Stuart Brown
Professor of Physics
Department of Physics and Astronomy
University of California, Los Angeles
[redacted]

Education
B.A., physics and mathematics, University of Colorado at Boulder, 1981.
M.S., physics, University of California at Los Angeles, 1983.
Ph.D., physics, University of California at Los Angeles, 1988.

Professional Experience
Professor, University of California, Los Angeles, 1999-present
Consultant, Los Alamos National Laboratory, 2008-present
Member, (FSU) President's External Advisory Committee of the National High Magnetic Field Laboratory, 2011-
Associate Professor, University of California, Los Angeles, 1994-1999
Assistant Professor, University of California, Los Angeles, 1992-1994.
Visiting Faculty, Los Alamos National Laboratory 1999-2000
Consultant, Physics Division, Los Alamos National Laboratory, 1989-1999.
Consultant, Advanced Technology Materials, Danbury, CT, 1987-1992
Assistant Professor, University of Florida, 1989-1991.

Fellow of the American Physical Society, 2004-

Research interests
The focus of my research program is in low-dimensional and correlated electron systems, where novel ground states and phases are both emergent and tunable, and the physics observed cannot typically be described with conventional, effectively non-interacting, theories. I am an experimentalist; the principal investigative tool applied in my laboratory is nuclear magnetic resonance (NMR). Its utility in condensed matter physics problems is as a local probe sensitive to the electronic spin degrees of freedom through the hyperfine interaction. What interests me generally is the nature of the phases accessed and transitions between them, the nature of the low-lying excitations, as well as establishing ranges of stability. We exploit its compatibility to a diverse set of extreme conditions, including low temperatures, high pressure or stress, and as wide a range of dc magnetic fields available at UCLA or in user facilities. Most recently, we have concentrated on quantum magnetism, including one-dimensional and layered frustrated magnetic systems, and two-dimensional superconductors.

Selected positions of service at UCLA and professionally

Faculty coordinator for Organizing Committee, APS Conference for Undergraduate Women in Physics, 2017 (UCLA site)

Organizer, Gordon Research Conference on Conductivity and Magnetism in Molecular Materials, August, 2017 (with Professor Stephen Hill, at Mount Holyoke College, MA)

Member, Council on Academic Personnel of the Academic Senate, Los Angeles Div. 2013-2016

Chair, Undergraduate Council of the Academic Senate, Los Angeles Div., 2007-2008

Vice Chair, UCLA Physics and Astronomy, 2005-2008

Vice Chair, Graduate Council of the Academic Senate, Los Angeles Div., 2009-2010

Published research articles

1. "Subharmonic Shapiro Steps and Devil's Staircase behavior in driven charge-density wave systems", S.E. Brown, G. Mozurkewich, and G. Gruner, Phys. Rev. Lett. **52**, 2277 (1984).
2. "Subharmonic Shapiro Steps, Devil's Staircase, and synchronization in rf-driven CDW conduction", S.E. Brown, G. Mozurkewich, and G. Gruner, Lecture Notes in Physics **217**, 315 (1985).
3. "Harmonic and subharmonic Shapiro Steps in Orthorhombic TaS_3", S.E. Brown, G. Mozurkewich, and G. Gruner, Solid State Commun. **54**, 23 (1985).
4. "Effect of a temperature gradient on the current oscillations in moving charge-density waves", S.E. Brown, A. Janossy, and G. Gruner, Phys. Rev. B **31**, 6869 (1985).
5. "Shapiro Steps in Orthorhombic TaS_3", S.E. Brown and G. Gruner, Phys. Rev. B **31**, 8302 (1985).
6. "Coherent voltage oscillations induced by charge-density waves: interface or bulk phenomenon?", S.E. Brown and L. Mihaly, Phys. Rev. Lett. **55**, 1985).
7. "Interference phenomena in charge-density waves for nonsinusoidal external drives", S.E. Brown, G. Gruner, and L. Mihaly, Solid State Commun. **58**, 231 (1986).
8. "Long range remanent deformations of charge-density waves in TaS_3 and $NbSe_3$", S.E. Brown, L. Mihaly, and G. Gruner, Solid State Commun. **58**, 231 (1986).
9. "Interference effects in the charge-density wave conductor $NbSe_3$", S.E. Brown, L. Mihaly, and G. Gruner", Physica **23D**, 169 (1986).
10. "Phase locking in charge-density wave transport", R.E. Thorne, J.R. Tucker, John Bardeen, S.E. Brown, and G. Gruner, Phys. Rev. B **33**, 7342 (1986).
11. "Magnetic and superconducting properties of $RBa_2Cu_3O_x$", S.E. Brown, J.D. Thompson, J.O. Willis, R.M. Aikin, E. Zirngiebl, J.L. Smith, Z. Fisk, and R.B. Schwartz, Phys. Rev. B **36**, 2298 (1987).
12. "Normal state properties of $ABa_2Cu_3O_{7-y}$ compounds (A=Y, Gd): electron-electron correlations", S.-W. Cheong, S.E. Brown, J.R. Cooper, Z. Fisk, R.S. Kwok, D.E. Peterson, J.D. Thompson, G.L. Wells, E. Zirngiebl, and G. Gruner, Phys. Rev. B **36**, 3913 (1987).
13. "Magnetism of actinide compounds", J.L. Smith, S.E. Brown, B.R. Cooper, Z. Fisk, A.L. Giorgi, J.D. Thompson, and J.O. Willis, J. Magn. Magn. Mat. **70**, 347 (1987).
14. "Thermoelectric Power in the normal state of high-T_c superconductors $RBa_2Cu_3O_x$ (R=Y

or rare earth)", R.S. Kwok, S.E. Brown, J.D. Thompson, Z. Fisk, and G. Gruner, Physica **148B**, 346 (1987).
15. "Velocity and attenuation of stress waves in $GdBa_2Cu_3O_7$ near the superconducting phase transition", S.E. Brown, A. Migliori, and Z. Fisk, Solid State Commun. **65**, 483 (1988).
16. "Novel phase transition in non-antiferromagnetically oriented crystals of La_2CuO_4", S.-W. Cheong, Z. Fisk, J.O. Willis, S.E. Brown, J.D. Thompson, J.P. Remeika, A.S. Cooper, R.M. Aikin, D. Schiferl, and G. Gruner, Solid State Commun. **65**, 111 (1988).
17. "Effects of substitutional impurities on the low-temperature specific heat of $(TaSe_4)_2I$", S.E. Brown, J.O. Willis, B. Alavi, and G. Gruner, Phys. Rev. B **37**, 6551 (1988).
18. "Magnetic properties of Gd_2CuO_4", J.D. Thompson, S.-W. Cheong, S.E. Brown, Z. Fisk, and S. Oseroff, Phys. Rev. B **39**, 6660 (1989).
19. "Thermal conductivity of the charge-density wave systems $K_{0.3}MoO_3$ and $(TaSe_4)_2I$ near the Peierls transition", R.S. Kwok and S.E. Brown, Phys. Rev. Lett. **63**, 895 (1989).
20. "Electrodynamics of single-crystal Eu_2CuO_4", D.W. Reagor, S.-W. Cheong, S.E. Brown, A. Migliori, Z. Fisk, and J.D. Thompson, Synth. Met. **29**, F657 (1989).
21. "Thermal conductivity of $K_{0.3}MoO_3$ in the non-ohmic regime", R.S. Kwok, G. Gruner, and S.E. Brown, Solid State Commun. **72**, 513 (1989).
22. "Charge-density wave current oscillations and interference effects"*, S.E. Brown and A. Zettl, Ch. 6 in **Charge Density Waves in Solids**, edited by L.P. Gor'kov and G. Gruner (Elsevier Science Publishers B.V., Amsterdam, 1989).
23. "Fully automated system for the simultaneous measurement of thermal conductivity and heat capacity from 4 to 300K", R.S. Kwok and S.E. Brown, Rev. Sci. Instrum. **61**, 809 (1990).
24. "Elastic constants and specific heat measurements on single crystals of La_2CuO_4", A. Migliori, W.M. Visscher, S.E. Brown, Z. Fisk, J.D. Maynard, M.H.W. Chan, *et al.* , Phys. Rev. B **41**, 2098 (1990).
25. "Complete elastic constants and giant softening of C_{66} in superconducting $La_{1.86}Sr_{.14}CuO_4$", A. Migliori, W.M. Visscher, S. Wong, S.E. Brown, I. Takana, H. Kojima, and P.B. Allen, Phys. Rev. Lett. **64**, 2458 (1990).
26. "Thermal conductivity of quasi-one dimensional conductors", R.S. Kwok and S.E. Brown, Fizika **21**, 127 (1990).
27. "Impurity Effects in UPt_3", J.L. Smith, M.C. Aronson, S.E. Brown, and A.L. Giorgi, Physica B **163**, 129 (1990).
28. "Sound velocity measurements in $(TMTTF)_2X$ salts, X = ReO_4, AsF_6, SbF_6", S.E. Brown, H.H.S. Javadi, and R. Laversanne, Mat. Res. Soc. Proc. **173**, 245 (1990).
29. "Fluctuations and thermodynamic properties of the charge-density wave system $K_{0.3}MoO_3$", R.S. Kwok, G. Gruner, and S.E. Brown, Phys. Rev. Lett. **65**, 365 (1990).
30. "RF penetration depth of superconducting UPt_3 with double heat capacity anomaly", S.E. Brown, H. Li, M.W. Meisel, J.L. Smith, A.L. Giorgi, and J.D. Thompson, Physica B **165** & **166**, 377 (1990).
31. "Fluctuations and thermodynamics of the charge-density wave phase transition of $K_{0.3}MoO_3$", R.S. Kwok, G. Gruner, and S.E. Brown, Synth. Met. **41-43**, 3845 (1991).
32. "AC susceptibility and penetration depth studies of $U_{1-x}Th_xBe_{13}$", E.A. Knetsch, J.A.

Mydosh, P. Signore, S.E. Brown, M.W. Meisel, R.H. Heffner, and J.L. Smith (in press, J. Mag. Mag. Mat. **108**, 73 (1992).

33. "Anisotropic superconducting properties of URu_2Si_2", E.A. Knetsch, A.A. Menovsky, G.J. Nieuwenhuys, J.A. Mydosh, P. Signore, S.E. Brown, and M.W. Meisel, J. Mag. Mag. Mat. **108**, 71 (1992).
34. "Inductive response of oriented UPt_3 in the superconducting state", P.J.C. Signore, E.A. Knetsch, C. van Woerkens, M.W. Meisel, S.E. Brown, and Z. Fisk, Phys. Rev. B **45**, 10151 (1992).
35. "Softening of Young's Modulus and collective spin-density wave transport in $(TMTSF)_2PF_6$ (where TMTSF is tetramethyltetraselenafulvalene)", S.E. Brown, B. Alavi, G. Gruner, and K. Bartholomew, Phys. Rev. B **46**, 10483 (1992).
36. "Deformation of the charge-density wave by electric fields in $K_{0.3}MoO_3$", J. Zhang, J.F. Ma, S.E. Nagler, and S.E. Brown, Phys. Rev. B **47**, 1655 (1993).
37. "Thermodynamics of the spin-density wave transition in $(TMTSF)_2PF_6$", J. Coroneus, B. Alavi, and S.E. Brown, Phys. Rev. Lett., **70**, 2332 (1993).
38. "Polarization kinetics of the charge-density wave in $K_{0.3}MoO_3$", J. Zhang, J.F. Ma, S.E. Nagler, and S.E. Brown, Phys. Rev. Lett. **70**, 3095 (1993).
39. "Relationship between the elastic properties and the order parameter of the spin-density wave phase of $(TMTSF)_2PF_6$", S.E. Brown, B. Alavi, W.G. Clark, M.E. Hanson, and B. Klemme, J. de Physique IV, Coll. **C2**, 225 (1993).
40. "Density Waves in Solids", Stuart Brown and George Gruner, Scientific American **270**, 28 (1994).
41. "Evidence for Kondo effect and crossover in electronic structure for x~0.2 of $U_xY_{1-x}Pd_3$", J. McCarten, S.E. Brown, C.L. Seaman, and M.B. Maple, Physica B **199-200**, 389 (1994).
42. "Evidence for the Kondo effect and crossover in transport behavior for x~0.2 of $Y_{1-x}U_xPd_3$", J. McCarten, S.E. Brown, C.L. Seaman, and M. B. Maple, Phys. Rev. B **49**, 6400 (1994).
43. "Inductive response of polished, single-crystal UPt_3, P.J.C. Signore, M.W. Meisel, S.E. Brown, and Z. Fisk, Physica B **199-200**, 157 (1994).
44. "Inductive measurements of UPt_3 in the superconducting state", P.J.C. Signore, B. Andraka, M.W. Meisel, S.E. Brown, Z. Fisk, A. Giorgi, J.L. Smith, E. Schuberth, and A.A. Menovsky, Phys. Rev. B **52**, 4446 (1995).
45. "Commensurate and incommensurate spin-density waves and a modified phase diagram of the Bechgaard Salts", B.J. Klemme, S.E. Brown, P.Wzietek, G. Kriza, D. Jerome, and J.M. Fabre, Phys. Rev. Lett. **75**, 2408 (1995).
46. "Kondo Insulators", Z. Fisk, J. L. Sarrao, J. D. Thompson, D. Mandrus, M. Hundley, A. Migliori, B. Buchner, Z. Schlesinger, G. Aeppli, E. Bucher, J. F. DiTusa, C. S. Oglesby, H. R. Ott, P. C. Canfield, and S. E. Brown, Physica B **206-207**, 798 (1995).
47. "Evidence from ^{1}H-NMR for a crossover from "local-moment" antiferromagnetism to spin-density wave with application of pressure", B.J. Klemme, S.E. Brown, P. Wzietek, D. Jerome, and J. M. Fabre, J. Phys. I **6**, 1745 (1996) (Shegolev issue).
48. "Examination of the antiferromagnetic ground state of the Bechgaard salts", S. E. Brown, B. J. Klemme, P. Wzietek, D. Jerome, and J. M. Fabre, Synth. Metals **86**, 1937 (1997).

49. "NMR as a probe of incommensurate spin density waves in organic metals", W. G. Clark, M. E. Hanson, S. E. Brown, B. Alavi, G. Kriza, P. Segranson, and C. Berthier, Synth. Metals **86**, 1941 (1997).
50. "Evolution of the ground state of $(TMTTF)_2Br$ with pressure", S.E. Brown and B. J. Klemme, Physica B **230-232**, 981 (1997).
51. "Relation between the dielectric function and nuclear spin-lattice relaxation by thermal phase fluctuations of a pinned spin-density wave", S.E. Brown, G. Kriza, and W.G. Clark, Phys. Rev. B **56**, 5080 (1997).
52. "Absence of quasiparticles in the photoemission spectra of quasi-one-dimensional Bechgaard salts", F. Zwick, S. E. Brown, G. Margaritondo, C. Merlic, M. Onellion, J. Voit, and M. Grioni, , Phys. Rev. Lett. **79**, 3982 (1997).
53. "^{13}C NMR measurements of the high-magnetic-field, low-temperature phases of $(TMTTF)_2PF_6$", S. E. Brown, W. G. Clark, F. Zamborszky, B. J. Klemme, G. Kriza, B. Alavi, C. Merlic, P. Kuhns, and W. Moulton, Phys. Rev. Lett. **80**, 5429 (1998).
54. "Singular behavior in the pressure-induced competition between spin-Peierls and antiferromagnetic ground states in $(TMTTF)_2PF_6$", D. S. Chow, D. Fogliatti, P. Wzietek, D. J. Tantillo, B. Alavi, and S. E. Brown, Phys. Rev. Lett. **81**, 3984 (1998).
55. "Pressure-tuning the antiferromagnetic and spin-Peierls ground states of $(TMTTF)_2PF_6$, D. S. Chow, S. E. Brown, P. Wzietek, D. Fogliatti, B. Alavi, C. A. Merlic, and D. J. Tantillo, Synth. Metals **103**, 2058 (1999).
56. "Incommensurate phase of the spin-Peierls compound $(TMTTF)_2PF_6$", S. E. Brown, W. G. Clark, B. Alavi, D. S. Chow, C. A. Merlic, and D. J. Tantillo, Synth. Metals **103**, 2056 (1999).
57. "High field NMR studies of conduction electron dynamics in metallic polypyrrole-PF_6", W. G. Clark, K. Tanaka, S. E. Brown, R. Menon, F. Wudl, W. G. Moulton, P. Kuhns, Synth. Metals **101**,343 (1999).
58. "Synthesis of Carbon-13 labelled tetramethyltetrathiafulvalene", C. A. Merlic, A. Baur, D. J. Tantillo, and S. E. Brown, Synthetic Communications (in press).
59. "High-field magnetization of the spin-Peierls compound $(TMTTF)_2PF_6$", S. E. Brown, W. G. Clark, B. Alavi, D. Hall, M. J. Naughton, D. J. Tantillo, and C. A. Merlic, Phys. Rev. B **60** 6270 (1999).
60. "Charge-ordering in the TMTTF family of molecular conductors", D. S. Chow, F. Zamborszky, A. Baur, C. Merlic, and S. E. Brown, Phys. Rev. Lett. **85**, 1698 (2000).
61. "^{1}H NMR studies in the regime of the field-induced spin-density wave phases of $(TMTSF)_2PF_6$", S. E. Brown, M. Pieper, W. G. Clark, D. S. Chow, A. Lacerda, and B. Alavi, J. Phys. IV, **Pr10**, 187 (1999).
62. "Singular behavior in the pressure-tuned competition between Spin-Peierls and antiferromagnetic ground states of $(TMTTF)_2PF_6$", D. S. Chow, S. E. Brown, P. Wzietek, D. Fogliatti, B. Alavi, and C. A. Merlic, Synth. Metals **103**, 2058 (1999).
63. "Synthesis of quadruply-carbon-13 labeled tetramethyltetrathiafulvalene", C. A. Merlic, A. Baur, K. Yamada, and S. E. Brown, Synth. Commun. **30**, 2677 (2000).
64. Hall effect in the normal phase of the organic superconductor $(TMTSF)_2PF_6$, J. Moser, J. R. Cooper, D. Jerome, B. Alavi, S. E. Brown, K. Bechgaard, Phys. Rev. Lett. **84**, 2674 (2000).
65. "Mott transition, antiferromagnetism and unconventional superconductivity in layered organic superconductors, S. Lefebvre, P. Wzietek, S. E. Brown, C. Bourbonnais, D.

Jerome, C. Meziere, M. Fourmigue, and P. Batail, Phys. Rev. Lett. **85**, 5420 (2000).
66. "Two-dimensional organic superconductors studied by NMR under pressure", P. Wzietek, S. Lefebvre, H. Mayaffre, S. E. Brown, C. Bourbonnais, D. Jerome, C. Meziere, and P. Batail, Hyperfine Inter. **128**, 183 (2000).
67. "Interlayer decoupling, Lebed magic angle magnetoresistance and triplet superconductivity in $(TMTSF)_2PF_6$", E. I. Chashechkina, I. J. Lee, S. E. Brown, D. S. Chow, W. G. Clark, M. J. Naughton, and P. M. Chaikin, Synth. Metals **119**, 13 (2001).
68. "Metastable solid phase at the crystalline-amorphous border: The glacial phase of triphenyl phosphite", B. G. Demirjian, G. Dosseh, A. Chauty, M. L. Ferrer, D. Morineau, C. Lawrence, K. Takeda, D. Kivelson, and S. E. Brown, J. Phys. Chem. B **105**, 2107 (2001).
69. "Triplet superconductivity in a quasi-one-dimensional organic conductor proved by ^{77}Se NMR Knight shift", I. J. Lee, S. E. Brown, M. J. Strouse, M. J. Naughton, W. Kang, P. M. Chaikin, Phys. Rev. Lett. **88**, 017004 (2002).
70. "NMR study of the antiferromagnetic to superconductor phase transition in $(TMTSF)_2PF_6$", W. Yu, F. Zamborszky, S. E. Brown, I. J. Lee, and P. M. Chaikin, Int. J. Mod. Phys. B **16**, 3090 (2002).
71. "Competition and coexistence of bond and charge orders in $(TMTTF)_2AsF_6$", F. Zamborszky, W. Yu, W. Raas, S. E. Brown, B. Alavi, C. Merlic, and A. Baur, Phys. Rev. B **66**, 1103 (2002).
72. "Inhomogeneous carrier density and the role of disorder in $(TMTSF)_2PF_6$", W. Yu, F. Zamborszky, B. Alavi, and S. E. Brown, Synth. Met. .
73. "Triplet quasi-one-dimensional superconductors", S. E. Brown, M. J. Naughton, I. J. Lee, E. I. Chashechkina, and P. M. Chaikin in More is Different: Fifty Years of Condensed Matter Physics, N. P. Ong and R. N. Bhatt, Ed. (Princeton University Press, Princeton, NJ, 2001), p. 151-172.
74. "Influence of charge order on the ground states of TMTTF conductors", F. Zamborszky, W. Yu, W. Raas, S. E. Brown, B. Alavi, C. A. Merlic, A. Baur, S. Lefebvre, and P. Wzietek, J. Phys. IV **12**, 139-44 (2002).
75. "Triplet superconductivity and stripes? in $(TMTSF)_2PF_6$", I. J. Lee, S. E. Brown, W. G. Clark, W. Kang, M. J. Naughton, and P. M. Chaikin, Synth. Metals **133,** 33-6 (2003).
76. "On the angular dependences of the superconducting and normal state properties of the Bechgaard salts: Triplet superconductivity, enhanced H_{c2} near the S-I boundary, giant Nernst Effect at Lebed magic angles", W. Wu and I. J. Lee and S. E. Brown and M. J. Naughton and P. M. Chaikin, Synth. Metals, **137**, 1305-7 (2003).
77. "Inhomogeneous carrier density and the role of disorder in the normal state of $(TMTSF)_2PF_6$", S. E. Brown, W. Yu, F. Zamborszky, and B. Alavi, Synth. Metals **137**, 1299-301 (2003).
78. Evidence from ^{77}Se Knight shifts for triplet superconductivity in $(TMTSF)_2PF_6$, I. J. Lee, D. S. Chow, W. G. Clark, M. J. Strouse, M. J. Naughton, P. M. Chaikin, and S. E. Brown Phys. Rev. B **68**, 092510 (2003)
79. "Electron-lattice coupling and broken symmetries of the molecular salt $(TMTTF)_2SbF_6$", W. Yu, F. Zhang, F. Zamborszky, B. Alavi, A. Baur, C. A. Merlic, and S. E. Brown, Phys. Rev. B **70**, 121101 (2004).
80. "Influence of charge order on the ground states of TMTTF molecular salts", W. Yu, F. Zamborszky, B. Alavi, A. Baur, C. A. Merlic, and S. E. Brown, J. Phys. IV **114**, 35-40

(2004).

81. "Phase inhomogeneity of the itinerant ferromagnet MnSi at high pressures", W. Yu, F. Zamborszky, J. D. Thompson, J. L. Sarrao, M. E. Torelli, Z. Fisk, and S. E. Brown, Phys. Rev. Lett. **92**, 086403 (2004).
82. "Inhomogeneous electronic structure probed by spin-echo experiments in the electron doped high-T_c superconductor $Pr_{1.85}Ce_{0.15}CuO_{4-y}$, F. Zamborszky, G. Wu, J. Shinagawa, W. Yu, H. Balci, R. L. Greene, W. G. Clark, and S. E. Brown, Phys. Rev. Lett. **92**, 0047003 (2004).
83. "NMR evidence for very slow carrier density fluctuations in the organic metal $(TMTSF)_2ClO_4$ " F. Zhang, Y. Kurosaki, J. Shinagawa, B. Alavi, and S. E. Brown, Phys. Rev. B **72**, 060501 (2005).
84. "Coexistence of superconductivity and antiferromagnetism probed by simultaneous nuclear magnetic resonance and electrical transport in $(TMTSF)_2PF_6$", I. J. Lee, S. E. Brown, W. Yu, M. J. Naughton, and P. M. Chaikin, Phys. Rev. Lett. **94**, 197001 (2005)
85. "^{77}Se NMR probe of magnetic excitations of the Magic Angle Effect in $(TMTSF)_2PF_6$", W. Wu, P. M. Chaikin, W. Kang, J. Shinagawa, W. Yu, and S. E. Brown, Phys. Rev. Lett. **94**, 097004 (2005)
86. "Surface pinning of fluctuating charge order: an extraordinary surface phase transition", S. E. Brown, E. Fradkin, and S. A. Kivelson, Phys. Rev. B **71**, 224512 (2005).
87. "Charge order and the electronic phases of the TMTTF-based molecular conductors", F. Zhang, S. E. Brown, S. Lefebvre, P. Wzietek, J. Phys. IV **131**, 9-13 (2005).
88. "^{77}Se NMR Studies on Magic Angle Effect and Nature of the Superconducting State in the Organic Superconductors $(TMTSF)_2X$ ", J. Shinagawa, W. Wu, P.M. Chaikin, W. Kang, W. Yu, F. Zhang, Y. Kurosaki, C. Parker, and S.E. Brown, J. Low Temp. Phys. **142**, 237 (2006).
89. "Unconventional superconductivity in the quasi-one dimensional system $(TMTSF)_2X$", I.J. Lee, S. E. Brown, M. J. Naughton, and P. M. Chaikin, J. Phys. Soc. Japan **75**, 051011 (2006).
90. "Proton NMR measurements of the local magnetic field in the paramagnetic metal and antiferromagnetic insulator phases of λ-$(BETS)_2FeCl_4$" , G. Wu, P. Ranin, W. G. Clark, S. E. Brown, L. Balicas, and L.K. Montgomery, Phys. Rev. B **74,** 064028 (2006)
91. "Magnetic model of the tetragonal-orthorhombic transition of the cuprates", Chen Fang, Jiangping Hu, Steven Kivelson, and Stuart Brown, Phys. Rev. B **74**, 094508 (2006).
92. "^{77}Se NMR measurements of the p-d exchange field in the organic conductor λ-$(BETS)_2FeCl_4$", Guoqing Wu, W. G. Clark, S. E. Brown, J. S. Brooks, A. Kobayashi, and H. Kobayashi, Phys. Rev. B **76** 132510 (2007).
93. "^{1}H-NMR spin echo measurements of the spin dynamic properties in λ-$(BETS)_2FeCl_4$", Phys. Rev. B **75**, 174416 (2007).
94. "Superconducting state of $(TMTSF)_2ClO_4$", J. Shinagawa, Y. Kurosaki, F. Zhang, C. Parker, S. E. Brown, D. Jérome, J. B. Christensen, and K. Bechgaard, Phys. Rev. Lett. **98**, 147002 (2007).
95. "La tour des sels Bechgaard", S. E. Brown, P. M. Chaikin, and M. J. Naughton, book chapter in **Organic superconductors and conductors**, ed. By A. G. Lebed (Springer Series in Materials Science vol. 110, 2008).
96. "^{77}Se NMR probe of the field-induced spin density wave phase transitions in $(TMTSF)_2ClO_4$", L. L. Lumata, J. S. Brooks, P. L. Kuhns, A. P. Reyes, S. E. Brown, H.

B. Cui, and R. C. Haddon, Phys, Phys. Rev. B **78**, 020407 (2008).
97. "^{93}Nb spin echo spectroscopy in single crystal $NbSe_3$", S. Suh, W. G. Clark, P. Monceau, R. E. Thorne, and S. E. Brown (Phys. Rev. Lett., **101**, 136407 (2008)).
98. "Preparation and properties of metallic, superhard rhenium diboride crystals", Jonathan B. Levine, Sandy L. Nguyen, Haider Rasool, Saeed I. Khan, Jeffrey Wright, Stuart Brown, Richard B. Kaner, J. Am. Chem. Soc., **130**, 16953-16958 (2008).
99. "Critical properties of the *S*=1 spin dimer compound $Ba_3Mn_2O_8$, S. Suh, K. A. Al-Hassanieh, E. C. Samulon, J. S. Brooks, W. G. Clark, P. L. Kuhns, L. L. Lumata, A. Reyes, I. R. Fisher, S. E. Brown, and C. D. Batista, arXiv:0905.0718 (2009).
100. "Phase Diagram of Quarter-Filled Band Organic Salts [EDT-TTF-$CONMe_2$]$_2$X, X=AsF_6 and Br", P. Auban-Senzier, C. R. Pasquier, D. Jerome, S. Suh, S. E. Brown, C. Meziere, and P. Batail, Phys. Rev. Lett. **102**, 257001 (2009).
101. "Charge ordering, symmetry and electronic structure issues and Wigner crystal structure of the quarter-filled band Mott insulators and high pressure metals d-(EDT-TTF-$CONMe_2$)$_2$X, X = Br and AsF6", L. Zorina, S. Simonov, C. Meziere, E. Canadell, S. Suh, S. E. Brown, P. Foury-Leylekian, P. Fertey, J. P. Pouget, and P. Batail, J. Mat. Chem. **19**, 6980-94 (2009).
102. "NMR Investigation of superconductivity and antiferromagnetism in $CaFe_2As_2$ under pressure", S.-H. Baek, H. Lee, S. E. Brown, N. J. Curro, E. D. Bauer, F. Ronning, T. Park, and J. D. Thompson, Phys. Rev. Lett. **102**, 227601 (2009).
103. ^{59}Co NMR shift anomalies and spin dynamics in the normal state of superconducting $CeCoIn_5$: verification of two-dimensional antiferromagnetic spin fluctuations}, H. Sakai, S.-H. Baek, S. E. Brown, F. Ronning, E. D. Bauer, and J. D. Thompson, Phys. Rev. B **82**, 020501 (2010).
104. "Ultra-fast Rotors for Molecular Machines and Functional Materials via Halogen Bonding: Crystals of 1,4-Bis(iodoethynyl)bicyclo[2.2.2]octane with Distinct Gigahertz Rotation at Two Sites", Cyprien Lemouchi, Cortnie S. Vogelsberg, Leokadiya Zorina, Sergey Simonov, Patrick Batail, Stuart Brown, and Miguel A. Garcia-Garibay, J. Am. Chem. Soc., J. Am. Chem. Soc. **133**, 6371-6379 (2011).
105. "Field induced, spin driven phase transition within the superconducting state of κ-(BEDT-TTF)$_2$Cu(NCS)$_2$", J. Wright, L. Green, P. Kuhns, A. Reyes, J. S. Brooks, J. Schlueter, R. Kato, H. Yamamoto, M. Kobayashi, and S. E. Brown, Phys. Rev. Lett. **107**, 087002 (2011).
106. "Interaction of magnetic field-dependent Peierls and spin-Peierls ground states in (Per)$_2$[Pt(mnt)$_2$]", E. L. Green, J. S. Brooks, P. L. Kuhns, A. P. Reyes, L. L. Lumata, M. Almeida, M. J. Matos, R. T. Henriques, J. A. Wright, and S. E. Brown, Phys. Rev. B **84**, 121101 (2011).
107. "Non-universal magnetization at the BEC critical field: application to the spin dimer compound $Ba_3Mn_2O_8$", S. Suh, K. A. Al-Hassanieh, E. C. Samulon, I. R. Fisher, S. E. Brown, and C. D. Batista, Phys. Rev. B **84**, 054413 (2011).
108. "Magnetic-field-induced enhancement of nuclear spin-lattice relaxation rates in the heavy-fermion superconductor $CeCoIn_5$ using ^{59}Co nuclear magnetic resonance", H. Sakai, S. E. Brown, S.-H. Baek, F. Ronning, E. D. Bauer, and J. D. Thompson, Phys. Rev. Lett. **107**, 137001 (2011).
109. "Recent topics of organic superconductors", Arzhang Ardavan, Stuart Brown, Seiichi Kagoshima, Kazushi, Kanoda, Kazuhio Kuroki, Hatsumi Mori, Masao Ogata, Shinya Uji,

and Jochen Wosnitza, invited special topics article for the Journal of the Physical Society of Japan in celebration of 100 years of superconductivity, J. Phys. Soc. Japan 81, 011004 (2012).

110. "Tuning the magnetic dimensionality by charge ordering in the molecular TMTTF salts", Kazuyoshi Yoshimi, Hitoshi Seo, Shoji Ishibashi, and Stuart Brown, Phys. Rev. Lett. **108**, 096402 (2012).
111. Spin frustration, charge ordering, and enhanced antiferromagnetism in $(TMTTF)_2SbF_6$, K. Yoshimi, H. Seo, S. Ishibashi, Physica B, 407, 1783 (2012).
112. "^{1}H and ^{195}Pt NMR Study of the Parallel Two-Chain Compound Per $_2$[Pt(mnt) $_2$]", E. L. Green, L. L. Lumata, J. S. Brooks, P. Kuhns, S. E. Brown, M. Almeida, Crystals, 2, 1116-35 (2012).
113. "Antiferromagnetic order in $Ca_{10}(Pt_3As_8)(Fe_2As_2)_5$ observed by As-75 NMR", T. Zhou, G. Koutroulakis, J. Lodica, N. Ni, J. D. Thompson, R. J. Cava, and S. E. Brown, J. Phys. Condensed Matter **25**, 122201 (2013).
114. "Tuning the magnetic dimensionality by charge ordering in the molecular TMTTF salts, H. Seo, S. Ishibashi, and S.E. Brown (comment reply), Phys. Rev. Lett. **113**, 029702 (2014).
115. "Quantum phase diagram of the S=1/2 triangular-lattice antiferromagnet $Ba_3CoSb_2O_9$", G. Koutroulakis, T. Zhou, Y. Kamiya, C. D. Batista, J. D. Thompson, S. E. Brown, and H. D. Zhou, Phys. Rev. B 91, 024410 (2015).
116. "Organic superconductors: the Bechgaard salts and relatives", S. E. Brown, Physica C 514, 279-289 (2015). (Invited contribution to a special issue of Physica C on superconducting materials, ed. J. Hirsch, M. B. Maple, F. Marsiglio).
117. "Antiferromagnetic Ordering in MnF(salen)", Erik Čižmár, Olivia N. Risset, Tong Wang, Martin Botko, Akhil R. Ahir, Matthew J. Andrus, Ju-Hyun Park, Khalil A. Abboud, Daniel R. Talham, Mark W. Meisel, Stuart E. Brown, J. Phys. Condensed Matter, 28, 236003 (2016).
118. "Microscopic study of the Fulde-Ferrell-Larkin-Ovchinnikov state in an all-organic superconductor", G. Koutroulakis, H. Kühne, J. A. Schlueter, J. Wosnitza, S. E. Brown, Phys. Rev. Lett. **116**, 067003 (2016).
119. "Isotropic rotation in amphidynamic crystals of stacked carbazole-based rotors featuring halogen-bonded stators", Abraham Colin-Molina, Salvador Pérez-Estrada, Arian E. Roa, Alvin Villagrana-Garcia, Simón Hernández-Ortega, Mario Rodríguez, Stuart E. Brown, and Braulio Rodríguez-Molina, Chem. Commun. **52**, 1359-7345 (2016).
120. "Rotational Dynamics of Diazabicyclo[2.2.2]octane in Isomorphous Halogen-Bonded Co-crystals: Entropic and Enthalpic Effects", Luca Catalano, Salvador Perez-Estrada, Hsin-Hua Wang, Anoklase J.-L. Ayitou, Saeed I. Khan, Giancarlo Terraneo, Giancarlo, Pierangelo Metrangolo, Stuart Brown, and Miguel Garcia-Garibay, J. Amer. Chem. Soc. **139**, 843-848 (2017).

Recent invited conference presentations

Materials and Mechanisms of Superconductivity, Washington, DC USA (July, 2012).

Tokyo workshop on Spin/Charge Liquids Near Ordering, Tokyo, Japan (November, 2012).

New Frontiers of Materials Science opened by Molecular Degrees of Freedom, Miyazaki, Japan (December, 2012).

American Physical Society March Meeting, Baltimore, MD USA (March, 2013).

Gordon Research Conference on Superconductivity, Les Diablerets, Switzerland (May, 2013).

Superconductivity at 300 mK and Beyond, College Park, MD USA (November, 2013).
Collective Behavior of Correlated Electron Systems, Stanford University, Palo Alto, CA USA (December, 2013).

Aspen Winter Conference on Unconventional Order in Strongly Correlated Electron Systems, Aspen, CO USA (January 2014).

Overarching Issues in the Theory of Highly Correlated Electron Fluids, Stanford Institute for Theoretical Physics, Palo Alto, CA USA (June, 2014).

International Workshop on Electronic Crystals, Carghese, Corsica, France (August, 2014).

Gordon Research Conference on Conductivity and Magnetism in Molecular Materials, Baines College, ME USA (Discussion Leader) (August, 2014).

Magnetism, Bad Metals, and Superconductivity: Iron pnictides and beyond, Kavli Institute for Theoretical Physics, UCSB, Goleta, CA USA (October, 2014).

Materials and Mechanism in Superconductivity, Geneva, Switzerland (contributed oral presentation) (August, 2015).

International Symposium on Crystalline Organic Materials, Bad Gogging, Germany (September, 2015).

Pacifichem, Honolulu, HI USA (December, 2015).

Spectroscopies of Novel Superconductors, Stuttgart, Germany (June, 2016).

FFLO Phase in Quantum Liquids, Quantum Gases, and Nuclear Matter, Max Planck Institute, Dresden, Germany (June, 2016).