Abridged CV of Alex D. Gottlieb

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Education

1991 - '98   University of California, Berkeley, California

PhD in Mathematics

1986 - '91   Purdue University, West Lafayette, Indiana

BS with Honors in Mathematics

Employment

Currently: Senior Researcher

Wolfgang Pauli Institute, Vienna

2012 - '13   Instructor

University of Hawaii at West Oahu

2008 - '11   Project Manager, "Correlation in Quantum Systems"

Supported by a grant from the Vienna Science and Technology Fund

2005 - '07   Post-Doc

Wolfgang Pauli Institute, Vienna

2001 - '04   Research Associate

Fakultät für Mathematik, Uni. Wien

2000   Visiting Assistant Professor

Mathematics Department, UC Berkeley

1999 - '00   Visiting Postdoctoral Fellow

Lawrence Berkeley National Laboratory

Grants and Fellowships

- Principal Investigator of research project "Correlation in Quantum Systems": This four-year project was affiliated to the Wolfgang Pauli Institute in Vienna and funded by a grant of € 446000 from the WWTF (Vienna Science and Technology Fund). It was one of ten applied mathematics projects that were awarded grants under the € 4.47 million WWTF funding program "Mathematik *und . . .* " of 2007.
- Visiting Scholar, UH Mathematics, 2006 - '10
- Visiting Scholar, UCLA Mathematics, 2004 - '05

Teaching and Curriculum Development

- Instructor, University of Hawaii West Oahu, AY 2012-13:
  "College Algebra", "Math for Elementary School Teachers I"
  and "Math for Elementary School Teachers II"
- Lecturer, University of Hawaii (UH) Mathematics, Summer 2012:
  "Calculus I" and "Introduction to Programming"
- Assistant Professor at UH, Fall 2011:
  "Numerical Analysis I" and "Calculus for Business and the Social Sciences"
- Instructor, University of Vienna Mathematics, Summer 2011:
  "Nonlinear Schrödinger Equations"
- Assistant Professor at UH, Fall 2010:
  "Calculus IV" and "Introduction to Programming"
- Assistant Professor at UH, Fall 2009:
  "Numerical Analysis I" and "Calculus for Business and the Social Sciences"
- Lecturer at UH, Summer 2008:
  "Introduction to Linear Algebra"
- Lecturer at UH, Spring 2008:
  "Calculus for Business and the Social Sciences"
- Lecturer at UH, Fall 2007:
  "Calculus II"
- Instructor at Hawaii Tokai International College (HTIC), Summer 2007:
  "Survey of Mathematics"
- Lecturer at UH, Summer 2007:
  "Calculus for Business and the Social Sciences"
- Instructor at HTIC, Spring 2007:
  "Survey of Mathematics"
- Lecture series for the Graduate Preparation Program at HTIC, Winter 2007:
  "Statistics for Graduate Studies"
- Instructor at HTIC, Fall 2006:
  "Trigonometry and Analytic Geometry"

- Lecturer at UH, Summer 2006:
  "Calculus for Business and the Social Sciences"
- Calculus teacher for the Native Hawaiian Science and Engineering Mentoring Program (Summer 2006)
- Visiting Assistant Professor at UC Berkeley, Spring 2000:
  "Mathematical Tools for Physics"
- Instructional technologies developer for Multivariable Calculus at UC Berkeley, 1996: coded graphical user interfaces in MatLab for an instructional computer lab and designed a series of lab projects to go with the software.

Peer Reviewed Publications

1. A. D. Gottlieb and N. J. Mauser.
   Correlation in fermion or boson systems as the minimum of entropy relative to all free states.
   Under review.
2. B. Juliá-Díaz, A. D. Gottlieb, J. Martorell, and A. Polls.
   Quantum and thermal fluctuations in bosonic Josephson junctions.
   Phys. Rev. A 88, 033601 (2013)
3. A. D. Gottlieb and R. M. Weishäupl.
   Strongly separated pairs of core electrons in computed ground states of small molecules.
   Comp. Theor. Chem. 1007, 82 - 89 (2013)
4. A. D. Gottlieb, J. D. Head, and D. Perusse.
   Natural molecular shells as open subsystems of small molecules.
   Int. J. Quant. Chem. 111, 4158 - 4173 (2011)
5. A. D. Gottlieb and T. Schumm.
   Quantum noise thermometry for bosonic Josephson junctions in the mean field regime.
   Phys. Rev. A 79, 063601 (2009)
6. S. Evans and A. D. Gottlieb.
   Hyperdeterminantal point processes.
   Metrika 69, 85 - 99 (2009)
7. A. D. Gottlieb.
   Introduction to determinantal point processes from a quantum probability viewpoint.
   QP-PQ, Quantum Probability and White Noise Analysis, Volume 20, World Scientific, 2007.
8. A. D. Gottlieb and N. J. Mauser.
   Properties of nonfreeness: an entropy measure of electron correlation
   Int. J. Quant. Inf. 5 (6), 815- 827 (2007)
9. C. Bardos, B. Ducomet, F. Golse, A. D. Gottlieb, and N. J. Mauser.
   The TDHF approximation for Hamiltonians with m-particle interaction potentials.
   Comm. Math. Sci. 5, 1 - 9 (2007)

10. A. D. Gottlieb and L. M. Wesoloski.
    Bardeen's tunneling theory as applied to Scanning Tunneling Microscopy.
    Nanotechnology 17, R57 - R65 (2006)
11. A. D. Gottlieb.
    Examples of bosonic de Finetti states over finite dimensional Hilbert spaces.
    J. Stat. Phys. 121, 497 - 509 (2005)
12. A. D. Gottlieb.
    Convergence of continuous-time quantum walk on the line.
    Phys. Rev. E 72, 047102 (2005)
13. A. D. Gottlieb and N. J. Mauser.
    New measure of electron correlation.
    Phys. Rev. Lett. 95, 123003 (2005)
14. A. D. Gottlieb, S. Janson, and P. Scudo.
    Convergence of quantum walks in d-dimensional Euclidean space.
    Infinite Dimensional Analysis, Quantum Probability and Related Topics 8 (1),
    129 - 140 (2005)
15. C. Bardos, F. Golse, A. D. Gottlieb, and N. J. Mauser.
    *Accuracy of the time-dependent Hartree-Fock approximation for uncorrelated
    initial states.*
    J. Stat. Phys. 115, 1037-1055 (2004)
16. C. Bardos, F. Golse, A. D. Gottlieb, and N. J. Mauser.
    On the derivation of nonlinear Schrödinger and Vlasov equations.
    IMA Volumes in Mathematics and its Applications, Volume 136, Dispersive
    Transport Equations and Multiscale Models (2004).
17. C. Bardos, F. Golse, A. D. Gottlieb, and N. J. Mauser.
    *Mean-field dynamics of fermions and the time-dependent Hartree-Fock
    equation.*
    J. Math. Pures Appl. 82, 665 - 683 (2003)
18. A. D. Gottlieb.
    *Asymptotic equivalence of the jackknife and infinitesimal jackknife variance
    estimators for some smooth statistics.*
    Annals of the Institute of Statistical Mathematics 55, 555 - 561 (2003)
19. A. D. Gottlieb.
    Propagation of chaos in classical and quantum kinetics.
    Stochastic Analysis and Mathematical Physics II (R. Rebolledo, ed.)
    Trends in Mathematics, Birkhäuser, 2003.
20. A. D. Gottlieb and J. Lipman.
    Group-theoretic axioms for projective geometry.
    Canad. J. Math. 43, 89 - 107 (1991)

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*Confucius said, "Do not be concerned that you lack an official position, but rather
concern yourself with the means by which you might take your stand. Do not be
concerned that no one has heard of you, but rather strive to become a person worthy
of being known."*
----- The Analects of Confucius 4.14 (Edward G. Slingerland, translation)