

# CURRICULUM VITAE

## DIETRICH BELITZ

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**Education:** 1982 Dr. rer. nat. (Physics), Technical University Munich (W. Götze, advisor)  
1980 Diploma (Physics), Technical University Munich (W. Götze, advisor)

### Career/Employment:

2023–present: Professor Emeritus of Physics, University of Oregon, Eugene, OR  
1997–2022: Professor of Physics, University of Oregon, Eugene, OR  
2019–present: Member, Institute for Fundamental Science, University of Oregon, Eugene, OR  
1987–present: Member, Materials Science Institute, University of Oregon, Eugene, OR  
2013–2019: Director, Institute of Theoretical Science, University of Oregon, Eugene, OR  
1989–2019: Member, Institute of Theoretical Science, University of Oregon, Eugene, OR  
2004–2010: Associate Dean for Natural Sciences, University of Oregon, Eugene, OR  
1998–2004: Department Head, Physics, University of Oregon, Eugene, OR  
1991–1997: Associate Professor of Physics, University of Oregon, Eugene, OR  
1987–1991: Assistant Professor of Physics, University of Oregon, Eugene, OR  
1985–1987: Research Associate, Dept. of Physics & Astronomy, University of Maryland, College Park, MD  
1982–1985: Research Associate, Department of Physics, Technical University Munich, Munich, FRG  
1980–1982: Member of Scientific Staff (part time), Technical University Munich, Munich, FRG

### Visiting Positions:

Dec 2007: Visiting Member, Institute for Theoretical Physics, University of California, Santa Barbara, CA  
Jan/Feb 2005: Visiting Member, Institute for Theoretical Physics, University of California, Santa Barbara, CA  
Nov/Dec 1998: Visiting Member, Institute for Theoretical Physics, University of California, Santa Barbara, CA  
Feb–Apr 1992: Visiting Member, Institute for Theoretical Physics, University of California, Santa Barbara, CA  
Summer 1989: Consultant, Department of Physics, University of Maryland, College Park, MD

### Honors and Awards:

Fellow, American Physical Society

### Memberships:

American Physical Society  
Deutsche Physikalische Gesellschaft

## RESEARCH ACTIVITIES

### Publications:

#### A. Major Review Articles

3. M. Brando, D. Belitz, F. M. Grosche, and T. R. Kirkpatrick, “Metallic Quantum Ferromagnets”, *Rev. Mod. Phys.* **88**, 025006 (2016). <https://doi.org/10.1103/RevModPhys.88.025006>
2. D. Belitz, T. R. Kirkpatrick, and T. Vojta, “How Generic Scale Invariance Influences Classical and Quantum Phase Transitions”, *Rev. Mod. Phys.* **77**, 579 (2005). <https://doi.org/10.1103/RevModPhys.77.579>
1. D. Belitz and T. R. Kirkpatrick, “The Anderson-Mott Transition”, *Rev. Mod. Phys.* **66**, 261 (1994). <https://doi.org/10.1103/RevModPhys.66.261>

#### B. Original Publications in Refereed Journals

142. T. R. Kirkpatrick and D. Belitz, “A Fluctuation-Response Relation as a Probe of Long-Range Correlations in Non-Equilibrium Quantum and Classical Fluids”, *Phys. Rev. E* **109**, 044140 (2024) <https://doi.org/10.1103/PhysRevE.109.044140>
141. T. R. Kirkpatrick and D. Belitz, “Fluctuation-Dissipation Relation in a Non-Equilibrium Quantum Fluid”, *Phys. Rev. Lett.* **131**, 244001 (2023) <https://doi.org/10.1103/PhysRevLett.131.244001>
140. T. R. Kirkpatrick and D. Belitz, “Velocity-Dependent Forces and Non-Hydrodynamic Initial Conditions in Quantum and Classical Fluids”, *Eur. Phys. J. Spec. Top.* **232**, 3495 (2023) <https://doi.org/10.1140/epjs/s11734-023-01032-y>
139. J. Amarel, D. Belitz, and T. R. Kirkpatrick, “Thermal Transport and Non-Mechanical Forces in Metals”, *Phys. Rev. B* **106**, 125105 (2022) <https://doi.org/10.1103/PhysRevB.106.125105>
138. T. R. Kirkpatrick and D. Belitz, “Fluctuating Quantum Kinetic Theory”, *Phys. Rev. B* **105**, 245147 (2022) <https://doi.org/10.1103/PhysRevB.105.245147>
137. D. Belitz and T. R. Kirkpatrick, “Soft modes in Fermi liquids at arbitrary temperatures”, *Phys. Rev. B* **105**, 245146 (2022) <https://doi.org/10.1103/PhysRevB.105.245146>
136. T. R. Kirkpatrick, D. Belitz, and J. R. Dorfman, “Non-Hydrodynamic Initial Conditions are Not Soon Forgotten”, *Phys. Rev. E* **104**, 024111 (2021) <https://doi.org/10.1103/PhysRevE.104.024111>
135. T. R. Kirkpatrick, D. Belitz, and J. R. Dorfman, “Rigidity and Superfast Signal Propagation in Fluids and Solids in Non-Equilibrium Steady States”, *J. Chem. Phys. B* **125**, 7499 (2021). <https://doi.org/10.1021/acs.jpcc.0c11283>
134. J. Amarel, D. Belitz, and T. R. Kirkpatrick, “Rigorous results for the electrical conductivity due to electron-phonon scattering”, *J. Math. Phys.* **62**, 023301 (2021). <https://doi.org/10.1063/5.0004277>
133. J. Amarel, D. Belitz, and T. R. Kirkpatrick, “Exact solution of the Boltzmann equation for low-temperature transport coefficients in metals II: Scattering by ferromagnons”, *Phys. Rev. B* **102**, 214307 (2020). <https://doi.org/10.1103/PhysRevB.102.214307>
132. J. Amarel, D. Belitz, and T. R. Kirkpatrick, “Exact solution of the Boltzmann equation for low-temperature transport coefficients in metals I: Scattering by phonons, antiferromagnons, and helimagnons”, *Phys. Rev. B* **102**, 214306 (2020). <https://doi.org/10.1103/PhysRevB.102.214306>

131. T.R. Kirkpatrick and D. Belitz, “Ferromagnetic Quantum Critical Point in Non-Centrosymmetric Systems”, *Phys. Rev. Lett.* **124**, 147201 (2020). <https://doi.org/10.1103/PhysRevLett.124.147201>
130. D. Belitz and T.R. Kirkpatrick, “Magnetic Quantum Phase Transitions in a Clean Dirac Metal”, *Phys. Rev. B* **100**, 174433 (2019). <https://doi.org/10.1103/PhysRevB.100.174433>
129. T.R. Kirkpatrick and D. Belitz, “Quantum Ferromagnetic Transition in Clean Dirac Metals”, *EPL* **127**, 57003 (2019). <https://doi.org/10.1209/0295-5075/127/57003>
128. T.R. Kirkpatrick and D. Belitz, “Soft modes and nonanalyticities in a clean Dirac metal”, *Phys. Rev. B* **99**, 085109 (2019). <https://doi.org/10.1103/PhysRevB.99.085109>
127. T.R. Kirkpatrick and D. Belitz, “Generic non-Fermi-liquid behavior of the resistivity in magnets with ferromagnetic, helical, or skyrmionic order”, *Phys. Rev. B* **97**, 064411 (2018). <https://doi.org/10.1103/PhysRevB.97.064411>
126. D. Belitz and T.R. Kirkpatrick, “Quantum triple point and quantum critical endpoints in metallic magnets”, *Phys. Rev. Lett.* **119**, 267202 (2017). <https://doi.org/10.1103/PhysRevLett.119.267202>
125. T.R. Kirkpatrick and D. Belitz, “Spin dynamics of antiferromagnets in the presence of a homogeneous magnetization”, *Phys. Rev. B* **95**, 214401 (2017). <https://doi.org/10.1103/PhysRevB.95.214401>
124. D. Belitz and T.R. Kirkpatrick, “Scaling Theory of a Compressibility-Driven Metal-Insulator Transition in a Two-Dimensional Electron Fluid”, *Phys. Rev. Lett.* **117**, 236803 (2016). <https://doi.org/10.1103/PhysRevLett.117.236803>
123. S. Bharadwaj, D. Belitz, and T.R. Kirkpatrick, “Magnon-induced long-range correlations and their neutron-scattering signature in quantum magnets”, *Phys. Rev. B* **94**, 144404 (2016). <https://doi.org/10.1103/PhysRevB.94.144404>
122. T.R. Kirkpatrick and D. Belitz, “Stable phase separation and heterogeneity away from the coexistence curve”, *Phys. Rev. B* **93**, 144203 (2016). <https://doi.org/10.1103/PhysRevB.93.144203>
121. T.R. Kirkpatrick and D. Belitz, “Quantum correlations in metals that grow in time and space”, *Phys. Rev. B* **93**, 125130 (2016). <https://doi.org/10.1103/PhysRevB.93.125130>
120. T.R. Kirkpatrick and D. Belitz, “Third law of thermodynamics and the shape of the phase diagram for systems with a first-order quantum phase transition”, *Phys. Rev. Lett.* **115**, 020402 (2015). <https://doi.org/10.1103/PhysRevLett.115.020402>
119. T.R. Kirkpatrick and D. Belitz, “Exponent relations at quantum phase transitions, with applications to metallic quantum ferromagnets”, *Phys. Rev. B* **91**, 214407 (2015). <https://doi.org/10.1103/PhysRevB.91.214407>
118. T.R. Kirkpatrick and D. Belitz, “Pre-asymptotic critical behavior and effective exponents in disordered metallic quantum ferromagnets”, *Phys. Rev. Lett.* **113**, 127203 (2014). <https://doi.org/10.1103/PhysRevLett.113.127203>
117. Y. Sang, D. Belitz, and T.R. Kirkpatrick, “Disorder dependence of the ferromagnetic quantum phase transition”, *Phys. Rev. Lett.* **113**, 207201 (2014). <https://doi.org/10.1103/PhysRevLett.113.207201>
116. S. Bharadwaj, D. Belitz, and T.R. Kirkpatrick, “Electronic relaxation rates in metallic ferromagnets”, *Phys. Rev. B* **89**, 134401 (2014). <https://doi.org/10.1103/PhysRevB.89.134401>
115. D. Belitz and T.R. Kirkpatrick, “Nonanalyticities in a Strongly Correlated Fermi Liquid: Corrections to Scaling at the Fermi-Liquid Fixed Point”, *Phys. Rev. B* **89**, 035130 (2014). <https://doi.org/10.1103/PhysRevB.89.035130>
114. T.R. Kirkpatrick and D. Belitz, “Anomalous Density-of-States Fluctuations in Two-Dimensional Clean Metals”, *EPL* **102**, 17002 (2013). <https://doi.org/10.1209/0295-5075/102/17002>
113. T.R. Kirkpatrick and D. Belitz, “Quantum Phase Transition in a Clean Two-Dimensional Electron System”, *Phys. Rev. Lett.* **110**, 035702 (2013). <https://doi.org/10.1103/PhysRevLett.110.035702>

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  110. T.R. Kirkpatrick and D. Belitz, “Theory of a Fermi-Liquid-to-Non-Fermi-Liquid Quantum Phase Transition in Dimensions  $d > 1$ ”, Phys. Rev. Lett. **108**, 086404 (2012). <https://doi.org/10.1103/PhysRevLett.108.086404>
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35. T. R. Kirkpatrick and D. Belitz, "A new universality class for the metal-insulator transition problem", *J. Phys. Cond. Matter* **4**, L37-L42 (1991)
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  33. T.P.Devereaux and D. Belitz, "Quasiparticle inelastic lifetimes in disordered superconducting films", *Phys. Rev. B* **44**, 4587-4600 (1991)
  32. D. Belitz and T. R. Kirkpatrick, "New phase of disordered Fermi systems", *Phys. Rev. B* **44**, 955-968 (1991)
  31. T. R. Kirkpatrick and D. Belitz, "Disorder-induced triplet superconductivity *Phys. Rev. Lett.* **66**, 1533-1536 (1991)
  30. T.P.Devereaux and D. Belitz, "Power-law temperature dependence of the inelastic scattering rate in disordered superconductors", *Phys. Rev. B* **43** (Rapid Commun.) 3736-3739 (1991)
  29. T. R. Kirkpatrick and D. Belitz, "The spin freezing transition in the disordered electron problem", *J. Phys. Cond. Matt.* **2**, 5259-5264 (1990)
  28. T. R. Kirkpatrick and D. Belitz, "Approaching the metal-insulator transition", *Phys. Rev. B* **41**, 11082-11100 (1990)
  27. T.P.Devereaux and D. Belitz, "Disorder enhancement of quasiparticle lifetimes in superconductors", *J. Low Temp. Phys.* **77**, 319-326 (1989)
  26. D. Belitz and T. R. Kirkpatrick, "Crossover and scaling phenomena in a disordered Fermi liquid", *Phys. Rev. Lett.* **63**, 1296-1299 (1989)
  25. T. R. Kirkpatrick and D. Belitz, "Existence of a phase transition in Finkelshtein's model for a disordered Fermi liquid", *Phys. Rev. B* **40** (Rapid Commun.), 5227-5230 (1989).
  24. D. Belitz, "Relation between the  $T_c$ -degradation and the correlation gap in disordered superconductors", *Phys. Rev. B* **40**, 111-114 (1989).
  23. D. Belitz and T. R. Kirkpatrick, "Interacting disordered electrons and the metal-insulator transition: The field theoretic approach reanalyzed", *Nucl. Phys. B* **316**, 509-525 (1989).
  22. D. Belitz, S. De Souza-Machado, T.P.Devereaux, and D.W.Hoard, "Electromagnetic response of disordered superconductors", *Phys. Rev. B* **39**, 2072-2083 (1989).
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  20. D. Belitz and S. Das Sarma, "Inelastic phase coherence time in thin metal films", *Phys. Rev. B* **36** (Rapid Commun.) 7701-7704 (1987).
  19. D. Belitz, "Electron-phonon interaction, ultrasonic attenuation, and Eliashberg function  $\alpha^2F(\omega)$  in impure metals", *Phys. Rev. B* **36**, 2513-2518 (1987).
  18. D. Belitz, "Theory of disorder-induced increase and degradation of superconducting  $T_c$ ", *Phys. Rev. B* **36**, 47-53 (1987).
  17. D. Belitz, "Theory for dirty superconductors. II. McMillan solution and  $T_c$ -degradation", *Phys. Rev. B* **35**, 1651-1658 (1987).
  16. D. Belitz, "Theory for dirty superconductors. I. Strong coupling equations", *Phys. Rev. B* **35**, 1636-1650 (1987).
  15. D. Belitz and S. Das Sarma, "Plasmon linewidth in metals and semiconductors: a memory function approach", *Phys. Rev. B* **34**, 8264-8269 (1986).
  14. T. R. Kirkpatrick and D. Belitz, "Critical behavior of transverse sound attenuation at a mobility edge", *Phys. Rev. B* **34** (Rapid Commun.) 9008-9011 (1986).



13. T. R. Kirkpatrick and D. Belitz, “Nonanalytic behavior of ultrasonic attenuation in disordered electronic systems”, Phys. Rev. B **34**, 2168-2175 (1986).
12. D. Belitz and T. R. Kirkpatrick, “Universal coefficients of perturbation expansion for the Anderson localization problem”, Phys. Rev. B **33** (Rapid Commun.) 7332-7335 (1986).
11. D. Belitz, “Correlation-induced reentry in impure superconductors”, Phys. Rev. Lett. **56**, 1175-1178 (1986).
10. D. Belitz, “Correlation gap mechanism for  $T_c$ -degradation in high-temperature superconductors”, J. Phys. F **15**, 2315-2331 (1985).
9. D. Belitz, “Theory of Anderson localization in weak magnetic fields”, Sol. State Commun. **52**, 989-992 (1984).
8. D. Belitz, “Electronic transport in solids: the resolvent method revisited”, J. Phys. C **17**, 2735-2744 (1984).
7. D. Belitz and W. Schirmacher, “Transport theory for high-resistivity conductors”, J. Non-Cryst. Sol. **61&62**, 1073-1078 (1984).
6. D. Belitz and W. Götze, “Some aspects of impurity conduction”, Phys. Rev. B **28**, 5445-5453 (1983).
5. D. Belitz, A. Gold, W. Götze, and J. Metzger, “Electronic structure factor in disordered materials”, Phys. Rev. B **27**, 4559-4563 (1983).
4. D. Belitz and W. Schirmacher, “Theory of phonon-controlled conductivity in high-resistivity conductors”, J. Phys. C **16**, 913-926 (1983).
3. D. Belitz and W. Götze, “Defect-induced tunneling and the conductivity of strongly disordered systems”, J. Phys. C **15**, 981-997 (1982).
2. D. Belitz, A. Gold, and W. Götze, “Self-consistent current relaxation theory for the electron localization problem”, Z. Phys. B **44**, 273-277 (1981).
1. D. Belitz and W. Götze, “The temperature dependence of the d.c. conductivity near the Anderson transition in three-dimensional systems”, Phil. Mag. B **43**, 517-526 (1981).

### C. Invited/Refereed Short Reviews, Contributions to Conference Proceedings, Books, etc.

26. D. Belitz and T.R. Kirkpatrick, “Anomalous Transport Behavior in Quantum Magnets”, Condens. Matter **3**(4), 30 (2018) <https://doi.org/10.3390/condmat3040030>. Also available as <https://xxx.lanl.gov/abs/1809.09675>.
25. T.R. Kirkpatrick and D. Belitz, “The quantum ferromagnetic transition in a clean Kondo lattice is discontinuous”, Fortschr. Phys. **65**, 1600028 (2017). <https://doi.org/10.1002/prop.201600028>. Also available as <https://arxiv.org/abs/1603.07973>.
24. D. Belitz and T.R. Kirkpatrick, “Electronic Transport at Low Temperatures: Diagrammatic Approach”, Physica E **42**, 497 (2010) (Proceedings FMQT’08).
23. O. Bleibaum and D. Belitz, “Electron localization in an external electric field”, phys. stat. sol. (c) **1**, 59-62 (2004) (Proceedings of the Tenth Hopping and Related Phenomena Conference (HRP 10)).
22. S.L. Sessions, D. Belitz, T.R. Kirkpatrick, and M.T. Mercaldo, “Weak Localization Effects at the Quantum Ferromagnetic Transition”, J. Phys. Soc. Japan **72**, 171-172 (2003) (Proceedings of the International Conference on Quantum Transport and Quantum Coherence (Localization 2002)).
21. T.R. Kirkpatrick, T. Vojta, D. Belitz, and R. Narayanan, “Superconductivity and Quantum Phase Transitions in Weak Itinerant Ferromagnets”, in *Advances in Quantum Many-Body Theory, Vol. 6 (Proceedings of the 11th International Conference on Recent Progress in Many-Body Physics)*, edited

- by Raymond F. Bishop, Tobias Brandes, Klaus A. Gernoth, Niels R. Walet, and Yang Xian, World Scientific (Singapore 2003), pp. 132-141.
20. T. Vojta, D. Belitz, and T.R. Kirkpatrick, “Annealed Local Magnetic Moments and the Metal-Insulator Transition in Disordered Electronic Systems”, *phys. stat. sol. (b)* **230**, 97-100 (2002) (Proceedings of the 9th International Conference on Hopping and Related Phenomena).
  19. D. Belitz, S.L. Sessions, T.R. Kirkpatrick, M.T. Mercaldo, R. Narayanan, and T. Vojta, “Transport Anomalies and Marginal Fermi-Liquid Effects at a Quantum Critical Point”, in *Advances in Quantum Many-Body Theory, Vol. 6 (Proceedings of the 11th International Conference on Recent Progress in Many-Body Physics)*, edited by Raymond F. Bishop, Tobias Brandes, Klaus A. Gernoth, Niels R. Walet, and Yang Xian, World Scientific (Singapore 2003), pp. 99-102.
  18. T.R. Kirkpatrick, D. Belitz, and J.V. Sengers, “Long-Time Tails, Weak Localization, and Classical and Quantum Critical Behavior”, *J. Stat. Phys.* **109**, 373-405 (2002). (Special issue dedicated to J. Robert Dorfman on the occasion of his 65th birthday.) <https://doi.org/10.1023/A:1020485809093>
  17. D. Belitz and T.R. Kirkpatrick, “Why Quantum Phase Transitions Are Interesting”, *J. Low Temp. Phys.* **126**, 1107 (2002). (Volume dedicated to Peter Wölfle on the occasion of his 60th birthday.)
  16. T. Vojta, D. Belitz, T.R. Kirkpatrick, and R. Narayanan, “Quantum critical behavior of itinerant ferromagnets”, in *Proceedings of the International Conference ‘Localization 1999: Disorder and Interaction in Transport Phenomena’*, M. Schreiber (ed.), *Ann. Phys. (Leipzig)* **8**, 593-602 (1999).
  15. R. Narayanan, T. Vojta, D. Belitz, and T.R. Kirkpatrick, “Rare regions and annealed disorder in quantum phase transitions”, in *Proceedings of the International Conference ‘Localisation 1999: Disorder and Interaction in Transport Phenomena’*, M. Schreiber (ed.), *Ann. Phys. (Leipzig)* **8**, SI-185-SI-188 (1999).
  14. D. Belitz and T.R. Kirkpatrick, “The disordered Fermi-liquid fixed point and its instabilities”, in *Proceedings of the International Conference ‘Localization 1999: Disorder and Interaction in Transport Phenomena’*, M. Schreiber (ed.), *Ann. Phys. (Leipzig)* **8**, 765-774 (1999).
  13. D. Belitz and T. R. Kirkpatrick, “Quantum Phase Transitions”, in *Dynamics: Models and Kinetic Methods for Non-Equilibrium Many Body Systems*, J. Karkheck (ed.), Kluwer (Dordrecht 2000), p. 399-424.
  12. T. R. Kirkpatrick and D. Belitz, “Quantum kinetic theory: The disordered electron problem”, in *Dynamics: Models and Kinetic Methods for Non-Equilibrium Many Body Systems*, J. Karkheck (ed.), Kluwer (Dordrecht 2000), p. 379-398.
  11. T. R. Kirkpatrick and D. Belitz, “Quantum phase transitions in electronic systems”, in *Electron Correlation in the Solid State*, Norman H. March (ed.), Imperial College Press (London 1999), p. 297-370.
  10. T. R. Kirkpatrick and D. Belitz, “The metal-insulator transition as a quantum glass problem”, in M. Rubi and C. Perez-Vicent (eds.), ‘Complex Behaviour of Glassy Systems’, *Lecture Notes in Physics* vol. 492 (Springer, Berlin 1997), p. 241.
  9. T. R. Kirkpatrick and D. Belitz, “Long-range correlations and generic scale invariance in classical and quantum fluids”, *J. Stat. Phys.* **87**, 1307 (1997). (Special issue dedicated to Matthieu H. Ernst on the occasion of his 60th birthday.) <https://doi.org/10.1007/BF02181286>
  8. D. Belitz and T. R. Kirkpatrick, “Quantum critical behavior of itinerant ferromagnets”, in P. Coleman, B. Maple, and A. Millis (eds.), ‘Papers presented at the Institute for Theoretical Physics Conference on Non-Fermi Liquid Behavior in Metals’, *J. Phys. Cond. Mat.* **8**, 9707 (1996).
  7. D. Belitz and T. R. Kirkpatrick, “The Disordered Electron problem: From the Metal-Insulator Transition to Disordered Superconductors”, in V.Srivastava, A.K.Bhatnagar, and D.G.Naugle (eds.), ‘Ordering Disorder: Prospect and Retrospect in Condensed Matter Physics. Proceedings of the Indo-US Workshop’, *AIP Conference Proceedings*, vol. 286, New York (1993).

6. D. Belitz and T. R. Kirkpatrick, “New phases of the disordered Fermi liquid” in K. A. Benedict and J. T. Chalker (eds.), ‘Localisation 1990. Proceedings of the International Conference on Localisation 1990’, IOP Physics Conf. Series, vol. **108**, London (1991).
5. D. Belitz and T. R. Kirkpatrick, “Magnetic anomalies in disordered electronic systems”, *Physica A* **167**, 259-278 (1990).
4. D. Belitz, “Theory of type-II superconductivity”, in J. W. Lynn (ed.) ‘High- $T_c$  superconductivity’, Springer, New York (1990).
3. D. Belitz, “Anderson localization in narrow bands”, in ‘Localization in disordered systems’, Teubner-Texte zur Physik, vol.3, pp.21-31 ed. by W.Weller and P.Ziesche, B.G.Teubner, Leipzig (1984).
2. D. Belitz, “Influence of a weak magnetic field on electron localization”, Proc. Int. Conf. on Localization, Interaction, and Transport Phenomena in Impure Metals, PTB-Bericht PTB-PG-1, pp.294-297, L.Schweitzer and B.Kramer (eds.) (1984)
1. D. Belitz and W. Götze, “Electron diffusion and localization in a narrow band”, Proc. Int. Conf. on Localization, Interaction, and Transport Phenomena in Impure Metals, PTB-Bericht PTB-PG-1, pp.227-230, L.Schweitzer and B.Kramer (eds.) (1984)

#### D. Other Invited Publications

1. D. Belitz and T.R. Kirkpatrick, “A watched pot on a quantum stove”, *Nature Physics* **3**, 15 (2007).  
<https://doi.org/10.1038/nphys485>

#### E. Articles Published in Electronic Format Only

4. D. Belitz and T.R. Kirkpatrick, “A compilation of metallic systems that show a quantum ferromagnetic transition”, arXiv:1204.0873 (2012).
3. T.R. Kirkpatrick and D. Belitz, “Reply to Comment on ‘Absence of electron dephasing at zero temperature’ ”, cond-mat/0112063.
2. D. Belitz and T.R. Kirkpatrick, “Comment on ‘Specific heat of a Fermi system near ferromagnetic quantum phase transition’ by Grosu, Bodea, and Crisan (cond-mat/0101392)”, cond-mat/0102090.
1. B. Kramer, D. Belitz, and M. Batsch, “Mean-field limit of the random flux model”, cond-mat/9607043.

#### External Research Funding:

- NSF DMR-1401410 Collaborative Research: Topics in Many-Body Theory, \$ 300,000, Sep 1, 2014 - Aug 31, 2018
- NSF DMR-0901952 Collaborative Research: Topics in Many-Body Theory, \$ 285,000, Sep 15, 2009 - Aug 31, 2013
- NSF DMR-0529966 Collaborative Research: Topics in Many-Body Theory, \$ 315,000, Dec 1, 2005 - May 31, 2009
- NSF DMR-0132555 Collaborative Research: Topics in Many-Body Theory, \$ 246,000, Jan 1, 2002 - Dec 31, 2005
- NSF DMR-9870597 Topics in Many-Body Theory, \$ 198,500, Jul 15, 1998 - Jun 30, 2001

- NSF DMR-9510185 Theory of Electronic Transport in Disordered Materials, \$ 168,000, Aug 1, 1995 - Jul 31, 1998
- NATO CRG-941250 (travel grant, with B. Kramer and A. MacKinnon) Universality Classes for the Anderson Transition, \$ 12,640, 1995-1996
- NSF DMR-9209879 Theory of Electronic Transport in Disordered Materials, \$ 153,000, Aug 1, 1992 - Jan 31, 1996
- NSF DMR-8819302 Theory of Electronic Transport in Disordered Materials, \$ 108,900, Aug 1, 1989 - Jan 31, 1993
- ACS PRF-G Starter Grant, \$ 40,000, 1988 - 1989

### Major Addresses:

- Invited Speaker, International Conference on Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT21), Prague, Czech Republic, July 19 - 23, 2021.
- Invited Speaker, Superstripes 2019, Ischia, Italy, June 23-29, 2019.
- Invited Speaker, Quantum Complex Matter 2018, Frascati National Laboratory, Frascati, Italy, June 11-15, 2018.
- Invited Speaker, DMREF-FCMP Symposium on Mott Transitions and Computational Approaches, University of Tokyo, Japan, January 17, 2017.
- Invited Speaker, International Conference on Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT15), Prague, Czech Republic, July 27 - August 1, 2015.
- Invited Speaker, Workshop on Concepts and Discovery in Quantum Matter, Cavendish Laboratory, Cambridge, England, July 12 - 15, 2015.
- Invited Speaker, International Workshop on “Quantum Correlated Matter and Chaos”, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, June 21 - 26, 2015.
- Invited Speaker, International Conference “Fermions 2015”, International Science Forum Heidelberg, Heidelberg, Germany, April 20 - 24, 2015.
- Invited Speaker, Workshop on “Modern Trends in Quantum Magnetism”, Aspen Center for Physics, Aspen, CO, June 4, 2014.
- Invited Speaker, International Conference on “Quantum Criticality: Experiment and Theory”, Freudenstadt-Lauterbad, Germany, Sept. 16-18, 2013.
- Invited Speaker, Conference on Quantum Matter from the Nano- to the Macroscale, MPIKS Dresden, Germany, June 18 - July 6, 2012.
- Invited Speaker, International Conference on Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT11), Prague, Czech Republic, July 25 - July 30, 2011.
- Invited Speaker, POSTECH-APCTP Advanced Materials Science Workshop on “Metal-Insulator Transitions in Disordered and Magnetic Systems”, August 30 - September 10, 2010, Asian Pacific Center for Theoretical Physics, Pohang University of Science and Technology, Pohang, Korea.
- Invited Speaker, Fermions 2009: From Correlated Electrons to Cold Atoms, Universitätszentrum Obergurgl, Austria, October 13-18, 2009.
- Invited Speaker, Workshop on Quantum Criticality, Fields Institute, University of Toronto, Toronto, CA, September 25-27, 2008.

- Invited Speaker, International Conference on Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT08), Prague, Czech Republic, July 28 - August 2, 2008.
- Invited Speaker, Workshop on Unconventional Phases and Phase Transitions in Strongly Correlated Electron Systems, Max Planck Institute for Physics of Complex Systems, Dresden, Germany, June 14-27, 2008.
- Invited Speaker, TRIUMF Workshop for Correlated Electron Studies, Vancouver, BC, June 16-17, 2007.
- Invited Speaker, March Meeting of the American Physical Society, Denver, CO, March 5-9, 2007.
- Invited Speaker, International Workshop on Quantum Criticality, Lorentz Center, Leiden, Holland, August 7-19, 2006.
- Invited Speaker, International Conference on Quantum Phase Transitions, Kavli Institute for Theoretical Physics, UCSB, Santa Barbara, CA, January 18-21, 2005.
- Invited Speaker, WE-Heraeus-Seminar on Quantum Phase Transitions, Bad Honnef, Germany, October 11-14, 2004.
- Invited Speaker, Brookhaven National Laboratory International Workshop on Frustrated Magnetism, Montauk, NY, September 13-17, 2004
- Invited Speaker, Lorentz Center Workshop on Non-Fermi Liquid Behavior and Quantum Phase Transitions, Leiden, Holland, May 12-23, 2003.
- Invited Speaker, ICAM Workshop on Quantum Criticality, Columbia University, March 20-23, 2003.
- Invited Speaker, March Meeting of the American Physical Society, Austin, TX, March 3-7, 2003.
- Invited Speaker, International Workshop on the Theme of ‘Quantum Magnetism: Microscopic Techniques For Novel States Of Matter’, Bad Honnef, Germany, November 4-6, 2002.
- Invited Speaker, SPHINX Workshop on Unconventional Critical Behavior and Phase Transitions, Prague, Czech Republic, September 18-21, 2002.
- Invited Speaker, Workshop on Disordered Interacting Electrons in Two Dimensions, University of Leiden, The Netherlands, June 5 - 9, 2000
- Invited Speaker, Localization 1999, An International Conference on Quantum Transport in Disordered Systems, July 30 - August 2, 1999, Hamburg, Germany
- Invited Speaker, First Meeting of the Northwest Section of the American Physical Society, May 21-22, 1999, Vancouver, BC, Canada
- Invited Lecturer, Advanced School on Quantum Transport, Mesoscopic Physics, and Single Electronics, January 4-10, 1999, National Chiao Tung University, Taiwan
- Invited Lecturer, NATO Advanced Study Institute on Dynamics: Models and kinetic methods for nonequilibrium many-body systems, July 27 - August 7, 1998, Leiden, The Netherlands
- Invited Speaker, Conference on Strongly Correlated Fermion Systems, July 21-26, 1996, Pisa, Italy
- Invited Speaker, Workshop on Strong Electron Correlations, July 1-19, 1996, International Center for Theoretical Physics, Trieste, Italy
- Invited Speaker, Conference on Non-Fermi Liquid Physics in Metals, June 17-21, 1996, Institute for Theoretical Physics, Santa Barbara, CA
- Invited Speaker, Workshop on Electronic Properties of Disordered Systems, August 21-27, 1993, Argonne Natl. Lab., Argonne, IL
- Invited Speaker, Third E.E.C. Workshop on Localization and Transport Fluctuations in Microstructures, September 5-10, 1993, Chantilly, France

- Invited Speaker, Indo-American Workshop on ‘Ordering Disorder’, December 27, 1992 - January 5, 1993, Hyderabad, India
- Invited Speaker, Gordon Conference on Condensed Matter Physics, August 1992, Wolfeboro, NH
- Invited Speaker, Aspen Winter Conference, January 13-19, 1991, Aspen, CO
- Invited Speaker, WE-Heraeus-Seminar on Electronic Transport in Thin Metallic Films, October 9-12, 1990, Bad Honnef, FRG
- Invited Speaker, International Conference on Localization, August 13-15, 1990, Imperial College, London, UK
- Invited Speaker, 1990 March Meeting of the American Physical Society, March 12-16, 1990, Anaheim, CA
- Invited Speaker, International Workshop on Anderson Transition and Mesoscopic Fluctuations, January 8-12, 1990, Braunschweig, FRG
- Invited Speaker, Materials Science Symposium, April 23, 1988, Corvallis, OR
- Invited Speaker, Second DFG Workshop on the Quantum Hall Effect, April 9-12, 1985, Schleching, FRG
- Invited Speaker, NORDITA Symposium on Disordered Systems, September 10-14, 1984, Copenhagen, DK
- Invited Speaker, International Seminar on Localization in Disordered Systems, December 5-9, 1983, Johnsbach, GDR
- Invited Speaker, DFG Workshop on the Quantum Hall Effect, April 5-8, 1983, Schleching, FRG
- Invited Speaker, DFG Workshop on Weak Localization, March 1982, Schleching, FRG

### Students and Postdocs Supervised:

- J. Amarel (graduate student, PhD 2022)
- G. DeCoster (graduate student, PhD 2018)
- S. Bharadwaj (graduate student, PhD 2016)
- Y. Sang (graduate student, PhD 2014)
- R. Saha (postdoc, 2006 - 2008)
- Q. Li (graduate student, PhD 2008)
- S. Tewari (postdoc, 2003 - 2005)
- J. Rollbühler (postdoc, 2003 - 2005)
- O. Bleibaum (postdoc, 2002 - 2003)
- S. Sessions (graduate student, PhD 2002)
- R. Narayanan (graduate student, PhD 1999)
- T. Vojta (postdoc, 1995 - 1997)
- F. Evers (postdoc, 1995 - 1997)
- W. Park (graduate student, PhD 1995)
- S.Q. Yang (graduate student, PhD 1994)

- T.P. Devereaux (graduate student, PhD 1991)
- C. Chen (postdoc, 1989 - 1990)
- S. De Souza-Machado (undergraduate student, Summer 1989)
- D.W. Hoard (undergraduate student, Summer 1989)

## PROFESSIONAL SERVICE

### Conference Organization:

- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics 2022*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 31 - Aug 6, 2022, Prague, Czech Republic
- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics 2019*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 14 - 20, 2019, Prague, Czech Republic
- Organizer (with M. Brando and A. Huxley)  
*International Workshop on Quantum Ferromagnetism and Related Phenomena*  
An international conference held at the Max Planck Institute for Physics of Complex Matter  
May 6 - 10, 2019, Dresden, Germany
- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics 2017*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 9 - 15, 2017, Prague, Czech Republic
- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics 2015*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 27 - August 1, 2015, Prague, Czech Republic
- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics 2013*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 29 - August 3, 2013, Prague, Czech Republic
- Member, Scientific Committee  
*Frontiers of Quantum and Mesoscopic Thermodynamics*  
An international conference organized by the Czech Academy of Sciences and Charles University  
July 25 - 30, 2011, Prague, Czech Republic
- Member, International Advisory Committee  
*Localisation 2011*  
A Satellite Conference to LT26.  
August 5 - 9, 2011, Pohang, Korea
- Organizer  
*Mini-Colloquium on Magnetic Quantum Phase Transitions*  
A Session of the 20th General Conference of the Condensed Matter Division of the European Physical Society  
July 19 - 23, 2004, Prague, Czech Republic
- Organizer (with T.R. Kirkpatrick and T. Vojta)  
*Workshop on Quantum Phase Transitions*



June 23 - July 28, 2003, Max Planck Institute for Complex Systems, Dresden, Germany

- Organizer (with T.R. Kirkpatrick)  
*Workshop on Quantum Phase Transitions*  
July 16-28, 1995, Telluride Science Research Center, Telluride, CO
- Chair, Organizing Committee  
*Metal-Insulator Transitions, Localization, and Mesoscopic Systems*  
An LT 20 Satellite Conference  
August 12-14, 1993, University of Oregon
- Member, Organizing Committee  
*XX International Conference on Low Temperature Physics*  
August 1993, Eugene, OR
- Organizer (with H. Jansen)  
*Oregon Materials Science Symposium*  
May 1990, Oregon State University

### Other Professional Activities:

- Colloquia Editor, Reviews of Modern Physics, 2020 - present
- Consulting Editor, Physical Review X, 2019 - present
- Associate Editor for Condensed Matter Theory, Reviews of Modern Physics, 2005 - 2020
- Member, Advisory Board, Annalen der Physik (Leipzig), 1998 - 2011
- Member, Advisory Board, International Conference LOCALIZATION 1999

## ADMINISTRATIVE EXPERIENCE

As Department Head of Physics (1998 - 2004) I was responsible for the day-to-day operations of a department with roughly 30 faculty, 100 undergraduate majors, and 80 graduate students. The department's annual operating budget was approximately \$ 2.2 Million, and research expenses averaged \$ 6 Million. I reported to the Associate Dean of Natural Sciences, and worked closely with the Vice President for Research and the Vice President for Academic Affairs on research and personnel matters, respectively.

As Associate Dean for Natural Sciences (2004 - 2010) I reported to the Dean of the College of Arts and Sciences and was responsible for budgetary, personnel, and curriculum oversight for eight academic departments: Biology, Chemistry, Computer and Information Science, Geological Sciences, Human Physiology, Mathematics, Physics, and Psychology, as well as for the Oregon Institute of Marine Biology, and the following programs and support units: Chemistry Laboratory Service, General Science, Technical Science Administration. I served as a liaison between the departments and the college's development staff, and I was the college's principle liaison with the following research institutes, which report to the Vice President for Research: Materials Science Institute, Molecular Biology Institute, Neuroscience Institute, Oregon Center for High Energy Physics, Oregon Center for Optics, and Theoretical Science Institute. In addition, I was responsible for equipment management for the entire college, and I was responsible for college-wide space management from 2004 until 2007.

At the university level, in my capacity as an associate dean I served on the Leadership Council, the Deans' Working Group, and the Policy Group on Conflicts of Interest and Conflicts of Commitment. I also was an

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ex-officio member of the Science Council that advises the Provost and the President on issues relevant to the Natural Sciences. I served as the college's representative on the university's Space Committee, Planning Committee, and Educational Technology Committee. I worked closely with the Vice President for Research, the Vice President for Academic Affairs, the Vice Provost for Diversity, and the Vice Provost for Information Services on various issues affecting the college.