

# JAMES KEVIN INGERSENT

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## Professional Employment

2013–2021	Chair, Department of Physics	University of Florida
2009–2013	Associate Chair, Department of Physics	University of Florida
2004–	Professor of Physics	University of Florida
1997–2004	Associate Professor of Physics	University of Florida
1992–1997	Assistant Professor of Physics	University of Florida
1990–1992	Postdoctoral Researcher	The Ohio State University

## Degrees

1990	Ph.D.	Physics	University of Pennsylvania
1984	B.A. (First Class)	Natural Sciences	Cambridge University, U.K.

## Doctoral and Postdoctoral Mentors

Doctoral	Paul J. Steinhardt (now at Princeton University)
Postdoctoral	John W. Wilkins (deceased)

## Fellowships, Awards, and Honors

2014	Outstanding Referee, American Physical Society
2010–2011	Colonel Allan R. and Margaret G. Crow Term Professor, University of Florida
2009	Fellow, American Physical Society
2003	Physics Department Teacher of the Year, University of Florida
1996	Teaching Improvement Program Award, University of Florida
1990–1991	IBM Postdoctoral Fellowship
1986–1988	Dean's Fellow, University of Pennsylvania
1984–1986	Thouron Exchange Fellow, University of Pennsylvania
1984	Hart Prize, Magdalene College, Cambridge
1982–1984	Prize for Natural Sciences, Magdalene College, Cambridge
1982–1984	Scholar, Magdalene College, Cambridge

## Research Accomplishments

- Numerical renormalization-group method for Bose-Fermi quantum impurity problems
- Theory of “local criticality” in heavy-fermion systems
- Theory of magnetic impurities in pseudogapped Fermi systems and Luttinger liquids
- Non-local extensions to the dynamical mean-field theory of correlated electrons
- Numerical solution of two-impurity, two-channel and three-impurity Kondo problems
- Matching rules and growth rules for quasiperiodic tilings
- Scaling theory of interaction between adsorbed polymer layers

## Professional Activities

- Member, Science Council, National High Magnetic Field Laboratory (2014–). Participate in setting and guiding the NHMFL’s scientific agenda
- Organizer (with V. Dobrosavljević and L. H. Greene), National High Magnetic Field Laboratory Theory Winter School on “Modeling of Correlated Electron Materials,” Tallahassee, FL (2017). Attended by 50 junior scientists from institutions worldwide
- Organizer (with T. L. Hughes and D. Maslov), National High Magnetic Field Laboratory Theory Winter School on “Topological Phases of Condensed Matter,” Tallahassee, FL (2014). Attended by 75 junior scientists from institutions worldwide
- Divisional Associate Editor, Physical Review Letters (2007–2012)
- Member, Research Program Committee, National High Magnetic Field Laboratory (1994–2002, 2008–2009). Reviewed preproposals and proposals for the In-House Research Program/User Collaboration Grants Program. Participated in writing of the NHMFL’s 1995 renewal proposal to the National Science Foundation
- Member, Theory Committee, National High Magnetic Field Laboratory (1992–1994)
- Organizer (with V. Dobrosavljević), National High Magnetic Field Laboratory “Three-Sites Meeting,” Live Oak, Florida (1996)
- Organizer (with P. J. Hirschfeld), international workshop “Quantum Impurity Problems,” Gainesville, Florida (1995)
- Judge, Abraham Lincoln Middle School Science and Engineering Fair, Gainesville, Florida (2007, 2010, 2017, 2018)
- Judge, Howard W. Bishop Middle School Science and Engineering Fair, Gainesville, Florida (2016)
- Judge, Westwood Middle School Science and Engineering Fair, Gainesville, Florida (2014, 2015, 2019)
- Judge, Alachua County Science and Engineering Fair, Gainesville, Florida (2000, 2001, 2003)
- Classroom visitor, Littlewood Elementary School, Gainesville, Florida (2003–2007). Led students in hands-on physics experiments

- Faculty advisor, University of Florida chapter of the Society of Physics Students and  $\Sigma\Pi\Sigma$  (1993–1999)
- Co-organizer and moderator, interzonal meeting of Society of Physics Students, Tallahassee, Florida (November 10, 1995)
- National Science Foundation review panelist (2000, 2008  $\times$  2, 2009, 2019, 2021)
- Ad-hoc reviewer for numerous scientific journals and funding agencies

## Grants

- National Science Foundation, “Collaborative Research: Spin correlations and spin-orbit effects in new quantum materials,” K. Ingersent (PI), \$255,000 (2015–2019)
- National Science Foundation, “REU Site: Condensed Matter and Materials Physics,” S. P. Hershfield (PI), K. Ingersent (co-PI), \$300,000 (2015–2019)
- National Science Foundation, “REU Site: Materials Physics at the University of Florida,” S. P. Hershfield (PI), K. Ingersent (co-PI), \$317,616 (2012–2015)
- National Science Foundation, “Materials World Network – Collaborative Research: Symmetry, local environment, and time-dependent effects in nanoscale systems – A synergistic approach,” K. Ingersent (PI), \$317,871 (2011–2015)
- National Science Foundation and Department of Defense, “REU Site: Materials Physics at the University of Florida,” S. P. Hershfield (PI), K. Ingersent (co-PI), \$360,000 (2009–2012)
- National Science Foundation, “Materials World Network – Collaborative Research: Decoherence, correlations and spin effects in nanostructured materials,” K. Ingersent (PI), \$364,000 (2007–2012)
- National Science Foundation, “REU Site: Materials Physics at the University of Florida,” K. Ingersent (PI), S. P. Hershfield (co-PI), \$312,000 (2006–2009)
- National Science Foundation, “ITR: Modeling of local critical behavior in correlated electron systems,” K. Ingersent (PI), \$383,000 (2003–2007)
- National Science Foundation, “An REU Site at the University of Florida,” K. Ingersent (PI), A. T. Dorsey (co-PI), \$270,000 (2002–2005)
- National Science Foundation, “Research Experiences for Teachers,” supplement to the REU award, K. Ingersent (PI), A. T. Dorsey (co-PI), \$44,000 (1999–2001)
- National Science Foundation, “An REU Site in Physics at the University of Florida,” K. Ingersent (PI), A. T. Dorsey (co-PI), \$209,000 (1999–2002)
- National Science Foundation, support for “Quantum Impurity Problems” workshop, P. J. Hirschfeld (PI), K. Ingersent (co-PI), \$2,500 (1995)
- National Science Foundation, “Physics of Magnetic Impurities in Metals,” K. Ingersent (PI), \$135,000 (1993–1997)

### **Physics Department Service**

- Chair (2013–2021)
- Associate Chair (2009–2013)
- Department Advisory Committee (2002–2004, 2006–2013)
- Director (1999–2008) and Co-Director (2008–present), Research Experiences for Undergraduates
- Chair Search Committee (chair 2009; member 2002)
- Salary Review Committee (chair 2009–2013; member 2005–2007)
- Computing Committee (chair 2001–2007; member 1992–1995, 2000–2001, 2007–2009)
- Colloquium Committee (2008–2009)
- Condensed Matter Seminar (organizer 1993–1994; co-organizer 1992, 1994–1995, 2001–2004)
- Faculty Search Committees (1999–2001, 2005)
- Faculty promotion committee (chair 2005)
- Ph.D. Preliminary Examination Committee (2001, 2002, 2006, 2008)
- Ph.D. Comprehensive Examination Committee (1998–2001)
- Graduate Curriculum Committee (chair 1998–1999)
- Teaching Improvement Program Committee (1996, 1998)

### **College of Liberal Arts and Sciences (CLAS) and University of Florida Service**

- CLAS Finance Committee (chair 2012–2013, member 2013–2015)
- CLAS Faculty Council (elected 2010–2012; ex officio 2012–2013)
- Director (elected 2002–2004) and Executive Board Member (elected 2009–2013), Center for Condensed Matter Sciences
- CLAS Committee on Computational Science Degrees and Curricula (2004–2005)
- CLAS Information Technology Advisory Committee (2003–2005)
- CLAS Associate Dean for Academic Affairs Search Committee (2002)
- CLAS Curriculum Committee (elected 1997–1999)
- University Senate (elected 1993–1995)

### **Theses Supervised**

- Jasdeep Sidhu, “A Study of Kondo Physics and Unconventional Superconductivity in Inhomogeneous Electronic Systems,” University of Florida Ph.D., December 2020. Current position: Software Developer, Workday Inc., Pleasanton, CA

- Christopher Wagner, “Equilibrium and Time-Dependent Properties of Quantum Impurity Systems,” University of Florida Ph.D., December 2018. Current position: Unknown
- Tathagata Chowdhury, “A Study of Quantum Phase Transitions in Quantum Impurity Systems,” University of Florida Ph.D., December 2015. Current position: Postdoctoral Researcher, Universität zu Köln, Köln, Germany
- Lili Deng, “Anderson Impurity Models with Bosons as Descriptions of Molecular Devices and Heavy-Fermion Systems,” University of Florida Ph.D., April 2014. Current position: Software Developer, Facebook, Bellevue, WA
- Mengxing Cheng, “Quantum Phase Transitions of Magnetic Impurities in Dissipative Environments,” University of Florida Ph.D., December 2010. Current position: High-Performance Computing Systems Administrator, University of Chicago, Chicago, IL
- W. Brian Lane, “Conductances in the Two-Impurity Anderson Model,” University of Florida Ph.D., May 2008. Current position: Visiting Lecturer, Department of Physics, University of North Florida, Jacksonville, FL
- Bruce C. Paul, “A Study of a Three-Impurity Kondo Model,” University of Florida Ph.D., May 2000. Current position: Unknown

#### **Postdoctoral Associates Mentored**

- Arturo Wong López (2011–2013) Most recent known position: Postdoctoral researcher, Center for Nanosciences and Nanotechnology, National Autonomous University of Mexico, Ensenada, Mexico
- Matthew Glossop (2004–2007). Current position: Teacher, Harrow School, London, UK
- Arnold Sikkema (1996–1997). Current position: Professor of Physics and Associate Dean, Faculty of Natural and Applied Sciences, Trinity Western University, British Columbia, Canada
- Avraham Schiller (1993–1996). Deceased. Last position: Associate Professor, Racah Institute of Physics, The Hebrew University of Jerusalem, Israel

#### **Teaching Activities at the University of Florida**

- PHY 2004 Applied Physics 1. First introductory course for non-science majors: Mechanics, heat, and vibrations. Instructor: Fall 1993, Spring 1994, Fall 1994, Spring 1995
- PHY 2005 Applied Physics 2. Second introductory course for non-science majors: Electricity, magnetism, optics, and modern physics. Instructor: Summer 1998, Summer 2000
- PHY 2020: Introduction to Principles of Physics. One-semester introduction for non-science majors: Mechanics, heat, vibrations, electricity, magnetism, and optics. Instructor (online): Spring 2015, Summer 2015, Spring 2016, Summer 2016, Spring 2017, Summer 2017, Spring 2018, Summer 2018, Fall 2018, Spring 2019, Summer 2019, Fall 2019, Spring 2020
- PHY 2048 Physics With Calculus 1. First introductory course for science and engineering majors: Mechanics, vibrations and waves. Co-instructor: Summer 1998. Recitation instructor: Fall 1992

- PHY 2054 Physics 2. Second introductory course for pre-health students: Electricity, magnetism, and optics. Recitation instructor: Spring 1996, Spring 1997, Spring 1998
- PHY 2060 Honors Physics 1. First introductory course for students well-prepared in physics: Mechanics, vibrations, and special relativity. Instructor: Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008
- PHZ 3113 Introduction to Theoretical Physics. Junior-level course in mathematical methods of physics. Instructor: Fall 2011, Fall 2012
- PHY 3513 Thermal Physics. Junior-level course in classical equilibrium thermodynamics. Instructor: Fall 1998, Fall 1999, Fall 2000
- PHY 4523 Statistical Physics. Senior-level course in statistical mechanics and kinetic theory. Instructor: Spring 1999, Spring 2000, Spring 2001
- PHY 4604 Introductory Quantum Mechanics 1: First of two senior-level courses in nonrelativistic quantum mechanics. Instructor: Fall 2008, Fall 2009, Fall 2010, Spring 2012, Spring 2013
- PHZ 6426 Solid State 1. First graduate-level course in solid state physics: Electrons in periodic solids, and lattice vibrations. Instructor: Fall 1995, Fall 1996, Fall 1997
- PHY 6645 Quantum Mechanics 1: First-semester graduate-level course in nonrelativistic quantum mechanics. Instructor: Fall 2001, Fall 2002, Fall 2003
- PHY 6646 Quantum Mechanics 2: Second-semester graduate-level courses in nonrelativistic quantum mechanics. Instructor: Spring 2002, Spring 2003, Spring 2004
- PHZ 7427 Solid State 2. Second graduate-level course in solid state physics: Collective phenomena. Instructor: Spring 2009, Spring 2010, Spring 2011
- PHZ 7428 Modern Condensed Matter Physics: Advanced graduate-level course in many-body techniques for condensed matter physics. Instructor: Fall 2004

## Refereed Publications

- “Critical local moment fluctuations and enhanced pairing correlations in a cluster Anderson model,” A. Cai, J. H. Pixley, K. Ingersent, and Q. Si, *Phys. Rev. B* **101**, 014452 (2020). [8 pages]
- “Sequential localization of a complex electron fluid,” V. Martelli, A. Cai, E. M. Nica, M. Taupin, A. Prokofiev, C.-C. Liu, H.-H. Lai, R. Yu, K. Ingersent, R. K uchler, A. M. Strydom, D. Geiger, J. Haenel, J. Larrea, Q. Si, and S. Paschen, *Proc. Natl. Acad. Sci. USA* **116**, 17701-17706 (2019). [19 pages including Supplemental Information]
- “Sublattice symmetry breaking and Kondo-effect enhancement in strained graphene,” D. Zhai, K. Inersent, S. E. Ulloa, and N. Sandler, *Phys. Rev. B* **99**, 195410 (2019). [17 pages]
- “Long-range entanglement near a Kondo-destruction quantum critical point,” C. E. Wagner, Y. Chowdhury, J. H. Pixley, and K. Ingersent, *Phys. Rev. Lett.* **121**, 147602 (2018). [17 pages including Supplemental Information]

- “Phase boundaries of the pseudogap Anderson and Kondo models,” M. Cheng, T. Chowdhury, A. Mohammed, and K. Ingersent, *Phys. Rev. B* **96**, 045103 (2017). [15 pages]
- “Influence of Rashba spin-orbit coupling on the Kondo effect,” A. Wong, S. E. Ulloa, N. Sandler, and K. Ingersent, *Phys. Rev. B* **93**, 075148 (2016). [13 pages]
- “Entanglement entropy near Kondo-destruction quantum critical points,” J. H. Pixley, T. Chowdhury, M. T. Miecnikowski, J. Stephens, C. Wagner, and K. Ingersent, *Phys. Rev. B* **91**, 245122 (2015). [14 pages]
- “Pairing correlations near a Kondo-destruction quantum critical point,” J. H. Pixley, L. Deng, K. Ingersent, and Q. Si, *Phys. Rev. B* **91**, 201109(R) (2015). [5 pages]
- “Critical charge fluctuations in a pseudogap Anderson model,” T. Chowdhury and K. Ingersent, *Phys. Rev. B* **91**, 035118 (2015). [7 pages]
- “Kondo effect in graphene with Rashba spin-orbit coupling,” D. Mastrogiuseppe, A. Wong, K. Ingersent, S. E. Ulloa, and N. Sandler, *Phys. Rev. B* **90**, 035426 (2014). [10 pages]
- “Quantum phase transitions into Kondo states in bilayer graphene,” D. Mastrogiuseppe, A. Wong, K. Ingersent, S. E. Ulloa, and N. Sandler, *Phys. Rev. B* **89**, 081101(R) (2014). [5 pages]
- “Quantum criticality in the pseudogap Bose-Fermi Anderson and Kondo models: Interplay between fermion- and boson-induced Kondo destruction,” J. H. Pixley, S. Kirchner, K. Ingersent, and Q. Si, *Phys. Rev. B* **88**, 245111 (2013). [15 pages]
- “Quantum critical Kondo destruction in the Bose-Fermi Kondo model with a local transverse field,” E. Nica, K. Ingersent, J.-X. Zhu, and Q. Si, *Phys. Rev. B* **88**, 014414 (2013). [10 pages]
- “Spin-polarized conductance in double quantum dots: Interplay of Kondo, Zeeman and interference effects, L. G. V. V. Dias da Silva, E. Vernek, K. Ingersent, N. Sandler, and S. E. Ulloa, *Phys. Rev. B* **87**, 205313 (2013). [11 pages]
- “Quantum criticality in the two-channel pseudogap Anderson model: A test of the non-crossing approximation,” F. Zamani, T. Chowdhury, P. Ribeiro, K. Ingersent, and S. Kirchner, *Phys. Status Solidi B*, **250**, 547–552 (2013).
- “Quantum phase transitions in a pseudogap Anderson-Holstein model,” M. Cheng and K. Ingersent, *Phys. Rev. B* **87**, 075145 (2013). [23 pages, selected as an “Editors’ Suggestion”]
- “Effects of electron-phonon coupling in the Kondo regime of a two-orbital molecule,” G. I. Luiz, E. Vernek, L. Deng, K. Ingersent, and E. V. Anda, *Phys. Rev. B* **87**, 075408 (2013). [16 pages]
- “Kondo destruction and valence fluctuations in an Anderson model,” J. H. Pixley, S. Kirchner, K. Ingersent, and Q. Si, *Phys. Rev. Lett.* **109**, 086403 (2012). [5 pages]
- “Signatures of quantum phase transitions in parallel quantum dots: Crossover from local moment to underscreened spin-1 Kondo physics,” A. Wong, W. B. Lane, L. G. V. V. Dias da Silva, K. Ingersent, N. Sandler, and S. E. Ulloa, *Phys. Rev. B* **85**, 115316 (2012). [6 pages]
- “Quantum criticality of the sub-Ohmic spin-boson model,” S. Kirchner, K. Ingersent, and Q. Si, *Phys. Rev. B* **85**, 075113 (2012). [9 pages]

- “Search for heavy quasiparticles in the resistivity of  $\text{PrOs}_4\text{Sb}_{12}$  in magnetic fields: Comparison with  $\text{Pr}_{0.7}\text{La}_{0.3}\text{Os}_4\text{Sb}_{12}$ ,” B. Andraka, C. R. Rotundu, and K. Ingersent, *Phys. Rev. B* **81**, 054509 (2010). [7 pages]
- “Quantum phase transitions in a charge-coupled Bose-Fermi Anderson model,” M. Cheng, M. T. Glossop, and K. Ingersent, *Phys. Rev. B* **80**, 165113 (2009). [24 pages]
- “Tunable pseudogap Kondo effect and quantum phase transitions in Aharonov-Bohm interferometers,” L. G. G. V. Dias da Silva, N. Sandler, P. Simon, K. Ingersent, and S. E. Ulloa, *Phys. Rev. Lett.* **102**, 166806 (2009). [4 pages]
- “Finite-size scaling of classical long-ranged Ising chains and the criticality of dissipative quantum impurity models,” S. Kirchner, Q. Si, and K. Ingersent, *Phys. Rev. Lett.* **102**, 144605 (2009). [4 pages]
- “Conductance signatures of Kondo interference and quantum criticality in double quantum dots,” L. G. G. V. Dias da Silva, K. Ingersent, N. Sandler, and S. E. Ulloa, *Phys. Rev. B* **78**, 153304 (2008). [4 pages]
- “Resistivity and magnetoresistance of La-doped  $\text{CeOs}_4\text{Sb}_{12}$  and  $\text{PrOs}_4\text{Sb}_{12}$ ,” B. Andraka, C. R. Rotundu, K. Ingersent, and P. Schlottmann, *J. Phys. Soc. Jpn.* **77**, Suppl. A, 148–152 (2008).
- “Kondo physics in a dissipative environment,” M. T. Glossop, N. Khoshkhou, and K. Ingersent, *Physica B* **403**, 1303–1305 (2008).
- “Transmission in double quantum dots in the Kondo regime: Quantum-critical transitions and interference effects,” L. G. G. V. Dias da Silva, N. Sandler, K. Ingersent, and S. E. Ulloa, *Physica E* **40**, 1002–1005 (2008).
- “Quantum phase transitions in a resonant-level model with dissipation: Renormalization-group studies,” C.-H. Chung, M. T. Glossop, L. Fritz, M. Kirćan, K. Ingersent, and M. Vojta, *Phys. Rev. B* **76**, 235103 (2007). [13 pages]
- “Magnetic quantum phase transition in an anisotropic Kondo lattice,” M. T. Glossop and K. Ingersent, *Phys. Rev. Lett.* **99**, 227203 (2007). [4 pages]
- “Dias da Silva et al. reply,” L. G. G. V. Dias da Silva, N. P. Sandler, K. Ingersent, and S. E. Ulloa, *Phys. Rev. Lett.* **99**, 209702 (2007) [1 page].
- “Thermodynamics of the up-up-down phase of the  $S = 1/2$  triangular-lattice antiferromagnet  $\text{Cs}_2\text{CuBr}_4$ ,” H. Tsujii, C. R. Rotundu, T. Ono, H. Tanaka, B. Andraka, K. Ingersent, and Y. Takano, *Phys. Rev. B* **76**, 060406(R) (2007). [4 pages]
- “Kondo physics and dissipation: A numerical renormalization-group approach to Bose-Fermi Kondo models,” M. T. Glossop and K. Ingersent, *Phys. Rev. B* **75**, 104410 (2007). [23 pages]
- “Crystalline electric field contribution to the magnetoresistance of  $\text{Pr}_{1-x}\text{La}_x\text{Os}_4\text{Sb}_{12}$ ,” C. R. Rotundu, K. Ingersent, and B. Andraka, *Phys. Rev. B* **75**, 104504 (2007). [5 pages]
- “Nature of the two quantum critical points in  $\text{Ce}(\text{Ru}_{1-x}\text{Rh}_x)_2\text{Si}_2$  ( $x=0.4$  and  $0.6$ ),” J. S. Kim, D. J. Mixson, D. Burnette, B. Andraka, K. Ingersent, G. R. Stewart, E. W. Scheidt, and W. Scherer, *Phys. Rev. B* **74**, 165112 (2006). [9 pages]



- “Zero-field Kondo splitting and quantum-critical transition in double quantum dots,” L. G. G. V. Dias da Silva, N. P. Sandler, K. Ingersent, and S. E. Ulloa, *Phys. Rev. Lett.* **97**, 096603 (2006). [4 pages]
- “Kondo screening in a magnetically frustrated nanostructure: Exact results on a stable, non-Fermi-liquid phase,” K. Ingersent, A. W. W. Ludwig, and I. Affleck, *Phys. Rev. Lett.* **95**, 257204 (2005). [4 pages]
- “Numerical renormalization-group study of the Bose-Fermi Kondo model,” M. T. Glossop and K. Ingersent, *Phys. Rev. Lett.* **95**, 067202 (2005). [4 pages]
- “Absence of Kondo lattice coherence effects in  $\text{Ce}_{0.6}\text{La}_{0.4}\text{Pb}_3$ : A magnetic-field study,” R. Pietri, C. R. Rotundu, B. Andraka, B. C. Daniels, and K. Ingersent, *J. Appl. Phys.* **97**, 10A501 (2005). [3 pages]
- “Local fluctuations in quantum critical metals,” Q. Si, S. Rabello, K. Ingersent, and J. L. Smith, *Phys. Rev. B* **68**, 115103 (2003). [19 pages]
- “Critical local-moment fluctuations, anomalous exponents, and  $\omega/T$  scaling in the Kondo problem with a pseudogap,” K. Ingersent and Q. Si, *Phys. Rev. Lett.* **89**, 076403 (2002). [4 pages]
- “Locally critical quantum phase transitions in strongly correlated metals,” Q. Si, S. Rabello, K. Ingersent, and J. L. Smith, *Nature* **413**, 804–808 (2001).
- “Specific heat of  $\text{Ce}_{0.8}\text{La}_{0.2}\text{Al}_3$  in magnetic fields: a test of the anisotropic Kondo picture,” R. Pietri, K. Ingersent, and B. Andraka, *Phys. Rev. Lett.* **86**, 1090–1093 (2001).
- “Quantum critical behavior in Kondo systems,” Q. Si, J. L. Smith, and K. Ingersent, *Int. J. Mod. Phys. B* **13**, 2331–2342 (1999).
- “Pseudogap effects in heavy fermions close to a quantum phase transition,” K. Ingersent and Q. Si, in *Proceedings of Physical Phenomena at High Magnetic Fields-III*, edited by Z. Fisk *et al.* (World Scientific, Singapore, 1999), pp. 190–193.
- “Numerical renormalization-group study of Anderson and Kondo impurities in gapless Fermi systems,” C. Gonzalez-Buxton and K. Ingersent, *Phys. Rev. B* **57**, 14 254–14 293 (1998).
- “Renormalization-group study of an Anderson impurity in a Luttinger liquid,” A. Schiller and K. Ingersent, *Europhys. Lett.* **39**, 645–650 (1997).
- “Stabilization of local moments in gapless Fermi systems,” C. Gonzalez-Buxton and K. Ingersent, *Phys. Rev. B* **54**, R15 614–R15 617 (1996).
- “Behavior of magnetic impurities in gapless Fermi systems,” K. Ingersent, *Phys. Rev. B* **54**, 11 936–11 939 (1996).
- “The Kondo effect in a system with a singular density of states,” K. Ingersent, in *Proceedings of Physical Phenomena at High Magnetic Fields-II*, edited by Z. Fisk *et al.* (World Scientific, Singapore, 1996), pp. 179–184.
- “Systematic  $1/d$  corrections to the infinite-dimensional limit of correlated lattice electron models,” A. Schiller and K. Ingersent, *Phys. Rev. Lett.* **75**, 113–116 (1995).

- “Exact results for the Kondo effect in a Luttinger liquid,” A. Schiller and K. Ingersent, Phys. Rev. B **51**, R4676–4679 (1995).
- “Study of the instability of the single-impurity, multi-channel Kondo ground state to inter-impurity interactions,” B. A. Jones and K. Ingersent, Physica B **199–200**, 411–412 (1994).
- “Low-temperature physics of the two-impurity, two-channel Kondo model,” K. Ingersent and B. A. Jones, Physica B **199–200**, 402–405 (1994).
- “Study of the two-impurity, two-channel Kondo Hamiltonian,” K. Ingersent, B. A. Jones, and J. W. Wilkins, Phys. Rev. Lett. **69**, 2594–2597 (1992).
- “Matching rules and growth rules for pentagonal quasicrystal tilings,” K. Ingersent and P. J. Steinhardt, Phys. Rev. Lett. **64**, 2034–2037 (1990).
- “Forces between surfaces with adsorbed polymers: 3.  $\Theta$  solvent. Calculations and comparison with experiment,” K. Ingersent, J. Klein, and P. Pincus, Macromolecules **23**, 548–560 (1990).
- “Equilibrium faceting shapes for quasicrystals,” K. Ingersent and P. J. Steinhardt, Phys. Rev. B **39**, 980–992 (1989).
- “Quasicrystals with dodecahedral equilibrium faceting,” K. Ingersent and P. J. Steinhardt, Phys. Rev. Lett. **60**, 2444 (1988).
- “Patterns in systems with competing incommensurate lengths,” T. C. Lubensky and K. Ingersent, in *Proceedings of the NATO Advanced Workshop on Patterns, Defects, and Microstructures in Nonequilibrium Systems (Austin, Texas, March 1986)*, edited by D. Walgraef (Martinus Nijhoff, Dordrecht, Netherlands, 1987), pp. 48–72.
- “Interactions between surfaces with adsorbed polymer: Poor solvent. 2. Computations and comparison with experiment,” K. Ingersent, J. Klein, and P. Pincus, Macromolecules **19**, 1374–1381 (1986).

### Submitted or Accepted for Refereed Publication

- “Dynamical Kondo effect and Kondo destruction in effective models for quantum-critical heavy fermion metals,” A. Cai, H. Hu, K. Ingersent, S. Paschen, and Q. Si, Phys. Rev. B (to be submitted); available at <http://arXiv.org/abs/1904.11471> [10 pages]
- “Quantum criticality and global phase diagram of an Ising-anisotropic Kondo lattice,” E. M. Nica, K. Ingersent, and Q. Si, Phys. Rev. Lett. (submitted); available at <http://arXiv.org/abs/1603.03829> [10 pages]

### Book Chapters

- “NRG with bosons,” Ch. 6 in *Many-Body Physics: From Kondo to Hubbard, Modeling and Simulation, Vol. 5*, edited by E. Pavarini, E. Koch, and P. Coleman (Verlag des Forschungszentrum Jülich, 2015), pp. 6.1–6.26.
- “Matching rules for quasicrystalline tilings,” K. Ingersent, Ch. 7 in *Quasicrystals: The State of the Art*, edited by D. P. DiVincenzo and P. J. Steinhardt (World Scientific, Singapore, 1991), pp. 185–212.

## Invited Talks at Meetings

- “NRG with bosons,” Autumn School on Correlated Electrons, Forschungszentrum Jülich, Jülich, Germany (September 25, 2015)
- “Entanglement near Kondo-destruction quantum critical points,” Workshop on *Quantum Criticality: Heavy Fermion Systems and Beyond*, Rice Center for Quantum Materials, Houston, TX (March 26, 2015)
- “Computational approaches to quantum criticality,” Workshop on *Quantum Critical Matter – from Atoms to Bulk*, Obergurgl, Austria (August 19, 2014)
- “Kondo physics in the presence of Rashba spin-orbit coupling,” Workshop on *Spin-Related Phenomena in Mesoscopic Transport*, Nordita, Stockholm (September 21, 2012)
- “Interplay of strong electron-electron and electron-boson interactions in nanostructures,” Workshop on *Developments and Prospects in Quantum Impurity Physics*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (June 8, 2011)
- “Kondo physics, interference, and quantum phase transitions in double quantum-dot devices,” Workshop on *Spin-Related Phenomena in Mesoscopic Transport*, Natal, Brazil (April 29, 2010)
- “NRG with bosons II: The better, the worse, and the computationally uglier,” Workshop on *Decoherence, Correlations and Spin Effects in Nanostructured Materials*, Viña del Mar, Chile (January 5, 2009)
- “The Kondo effect in a dissipative environment: Spin-boson physics and beyond,” Workshop on *New Frontiers in Quantum Impurity Physics: From Nano-Structures to Molecular Devices*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (August 23, 2007)
- “NRG with bosons: The good, the bad, and the computationally ugly,” School on *New Frontiers in Quantum Impurity Physics: From Nano-Structures to Molecular Devices*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (August 15, 2007)
- “Quantum criticality in the Bose-Fermi Kondo model,” Conference on *Quantum Phase Transitions*, Kavli Institute for Theoretical Physics, Santa Barbara, CA (January 18, 2005)
- “Quantum phase transitions in magnetic impurity problems,” NSF Division of Materials Research ITR Computational Workshop, University of Illinois at Urbana-Champaign (June 18, 2004)
- “Lessons from quantum impurity models,” Workshop on *Non-Fermi Liquid Behavior and Quantum Phase Transitions*, Lorentz Center, Leiden, The Netherlands (May 21, 2003)
- “Critical local moments in the pseudogap Kondo model and the Kondo lattice,” Workshop on *Modern Aspects of Quantum Impurity Systems*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (April 10, 2003)
- “Critical local moments in the pseudogap Kondo model and the Kondo lattice,” Program on *Realistic Theories of Correlated Electron Materials*, Kavli Institute for Theoretical Physics, Santa Barbara, CA (November 4, 2002)

- “Magnetic impurities in superconductors and critical systems,” March Meeting of the American Physical Society, Indianapolis, IN (March 21, 2002)
- “Local magnetic properties of impurities in unconventional superconductors,” Workshop on *Defects in Strongly Correlated Electron Systems*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (July 24, 2001)
- “From magnetic impurities to heavy fermions,” National High Magnetic Field Laboratory Three-Site Meeting, Live Oak, FL (October 27, 1996)
- “Three Kondo impurities: a more robust route to non-Fermi-liquid behavior?,” Program on *Non-Fermi Liquid Physics*, Institute for Theoretical Physics, Santa Barbara, CA (June 7, 1996)
- “Recent progress in multi-channel Kondo physics,” 38th Annual Conference on Magnetism and Magnetic Materials, Minneapolis, MN (November 18, 1993)
- “Low-temperature physics of the two-impurity, two-channel Kondo model,” International Conference on Strongly Correlated Electron Systems, La Jolla, CA (August 18, 1993)

### Seminars and Colloquia

- “Kondo-destruction quantum criticality in heavy fermion systems: New physics near absolute zero,” Center for Nonlinear Studies Colloquium, Los Alamos National Laboratory (Los Alamos, NM; December 4, 2018)
- “Kondo physics in the presence of Rashba spin-orbit coupling,” Condensed Matter Physics Seminar, Zhejiang University (Hangzhou, China; May 4, 2016)
- “Heavy-fermion quantum criticality: Mysteries near absolute zero,” University of South Florida Physics Colloquium (Tampa, FL; April 1, 2016)
- “Kondo physics in the presence of Rashba spin-orbit coupling,” Rice University Condensed Matter Physics Seminar (Houston, TX; November 9, 2015)
- “Strong correlations and quantum interference in quantum dots,” University of São Paulo-São Paulo Institute of Physics Colloquium (São Paulo, Brazil; May 19, 2011)
- “Strong correlations and quantum interference in quantum dots,” University of São Paulo-São Carlos Institute of Physics Colloquium (São Carlos, Brazil; May 13, 2011)
- “Strong electron-electron and electron-boson interactions in quantum dots and single-molecule devices,” University of São Paulo-São Carlos Condensed Matter Physics Seminar (São Carlos, Brazil; May 11, 2011)
- “Interplay of strong electron-electron and electron-boson interactions in nanostructures,” Duke University Condensed Matter Seminar (Durham, NC; April 28, 2011)
- “Quantum criticality in heavy fermions: New physics near absolute zero,” Federal University of Uberlandia Condensed Matter Physics Seminar (Uberlandia, Brazil; May 6, 2010)
- “Quantum phase transitions in a double-quantum-dot device,” Rice University Condensed Matter Physics Seminar/Keck Seminar (Houston, TX; July 17, 2008)

- “Quantum criticality in heavy fermions: New physics near absolute zero,” University of Illinois at Chicago Condensed Matter Physics Seminar (Chicago, IL; April 25, 2008)
- “Strong correlations in magnetic nanostructures: Model Hamiltonians meet quantum chemistry,” University of Florida Quantum Theory Project Seminar (Gainesville, FL; November 8, 2006)
- “Non-Fermi-liquid physics in a magnetically frustrated nanostructure,” Rice University Condensed Matter Physics Seminar (Houston, TX; October 17, 2005)
- “Quantum criticality in metals: New physics near absolute zero,” Ohio University Condensed Matter and Surface Science Colloquium (Athens, OH; May 5, 2005)
- “Quantum phase transitions in correlated metals,” University of Florida Colloquium (Gainesville, FL; August 28, 2003)
- “Critical local-moment fluctuations in the pseudogap Kondo model and the Kondo lattice,” University of Florida/Florida State University Condensed Matter Theory Workshop (Gainesville, FL; April 26, 2003)
- “Critical local moments in correlated electron systems,” Ohio State University Condensed Matter Theory Seminar (Athens, OH; February 11, 2002)
- “The non-Fermi-liquid zoo,” University of South Florida Colloquium (Tampa, FL; October 11, 1999)
- “Magnetic impurities in interacting one-dimensional metals,” Rice University Condensed Matter Seminar (Houston, TX; December 10, 1996)
- “From magnetic impurities to heavy fermions,” University of Florida Colloquium (Gainesville, FL; October 1, 1996)
- “What’s all the fuss about a few impurities?” University of Florida Quantum Theory Project Seminar (Gainesville, FL; November 22, 1995)
- “Phase diagram of the two-impurity, two-channel Kondo model,” Bell Laboratories (Murray Hill, NJ; March 10, 1993)