effect without Landau levels", Physical Review Letters **65**, 251–254 (1990).
21. **V. M. Yakovenko**, "Quantum Hall effect in quasi-one-dimensional conductors", Physical Review B **43**, 11353–11366 (1991).
22. **V. M. Yakovenko**, "Theory of the quantum Hall effect in quasi-one-dimensional conductors", Synthetic Metals **43**, 3389–3390 (1991).
23. M. V. Kartsovnik, V. N. Laukhin, S. I. Pesotskii, I. F. Schegolev, and V. M. Yakovenko, "Angular magnetoresistance oscillations and the shape of the Fermi surface in β-$(ET)_2IBr_2$", Journal de Physique I **2**, 89–99 (1992).
24. **V. M. Yakovenko**, "Theory of thermodynamic magnetic oscillations in quasi-one-dimensional conductors", Physical Review Letters **68**, 3607–3610 (1992); Erratum **70**, 519 (1993).
25. **V. M. Yakovenko**, "Once again about interchain hopping", JETP Letters **56**, 510–513 (1992).
26. **V. M. Yakovenko**, "Metals in a high magnetic field: A universality class of marginal Fermi liquids", Physical Review B **47**, 8851–8857 (1993).

27. **V. M. Yakovenko**, "Magnetic oscillations and crystal superstructure", Physical Review Letters **70**, 2657 (1993).

28. **V. M. Yakovenko**, "Hall conductivity of the moving FISDW", Journal de Physique IV, Colloque C2, **3**, 307–310 (1993).

29. **V. M. Yakovenko**, "Hall conductivity of a moving magnetic-field-induced spin-density-wave", Journal of Superconductivity **7**, 683–685 (1994).

30. Y. Hasegawa, K. Machida, M. Kohmoto, and V. M. Yakovenko, "Quantum Hall effect in the field-induced spin density wave states", Journal of Superconductivity **7**, 757–762 (1994).

31. K. Machida, Y. Hasegawa, M. Kohmoto, V. M. Yakovenko, Y. Hori, and K. Kishigi, "Quantized Hall conductance and its sign reversal in field-induced spin-density waves", Physical Review B **50**, 921–931 (1994).

32. A. T. Zheleznyak and **V. M. Yakovenko**, "'Hot spots' in quasi-one-dimensional organic conductors", Synthetic Metals **70**, 1005–1008 (1995).

33. I. I. Mazin and V. M. Yakovenko, "Neutron scattering and superconducting order parameter in $YBa_2Cu_3O_7$", Physical Review Letters **75**, 4134–4137 (1995); Erratum **76**, 1984 (1996).

34. V. M. Yakovenko and I. I. Mazin, "On the interpretation of neutron scattering in superconducting $YBa_2Cu_3O_7$", Journal of Physics and Chemistry of Solids **56**, 1777–1778 (1995).

35. R. J. Radtke, A. I. Liechtenstein, V. M. Yakovenko, and S. Das Sarma, "Antiferromagnetic interactions and the superconducting gap function: Where are the nodes?", Physical Review B **53**, 5137–5140 (1996).

36. **V. M. Yakovenko** and H.-S. Goan, "Quantum Hall effect in quasi-one-dimensional conductors: The roles of moving FISDW, finite temperature, and edge states", Journal de Physique I (France) **6**, 1917–1937 (1996). **Invited review** for the I. F. Schegolev Memorial Volume *Common Trends in Synthetic Metals and High-T_c Superconductors.*

37. A. T. Zheleznyak, V. M. Yakovenko, and I. E. Dzyaloshinskii, "Parquet solution for a flat Fermi surface", Physical Review B **55**, 3200–3215 (1997).

38. H.-S. Goan and **V. M. Yakovenko**, "Temperature evolution of the quantum Hall effect in quasi-one-dimensional organic conductors", Synthetic Metals **85**, 1609–1612 (1997).

39. G. E. Volovik and V. M. Yakovenko, "Hopf term for a two-dimensional electron gas", Physical Review Letters **79**, 3791 (1997).

40. A. T. Zheleznyak, V. M. Yakovenko, H. D. Drew, and I. I. Mazin, "Phenomenological interpretations of the ac Hall effect in the normal state of $YBa_2Cu_3O_7$", Physical Review B **57**, 3089–3098 (1998).

41. N. Dupuis and **V. M. Yakovenko**, "Sign reversals of the quantum Hall effect and helicoidal magnetic-field-induced spin-density waves in quasi-one-dimensional organic conductors", Physical Review Letters **80**, 3618–3621 (1998).

42. **V. M. Yakovenko** and H.-S. Goan, "Edge and bulk electron states in a quasi-one-dimensional metal in a magnetic field: Semi-infinite Wannier-Stark ladder", Physical Review B **58**, 8002–8008 (1998).

43. N. Dupuis and **V. M. Yakovenko**, "Effect of umklapp scattering on the magnetic-field-induced spin-density waves in quasi-one-dimensional organic conductors", Physical Review B **58**, 8773–8792 (1998).

44. **V. M. Yakovenko** and H.-S. Goan, "The influence of magnetic-field-induced spin-density-wave motion and finite temperature on the quantum Hall effect in quasi-one-dimensional conductors: A quantum field theory", Physical Review B **58**, 10648–10664 (1998).

45. A. T. Zheleznyak, V. M. Yakovenko, and H. D. Drew, "Magnetoresistance of $YBa_2Cu_3O_7$ in the 'cold spots' model", Physical Review B **59**, 207–210 (1999).

46. N. Dupuis and **V. M. Yakovenko**, "Quantum Hall effect anomaly and collective modes in the magnetic-field-induced spin-density-wave phases of quasi-one-dimensional conductors", Europhysics Letters **45**, 361–367 (1999).

47. N. Dupuis and **V. M. Yakovenko**, "Sign reversals of the quantum Hall effect and helicoidal magnetic-field-induced spin-density waves in organic conductors", Physica B, **259–261**, 1013–1014 (1999).

48. **V. M. Yakovenko** and A. T. Zheleznyak, "Temperature dependence of the normal-state Hall coefficient of a quasi-one-dimensional metal", Synthetic Metals **103**, 2202–2205 (1999).

49. **V. M. Yakovenko** and A. T. Zheleznyak, "Magnetic-field-induced Luttinger insulator state in quasi-one-dimensional conductors", Synthetic Metals **103**, 2028–2029 (1999).

50. A. T. Zheleznyak and **V. M. Yakovenko**, "Temperature dependence of resistivity in quasi-one-dimensional conductors in a strong magnetic field", European Physical Journal B **11**, 385–399 (1999).

51. A. Drăgulescu, V. M. Yakovenko, and D. J. Singh, "Theory of angular magnetoresistance oscillations in $Tl_2Ba_2CuO_6$", Physical Review B **60**, 6312–6315 (1999).

52. **V. M. Yakovenko**, H.-S. Goan, J. Eom, and W. Kang, "Temperature evolution of the quantum Hall effect in the FISDW state: Theory vs. experiment", Journal de Physique IV (France) **9**, Pr10-195 (1999).

53. N. Dupuis and **V. M. Yakovenko**, "Sign reversal of the quantum Hall effect and helicoidal magnetic-field-induced spin-density waves in organic conductors", Journal de Physique IV (France) **9**, Pr10-199 (1999).

54. N. Dupuis and **V. M. Yakovenko**, "Collective modes in a system with two spin-density waves: The Ribault phase of quasi-one-dimensional organic conductors", Physical Review B **61**, 12888–12908 (2000).

55. K. Sengupta and **V. M. Yakovenko**, "Hopf invariant for long-wavelength Skyrmions in quantum Hall systems for integer and fractional fillings", Physical Review B **62**, 4586–4604 (2000).

56. A. Drăgulescu and **V. M. Yakovenko**, "Statistical mechanics of money", European Physical Journal B **17**, 723–729 (2000).

57. **V. M. Yakovenko** and A. T. Zheleznyak, "Comparison of experimental data and theoretical calculations for electrical resistivity and Hall coefficient in quasi-one-dimensional organic conductor $(TMTSF)_2PF_6$", Synthetic Metals **120**, 1083–1084 (2001).

58. K. Sengupta, H.-J. Kwon, and **V. M. Yakovenko**, "Edge electron states for quasi-one-dimensional organic conductors in the magnetic-field-induced spin-density-wave phases", Physical Review Letters **86**, 1094–1097 (2001).

59. K. Sengupta, I. Žutić, H.-J. Kwon, V. M. Yakovenko, and S. Das Sarma, "Midgap edge states and pairing symmetry of quasi-one-dimensional organic superconductors", Physical Review B **63**, 144531 (2001) [6 pages].

60. A. Drăgulescu and **V. M. Yakovenko**, "Evidence for the exponential distribution of income in the USA", European Physical Journal B **20**, 585–589 (2001).

61. A. Drăgulescu and **V. M. Yakovenko**, "Exponential and power-law probability distributions of wealth and income in the United Kingdom and the United States", Physica A **299**, 213–221 (2001).

62. K. Sengupta, H.-J. Kwon, and **V. M. Yakovenko**, "Edge states and determination of pairing symmetry in superconducting Sr_2RuO_4", Physical Review B **65**, 104504 (2002) [6 pages].

63. H.-J. Kwon and **V. M. Yakovenko**, "Spontaneous formation of a π soliton in a superconducting wire with an odd number of electrons", Physical Review Letters **89**, 017002 (2002) [4 pages]. This paper was also selected to appear in Virtual Journal of Quantum Information, Virtual Journal of Nanoscale Science & Technology, and Virtual Journal of Applications of Superconductivity, online compilation journals published by the American Institute of Physics.

64. A. A. Dragulescu and **V. M. Yakovenko**, "Probability distribution of returns in the Heston model with stochastic volatility", Quantitative Finance **2**, 443–453 (2002); Erratum **3**, C15 (2003).

65. H.-J. Kwon, **V. M. Yakovenko**, and K. Sengupta, "How to detect edge electron states in $(TMTSF)_2X$ and Sr_2RuO_4 experimentally", Synthetic Metals **133–134**, 27–31 (2003).

66. A. C. Silva and **V. M. Yakovenko**, "Comparison between the probability distribution of returns in the Heston model and empirical data for stock indexes", Physica A **324**, 303–310 (2003).

67. V. A. Khodel and V. M. Yakovenko, "Unconventional superconductivity in two-dimensional electron systems with long-range correlations", JETP Letters **77**, 420–423 (2003).

68. V. M. Yakovenko and V. A. Khodel, "Physics of the insulating phase in the dilute two-dimensional electron gas", JETP Letters **78**, 398–401 (2003).

69. H.-J. Kwon, K. Sengupta, and **V. M. Yakovenko**, "Theoretical prediction of the fractional ac Josephson effect in p- and d-wave superconductors", Brazilian Journal of Physics **33**, 653–658 (2003).

70. J. W. Clark, V. A. Khodel, M. V. Zverev, and V. M. Yakovenko, "Unconventional superconductivity in two-dimensional electron systems with long-range correlations", Physics Reports **391**, 123–156 (2004).

71. H.-J. Kwon, K. Sengupta, and **V. M. Yakovenko**, "Fractional ac Josephson effect in p- and d-wave superconductors", European Physical Journal B **37**, 349–361 (2004).

72. V. A. Khodel, V. M. Yakovenko, M. V. Zverev, and H. Kang, "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", Physical Review B **69**, 144501 (2004) [6 pages].

73. A. C. Silva, R. E. Prange, and V. M. Yakovenko, "Exponential distribution of financial returns at mesoscopic time lags: a new stylized fact", Physica A **344**, 227–235 (2004).

74. H.-J. Kwon, K. Sengupta, and **V. M. Yakovenko**, "Fractional ac Josephson effect in unconventional superconductors", Low Temperature Physics **30**, 613–619 (2004). This paper was also selected to appear in Virtual Journal of Applications of Superconductivity, an online compilation journal published by the American Institute of Physics.

75. A. C. Silva and **V. M. Yakovenko**, "Temporal evolution of the 'thermal' and 'superthermal' income classes in the USA during 1983-2001", Europhysics Letters **69**, 304–310 (2005).

76. A. V. Chubukov, V. M. Galitski, and **V. M. Yakovenko**, "Quantum critical behavior near a density-wave instability in an isotropic Fermi liquid", Physical Review Letters **94**, 046404 (2005) [4 pages].

77. Y. Zhang, V. M. Yakovenko, and S. Das Sarma, "Dispersion instability in strongly interacting electron liquids", Physical Review B **71**, 115105 (2005) [10 pages].

78. V. A. Khodel, M. V. Zverev, and V. M. Yakovenko, "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", Physical Review Letters **95**, 236402 (2005) [4 pages].

79. B. K. Cooper and **V. M. Yakovenko**, "Interlayer Aharonov-Bohm interference in tilted magnetic fields in quasi-one-dimensional organic conductors", Physical Review Letters **96**, 037001 (2006) [4 pages].

80. **V. M. Yakovenko** and B. K. Cooper, "Angular magnetoresistance oscillations in bilayers in tilted magnetic fields", Physica E **34**, 128–131 (2006).

81. **V. M. Yakovenko** and B. K. Cooper, "Angular magnetoresistance oscillations in Q1D as interlayer Aharonov-Bohm interference", Journal of Low Temperature Physics **142**, 491–494 (2006).

82. A. Banerjee, **V. M. Yakovenko**, and T. Di Matteo, "A study of the personal income distribution in Australia", Physica A **370**, 54–59 (2006).

83. **V. M. Yakovenko**, "Theory of the high-frequency chiral optical response in a $p_x + ip_y$ superconductor", Physical Review Letters **98**, 087003 (2007) [4 pages].

84. A. C. Silva and **V. M. Yakovenko**, "Stochastic volatility of financial markets as the fluctuating rate of trading: an empirical study", Physica A **382**, 278–285 (2007).

85. V. A. Khodel, J. W. Clark, V. M. Yakovenko, and M. V. Zverev, "Non-Fermi-liquid behavior from the Fermi-liquid approach", International Journal of Modern Physics B **21**, 2077–2090 (2007).

86. V. A. Khodel, V. M. Yakovenko, and M. V. Zverev, "Flattening of single-particle spectra in strongly correlated electron systems and the violation of the Wiedemann-Franz law", JETP Letters **86**, 772–778 (2007).

87. V. A. Khodel, J. W. Clark, V. M. Yakovenko, and M. V. Zverev, "Non-Fermi-liquid behavior of strongly correlated Fermi systems explained by the Fermi-liquid approach", Physica B **403**, 1227–1229 (2008).

88. R. M. Lutchyn, P. Nagornykh, and **V. M. Yakovenko**, "Gauge-invariant electromagnetic response of a chiral $p_x + ip_y$ superconductor", Physical Review B **77**, 144516 (2008), marked as a PRB EditorsÕ Suggestion.

89. S. Tewari, C. Zhang, V. M. Yakovenko, and S. Das Sarma, "Time-reversal symmetry breaking by a $(d + id)$ density-wave state in underdoped cuprate superconductors", Physical Review Letters **100**, 217004 (2008).

90. A. Banerjee and **V. M. Yakovenko**, "Angular magnetoresistance oscillations in quasi-one-dimensional organic conductors in the presence of a crystal superstructure", Physical Review B **78**, 125404 (2008).

91. K. Sengupta and **V. M. Yakovenko**, "Spontaneous spin accumulation in singlet-triplet Josephson junctions", Physical Review Letters **101**, 187003 (2008).

92. C. Zhang, S. Tewari, V. M. Yakovenko, and S. Das Sarma, "Anomalous Nernst effect from a chiral d-density-wave state in underdoped cuprate superconductors", Physical Review B **78**, 174508 (2008). An image from this paper was selected by the editors for the Kaleidoscope of PRB Images.

93. R. M. Lutchyn, P. Nagornykh, and **V. M. Yakovenko**, "Frequency and temperature dependence of the anomalous Hall conductivity in a chiral $p_x + ip_y$ superconductor with impurities", Physical Review B **80**, 104508 (2009), marked as a PRB EditorsÕ Suggestion.

94. V. M. Yakovenko and J. B. Rosser, "Colloquium: Statistical Mechanics of Money, Wealth, and Income", Reviews of Modern Physics **81**, 1703–1725 (2009).

95. A. Banerjee and **V. M. Yakovenko**, "Universal patterns of inequality", New Journal of Physics **12**, 075032 (2010).

96. S. S. Pershoguba and **V. M. Yakovenko**, "Energy spectrum of graphene multilayers in a parallel magnetic field", Physical Review B **82**, 205408 (2010).

97. **V. M. Yakovenko**, "Statistical mechanics of money, debt, and energy consumption", Science and Culture **76** (9–10), 430–436 (2010), invited paper to the special issue on Econophysics.

98. C. M. Varma, V. M. Yakovenko, and A. Kapitulnik, "Violation of Onsager reciprocity in underdoped cuprates?", arXiv:1007.1215.

99. R. M. Lutchyn, M. Dzero, and **V. M. Yakovenko**, "Spectroscopy of the soliton lattice formation in quasi-one-dimensional fermionic superfluids with population imbalance", Physical Review A **84**, 033609 (2011).

100. **V. M. Yakovenko**, "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", Physica B **407**, 1969–1972 (2012).

101. G. R. Boyd, V. M. Galitski, and **V. M. Yakovenko**, "Detecting d-wave pairing and collective modes in fermionic condensates with Bragg scattering", Physical Review A **85**, 063619 (2012).

102. S. S. Pershoguba and **V. M. Yakovenko**, "The Shockley model description of the surface states in topological insulators", Physical Review B **86**, 075304 (2012).

103. S. S. Pershoguba and **V. M. Yakovenko**, "Spin-polarized tunneling current through a thin film of a topological insulator in a parallel magnetic field", Physical Review B **86**, 165404 (2012).

104. Yu. I. Latyshev, A. P. Orlov, P. Monceau, D. Vignolles, S. S. Pershoguba, and V. M. Yakovenko, "Interlayer tunneling spectroscopy of graphite at high magnetic field oriented parallel to the layers", The European Physical Journal Special Topics **222**, 1257–1262 (2013).

105. S. Lawrence†, Q. Liu, and **V. M. Yakovenko**, "Global inequality in energy consumption from 1980 to 2010", Entropy **15**, 5565–5579 (2013). †**undergraduate physics major at UMD**

106. S. S. Pershoguba, K. Kechedzhi, and **V. M. Yakovenko**, "Proposed chiral texture of the magnetic moments of unit-cell loop currents in the pseudogap phase of cuprate superconductors", Physical Review Letters **111**, 047005 (2013); Erratum **113**, 129901 (2014), marked as a PRL EditorsÕ Suggestion and covered in Physics Synopsis.

107. S. S. Pershoguba, D. S. L. Abergel, **V. M. Yakovenko**, and A. V. Balatsky, "Effects of a tilted magnetic field in a Dirac double layer", Physical Review B **91**, 085418 (2015).

108. **V. M. Yakovenko**, "Tilted loop currents in cuprate superconductors", Physica B **460**, 159–

164 (2015).

109. G. Sharma, S. Tewari, P. Goswami, V. M. Yakovenko, and S. Chakravarty, "Calculation for polar Kerr effect in high-temperature cuprate superconductors", Physical Review B **93**, 075156 (2016).

110. **V. M. Yakovenko**, "Monetary economics from econophysics perspective", The European Physical Journal Special Topics **225**, 3313–3335 (2016).

111. S. Motesharrei, J. Rivas, E. Kalnay, G. R. Asrar, A. J. Busalacchi, R. F. Cahalan, M. A. Cane, R. R. Colwell, K. Feng, R. S. Franklin, K. Hubacek, F. Miralles-Wilhelm, T. Miyoshi, M. Ruth, R. Sagdeev, A. Shirmohammadi, J. Shukla, J. Srebric, V. M. Yakovenko, and N. Zeng, "Modeling sustainability: population, inequality, consumption, and bidirectional coupling of the Earth and Human Systems", National Science Review **3**, 470–494 (2016).

112. Xinxin Gong, Mehdi Kargarian, Alex Stern, Di Yue, Hexin Zhou, Xiaofeng Jin, Victor M. Galitski, **Victor M. Yakovenko**, Jing Xia, "Time-reversal symmetry-breaking superconductivity in epitaxial bismuth/nickel bilayers", Science Advances **3**, e1602579 (2017).

113. L. Boyer and **V. M. Yakovenko**, "A model for metastable magnetism in the hidden-order phase of URu_2Si_2", Annals of Physics **388**, 398–407 (2018).

114. Yong Tao, Xiangjun Wu, Tao Zhou, Weibo Yan, Yanyuxiang Huang, Han Yu, Benedict Mondal†, and **Victor M. Yakovenko**, "Exponential structure of income inequality: evidence from 67 countries", Journal of Economic Interaction and Coordination **14**, 345–376 (2019). †**undergraduate physics major at UMD**

115. M. Kayyalha, M. Kargarian, A. Kazakov, I. Miotkowski, V. M. Galitski, **V. M. Yakovenko**, L. P. Rokhinson, and Y. P. Chen, "Anomalous low-temperature enhancement of supercurrent in topological-insulator nanoribbon Josephson junctions: Evidence for low-energy Andreev bound states", Physical Review Letters **122**, 047003 (2019).

116. S. Lee, V. Stanev, X. Zhang, D. Stasak, J. Flowers, J. S. Higgins, S. Dai, T. Blum, X. Pan, V. M. Yakovenko, J. Paglione, R. L. Greene, V. Galitski, and I. Takeuchi, "Perfect Andreev reflection due to the Klein paradox in a topological superconducting state", Nature **570**, 344–348 (2019). On the cover of Nature 20 June 2019, story in Scientific American `https://www.scientificamerican.com/article/quirky-quantum-tunneling-observed/`.

117. P. M. R. Brydon, D. S. L. Abergel, D. F. Agterberg, and **V. M. Yakovenko**, "Loop currents and anomalous Hall effect from time-reversal symmetry-breaking superconductivity on the honeycomb lattice", Physical Review X **9**, 031025 (2019).

118. G. Semieniuk and **V. M. Yakovenko**, "Historical evolution of global inequality in carbon emissions and footprints versus redistributive scenarios", Journal of Cleaner Production **264**, 121420 (2020).

119. S. S. Pershoguba and **V. M. Yakovenko**, "Optical control of topological memory based on orbital magnetization", Physical Review B **105**, 064423 (2022); Erratum **108**, 059904(E) (2023).

120. D. Ludwig† and **V. M. Yakovenko**, "Physics-inspired analysis of the two-class income distribution in the USA in 1983–2018", Philosophical Transactions of the Royal Society A, **380**, 20210162 (2022). †**undergraduate physics major at UMD**

121. S. S. Pershoguba and **V. M. Yakovenko**, "Direct current in a stirred optical lattice", Annals of Physics **447**, 169075 (2022).

122. **V. M. Yakovenko**, "Statistical physics perspective on economic inequality", an invited chapter for the upcoming *Routledge Handbook of Complexity Economics* to be published in 2024, `https://arxiv.org/abs/2307.02470`

2.c Monographs, Reports, and Extension Publications

1. **V. M. Yakovenko**, "Research in Econophysics", The Photon, Issue 24, January-February 2003 (review of econophysics research by Victor Yakovenko, written for the online newspaper published by the Department of Physics, University of Maryland).

2.d Invited Book Reviews, Other Articles, and Notes

1. V. M. Yakovenko, review of the book "The Physics of Wall Street: A Brief History of Predicting the Unpredictable" by James Owen Weatherall, Physics Today **66**, August 2013, p. 50.

2.f Talks, Abstracts, and Other Professional Papers Presented

2.f.i Invited talks

Invited seminars and colloquia

I did not keep track of precise titles and dates of my seminars prior to coming to the University of Maryland in 1993. Thus, only years and places are indicated for the period of 1985–1992. I gave numerous seminars at various research institutes of the Soviet Academy of Sciences starting from 1985.

1. Landau Institute for Theoretical Physics, Moscow
2. Kapitza Institute for Physical Problems, Moscow
3. Lebedev Physical Institute, Moscow
4. Institute for Solid State Physics, Chernogolovka
5. Institute for Chemical Physics, Moscow
6. Ioffe Physical–Technical Institute, Leningrad
7. Institute for Nuclear Physics, Gatchina
8. Laboratoire de Physique des Solides, Orsay, France (1989)
9. Laue-Langevin Institute, Grenoble, France (1989)
10. Laboratoire de Physique des Solides, Orsay, France (1990)
11. Institute for Scientific Interchange, Turin, Italy (1990)
12. Princeton University (1991)
13. Rutgers University (1991)
14. Massachusetts Institute of Technology (1991)
15. Boston University (1991)
16. State University of New York, Buffalo, colloquium (1991)
17. Cambridge University, England (1991)
18. Harvard University (1992)

19. Massachusetts Institute of Technology (1992)
20. Boston University (1992)
21. Bell Laboratories, Murray Hill, New Jersey (1992)
22. State University of New York, Buffalo (1992)
23. University of Illinois, Urbana-Champaign (1992)
24. Johns Hopkins University (1992)
25. Rutgers University (1992)
26. Los Alamos National Laboratory (1992)
27. University of California, Irvine (1992)
28. University of Florida, Gainesville (1992)
29. Aspen Center for Physics, Colorado (1992)
30. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Princeton University (January 1993)
31. "Quasi-one-dimensional conductors in high magnetic field", University of Maryland, condensed matter seminar (February 1993)
32. "Quasi-one-dimensional conductors in high magnetic field", Boston University (February 1993)
33. "Quasi-one-dimensional conductors in high magnetic field", State University of New York at Stony Brook (February 1993)
34. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Laboratoire de Physique des Solides, Orsay, France (May 1993)
35. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Laue-Langevin Institute, Grenoble, France (May 1993)
36. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Service des Champs Magnetiques Intenses, Toulouse, France (May 1993)
37. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Oxford University, Britain (June 1993)
38. "Angular magnetic oscillations in layered organic conductors", Oxford University, Britain (June 1993)
39. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", Cambridge University, Britain (June 1993)
40. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", University of British Columbia, Vancouver, Canada (July 1993)
41. "Metals in a high magnetic field: A new universality class of marginal Fermi liquids", University of Maryland, condensed matter seminar (November 1993)
42. "Parquet solution for a flat Fermi surface", Aspen Center for Physics, Colorado (August 1994)
43. "Quantum Hall effect in quasi-one-dimensional organic conductors", University of Wisconsin at Madison (August 1994)
44. "Metals in a strong magnetic field: A new universality class of marginal Fermi liquids",

Argonne National Laboratory, Illinois (August 1994)

45. "Quantum Hall effect and moving density wave in quasi-one-dimensional conductors", Bell Laboratories, Murray Hill, New Jersey (May 1995)
46. "Neutron scattering and superconducting order parameter in $YBa_2Cu_3O_7$", Rutgers University, New Jersey (May 1995)
47. "Quantum Hall effect and magnetic-field-induced spin-density wave in quasi-one-dimensional organic conductors", Institute for Advanced Study, Princeton, New Jersey (January 1996)
48. "Quantum Hall effect in quasi-one-dimensional conductors", Indiana University, Bloomington (October 1996)
49. "Marginal Fermi-liquid in a strong magnetic field", University of Maryland, statistical physics seminar (November 1996)
50. "Quantum Hall effect in quasi-one-dimensional conductors", National High Magnetic Field Laboratory, Tallahassee, Florida (February 1997)
51. "Quantum Hall effect in quasi-one-dimensional organic conductors", University of Virginia, Charlottesville (September 1997)
52. "Angular magnetoresistance oscillations in layered metals: Applications to organic conductors, high-T_c superconductors, and ruthenates", Naval Research Laboratory, Washington DC (October 1997)
53. "Theory of the quantum Hall effect in quasi-one-dimensional organic conductors", University of Chicago (January 1998)
54. "Normal-state transport in high-T_c superconductors and organic metals: 'Cold spots' vs 'hot spots'", University of Maryland, condensed matter seminar (February 1998)
55. "Renormalization group for a flat Fermi surface", University of Maryland, statistical physics seminar (April 1998)
56. "Quasi-one-dimensional conductors in strong magnetic fields", University of Maryland, physics colloquium (September 1998)
57. "Statistical mechanics of money", University of Maryland, condensed matter physics seminar (September 1999)
58. "Temperature evolution of the quantum Hall effect in quasi-one-dimensional conductors", Oxford University, theoretical condensed matter seminar (September 1999)
59. "Statistical mechanics of money", Oxford University, theoretical condensed matter seminar (September 1999)
60. "Electrons on the edge", Rutgers University, condensed matter physics seminar (April 2000)
61. "Electrons on the edge", NEC Research Institute, Princeton, condensed matter physics seminar (April 2000)
62. "Statistical mechanics of money", Princeton University, condensed matter seminar (April 2000)
63. "Electrons on the edge", University of Maryland, condensed matter physics seminar (April 2000)
64. "Electrons on the edge", Utrecht University, The Netherlands, condensed matter physics seminar (June 2000)

65. "Electrons on the edge", Helsinki University of Technology, Finland, condensed matter physics seminar (June 2000)

66. "Statistical mechanics of money and income", seminar on interdisciplinary problems in chemistry and physics, University of Maryland (October 2000)

67. "Electron edge states in triplet superconductors $(TMTSF)_2X$ and Sr_2RuO_4", University of Geneva, Switzerland, condensed matter physics seminar (29 January 2001)

68. "Electrons on the edge", ETH, Zurich, Switzerland, condensed matter physics seminar (30 January 2001)

69. "Electrons on the edge", University of Fribourg, Switzerland, condensed matter physics seminar (31 January 2001)

70. "Electrons on the edge", Laboratoire de Physique des Solides, Orsay, France, condensed matter physics seminar (1 February 2001)

71. "Statistical mechanics of money and income", Laboratoire de Physique Theorique et Modeles Statistiques, Orsay, France, statistical physics seminar (1 February 2001)

72. "Theory of the electron edge states in the quasi-one-dimensional organic conductors of the $(TMTSF)_2X$ family", Delft Technical University, The Netherlands, condensed matter physics seminar (5 February 2001)

73. "Electron edge states in quasi-one-dimensional organic conductors", Massachusetts Institute of Technology, condensed matter physics seminar (20 March 2001)

74. "Electrons on the edge", Boston College, physics colloquium (21 March 2001)

75. "Electron edge states in quasi-one-dimensional organic conductors", Harvard University, condensed matter physics seminar (22 March 2001)

76. "Statistical mechanics of money and income", Boston University, condensed matter physics seminar (23 March 2001)

77. "Electron edge states in quasi-one-dimensional organic conductors", University of Chicago, condensed matter physics seminar (16 April 2001)

78. "Edge states and determination of pairing symmetry in superconducting Sr_2RuO_4", Yukawa Institute for Theoretical Physics, Kyoto University, Japan, condensed matter physics seminar (5 September 2001)

79. "Electron edge states in quasi-one-dimensional organic conductors", Department of Physics, Kyoto University, Japan, condensed matter physics seminar (6 September 2001)

80. "Statistical mechanics of money, wealth, and income", University of Maryland, Mathematics Department, statistics seminar (20 September 2001)

81. "Andreev edge states and determination of pairing symmetry in superconducting Sr_2RuO_4", Department of Physics, Pennsylvania State University, University Park, condensed matter physics seminar (25 September 2001)

82. "Statistical mechanics of money, wealth, and income", Santa Fe Institute, SFI seminar (17 October 2001)

83. "Statistical mechanics of money, income and wealth", University of Maryland, physics colloquium (29 January 2002)

84. "Quantum computation with ultimate nano-SQUIDs", Laboratory for Physical Sciences at

the University of Maryland, quantum computing seminar (21 May 2002)

85. "Andreev bound states in superconductors: Fractional Josephson effect and spontaneous soliton formation", University of California at Santa Barbara, condensed matter theory seminar (7 November 2002)
86. "Fractional ac Josephson effect in p- and d-wave superconductors", University of Southern California, condensed matter physics seminar (15 November 2002)
87. "Andreev bound states in superconductors: Fractional Josephson effect and spontaneous soliton formation", University of California at Santa Barbara, condensed matter/applied physics seminar (21 November 2002)
88. "Andreev bound states in superconductors: Fractional Josephson effect and spontaneous soliton formation", University of California at Los Angeles, condensed matter physics seminar (4 December 2002)
89. "Statistical mechanics of money, income and wealth", Applied Physics Laboratory of the Johns Hopkins University, colloquium (10 January 2003)
90. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", University of Maryland, condensed matter physics seminar (27 February 2003)
91. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", Johns Hopkins University, condensed matter physics seminar (19 March 2003)
92. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", State University of New York at Stony Brook, solid state seminar (28 March 2003)
93. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", Massachusetts Institute of Technology, condensed matter physics seminar (10 June 2003)
94. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", Harvard University, condensed matter physics seminar (10 June 2003)
95. "The hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", University of Maryland, condensed matter physics seminar (2 October 2003)
96. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", University of Maryland, physics colloquium (7 October 2003)
97. "Statistical mechanics of money, income, and wealth", George Mason University, School of Computational Sciences, general colloquium (16 October 2003)
98. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", Yale University, condensed matter physics seminar (30 October 2003)
99. "Statistical mechanics of money, income, and wealth", Naval Research Laboratory, Sigma Xi colloquium (7 January 2004)
100. "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", ETH, Zurich, Switzerland, condensed matter physics seminar (22 January 2004)

101. "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, condensed matter physics seminar (23 January 2004)

102. "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", University of California at Los Angeles (UCLA), condensed matter physics seminar (19 May 2004)

103. "Statistical Mechanics of Money, Income, and Wealth", Kavli Institute for Theoretical Physics, University of California at Santa Barbara, colloquium (2 June 2004)

104. "Statistical Mechanics of Money, Income, and Wealth", Instituto de Fisica Teorica, Universidade Estadual Paulista (UNESP), Sao Paulo, Brasil, colloquium (6 August 2004)

105. "Conflicting stories of the divergent effective electron mass", Saha Institute of Nuclear Physics, Kolkata, India, condensed matter physics seminar (14 March 2005)

106. "Theory of angular magnetoresistance oscillations in tilted magnetic fields in bilayers", California Institute of Technology, condensed matter physics seminar (15 April 2005)

107. "Andreev Bound States in Superconductors: Spontaneous Soliton Formation and Fractional Josephson Effect", Department of Physics, University of Illinois at Urbana-Champaign, condensed matter physics seminar (26 May 2005)

108. "Statistics of stock-price fluctuations and turbulence", NASA's Goddard Space Flight Center, Greenbelt, Maryland, seminar of the Laboratory for Solar and Space Physics (16 December 2005).

109. "Angular magnetoresistance oscillations in quasi-1D and quasi-2D materials and bilayers as an Aharonov-Bohm interference effect", Department of Physics, University of Florida, Gainesville, condensed matter physics seminar (9 January 2006)

110. "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", Department of Physics, University of Florida, Gainesville, condensed matter physics seminar (10 January 2006)

111. "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", National High Magnetic Field Laboratory, Tallahassee, Florida, condensed matter physics seminar (12 January 2006)

112. "Angular magnetoresistance oscillations in quasi-1D and quasi-2D materials and bilayers as an Aharonov-Bohm interference effect", National High Magnetic Field Laboratory, Tallahassee, Florida, condensed matter physics seminar (13 January 2006)

113. "Two-class structure of the personal income distribution in the USA in 1983-2001", The Brookings Institution, Washington, DC, joint seminar of the Center on Social and Economic Dynamics and the Globalization and Inequality Group (17 January 2006)

114. "Interlayer Aharonov-Bohm interference in a tilted magnetic field in low-dimensional lattices", University of Maryland, joint quantum seminar UMD – NIST (27 March 2006)

115. "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", University of Maryland, condensed matter physics seminar (30 March 2006)

116. "Two-class structure of the personal income distribution in the USA, 1983–2001", The New School for Social Research, New York, Economics Department seminar (17 April 2006)

117. "Statistical mechanics of money, income, and wealth", Georgetown University, Physics Department colloquium (19 September 2006)

118. "Theory of the high-frequency chiral optical response in a $p_x + ip_y$ superconductor", Stanford University, condensed matter physics seminar (2 November 2006)

119. "Theory of angular magnetic oscillations in bilayer graphene", University of Maryland, condensed matter physics seminar (30 November 2006)

120. "Statistical mechanics of money, income, and wealth", University of Maryland, School of Public Policy, environmental policy roundtable seminar (8 December 2006)

121. "Statistical mechanics of money, income, and wealth", George Mason University, Fairfax, VA, seminar at the Center for Social Complexity (23 March 2007)

122. "The non-Fermi-liquid behavior of strongly correlated Fermi systems within the Fermi-liquid approach", Brookhaven National Laboratory, Upton, NY, condensed matter physics seminar (7 June 2007)

123. "Statistical Mechanics of Money, Income, and Wealth", a lecture for physics majors, Department of Physics, University of Maryland (16 January 2008)

124. "Statistical mechanics of money, income, and wealth", physics and astronomy seminar, Department of Physics, George Mason University, Fairfax, Virginia (20 March 2008)

125. "Review of econophysics models of money, wealth, and income distributions", Department of Economics, New School for Social Research, New York, NY (5 May 2008)

126. "Theoretical models of spontaneous time-reversal symmetry breaking in Sr_2RuO_4 and in underdoped cuprates: $p + ip$ superconductivity and $d + id$ density wave", condensed matter seminar, École Normale Supérieure, Paris, France (7 October 2008)

127. "Interlayer Aharonov-Bohm interference in a tilted magnetic field in organic conductors, semiconducting and graphine bilayers, and superconducting qubits", seminar *Théorie de la Matière Condensée sur le Plateau: Orsay-Palaiseau-Saclay*, Laboratoire de Physique des Solides, Orsay, France (16 October 2008)

128. "New developments in statistical mechanics of money, income, and wealth", statistical physics seminar of LPT and LPTMS, Laboratoire de Physique Théorique et Modèles Statistiques, Orsay, France (16 October 2008)

129. "Theoretical models of spontaneous time-reversal symmetry breaking in Sr_2RuO_4 and in underdoped cuprates: $p+ip$ superconductivity and $d+id$ density wave", seminar on magnetism and superconductivity, Laboratoire de Physique des Solides, Orsay, France (20 October 2008)

130. "Interlayer Aharonov-Bohm interference in a tilted magnetic field in organic conductors, semiconducting and graphine bilayers, and superconducting qubits", condensed matter seminar, Laboratoire National des Champs Magnétiques Pulsés, Toulouse, France (22 October 2008)

131. "Income inequality and statistical mechanics", keynote talk at the workshop celebrating the 60th anniversary of the Economics Department of the Università Cattolica del Sacro Cuore, Milan, Italy (3 November 2008)

132. "New developments in statistical mechanics of money, income, and wealth", SFI seminar, Santa Fe Institute, NM (15 January 2009)

133. "Theoretical models of spontaneous time-reversal symmetry breaking in underdoped cuprates and in Sr_2RuO_4: $d+id$ density wave and $p+ip$ superconductivity", condensed matter theory

seminar, Los Alamos National Laboratory, NM (2 February 2009)

134. "Statistical mechanics of money, income, and wealth", colloquium, Center for Nonlinear Studies, Los Alamos National Laboratory, NM (2 February 2009)

135. "Theoretical models of spontaneous time-reversal symmetry breaking in Sr_2RuO_4 and in underdoped cuprates", colloquium, Indian Association for the Cultivation of Sciences, Kolkata, India (13 March 2009)

136. "New developments in statistical mechanics of money, income, and wealth", colloquium, Kavli Institute for Theoretical Physics, University of California at Santa Barbara (13 May 2009)

137. "Theoretical models of spontaneous time-reversal symmetry breaking in Sr_2RuO_4 and in underdoped cuprates", condensed matter seminar, Stanford University (14 May 2009)

138. "Statistical mechanics of money, income, and wealth: Conservation laws, debt, and the current financial crisis", seminar, Chair of Quantitative Finance, École Centrale Paris, France (2 July 2009)

139. "Theories of the time-reversal symmetry breaking and the polar Kerr effect in Sr_2RuO_4 and in underdoped cuprates", condensed matter seminar, University of Maryland (19 November 2009)

140. "Statistical mechanics of money, income, and wealth", lunch-time seminar, Janelia Farm research campus, Howard Hughes Medical Institute (4 January 2010)

141. "Econophysics", lecture for undergraduate physics majors, Physics Research Seminar Series (PHYS 299C), Department of Physics, University of Maryland (6 January 2010)

142. "Statistical mechanics of money, income, and wealth", bio-complexity seminar series, Department of Physics, Indiana University, Bloomington (12 January 2010)

143. "Statistical mechanics of money, income, and wealth", colloquium, Department of Physics, Stanford University (19 January 2010)

144. "New developments in statistical mechanics of money, income, and wealth", colloquium, Department of Physics, University of Maryland (26 January 2010)

145. "Statistical mechanics of money, income, and wealth", colloquium, Department of Physics and Astronomy, Howard University, Washington DC (31 March 2010)

146. "Statistical mechanics of money, income, and wealth", colloquium, Department of Physics and Astronomy, The Johns Hopkins University, Baltimore (29 April 2010)

147. "Statistical mechanics of money, income, and wealth", lunch-time talk, Economic Research Division, NASDAQ OMX, Rockville, MD (14 June 2010)

148. "Spectroscopy of the soliton lattice formation in quasi-one-dimensional fermionic superfluids with population imbalance"", Bose-Einstein condensation and quantum information seminar, National Institute of Standards and Technology, Gaithersburg, MD (24 November 2010)

149. "Statistical mechanics of money, income, wealth, and energy consumption", colloquium, Department of Physics and Astronomy, University of North Carolina, Chapel Hill (10 January 2011)

150. "Spectroscopy of the soliton lattice formation in quasi-one-dimensional fermionic superfluids with population imbalance ", Brookhaven National Laboratory, Upton, NY, condensed matter physics seminar (17 February 2011)

151. "Photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", Laboratory for Physical Sciences at the University of Maryland, physics seminar (30 March 2011)

152. "Entropy maximization and distributions of money, income, and energy consumption in a market economy", joint seminar of Economics Department and Info-Metrics Institute, American University, Washington, DC (14 September 2011)

153. "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", condensed matter physics and Center for Advanced Materials seminar, Department of Physics and Astronomy, University of Kentucky, Lexington, KY (17 January 2012)

154. "Statistical mechanics of money, income, wealth, and energy consumption", colloquium, Department of Physics, Syracuse University, NY (19 January 2012)

155. "Living in a solar-powered home", colloquium, Department of Physics, University of Maryland (31 January 2012)

156. "Statistical mechanics of money, income, debt, and energy consumption", talk at the seminar series *Aspects of Statistical Mechanics with Applications*, Department of Mathematics, University of Maryland (6 February 2012)

157. "Statistical mechanics of money, income, debt, and energy consumption", colloquium for the Mid-Atlantic Senior Physicists Group, American Physical Society, College Park, MD (22 February 2012)

158. "Statistical mechanics of money, income, wealth, and energy consumption", colloquium, Department of Physics, New York University (19 April 2012)

159. "A year in a solar-powered house", brown bag lunch talk, American Center for Physics, College Park, MD (24 April 2012)

160. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, Washington University in St. Louis, MO (2 May 2012)

161. "Living in a solar-powered home", colloquium, Department of Physics, Georgetown University (4 September 2012)

162. "Statistical mechanics of money, income, debt, and energy consumption", talk for the Economics and Finance Club, Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD (26 September 2012)

163. "Statistical mechanics of money, income, debt, and energy consumption", Applied and Computational Mathematics seminar, Department of Mathematical Sciences, George Mason University (19 October 2012)

164. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, Catholic University of America, Washington, DC (31 October 2012)

165. "Statistical mechanics of money, income, and energy consumption", colloquium, Department of Physics and Astronomy, University of California at Los Angeles (UCLA) (10 January 2013)

166. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, University of Florida, Gainesville (17 January 2013)

167. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics and Astronomy, University of Tennessee, Knoxville (28 January 2013)

168. "Statistical mechanics of money, income, debt, and energy consumption", Niels Bohr Lecture at the Niels Bohr Institute, University of Copenhagen, Denmark (29 May 2013)

169. "Possible chiral structure in the pseudogap phase of cuprates", condensed matter physics seminar at the Center for Quantum Devices, University of Copenhagen, Denmark (30 May 2013)

170. "Statistical mechanics of money, income, debt, and energy consumption", seminar at the Institute for Futures Studies, Stockholm, Sweden (31 May 2013)

171. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, University of Illinois at Urbana-Champaign (28 August 2013)

172. "Spiral twisting of the anapole moments of loop currents as a possible origin of gyrotropy in cuprates", condensed matter physics seminar, Department of Physics, University of Illinois at Urbana-Champaign (29 August 2013)

173. "Statistical mechanics of money, income, debt, and energy consumption", joint seminar of the Center for Scientific Computation and Mathematical Modeling (CSCAMM) and KI-Net, University of Maryland (4 September 2013)

174. "Spiral twisting of the anapole moments of loop currents as a possible origin of gyrotropy in cuprates", condensed matter physics seminar, Department of Physics, University of Maryland (5 September 2013)

175. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics and Astronomy, University of Waterloo, Canada (31 October 2013)

176. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, American University, Washington DC (26 February 2014)

177. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics and Astronomy, Texas A&M University, College Station, TX (20 March 2014)

178. "Spiral twisting of the anapole moments of loop currents as a possible origin of gyrotropy in cuprates", condensed matter physics seminar, Department of Physics and Astronomy, Texas A&M University, College Station, TX (21 March 2014)

179. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics and Astronomy, Rutgers University, Piscataway, NJ (30 April 2014)

180. "Possible spiral structure in the pseudogap phase of cuprates", condensed matter physics seminar, Department of Physics and Astronomy, Rutgers University, Piscataway, NJ (1 May 2014)

181. "Statistical mechanics of money, income, debt, and energy consumption", seminar at the Graduate Center of CUNY, City University of New York (12 May 2014)

182. "Global inequality in energy consumption from the maximal entropy perspective", Department of Economics, New School for Social Research, New York (13 May 2014)

183. "Statistical mechanics of money, income, debt, and energy consumption", seminar at the Institute for New Economic Thinking (INET), New York (14 May 2014)

184. "Statistical mechanics of money, income, debt, and energy consumption", colloquium, Department of Physics, University of Maryland Baltimore County (10 September 2014)

185. "Tilted loop currents in cuprate superconductors", condensed matter physics seminar, De-

partment of Physics, University of Maryland (4 December 2014)

186. "Statistical mechanics of money, income, debt, and energy consumption", seminar, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD (27 January 2015)

187. "Economic inequality from statistical physics point of view", seminar, Laboratoire de Physique Théorique et Modèles Statistiques, Orsay, France (8 April 2015)

188. "Economic inequality from statistical physics point of view", seminar, Perimeter Institute for Theoretical Physics, Waterloo, Canada (10 June 2015)

189. "Economic inequality from statistical physics point of view", colloquium, Department of Physics, Queens College, NY (2 November 2015)

190. "Economic inequality from statistical physics point of view", seminar, Indian Institute of Management, Ahmedabad, India (2 December 2015)

191. "Economic inequality from statistical physics point of view", seminar, School of Systems Science, Beijing Normal University, China (4 December 2015)

192. "Economic inequality from statistical physics point of view", colloquium, Computational Materials Science Center, George Mason University, Fairfax, VA (18 April 2016)

193. "Time-reversal-symmetry breaking in superconductors", condensed matter seminar, Department of Physics and Astronomy, University of California at Irvine (20 April 2016)

194. "Economic inequality from statistical physics point of view", colloquium, Department of Physics and Astronomy, University of California at Irvine (21 April 2016)

195. "Economic inequality from statistical physics point of view", colloquium, Department of Physics, University of Basel, Switzerland (27 May 2016)

196. "Five years in a net-zero-electricity solar home", seminar, Department of Mathematics, Tufts University, MA (3 November 2016)

197. "Monetary economics from an econophysics perspective", Philosophical Fridays seminar with the Tufts Project to Study Inequality, Department of Philosophy, Tufts University, MA (4 November 2016)

198. "Economic inequality from statistical physics point of view", colloquium, Department of Mathematics, Tufts University, MA (4 November 2016)

199. "Five years in a net-zero-electricity solar home", luncheon lecture for Chesapeake Project, University of Maryland, College Park (7 December 2016)

200. "Time-reversal-symmetry-breaking superconductivity in epitaxial bismuth/nickel bilayers", condensed matter seminar, Department of Physics and Astronomy, University of Utah, Salt Lake City (17 January 2017)

201. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, University of Utah, Salt Lake City (19 January 2017)

202. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, Wayne State University, Detroit, MI (7 September 2017)

203. "Global inequality in energy consumption from 1980 to 2014", seminar series *Climate Change and Social Inequality*, Department of Geography, University of Maryland, College Park (28 November 2017)

204. "Economic inequality from a statistical physics point of view", seminar at the Institute for

New Structural Economics, Peking University, Beijing, China (27 and 29 December 2017)

205. "Economic inequality from a statistical physics point of view", Applied Dynamics Seminar, University of Maryland, College Park (1 March 2018)

206. "Superconductivity that breaks time-reversal symmetry and its experimental manifestations", colloquium, Landau Institute for Theoretical Physics, Chernogolovka, Russia (28 September 2018)

207. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, University of Toledo, OH (24 January 2019)

208. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, Rice University, Houston, TX (20 March 2019)

209. "Time-reversal-breaking superconductivity and its experimental manifestations", joint Condensed Matter/AMO seminar, Department of Physics and Astronomy, Rice University, Houston, TX (21 March 2019)

210. "Economic inequality from a statistical physics point of view", Condensed Matter Theory Center seminar, University of Maryland, College Park (14 May 2019)

211. "'Time-reversal-breaking superconductivity and its experimental manifestations", seminar, Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France (1 July 2019)

212. "Time-reversal-breaking superconductivity and its experimental manifestations", a talk for Joint Quantum Institute fellows, University of Maryland, College Park (5 August 2019)

213. "Economic inequality from a statistical physics point of view", Financial Engineering Practitioners Seminar, Center for Financial Engineering, Columbia University, New York (16 September 2019)

214. "Economic inequality from a statistical physics point of view", colloquium, Physics Department, Wesleyan University, Middletown, CT (2 April 2020) on Zoom

215. "Economic inequality from a statistical physics point of view", seminar, Growth Lab, Harvard Kennedy School, Boston (1 June 2020) on Zoom

216. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics, Oxford University, England (16 June 2020) on Zoom

217. "Loop currents and anomalous Hall effect due to time-reversal-breaking superconductivity", Quantum Matter Seminar, Department of Physics, Northeastern University, Boston (9 September 2020) on Zoom

218. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, University of New Hampshire, Durham (12 February 2021) on Zoom

219. "Economic inequality from a statistical physics point of view", colloquium as a part of lecture series on *Physics & Public Policy*, Department of Physics, American University of Beirut (24 June 2021) on Zoom

220. "Using circularly polarized light or stirring to control topological memory in a Chern insulator or induced direct current of neutral atoms in an optical lattice", Joint Quantum Institute seminar, University of Maryland, College Park (17 October 2022)

221. "Economic inequality from a statistical physics point of view", colloquium, Department of Physics and Astronomy, Howard University, Washington DC (1 February 2023)

Invited guest lectures

1. "Statistical mechanics of money, wealth, and income", University of Maryland, "Foundations and Frontiers of Physics" seminar for graduate students (30 April 2001)
2. "Statistical mechanics of money, wealth, and income", University of Maryland, "Foundations and Frontiers of Physics" seminar for graduate students (9 February 2004)
3. "Statistical mechanics of money, wealth, and income", University of Maryland, "Foundations and Frontiers of Physics" seminar for graduate students (24 April 2006)
4. "Statistical mechanics of money, income, and wealth", guest lecture in the course PHYS 615 *Nonlinear Dynamics of Extended Systems*, University of Maryland (6 October 2009)
5. "Statistical mechanics of money, income, and wealth", guest lecture in the course PHYS 615 *Nonlinear Dynamics of Extended Systems*, University of Maryland (7 September 2010)
6. "Quantum mechanics at work: physics and practice of solar photovoltaics", talk for the Society of Physics Students, University of Maryland (8 March 2012)
7. "Statistical mechanics of money, income, debt, and energy consumption", seminar for graduate students *Foundations and Frontiers of Physics*, University of Maryland (13 February 2013)
8. "Statistical mechanics of money, income, debt, and energy consumption", guest lecture in the course PHYS 404 *Introduction to Statistical Thermodynamics*, University of Maryland (7 May 2013)
9. "Statistical mechanics of money, income, debt, and energy consumption", guest lecture in the course PHYS 615 *Nonlinear Dynamics of Extended Systems*, University of Maryland (4 February 2014)
10. "Statistical mechanics of money, income, debt, and energy consumption", guest lecture in the course PHYS 603 *Methods of Statistical Physics*, University of Maryland (4 March 2014)
11. "Condensed matter theory and econophysics", *Foundations and Frontiers of Physics* seminar for graduate students, University of Maryland, College Park (29 April 2015)
12. "Economic inequality from statistical physics point of view", guest lecture in the course PHYS 615 *Nonlinear Dynamics of Extended Systems*, University of Maryland, College Park (8 September 2015)
13. "Econophysics", a talk for the Society of Physics Students, University of Maryland, College Park (22 October 2015)
14. "Five years in a net-zero-electricity solar home", guest lecture in the course EDHI 488E *Ecological Ethics and Education*, University of Maryland, College Park (5 October 2016)
15. "Five years in a net-zero-electricity solar home", guest lecture in the course ENEE 489I *Solar Energy Conversion*, University of Maryland, College Park (28 November 2016)
16. Gave a public lecture "Statistical mechanics of money" in *Saturday Morning Physics* series, Department of Physics, UMD (22 October 2016 and 28 October 2017)
17. "Economic inequality from a statistical physics point of view", guest lecture in the course PHYS 615 *Nonlinear Dynamics of Extended Systems*, University of Maryland, College Park (1 February 2017)
18. "Economic inequality from a statistical physics point of view", guest lecture in the course PHIL 2281 *Philosophy of the Environment*, Department of Philosophy, George Washington University, Washington, DC (12 October 2017)

19. "Six years in a net-zero-electricity solar home", guest lecture in the course ENEE 489I *Solar Energy Conversion*, University of Maryland, College Park (27 November 2017)
20. "Seven years in a net-zero-electricity solar home", guest lecture in the course ENMA 412 *Fundamentals of Photovoltaics*, University of Maryland, College Park (19 April 2018)
21. "Eight years in a net-zero-electricity solar home", guest lecture in the course ENEE 489I *Solar Energy Conversion*, University of Maryland, College Park (23 April 2019)
22. "Economic inequality from a statistical physics point of view", guest lecture in EconoPhysics course at University of Thessaly, Greece (28 May 2020) on Zoom
23. "Statistical mechanics of money", talk for the Society of Physics Students, University of Maryland, College Park (4 December 2020) on Zoom
24. "Economic inequality from a statistical physics point of view", two guest lectures in the course ECN 271-P *Econophysics* for economics, physics, and environmental majors at Wake Forest University, Winston-Salem, NC (1 and 3 March 2022) on Zoom
25. "Condensed matter theory and econophysics", *Foundations and Frontiers of Physics* seminar for graduate students, University of Maryland, College Park (14 April 2022)
26. "Statistical mechanics of money", joint seminar for REU programs (Research Experiences for Undergraduates), Department of Mathematics, UMD (20 July 2023)
27. "Condensed matter theory and econophysics", talk for the Society of Physics Students (SPS), Department of Physics, UMD (29 September 2023)

Invited talks at conferences

1. "Quasi-one-dimensional conductors in magnetic field: Physical consequences of 'non-standard' theoretical approach", *Third European Conference on Low Dimensional Conductors and Superconductors*, Dubrovnik, Croatia (September 1989)
2. "Theory of the quantum Hall effect in quasi-one-dimensional conductors", *Gordon Research Conference on Organic Superconductors*, Irsee, Germany (September 1991)
3. "Hall conductivity of the moving magnetic-field-induced spin-density wave", *International Workshop on Electronic Crystals*, Carry-le-Rouet, France (June 1993)
4. "Quantum Hall effect in quasi-one-dimensional organic conductors", *Workshop on the Quantum Hall Effect*, Turin, Italy (June 1994)
5. "Parquet approach to abnormal Fermi liquids", two lectures, *Workshop on Strong Correlations and Quantum Critical Phenomena*, Trieste, Italy (June 1994)
6. "Are there any 'hot spots' in quasi-one-dimensional metals?", *International Conference on Synthetic Metals*, Seoul, Korea (July 1994)
7. "Are there any 'hot spots' in quasi-one-dimensional metals?", *International Symposium on Molecular Conductors*, Tokyo, Japan (August 1994)
8. "Magnetic-field-induced Luttinger liquid in quasi-one-dimensional organic conductors", *Correlated Fermions and Transport in Mesoscopic Systems*, Les Arcs, France (January 1996)
9. "Quantum Hall effect in the Bechgaard salts", *Electronic and Structural Properties of Low-Dimensional Conductors*, Sherbrooke, Canada (May 1996)
10. "Temperature dependence of the umklapp resistivity of a quasi-one-dimensional metal in a

strong magnetic field", *International Conference on Synthetic Metals*, Montpellier, France (July 1998)

11. "Integer quantum Hall effect in quasi-1D organics". *Disorder and Interactions in Quantum Hall and Mesoscopic Systems*, Institute for Theoretical Physics, Santa Barbara, California (August 1998)
12. "Temperature evolution of the quantum Hall effect in the FISDW state: Theory vs Experiment", *International Workshop on Electronic Crystals*, La Colle sur Loup, France (June 1999).
13. "Fermiology in cuprates", *XI Workshop on Strongly Correlated Electron Systems*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (July 1999)
14. "Theory of the edge electron states in the FISDW and superconducting states of $(TMTSF)_2X$", *Third International Symposium on Crystalline Organic Metals, Superconductors, and Ferromagnets*, Oxford, England (September 1999)
15. "Coherence of electron tunneling between one-dimensional Luttinger liquids", *Conference on Mechanisms of Decoherence*, Spinoza Institute, Utrecht University, The Netherlands (June 2000)
16. "Electrons on the edge", *International Conference on Mesoscopic and Strongly Correlated Electron Systems*, Chernogolovka, Russia (July 2000)
17. "Overview of transport models in cuprates", *XII Workshop on Strongly Correlated Electron Systems*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (July 2000)
18. "Electron edge states in quasi-1D and quasi-2D systems", *XII Workshop on Strongly Correlated Electron Systems*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (July 2000)
19. "Statistical mechanics of money", *Packard Fellows Meeting*, Monterey, California (September 2000)
20. "Electron edge states in quasi-one-dimensional conductors", *Summer School on Low-Dimensional Quantum Systems: Theory and Experiment,* Abdus Salam International Center for Theoretical Physics, Trieste, Italy (23 July 2001)
21. "Theory of electron edge states in $(TMTTF)_2X$ and determination of pairing symmetry in superconducting $(TMTSF)_2X$", *International Symposium on Crystalline Organic Metals, Superconductors, and Ferromagnets*, Rusutsu, Hokkaido, Japan (12 September 2001)
22. "The quantum Hall effect in quasi-one-dimensional organic conductors", *Conference on Physical Phenomena in High Magnetic Fields-IV*, Santa Fe (25 October 2001)
23. "Statistical mechanics of money, wealth, and income", *Horizons in Complex Systems,* Messina, Italy (8 December 2001)
24. "Theoretical overview of transport in cuprates", *Workshop on Emergent Materials and Highly Correlated Electrons*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (14 August 2002)
25. "Probability distribution of returns for a model with stochastic volatility", *International Econophysics Conference,* Bali, Indonesia (31 August 2002)
26. "Hot and cold spots of the electron relaxation time in Q1D organic conductors and in curates", *Realistic Theories of Correlated Electron Materials,* Kavli Institute for Theoretical Physics,

University of California at Santa Barbara (19 November 2002)

27. "Spontaneous formation of a π soliton in a superconducting wire with an odd number of electrons", *March Meeting of the American Physical Society*, Austin (5 March 2003)

28. "Statistical mechanics of money, income, and wealth", *International Symposium of Physics*, Monterrey Institute of Technology, Mexico (26 February 2004)

29. Invited talk, *International Conference on New Theories, Discoveries and Applications of Superconductors and Related Materials*, Chongqing, China (10-15 June 2004), declined

30. "'Thermal' and 'superthermal' two-class structure of the personal income distribution", *North American Association for Computational Social and Organizational Science, NAACSOS Conference 2004*, Carnegie Mellon University, Pittsburgh (28 June 2004)

31. "Self-energy near a quantum critical point", *Workshop on Novel States and Phase Transitions in Highly Correlated Matter*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (22 July 2004)

32. "Parquet method for a flat 2D Fermi surface", a series of 3 lectures at the *School on Renormalization Group Methods for Interacting Electrons*, Brasília, Brazil (3–5 August 2004)

33. "'Thermal' and 'superthermal' two-class structure of personal income distribution", *Workshop on Volatility of Financial Markets: Theoretical Models, Forecasting and Trading*, Lorentz Center, Leiden University, The Netherlands (21 October 2004)

34. "Two-class structure of income distribution in the USA: exponential bulk and power-law tail", workshop on *Econophysics of Wealth Distributions*, Saha Institute of Nuclear Physics, Kolkata, India (15 March 2005)

35. "Statistical mechanics of money, income, and wealth: foundations and applications", workshop on *Econophysics of Wealth Distributions*, Saha Institute of Nuclear Physics, Kolkata, India (19 March 2005)

36. "Can 'non-Fermi-liquid' behavior be found in the Landau theory of Fermi liquids?", program on *Quantum Phase Transitions*, Kavli Institute for Theoretical Physics, University of California at Santa Barbara (25 April 2005)

37. "Statistical mechanics of money", workshop on *Emergence*, Pacific Institute of Theoretical Physics, University of British Columbia, Vancouver (17 May 2005)

38. "Statistical mechanics of money, income, and wealth", symposium *Understanding Complex Systems*, Department of Physics, University of Illinois at Urbana-Champaign (18 May 2005)

39. "Two-class structure of income distribution in the USA: exponential bulk and power-law tail", *Econophysics Conference*, Australian National University, Canberra, Australia (17 November 2005)

40. "Statistical mechanics of money, income, and wealth", *Topological Aspects of Critical Systems and Networks*, Hokkaido University, Sapporo, Japan (14 February 2006).

41. "Statistical mechanics of money, income, and wealth", *March Meeting of the American Physical Society*, Baltimore (13 March 2006).

42. "Distribution of log-returns in the Heston model obtained by subordination to the fluctuating number of trades", *Applications of Physics in Financial Analysis 5*, Turin, Italy (29 June 2006).

43. "Statistical mechanics of money, income, and wealth", *Third Feynman Festival*, University of

Maryland (29 August 2006).

44. "The Econophysics Perspective", *Fat Tails from Finance to Fluids*, University College Dublin and the Royal Irish Academy, Dublin, Ireland (23 May 2007).

45. "Time-reversal-symmetry breaking and the Kerr effect in Sr_2RuO_4", Miniprogram *Sr_2RuO_4 and Chiral p-wave Superconductivity*, Kavli Institute for Theoretical Physics, University of California at Santa Barbara (11 December 2007)

46. "Evidence for the horizontal lines of nodes from the tunneling spectrum of Sr_2RuO_4", Miniprogram *Sr_2RuO_4 and Chiral p-wave Superconductivity*, Kavli Institute for Theoretical Physics, University of California at Santa Barbara (19 December 2007)

47. "Statistical Mechanics of Money, Income, and Wealth", *Winter Meeting on Statistical Physics*, Taxco, Guerrero, Mexico (11 January 2008)

48. "Distributions of money, income, and wealth: the social inequality data", *Data in Complex Systems* conference, Università degli Studi di Palermo, Sicily, Italy (7 April 2008)

49. "Statistical mechanics of money, income, and wealth", conference on *Probabilistic Political Economy*, Kingston University, UK (15 July 2008)

50. "$d + id$ density-wave as the origin of the time-reversal symmetry breaking in underdoped cuprates", *Workshop on Electronic Crystals*, Cargèse, Corsica, France (26 August 2008)

51. "Spontaneous formation of a π-soliton in a superconducting wire with an odd number of electrons and other unusual Josephson effects", mini-conference *Low Dimensional Conductors*, Laboratoire de Physique Théorique et Modèles Statistiques, Orsay, France (23 September 2008)

52. "Conservation laws, debt, and the current financial crisis: Lessons from statistical physics", workshop *Econphys-Kolkata IV: Games and Social Choices*, Kolkata, India (12 March 2009)

53. "Angular oscillations in a tilted magnetic field in layered metals and bilayers: Q2D, Q1D, graphite/graphene, etc.", program on *Low Dimensional Electron Systems*, Kavli Institute for Theoretical Physics, University of California at Santa Barbara (21 April 2009)

54. "Statistical mechanics of money, income, and wealth", *2nd International Symposium on Neural Networks and Econophysics: from superconducting junctions to financial markets*, Department of Physics and Business School, Loughborough University, UK (14 June 2009)

55. "Spontaneous spin accumulation in singlet-triplet Josephson junctions", *2nd International Symposium on Neural Networks and Econophysics: from superconducting junctions to financial markets*, Department of Physics and Business School, Loughborough University, UK (16 June 2009)

56. "Statistical mechanics of money, income, and wealth", workshop *Money – Interdisciplinary Perspectives*, Department of Sociology, Free University of Berlin, Germany (26 June 2009)

57. "$d + id$ density-wave as the origin of the time-reversal symmetry breaking in underdoped cuprates", *ICAM-I2CAM Cargèse Summer Workshop*, Corsica, France (8 July 2009)

58. "Theory of the high-frequency chiral optical response of a $p_x + ip_y$ superconductor", *ICAM-I2CAM Cargèse Summer Workshop*, Corsica, France (15 July 2009)

59. "Statistical mechanics of money, income, and wealth: lessons for global economic crisis", *Annual Meeting of AAAS*, invited session "What Went Wrong with the Global Economy?", San Diego (19 February 2010)

60. "Highly efficient photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *ARPA-E Technology Showcase*, invited poster as a finalist of DOE competition, National Harbor, MD (1–2 March 2010)

61. "Insights from statistical physics into the distributions of money, income and wealth in a society", *Annual Meeting of the Pacific Sociological Association*, session on Mathematical Sociology, Oakland, CA (8 April 2010)

62. Invited discussant at the special session to the memory of C. Wright Mills, *Annual Meeting of the Pacific Sociological Association*, Oakland, CA (8 April 2010)

63. "Statistical mechanics of money, income, and wealth", *Statistical Mechanics Conference*, Rutgers University, Piscataway, NJ (9 May 2010)

64. "Theories of the time-reversal-symmetry breaking and the polar Kerr effect in Sr_2RuO_4 and underdoped cuprates", *International Conference on Spectroscopies in Novel Superconductors*, Shanghai, China (24 May 2010)

65. "A proposal for highly efficient photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *Research Symposium of the Center for Nanophysics and Advanced Materials*, University of Maryland (10 June 2010)

66. "Global distribution and inequality in energy consumption compared with the money, wealth and income distributions and inequality: insights from statistical physics", *General Conference of the International Association for Research in Income and Wealth*, St.-Gallen, Switzerland (26 August 2010)

67. "Photovoltaics: principles, materials, and a novel approach using surface acoustic waves", *Mediterranean School on Nano-Physics*, Marrakech, Morocco, sponsored by ICTP, Trieste (10 December 2010)

68. "Statistical mechanics of money, debt, and energy consumption", *Mediterranean School on Nano-Physics*, Marrakech, Morocco, sponsored by ICTP, Trieste (11 December 2010)

69. "Highly efficient photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *ARPA-E Technology Showcase*, invited poster as a finalist of DOE competition, National Harbor, MD (1–2 March 2011)

70. "Entropy maximization and distributions of money, income, and energy consumption in a market economy", workshop *Info-Metrics Across the Sciences*, Info-Metrics Institute, American University, Washington, DC (2 May 2011)

71. "Angular oscillations in a tilted magnetic field in topological insulators", *Research Symposium of the Center for Nanophysics and Advanced Materials*, University of Maryland (12 May 2011)

72. "Theories of the time-reversal-symmetry breaking and the polar Kerr effect in Sr_2RuO_4 and underdoped cuprates", workshop *Superconductivity: 100 Years Old*, International Institute of Physics, Natal, Brazil (20 May 2011)

73. "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *Workshop on Electronic Crystals*, Cargèse, Corsica, France (19 August 2011)

74. "Statistical mechanics approach to the probability distributions of money, wealth, income, and energy consumption", *Symposium in honor of Duncan K. Foley*, Department of Economics, The New School for Social Research, New York (20 April 2012)

75. "Fractional ac Josephson effect and spontaneous spin accumulation", workshop *Majorana Fermions in Condensed Matter*, Lorentz Center, Leiden University, The Netherlands (4 July

2012)

76. "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", conference *Electronic States and Phases Induced by Electric or Optical Impacts*, Université Paris-Sud, Orsay, France (13 September 2012)

77. "Thin film of a topological insulator in a parallel or tilted magnetic field", *Research Symposium of the Center for Nanophysics and Advanced Materials*, University of Maryland (11 May 2012)

78. "Thin film of a topological insulator in a parallel or tilted magnetic field", symposium *Frontiers of Quantum Matter*, Center for Quantum Science, George Mason University, Fairfax, VA (22 June 2012)

79. "Statistical mechanics of money, income, debt, and energy consumption", *Econophysics Colloquium and Asia Pacific Econophysics Conference*, Asia Pacific Center for Theoretical Physics, Pohang University of Science and Technology, South Korea (30 July 2013)

80. "Statistical mechanics of money, income, debt, and energy consumption", workshop *Models from Statistical Mechanics in Applied Sciences*, Mathematics Institute, University of Warwick, United Kingdom (9 September 2013)

81. "Statistical mechanics of money, income, debt, and energy consumption", workshop *Statistical Modeling, Financial Data Analysis and Applications*, Istituto Veneto di Scienze, Lettere ed Arti, Palazzo Franchetti, Venice, Italy (13 September 2013)

82. "Statistical mechanics of money, income, debt, and energy consumption", *Physics-Biology Mini-Symposium*, University of Maryland (7 February 2014)

83. "Possible spiral structure in the pseudogap phase of cuprates", *Workshop on Electronic Crystals*, Cargèse, Corsica, France (20 August 2014)

84. "Statistical mechanics of money, income, debt, and energy consumption", KI-Net Conference *Modeling and Control in Social Dynamics*, Department of Mathematics, Rutgers University – Camden, NJ (7 October 2014)

85. "Evolution of global inequality in energy consumption as entropy-maximizing process", conference *Recent Innovations in Info-Metrics: An Interdisciplinary Perspective*, Info-Metrics Institute, American University, Washington, DC (1 November 2014)

86. "Statistical mechanics of money, income, debt, and energy consumption", KI-Net conference *Collective Dynamics and Model Verification*, School of Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ (17 April 2015)

87. "Statistical mechanics of inequality in distributions of money, income, debt, and energy consumption", minisymposium *Wealth Distribution and Statistical Equilibrium in Economics* at AMMCS-CAIMS Congress, Waterloo, Canada (8 June 2015)

88. "Economic inequality from statistical physics point of view", *Workshop in Honor of the Life and Work of Richard Prange*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (26 June 2015)

89. "Economic inequality from statistical physics point of view", *Asia-Pacific Econophysics Conference*, Nanyang Technological University, Singapore (13 July 2015)

90. "Spontaneous time-reversal symmetry breaking in superconductors and related materials – I and II", two lectures at *School on Strongly Correlated Electronic Systems*, International Centre for Theoretical Physics (ICTP), Trieste, Italy (10-11 August 2015)

91. "Re-examining evidence for time-reversal symmetry breaking in cuprates", *Workshop on Strongly Correlated Electronic Systems*, International Centre for Theoretical Physics (ICTP), Trieste, Italy (18 August 2015)

92. "Economic inequality from statistical physics point of view", *Econophysics and Sociophysics*, Jawaharlal Nehru University and University of Delhi, India (30 November 2015)

93. "Economic inequality from statistical physics point of view", *Annual Conference of the Eastern Economic Association*, Washington, DC (26 February 2016)

94. "Economic inequality from statistical physics point of view", *Physics and Social Network Dynamics of the Markets*, Nordic Institute for Theoretical Physics (Nordita), Stockholm, Sweden (1 June 2016)

95. "Global inequality in energy consumption from 1980 to 2010", *7th BioPhysical Economics meeting*, University of the District of Columbia, Washington, DC (27 June 2016)

96. "Statistical economics: Probability distributions of money, income, and energy consumption", *7th BioPhysical Economics meeting*, University of the District of Columbia, Washington, DC (27 June 2016)

97. "Time-reversal-symmetry-breaking superconductivity in Bi/Ni epitaxial bilayers", *Multi-Component and Strongly-Correlated Superconductors*, Nordic Institute for Theoretical Physics (Nordita), Stockholm, Sweden (21 July 2016)

98. "Monetary inequality: Agent-based modeling versus real data", *International Congress on Agent Computing*, George Mason University, Fairfax, VA (29 November 2016)

99. "Economic inequality from a statistical physics point of view", minisymposium *Collective Behavior in Complex Systems* at the Annual Meeting of the Canadian Society of Applied and Industrial Mathematics (CAIMS), Halifax, Canada (19 July 2017)

100. "Evolution of the global inequality in energy consumption", *Annual Conference* of the International Confederation of Associations for Pluralism in Economics (ICAPE), Philadelphia (4 January 2018)

101. "Loop currents from nonunitary time-reversal-breaking superconductivity on the honeycomb lattice", *Novel Superconductors: Materials and Properties*, Nordic Institute for Theoretical Physics (Nordita), Stockholm, Sweden (8 May 2018)

102. "Economic inequality from a statistical physics point of view", program *Statistical Techniques for Correlation Analysis: Quantum Many-Body Systems and More*, Centro Internacional de Ciencias, Cuernavaca, Mexico (17 July 2018)

103. "Global inequality in energy consumption", conference *RMT, Complex Networks and Applications*, Centro Internacional de Ciencias, Cuernavaca, Mexico (19 July 2018)

104. "Statistical mechanics of money", plenary talk, conference *Computer Simulations in Physics and Beyond*, Higher School of Economics, Moscow, Russia (26 September 2018)

105. "Economic inequality from a statistical physics point of view", symposium on *Inequality, Entropy, and Econophysics*, Columbia University, New York City (30 May 2019)

106. "Economic inequality from a statistical physics point of view", *Global Innovation Forum*, National Economic University and Foundation for Armenian Science and Technology, Yerevan, Armenia (17 and 18 October 2019)

107. "Economic inequality from a statistical physics point of view", *Thermodynamics 2.0*, interna-

tional conference, Worcester University, MA (23 June 2020) on Zoom

108. "Economic inequality from a statistical physics point of view", international *Conference on Complex Systems*, Greece (7 December 2020) on Zoom

109. "Entropic perspective on global inequality in carbon emissions", Econophysics Conference, a satellite to international *Conference on Complex Systems*, Lyon, France (27 October 2021) on Zoom

110. "Economic inequality from a statistical physics point of view", *International Symposium of Physics*, Monterrey Institute of Technology, Mexico (20 May 2022) on Zoom

111. "Optical control of topological memory based on orbital magnetization", *Workshop on Electronic Crystals*, Cargèse, Corsica, France (17 August 2022) in person

2.f.ii Refereed conference proceedings

1. **V. M. Yakovenko** and H.-S. Goan, "What happens to the quantum Hall effect when magnetic-field-induced spin-density wave moves", *Proceedings of the Physical Phenomena at High Magnetic Fields – II Conference*, World Scientific Publishing Co., pp. 116–121 (1996).

2. A. Drăgulescu, V. M. Yakovenko, and D. J. Singh, "Angular oscillations of the *c*-axis magnetoresistance in $Tl_2Ba_2CuO_6$", *Proceedings of the Physical Phenomena at High Magnetic Fields – III Conference*, World Scientific Publishing Co., pp. 365–368 (1999).

3. A. A. Dragulescu and **V. M. Yakovenko**, "Statistical mechanics of money, income, and wealth: A short survey", *Modeling of Complex Systems: Seventh Granada Lectures*, AIP Conference Proceedings **661**, pp. 180–183 (2003).

4. **V. M. Yakovenko** and A. C. Silva, "Two-class structure of income distribution in the USA: exponential bulk and power-law tail", *Econophysics of Wealth Distributions*, edited by A. Chatterjee, S. Yarlagadda, and B. K. Chakrabarti, Springer series "New Economic Windows", pp. 15–23 (2005).

2.f.iv Contributed talks and posters at conferences

1. "A weak coupling theory for La_2CuO_4: $\ln^2$-parquet approach", *Electronics of Organic Materials*, Tashkent, USSR (1987), talk

2. "A weak coupling theory for La_2CuO_4: $\ln^2$-parquet approach" and "Possible superconductivity on the junction surface of dielectric La_2CuO_4", *Toward Theoretical Understanding of High-*T_c *Superconductivity*, Trieste, Italy (1988), talk

3. "A weak coupling theory for La_2CuO_4: $\ln^2$-parquet approach", *US-SU Symposium in Physics*, Tbilisi, USSR (1988), talk

4. "Spin, statistics and charge of solitons in (2+1)-dimensional theories", *NORDITA–USSR Workshop in Physics*, Zvenigorod, USSR (1989), talk

5. "Spin, statistics and charge of solitons in (2+1)-dimensional theories", *NATO School on Strongly Correlated Electron Systems*, Cargese, France (1990), talk

6. "Theory of the quantum Hall effect in quasi-one-dimensional conductors", *International Conference on Synthetic Metals*, Tubingen, Germany (1990), poster

7. "Hall conductivity of the moving magnetic-filed-induced spin-density wave", *Gordon Research Conference on Organic Superconductors*, Il Ciocco, Italy, (May 1993), talk

8. "Hall conductivity of the moving magnetic-filed-induced spin-density wave", *Physics and Chemistry of Molecular and Oxide Superconductors*, Eugene, Oregon (July 1993), poster
9. "'Hot spots' in quasi-one-dimensional organic conductors", March Meeting of the American Physical Society, Pittsburgh, Pennsylvania (1994), talk
10. "On the interpretation of neutron scattering in superconducting $YBa_2Cu_3O_7$", *Stanford Conference on Spectroscopies in Novel Superconductors* (March 1995), poster
11. "Magnetic-field-induced Luttinger liquid in quasi-one-dimensional conductors", *Workshop on Non-Fermi Liquid in one dimension*, University of California at Los Angeles (March 1995), talk
12. "Hall conductivity of the moving magnetic-field-induced spin-density wave", *Physical Phenomena at High Magnetic Fields – II*, National High Magnetic Field Laboratory, Tallahassee, Florida (May 1995), poster
13. "Metals in a strong magnetic field: A new universality class of marginal Fermi liquids", *Modern Trends in Theoretical Physics*, Landau Institute, Moscow, Russia (June 1995), talk
14. "Magnetic-field-induced Luttinger liquid in quasi-one-dimensional conductors: Temperature dependence of impurity scattering", *Workshop on Strongly Interacting Electronic Materials*, Princeton University (November 1995), poster
15. "Magnetic-field-induced Luttinger liquid in quasi-one-dimensional organic conductors", *Non-Fermi-Liquid Physics*, Institute for Theoretical Physics, Santa Barbara, California (June 1996), talk
16. "Magnetic-field-induced Luttinger liquid in quasi-one-dimensional organic conductors", NATO Advanced Study Institute on *Mesoscopic Electron Transport*, Curaçao (June/July 1996), poster
17. "Recent developments in the theory of the quantum Hall effect in quasi-one-dimensional organic conductors $(TMTSF)_2X$", *International Conference on Synthetic Metals*, Snowbird, Utah (July/August 1996), talk
18. "Angular oscillations of magnetoresistance in layered metals: A tool for measuring the interplane coherence and the intraplane Fermi surface", *Spectroscopies in Novel Superconductors*, Cape Cod, Massachusetts (September 1997), talk
19. "Temperature dependence of the Hall resistivity in the metallic state of $(TMTSF)_2X$", "Edge electron states in a Q1D metal in a magnetic field", and "Helicoidal FISDWs in $(TMTSF)_2X$", *International Conference on Synthetic Metals*, Montpellier, France (July 1998), posters
20. "Parquet solution for a flat Fermi surface", *Statistical Physics 20*, Paris, France (July 1998), talk
21. "Coherence of tunneling between Luttinger liquids" and "Parquet solution for a flat Fermi surface", *X Trieste Workshop on Open Problems in Strongly Correlated Electron Systems*, Italy (July 1998), talks
22. "Temperature dependence of the Hall resistivity in the metallic state of $(TMTSF)_2X$", "Edge electron states in a Q1D metal in a magnetic field", "Helicoidal FISDWs and sign reversals of the quantum Hall effect in $(TMTSF)_2X$", "Temperature dependence of the umklapp resistivity of a Q1D metal in a strong magnetic field", "Theory of angular magnetoresistance oscillations in $Tl_2Ba_2CuO_6$", and "Magnetoresistance and the ac Hall effect in the 'cold spots' model of the normal-state transport in $YBa_2Cu_3O_7$" *Physical Phenomena at High Magnetic Fields –*

III, National High Magnetic Field Laboratory, Tallahassee, Florida (October 1998), posters

23. "Gibbs distribution of money: A computer simulation", *Europhysics Conference on Applications of Physics in Financial Analysis*, Dublin, Ireland (July 1999), poster
24. "Coherence of tunneling between one-dimensional Luttinger liquids", *Electron Transport in Mesoscopic Systems*, Göteborg, Sweden (August 1999), poster
25. "Theory of electron edge states in the triplet quasi-one-dimensional organic superconductor $(TMTSF)_2PF_6$ (and inorganic Sr_2RuO_4)", *Gordon Research Conference on Superconductivity*, Ventura, California (February 2000), poster
26. "Statistical mechanics of money", *Europhysics conference on Applications of Physics in Financial Analysis*, Liège, Belgium (July 2000), poster
27. "Edge electron states in Q1D systems: theory", *International Conference on Synthetic Metals,* Bad Gastein, Austria (July 2000), talk
28. "Electrons on edge", *Electronic Correlations: From Meso- to Nano-Physics*, Les Arcs, France (21 January 2001), talk
29. "Statistical mechanics of money and income", *NATO Advanced Research Workshop on Application of Physics in Economic Modeling,* Prague, Czech Republic (10 February 2001), talk
30. "Exponential and power-law scaling in the income distribution", *Scaling Concepts and Complex Systems,* Merida, Mexico (12 July 2001), talk
31. "Statistical mechanics of money and income", *21st International Conference on Statistical Physics,* Cancun, Mexico (19 July 2001), poster
32. "Andreev edge states and determination of pairing symmetry in superconducting Sr_2RuO_4", *Workshop on Excitations in Unconventionally Ordered Metals,* Santa Fe (27 October 2001), talk
33. "How to detect edge midgap states in superconducting $(TMTSF)_2X$ experimentally", *March Meeting of the American Physical Society*, Indianapolis (19 March 2002), talk
34. "Probability distribution of returns in a model with stochastic volatility", *Workshop on Economics with Heterogeneous Interacting Agents (WEHIA 2002)*, Abdus Salam International Center for Theoretical Physics, Trieste, Italy (31 May 2002), talk
35. "Exponential and power-law probability distributions of wealth and income in the United Kingdom and the United States", *Computing in Economics and Finance,* Aix-en-Provence, France (29 June 2002), talk
36. "Probability distribution of returns in the Heston model with stochastic volatility", *Computing in Economics and Finance,* Aix-en-Provence, France (29 June 2002), talk
37. "Spontaneous formation of a π soliton in a superconducting wire with an odd number of electrons", *International Workshop on Electronic Crystals (ECRYS-2002)*, St. Flour, France (3 September 2002), talk
38. "Statistical mechanics of money, income, and wealth", *7th Granada Seminar on Computational and Statistical Physics*, Granada, Spain (7 September 2002), talk
39. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", *4th International Conference on New Theories, Discoveries, and Applications of Superconductors and Related Materials (New^{3}SC-4)*, San Diego (17 January 2003), talk

40. "Fractional ac Josephson effect in p- and d-wave superconductors", *March Meeting of the American Physical Society*, Austin (4 March 2003), talk

41. "Fractional ac Josephson effect in p- and d-wave superconductors", *International Workshop on Unconventional Superconductors*, State University of Campinas, Brazil (21 May 2003), talk

42. "Fractional ac Josephson effect in p- and d-wave superconductors", *7th International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors*, Rio de Janeiro, Brazil (26 May 2003), poster

43. "Time evolution of the probability distribution of returns in the Heston model of stochastic volatility compared with the high-frequency stock-market data", *Applications of Physics in Financial Analysis 4*, Warsaw, Poland (15 November 2003), talk

44. "Andreev bound states, as coherent many-body objects in superconductors, quantum spin/qubit chains, and 1D optical lattices", Workshop of the prospective Joint Institute for Coherent Quantum Processes, Department of Physics, UMD (5 January 2004), talk

45. "Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect", *6th Rencontres de Moriond in Mesoscopic Physics: Quantum information and Decoherence in Nanosystems*, La Thuile, Italy (29 January 2004), talk

46. "Lattice-formation scenario of the metal-insulator transition in a two-dimensional electron liquid", *March Meeting of the American Physical Society*, Montreal (23 March 2004), talk

47. "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", *March Meeting of the American Physical Society*, Montreal (24 March 2004), talk

48. "Statistical mechanics of money, income, and wealth: a short survey", *9th Workshop on Economics and Heterogeneous Interacting Agents (WEHIA 2004)*, Kyoto University, Japan (28 May 2004), talk

49. "Exponential distribution of financial returns at mesoscopic time lags: a new stylized fact", *9th Workshop on Economics and Heterogeneous Interacting Agents (WEHIA 2004)*, Kyoto University, Japan (28 May 2004), poster

50. "Hot spots and transition from d-wave to another pairing symmetry in the electron-doped cuprate superconductors", *7th International Conference on Spectroscopies in Novel Superconductors (SNS2004)*, Sitges, Spain (12–15 July 2004), poster

51. "'Thermal' and 'superthermal' two-class structure of the personal income distribution", *March Meeting of the American Physical Society*, Los Angeles (21 March 2005), talk

52. "Probability distribution of financial returns in a model of multiplicative Brownian motion with stochastic diffusion coefficient", *March Meeting of the American Physical Society*, Los Angeles (22 March 2005), talk

53. "Two-class structure of the personal income distribution in the USA in 1983–2001", *11th Conference on Computing in Economics and Finance*, Washington, DC (24 June 2005), poster

54. "Theory of angular magnetoresistance oscillations in tilted magnetic fields in bilayers", *Emergent Phenomena in Quantum Hall Systems*, Taos, New Mexico (8 July 2005), poster

55. "Theory of angular magnetoresistance oscillations in tilted magnetic fields in bilayers", *16th International Conference on the Electronic Properties of Two-Dimensional Systems (EP2DS-16)*, Albuquerque, New Mexico (11 July 2005), poster

56. "Angular magnetoresistance oscillations in Q1D, Q2D, and bilayers as the Aharonov-Bohm interference between the real-space orbits", *6th International Symposium on Crystalline Organic Metals, Superconductors, and Ferromagnets (ISCOM-2005)*, Key West, Florida (13 September 2005), poster

57. "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", *Topological Aspects of Critical Systems and Networks*, Hokkaido University, Sapporo, Japan (13 February 2006), poster

58. "Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids", *March Meeting of the American Physical Society*, Baltimore (15 March 2006), talk

59. "Interlayer Aharonov-Bohm interference in tilted magnetic fields in quasi-one-dimensional organic conductors", *March Meeting of the American Physical Society*, Baltimore (15 March 2006), talk

60. "Statistical mechanics of money, income, and wealth", *Annual Meeting of the Institute for Complex Adaptive Matter (ICAM)*, Santa Fe (11 November 2006), talk

61. "Stochastic volatility of financial markets as the fluctuating rate of trading: an empirical study", *March Meeting of the American Physical Society*, Denver (5 March 2007), talk

62. "Angular magnetoresistance oscillations in quasi-one-dimensional organic conductors in the presence of a crystal superstructure", *March Meeting of the American Physical Society*, Denver (6 March 2007), talk

63. "Theory of the high-frequency chiral optical response in a $p_x + ip_y$ superconductor", *March Meeting of the American Physical Society*, Denver (9 March 2007), talk

64. "Theory of the high-frequency chiral optical response in a $p_x + ip_y$ superconductor", International Conference on *Strongly Correlated Electron Systems* (SCES), Houston (14 May 2007), poster

65. "Non-Fermi-liquid behavior of strongly correlated Fermi systems within the Fermi-liquid approach", International Conference on *Strongly Correlated Electron Systems* (SCES), Houston (18 May 2007), poster

66. "Universal and non-universal features in the distribution of income", International Conference on the *Economic Science with Heterogeneous Interacting Agents* (ESHIA), George Mason University, Fairfax, VA (18 June 2007), talk

67. "Modeling income distribution as a sum of additive and multiplicative stochastic processes", *March Meeting of the American Physical Society*, New Orleans (10 March 2008), talk

68. "Spontaneous spin accumulation in singlet-triplet Josephson junctions", *March Meeting of the American Physical Society*, New Orleans (11 March 2008), talk

69. "Time-reversal symmetry breaking by a $(d + id)$ density-wave state in underdoped cuprate superconductors", *March Meeting of the American Physical Society*, New Orleans (13 March 2008), talk

70. "Statistical distributions of money, income, and wealth", working group *Universal Diversity Patterns Across the Sciences*, Santa Fe Institute, NM (24 February 2009), talk

71. "High-efficiency photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *International Semiconductor Device Research Symposium*, University of Maryland (9 December 2009)

72. "Landau levels of graphene multilayers in a parallel magnetic field", *March Meeting of the American Physical Society*, Portland, OR (15 March 2010), talk

73. "Patterns of inequality: Dynamics of income distribution in USA and global energy consumption distribution", *March Meeting of the American Physical Society*, Portland, OR (16 March 2010), talk

74. "High-efficiency photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *March Meeting of the American Physical Society*, Portland, OR (16 March 2010), talk

75. "Highly efficient photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *Nanomaterials Symposium*, Applied Physics Laboratory of the Johns Hopkins University, Laurel, MD (19 April 2010), poster

76. "Violation of Onsager reciprocity in underdoped cuprates?", *March Meeting of the American Physical Society*, Dallas, TX (21 March 2011), talk

77. "Spectroscopy of the soliton lattice formation in quasi-one-dimensional fermionic superfluids with population imbalance", *March Meeting of the American Physical Society*, Dallas, TX (22 March 2011), talk

78. "Entropy maximization and distributions of money, income, and energy consumption in a market economy", *8th International Conference on Complex Systems*, Boston, MA (29 June 2011), talk

79. "Statistical mechanics of money, income, wealth, and energy consumption", *Dynamics Days*, Baltimore, MD (6 January 2012), poster

80. "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *Annual Meeting of the Institute for Complex Adaptive Matter (ICAM)*, New York (25 May 2012), poster

81. "Theory of the time-reversal-symmetry breaking and the polar Kerr effect in underdoped cuprates", *International Conference on Materials and Mechanisms of Superconductivity*, Washington, DC (30 July 2012), poster

82. "Theory of the time-reversal-symmetry breaking and the polar Kerr effect in Sr_2RuO_4", *International Conference on Materials and Mechanisms of Superconductivity*, Washington, DC (30 July 2012), poster

83. "Spontaneous spin accumulation in singlet-triplet Josephson junctions", *International Conference on Materials and Mechanisms of Superconductivity*, Washington, DC (1 August 2012), poster

84. "Global inequality in energy consumption: insights from statistical physics", *32nd General Conference of the International Association for Research in Income and Wealth*, Boston, MA (9 August 2012), talk

85. "Statistical mechanics of money, income, debt, and energy consumption", workshop *Econophysics Colloquium*, ETH Zürich, Switzerland (11 September 2012), talk

86. "Novel method for photovoltaic energy conversion using surface acoustic waves in piezoelectric semiconductors", *Sustainability Workshop: Solar Energy*, The Clark School of Engineering, University of Maryland (26 April 2012), talk

87. "Home installation of solar panels", *Sustainability Workshop: Solar Energy*, The Clark School of Engineering, University of Maryland (26 April 2012), talk

88. "Insights from statistical physics into the probability distributions of money and income in the US economy", *Annual Conference of the Society of Government Economists*, George Washington University, Washington, DC (6 November 2012), talk

89. "Graphene multilayers in the crossed in-plane magnetic and out-of-plane electric fields", *March Meeting of the American Physical Society*, Baltimore, MD (20 March 2013), talk

90. "Spin-polarized tunneling current through a thin film of a topological insulator in a parallel magnetic field", *March Meeting of the American Physical Society*, Baltimore, MD (22 March 2013), talk

91. "Possible chiral structure in the pseudogap phase of cuprates", *International Conference on Spectroscopies in Novel Superconductors*, Lawrence Berkeley National Laboratory, Berkeley, CA (24 June 2013), poster

92. "Insights from statistical physics into the probability distributions of money and income in the U.S. economy", *Annual Conference of the Society of Government Economists*, George Washington University, Washington, DC (6 November 2013), talk

93. "Possible spiral structure in the pseudogap phase of cuprates", international conference on *Low Energy Electrodynamics in Solids*, Amboise, Loire Valley, France (30 June 2014), talk

94. "Global Inequality in Energy Consumption from the Maximal Entropy Perspective", *Dupont Summit on Science, Technology, and Environmental Policy Issues*, Washington, DC (5 December 2014), talk

95. "Economic inequality from statistical physics point of view", *Annual Conference of the Society of Government Economists*, George Washington University, Washington, DC (21 May 2015), talk

96. "Economic inequality from statistical physics point of view", Granada Seminar *Physics Meets the Social Sciences*, La Herradura, Spain (15 June 2015), talk

97. "Polar Kerr effect and time-reversal symmetry breaking in cuprates", *Research Symposium* of the Center for Nanophysics and Advanced Materials (CNAM), University of Maryland, College Park (9 July 2015), talk

98. "Polar Kerr effect in high temperature cuprate superconductors", *March Meeting of the American Physical Society*, Baltimore, MD (16 March 2016), talk

99. "A model for the polar Kerr effect in the hidden-order phase of URu_2Si_2", *March Meeting of the American Physical Society*, Baltimore, MD (17 March 2016), talk

100. "Income distribution: Is there a middle class?", *Annual Conference of the Society of Government Economists*, Bureau of Labor Statistics, Washington, DC (13 May 2016), talk

101. "Economic inequality from statistical physics point of view", *Modeling Science, Technology, and Innovation*, National Academy of Sciences, Washington, DC (18 May 2016), short talk

102. "Loop currents from nonunitary chiral superconductivity on the honeycomb lattice", *Symposium* of the Condensed Matter Theory Center (CMTC), University of Maryland, College Park (16 March 2018), talk

103. "Economic inequality from a statistical physics point of view", *30th Anniversary Reunion of the Packard Foundation Fellows*, San Diego, CA (8 September 2018), poster

104. "Exponential structure of income inequality: Evidence from 67 countries", *8th Meeting of the Society for the Study of Economic Inequality*, Paris School of Economics, France (3 July

2019), talk

105. "How to measure Hall conductivity in a superconductor", *Symposium* of the Condensed Matter Theory Center (CMTC), University of Maryland, College Park (21 October 2020), talk

106. "Entropic perspective on global inequality in carbon emissions", *Workshop on Economics with Heterogeneous Interacting Agents*, Milan, Italy (28 June 2021) talk on Zoom

107. "Historical evolution of global inequality in carbon emissions and footprints versus redistributive scenarios", *9th Meeting of the Society for the Study of Economic Inequality*, London School of Economics, United Kingdom (10 July 2021) talk on Zoom

108. "Two-class income distribution in the USA in 1983–2018", *Thermodynamics 2.0*, international conference, Boone, NC (18 July 2022) talk on Zoom

109. "Optical control of topological memory based on orbital magnetization", *Correlated Matter and Light*, international conference, University of Geneva, Switzerland (7 September 2022) poster on Zoom

110. "A proposal for optical control of topological memory in Chern insulators realized in moiré multilayers", *March Meeting of the American Physical Society*, Las Vegas, NV (20 March 2023), talk on Zoom

111. "Optical control of topological memory based on orbital magnetization in moiré multilayers", *Packard Fellows 35th Anniversary Reunion*, Colorado Springs, CO (6 September 2023), poster in person

2.g Films, CDs, Photographs, Web pages, etc.

- Created and maintained a Web page with papers, computer animation, links to video lectures, and other materials for the interdisciplinary field of Econophysics, `http://physics.umd.edu/~yakovenk/econophysics/`, since 2000

2.h Exhibits, Performances. Demonstrations, and Other Creative Activities

- Organized and performed on drums with a rock band at the *Physics Songs Sing-Along* concert at the annual March Meeting of the American Physics Society, Baltimore 2013

2.i Original Designs, Plans, Inventions, and Patents

Victor Yakovenko (sole inventor) filed a provisional patent application PS-2009-039 "Photovoltaic Energy Conversion Using Surface Acoustic Waves in Piezoelectric Semiconductors" via OTC of UMD in 2009.

2.j Contracts and Grants

As a Fellow of the Joint Quantum Institute (JQI), Victor Yakovenko is one of co-PIs on the collective grant for Physics Frontier Center (PFC) awarded by NSF to JQI at UMD in September 2008. The title of the grant is "Processing Quantum Coherence".

Victor Yakovenko is/was the sole Principal Investigator on all of the following grants.

Project Title	Statistical Physics Approach to Income and Wealth Distribution
Source of Support	Institute for New Economic Thinking
Total Award Amount	$36,598
Total Award Period	January 1, 2013 – December 31, 2015

Project Title	Theory of Quasi-One-Dimensional Organic Conductors
Source of Support	National Science Foundation, DMR-0137726
Total Award Amount	$275,000
Total Award Period	June 15, 2002 – May 31, 2006

Project Title	Organic Conductors in High Magnetic Fields: A Theoretical Study
Source of Support	National Science Foundation, DMR-9815094
Total Award Amount	$203,000
Total Award Period	January 1, 1999 – January 31, 2002

Project Title	Organic Conductors in High Magnetic Fields: A Theoretical Study
Source of Support	National Science Foundation, DMR-9417451
Total Award Amount	$143,000
Total Award Period	January 1, 1995 – December 31, 1998

2.k Fellowships, Prizes, and Awards

2012 : Member of the Condensed Matter Theory Center (CMTC), UMD
2006 : Fellow of the Joint Quantum Institute (JQI), UMD–NIST
2004 : Fellow of the American Physical Society
2003 : Richard A. Ferrell Distinguished Faculty Fellowship, Department of Physics, UMD
Total award amount: $10,000
1995–2001 : David and Lucile Packard Fellowship in Science and Engineering
Total award amount: $550,000
1994–1996 : Alfred P. Sloan Research Fellowship
Total award amount: $30,000
1990 : Soviet Youth League Prize in Physics

2.l Editorships, Editorial Boards, and Reviewing Activities for Journals and Other Publications

- Editorial Board member of *Review of Behavioral Economics* journal (2013–2022)

Refereed more than 482 articles for the following journals and publishers:

- *Nature*
- *Nature Materials*
- *Nature Energy*
- *Nature Sustainability*
- *NPJ Quantum Materials*
- *Science Advances*
- *Proceedings of the National Academy of Sciences of USA*
- *Physical Review Letters*
- *Physical Review B*

- *Physical Review E*
- *Physical Review X*
- *Reviews of Modern Physics*
- *Physics Today*
- *Physics Central*
- *PLOS One (Public Library of Science)*
- *Journal of Applied Physics*
- *American Journal of Physics*
- *European Physical Journal B*
- *European Physical Journal Special Topics*
- *European Physical Journal Data Science*
- *Europhysics Letters*
- *New Journal of Physics*
- *Journal of Physics A*
- *Journal of Physics Condensed Matter*
- *Journal of Physics Conference Series*
- *Annals of Physics*
- *Physica A*
- *Physica B*
- *Physica C*
- *Physica D*
- *Physica E*
- *Physics Letters A*
- *Journal of Statistical Physics*
- *Journal of Statistical Mechanics (JSTAT)*
- *Journal de Physique*
- *JETP Letters*
- *Soviet Physics-JETP*
- *Nano Letters*
- *Chinese Physics Letters*
- *PMC Physics B*
- *Physics Essays*
- *Journal of Physics and Chemistry of Solids*
- *Journal of Low Temperature Physics*
- *Solid State Sciences*
- *Synthetic Metals*
- *Chemical Reviews*
- *Journal of the Optical Society of America*
- *Astrophysical Journal*
- *Proceedings of the Royal Society, Series A*
- *Journal of the Royal Society Interface*
- *Advances in Complex Systems*
- *Complexity*
- *Chaos*
- *Entropy*
- *Energy*
- *Sustainability*
- *Nonlinearity*

- *Inverse Problems in Science and Engineering*
- *Journal of Mathematical Analysis and Applications*
- *Applied Mathematics and Computation*
- *Applied Mathematics Letters*
- *SIAM Journal of Applied Mathematics (SIAP)*
- *Acta Applicanda Mathematicae*
- *Stochastics*
- *Journal of Economics*
- *Journal of Evolutionary Economics*
- *Journal of Economic Dynamics and Control*
- *Journal of Economic Behavior and Organization*
- *Journal of Economic Interaction and Coordination*
- *Journal of Economic Surveys*
- *Journal of Income Distribution*
- *European Journal of History of Economic Thought*
- *European Journal of the History of Economics*
- *e-journal Economics*
- *Review of Behavioral Economics*
- *Empirical Economics*
- *Metroeconomica*
- *Economic Modelling*
- *Dynamics of Socio-Economic Systems*
- *Journal of Mathematical Sociology*
- *Quantitative Finance*
- *Annals of Finance*
- *International Journal of Theoretical and Applied Finance*
- *Cambridge University Press*
- *Springer*
- *Routledge, Taylor & Francis publishing*
- *Palgrave Communications*
- *Sankhya B: The Indian Journal of Statistics*

2.m Other

- Member of the American Physical Society: Division of Condensed Matter Physics (DCMP) and Group on Statistical and Nonlinear Physics (GNSP), since 1993
- Member of the Society for the Study of Economic Inequality (ECINEQ), 2019 – 2022
- Member of the International Association for Research in Income and Wealth (IARIW), 2010–2013
- Research Associate of the Info-Metrics Institute, Department of Economics, American University, Washington DC, 2011–2016

3 Teaching, Mentoring, and Advising

3.a Courses taught

3.a.i General

2024 Spring :	Phys413 "Electricity and Magnetism II"	3 credits	6 students
2023 Fall :	Phys412 "Intermediate Electricity and Magnetism I"	4 credits	13 students

2022 Spring :	Phys613 “Quantum and Statistical Physics II”	4 credits	56 students
2021 Fall :	Phys411 “Intermediate Electricity and Magnetism”	4 credits	36 students
2021 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	34 students
2020 Fall :	Phys411 “Intermediate Electricity and Magnetism”	4 credits	62 students
2020 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	30 students
2019 Fall :	Phys411 “Intermediate Electricity and Magnetism”	4 credits	33 students
2019 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	30 students
2018 Fall :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	40 students
2018 Spring :	Phys270 “General Physics: Electrodynamics, Light, Relativity and Modern Physics”	3 credits	150 students
2017 Fall :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	62 students
2017 Spring :	Phys270 “General Physics: Electrodynamics, Light, Relativity and Modern Physics”	3 credits	134 students
2016 Fall :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	51 students
2015 Spring :	Phys625 “Nonrelativistic Quantum Mechanics”	3 credits	15 students
2014 Fall :	Phys601 “Theoretical Dynamics”	3 credits	31 students
2014 Spring :	Phys625 “Nonrelativistic Quantum Mechanics”	3 credits	25 students
2013 Fall :	Phys601 “Theoretical Dynamics”	3 credits	31 students
2013 Spring :	Phys402 “Quantum Physics II”	4 credits	40 students
2012 Fall :	Phys601 “Theoretical Dynamics”	3 credits	31 students
2012 Spring :	Phys402 “Quantum Physics II”	4 credits	60 students
2011 Fall :	Phys404 “Introduction to Statistical Thermodynamics”	3 credits	31 students
2011 Spring :	Phys402 “Quantum Physics II”	4 credits	36 students
2010 Fall :	Phys404 “Introduction to Statistical Thermodynamics”	3 credits	39 students
2010 Spring :	Phys402 “Quantum Physics II”	4 credits	62 students
2009 Fall :	Phys404 “Introduction to Statistical Thermodynamics”	3 credits	46 students
2008 Spring :	Phys603 “Methods of Statistical Physics”	3 credits	40 students
2007 Spring :	Phys603 “Methods of Statistical Physics”	3 credits	25 students
2007 Spring :	Phys272 and 272H “Introductory Physics: Fields”	3 credits	40 students
2006 Fall :	Phys374 “Intermediate Theoretical Methods”	4 credits	37 students
2006 Spring :	Phys272 and 272H “Introductory Physics: Fields”	3 credits	30 students
2005 Fall :	Phys142 “Principles of Physics II”	3 credits	23 students
2004 Fall :	Phys171H “Introductory Physics: Mechanics and Relativity”	3 credits	16 students
2004 Fall :	Phys142 “Principles of Physics II”	4 credits	21 student
2004 Spring :	Phys625 “Nonrelativistic Quantum Mechanics”	3 credits	12 students
2003 Fall :	Phys142 “Principles of Physics II”	4 credits	19 students
2003 Spring :	Phys420 “Principles of Modern Physics”	3 credits	21 students
2002 Spring :	Phys625 “Nonrelativistic Quantum Mechanics”	3 credits	13 students
2000 Fall :	Phys832 “Theory of Solids I”	3 credits	13 students
2000 Spring :	Phys625 “Nonrelativistic Quantum Mechanics”	3 credits	10 students
1999 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	31 students
1998 Fall :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	50 students
1998 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	20 students
1997 Fall :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	16 students
1997 Spring :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	25 students
1996 Fall :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	14 students
1996 Spring :	Phys622 “Introduction to Quantum Mechanics I”	4 credits	13 students
1995 Fall :	Phys623 “Introduction to Quantum Mechanics II”	3 credits	10 students

1994 Spring : Phys832 "Theory of Solids I" 3 credits 7 students

3.a.ii Specialized

2001 Spring : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 5 students
2000 Fall : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 3 students
2000 Spring : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 5 students
1999 Fall : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 5 students
1999 Spring : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 4 students
1998 Fall : Phys739 "Seminar in Theoretical Solid State Physics" 1 credit 4 students

3.a.iv Independent Study, Tutorial, Internship Supervision

2023 Fall : Phys398 "Independent Studies Seminar", 1 student
2012 Fall : Upon request, gave an overview lecture on statistical physics and thermodynamics
: for undergraduate students preparing for GRE exam, 15 students
2012 Spring : Phys398 "Independent Studies Seminar", 1 student
2008 Spring : Phys398 "Independent Studies Seminar", 1 student
2008 Spring : Phys499B "Special Problems in Physics", 1 student
2004 Fall : Phys798 "Special Problems in Advanced Physics", 1 student
1996 Summer : Phys798 "Special Problems in Advanced Physics", 1 student

3.c Textbook, Manuals, Notes, Software, Web Pages, and Other Contributions to Teaching

In the framework of graduate reform, Yakovenko designed and taught a **new course** Phys613 "Quantum and Statistical Physics II" in Spring 2022, replacing previous two courses Phys622 and Phys623 "Introduction to Quantum Mechanics I and II".

Long-term mentor for the courses Phys141 and Phys142 since 1/2005. Reviewed new lab manual for Phys142 and made suggestions for improvements and correction of errors.

Uncovered a serious problem in a Phys142 laboratory experiment and suggested ways to fix it. Found that unbalanced magnetic poles in a magnetic damper leak magnetic field, which significantly distorts measurements of Ampère's force between two currents.

As the long-term mentor of Phys141–142, I participated in discussions with other teaching faculty concerning selection of another textbook for this course sequence after the publisher increased the price well above $100 for the new edition of Serway and Jewitt. We decided to abandon that textbook and switch to the electronic textbook by Tipler and Mosca from a different publisher at a significantly lower cost of about $30.

Created and posted online sets of problems for the following courses:

- PHYS 374 "Intermediate Theoretical Methods"
- PHYS 402 "Quantum Physics II"
- PHYS 404 "Introduction to Statistical Thermodynamics"
- PHYS 411 "Intermediate Electricity and Magnetism"

- PHYS 601 "Theoretical Dynamics"
- PHYS 603 "Methods of Statistical Physics"
- PHYS 613 "Quantum and Statistical Physics II"
- PHYS 622/623 "Introduction to Quantum Mechanics"
- PHYS 625 "Nonrelativistic Quantum Mechanics"

The problems are typeset in LaTeX and utilized by students and other professors who teach these courses, see `http://physics.umd.edu/~yakovenk/teaching/`

3.d Teaching Awards and Other Special Recognition

I received letters of commendation for outstanding teaching performance from the Departmental Chair in 2011, 2014, 2015, and for Fall 2018.

Recognized as the faculty mentor who has made the most impact on academic achievement by the undergraduate student Zachary Siegel, a 2014-2015 Philip Merrill Presidential Scholar, UMD.

Dr. Sam Teitelbaum, Assistant Professor at Arizona State University, indicated Yakovenko as a major influence, `https://news.asu.edu/20221229-changing-way-we-think-about-world`

- Q: What was the moment when you discovered your passion for science?
  A: When I started college at the University of Maryland, I had a professor for electricity and magnetism named Victor Yakovenko ...
- Q: What were other pivotal moments in your career?
  A: ... Then in graduate school, I was able to apply that passion for complex materials that started in Professor Yakovenko's class ...

3.f Advising: Other Than Research Direction

3.f.i Undergraduate

1997–1999 : Ekaterina Leistner, B.S. 5/1999
1998–2003 : Alexey Toptygin, B.S. 5/2003
2000–2001 : Joshua Warfield, switched to Mechanical Engineering
2001–2002 : Brian Ross, B.S. 5/2002
2003–2005 : Yevgeniy Tyurmin, switched to a different major
2005–2007 : Michael Day, switched to a different major
2005–2012 : Vadim Korotkikh
2005–2007 : Joseph Munson, switched to a different major
2005–2008 : Christopher Spears
2007–2008 : Philip Isett, switched to a different major
2007–2008 : Steven Rothenberg
2009–2011 : Rafael Rovirosa
2009–2011 : Temuge Batpurev
2009–2012 : Jan Babiuch-Hall
2011 : Jasper Saberi
2012–2015 : Zachary Siegel, B.S. 5/2015
2012–2012 : Zachary George
2016 : Nicholas Lawson
2017 : John Fraser

2016–2017 : Claudio Pineda Bosque
2016–2018 : Brock Peters
2017–2018 : Jocelle Royce Lee
2017–2019 : Sean Winters
2017–2019 : Kun Do
2019 : Mingwei Zhu
2019 : Ethan Zack
2019 : Ben Knutson
2020–2021 : Veronica Kunzle
2020–2022 : Samuel Felsenfeld
2020–2022 : William Heffernan
2020–2022 : Yucun Xie

3.f.ii Graduate

2003 : Emrah Altunkaya
2003 : Jared Hertzberg
2003 : William Boggs
2003 : Mark Burky
2003 : Paul Hohler
2004 : Jianhao Chen
2004 : Shixiong Zhang
2004 : Kaushik Mitra
2004 : Rajesh Sathiyanarayanan
2004 : Solomon Granor
2004 : Brian Christy
2006 : Konstantin Safronov
2006 : Alexey Karavaev
2006 : Oleg Zatsepin
2006 : Pavel Nagornykh
2006 : Baladitya Suri
2012 : Aaron Lee
2012 : Kenneth Wright
2012 : Caroline Figgatt

3.f.iii Other advising and mentoring activities (advising student groups, special assignments, recruiting, faculty mentorship, etc.)

- Shared "Teaching on Zoom" experience with faculty members in a group session (9 June 2020) and via individual mentoring
- **Chair** of promotion committee to Associate Professorship for Prof. Maissam Barkeshli (2019)
- Teaching **mentor** and member of promotion committee to Associate Professorship for Prof. Jay Sau (2014–2018)
- Faculty **mentor** and **chair** of promotion committees to Associate and Full Professorship for Prof. Victor Galitski (2006–2011 and 2013)
- Conducted a teaching peer review of Assistant Prof. Vladimir Manucharyan (2014)
- Conducted a tutorial session at Kamp Kwal-i-Fire for graduate students preparing for physics qualifier examination (2014)

3.g Advising: Research Direction

3.g.i Undergraduate

2003 : Alexandre Rostovtsev
2004–2005 : William Keay
2006–2008 : Roman Przygodzki
2012 : Syed Ali and Seth Terry
2013–2015 : Scott Lawrence
2015–2018 : Benedict Mondal
2020–2022 : Danial Ludwig

3.g.iii Doctoral

1993–1997 : Anatoley T. Zheleznyak, Ph.D. 1997
Thesis: "Theoretical Studies of Phase Transitions and Transport Properties in High-T_c Superconductors and Quasi-One-Dimensional Organic Metals"
Senior Scientist/Physicist, Digital Signal Corp, Arlington, VA

1994–1999 : Hsi-Sheng Goan, Ph.D. 1999
Thesis: "Theoretical Studies in Quasi-One-Dimensional Conductors"
Professor, Department of Physics, National Taiwan University, Taipei

1996–2001 : Krishnendu Sengupta, Ph.D. 2001
Thesis: "Electronic Properties of Low-Dimensional Systems with Broken Symmetries: A Theoretical Study"
Professor, Indian Association for the Cultivation of Science, Kolkata, India

1997–2002 : Adrian Drăgulescu, Ph.D. 2002
Thesis: "Applications of Physics to Economics and Finance: Money, Income, Wealth, and the Stock Market"
Risk Analyst at Constellation Energy Group, Baltimore

2002–2005 : A. Christian Silva, Ph.D. 2005
Thesis: "Applications of Physics to Finance and Economics: Returns, Trading Activity and Income"
Financial Quantitative Analyst at Ivory Investment Management

6–11/2003 : Haeyong Kang, a visiting student from Ewha Womans University, Seoul, South Korea

2004–2005 : Benjamin Cooper, switched to experiment in superconductivity at UMD

2005–2008 : Anand Banerjee, Ph.D. 2008
Thesis: "Studies of Complex Systems in Condensed Matter Physics and Economics"
Postdoc at the National Institutes of Health (NIH)

2007–2009 : Pavel Nagornykh (JQI Graduate Fellow), co-advised with Prof. Victor Galitski, now does experimental work with Dr. Bruce Kane

2013 : Qin Liu, switched to another research supervisor

2009–2014 : Sergey Pershoguba, Ph.D. 2014
Ann G. Wylie Dissertation Fellowship award by UMD in 2013
Thesis: "Interlayer Interaction Phenomena in Novel Materials"

Postdoc at the Nordic Institute for Theoretical Physics (Nordita), Stockholm, Sweden

2013–2016 : Yuchen Peng, Ph.D. 2016, outside advisor Dr. Frank Gaitan (LPS)
Thesis: "Quantum Gate and State Preparation through Neighboring Optimal Control"

2013–2017 : Secondary co-advisor to Ayoti Patra, primary Prof. Chris Jarzynski (Chemistry Dept)

2015 : Efim Rozenbaum (JQI Graduate Fellow), primary advisor Prof. Victor Galitski

2015–2018 : Safa Motesharrei, Ph.D. 2018, co-advised with Profs. James A. Yorke and Eugenia Kalnay
Thesis: "Carrying Capacity of Two-Way Coupled Earth-Human Systems"

2014–2019 : Lance Boyer, Ph.D. 2019
Thesis: "Time-Reversal Symmetry Breaking in Superconducting Systems"
Employed at the Applied Physics Laboratory, Maryland

3.g.iv Postdoctoral

1996–1998 : Nicolas Dupuis (now Researcher Scientist at Université Pierre et Marie Curie, Paris)
1999–2003 : Hyok-Jon Kwon (now Assistant Professor of Business Administration at the University of Illinois in Urbana-Champaign)
2000–2001 : Andrei Lopatin (then Research Associate at the Argonne National Laboratory)
2000–2001 : Igor Zutic (CMTC postdoc, now Professor at SUNY Buffalo)
2004–2005 : Ying Zhang (CMTC postdoc, now at Goldman-Sachs)
2005–2005 : Victor Galitski (CMTC postdoc, now Professor at UMD)
2007–2008 : Sumanta Tewari (CMTC postdoc, now Assistant Professor at Clemson University)
2007–2008 : Chuanwei Zhang (CMTC postdoc, now Assist. Prof. at Washington State University)
2007–2010 : Roman Lutchyn (JQI postdoc, now researcher at Microsoft Station Q)
2009–2010 : Maxim Dzero (postdoc with Galitski, now Assist. Prof. at Kent State University)
2011–2012 : Gregory Boyd (postdoc with Galitski, now postdoc at Georgetown University)
2013–2014 : Kostyantyn Kechedzhi (CMTC postdoc, now researcher at USRA in Mountain View, CA)
2016–2017 : Mehdi Kargarian, co-advised with Prof. Victor Galitski

3.h **Extension Activities:** Major Programs Established, Workshops, Presentations, **Media Activities,** Awards, Honors, etc.

2002 Econophysics work by Yakovenko was featured in *American Scientist* magazine, `http://www.americanscientist.org/issues/pub/2002/5/follow-the-money`

2003 Econophysics work by Yakovenko was featured in *Australian Financial Review* newspaper

2005 Econophysics work by Yakovenko was featured in *New York Times Magazine*, `http://www.nytimes.com/2005/12/11/magazine/11ideas1-15.html`

2005 Econophysics work by Yakovenko was featured in *New Scientist* magazine, `http://www.newscientist.com/article/dn7107`

2006 Econophysics work by Yakovenko was featured in *Australian Financial Review* newspaper

2008 Econophysics work by Yakovenko was featured in *Faculty Voice* newspaper at UMD, `http://www.facultyvoice.umd.edu/All%20past%20issues/2007-2008/Mar_2008_Vol21_No3.pdf`

2009 Econophysics work by Yakovenko was featured in blog *Science 2.0*, `http://www.science20.com/principia_polymathematica/distribution_money_and_ability`

2011 Econophysics work by Yakovenko was featured in *Engineering and Technology Magazine*, a publication of the UK Institution of Engineering and Technology, http://eandt.theiet.org/magazine/2011/06/economy-of-the-brain.cfm

2012 Yakovenko was interviewed for a press release by Purdue University about the first experimental observation (*Nature Physics* 2012) of the fractional Josephson effect predicted theoretically by Yakovenko in 2003–2004, also featured in a *News & Views* article in *Nature Physics*, http://www.purdue.edu/newsroom/

2012 A press release by the Joint Quantum Institute (JQI) of UMD featured talks on econophysics presented by Yakovenko at NYU and at the New School for Social Research, http://jqi.umd.edu/news/inequality-and-investment-bubbles

2012 Articles in *College Park Patch* and *Gazette* highlighted the *Green Award* to Yakovenko from the Committee for a Better Environment of the City of College Park for installation of solar panels, reduction of energy consumption, and sharing his experience, http://collegepark.patch.com/articles/college-park-residents-honored-for-environmental-work

2013 A video interview with Yakovenko, as a grantee of the Institute of New Economic Thinking (INET), is featured on the INET Web site, http://ineteconomics.org/institute-blog/victor-yakovenko-what-causes-inequality-econophysics-approach

2013 An article on helical micro-currents in cuprate superconductors, published by Yakovenko in PRL (2013), was featured in the online newsletter *Waves and Packets* by the National Society of Black Physicists, http://www.multibriefs.com/briefs/nsbp/nsbp072713.php

2014 A press release by JQI featuring a paper by Yakovenko on global inequality in energy consumption was picked by more than 30 online news outlets, e.g. http://phys.org/news/2014-01-entropy-nations-global-energy-inequality.html

2014 Yakovenko was interviewed on Brian Lehrer's TV show in the segment *Public Intellectual* starting around minute 40 at http://www.cuny.tv/show/brianlehrer/PR2002638

2014 Econophysics work by Yakovenko was featured in the special issue *The Science of Inequality* of the *Science* magazine http://www.sciencemag.org/content/344/6186/828

2014 A TV interview with Yakovenko appeared in the episode "Is Poverty Genetic?" in the series *Through the Wormhole with Morgan Freeman* on Science Channel, http://www.sciencechannel.com/tv-shows/through-the-wormhole/videos/the-rich-dont-play-by-the-same-rules.htm

2021 Referenced in Alexis Goldstein's opinion article "The trouble with gamestop is that the house still wins", New York Times, 1 February 2021.

2021 Econophysics work by Yakovenko is extensively covered in Ch. 3 of the book *Anthill Economics: Animal Ecosystems and the Human Economy* published in 2021 by science journalist Nathanial Gronewold, who interviewed him in depth in 2019.

2023 A long Zoom meeting and e-mail exchanges with Sebastian Fernandez-Mulligan, a graduate student at History Department of Yale University (B.S. in Physics from University of Chicago), working on a Ph.D. thesis and a book on history of econophysics (27 January 2023)

2023 Recorded a podcast about econophysics with the JQI media specialist Dina Genkina (3 February 2023)

4 Service

4.a Professional

4.a.i Offices and committee memberships held in professional organizations

- Board Member of the Complex Systems Laboratory, `http://complexsystemslab.com`, Eastern Macedonia & Thrace Institute of Technology, Kavala, Greece (2019 – 2022)
- Member of the Scientific Program Committee for *Econophysics Colloquium* conference, Palermo, Italy (2018)
- Member of the International Advisory Board for *International Workshop on Electronic Crystals* (ECRYS), France (2002, 2008, 2011, 2014)
- Member of organizing committee for the workshop *Electronic States and Phases Induced by Electric or Optical Impacts* (IMPACT), Orsay, France (2012)
- Member of the organizing committees for the conference on *Economic Science with Heterogeneous Interacting Agents* (ESHIA): George Mason University (2007) and Warsaw, Poland (2008)

4.a.ii Reviewing activities for agencies

- 48 proposals for the National Science Foundation
- 3 proposals for the American Chemical Society
- 5 proposals for the Institute for New Economic Thinking
- 1 proposal for the U.S. Civilian Research and Development Foundation (CRDF) (2005)
- 1 proposal for the University of South Carolina NanoCenter (2005)
- 1 proposal for the Louisiana Board of Regents Research Competitiveness Program (2005)
- 1 proposal for the Science-Centers-in-the-Former-Soviet-Union program of the U.S. Department of State (2001)
- 2 proposal for the Austrian Science Fund FWF (2009, 2014)
- 1 proposal for the Fondazione Cariparo, Cassa di Risparmio di Padova e Rovigo, Italy (2009)
- 1 proposal for Central Research Committee of the Free University of Bozen-Bolzano, Italy (2015)
- 1 proposal for the Engineering and Physical Sciences Research Council, United Kingdom (2011)
- Evaluator for the Latsis Prize given to junior scientists of ETH, Zurich, Switzerland (2001)
- Evaluator for research promotions at the University of Queensland, Australia (2001, 2004)

4.a.iv Other non-University committees, commissions, panels, etc.

- Organized *Focus Session on Econophysics* at the March Meetings of the American Physical Society: Baltimore 2006, Denver 2007, New Orleans 2008
- Sorted abstracts for the March Meetings of the American Physical Society (1993, 2005–2007)
- Chaired sessions at the March Meetings of the American Physical Society (2006–2008, 2010, 2011) and numerous other conferences

4.a.v International activities not listed above

Served as an external member of dissertation committees and reviewed Ph.D. theses for

- Guennadi Chitov, University of Sherbrooke, Canada (1998)
- Perez Moses, University of New South Wales, Australia (2001)
- Yonatan Berman, Tel-Aviv University, Israel (2017/2018)
- Alex Kindler, Hebrew University of Jerusalem, Israel (2018)

4.a.vi Paid consultancies

Consulted for Planning Systems Inc., Reston, Virginia (2004)

4.b University

4.b.i Departmental

- **Chair** of the Qualifying Exam Committee, implemented transition from old to new qualifier exam (2021–present)
- **Deputy Director** of Condensed Matter Theory Center (CMTC) (January – April 2020)
- **Chair** of the promotion committee to Associate Professorship for Prof. Maissam Barkeshli (2019)
- Member of promotion committee to Full Professorship for Prof. Maissam Barkeshli (2023)
- Teaching **mentor** and member of promotion committee to Associate Professorship for Prof. Jay Sau (2014–2018)
- Member of the promotion committee to Full Professorship for Prof. JP Paglione (2014)
- Faculty **mentor** and **chair** of promotion committees to Associate and Full Professorship for Prof. Victor Galitski (2006–2011 and 2013)
- **Chair** and member of the internal Physics APT Committee (2006–2008)
- Served on Condensed Matter Theory Search Committees (2005–2006, 2009–2010)
- Served on Condensed Matter Experiment Search Committees (2005–2008)
- Conducted a teaching peer review of Assistant Prof. Vladimir Manucharyan (2014)
- Conducted a teaching interview for a Physics faculty search (2018, 2020, 2022)
- Served on Physics Council (1995–1997, 1998–1999, 2013)
- Served on Physics Library Committee (2000–present)
- Served on the elected Faculty Merit Review Salary Advisory Committee (2002–2004, 2009–2011, 2014, 2022)
- Served on a committee to advise on grades in graduate courses (2021)
- Member of the Qualifying Exam Committee: reviewed and edited problems, as well as proctored at qualifying exams (2009–2013)
- Served on the Expanded Qualifying Exam Committee (1993, 1996–present)
- Framed problems for the Qualifying Exam: since 1993, spring 2014, spring 2015, spring 2017; graded in August 2017; reviewed qualifier problems in Fall 2017, framed and graded, provided solutions Fall 2019. Fall 2020
- Served on 54 Ph.D. dissertation committees, 2 oral Qualifying Examinations, and reviewed 1 Master's non-thesis scholarly paper
- Served on Postdoctoral Selection Committee for CMTC (2018/2019)
- Served on the Graduate Admission Committee (2005–2008, 2015, 2018)
- Reviewed applications for graduate admission from Eastern Europe (1993–2008)
- Responded by e-mail to perpetual stream of inquiries from perspective graduate students and postdocs (never stops)
- Met with perspective graduate students and participated in the open house (1994–present)
- Served on the CNAM Graduate Fellowship selection committee (2008)
- Advised incoming graduate students: 5 in 2003, 6 in 2004, 5 in 2006, 3 in 2012
- Helped to represent Physics Department at the Maryland Day on campus (2006, 2007, 2011)
- Coordinated Condensed Matter Physics Seminar and maintained its Web page (1998–2001)
- Hosted numerous colloquium and seminar speakers (ongoing)

4.b.ii College

- Served on the CMNS Appointments, Promotion, & Tenure (APT) committee (2012–2014)
- Served on the CMPS Programs, Curricula & Courses (PCC) committee (2005–2006)
- Served on the CMPS library committee (2000–present)

4.b.iii University

- Member of the University Library Council of the University Senate (2011–2015)
- Served on the campus committee to select nominations for the David and Lucile Packard Fellowship in Science and Engineering (1998–2008, 2015, 2017)
- Volunteered for a joint pilot project "The Art of Presentation" between CMNS, School of Engineering, and School of Theater, Dance, and Performance Studies (2013–2014)
- Volunteered to review (2017) and perform beta-testing (2018) of the Faculty Insight reporting software
- Served at Ph.D. defenses as Dean's Representative and an outside committee member
  - Chemical Physics Program (4)
  - Applied Mathematics and Statistics Program (10)
  - Department of Electrical and Computer Engineering (2)
  - Department of Computer Science (2)
  - Department of Mathematics (2)
  - School of Public Policy
  - School of Music
  - Department of Aerospace Engineering (for a comprehensive Ph.D. examination)
- Attended a faculty dinner with undergraduates at the request by the Provost (2008, 2010)
- Attended the UMD Library Summit (2007)

4.b.v Other

Served on several committees of the Joint Quantum Institute (JQI) between UMD and NIST

- Committee on Bylaws (2006)
- Created and maintained the JQI seminar Web page (2006)
- Committee on Selection of Graduate Fellows (2006, 2011, 2013, 2018, 2021)
- Committee on Selection of Postdoctoral Fellows (2010, 2012, 2018/2019, 2019/2020)

4.c Community, State, National, outreach

- By invitation, met and shared experience with participants of the Conferences for Undergraduate Women in Physics (CUWiP) at UMD (2014)
- Operated demonstrations and answered questions at the JQI booth at the Science and Engineering Festival in Washington DC (2014)
- Presented my solar-powered home in College Park at the annual *Tour of Solar Homes* in the metropolitan Washington DC area (2012, 2013, 2014, 2016, 2018)
- Gave a talk "A year in a solar-powered house" at the *Solar Energy Workshop* organized by Committee for a Better Environment at the City of College Park (5 May 2012)
- Judged student posters at the annual conference of AAAS in Washington, DC (2011)
- Judged the Prince George's County Area Science Fair, Largo (2003)

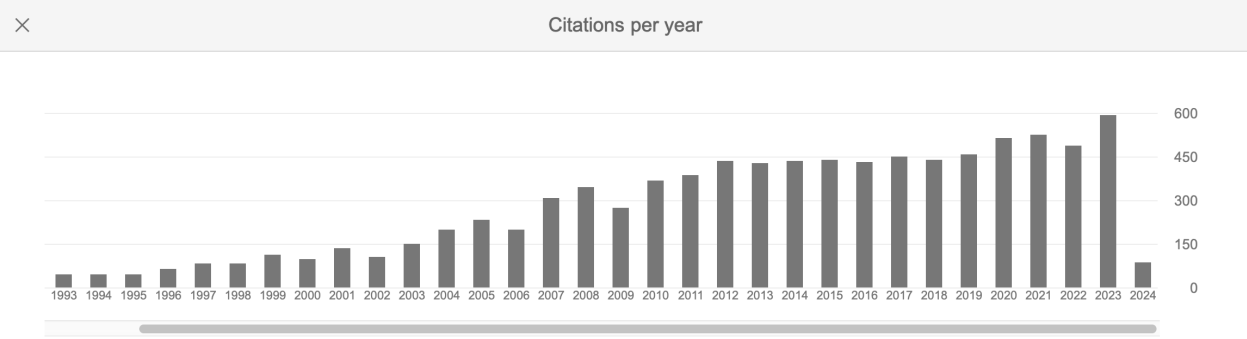
- Supervised a summer research project of Justin Chen, an undergraduate physics student from Caltech (2007)
- Supervised research project of David Levit, a student of the Thomas Jefferson High School for Science and Technology in Fairfax County, Virginia (2005–2006)
- Answered e-mail questions of Alan Du, a student at Takoma Park Middle School, about econophysics (2010)
- Answered e-mail questions of Eric Gottlieb, a junior at the Park School of Baltimore (2005)
- Answered questions of high-school students at Physics Olympics organized by the Department of Physics (1998)
- Created and maintained a Web page of Russian-language cultural events in the Washington, DC area (1997–2003)
- Helped with drum accompaniment for *Physics Sing-Along* concerts at the March Meetings of the American Physical Society (2006–2008, 2010, 2011, 2013)
- Played drums with the CMNS jazz combo at holiday parties of Biology and Physics Departments (2017, 2018), music highly appreciated by staff personnel

4.d Service Awards and Honors

2012 Received *Green Award* from the Committee for a Better Environment of the City of College Park for installation of solar panels and reduction of energy consumption

2023 Received *Green Award* from the Committee for a Better Environment of the City of College Park for installation of a geothermal system in 2019 and sharing information with the community

Citation metrics as of March 10, 2024



Google Scholar `https://scholar.google.com/citations?user=pEnxwCMAAAAJ`
Citations 9240 H-index 45
> 1000 citations: 1 paper
> 700 citations: 1 paper
> 500 citations: 1 paper
> 400 citations: 2 papers
> 300 citations: 2 papers
> 200 citations: 3 papers
> 100 citations: 11 papers