CURRICULUM VITAE
MACDONALD, ALLAN H.

Full name:	Allan Hugh MacDonald
Date and place of birth:	December 1, 1951 Antigonish, Nova Scotia, Canada
Citizenships:	Canadian and American
Present address:	2519 Harris Boulevard Austin, Texas 78703 USA Phone (512) 495-9192
Institutional affiliation:	The University of Texas at Austin Austin, Texas 78712 Phone (512) 232-9113 FAX (512) 471-9621 e-mail: macd@physics.utexas.edu
Title:	Sid W. Richardson Foundation Regents Chair
Field of Specialization:	Condensed Matter Theory

Employment:

September 1973 -- April 1978	Ph.D. Student University of Toronto
May 1978 -- October 1980	Research Associate --- National Research Council
November 1980 -- June 1982	Assistant Research Officer -- National Research Council of Canada
August 1982 -- August 1987	Associate Research Officer --- National Research Council of Canada
September 1987 -- August 1992	Professor of Physics --- Indiana University
September 1992 -- August 2000	Distinguished Professor of Physics --- Indiana University
September 2000 -- present	Sid W. Richardson Foundation Regents Chair --- The University of Texas at Austin

Scholarships and Honors:

President's Scholarship, St. Francis Xavier University, 1969–1973
Governor-General's Medal, St. Francis Xavier University, 1973
(Highest academic standing in graduating class)
NSERC 1967 Science Scholarship, University of Toronto, 1973–1977
Herzberg Medal, 1987 (Awarded by the Canadian Association of Physicists)
Fellow of the American Physical Society, 1989
Sid W. Richardson Foundation Regents Chair (2000)
Fellow of the Academy of Arts and Sciences (2005)
Co-recipient of the Buckly Prize (2007)
Outstanding Referee The American Physical Society (2008)
Fellow of National Academy of Sciences (2010)
Ernst Mach Honorary Medal Academy of Sciences of the Czech Republic (2012)

Past Postdocs

Kharen Tevosyan, now at Microsoft
Ulrich Zuelicke, now at the Univeristy of Karlsruhe
Martin Bonsager, now at Seagate
Sunoy Banerjee, now at CAN Corporation
Joglekar, Yoges; now a faculty member at Indiana/Perdue University
Burkov, Anton; now a faculty member at University of Waterloo, Canada
Joaquin Fernandez-Rossier, now a faculty member at University of Alicante, Spain, **Elena Bascones** now at ETH-Zurich
Lee, Byounghak, now a faculty member at Texas State University
Yoichi Sato, now a faculty member at University of Tokyo.
Eric Sorensen, now a faculty member at the University of Toulouse
Charles Hanna, now a faculty member at Boise State University
Juanjo Palacios, now a faculty member at Alicante University, Spain
Bill Atkinson, now a faculty member at Southern Illinois University
Lin, Hsiu-Hau; now a faculty member at National Tsing-Hua University, Taiwan
Jungwirth, Tomas; now a faculty member at the University of Nottingham
Jario Sinova, now a faculty member at Texas A&M University
Emiliano Papa now a faculty member at The University of Virginia, Charlottesville
Enrico Rossi now a faculty member at the University of Illinois-Chicago
Alvaro Nunez now a faculty member at the University of Chile
Rembert Duine now a faculty member at Utrecht University, The Netherlands

Recent Postdocs

Nomura, Kentaro now at Tohoku University, Japan
Nikolai Sinitsyn now a postdoctoral researcher at Los Alamos National Laboratory
Tami Barnea-Pereg now a postdoctoral researcher at Caltech
Barlas, Yafis now a postdoc at Florida State University
Min, Hongki now a postdoc at National Institute of Standards & Technology
Wei-Cheng Lee now a postdoc at University of Illinois
Paul Haney now a postdoc at National Institute of Standards & Technology
Jung, Jeil now a postdoc in Tiawan
Rafi Bistritzer
Wang-Kong (James) Tse now at the University of Maryland

Tilahun, Dagim; now at Utrecht University
Jung-Jung Su now at Stanford University

Current Postdoctoral Researchers
Chen, Hua, Ashley DaSilva, Rohit Hedge, Massoud Masir

Research Interests and Highlights:

My primary research interests center on the influence of electron-electron interactions on the electronic properties of metals and semiconductors. My research is driven, for the most part, by experiment rather than by theoretical technique. My technical interests cover a broad swath within the condensed matter theory subfield, ranging from pragmatic techniques for electronic structure calculations on the more traditional side to the more trendy field theoretical approaches. In the following paragraph, I briefly summarize the topics on which I have worked.

My Ph.D. thesis research, performed under the supervision of S. H. Vosko at the University of Toronto, was part of a body of work in the late 1970's, which demonstrated the power of spin-density-functional based approximations in describing many ground state properties of metallic magnets. One aspect of my thesis work was a relativistic generalization of the Hohenberg-Kohn-Sham density functional theory, reported in a paper ([11]) which is still regularly cited. My postdoctoral research work, performed at the laboratories of the National Research Council of Canada and motivated in part by experimental work in that lab, centered on the lattice dynamics and transport properties of metals. This work brought our understanding of carrier-carrier scattering effects in simple metals to a quantitative level for the first time and identified ([20]) phonon-mediated scattering as a dominant process in many metals. The work on transport theory in metals led to an interest in the quantum Hall effect, a transport anomaly which occurs in degenerate two-dimensional semiconductor systems in strong magnetic fields. My first work in this area ([48]) was carried out while visiting with Maurice Rice at the ETH in Zurich. It focused on some perplexing questions concerning the spatial distribution of current in the quantum Hall regime which subsequently received a great deal of attention. The following summer, while working at the physics center in Trieste in collaboration with Pavel Streda, I wrote an early paper ([61]) on the relationship between the Kubo formula description of the integer quantum Hall effect, which was being developed by Streda, Thouless, and others, and the edge state picture, being developed by Laughlin, Halperin and others.

By this time my primary interest had shifted from transport theory to the many-body physics problem underlying the fractional quantum Hall effect, namely the problem of interacting electrons in a macroscopically degenerate Landau level which can be tackled only with non-perturbative techniques. Working with Steve Girvin and Phil Platzman in Aspen in 1984, I employed a sum rule approach ([79]) similar to that used by Feynman for liquid Helium to address the collective excitations of fractional Hall states. In collaboration with Mark Rasolt ([84]), I used a similar approach to look at Goldstone modes in the broken symmetry states, which frequently arise, in the fractional Hall regime when the electrons possess additional degrees of freedom. Steve Girvin and I pointed out ([92]) an unusual long-range-order property in Laughlin's quantum Hall states. This paper was the harbinger of Chern-Simons field theory approaches to fractional Hall effect theory. In 1990 I proposed ([111]), on the basis of microscopic considerations, that the description of the low energy physics of fractional Hall edge required, in general, multi-branch one-dimensional Fermion models. This year also marked a return to my interest in broken symmetries in fractional Hall systems with additional degrees of freedom. I pointed out that ([122]) that double-layer quantum Hall systems could have a broken symmetry in their ground state like that in easy plane

ferromagnets and estimated the phase boundary which delimited the stability region of the broken symmetry states. More recent work on this topic ([190]) has focused on the properties of these states when a magnetic field is applied in the plane of the 2D electron layers. With René Côté I developed ([130]) techniques, originally applied to the Wigner crystal state, which enabled accurate calculations of physical properties of electronic states in the quantum Hall regime with broken translational symmetry. These techniques have provided the backbone for a series of recent calculations ([199]) of the properties of skyrmion crystal states in quantum Hall ferromagnets.

In recent years, a smaller fraction of my research effort has been devoted to the fractional quantum Hall effect. In collaboration with students at Indiana University, I have completed work on the vortex-lattice melting transition ([173]), and on microscopic properties of the mixed state of type-II superconductors. I maintain an interest in the properties of two-dimensional electronic systems, in both zero field and strong field limits. I have also returned to the subject of my thesis research, metallic magnetism. I am particularly interested in the transport properties of metallic magnets, and at present, especially the properties of magnetic tunnel junctions.

The numbers above refer to the publication list below.

Professional Activities:

2014 Chair, International Conference on Magnetism - to take place in San Francisco in 2018

2013 Advisory Committee, William Fine Center for theoretical physics

2013 Meeting Chair, Magnetism and Magnetic Materials Conference

2013 Meeting Chair, APS March Meeting 2014

2013 Advisory Panel Coordinator, Ran conference `Concepts in Spintronics' UCSB

2013 Review Committee**,** Dublin, Ireland - Irish Science Academy reviewing the CRANN Research Centre at Trinity College

2013 Advisory Panel, Center for Integrative Nanotechnology (CINT) - Sandia National Labs

2013 Simons Foundation Advisory Panel

2013 Vice-Chair for the 2014 International Conference on Semiconductors - to be held in Austin July 2014

2013 Meeting Chair for the 2014 March Meeting of the American Physical Society

2013 Chair of the Division of Condensed Matter Physics of the APS

2003 Review Panel, Materials Science Division at Argonne National Lab

1998 13th International Conference on Semiconductors in a Magnetic Field, Nijmegan, Netherlands

1998 Advisory Committee, Institute for Theoretical Physics program on "Interaction and Disorder in Quantum Hall and Mesoscopic Systems

1998 Member of NRC Subpanel for NIST Center for Neutron Research

1997 Advisory Committee, Aspen Winter Conference on Condensed Matter

1997 Guest expert for European Science Foundation Meeting on the scientific case for the European Large Magnetic Field Facility (ELMF)

1997 Member of evaluation panel for a proposed high continuous magnetic field facility at Nijmegan for the Foundation for Fundamental Research on Matter (Netherlands)

1997 Member of NSF CAREER proposal review panel

1995 International Advisory Committee, 10th International Conference on Electronic Properties of Two-Dimensional Systems, Nottingham, UK

1995 Member, Executive Committee, DCMP, American Physical Society

1994 Chair of the Buckley Prize Committee for the American Physical Society

1994 Divisional Associate Editor for Physical Review Letters

1994 Program Committee, 11th International Conference on Semiconductors in a Magnetic Field, Boston MA

1993 Chair of the μSR Experiment Evaluation Committee for TRIUMF

1993 Program Committee, 9th International Conference on Electronic Properties of Two-Dimensional Systems, Newport, RI

1993 Member of Buckley Prize Committee for the American Physical Society

1990 Member of the μSR Experiment Evaluation Committee for TRIUMF

1990 Co-organizer, Aspen Workshop on Quantum Transport in Restricted Geometries, Aspen, Colorado

1990 Editorial Board of Solid State Communications

1988 Consultant for the Max Plank Institute for Solid State Research, Stuttgart, Germany

1987 Past Chair, Condensed Matter Division, Canadian Association of Physicists

1987 International Advisory Committee, 7th International Conference on Electronic Properties of Two Dimensional Systems, New Mexico

1986 Chair, Condensed Matter Division, Canadian Association of Physicists

1986 Director, Summer Workshop on the Physics of Artificially Structured Materials, Kingston

1985 Deputy Chair, Condensed Matter Division, Canadian Association of Physicists

1981 Member of Local Organizing Committee, International Conference on Transport in Metals, Ottawa

Publications

648 "Crystalline phases of graphene quantum Hall polariton fluids", Pellegrino, Francesco M.D.; Giovannetti, Vittorio; MacDonald, Allan H.; Polini, Marco, arXiv:1505.07011v1, (May 2015)

647 "Persistent current states in bilayer grapheme", Jung, Jeil; Polini, Marco; MacDonald, Allan H., Phys. Rev. B **91**, 155423 (Apr 2015).

646 "Transport and particle-hole asymmetry in graphene on boron nitride", DaSilva, Ashley M.; Jung, Jeil; Adam, Shaffique; MacDonald, Allan H., http://arxiv.org/abs/1503.04312 (Mar. 2015).

645 "Thin films of a three-dimensional topological insulator in a strong magnetic field: Microscopic study", Pertsova, A.; Canali, C. M.; MacDonald, A. H., Phys. Rev. B **91**, 075430 (Feb 26, 2015).

644 "Accurate tight-binding and continuum Models for the TT bands of bilayer graphene", Jung, Jeil; MacDonald, Allan H., Phys. Rev. B **89**, 035405 (Jan 2014).

643 "Origin of band gaps in graphene on hexagonal boron nitride", Jung, Jeil; DaSilva, Ashley M; MacDonald, Allan H; Adam, Shaffique, Nat. Comm. **6**, 6308 (Feb 2015).

642 "Topological superconductivity induced by ferromagnetic metal chains", Li, Jian; Chen, Hua; Drozdov, Ilya K.; Yazdani, A.; Bernevig, B. A.; MacDonald, A.H., Phys. Rev. B **90**, 235433 (Dec 2014).

641 "Exciton band structure of monolayer MoS2", Wu, Fengcheng; Qu, Fanyao; MacDonald, Allan H., Phys. Rev. B **91**, 075310 (Feb. 2015).

640 "First-principles theory of electron-spin fluctuation coupling and superconducting instabilities in iron selenide", Lischner, Johannes; Bazhirov, Timur; MacDonald, Allan H.; Cohen, Marvin L.; Louie, Steven G., Phy. Rev. B **91**, 020502 (Jan 2015).

639 "Nonlocal Transport mediated by spin supercurrents", Chen, Hua; Kent, Andrew D.; MacDonald, Allan H.; Sodemann, Inti, Phys. Rev. B **90**, 220401 (Dec 2014).

638 "Observation of Majorana fermions in ferromagnetic atomic chains on a superconductor", Nadj-Perge, Stevan; Drozdov, Ilya K.; Li, Jian; Chen, Hua; Jeon, Sangjun; Seo, Jungpil; MacDonald, Allan H.; Bernevig, B. Andrei; Yazdani, Ali, Science **31**, 602 (Oct 2014).

637 “Spontaneous layer-pseudospin domain walls in bilayer graphene”, Li, Xiao; Zhang, Fan; Niu, Qian; MacDonald, A. H., Phys. Rev. Lett. **113**,116803 (Sept 2014).

636 “Weak Localization, Spin Relaxation, and Spin-Diffusion: The Crossover Between Weak and Strong Rashba Coupling Limits”, Araki, Yaufumi; Khalsa, Guru; MacDonald, Allan H., Phys. Rev. B **12,** 125309 (Sept 2014).

635 “SO(5) Symmetry in Graphene’s Fractional Quantum Hall Effect”, Wu, Fengcheng; Sodemann, Inti; Araki, Yaufumi; MacDonald, Allan H.; Jolicoeur, Thierry, Phys. Rev. B **90**, 235432 (Dec 2014).

634 “Non-Local Transport Mediated by Spin-Supercurrents”, Chen, Hua; Kent, Andrew D.; MacDonald, Allan H.; Sodemann, Inti; Phys. Rev. B **90**, 220401 (Dec 2014).

633 “Half-metallic magnetism and the search for better spin valves”, Everschor-Sitte; Karin; Sitte, Matthias; MacDonald, Allan H., Journal of Applied Physics, **116**, 083906 (Aug 2014).

632 “Stable path to ferromagnetic hydrogenated graphene growth”, Hemmatiyan, Shayan; Polini, Marco; Abanov, Artem; MacDonald, A. H.; Sinova, Jairo, Phys. Rev. B **90,** 035433 (Jul 2014).

631 “Impurity cyclotron resonance of anomalous Dirac electrons in graphene”, Kim, S C; Yang, S-R Eric; MacDonald, A. H., Inst. of Phys. J **26,** 325302 (Aug. 2014).

630 “Accurate tight-binding models for the pi bands of bilayer graphene”, Jung, Jeil; MacDonald, Allan H., Phys. Rev. B **89,** 035405 (Jan 2014).

629 “Optical conductivity of the t_{2g} two-dimensional electron gas”, Xie, Ming; Khalsa, Guru; MacDonald, Allan H., Phys. Rev. B **89,** 245417 (Jun 12, 2014).

628 “Ferminoic Physics in Dipolariton Condensates”, Su, Jung-Jung; Kim, Na Young; Yamamoto, Yoshihisa; MacDonald, Allan H., Phys. Rev. Lett. **112,** 116401 (Mar 2014).

627 “Band Offset and Negative Compressibility in Graphene-MoS_2 Heterostructures”, Larentis, Stefano; Tolsma, John R.; Fallahazad, Babak; Dilien, David C.; Kim, Kyounghwan; MacDonald, Allan H.; Tutuc, Emanuel, Nano Lett. **14,** 2039 (Apr 2014).

626 “Competing ordered states with filling factor two in bilayer graphene”, Velasco, J. Jr.; Lee, Y.; Zhang, F.; Myhro, K.; Tran, D.; Deo, M.; Smirnov, D.; MacDonald, A. H.; Lau, C. N., Nat. Comm. **5,** 4550 (Jul 2014).

625 “Quantum Anomalous Hall Effect in Graphene Proximity coupled to an Antiferromagnetic Insulator”, Qiao, Zhenhua; Ren, Wei; Chen, Hua; Bellaiche, L.; Zhang, Zhenyu; MacDonald, A. H.; Niu, Qian, Phys. Rev. Lett. **112,** 116404 (Mar 2014).

624 "Current Partition at Topological Channel Intersections", Qiao, Zhenhua; Jung, Jeil; Lin, Chungwei; Ren, Yafei; MacDonald, Allan H.; Niu, Qian; Phys. Rev. Lett. **112,** 20 (May 2014).

623 "Direct chemical conversion of graphene to boron- and nitrogen- and carbon-containing atomic layers", Gong, Yongji; Shi, Gang; Zhang, Zhuhua; Zhou, Wu; Jung, Jeil; Gao, Weilu; Ma, Lulu; Yang, Yang; Yang, Shubin; You, Ge; Vajtai, Robert; Xu, Qianfan; MacDonald, Allan H., Yakobson, Boris I.; Lou, Jun; Liu, Zheng; Pulickel, M. Ajayan, Nat. Comm **5**, 3193 (Jan 2014).

622 "Capacitance of carbon-based electrical double-layer capacitors", Ji, Hengxing; Zhao, Xin; Qiao, Jung; Zhenhua, Jeil; Zhu, Yanwu; Lu, Yalin; Zhang, Li Li; MacDonald, Allan H.; Ruoff, Rodney S., Nat. Comm **5,** 3317 (Feb 2014).

621 "Origin of band gaps in graphene on hexagonal boron nitride", Jung, Jeil; Ashley DaSilva; Shaffique Adam; MacDonald, Allan H., arXiv:1403.0496 (2014).

620 "Effect of spin fluctuations on quasiparticle excitations: First-principles theory and application to sodium and lithium", Lischner, Johannes; Bazhirov, Timur; MacDonald, Allan H.; Cohen, Marvin L.; Louie, Steven G., Phys. Rev. **89,** 081108 (Feb 2014).

619 "Anomalous Hall effect arising from noncollinear antiferromagnetism", Chen, Hua; Niu, Qian; MacDonald, Allan H., Phys. Rev. Lett. **112,** 017205 (Jan 2014).

618 "Broken SU(4) Symmetry and The Fractional Quantum Hall Effect in Graphene", Sodemann, Inti; MacDonald, Allan H., Phys. Rev. Lett. **112,** 126804 (Mar 2014).

617 "Ab-Initio Theory of Moire Superlattice Band in Layered Two-Dimensional Materials", Jung, Jeil; Raoux, Arnaud; Qiao, Zhenhua; MacDonald, Allan H., Phys. Rev. B **89,** 205414 (May 2014).

616 "Ultrathin high-temperature oxidation-resistant coatings of hexagonal boron nitride", Liu, Zheng; Gong, Yongji; Zhou, Wu; Ma, Lulu; Yu, Jingjiang; Idrobo, Juan Carlos; Jung, Jeil; MacDonald, Allan H., Vajtai, Robert; Lou, Jun; Ajayan, Pulickel M., Nat. Comm. **4,** 2541 (Oct 2013).

615 "Revealing the electronic band structure of trilayer graphene on SiC: An angle-resolved photoemission study", Coletti, C.; Forti, S.; Principi, A.; Emtsev, K. V.; Zakharov, A. A.; Daniels, K. M.; Daas, B. K.; Chandrashekhar, M. V. S.; Ouisse, T.; Chaussende, D.; MacDonald, A. H.; Polini, M.; Starke, U., (International support) Phys. Rev. B **88,** 155439 (Oct 2013).

614 "Anomalous perovskite PbRuO3 stabilized under high pressure", Cheng, J-G; Kweon, K. E.; Zhou, J-S; Alonso, J. A.; Kong, P-P; Liu, Y.; Jin, Changqing; Wu, Junji; Lin, Jung-Fu; Larregola, S. A.; Yang, Wenge; Shen, Guoyin; Macdonald, A. H.; Manthiram, Arumugam; Hwang, G. S.; Goodenough, John B., PNAS **110,** 20003 (Dec 2013).

613 "Ehancement of Phontonic density of states enhancement in graphene multilayers", Dasilva, Ashley M.; Chang, You-Chia; Norris, Ted; MacDonald, Allan H., Phys. Rev. B **88**, 195411 (Nov 2013).

612 "Theory of Native Orientational Pinning in Quantum Hall Nematics", Sodemann, Inti; MacDonald, Allan H., arXiv:1312.7723 (2013).

611 "Topological Magneto-Electric Effect Decay", Pesin, D. A.; MacDonald, A. H., Phys. Rev. Lett. **111**, 016801 (Jul 2013).

610 “Valley Chern numbers and boundary modes in gapped bilayer graphene”, Zhang, Fan; MacDonald, Allan H.; Mele, Eugene J., PNAS **110,** 10546 (Jun 2013).

609 “Tight-binding model for graphene pi-bands from maximally localized Wannier functions”, Jung, Jeil; MacDonald, Allan H.; Phys. Rev. B **87,** 195450 (May 2013).

608 “Landau level mixing and the fractional quantum Hall effect”, Sodemann, I.; MacDonald, A. H., Phys. Rev. B **87,** 245425 (Jun 2013).

607 “Theory of t2g electron-gas Rashba interactions”, Khalsa, Guru; Lee, Byounghak; MacDonald, Allan H., Phys. Rev. B **88,** 041302 (July 2013).

606 “Conduction-band edge and Shubnikov–de Haas effect in low-electron-density SrTiO3”, Allen, S. James; Jalan, Bharat; Lee, SungBin; Ouellette, Daniel G.; Khalsa, Guru; Jaroszynski, Jan; Stemmer, Susanne; MacDonald, Allan H., Phys. Rev. B **88,** 045114 (July 2013).

605 “Uniaxial strain induced band splitting in semiconducting SrTiO3”, Chang, Young Jun; Khalsa, Guru; Moreschini, Luca; Walter, Andrew L.; Bostwick, Aaron; Horn, Karsten; MacDonald, A. H.; Rotenberg, Eli, Phys. Rev. B **87,** 115212 (Mar 2013).

604 “Transport Studies of Dual-Gated ABC and ABA Trilayer Graphene: Band Gap Openving and Band Structure Tuning in Very Large Perpendicular Electric Fields”, Zou, K.; Zhang, Fan; Capp, C., Nano Lett. **13,** 369 (Jan 2013).

603 “Gate-Tunable Exchange Coupling Between Cobalt Clusters on Graphene”, Chen, Hua; Niu, Qian; Zhang, Zhenyu; MacDonald, Allan H., Phys. Rev. B **87,** 144410 (Apr 2013).

602 "Electron-electron interactions in nonequilibrium bilayer graphene", Liu, Wei-Zhe; MacDonald, Allan H.; Culcer, Dimitrie, Phys. Rev. B **87**, 085408 (Feb. 2013).

601 “Enhancement of photonic density of states enhancement in finite graphene multilayers”, DaSilva, Ashley M.; Chang, You-Chia; Norris, Ted; MacDonald, Allan H., Phys. Rev. B **88**, 195411 (Nov 2013).

600 “Gapped broken symmetry states in ABC trilayer graphene”, Jung, Jeil; MacDonald, Allan H., Phys. Rev. B **88,** 075408 (Aug 2013).

599 "Photoemession spectra of massless Dirac fermions on the verge of exciton condensation", Rist, Stefen; Varlamov, A. A.; MacDonald, Allan H.; Fazio, Rosario; Polini, Marco, Phys. Rev. **87** (Jun 2013).

598 “Photonic topical insulators”, Khanikaev, Alexander B.; Mousavi, S. Hossein; Tse, Wang-Kong; Kargarian, Mehki; MacDonald, Allan H.; Shvets, Gennady, Nat. Mat. **12,** 233-239 (Dec 2012).

597 "Drude weigh Anomalous Hall Effect Arising from Non-Collinear Antiferromagnetism t, cyclotron resonance and the Dicke model of graphene cavity QED", Chirolli, Luca; Polini, Marco; Giovannetti, Vittorio, Phys. Rev. Lett **109,** 267404 (Dec 2012).

596 "Spintronics and pseudospintronics in graphene and topological insulators", Pesin, Dmytro; MacDonald, Allan H., Nat. Mat. **11,** 409-416 (May 2012).

595 "Visualization of geometric influences on proximity effects in heterogeneous superconductor thin films", Kim, Jungdae; Chua, Victor; Fiete, Gregory A.; Nam, Hyoungdo; MacDonald, Allan H.; Shih, Chih-Kang, Nat. Phys. Lett. **8,** 464-469 (April 2012).

594 "Evidence for a spontaneous gapped state in ultraclean bilayer graphene", Bao, Wenzhong; Velasco Jr., Jairo; Zhang, Fan; Jing, Lei; Standley, Brian; Smirnov, Dmitry; Bockrath, Marac; MacDonald, Allan H.; Lau, Chun Ning, PNAS **109,** 10802-10805 (2012).

593 "Distinguishing Spontaneous Quantum Hall State in Bilayer Graphene", Zhang, Fan; MacDonald, A. H, Phys. Rev. Let **108,** 186804 (May 2012).

592 "Strong Coulomb drag and broken symmetry in double-layer graphene", Gorbachev, R. V.; Geim, A. K.; Katsnelson, M. I.; Novoselov, K. S.; Tudorovskiy, T.; Grigorieva, I. V.; MacDonald, Allan H.; Morozov, S. V.; Wantabe, K.; Taniguchi, T.; Ponomarenko, L. A., Nat. Phys. **8,** 896-901 (2012).

591 "Interaction-Enhanced Coherence Betweeen Two-Dimensional Dirac Layers", Sodemann, Inti; Pesin, D. A.; MacDonald, Allan H., Phys. Rev. B **85,** 195136 (March 2012).

590 "Competing Ordered States in Bilayer Graphene", Zhang, Fan; Min, Hongki; MacDonald, Allan H., Phys. Rev. B **88,** 155128 (2012).

589 "Theory of the SrTiO3 Surface State Two-Dimensional Electron Gas", Khalsa, Guru; MacDonald, Allan H., Phys. Rev. B **88,** 125121 (Sept 2012).

588 "Transport Properties of Graphene Nanoroads in Boron-Nitride Sheets", Jung, Jeil; Qiao, Zhenhua; Niu, Qian; MacDonald, Allan H., Nano Lett. **12**, 2936 (2012).

587 "Minimum Conductivity and Evidence for Phase Transitions in Ultra-clean Bilayer Graphene", Bao, Wenzhong; Velasco Jr., Jairo; Zhang, Fan; Jing, Lei; Standley, Brian; Smirnov, Dmitry; Bockrath, Marc; MacDonald, Allan H.; Lau, Chun Ning, Proc. Nat. Acad. Sci. **109,** 10802 (2012).

586 "Pseudospin Transfer Torques in Semiconductor Electron Bilayers", Kim, Youngseok; MacDonald, Allan H.; Gilbert, Matthew J., Phys. Rev. B **85,** 165424 (Apr 2012).

585 "Hund's Rules for the N=0 Landau Levels of Trilayer Graphene", Zhang, Fan; Tilahun, Dagim; MacDonald, Allan H., Phys. Rev. B **85,** 165139 (Apr 2012).

584 "Density, spin, and pairing instabilities in polarized ultracold Fermi gases", Sodemann, Inti; Pesin, D. A.; MacDonald, Allan H., Phys. Rev. A **85,** 033628 (Mar 2012).

583 "Quantum kinetic Theory of Current-Induced Torques in Rashba Ferromagnets", Pesin, D. A.; MacDonald, Allan H., Phys. Rev. B **86,** 014416 (July 2012).

582 "Double-layer graphene and topological insulator thin-film plasmons", Profumo, Rosario E. V.; Asgari, Reza; Polini, Marco; MacDonald, Allan H., Phys. Rev. B **85,** 085443 (Feb 2012).

581 "The tunneling density-of-states of interacting massless Dirac fermions", Principi, A.; Polini, Marco; Asgari, Reza; MacDonald, Allan H., Solid State Comm. **152,** 1456 (Apr 2012).

580 "Quantum Hall Effects in Graphene-Based Two-Dimensional Electron Systems", Barlas, Yafis; Yang, Kung; MacDonald, Allan H., Nanotech **23,** 052001 (Jan 2012).

579 "Pseudospin Order in Monolayer, Bilayer and Double-Layer Graphene", MacDonald, Allan H.; Jung, Jeil; Zhang, Fan, Phys. Scr. T **146**, 014012 (2012).

578 "Transport Spectroscopy of Symmetry-Broken Insulating States in Bilayer Graphene", Velasco Jr., J.; Jing, L.; Bao, W.; Lee, Y.; Kratz, P.; Aji, V.; Bockrath, M.; Lau, C. N.; Varma, C.; Stillwell, R.; Smironov, D.; Zhang, Fan; Jung, J.; MacDonald, Allan H., Nat. Nanotech **7,** 156 (Jan 2012).

577 "Haldane Sashes in Quantum Hall Spectra", MacDonald, Allan H., Phys. Rev. Lett. **105,** 206801 (Jan 2012).

576 "Quantizied Casimir Force", Tse, Wang-Kong; MacDonald, A. H., Phys. Rev.**109,** 236806 (2012).

575 "Josephson current in a four terminal superconductor-exciton condensate-superconductor system", Peotta, Sebastiano; Gibertini, Marco; Dolcini, Fabrizio; Taddei, Fabio; Polini, Marco; Ioffe, L. B.; Fazio, Rosario; MacDonald, Allan H., Phys. Rev. **84,** 184528 (Nov 2011).

574 "First-principles calculations of the nonadiabatic spin transfer torque in Ni and Fe", Gilmore, Keith; Garate, Ion; MacDonald, Allan H.; Stiles, M. D., Phys. Rev. B **84,** 224412 (Dec 2011).

573 "Quantum Theory of Cold Bosinic Atoms in Optical Lattices", Tilahun, Dagim; Duine, R. A.; MacDonald, Allan H., Phys. Rev. A **84,** 033622 (Sep 2011).

572 "Enhancement of non-local exchange near isolated band-crossings in graphene", Jung, Jeil; MacDonald, Allan H., Phys. Rev. B **84,** 085446 (May 2011).

571 "Graphene moire mystery solved?" MacDonald, Allan H.; Bistritzer, Rafi, Nat. **474,** 453-454 (Jun 2011).

570 "Persistent Current States in Bilayer Graphene", Jung, Jeil; Polini, Marco; MacDonald, Allan H., cond-mat/1111.1765 (2011).

569 "Magneto-Opitcal Faraday and Kerr Effects in Topological Insulator Films and in Other Layered Quatized Hall Systems", Tse, Wang-Kong; MacDonald, Allan H., Phys. Rev. B **84,** 205327 (Jan 2011).

568 "Spontaneous Quantum Hall States and Novel Luttinger Liquids in Chiral Graphene", Zhang, Fan; Jung, Jeil; MacDonald, Allan H., Phys. Rev. Lett. **108,** 186804 (Apr 2011).

567 "Antiferromagnetic Metal Spintronics", Nunez, A. S.; Duine, R. A.; MacDonald, Allan H., Phil Trans R Soc A **369,** 3098-3114 (2011).

566 "Transport in Coherent Quantum Hall Bilayers", MacDonald, Allan H.; Pesin, Dmytro, Phys. Rev. B **84** (Oct 2011).

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Books

1. "A Perspective on the Quantum Hall Effect", MacDonald, Allan H., (Jack Books, Milan, 1989.)

For the past 10 years an average of 20 presentations per year.

Invited Talks

"Spatially Indirect Exciton Condensates in Transition Metal Dichacogenides"
Feb. 2015 - University of Maryland Colloquium

"Anomalous Electrical Properties of Spatially Indirect Exciton Condensates"
Dec. 2015 - Rice University

"Magnetic Majorana Factories"
Taiwan, Dec.-14

"Many-Body Switches"
Taiwan, Dec.-14

"Tutorial Lectures on the Electronic properties of Graphene Based Electron systems"
Symposium K, Boston, MA Dec-14

"Toward Optimized Topological Superconductivity in Transition Metal Atom Chains"
Majorana Workshop, Princeton University, Oct-14

"High-Precision ARPES and frontiers of Many-electron Physics"
LBL Soft-Xray workshop, CA Oct-14

"Spin Superfluidity and Many-Body Switches"
St. Francis Xavier University, Antigonish, NS, Canada, Aug-14

"Many-Body Switches"
ICPS Conference, Austin, TX, Aug-14

"Muons and Topological Insulators"
muSR 2014 International Conference, Switzerland, Jun-14

"Fractional Quantum Hall Effect in Graphene"
Gordon Research Conference on Graphitic Materials, Bates College, Lewiston, MA, Jun-14

"Exciton and Spin Superfluidity"
Kalmar University, Sweden, Jun-14

"Fractional Quantum Hall Effect in Graphene"
Graphene Week 2014 Conference, Sweden, Jun-14

"Exciton and Spin Superfluidity"
Multisuper Conference, Camrino, Italy, Jun-14

"Excitonic Superfluidity"
Inaugral International Conf. for International Center for Theoretical Physics, Turkey, May-14

"Fractional Quantum Hall Effect in Graphene"
Naples, Italy, Apr-14

"Spin-Superfluidity"
New York University, NY, Apr-14

"Spintronics in Graphene and Topological Insulators"
SpinoGraph, Braga, Portugal, Mar-14

"Many-Body Switches"
APS Workshop, Denver, CO, Mar-14

"Many-Body Switches"
Texas Tech, Lubbock, TX, Mar-14

"Dipolariton Bose Condensates"
Pennsylvania State University, Feb-14

"Majorana States in Semiconductor and Oxide Quantum Wires"
CQS Seminar, Austin, TX, Jan-14

"Majorana States in Semiconductor and Oxide Quantum Wires"
Tokyo, Japan, Jan-14

"Spin-Superfluidity"
Kavli Center for Theoretical Physics, Santa Barbara, CA, Dec-13

"Anomalous Hall effect revisited"
Simon Fraser University, Vancouver, BC, Canada, Nov-13

"Majorana State Properties in Semiconductor and Oxide Superconducting Quantum Wires"
University of Illinois at Urbana-Champaign, Champaign, IL, Nov-13

"Anti-Spintronics"
UCSB Kavli Institute for Theoretical Physics, Santa Barbra, CA, Oct-13

"Spin-Orbit Interactions in Oxide Two-Dimensional Electron Systems"
Stanford San Francisco, San Fran, CA, Aug-13

"Superfluidity in GiBilayer Quantum Hall Systems"
Trento, Italy, Jul-13

"Majorana States in Oxide Quantum Wires"
Ettore Majorana Center for Theoretical Physics, Sicily, Italy, Jul-13

"Majorana States in Oxide Quantum Wires"
Sicily, Italy, Jul-13

"Theory of spontaneous Hall states in graphene and graphene multilayer two-dimensional electron systems" University of Paris, France, Jun-13

"Theory of current-induced torques in magnetic thin films"
University of Paris, France, Jun-13

"Theory of the Interaction between graphene and graphite or boron nitride substates"
University of Paris, France, May-13

"Topological States in Graphene-Based Two-Dimensional Electron Systems"
University of Vermont, Burlington, VT, Apr-13

"Topological States in Graphene-Based Two-Dimensional Electron Systems"
University of Victoria, Victoria, BC, Canada, Mar-13

"Topological States in Graphene-Based Two-Dimensional Electron Systems"
University of British Columbia, Vancouver, BC, Canada, Mar-13

"Topological States in Graphene-Based Two-Dimensional Electron Systems"
McGill University, Montreal, QC, Canada, Jan-13

"Spin Transfer in Semiconductors and Quantum Hall Bilayers"
Gorky, Russia, Jul-04

"Ferromagnetism and Spin Transport in Semiconductors"
Pacific Grove, CA, Jul-04

"Excitonic BEC in Bilayer Quantum Hall Systems"
Prague, CZ Rep, Jul-04

"Spin Transfer in Semiconductors and Quantum Hall Bilayers"
Wuhan, China, Jun-04

"Spin Transfer in Semiconductors and Quantum Hall Bilayers"
St. Petersburg, Russia, Jun-04

"Ferromagnetism and Spin Transport in Semiconductors"
Beijing, China, Jun-04

"Ferromagnetism and Spin Transport in Semiconductors"
Holyoke, MA, Jun-04

"Spin Transfer in Semiconductors"
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"Ferromagnetism and Spin Transport in Semiconductors"
Trieste, Italy, May-04

"Excitonic BEC in Bilayer Quantum Hall Systems"
Pittsburg, PA, May-04

"Ferromagnetism and Spin Transport in Semiconductors"
San Francisco, CA, Apr-04

"Ferromagnetism and Spin Transport in Semiconductors"
Ohio University, Athens, OH, Apr-04

"Excitonic BEC in Bilayer Quantum Hall Systems"
Penn State University, State College, PA, Apr-04

"Theory of Anomalous Transport"
Montreal, QC, Canada, Mar-04

"Ferromagnetism and Spin Transport in Semiconductors"
Cal State Northridge, Los Angles, CA, Mar-04

"Ferromagnetism and Spin Transport in Semiconductors"
San Jose, CA, Feb-04

"Excitonic BEC in Bilayer Quantum Hall Systems"
University of Chicago, Chicago, IL, Feb-04

"Ferromagnetism and Spin Transport in Semiconductors"
Nagoya, Japan, Nov-03

"Excitonic BEC in Bilayer Quantum Hall Systems"
Texas A&M, College Station, TX, Nov-03

"Ferromagnetism and Spin Transport in Semiconductors"
Barcelona, Spain, Oct-03

"Diluted Magnetic Semiconductor Ferromagnetism"
Santa Monica, CA, Oct-03

"Ferromagnetism and Spin Transport in Semiconductors"
Maui, HI, Sep-03

"The Bosan FQHE: Rapidly Rotating Cold Atoms"
International Conference, Stuttgart, Germany, Jul-03

"Spintronics in Semiconductors"
3 lectures, Boulder Condensed Matter Physics School, Boulder, CO, Jul-03

"Collective Transport in Bilayer Quantum Hall Systems"
15th International Conferences, Nara, Japan, Jul-03

"The Bosan FQHE:Rapidly Rotating Cold Atoms"
University of Pisa, Pisa, Italy, Jun-03

"The Bosan FQHE: Rapidly Rotating Cold Atoms"
University of Karlshruhe, Karlshruhe, Germany, Jun-03

"Phenomenological Models of DMS Ferromagnetism"
CECAM Workshop, Lyon, France, Jun-03

"Ferromagnetism in Diluted Magnetic Semiconductors"
High Magnetic Field Lab, Grenoble, France, Jun-03

"Weak-Coupling Theory of Underdoped Cuprates"
Canadian Institute of Advanced Research, Vancouver, BC, Canada, May-03

"Progress in Theory of Ferromagnetism in Semiconductors/Intrinsic Spin-Hall Effect in Semiconductors"
DARPA, Apr-03

"Weak-Coupling Theory of Underdoped Cuprates"
Aspen Winter Conference, Buffalo, NY, Feb-03

"Weak-Coupling Theory of Cuprate Superconductors"
Columbia University, New York, NY, Jan-03

"Superfluid Properties of Quantum Hall Ferromagnets"
Columbia University, New York, NY, Jan-03

"Ferromagnetic Transition Metal Nanoparticles"
Lancaster University, Lancaster, England, UK, Jan-03

"Rapidly Rotating Bose Condensates"
Los Alamos National Lab, Las Alamos, NM, Dec-02
"Rapidly Rotating Bose Condensates"
University of North Carolina, Chapel Hill, NC, Nov-02

"Ferromagnetic Semiconductors"
Texas A&M University, College Station, TX, Nov-02

"Ferromagnetic Semiconductors"
Cornell University, Ithaca, NY, Nov-02

"Magnetic Semiconductors"
(LEES), New York, NY, Oct-02

"Ferromagnetic Semiconductors"
University of Cincinnati, Cincinnati, OH, Oct-02

"Ferromagnetic Semiconductors"
Johns Hopkins University, Baltimore, MD, Oct-02

"Spintronics in Semiconductors"
3 lectures, DARPA, Ft. Lauderdale, FL, Sep-02

"Spintronics in Quantum Hall Ferromagnets"
International Conference, Scotland, Aug-02

"Spintronics in Quantum Hall Ferromagnets"
International Conference, Hiroshima, Japan, Aug-02

"Spintronics"
NATO Advanced Study Institute, Erice, Sicily, Jul-02

"Spintronics in Quantum Hall Ferromagnets"
Workshop, Erice, Sicily, Jul-02

"Spintronics in Quantum Hall Ferromagnets"
Workshop, Xian, China, Jun-02

"Ferromagnetism in Magnetically Doped Semiconductors"
Workshop, Beijing, China, Jun-02

"Ferromagnetic Semiconductors"
Gordon Research Conference, Colby College, Waterville, ME, Jun-02

"Spintronics in Quantum Hall Ferromagnets"
Workshop, Minneapolis, MN, May-02

"Ferromagnetic Semiconductors"
University of California at San Diego, San Diego, CA, May-02

"Ferromagnetism in Diluted Magnetic Semiconductors and Transition Metal Ferromagnets"
NSF US-Italy Conference, Washington, D.C., Mar-02

"Ferromagnetic Semiconductors"
Workshop, Vanderbilt University, Nashville, TN, Feb-02

"Superfluid Properties of Quantum Hall Ferromagnets"
National High Magnetic Field Lab, Tallahassee, FL, Jan-02

"Ferromagnetism and Superfluidity in Bilayer QH Systems"
International Symposium, University of Wurzburg, Germany, Dec-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Oak Ridge National Lab, Computational Materials Institute, Oak Ridge, TN, Nov-01

"Quantum Hall Quantum Bits"
Workshop, UT Austin, Austin, Texas, Oct-01

"Metallic Nanoparticles"
Georgia Tech, Atlanta, GA, Oct-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Georgia Tech, Atlanta, GA, Oct-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
UT Austin, Austin, TX, Oct-01

"Ferromagnetic Semiconductors"
Workshop, Oak Ridge, TN, Oct-01

"Charge Fluctuations in Quantum Hall Bilayers and Underdoped Cuprates"
Workshop, Kashiwa, Japan, Oct-01

"Quantum Description of Ferromagnetic Metal Nanoparticles"
Workshop, Institute for Theoretical Physics, Santa Barbara, CA, Aug-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop, Washington, Aug-01

"Charge Fluctuations in Quantum Hall Bilayers and Underdoped Cuprates"
Workshop, Ann Arbor, MI, Aug-01

"Quantum Description of Ferromagnetic Metal Nanoparticles"
Workshop, National Center of Nanoscience, Beijing, China, Jun-01

"Quantum Description of Ferromagnetic Metal Nanoparticles"
Workshop, University of Science & Technology, Heifei, China, Jun-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Argonne National Laboratory, Chicago, IL, Jun-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop, Janczowic, Poland, Jun-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop on Quantum Materials, Hamburg, Germany, Jun-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop, Ile de Bendor, France, Jun-01

"Superfluid Properties of Quantum Hall Ferromagnets"
Los Alamos National Laboratory, Los Alamos, NM, Apr-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Los Alamos National Laboratory, Los Alamos, NM, Apr-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Clemson University, Clemson, SC, Apr-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Rice University, Houston, TX, Mar-01

"Superfluid Properties of Quantum Hall Ferromagnets"
Workshop, Tokyo, Japan, Feb-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop, Queenstown, New Zealand, Feb-01

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
Workshop, Seoul, Korea, Feb-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
National Research Council of Canada, Ottawa, ON, Canada, Jan-01

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
University of Houston, Houston, TX, Jan-01

"Quantum Description of Ferromagnetic Metal Nanoparticles"
Workshop, Ascona, Switzerland, Oct-00

"Superfluid properties of quantum Hall ferromagnets"
Conference, Matsue, Japan, Sep-00

"Quantum Description of Ferromagnetic Metal Nanoparticles"
Workshop, Cortona, Italy, Jul-00

"III1-xMnxV Ferromagnetism: Semiconductor Spintronics"
1st Washington Spintronics Conference, Washington DC, Jul-00

"de-Haas van Aalphen Oscillations in the Mixed State"
Boulder Summer School in Condensed Matter Physics, Boulder, CO, Jul-00

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
Ohio State University, Columbus, OH, May-00

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
University of Iowa, Iowa City, IA, Apr-00

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
McMaster University, Hamilton, ON, Canada, Apr-00

"III1-xMnxV Ferromagnetism: Spintronics in Semiconductors"
University of Southern Illinois, Carbondale, IL Apr-00

"Superfluid Properties of Quantum Hall Ferromagnets"
Princeton University, Princeton, NJ, Mar-00

"Superfluid Properties of Quantum Hall Ferromagnets"
University of Lund, Sweden, Dec-99

"Superfluid Properties of Quantum Hall Ferromagnets"
Columbia University, New York, NY, Nov-99

"Quantum Hall Stripe State Physics"
A Celebration of the 65th Birthday of David Thouless, Seattle, WA, Sep-99

"New Surprises in Quantum Hall Physics"
Brown University, Providence, RI, Sep-99

"Quantum Hall Ferromagnets"
School on Exotic States in Quantum Nanostructures, London, England, UK, Aug-99

"Quantum Hall Stripe State Physics"
Workshop, Hamburg, Germany, Jul-99

"Quantum Hall Stripe State Physics"
Conference, Trieste, Italy, Jul-99

"Quantum Hall Ferromagnets"
Winter School J.J. Giambiagi, University of Buenos Aires, Argentina, Jul-99

"Spin-dependent Transport in Metals and Semiconductors"
Sitges Conference, Spain, Jun-99

"Optical Properties of Quantum Hall Ferromagnets"
NATO ARW, Ustron-Jaszowiec, Poland, Jun-99

"Quantum Hall Stripe State Physics"
Workshop, University of Minnesota, Minneapolis, MN, May-99

"Physics of Tunnel Junction Magnetoresistance"
Seagate Recording Heads, Minneapolis, MN, May-99

"Spin Electronics"
UT Austin, Austin, TX, Apr-99

"Spin-Dependent Tunneling in Metals and Semiconductors"
APS March Meeting, Atlanta, GA, Mar-99

"Spin Electronics"
University of Colorado, Boulder, CO, Mar-99

"Quantum Hall Ferromagnets"
University of California at Santa Barbara, Santa Barbara, CA, Nov-98

"Quantum Hall Ferromagnets"
Stanford University, Stanford, CA, Nov-98

"Quantum Hall Ferromagnets"
University of California at Santa Cruz, CA, Oct-98

"Quantum Hall Ferromagnets"
University of British Columbia, Vancouver, BC, Canada, Oct-98

"Electrodynamic Properties of the Vortex Lattice"
University of British Columbia, Vancouver, BC, Canada, Oct-98

"Carrier Induced Ferromagnetism in Diluted Magnetic Semiconductors"
Simon Fraser University, Vancouver, BC, Canada, Oct-98

"Electrodynamic Properties of the Vortex Lattice"
Indiana University, Bloomington, IN, Sep-98

"Critical Currents, Phase Slips and Turbulence in Mesoscopic Superconductors"
Indiana University, Bloomington, IN, Sep-98

"Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets"
University of Campinas, Brazil, Aug-98

"Electrodynamic Properties of the Vortex Lattice"
University of Campinas, Brazil, Aug-98

"Electrodynamic Properties of the Vortex Lattice"
Federal University of Rio de Janiero, Brazil, Aug-98

"Carrier Induced Ferromagnetism in Diluted Magnetic Semiconductors"
University of Campinas, Brazil, Aug-98

"Weak Disorder in Strongly Interacting 2D Electron Systems"
CECAM Workshop, Torino, Italy, Jun-98

"Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets"
XXII Condensed Matter Theories Workshop, Nashville, TN, Jun-98

"Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets"
INFM Workshop on Semiconductor Nanostructures, Pisa, Italy, Jun-98

"Pseudospin Anisotropy and Hysterisis in Quantum Hall Ferromagnets"
INFM Annual Meeting, Rimini, Italy, Jun-98

"Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets"
UT Austin, Austin, TX, May-98

"Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets"
Northwestern University, Evanston, IL, May-98

"Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets"
California Institute of Technology, Pasadena, CA, Apr-98

"Ising Pseudospin Order and Hysterisis in Quantum Hall Ferromagnets"
University of Illinois, Champaign, IL, Apr-98

"Skyrmions and Skyrme Crystals in Quantum Hall Ferrogmagnets"
Harvard University, Cambridge, MA, Nov-97

"Excitonic Condensates in Electron-Hole Double Layers"
European Physical Society General Meeting, Leuven, Belgium, Aug-97

"Strong Correlations in Electronic Systems"
9th International Conference, Sydney,Australia, Jul-97

"Strong Correlations in a Landau Band: The Fractional Quantum Hall Effect and Beyond"
Asia Pacific Center for Theoretical Physics Summer, Seoul, Korea, Jun-97

"Fractional Quantum Hall Effect"
3 Lectures at the French "GDR" school, Aussois, France, Jun-97

"Excitonic Condensates in Electron-Hole Double Layers"
ETRI Taejon, Korea, Jun-97

"Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets"
University of Florida, Gainesville, FL, Apr-97

"Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets"
University of Michigan, Ann Arbor, MI, Apr-97

"Excitonic Condensates in Electron-Hole Double Layers"
Indiana University, Bloomington, IN, Apr-97

"Skyrmions and Skyrme Crystals in Quantum Hall Ferromagnets"
Michigan State University, East Lansing, MI, Mar-97

"Excitonic Condensates in Electron-Hole Double Layers"
MPI-FKF Stuttgart, Germany, Feb-97

"Vortex Solids and Vortex Fluids in the Lowest Landau Level Approximation"
Landau Level Approximation" Workshop, Trieste, Italy, Aug-96

"Skyrme Crystals in Quantum Hall Ferromagnets"
International Conference, Wurzburg, Germany, Jul-96

"Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems"
Workshop, Trieste, Italy, Jul-96

"Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems"
Nobel Symposium, Arild, Sweden, Jun-96

"Excitonic Bose Condensation in 2D Electron-Hole Double-Layer Systems"
ECAMI Workshop, Ottawa, ON, Canada, Jun-96

"2D to 2D Tunneling"
Workshop, Pisa Italy, Jun-96

"Skyrme Crystals"
Workshop at Minneapolis, MN, May-96

"Quantum Hall Ferromagnetism"
Workshop at Erwin Schroedinger Institute, Vienna, Austria, Aug-95

"Current Problems in the Theory of The Fractional Quantum Hall Effect"
4 lectures at the NATO, Bad Lauterberg, Germany, Aug-95

"Current Problems in the Theory of The Fractional Quantum Hall Effect"
Lectures at the Brazilian Workshop, Rio de Janerio, Brazil, Jul-95

"Some Recent Results in Fractional Quantum Hall Effect Theory"
3 Lectures at the Winter School, Bangalore, IN, Jan-95

"Novel Physics in Double-Layer Quantum Hall Systems"
Workshop at Madras, India, Jan-95

"Vortices in s-wave and d-wave superconductors"
University of British Columbia, Vancouver, BC, Canada, Dec-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall systems"
Minneapolis, MN, Dec-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Ball State University, Muncie, IN, Nov-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum Hall Systems"
Technion Advanced Research Workshop, Nof Ginosar, Israel, Oct-94

"Introduction to the Quantum Hall Effect"
5 lectures at the Les Houches Summer School, Les Houches, France, Jul-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
The Technion, Haifa, Israel, Jun-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Ben-Gurion University, Beer-Sheva, Israel, Jun-94

"Introduction to the Quantum Hall Effect"
4 lectures at the International Center for Theoretical Physics, Trieste, Italy, May-94

"Vortex-lattice melting in Anisotropic Superconductors"
AT&T Bell Labs, Apr-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Penn State University, State College, PA, Apr-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Ohio State University, Columbus, OH, Apr-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
University of Minnesota, Minneapolis, MN, Apr-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall systems"
University of Tennessee, Knoxville, TN, Feb-94

"Vortex-lattice melting in Anisotropic Superconductors"
Oak Ridge National Lab, Oak Ridge, TN, Jan-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Purdue University, West Lafayette, IN, Jan-94

"Spontaneous Interlayer Coherence in Double-Layer Quantum-Hall Systems"
Johns Hopkins University, Baltimore, MD, Jan-94

"Commensurate-Incommensurate Phase Transitions in Double-Layer Quantum Hall Systems"
ENFISOL-4, Santiago, Chile, Jan-94

"One and One-half: Frontiers in FQHE Theory"
4th ISSP International Symposium, Tokyo, Japan, Nov-93

"Vortex-lattice melting in 2D Superconductors"
University of Florida, Gainesville, FL, Oct-93

"Vortex-lattice melting in 2D Superconductors"
Florida State University, Tallahassee, FL, Oct-93

"Spontaneous Interlayer Coherence in Double-Layer Systems"
University of Exeter, Exeter, England, UK, Sep-93

"Spontaneous Interlayer Coherence in Double-Layer Systems"
30th Anniversary of Solid State Communications, Oxford University, Oxford, England, UK, Sep-93

"Vortex-lattice Melting"
MISCON Workshop, Notre Dame University, Notre Dame, IN, Jul-93
"Coulomb Gaps in Strong Magnetic Fields"
University of Karlsruhe, Karlsruhe, Germany, Jun-93

"Coherent Interlayer Tunneling in Double-Layer Quantum Hall Systems"
International Workshop, Lauterberg, Germany, Jun-93

"Superconductivity in Extremely Strong Magnetic Fields"
University of Kentucky, Lexington, KY, Apr-93

"Superconductivity in Extremely Strong Magnetic Fields"
University of Illinois, Champaign, IL, Apr-93

"Do Superconductors Superconduct?"
University of Louisville, Louisville, KY, Apr-93

"Magnetoplasmons, Magnetorotons, and Magnetoexcitons"
American Physical Society, Seattle, WA, Mar-93

"Frictional Drag Between Nearby Two-Dimensional Electronic Systems"
Indiana University, Bloomington, ID, Feb-93

"Fractional Hall Quantum Dots"
University of Virginia, Charlottesville, VA, Feb-93

"Do Superconductors Superconduct?"
Antigonish, NS, Canada, Feb-93

"Lectures on the Quantum Hall Effect"
Australian National University Physics Summer School Canberra, Australia, Jan-93

"Frictional Drag Between Nearby Two-Dimensional Electronic Systems"
Czechoslovakian Academy of Sciences, Prague, CZ, Jan-93

"Fractional Hall Quantum Dots"
AT&T Bell Labs, Dec-92

"Superconductivity in Extremely Strong Magnetic Fields"
Concordia University, Montreal, ON, Canada, Oct-92

"Superconductivity in Extremely Strong Magnetic Fields"
University of Sherbrooke, Sherbrooke, QC, Canada, Oct-92

"Fractional Hall Quantum Dots"
Princeton University, Princeton, NJ, Oct-92

"Superconductivity in Extremely Strong Magnetic Fields"
Argonne Workshop, Lemont, IL, Aug-92

"Photoluminescence in the Fractional Hall Regime"
Gordon Godfrey Workshop, Sydney, Australia, Jul-92

"Magnetic Oscillations in Fractional Hall Dots"
University of New South Wales, Sydney, Australia, Jul-92

"The Fractional Quantum Hall Effect"
China Center for Advanced Science and Technology Summer School, Beijing, China, Jun-92

"Luminescence in the Fractional Hall Regime"
University of Munich, Munich, Germany, May-92

"Luminescence in the Fractional Hall Regime"
Max Planck Institut für Festkorperforschung, Stuttgart, Germany, May-92

"Edge Electronic Structure in the Fractional Hall Regime"
Max Planck -- Chernagolovka Joint Workshop, Stuttgart, Germany, May-92

"Superconductivity in Extremely Strong Magnetic Fields"
AT&T Bell Labs, Mar-92

"Electron Liquids and Solids in Very Strong Magnetic Fields"
Mauterndorf Winterschool, Austria, Feb-92

"Superconductivity in Very Strong Magnetic Fields"
University of British Columbia, Vancouver, BC, Canada, Dec-91

"Edge States in Integer and Fractional Quantum Hall Effects"
Simon Fraser University, Vancouver, BC, Canada, Dec-91

"Facts and Fantasies in FQHE theory"
Ohio University, Athens, OH, Nov-91

"Edge States in the Integer and Fractional Quantum Hall Effects"
University of Minnesota, Minneapolis, MN, Oct-91

"Anyons Anyone?"
University of Wisconsin, Madison, WI, Oct-91

"Superconductivity in Extremely Strong Magnetic Fields"
MISCON Meeting, Purdue University, West Lafayette, IN, Aug-91

"Facts and Fantasies in FQHE Theory"
National Research Council of Canada, Ottawa, ON, Canada, Aug-91

"Facts and Fantasies in FQHE Theory"
International Conference on Physics, Neuchatel, Switzerland, Aug-91

"The Quantum Hall Effects"
University of New South Wales, Sydney, Australia, Jul-91

"Edge Electronic Structure in the Fractional Hall Regime"
Institute for Theoretical Physics, Santa Barbara, CA, May-91

"Magnetophonons in the 2D Wigner Crystal"
University of Cincinnati, Cincinnati, OH, Feb-91

"Many-Body Physics in a Strong Magnetic Field"
Solid State Physics Conference, Santiago, Chile, Jan-91

"Many-Body Physics in a Strong Magnetic Field"
International Center for Condensed Matter Physics, Brazil, Jan-91

"Anyon Superconductivity"
University of Missouri, Columbia, MO, Jan-91

"Magnetophonons in the 2D Wigner Crystal"
Simon Frazer University, Vancouver, BC, Canada, Dec-90

"Anyon Superconductivity"
National Research Council of Canada, Ottawa, ON, Canada, Dec-90

"The 2D Wigner Crystal"
Northwestern University, Evanston, IL, Oct-90

"Magnetophonons in the 2D Wigner Crystal"
University of Florida, Gainesville, FL, Oct-90

"Magnetophonons in the 2D Wigner Crystal"
M.I.T., Cambridge, MA, Oct-90

"Magnetophonons in the 2D Wigner Crystal"
S.U.N.Y. Stony Brook, NY, Oct-90

"Half the Story"
Yale 2D, Yale University, New Haven, CT, Oct-90

"Magnetophonons in the 2D Wigner Crystal"
University of Maryland, College Park, MD, Sep-90

"Measuring fractional charges"
Aspen Center for Physics, Aspen, CO, Jul-90

"Photoluminescence in the fractional quantum Hall regime"
MPIF, Stuttgart, Germany, Jun-90

"Anyon superconductivity"
MPIF, Stuttgart, Germany, Jun-90

"Edge Magnetoplasmons in the Quantum Hall Regime"
MPIF, Stuttgart, Germany, May-90

"The Quantum Hall Effects"
NATO ASI, Les Arcs, France, Apr-90

"Edge Magnetoplasmons in the Quantum Hall Regime"
AT&T Bell Labs, Holmdel, NJ, Jan-90

"Edge Magnetoplasmons in the Quantum Hall Regime"
Yale University, New Haven, CT, Nov-89

"The Fractional Hall Effect"
University of Hamburg, Hamburg, Germany, Jul-89

"t/U Expansion of the Hubbard Model"
MPI fur Festkorperforschung, Stuttgart, Germany, Jul-89

"The Fractional Hall Effect in Two-Layer and Multilayer Systems"
AT&T Bell Labs, Jun-89

"The Fractional Hall Effect in Two-Layer and Multilayer Systems"
Ohio State University, Columbus, OH, Apr-89

"The Quantum Hall Effect"
Purdue University, Indianapolis, IN Apr-89

"The Quantum Hall Effect"
Indiana State University, Terre Haute, IN, Apr-89

"The Fractional Hall Effect in Two-Layer and Multilayer Systems"
University of Minnesota, Minneapolis, MN, Apr-89

"Landauer Formulas and the Quantum Hall Effect"
IBM T.J. Watson Labs, Feb-89

"Landauer Formulas and the Quantum Hall Effect"
Indiana University, Bloomington, IN, Feb-89

"The Quantum Hall Effect"
Solid State Physics Conference, Santiago, Chile, Jan-89

"Landauer Formulas and the Quantum Hall Effect"
Argonne National Lab, Lemont, IL, Jan-89

"Landauer Formulas and the Quantum Hall Effect"
National Research Council, Ottawa, ON, Canada, Oct-88

"Landauer Formulas and the Quantum Hall Effect"
University of Minnesota, Minneapolis, MN, Oct-88

"The Two-Component Fractional Quantum Hall Effect"
MPI fur Festkorperforschung, Stuttgart, Germany, Jun-88

"The Quantum Hall Effect"
Oulu, Finland, Jun-88

"ODLRO in the FQHE and Quantum Spin Systems"
MPI fur Festkorperforschung, Stuttgart, Germany, Jun-88

"The Two-Component Fractional Quantum Hall Effect"
University of Illinois, Champaign, IL, Apr-88

"The Two-Component Fractional Quantum Hall Effect"
University of Michigan, Ann Arbor, MI, Feb-88

"The Fractional Quantum Hall Effect"
University of Kentucky, Lexington, KY, Nov-87

"Fractional Quantum Hall Effect"
Oak Ridge National Lab, Oak Ridge, TN, Nov-87

"The Fractional Quantum Hall Effect"
University of Toronto, ON, Canada, Oct-87

"Raman Scattering in Fibonacci Superlattices"
University of Alberta, Edmonton, AB, Canada, Apr-87

"Raman Scattering in Fibonacci Superlattices"
Waterloo University, Waterloo, ON, Canada, Mar-87

"Raman Scattering in Fibonacci Superlattices"
University of California at Davis, Davis, CA, Feb-87

"Raman Scattering in Fibonacci Superlattices"
Indiana University, Bloomington, IN, Feb-87

"Fractional Quantum Hall Effect"
Ottawa, ON, Canada, Feb-87

"Raman Scattering in Fibonacci Superlattices"
MPI fur Festkorperforschung, Stuttgart, Germany, Jan-87

"ODLRO and the Fractional Quantum Hall Effect"
ETH-Zurich, Switzerland, Jan-87

"Fractional Quantum Hall Effect"
MPI fur Festkorperforschung, Stuttgart, Germany, Jan-87

"Fractional Quantum Hall Effect"
University of Florida, Gainesville, FL, Jan-87

"Fractional Quantum Hall Effect"
SUNY at Buffalo, Buffalo, NY, Oct-86

"Fractional Quantum Hall Effect"
University of Western Ontario, London, ON, Canada, Oct-86

"Density-wave Instabilities and Thermoelectric Parameters in the Alkali Metals"
National Bureau of Standards, Washington, DC, Apr-86

"Collective Excitations in the Fractional Quantum Hall Effect"
Brown University, Providence, RI, Apr-86

"The Fractional Quantum Hall Effect"
Tohoku University, Japan, Mar-86

"The Fractional Quantum Hall Effect"
Electrotechnical Institute, Japan, Mar-86

"Collective Excitations in the Fractional Quantum Hall Effect"
Research Institute for Iron, Steel and Other Metals, Japan, Mar-86

"Collective Excitations in the Fractional Quantum Hall Effect"
Institute for Solid State Physics, Japan, Mar-86

"The Fractional Quantum Hall Effect"
University of Hong Kong, China, Feb-86

"The Fractional Quantum Hall Effect"
University of Kyushu, Japan, Feb-86

"The Fractional Quantum Hall Effect"
Queen's University, Kingston, ON, Canada, Nov-85

"The Fractional Quantum Hall Effect"
University of Manitoba, Winnipeg, MB, Canada, Oct-85

"The Fractional Quantum Hall Effect"
Memorial University of Newfoundland, Canada, Oct-85

"The Fractional Quantum Hall Effect"
Max-Planck Institute, Grenoble, France, May-85

"The Fractional Quantum Hall Effect"
L'Ecole Normale Superieure, Paris, France, May-85

"The Fractional Quantum Hall Effect"
IBM T.J. Watson Research Center, Yorktown Heights, NY, Mar-85

"The Fractional Quantum Hall Effect"
University of Illinois, Champaign, IL, Feb-85

"The Fractional Quantum Hall Effect"
McMaster University, Hamilton, ON, Canada, Nov-84

"The Fractional Quantum Hall Effect"
University of Toronto, Toronto, ON, Canada, Oct-84

"The Fractional Quantum Hall Effect"
Cornell University, Ithaca, NY, Oct-84

"Edge States and the Quantum Hall Effect"
University of Sherbrooke, Sherbrooke, QC, Canada, Feb-84

"Edge States and the Quantum Hall Effect"
McGill University, Montreal, QC, Canada, Feb-84

"Edge States and the Quantum Hall Effect"
St. Francis Xavier University, Antigonish, NS, Canada, Oct-83

"Edge States and the Quantum Hall Effect"
Dalhousie University, Halifax, NS, Canada, Oct-83

"Quantum Hall Effect in a Periodic Potential"
E.T.H. Zurich, Switzerland, Jun-83

"Quantum Hall Effect in a Periodic Potential"
Imperial College, London, England, UK, May-83

"Quantum Hall Effect in a Periodic Potential"
University of Bristol, England, UK, May-83

"Quantum Hall Effect in a Periodic Potential"
Daresbury National Lab, England, UK, May-83

"Quantum Hall Effect in a Periodic Potential"
Free University of Amsterdam, Netherlands, May-83

"Quantum Hall Effect in a Periodic Potential"
Cambridge University, Cambridge, England, UK, May-83

"Quantum Hall Effect in a Periodic Potential"
University of Geneva, Switzerland, Feb-83

"Point Contact Spectroscopy"
Max-Planck Institute, Stuttgart, Germany, Nov-82

"Point Contact Spectroscopy"
University of Toronto, Toronto, ON, Canada, Nov-81

"Point Contact Spectroscopy"
Oak Ridge, TN, Oct-81

"Umklapp Electron-Electron Scattering in the Alkali Metals"
University of Alberta, Edmonton, Alberta, Canada, Jan-81

"Susceptibility Anisotropy in Transition Metal Dichalcogenides"
University of Alberta, Edmonton, Alberta, Canada, Jan-81

"Susceptibility Anisotropy in Transition Metal Dichalcogenides"
Simon Fraser University, Edmonton, Alberta, Canada, Jan-81

"Susceptibility Anisotropy in Transition-Metal Dichalcogenides"
Michigan State University, East Lansing, MI, Nov-80

"Alkali Metal Quasiparticle Dynamics"
National Research Council, Ottawa, ON, Canada, Nov-80

"Umklapp Electron-Electron Scattering in the Alkali Metals"
University of Ottawa, ON, Canada, Sep-80

"Electron-Electron Scattering in Metals"
Queen's University, Kingston, ON, Canada, Feb-80

"Electron-Electron Scattering in Metals"
Dalhousie University, Halifax, NS, Canada, Jan-80

"Electron-Electron Scattering in Metals"
St. Francis Xavier University, Antigonish, NS, Canada, Jan-80

"Relativistic Density Functional Formalism"
Argonne National Labs. Argonne, IL, Jan-79

"Relativistic Density Functional Formalism"
National Research Council, Ottawa, ON, Canada, Feb-78

"Excitonic BEC in Bilayer Quantum Hall Systems"
University of Colorado, Boulder, CO, Jun-05

"Off-Diagonal Long Range Order in the Quantum Hall Effect"
American Physical Society St. Louis, MO, 989

"Fractional Hall Effect in Multi-Component Systems"
Eighth International Conference, Grenoble, France, 989

"The Fractional Quantum Hall Effect"
5th International Conference, Oulu, Finland, 1987

"Fibonacci Superlattices"
NATO ASI on Interfaces, Superlattices and Quantum Wells Banff, Alberta, Canada, 1987

"Electrons in Strong Magnetic Fields"
Canadian Association of Physicists Congress, Toronto, ON, Canada, 1987

"The Fractional Quantum Hall Effect"
Gordon Research Conference, Wolfeboro, NH, 1986

"Classical Plasmas, Quantum Fluids and the Fractional Quantum Hall Effect"
Canadian Association of Physicists Congress, Fredericton, NB, Canada, 1985

"The Quantum Hall Effect"
International Center for Theoretical Physics, Trieste, Italy, 1983

"Relativistic Effects in Metals"
NATO ASI on Relativistic Effects in Atoms, Molecules, and Solids Vancouver, BC, Canada, 1981

"Electron-electron Interactions in Simple-metals and Transition-metals"
International Conference on Transport Metals, Ottawa, ON, Canada, 1981