Peter Adrian Beckmann

Marion Reilly Professor Emeritus of Physics
Department of Physics, Bryn Mawr College
Arrived 1 September 1977; Retired 31 August 2017
November 2019 Curriculum Vitae Update

Education at the University of British Columbia, Vancouver

1975 PhD Physics; 1971 MSc Physics; 1969 BSc Physics

Post-Doctoral Position in Nottingham, England

1975-1977 National Research Council of Canada (NRCC) Postdoctoral Fellow, University of Nottingham, England (NRCC is now called NSERC, National Sciences and Engineering Research Council of Canada)

Positions in the Department of Physics at Bryn Mawr College

2010-2012, 2005-2007, 1999-2002, 1993-1996, 1987-1989 Chairman
2017 Marion Reilly Professor Emeritus of Physics
1987-2017 Professor; 2007-2017 Marion Reilly Professor of Physics
1982-87 Associate Professor, 1977-82 Assistant Professor

Research Position at the University of Delaware

1997-2007 Research Professor of Physical Chemistry, Department of Chemistry and Biochemistry, University of Delaware, Newark, Delaware

Sabbaticals

2016 Fall (80%), 2017 Spring (20%); at Bryn Mawr College
2014 Spring; at Bryn Mawr College
2010 Spring; at Bryn Mawr College
2007 Fall; at Bryn Mawr College
2003 Fall; 60% at Bryn Mawr College, 40% in the Department of Chemistry and Biochemistry, University of Delaware, Newark, Delaware
1997-1998 full year in the Department of Chemistry and Biochemistry, University of Delaware, Newark, Delaware
1991 Spring; at Bryn Mawr College
1984-1985 full year in the Department of Chemistry, University of British Columbia, Vancouver, British Columbia, Canada
1980-1981 Junior Faculty Leave, full year in the Department of Chemistry, Southampton University, Southampton, England

79. Solid-solid phase transitions and *t*-butyl and methyl group rotation in an organic solid: X-ray diffractometry, differential scanning calorimetry, and solid state H-1 nuclear spin relaxation. P A Beckmann, A R McGhie, A L Rheingold, G J Sloan, and S T Szewczyk 2017 Journal of Physical Chemistry A 121 6220-6230. <http://pubs.acs.org/doi/10.1021/acs.jpca.7b06265>
78. Monitoring a simple hydrolysis process in an organic solid by observing methyl group rotation. P A Beckmann, J M Bohen, J Ford, W P Malachowski, C W Mallory, F B Mallory, A R McGhie, A L Rheingold, G J Sloan, S T Szewczyk, X Wang, and K A Wheeler 2017 Solid State Nuclear Magnetic Resonance 85 1-11. <http://www.sciencedirect.com/science/article/pii/S0926204016300856>
77. H-1 and F-19 spin-lattice relaxation and CH3 or CF3 reorientation in molecular solids containing both H and F atoms. P A Beckmann and A L Rheingold 2016 Journal of Chemical Physics, 144 154308 1-12. <http://scitation.aip.org/content/aip/journal/jcp/144/15/10.1063/1.4944981>
76. Methyl and *t*-butyl group rotation in a molecular solid: H-1 NMR spin-lattice relaxation and X-ray diffraction. P A Beckmann, C E Moore, and A L Rheingold 2016 Physical Chemistry Chemical Physics, 18 1720-1726. <http://pubs.rsc.org/en/content/articlelanding/2016/cp/c5cp04994f - !divAbstract>
75. Nonexponential H-1 spin-lattice relaxation and methyl group rotation in molecular solids. P. A. Beckmann 2015 Solid State Nuclear Magnetic Resonance 71 91-95. <http://www.sciencedirect.com/science/article/pii/S0926204015300060>
74. Methoxy and methyl group rotation: Solid state NMR H-1 spin-lattice relaxation, electronic structure calculations, X-ray diffractometry, and scanning electronic microscopy. P A Beckmann, C W Mallory, F B Mallory, A L Rheingold, and X Wang 2015 ChemPhysChem 16 1509-1519. <http://onlinelibrary.wiley.com/doi/10.1002/cphc.201402716/abstract>
73. Solid state H-1 spin-lattice relaxation and isolated-molecule and cluster electronic structure calculations in organic molecular solids: The relationship between structure and methyl group and *t*-butyl group rotation. X Wang, F B Mallory, C W Mallory, H R Odhner,* and P A Beckmann 2014 J Chem Phys 140 194304 1-15. <http://scitation.aip.org/content/aip/journal/jcp/140/19/10.1063/1.4874157>
72. I-127 and Pb-207 Solid-state NMR spectroscopy and nuclear spin relaxation in lead iodide: A preliminary study. R E Taylor, P A Beckmann, S Bai, and C Dybowski 2014 J Phys Chem C 118 9143-9153. <http://pubs.acs.org/doi/abs/10.1021/jp5023423>
71. Distributions of methyl group rotational barriers in polycrystalline organic solids. P A Beckmann, K G Conn,** C W Mallory, F B Mallory, A L Rheingold, L Rotkina, and X Wang 2013 J Chem Phys 139 204501 1-12. <http://scitation.aip.org/content/aip/journal/jcp/139/20/10.1063/1.4830411>
70. Nonexponential solid state H-1 and F-19 spin-lattice relaxation, single-crystal X-ray diffraction, and isolated-molecule and cluster electronic structure calculations in an organic solid: Coupled methyl group rotation and methoxy group libration in 4,4'-dimethoxyoctafluorobiphenyl. D P Fahey,** W G Dougherty Jr., W S Kassel, X Wang, and P A Beckmann 2012 J Phys Chem A 116 11946-11956. <http://pubs.acs.org/doi/abs/10.1021/jp3075892>

14. A deuterium nuclear magnetic resonance study of chain disorder in lamellar potassium palmitate: The effect of long and short chain guests. P A Beckmann, E E Burnell, M A Heldman, K R Northey, and T P Higgs 1980 Can J Phys 58 1544-1554. <http://www.nrcresearchpress.com/doi/abs/10.1139/p80-203>
13. Proton spin-lattice relaxation in meta-carborane. P A Beckmann and A Wendel 1980 J Chem Phys 73 3514-3515. <http://jcp.aip.org/resource/1/jcpsa6/v73/i7/p3514_s1>
12. Solid state phase transitions and molecular reorientation in ortho- and para-carborane: An isomer effect. P A Beckmann and A J Leffler 1980 J Chem Phys 72 4600-4607. <http://jcp.aip.org/resource/1/jcpsa6/v72/i8/p4600_s1>
11. Proton spin relaxation and methyl and hydroxy group motion. P A Beckmann 1979 J Mag Resonan 36 199-205. <http://www.sciencedirect.com/science/article/pii/0022236478900549>
10. Proton spin-lattice relaxation and methyl group rotation. P A Beckmann, C I Ratcliffe, and B A Dunell 1978 J Mag Resonan 32 391-402. <http://www.sciencedirect.com/science/article/pii/0022236478900549>
9. Electron spin relaxation and tunnelling methyl groups. P A Beckmann and S Clough 1978 J Phys C 11 4055-4067. <http://iopscience.iop.org/0022-3719/11/19/016>
8. The electron methyl group spin-spin interaction. P A Beckmann 1977 Molec Phys 34 665-680. <http://www.tandfonline.com/doi/abs/10.1080/00268977700102031>
7. Nuclear spin relaxation and centrifugal distortion effects in dilute silane gas. P A Beckmann and E E Burnell 1977 Can J Phys 55 1354-1355. <http://www.nrcresearchpress.com/doi/abs/10.1139/p77-173>
6. Nuclear spin-lattice relaxation and activation energies of tunnelling methyl groups. P A Beckmann and S Clough 1977 J Phys C 10 L231-L236. <http://iopscience.iop.org/0022-3719/10/9/002>
5. The Haupt Effect: Coupled rotational and dipolar relaxation of methyl groups. P A Beckmann, S Clough, J W Hennel, and J R Hill 1977 J Phys C 10 729-742. <http://iopscience.iop.org/0022-3719/10/5/016>
4. Nuclear spin relaxation by intramolecular interactions in gases of homonuclear diatomic molecules. M Bloom, P A Beckmann, and B C Sanctuary 1976 Can J Phys 54 2209-2212. <http://www.nrcresearchpress.com/doi/abs/10.1139/p76-264>
3. Proton spin relaxation in dilute methane gas: A symmetrized theory and its experimental verification. P A Beckmann, M Bloom, and I Ozier 1976 Can J Phys 54 1712-1727. <http://www.nrcresearchpress.com/doi/abs/10.1139/p76-204>
2. Nuclear spin relaxation in low-density molecular hydrogen at room temperature. P A Beckmann, E E Burnell, K Lalita, R L Armstrong, K E Kisman, and F R McCourt 1972 Phys Rev A 6 1684-1686. <http://pra.aps.org/abstract/PRA/v6/i4/p1684_1

52. Solid-State NMR Spectroscopy of Metals in Biological Systems and Materials, Newark, Delaware, Pennsylvania, June 2007.

51.

31. National Science Foundation Instrumentation and Laboratory Implementation Program Advisory Panel, Washington DC, USA, Jan 1989.
30. American Physical Society Annual Fall Meeting, Baltimore, Maryland, USA, April 1988.
29. Topical Conference of Departmental Chairs in Physics, Washington DC, USA, Feb 1988. (Member of Steering Committee and Session Chairman).
28. Montgomery County Science Teachers Mini-Convention, Mt St Joseph Academy, Flourtown, Pennsylvania, USA, Oct 1987.
27. Twenty Sixth Eastern Analytical Symposium, New York, USA, Sept 1987.
26. Twenty Sixth Experimental Nuclear Magnetic Resonance Conference, Baltimore, Maryland, USA, 1986.
25. Federation of Analytical Chemistry and Spectroscopy Societies Conference, Philadelphia, Pennsylvania, USA, 1985.
24. Waterloo Summer School on Nuclear Magnetic Resonance, Waterloo, Ontario, Canada, June 1985.
23. Twenty Fifth Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, USA, 1985.
22. Puget Sound Division of the American Chemical Society: Linus Pauling Award to John Waugh, Seattle, Washington, USA, 1985.
21. NATO Advanced Study Institute: Nuclear Magnetic Resonance of Liquid Crystals, San Miniato, Italy, 1983.
20. Gordon Conference on Magnetic Resonance, Wolfeboro, New Hampshire, USA, June 1983.
19. Twenty Second Experimental Nuclear Magnetic Resonance Conference, Madison, Wisconsin, USA, 1982.
18. Fifth International Meeting on Nuclear Magnetic Resonance Spectroscopy, Exeter, England, 1981.
17. British Nuclear Magnetic Resonance Discussion Group: Two Dimensional Nuclear Magnetic Resonance and Chemically Induced Dynamic Nuclear Polarization, London, England, 1980.
16. Collaborative Computing Project No. 5: Intermolecular Potentials in Simulations, Oxford, England, 1980.
15. Conference on the Physics of Dielectrics, Canterbury, England, 1980.
14. Royal Society: Nuclear Magnetic Resonance Spectroscopy in Solids, London, England, 1980.
13. Twenty First Experimental Nuclear Magnetic Resonance Conference, Tallahassee, Florida, USA, 1980.
12. Gordon Conference on Magnetic Resonance, Wolfeboro, New Hampshire, USA, June 1979.
11. VI International Symposium on Magnetic Resonance, Banff, Alberta, Canada, May 1977.

81. March 1998 "Proton and lead-207 spin relaxation and x-ray crystallography in molecular and ionic solids: Structure and motion." Invited group presentation, Nuclear Magnetic Resonance Spectroscopy Group, Department of Physics, University of British Columbia, Vancouver, British Columbia, Canada.
80. March 1998 "Physics, biology, your brain, and everything else." Invited lecture for the general public under the American Institute of Physics Visiting Scientist Program, Okanagan University College, Vernon Campus, Vernon, British Columbia, Canada.
79. March 1998 "How scientists model the world." Invited lecture (four times) at four local high schools under the American Institute of Physics Visiting Scientist Program, Kelowna, British Columbia, Canada.
78. March 1998 "The concept of unification in physics: A drive for simplicity and beauty." Invited lecture under the American Institute of Physics Visiting Scientist Program, Department of Physics, Okanagan University College, Kelowna, British Columbia, Canada.
77. March 1998 "Physics, biology, your brain, and everything else." Invited lecture for the general public under the American Institute of Physics Visiting Scientist Program, Okanagan University College, North Kelowna Campus, Kelowna, British Columbia, Canada.
76. March 1998 "How scientists model the world." Invited lecture at a local high school under the American Institute of Physics Visiting Scientist Program, Kamloops, British Columbia, Canada.
75. March 1998 "The concept of unification in physics: A drive for simplicity and beauty." Invited lecture under the American Institute of Physics Visiting Scientist Program, Department of Physics, The University College of the Caribou, Kamloops, British Columbia, Canada.
74. March 1998 "Physics, biology, your brain, and everything else." Invited lecture for the general public under the American Institute of Physics Visiting Scientist Program, The University College of the Caribou, Kamloops, British Columbia, Canada.
73. February 1998 "Structure and motion in molecular solids: X-ray crystallography and solid state dynamic nuclear magnetic resonance." Colloquium, Department of Physics, Bryn Mawr College, Bryn Mawr, Pennsylvania, USA.
72. November 1997 "The mental concept of clarinetness: The physics and biology of modeling sound waves." Invited colloquium, Lebanon Valley College, Annville, Pennsylvania, USA.
71. March 1997 "The physics of music and musical instruments." Invited lecture for the general public, Millersville University, Millersville, Pennsylvania, USA.
70. March 1997 " Proton spin, internal rotation in molecules, and the states of solids." Invited senior seminar speaker, Millersville University, Millersville, Pennsylvania, USA.

69. October 1996 "Teaching physics in second grade elementary school and first year college: The same stuff and the same approach." Invited lecture, American Association of Physics Teachers Northeast Regional Conference, Brookhaven National Laboratories, Upton, New York, USA.
68. September 1996 "Nuclear spin relaxation in organic molecular solids." Invited colloquium, Department of Chemistry, University of Delaware, Newark, Delaware, USA.
67. July 1996 "Methyl groups: Observers of the states of organic solids." Contributed poster, Gordon Conference on Order / Disorder in Solids, New London, New Hampshire, USA.
66. October 1995 "The physics of music and musical instruments." Invited colloquium, Moravian College, Allentown, Pennsylvania, USA.
65. February 1995 "All of physics in 45 minutes." Invited lecture to physics students at the University of Richmond, Richmond, Virginia, USA.
64. October 1995 "The physics of music and musical instruments." Invited colloquium, Moravian College, Allentown, Pennsylvania, USA.
63. February 1995 "Physics and music." Invited public lecture, University of Richmond, Richmond, Virginia, USA.
62. August 1994 "Proton spin relaxation and order / disorder in organic solids." Contributed poster, Gordon Conference on Order / Disorder in Solids, New London, New Hampshire, USA.
61. December 1993 "Future directions in nuclear magnetic resonance." Invited roundtable discussion leader, Symposium on Nuclear Magnetic Resonance; the Past, the Present and the Future. A Commemorative Symposium to Honour Myer Bloom on the Occasion of His Retirement. Whistler Mountain, British Columbia, Canada.
60. June 1993 "An example of how insight, closed-form mathematical modeling, and computer-based symbolic mathematics can help in doing interesting science: Nuclear spin relaxation in solids." Contributed talk, 11th Army Conference on Applied Mathematics and Computing, Pittsburgh, Pennsylvania, USA.
59. April 1993 "Computer-based symbolic mathematics and nuclear spin relaxation in solids." Contributed talk, Joint Meeting of the American Physical Society and the American Association of Physics Teachers, Washington, DC, USA.
58. February 1993 "The scientific mind." Invited luncheon speaker, Senior Men's Club, Bryn Mawr, Pennsylvania, USA.
57. October 1992 "The solar system: myth and beauty." Invited colloquium, Physics Department, Lebanon Valley College, Lebanon, Pennsylvania, USA.
56. July 1992 "The solar system: myth and beauty." Invited colloquium, The Quadrangle (a Retirement Community), Havertown, Pennsylvania, USA.
55. January 1992 "The universe: From the beginning to the end." Invited colloquium, Physics Department, Trenton State College, Trenton, New Jersey, USA.
54. October 1991 "Organic molecular solids: The role of time and temperature." Contributed poster, International Symposium on the Physics and Chemistry of Finite Systems: From Clusters to Crystals, Richmond, Virginia, USA.

38. September 1987 "Nuclear spin relaxation in the solid state: The 1,3- and 1,4-isomers of ditertiarybutylbenzene." Contributed poster, Twentieth Eastern Analytical Symposium, New York, New York, USA.
37. September 1987 "Fundamental particles and forces in physics." Invited talk, Prospective Students Day, Bryn Mawr College.
36. April 1986 "The large two-phase region in 1,4-diisopropylbenzene." Contributed poster, Twenty Sixth Experimental Nuclear Magnetic Resonance Conference, Baltimore, Maryland, USA.
35. February 1986 "Deuteron NMR spectroscopy, binary mixtures of liquid crystals and mean field theory." Invited colloquium, E.I. du Pont de Nemours Co., Wilmington, Delaware, USA.
34. September 1985 "The large two-phase region in 1,4-diisopropylbenzene." Contributed poster, Federation of Analytical Chemistry and Spectroscopy Societies Conference, Philadelphia, Pennsylvania, USA.
33. June 1985 "Molecular dynamics in liquid crystals. The measurement of spin-lattice relaxation rates and spectral densities at several sites in a nematogenic molecule." Contributed poster, Gordon Research Conference on Nuclear Magnetic Resonance, Wolfeboro, New Hampshire, USA.
32. June 1985 "Nuclear spin relaxation in molecular solids." Invited talk, Waterloo Summer NMR Institute, Waterloo, Ontario, Canada.
31. February 1985 "Deuteron magnetic resonance selective and non-selective excitation relaxation spectroscopy." Invited colloquium, Physical Chemistry Seminar, Chemistry Department, University of California, San Diego, La Jolla, California, USA.
30. October 1984 "Deuteron magnetic resonance in liquid crystals." Invited colloquium, Physics Department, University of British Columbia, Vancouver, British Columbia, Canada.
29. September 1984 "Methyl and tert-butyl reorientation in molecular solids." Invited talk, Joint Physics / Chemistry Liquid Crystal Seminar, University of British Columbia, Vancouver, British Columbia, Canada.
28. July 1984 "Molecular dynamics in liquid crystals. The measurement of spin-lattice relaxation rates and of spectral densities at several sites in a nematogenic molecule." Contributed poster, Tenth International Liquid Crystal Conference, York University, York, UK.
27. July 1984 "Molecular motion and spectral densities: fundamental theory." Invited talk, Joint Physics / Chemistry Liquid Crystal Seminar, University of British Columbia, Vancouver, British Columbia, Canada.
26. February 1984 "Some fundamental aspects of the relationship between intramolecular reorientation and nuclear spin relaxation in molecular solids." Department of Physics, Bryn Mawr College, Bryn Mawr, Pennsylvania, USA.
25. October 1983 "The fundamental forces and particles in nature." Invited colloquium, Physics Department, Ursinus College, Collegeville, Pennsylvania, USA.

24. October 1983 "Nuclear spin relaxation and methyl reorientation in solids."

9. April 1977 "Electron spin relaxation and the quantum mechanical tunnelling of methyl groups at low temperatures." Invited colloquium, Physics Department, Bryn Mawr College, Bryn Mawr, Pennsylvania, 19010, USA.
8. April 1977 "Electron spin relaxation and the quantum mechanical tunnelling of methyl groups at low temperatures." Invited colloquium, Physics Department, Dartmouth College, Hanover, New Hampshire, USA.
7. April 1977 "Electron spin relaxation and tunnelling methyl groups." Contributed talk, VI International Symposium on Magnetic Resonance, Banff, Alberta, Canada.
6. May 1976 "Electron spin resonance and tunnelling methyl groups." Contributed talk, British Radio Spectroscopy Group, Oxford, UK.
5. February 1976 "Nuclear spin relaxation in dilute hydrogen and methane gas." Invited colloquium, Physics Department, University of Nottingham, Nottingham, UK.
4.

5. Laura Happersett (MA 1990) "Proton spin-lattice relaxation in ethylbenzenes" (BMC graduate student, 1987-90). {See paper 36.}

4. Hong Yu (MA 1987) "A study of proton zeeman relaxation and the two phases of 1,3-di-*t*-butylbenzene" (BMC graduate student, 1985-1987). {See paper 31.}

3. Kathleen Gullifer (MA 1986) "Methyl and *t*-butyl reorientation in 3-*t*-butylchrysene" (BMC graduate student, 1984-1986). {See paper 53.}

2. Mary Scott (MA 1986) "Nuclear magnetic resonance and spin-lattice relaxation in organic molecular solids" (BMC graduate student 1981-83, 1985-86). {See papers 20 and 23.}

1. Cheryl Mills (MA 1980) "Proton spin-lattice relaxation and molecular dynamics in 4,4'-methylenebis(di-*t*-butylhydroxybenzene)" (BMC graduate student, 1978-80). {See paper 16.}

C. Undergraduate Theses and Projects

The numbers in braces { . . } count individual students.

59. Morgan Fine-Morris ('14) "A numerical analysis of noisy exponential and non-exponential relaxation data using the stretched-exponential function." (Summer 2012 research.) {48}

58. Hosanna Odhner ('13) "H-1 Nuclear spin relaxation in 2,7-di-*t*-butylpyrene at 22.5 MHz. (Supervised Unit of Research 2011-12). {47} {See paper 73.}

57. Evan Schneider ('10) "Solid state nuclear magnetic resonance relaxation and methyl group rotation in 4,4'-dimethoxybiphenyl" (Supervised Unit of Research 2009-10). {46} {See paper 68.}

56. Laura Popa ('09) "Proton spin relaxation in 5-*t*-butyl-4-hydroxy-2-methylphenyl sulfide; *t*-butyl and methyl group rotation in the solid state" (Summer 2008 research). {45} {See paper 66.}

55.

50. Maria Herd ('02) "Nuclear magnetic resonance of 1-CF_3-phenanthrene and 3-CF3-phenanthrene: A preliminary study of nuclear spin relaxation in asymmetric molecules with two different spin- nuclei" (Supervised Unit of Research, 2001-02). {39} {See paper 54}

49. Carol Paty ('01) A 8.50 MHz nuclear magnetic resonance relaxometry study of 2-*t*-butyl-4-methylhydroxybenzene" (Supervised Unit of Research, 2000-01). {38} {See paper 54}

48.

34. Stephanie Goellner ('92) "A theoretical study of the stretched exponential function" (Supervised Unit of Research, 1991-92). {26}

33. Jessica Weiss (Haverford '92) "Experimental investigation into types of intra-molecular motion in a series of alkyl-substituted organic compounds" (Supervised Unit of Research, 1991-92). {23} {See papers 41 and 47}

32. Jessica Weiss (Haverford '92) "Proton spin relaxation and structure and dynamics in 2-ethylnaphthalene" (Supervised Unit of Research, 1991-92). {23} See #33.

31. Brian Roe (Haverford '92) "Nuclear spin relaxation in 1,3-diisopropylbenzene; isopropyl structure and dynamics" (Supervised Unit of Research, 1991-92). {25} {See papers 41 and 43}

30. Hania Al-Hallaq ('94) "Isopropyl group geometry and methyl group dynamics in 1,2,4,5-tetraisopropylbenzene" (Summer 1991 Research). {24} See #37.

29. Jessica Weiss (Haverford '92) "Proton spin relaxation and thermal history effects in 1-ethylnaphthalene" (Summer 1991 Research). {23} See #33.

28. Anne Fry ('90) "Proton zeeman relaxation and models for *t*-butyl reorientation in 2,4,6-tri-*t*-butylbromobenzene" (Supervised Unit of Research, 1989-90). {21} {See papers 37 and 41}

27. Amy Plofker (Haverford, '90) "Nuclear spin relaxation in isopropylbenzene" (Supervised Unit of Research, 1989-90). {22} {See papers 41 and 42}

26. Anne Fry ('90) "Nuclear spin relaxation in a variety of organic molecular solids and the setting up of a new computer / oscilloscope data acquisition system" (Summer 1989 Research). {21} See #28.

25. Robin HathornjET.7 (al "Pring up of a new com)0.7 (putyO m)0.7 (odels for)spin4[ec.7 opropy

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27. 2003-2004 On Leave Semester I. Semester II . . . . .
    Committee for Undergraduate Admissions 9
    Laboratory Committee 12
    Majors Adviser to the Physics Class of 2006 12
    Physics non tenure-track search (Tsvetelin Tsankov) 15

26. 2002-2003 Convener, Committee for Undergraduate Admissions 8
    President's *ad hoc* Enrollment Management Advisory Group 1 (of 1!)
    Laboratory Committee 11

25. 2001-2002 Chairman, Physics Department 8
    Committee for the Coordination of the Sciences 8
    Library Committee 3
    Convener, Committee for Undergraduate Admissions 7
    3-2 Engineering Plans Coordinator 14

24. 2000-2001 Chairman, Physics Department 7
    Committee for the Coordination of the Sciences 7
    Committee on the Review of Termination of Tenure (did not meet) 11
    Library Committee 2
    3-2 Engineering Plans Coordinator 13
    Majors Adviser for the class of 2001 11

23. 1999-2000 Chairman, Physics Department 6
    Committee for the Coordination of the Sciences 6
    Committee on the Review of Termination of Tenure (did not meet) 10
    Physics Tenure Track Search Committee (Michael Noel) 12
    Chemistry Tenure Track Search Committee (Ed Wochvko) 13
    Library Committee 1
    3-2 Engineering Plans Coordinator 12
    Majors Adviser for the classes of 2000 and 2001 10
    Physics non tenure-track search (Mathew Rice) 12
    Physics non tenure-track search (Tony Rothman) 13
    Physics non tenure-track search (Sunme Kim) 14

22. 1998-99 Laboratory Committee 10
    Committee on the Review of Termination of Tenure (did not meet) 9
    3-2 Engineering Plans Coordinator 11
    Committee on Undergraduate Awards and Fellowships 1
    Majors Adviser - all years 9
    Graduate Adviser 8

21. 1997-98 Nothing! (Enhanced Sabbatical Leave) 11

20. 1996-97 Committee on Review of Termination of Tenure (did not met) 8
    Graduate Adviser 7
    Physics non tenure-track search (Alan Tameshtit) 11

19. 1995-96 Chairman, Physics Department 5
    Committee for the Coordination of the Sciences 5
    Committee on the Review of Termination of Tenure (did not meet) 7
    Graduate Adviser 6

18. 1994-95 Chairman, Physics Department 4
    Committee for the Coordination of the Sciences 4
    Undergraduate Admissions Committee 6
    Laboratory Committee 9
    Committee on the Review of Termination of Tenure (did not meet) 6
    3-2 Engineering Plans Coordinator 10
    Majors Adviser - all years 8
    Graduate Adviser 5
    Physics Tenure-track Search Committee (Elizabeth McCormack) 11
    Physics non tenure-track search (Chuck Samuels) 10

17. 1993-94 Chairman, Physics Department 3
    Committee for the Coordination of the Sciences 3
    Undergraduate Admissions Committee 5
    Laboratory Committee 8
    Committee on the Review of Termination of Tenure (did not meet) 5
    3-2 Engineering Plans Coordinator 9
    Majors Adviser - all years 7
    Graduate Adviser 4
    Physics non tenure-track search (Tina Mello) 8
    Physics non tenure-track search (Jim Arrison) 9

16. 1992-93 Undergraduate Admissions Committee 4
    Laboratory Committee (semester 2) 7
    Committee on the Review of Termination of Tenure (did not meet) 4
    Majors Adviser - all years 6
    3-2 Engineering Plans Coordinator 8
    Graduate Adviser 3

15. 1991-92 Undergraduate Curriculum Committee 3
    Committee on the Review of Termination of Tenure (did not meet) 3
    Majors Adviser - all years 5
    3-2 Engineering Plans Coordinator 7
    Physics non tenure-track search (Aurora Vicens) 7

14. 1990-91 (on leave semester 2)
    Chairman, Committee on Nominations of the General Faculty 5
    Chairman, Committee on Nominations of the Faculty of Arts & Sciences 5
    Laboratory Committee (semester 1) 6
    Committee on the Review of Termination of Tenure (did not meet) 2
    Undergraduate Curriculum Committee (semester 1) 2

322 6 solid state physics (Kittel) 8

2009-2010 semester one (33)
101-1 75 introductory physics for postbaccalaureates (Knight, Jones, & Field) 30
403 1 undergraduate research 40
2009-2010 semester two sabbatical leave
403 1 undergraduate research 41

2008-2009 semester one (32)
121 39 modeling the physical world (internet sites and texts) 5
303 5 statistical & thermal physics (Reif) 8
100L 70 over two afternoons a week 14
2008-2009 semester two
107 / 150 82 conceptual physics (internet sites; Lederman & Hill ("Symmetry")) 4
322 5 solid state physics (Kittel) 7

2007-2008 semester one (31) sabbatical leave
403 1 undergraduate research 38
2007-2008 semester two
102 41 introductory physics (Knight, Jones, and Field) 29
214L 6 quantum mechanics, solid state physics, & optics second-year lab 9
302 5 advanced quantum mechanics (Griffiths) 7
403 1 undergraduate research 39

2006-2007 semester one (30)
303 16 statistical & thermal physics (Reif) 7
2006-2007 semester two
107 / 150 48 conceptual physics (various readings and internet sites) 3
100L 24 introductory physics laboratory, one afternoon 13
322 4 solid state physics (Kittel) 6

2005-2006 semester one (29)
214 15 classical and quantum mechanics (Rohlf and Fowles & Cassiday) 11
2005-2006 semester two
104 16 introductory physics (Tipler and Mosca) 28
302 10 quantum mechanics (Griffiths, 2nd edition) 6

2004-2005 semester one (28)
100L 128 over four afternoons (administrator and instructor) 11
2004-2005 semester two
100L 155 over five afternoons (administrator and instructor) 12

2003-2004 semester one (27) sabbatical leave (60% at Bryn Mawr, 40% at Delaware)
403 2 undergraduate research 36
2003-2004 semester two
104 18 introductory physics (Tipler and Mosca) 27
215 5 special rel, e&m, and particles (Rohlf, Good, and Fowles & Cassiday) 10
215L 5 electronics laboratory 8

403 2 undergraduate research 37

2002-2003 semester one (26)
103 16 introductory physics (Tipler) 26
303 10 statistical & thermal physics (Reif) 6
2002-2003 semester two
215 4 special relativity, electromagnetism, and particles (Rohlf and Good) 9
215L 4 electronics laboratory 7
322 6 solid state physics (Kittel) 5

2001-2002 semester one (25) [chairman]
103 15 introductory physics (Tipler: see 1982-83!) 25
214L 8 quantum mechanics, solid state physics, & optics second-year lab 8
col sem 15 freshman college seminar (several books) 5
403 3 undergraduate research 34
2001-2002 semester two [chairman]
215 6 special relativity, electromagnetism, and particles (Rohlf and Good) 8
390 1 solid state physics (= physics 322) (Kittel) 4B (see 2000-01 semester 2)
403 3 undergraduate research 35

2000-2001 semester one (24) [chairman]
101 35 introductory physics {third third of semester} (Giancoli) 23
103 39 introductory physics (Giancoli) 24
col sem 16 freshman college seminar (several books) 4
403 1 undergraduate research 32
700 2 graduate research 22
2000-2001 semester two [chairman]
322 6 solid state physics (Kittel) 4A
403 1 undergraduate research 33

1999-2000 semester one (23) [chairman]
214L 8 quantum mechanics, solid state physics, & optics second-year lab 7
403 1 undergraduate research 31
1999-2000 semester two [chairman]
331L 6 modern physics laboratory 9

1998-1999 semester one (22)
214L 22 quantum mechanics, solid state physics, & optics second-year lab 6
403 3 undergraduate research 29
1998-1999 semester two
331L 14 modern physics laboratory 8
403 3 undergraduate research 30

1997-1998 semester one (21) (enhanced sabbatical leave)

1996-1997 semester one (20)

lib stu 47 liberal studies (several books, grading and one-on-one sessions for 15 students) (with Paul Grobstein and Sandra Berwind) 1
101 65 introductory physics (Serway) 22
403 2 undergraduate research 27

1996-1997 semester two

lib stu 47 liberal studies (several books, grading and one-on-one sessions for 14 students) (with Paul Grobstein and Sandra Berwind) 2
214 9 modern physics (Rohlf) 7
403 2 undergraduate research 28

1995-1996 semester one (19) [chairman]

331L 11 modern physics laboratory 7
403 2 undergraduate research 25

1995-1996 semester two [chairman]

214 18 modern physics (Rohlf) 6
214L 18 quantum mechanics, solid state physics, & optics second-year lab 5
403 4 undergraduate research 26

1994-1995 semester one (18) [chairman]

331L 5 modern physics laboratory 6

1994-1995 semester two [chairman]

309 14 electromagnetic theory (Reitz, Christy & Milford) 3
214L 14 quantum mechanics, solid state physics, & optics second-year lab 4

1993-1994 semester one (17) [chairman]

101 35 introductory physics I (Serway) 20
403 2 undergraduate research 23

1993-1994 semester two [chairman]

122 22 mech, thermo & waves (Halliday, Resnick & Walker) 21
507 2 graduate statistical mechanics (Reichl) 1
403 2 undergraduate research 24

1992-1993 semester one (16)

100 198 introductory physics lab lecture, 10 groups of 20, one group per day in two-week cycles (a one-time experiment!)
501 4 graduate quantum mechanics (B9hr 44 (graduate quantum)0.7 (m)0.7 (echanics

1991-1992 semester one (15)
107 61 conceptual physics (Pasachoff & Kutner, Hawking, Penrose) 2
100L 61 introductory physics lab 7
403 3 undergraduate research 19
1991-1992 semester two
102 99 introductory physics II (Serway) 15
302 24 quantum mechanics (Liboff) 5
403 4 undergraduate research 20
Summer 1992
101 17 introductory physics I (Serway) 16
100L 17 introductory physics lab 8
102 15 introductory physics II (Serway) 17
100L 15 introductory physics lab 9

1990-1991 semester one (14)
150 48 conceptual physics (Dixon, Hawking, ...) 1
700 1 graduate research 20
1990-1991 semester two sabbatical leave
700 1 graduate research 19

1989-1990 semester one (13)
103 45 introductory physics I (Serway) 12
331L 8 modern physics laboratory (Melissinos) 5
403 2 undergraduate research 17
700 2 graduate research 18
1989-1990 semester two
305L 6 advanced electronics lab (Higgins) 4
403 2 undergraduate research 18
700 2 graduate research 19
Summer 1990
101 13 introductory physics I (Serway) 13
100L 13 introductory physics lab 5
102 11 introductory physics II (Serway) 14
100L 11 introductory physics lab 6

1988-1989 semester one (12) [chairman]
303 11 statistical & thermal physics (Reif) 5
331L 9 modern physics laboratory (Melissinos) 4
700 2 graduate research 16
1988-1989 semester two [chairman]
102 25 introductory physics II (Serway) 9
307 4 solid state physics (Kittel) {henceforth numbered 322} 3
700 2 graduate research 17
Summer 1989 [chairman]
101 17 introductory physics I (Serway) 10
100L 17 introductory physics lab 3
102 13 introductory physics II (Serway) 11
100L 13 introductory physics lab 4

1987-1988 semester one (11) [chairman]
203 13 classical & relativistic mechanics (Fowles and Taylor & Wheeler) 5
203L 13 electronics laboratory 6
301 5 quantum mechanics I (French & Taylor) 4
403 1 undergraduate research 15
700 2 graduate research 14
1987-1988 semester two [chairman]
102 82 introductory physics II (Serway) 7
305L 5 advanced electronics lab (Higgins) 3
403 1 undergraduate research 15
700 2 graduate research 15
Summer 1988 [chairman]
102 25 introductory physics II (Serway) 8
100L 25 introductory physics lab 2

1986-1987 semester one (10)
203 5 classical & relativistic mechanics (Fowles and Taylor & Wheeler) 4
203L 5 electronics laboratory 5
301 7 quantum mechanics (French & Taylor) 3
700 1 graduate research 12
1986-1987 semester two
102 71 introductory physics II (Serway) 6
700 1 graduate research 13

1985-1986 semester one (9)
203 5 classical & relativistic mechanics (Fowles and Taylor & Wheeler) 3
203L 5 electronics laboratory 4
301 13 quantum mechanics (French & Taylor) 2
303 5 statistical & thermal physics (Reif) 4
403 3 undergraduate research 13
700 3 graduate research 10
1985-1986 semester two
305L 8 advanced electronics lab (Higgins) 2
307 9 solid state physics (Kittel) 2
403 3 undergraduate research 14
700 4 graduate research 11

1984-1985 semester one (8) ..... sabbatical leave
700 1 graduate research 8
1984-1985 semester two (8) ..... sabbatical leave
700 1 graduate research 9

1983-1984 semester one (7)
303 13 statistical & thermal physics (Reif) 3
331L 6 modern physics lab (Melissinos) 3A
403 4 undergraduate research 11
700 1 graduate research 7

1983-1984 semester two

305L	7	advanced electronics lab (Higgins) 1
331L	6	modern physics lab (Melissinos) 3B
403	4	undergraduate research 12

1982-1983 semester one (6)

101	75	introductory physics I (Tipler) 4
201L	8	electronics laboratory 3
403	3	undergraduate research 9
700	1	graduate research 5

1982-1983 semester two

102	75	introductory physics I (1/3 semester) (Tipler) 5
201L	9	electronics laboratory (1/2 semester) 2
331L	5	modern physics lab (Melissinos) 2
403	3	undergraduate research 10
700	1	graduate research 6

1981-1982 semester one (5)

309	4	electromagnetic theory (Reitz & Milford) 2
311	8	quantum mechanics (French & Taylor) 1
331L	8	modern phys lab (with Neal Abraham) (Melissinos) 1A
403	1	undergraduate research 7
501	1	quantum mechanics (Messiah) 2

1981-1982 semester two

102	41	introductory physics II (Orear) 3
211L	6	electronics laboratory 1
331L	9	modern phys lab (with Neal Abraham) (Melissinos) 1B
403	1	undergraduate research 8

1980-1981 semesters one and two (4) ..... junior faculty leave

1979-1980 semester one (3)

101	100	introductory physics I (Michaels, Smith, Albano & Hoyt) 2
403	3	undergraduate research 5
700	1	graduate research 3

1979-1980 semester two

211	9	classical mechanics (Symon) 2
211L	9	quantum mechanics, solid state physics, & optics second-year lab 3
403	3	undergraduate research 6
607	3	solid state physics (Ziman) 1
700	1	graduate research 4

1978-1979 semester one (2)

101	128	introductory physics (Michaels, Smith, Albano & Hoyt) 1
100L	128	introductory physics lab over five afternoons 1
399	4	solid state physics (1/2 semester) (Kittel) {henceforth numbered 307} 1
403	2	undergraduate research 3
700	1	graduate research 1