Editor's choice

This is my last opportunity to use this page (or pages!), and I intend to take full advantage of it. Not, however, by once more giving you my thoughts about physics nor my advice on how to teach it. For the former, I can refer you to my first editorial ["The joy of physics," **56** (7), 585 (1988)], very little of which I would choose to revise. For the latter, I will mention the paper I published here in 1993: "Reading the equations and confronting the phenomena—The delights and dilemmas of physics teaching," **61** (2), 128–142 (1993). And if any reader wants to know how much I have enjoyed being the editor of this journal for the past thirteen years, take a look at the editorial I wrote at the time we began the search for my successor: "Why not be editor?," **68** (3), 209 (2000). I will just quote here the final sentences of that editorial:

The editorship of AJP is a wonderful job. For me it has been the most important, difficult, and rewarding professional responsibility I have ever had. I am grateful for the privilege of having had primary editorial responsibility for this uniquely important physics journal.

As I reread that editorial, I wonder how anyone could be so foolish as to retire from the editorship of this wonderful journal. But I now pass on this responsibility with complete confidence to the new editor, Jan Tobochnik of Kalamazoo College. I look forward to my role as an avid reader and a subscriber, continuing my subscription which has been unbroken since 1952. When this issue arrives in my mailbox, it will be my 565th copy of AJP; I anticipate many more.

It would be impossible to thank by name all the authors, referees, and critical readers around the world who have contributed so importantly to the success of the *American Journal of Physics* and all those at the American Institute of Physics and the American Association of Physics Teachers who play such important roles. I single out for special mention all the members of my family who have encouraged and supported me and who have managed to understand my passion for AJP and those who have worked with me in the editorial office, especially Karla Keyes and Rob Oldershaw (who have been with me ever since 1988), and Kannan Jagannathan (who has been officially with me for most of that time and before that a valued colleague down the hall). K², Rob, Jagu: It has truly been a pleasure to work with you. Thanks, for your dedication and your friendship!

What I want to do in this final editorial is to list my own AJP favorites from the time of my editorship. Some of these, though officially accepted by me, will not appear in print for another few months—and because of the publishing schedule, I had to restrict the selection to papers accepted by mid-April, 2001. Here are papers that I especially enjoyed working on and shepherding through the sometimes laborious and apparently interminable process of reviewing, reviewing,.... Some of these are papers on which little editorial effort was needed but which I simply enjoyed reading and from which I learned some interesting new physics. I have included a few of my own editorials that I enjoyed writing and was happy to see in print and have even included half a dozen of my favorite "Page Fillers" from among the 1200

or so that we have printed since we renewed this custom shortly after the editorial office moved to Amherst College. It would be tempting simply to list everything published since 1988, and of course I know that by omission I may be causing some authors to wonder why *their* papers are not here. But these are my personal choices, and I am now doing for the last time one of the many things that a good editor is supposed to do—make choices. I hope this list may remind you of some papers you may have overlooked or of papers you may want to reread. I myself found it hard to put this list together; I kept coming across papers, many of which I had read and worked on in quite a few versions before they were printed, that I wanted to read again.

The order is approximately chronological, but when one item inspired others or when several papers form a sequence, I have tried to group all items together with the initial one. Neuenschwander's innocent Question ["The spin-statistics theorem," 62 (11), 972 (1994)], for instance, asking whether anyone had yet met Feynman's challenge to find an "elementary explanation" of the spin-statistics theorem (or, as it might be more properly referred to, the "spin-statistics connection"), led to a number of non-answers, another answer (by Hilborn) explaining why those "answers" were not satisfactory, and then a long paper by Duck and Sudarshan, as well as a review by Wightman of Duck and Sudarshan's book on the subject. All of this is interesting physics of the most basic sort, but unfortunately, the answer to Neuenschwander's original Question is still negative. As another example, Pellegrini and Swift's 1995 paper ["Maxwell's equations in a rotating medium: Is there a problem?," 63 (8), 694–705 (1995)] led to a number of other theoretical papers (and to a significant number of submissions that missed the point) and finally to an experimental paper ("Measurement of the relativistic potential difference across a rotating magnetic dielectric cylinder," based on a succession of three Amherst College undergraduate theses), by J. B. Hertzberg, S. R. Bickman, M. T. Hummon, D. Krause, Jr., S. K. Peck, and L. R. Hunter (in this issue), with data allowing one to draw a distinction between two rival predictions.

Thank you all once more for the opportunity to serve as editor of my favorite physics journal for these last thirteen years.

Robert H. Romer, Editor (1988–2001)

1988

Robert H. Romer, "The joy of physics," **56** (7), 585 (1988). Robert H. Romer, "958 men, 93 women—How many Lise Meitners among those 865?," **56** (10), 873–874 (1988); Janice Button-Shafer, "Why so few women?," **58** (1), 13–14 (1990); J. A. McHenry, "Can men serve as role models for women?," **58** (5), 424 (1990); Michael Levin, "Women—Why so few?," **58** (10), 905–906 (1990); Mary Beth Ruskai, "Are there innate cognitive gender differences? Some comments on the evidence in response to a letter from M. Levin," **59** (1), 11–14 (1991); Janice Button-Shafer, "Response to "Women—Why so few?," by Michael Levin," **59** (3), 199 (1991); Ellen F. Mappen, "Creating a support sys-

tem for women in science—Combining co-curricular programming and student life at Douglass College," **59** (12), 1065 (1991); Kenneth S. Krane, "Women in physics—A male department chair's perspective," **61** (5), 393–394 (1993); Elaine Seymour, "Why undergraduates leave the sciences," **63** (3), 199–202 (1995); Jan M. Yarrison-Rice, "On the problem of making science attractive for women and minorities: An annotated bibliography," **63** (3), 203–211 (1995).

Harold S. Zapolsky, "On electric fields produced by steady currents," **56** (12), 1137–1141 (1988).

1989

James Terrell, "The Terrell effect," **57** (1), 9–10 (1989).

Martin Gardner, "Is realism a dirty word?," **57** (3), 203 (1989).

Carl Sagan, "Why scientists should popularize science," 57 (4), 295 (1989).

Wayne A. Bowers, "Still more on the Coulomb potential," **57** (4), 375–376 (1989).

Michael Martin Nieto, Richard J. Hughes, and T. Goldman, "Actually, Eötvös did publish his results in 1910, it's just that no one knows about it…," **57** (5), 397–404 (1989).

Robert H. Romer, "Spin-1/2 quantum mechanics?—Not in my introductory course!," 57 (6), 491 (1989).

Robert N. Little, "American Association of Physics Teachers 1971 Oersted Medalist: Richard P. Feynman," **57** (6), 492 (1989).

Robert Mills, "Gauge fields," 57 (6), 493-507 (1989).

Alfred Shapere and Frank Wilczek, "Gauge kinematics of deformable bodies," **57** (6), 514–518 (1989).

Thomas E. Phipps, Jr., "Relativity and aberration," **57** (6), 549–551 (1989).

Melba Phillips, "Are there lessons from history?," **57** (7), 585 (1989).

W. Zimmermann, Jr., "A wave-packet description of the motion of a charged particle in a uniform magnetic field," **57** (7), 593–598 (1989). See also Comment by R. A. Moore, **59** (1), 91 (1991).

Richard E. Berg and Michael R. Collier, "The Feynman inverse sprinkler problem: A demonstration and quantitative analysis," **57** (7), 654–657 (1989). See also Michael R. Collier, Richard E. Berg, and Richard A. Ferrell, "The Feynman inverse sprinkler problem: A detailed kinematic study," **59** (4), 349–355 (1991); E. Rune Lindgren, "The transport of momentum theorem," **58** (4), 352–357 (1990).

J. M. Pasachoff, "La vitesse de la lumière or honoring Rømer," **57** (8), 679–680 (1989). See also Robert H. Romer, "Olaf Rømer's relatives?," **58** (4), 296 (1990).

Eric R. Scerri, "Eastern mysticism and the alleged parallels with physics," **57** (8), 687–692 (1989).

F. Herrmann, "Energy density and stress: A new approach to teaching electromagnetism," **57** (8), 707–714 (1989).

Rodney C. Cross, "Magnetic lines of force and rubber bands," **57** (8), 722–725 (1989).

Ray Skinner and John A. Weil, "An introduction to generalized functions and their application to static electromag-

netic point dipoles, including hyperfine interactions," **57** (9), 777–791 (1989).

S. P. Boughn, "The case of the identically accelerated twins," **57** (9), 791–793 (1989). See Comment by Edward A. Desloge and R. J. Philpott, **59** (3), 280–281 (1991).

Ben Yu-Kuang Hu, "Kramers-Kronig in two lines," 57 (9), 821 (1989).

A. P. French, J. M. Potgieter, and Jean Sivardière, "Comment on 'Coriolis deflection and air resistance," by J. Sivardière and A. P. French [Am. J. Phys. **56** (1), 88–89 (1988)]," **57** (10), 947–948 (1989).

Hans A. Bethe, "Review of 'The Privilege of Being a Physicist' by Victor F. Weisskopf," **57** (10), 957 (1989).

Christian Janot, Jean-Marie Dubois, and Marc de Boissieu, "Quasiperiodic structures: Another type of long-range order for condensed matter," **57** (11), 972–987 (1989).

J. L. Heilbron, "The politics of the meter stick," **57** (11), 988–992 (1989).

Helge Kragh, "The negative proton: Its earliest history," 57 (11), 1034–1039 (1989).

M. Torres, J. M. González, and G. Pastor, "Comment on 'Relation between charge density and curvature of surface of charged conductor," by Kun-Mu Liu [Am. J. Phys. **55** (9), 849–852 (1987)]," **57** (11), 1044–1046 (1989), and a Comment on the same paper by Myriam Dubé, Mario Morel, N. Gauthier, and A. J. Barrett, **57** (11), 1047–1048 (1989). See also W. L. Schaich and S. Mahmud, "On the distribution of charge over the surface of a conductor," **59** (7), 656–658 (1991); I. M. Benn and S. T. Shanahan, "Of lightning rods, charged conductors, curvature, and things," **59** (7), 658–660 (1991).

S. Washburn, "Conductance fluctuations in loops of gold," 57 (12), 1069–1078 (1989).

Barry R. Holstein, "The adiabatic theorem and Berry's phase," **57** (12), 1079–1084 (1989).

Nicole Meyer-Vernet, "Nonradiating sources: The subtle art of changing light into black," 57 (12), 1084–1089 (1989).

Tad McGeer and Leigh Hunt Palmer, "Wobbling, toppling, and forces of contact," **57** (12), 1089–1098 (1989).

Edward A. Desloge, "Nonequivalence of a uniformly accelerating reference frame and a frame at rest in a uniform gravitational field," **57** (12), 1121–1125 (1989).

G. C. Brown, J. O. Rasure, and W. A. Morrison, "Simple demonstration of superconductivity in YBa₂Cu₃O₇," **57** (12), 1142–1144 (1989).

Helmut Schmidt, "A simple derivation of distribution functions for Bose and Fermi statistics," **57** (12), 1150–1151 (1889). [A translation by R. E. Robson of a 1953 article in Z. Phys. **134**, 430–431 (1953).]

1990

Hans Dehmelt, "Less is more: Experiments with an individual atomic particle at rest in free space," **58** (1), 17–27 (1990).

Robert J. Birgeneau, "Novel magnetic phenomena and high-temperature superconductivity in lamellar copper oxides," **58** (1), 28–40 (1990).

- Fredy R. Zypman, "Moments to remember—The conditions for equating torque and rate of change of angular momentum," **58** (1), 41–43 (1990).
- E. H. Brandt, "Rigid levitation and suspension of high-temperature superconductors by magnets," **58** (1), 43–49 (1990).
- M. J. Ballico, M. L. Sawley, and F. Skiff, "The bipolar motor: A simple demonstration of deterministic chaos," **58** (1), 58–61 (1990).
- N. Bloembergen, "The unity and diversity of physics," 58 (2), 107–108 (1990).
- Harvey S. Leff, "Maxwell's demon, power, and time," **58** (2), 135–142 (1990).
- W. Klein, "Nuclear magnetic resonance: Free-induction decay and spin echoes in a 0.05 T magnetic field," **58** (2), 143–147 (1990).
- Harvey S. Leff and Andrew F. Rex, "Resource Letter MD-1: Maxwell's demon," **58** (3), 201–209 (1990).
- Freeman J. Dyson, "Feynman's proof of the Maxwell equations," **58** (3), 209–211 (1990). See Comments by Norman Dombey, Robert W. Brehme, James L. Anderson, and I. E. Farquhar, **59** (1), 85–87 (1991), by Richard J. Hughes, **60** (4), 301–306 (1992), and by Ildeu de Castro Moreira, **61** (10), 853 (1993).
- Fuhan Liu, Rochelle R. Tucker, and Peter Heller, "Nitrogen temperature superconducting ring experiment," **58** (3), 211–218 (1990).
- Melba Phillips, "The American Physical Society: A survey of its first 50 years," **58** (3), 219–230 (1990).
- Ruth Lewin Sime, "Lise Meitner's escape from Germany," **58** (3), 262–267 (1990); "Lise Meitner in Sweden 1938–1960: Exile from physics," **62** (8), 695–701 (1994). See Letters by Claude Kacser, **63** (2), 106–107 (1995) and David W. Trulock, "Meitner, Hahn, Hitler, and Siegbahn," **64** (5), 523–524 (1996).
- M. P. Silverman, "Circular birefringence of an atom in uniform rotation: The classical perspective," **58** (4), 310–317 (1990).
- Frank S. Crawford, "Elementary examples of adiabatic invariance," **58** (4), 337–344 (1990).
- Ross L. Spencer, "If Coulomb's law were not inverse square: The charge distribution inside a solid conducting sphere," **58** (4), 385–390 (1990).
- Kai-hua Zhao, "Physics nomenclature in China," 58 (5), 449–452 (1990).
- William B. Case and Mark A. Swanson, "The pumping of a swing from the seated position," **58** (5), 463–467 (1990).
- Richard H. Price and Richard P. Phillips, "The force between two charged wires," **58** (6), 534–539 (1990).
- K. T. McDonald, Carlos Farina, and Alexandre Tort, "Right and wrong use of the Lenz vector for non-Newtonian potentials," **58** (6), 540–542 (1990).
- Carl Sagan, on behalf of 32 scientists and 270 spiritual leaders from 83 countries, "Preserving and cherishing the Earth—An appeal for joint commitment in science and religion," **58** (7), 615–617 (1990). See also Letters by Robert C. Fleck, Jr., Howard J. Van Till, and Frank Loreti, **58** (12), 1127–1128 (1990).

- E. G. D. Cohen, "Short biography of G. E. Uhlenbeck," **58** (7), 618 (1990); "George E. Uhlenbeck and statistical mechanics," **58** (7), 619–625 (1990).
- Carl Sagan, "Croesus and Cassandra: Policy response to global warming," **58** (8), 721–730 (1990). See also Lawrence Cranberg, "The 1990 Oersted medal," **58** (8), 711 (1990).
- N. David Mermin, "Quantum mysteries revisited," **58** (8), 731–734 (1990). See also Comment by Achin Sen, **59** (8), 761 (1991).
- Daniel F. Styer, "The motion of wave packets through their expectation values and uncertainties," **58** (8), 742–744 (1990).
- Howard Brody, "Models of baseball bats," **58** (8), 756–758 (1990).
- J. Apple Henry, "Physicists' arrogance and Jacques Derrida," 58 (9), 808 (1990).
- Fang Lizhi, "Physics, physics students, and Tiananmen Square," **58** (9), 809 (1990).
- Cyrus S. MacLatchy and Hugh A. Chipman, "A dynamic method of measuring the charge induced on a conductor," **58** (9), 811–816 (1990). See Comment by A. J. Weinheimer, **60** (3), 277–278 (1992).
- Sheila Tobias and Lynne S. Abel, "Poetry for physicists," **58** (9), 816–821 (1990). See also the earlier paper on "Physics for poets:" Sheila Tobias and R. R. Hake, "Professors as physics students: What can they teach us?," **56** (9), 786–794 (1988).
- Tevian Dray, "The twin paradox revisited," **58** (9), 822–825 (1990).
- Shulamith G. Eckstein, "Verification of fundamental principles of mechanics in the computerized student laboratory," **58** (10), 909–915 (1990).
- Frank S. Crawford, "Hot water, fresh beer, and salt," **58** (11), 1033–1036 (1990). See Comment by Paul C. Mangelsdorf, Jr., "Salt and foaming beer," **59** (4), 296–297 (1991).
- Raymond A. Sorensen, "The random walk method for dc circuit analysis," **58** (11), 1056–1059 (1990).
- Robert H. Romer, "Is *clear* teaching *good* teaching? A tale of two teachers," **58** (12), 1129–1130 (1990).
- J. Clerk Maxwell, "Maxwell's great discovery," (page filler), **58** (12), 1130 (1990).
- Daniel M. Greenberger, Michael A. Horne, Abner Shimony, and Anton Zeilinger, "Bell's theorem without inequalities," **58** (12), 1131–1143 (1990).
- G. Matteucci, "Electron wavelike behavior: A historical and experimental introduction," **58** (12), 1143–1147 (1990).
- D. F. Bartlett, "Conduction current and the magnetic field in a circular capacitor," **58** (12), 1168–1172 (1990).
- N. David Mermin, Review of "The Emperor's New Mind: Concerning Computers, Minds, and the Laws of Physics," by Roger Penrose, **58** (12), 1214–1216 (1990). See also Comment by S. Chandrasekhar, and N. David Mermin's Response, **59** (7), 583 (1991).

W. M. Saslow, "How a superconductor supports a magnet, how magnetically 'soft' iron attracts a magnet, and eddy cur-

- rents for the uninitiated," **59** (1), 16–25 (1991).
- Mary M. Crone and Marc Sher, "The environmental impact of vacuum decay," **59** (1), 25–32 (1991).
- Richard E. Berg and Todd S. Marshall, "Wilberforce pendulum oscillations and normal modes," **59** (1), 32–38 (1991).
- Eugene Levin, "Friction experiments with a capstan," **59** (1), 80–84 (1991).
- Eric R. Dietz, "Vector analysis and the hydrostatic paradox," **59** (1), 89 (1991).
- David J. Griffiths and Mark A. Heald, "Time-dependent generalizations of the Biot–Savart and Coulomb laws," **59** (2), 111–117 (1991).
- K. Yusuf Billah and Robert H. Scanlan, "Resonance, Tacoma Narrows bridge failure, and undergraduate physics textbooks," **59** (2), 118–124 (1991).
- R. S. Dickson and J. A. Weil, "Breit-Rabi Zeeman states of atomic hydrogen," **59** (2), 125–129 (1991).
- A. M. Simpson and S. R. Ryan, "Racquetball court whistlers," **59** (2), 175–176 (1991).
- Frank S. Crawford, "Cube corner retroreflectors for sound waves," **59** (2), 176–177 (1991).
- Robert H. Romer, "John S. Bell (1928–1990), the man who proved Einstein was right," **59** (4), 299–300 (1991).
- Roland Gähler and Anton Zeilinger, "Wave-optical experiments with very cold neutrons," **59** (4), 316–324 (1991).
- Craig F. Bohren and Alistair B. Fraser, "Newton's zero-order rainbow: Unobservable or nonexistent?," **59** (4), 325–326 (1991). See also Comments by Alan E. Shapiro, **60** (8), 749–750 (1992) and James A. Lock and Timothy A. McCollum, "Further thoughts on Newton's zero-order rainbow," **62** (12), 1082–1089 (1994).
- Richard Montgomery, "How much does the rigid body rotate? A Berry's phase from the 18th century," **59** (5), 394–398 (1991).
- Freeman J. Dyson, "To teach or not to teach," **59** (6), 491–495 (1991).
- Hans Pfister and Walter Gekelman, "Demonstration of helicity conservation during magnetic reconnection using Christmas ribbons," **59** (6), 497–502 (1991).
- V. M. Babović, D. M. Davidović, and B. A. Aničin, "The Doppler interpretation of Rømer's method," **59** (6), 515–519 (1991).
- Nalini Easwar and Douglas A. MacIntire, "Study of the effect of relativistic time dilation on cosmic ray muon flux—An undergraduate modern physics experiment," **59** (7), 589–592 (1991).
- Laurie M. Brown and Helmut Rechenberg, "Quantum field theories, nuclear forces, and the cosmic rays (1934–1938)," **59** (7), 595–605 (1991).
- A. J. Dekker, H. Hickman, and T. M. Chen, "A tutorial approach to the thermal noise in metals," **59** (7), 609–614 (1991).
- K. Dreyer and F. R. Hickey, "The route to chaos in a dripping water faucet," **59** (7), 619–627 (1991).
- Samer Aljishi and Jakub Tatarkiewicz, "Why does heating water in a kettle produce sound?," **59** (7), 628–632 (1991).

- P. W. Milonni and M.-L. Shih, "Zero-point energy in early quantum theory," **59** (8), 684–698 (1991).
- Aaldert Compagner, "Definitions of randomness," **59** (8), 700–705 (1991).
- H. Winter and H. W. Ortjohann, "Simple demonstration of storing macroscopic particles in a 'Paul trap,' " **59** (9), 807–813 (1991).
- Geoffrey I. Opat, "The precession of a Foucault pendulum viewed as a beat phenomenon of a conical pendulum subject to a Coriolis force," **59** (9), 822–823 (1991).
- Edward Teller, "Military applications of technology—A new turn," **59** (10), 873 (1991).
- Michèle Glass-Maujean and H. Henry Stroke, "Rotating coordinates and the Ramsey separated oscillating-field resonance method," **59** (10), 886–890 (1991).
- Collin L. Olson and M. G. Olsson, "Dynamical symmetry breaking and chaos in Duffing's equation," **59** (10), 907–911 (1991).
- B. Duchesne, C. W. Fischer, C. G. Gray, and K. R. Jeffrey, "Chaos in the motion of an inverted pendulum: An undergraduate laboratory experiment," **59** (11), 987–992 (1991); N. Alessi, C. W. Fischer, and C. G. Gray, "Measurement of amplitude jumps and hysteresis in a driven inverted pendulum," **60** (8), 755–756 (1992).
- Eugene D. Commins, "Berry's geometric phase and motional fields," **59** (12), 1077–1080 (1991).
- Barry R. Holstein, "Variations on the Aharonov–Bohm effect," **59** (12), 1080–1085 (1991). See also Comment by S. Bruce, **66** (12), 1125–1126 (1998).

- Donald W. Born, "Planck's postcard to Weisskopf," **60** (1), 12 (1992). [See the page filler, "Weisskopf and Planck," **59** (9), 778 (1991).]
- Robert H. Romer, "A modest proposal for reform of the professoriat—Let's be students again!," **60** (1), 15–16 (1992).
- Peter Heller, "Analog demonstrations of Ampere's law and magnetic flux," **60** (1), 17–25 (1992). See also "Editor's note" and "Erratum," **60** (3), 274 (1992), and A. G. Klein, "On demonstrations of Ampère's law," **61** (11), 1045 (1993).
- Joel Gersten, Harry Soodak, and Martin S. Tiersten, "Ball moving on stationary or rotating horizontal surface," **60** (1), 43–47 (1992).
- J. M. Aguirregabiria, A. Hernández, and M. Rivas, "An example of surface charge distribution on conductors carrying steady currents," **60** (2), 138–141 (1992).
- L. L. Van Zandt, "The dynamical theory of the baseball bat," **60** (2), 172–181 (1992).
- Daniel E. Platt, "A modern analysis of the Stern-Gerlach experiment," **60** (4), 306–308 (1992).
- Mary B. James and David J. Griffiths, "Why the speed of light is reduced in a transparent medium," **60** (4), 309–313 (1992). See Comment by Joshua B. Diamond, **63** (2), 179–180 (1995).

- Richard A. Muller, "Thomas precession: Where is the torque?," **60** (4), 313–317 (1992).
- Paul Erdös, Gérard Schibler, and Roy C. Herndon, "Floating equilibrium of symmetrical objects and the breaking of symmetry. Part 1. Prisms" and "Part 2. The cube, the octahedron, and the tetrahedron," **60** (4), 335–356 (1992).
- A. John Mallinckrodt and Harvey S. Leff, "All about work," **60** (4), 356–365 (1992).
- James A. Lock and James H. Andrews, "Optical caustics in natural phenomena," **60** (5), 397–407 (1992).
- Troy Shinbrot, Celso Grebogi, Jack Wisdom, and James A. Yorke, "Chaos in a double pendulum," **60** (6), 491–499 (1992).
- William B. Case and Michael A. Shay, "On the interesting behavior of a gimbal-mounted gyroscope," **60** (6), 503–506 (1992).
- Robert H. Romer, "SI Units (Système Irrégulier d'Unités)," (page filler), **60** (6), 576 (1992).
- J. W. Haslett, "Textbook misquotations of de Broglie," **60** (7), 583 (1992). See also Joan A. Henry, "The de Broglie relationship—Fact and fiction," **60** (12), 1065 (1992).
- G. H. Hardy, Srinivasa Ramanujan, and Robert H. Romer, "1729, the taxi-cab number," (page filler—regrettably printed with several obvious typos), **60** (7), 586 (1992).
- Thomas D. Rossing, Daniel A. Russell, and David E. Brown, "On the acoustics of tuning forks," **60** (7), 620–626 (1992).
- W. M. Saslow, "Maxwell's theory of eddy currents in thin conducting sheets, and applications to electromagnetic shielding and MAGLEV," **60** (8), 693–711 (1992).
- Congressman George E. Brown, Jr., "The objectivity crisis," **60** (9), 779–781 (1992).
- M. Santander, "The Chinese South-Seeking chariot: A simple mechanical device for visualizing curvature and parallel transport," **60** (9), 782–787 (1992).
- W. E. Baylis, J. Huschilt, and Jiansu Wei, "Why *i*?," **60** (9), 788–797 (1992).
- Donald G. Bruns, "A solid-state low-voltage Tesla coil demonstrator," **60** (9), 797–803 (1992).
- P. S. Skordos and W. H. Zurek, "Maxwell's demon, rectifiers, and the second law: Computer simulation of Smoluchowski's trapdoor," **60** (10), 876–882 (1992).
- James A. Blackburn, H. J. T. Smith, and N. Grønbech-Jensen, "Stability and Hopf bifurcations in an inverted pendulum," **60** (10), 903–908 (1992). See Erratum, **61** (5), 475 (1993).
- H. J. T. Smith and J. A. Blackburn, "Experimental study of an inverted pendulum," **60** (10), 909–911 (1992).
- Fritz Rohrlich, "A poem by Ludwig Boltzmann," **60** (11), 972–973 (1992). See Erratum, **61** (5), 475 (1993).
- John G. King, Philip Morrison, Phylis Morrison, and Jerome Pine, "ZAP! freshman electricity and magnetism using desktop experiments: A progress report," **60** (11), 973–978 (1992).
- David J. Griffiths, "Dipoles at rest," **60** (11), 979–987 (1992).

- Peter Heering, "On Coulomb's inverse square law," **60** (11), 988–994 (1992).
- Per Kraus and David J. Griffiths, "Renormalization of a model quantum field theory," **60** (11), 1013–1023 (1992).
- Robert H. Romer, "Cold fusion," 60 (12), 1067 (1992).
- Alistair Steyn-Ross and Donald G. Ivey, "Frames of Reference' revisited," **60** (12), 1069–1085 (1992).
- Joseph Ford and Giorgio Mantica, "Does quantum mechanics obey the correspondence principle? Is it complete?," **60** (12), 1086–1098 (1992).
- K. B. MacAdam, A. Steinbach, and C. Wieman, "A narrowband tunable diode laser system with grating feedback, and a saturated absorption spectrometer for Cs and Rb," **60** (12), 1098–1111 (1992).
- A. E. Robson and J. D. Sethian, "Railgun recoil, Ampere tension, and the laws of electrodynamics," **60** (12), 1111–1117 (1992).

- George Gale and John Urani, "Philosophical midwifery and the birthpangs of modern cosmology," **61** (1), 66–73 (1993).
- Isaac Newton, "A new theory about light and colors," **61** (2), 108–112 (1993).
- Dudley H. Towne, "Teaching Newton's color theory first-hand," **61** (2), 113–118 (1993).
- F. Herrmann, "The unexpected path of the energy in a moving capacitor," **61** (2), 119–121 (1993).
- Harvey S. Leff and A. John Mallinckrodt, "Stopping objects with zero external work: Mechanics meets thermodynamics," **61** (2), 121–127 (1993).
- Robert H. Romer, "Reading the equations and confronting the phenomena—The delights and dilemmas of physics teaching," **61** (2), 128–142 (1993).
- Barry R. Holstein, "Anomalies for pedestrians," **61** (2), 142–147 (1993).
- J. P. Eisenstein, "The quantum Hall effect," **61** (2), 179–183 (1993).
- Wolfgang Rueckner, Douglass Goodale, Daniel Rosenberg, Simon Steel, and David Tavilla, "Lecture demonstration of wineglass resonances," **61** (2), 184–186 (1993).
- C. Sackett, E. Cornell, C. Monroe, and C. Wieman, "A magnetic suspension system for atoms and bar magnets," **61** (4), 304–309 (1993).
- Jonathan L. Rosner, "The Smith chart and quantum mechanics," **61** (4), 310–316 (1993).
- Frank O. Goodman, "Measure the earth's radius while boating on one of its lakes," **61** (4), 378–379 (1993).
- Harry Soodak and Martin S. Tiersten, "Wakes and waves in *N* dimensions," **61** (5), 395–401 (1993). See also Comment by Abraham A. Ungar, **62** (3), 279 (1994).
- Terje G. Vold, "An introduction to geometric algebra with an application in rigid body mechanics," **61** (6), 491–504 (1993); "An introduction to geometric calculus and its application to electrodynamics," **61** (6), 505–513 (1993).
- M. P. Silverman, "More than one mystery: Quantum inter-

- ference with correlated charged particles and magnetic fields," **61** (6), 514–523 (1993).
- E. G. D. Cohen, "Kinetic theory: Understanding nature through collisions," **61** (6), 524–533 (1993).
- W. E. Baylis, J. Bonenfant, J. Derbyshire, and J. Huschilt, "Light polarization: A geometric-algebra approach," **61** (6), 534–545 (1993).
- Fred B. Seeley, Joseph E. Alexander, Robert W. Connaster, Jeanette S. Conway, and Jonathan P. Dowling, "Dipole radiators in a cavity: A radio frequency analog for the modification of atomic spontaneous emission rates between mirrors," **61** (6), 545–550 (1993).
- Herbert C. Corben, "Factors of 2 in magnetic moments, spin-orbit coupling, and Thomas precession," **61** (6), 551–553 (1993).
- Edward M. Purcell, "Magnetism: A second-order relativistic effect," (page filler), **61** (8), 687 (1993).
- Robert H. Whitaker, "The Wheatstone kaleidophone," **61** (8), 722–728 (1993).
- Daniel V. Schroeder and Thomas A. Moore, "A computer-simulated Stern-Gerlach laboratory," **61** (9), 798–805 (1993).
- Eugene D. Commins, "Resource Letter ETDSTS-1: Experimental tests of the discrete space-time symmetries," **61** (9), 778–788 (1993).
- H. A. Haus and J. L. Pan, "Photon spin and the paraxial wave equation," **61** (9), 818–821 (1993).
- Robert P. Godwin, "The hydraulic jump ('shocks' and viscous flow in the kitchen sink)," **61** (9), 829–832 (1993); B. L. Blackford, "The hydraulic jump in radially spreading flow: A new model and new experimental data," **64** (2), 164–169 (1996); Y. Brechet and Z. Néda, "On the circular hydraulic jump," **67** (8), 723–731 (1999).
- Robert H. Romer, "Fermat's last theorem," **61** (10), 873–874 (1993).
- Carl A. Kocher, "Interactions of magnetic monopoles with electric currents," **61** (10), 875–878 (1993); "Magnetic monopoles and hyperfine structure," **61** (10), 879–882 (1993).
- Nelson H. Klein, "Square wheel," **61** (10), 893–896 (1993). See also L. Takacs, "The square wheel revisited," **62** (12), 1141–1144 (1994).
- Hans A. Bethe, "My experience in teaching physics," **61** (11), 972–973 (1993). See also Comment by M. A. B. Whitaker, "Bethe, Bell and de Broglie," **63** (10), 873 (1995).
- O. L. de Lange and J. Pierrus, "Measurement of inertial and noninertial properties of an air suspension gyroscope," **61** (11), 974–981 (1993).
- Marek A. Abramowicz and Ewa Szuszkiewicz, "The Wall of Death," 61 (11), 982-991 (1993).
- R. B. Levien and S. M. Tan, "Double pendulum: An experiment in chaos," **61** (11), 1038–1044 (1993).
- Gabriel Weinreich, "What science knows about violins—and what it does not know," **61** (12), 1067–1077 (1993).
- Daniel T. Gillespie, "Fluctuation and dissipation in Brownian motion," **61** (12), 1077–1083 (1993).
- R. Friedberg, "The electrostatics and magnetostatics of a

- conducting disk," **61** (12), 1084–1096 (1993).
- Cyrus S. MacLatchy, Philip Backman, and Larry Bogan, "A quantitative magnetic braking experiment," **61** (12), 1096–1101 (1993).
- D. W. L. Sprung, Hua Wu, and J. Martorell, "Scattering by a finite periodic potential," **61** (12), 1118–1124 (1993). See Comments by Roger G. Newton, **62** (11), 1042–1043 (1994); S. K. Lamoreaux, **64** (2), 175 (1996).

- Ralph Baierlein, "Entropy and the second law: A pedagogical alternative," **62** (1), 15–26 (1994). See also Comment and Response by George F. R. Ellis and Ralph Baierlein, **63** (5), 472–473 (1995).
- Francis S. Johnson, Bruce L. Cragin, and R. Richard Hodges, "Electromagnetic momentum density and the Poynting vector in static fields," **62** (1), 33–41 (1994).
- A. W. DeSilva, "Magnetically imploded soft drink can," **62** (1), 41–45 (1994).
- Nathan Rosen, "Bell's theorem and quantum mechanics," **62** (2), 109–110 (1994).
- John H. Scofield, "Frequency-domain description of a lock-in amplifier," **62** (2), 129–133 (1994).
- Robert H. Romer, "Is 'curiosity' a dirty word?," **62** (3), 199–200 (1994).
- Willis E. Lamb, Jr., "Suppose Newton had invented wave mechanics," **62** (3), 201–206 (1994). See also Comment by Michael Nauenberg, **63** (7), 661–662 (1995).
- Louis H. Cadwell, "Singing corrugated pipes revisited," **62** (3), 224–227 (1994).
- Robert O'Keefe, "Modeling the tearing of paper," **62** (4), 299–305 (1994).
- H. Urbantke, "Electrostatic fields with straight flux lines," **62** (4), 305–309 (1994).
- Bruce Denardo and Steven Alkov, "Acoustic resonators with variable nonuniformity," **62** (4), 315–321 (1994).
- W. M. Saslow, "Consider a spherical battery...," **62** (6), 495–501 (1994).
- David Auerbach, "Colliding rods: Dynamics and relevance to colliding balls," **62** (6), 522–525 (1994).
- R. H. Dickerson and J. Mottmann, "On the thermodynamic efficiencies of reversible cycles with sloping, straight-line processes," **62** (6), 558–562 (1994); Daniel T. Valentine, "Temperature-entropy diagram of reversible cycles with sloping, straight-line, pressure-volume processes," **63** (3), 279–281 (1995); A. Calvo Hernandez, "Heat capacity in a negatively sloping, straight-line process," **63** (8), 756 (1995); Harvey S. Leff, "Entropy and heat along reversible paths for fluids and magnets," **63** (9), 814–817 (1995), and Erratum: **63** (12), 1146 (1995).
- Mark Gerstein, "Purcell's role in the discovery of nuclear magnetic resonance: Contingency versus inevitability," **62** (7), 596–601 (1994).
- Reinhard A. Schumacher, "Special relativity and the Michelson–Morley interferometer," **62** (7), 609–612 (1994).

Chet Raymo, "In defense of the dull and boring," **62** (8), 679 (1994).

D. F. Bartlett and Y. Su, "What potentials permit a uniqueness theorem," **62** (8), 683–686 (1994).

Harry Soodak and Martin S. Tiersten, "Resolution analysis of gyroscopic motion," **62** (8), 687–694 (1994).

John Macdonald and Seán V. O'Leary, "Measuring the diameter of a hair with a steel rule," **62** (8), 763–764 (1994).

Ted Biewer, David Alexander, Scott Robertson, and Bob Walch, "Electrostatic orrery for celestial mechanics," **62** (9), 821–828 (1994).

Thomas F. Jordan, "Quantum mysteries explored," **62** (10), 874–880 (1994).

N. David Mermin, "Quantum mysteries refined," **62** (10), 880–887 (1994).

W. E. Baylis, J. Bonenfant, J. Derbyshire, and J. Huschilt, "Motion of charges in crossed and equal *E* and *B* fields," **62** (10), 899–902 (1994).

John J. Meyer and Anthony F. Behof, "Experiment on the motion of a dielectric in a parallel-plate capacitor," **62** (10), 931–934 (1994).

Abner Shimony, Review of "Mind, Matter, and Quantum Mechanics" by Henry P. Stapp, **62** (10), 956–957 (1994); Henry P. Stapp, "Answers to Shimony's queries," **63** (8), 757–758 (1995).

S. Chandrasekhar, "Boltzmann on Maxwell's style," **62** (11), 969 (1994) and Peter Wessels, "Boltzmann on Maxwell's style," **62** (11), 969–970 (1994). Two letters in response to the editor's earlier question about a piece by Boltzmann on Maxwell's style, one letter providing an English translation and the other the German original.

Dwight E. Neuenschwander, "Question #7. The spin-statistics theorem," **62** (11), 972 (1994). See Answers by Roy R. Gould, **63** (2), 109 (1995); Henri Bacry, **63** (4), 297–298 (1995); Robert C. Hilborn, **63** (4), 298–299 (1995); Thomas von Foerster, **64** (5), 526 (1996). Also Ian Duck and E. C. G. Sudarshan, "Toward an understanding of the spin-statistics theorem," **66** (4), 284–303 (1998), and Arthur S. Wightman, Review of "Pauli and the Spin-Statistics Theorem," by Ian Duck and E. C. G. Sudarshan, **67** (8), 742–746 (1999).

R. Anderson, H. R. Bilger, and G. E. Stedman, "'Sagnac' effect: A century of Earth-rotated interferometers," **62** (11), 975–985 (1994).

Harvey S. Leff and Andrew F. Rex, "Entropy of measurement and erasure: Szilard's membrane model revisited," **62** (11), 994–1000 (1994).

Giulio Venezian, "On the resistance between two points on a grid," **62** (11), 1000–1004 (1994); D. Atkinson and F. J. van Steenwijk, "Infinite resistive lattices," **67** (6), 486–492 (1999).

Robert H. Romer, "A report to the readers—and a request for suggestions," **62** (12), 1065–1076 (1994).

J. W. V. Storey, M. C. B. Ashley, M. Naray, and J. P. Lloyd, "21 cm line of atomic hydrogen," **62** (12), 1077–1081 (1994).

Paul H. E. Meijer, "Kamerlingh Onnes and the discovery of superconductivity," **62** (12), 1105–1108 (1994).

Roy J. Glauber, "Dirac's Famous Dictum on Interference: One Photon or Two?," **63** (1), 12 (1995). See F. Louradour, F. Reynaud, B. Colombeau, and C. Froehly, "Interference fringes between two separate lasers," **61** (3), 242–245 (1993), and Comments by Philip R. Wallace and by Lloyd M. Davis and C. Parigger, **62** (10), 950–952 (1994). See also J. H. Apple, "Question #60. Interference of two independent sources," **65** (4), 269 (1997) and Answers by M. P. Fewell, **66** (1), 13 (1998) and by Claus Kiefer and F. J. Duarte, **66** (8), 661–663 (1998).

H. Richard Crane, "Foucault pendulum 'wall clock," 63 (1), 33–39 (1995).

Wolfgang Rueckner, Douglass Goodale, Daniel Rosenberg, and David Tavilla, "Demonstration of charge conservation," **63** (1), 90–91 (1995).

Alan Cromer, "Many oscillations of a rigid rod," 63 (2), 112–121 (1995).

Kenneth S. Mendelson, "Statics of a ladder leaning against a rough wall," **63** (2), 148–150 (1995); Alejandro G. Gonzaléz and Julio Gratton, "Reaction forces on a ladder leaning on a rough wall," **64** (8), 1001–1005 (1996).

Ralph Baierlein, "Representing a vector field: Helmholtz's theorem derived from a Fourier identity," **63** (2), 180–182 (1995).

W. K. Koo, C. S. Chong, and Ben K. Merican, "Polarized light, Polaroid and your digital watch," **63** (2), 184–185 (1995).

Wolfgang Rueckner, Justin Georgi, Douglass Goodale, Daniel Rosenberg, and David Tavilla, "Rotating saddle Paul trap," **63** (2), 186–187 (1995).

Philip M. Sadler, "An ancient time machine: The Dial of Ahaz," 63 (3), 211–216 (1995).

Barry R. Holstein, "Radiation from a suddenly moving sheet of charge," **63** (3), 217–221 (1995).

Christopher C. Jones, "A mechanical resonance apparatus for undergraduate laboratories," **63** (3), 232–236 (1995).

Daniel T. Gillespie, "Answer to Question #3 ['Why is momentum called p?," N. David Mermin, Am. J. Phys. **62** (10), 871 (1994)]," **63** (4), 297 (1995).

Neal F. Lane, "To support basic research and to develop scientific talent," **63** (4), 300–301 (1995).

Carl Wieman, Gwenn Flowers, and Sarah Gilbert, "Inexpensive laser cooling and trapping experiment for undergraduate laboratories," **63** (4), 317–330 (1995).

Robert C. Hilborn, "Atoms in orthogonal electric and magnetic fields: A comparison of quantum and classical models," **63** (4), 330–338 (1995).

Robert D. Cousins, "Why isn't every physicist a Bayesian?," **63** (5), 398-410 (1995).

Raymond A. Sorensen, "Lorentz contraction: A real change of shape," **63** (5), 413–415 (1995).

George H. Watson, "Transmission line exercises for the introductory physics laboratory," **63** (5), 423–425 (1995).

M. P. Silverman, "Self-directed learning: A heretical experiment in teaching physics," **63** (6), 495–508 (1995).

Dennis G. Hall, "A few remarks on the matching conditions

at interfaces in electromagnetic theory," **63** (6), 508–512 (1995).

Carl Yao, "Magnetism and mirror symmetry," **63** (6), 520–523 (1995).

D. R. Spiegel and R. J. Helmer, "Shot-noise measurements of the electron charge: An undergraduate experiment," **63** (6), 554–560 (1995).

Gerald Gabrielse, "Relativistic mass increase at slow speeds," **63** (6), 568–569 (1995).

J. Loren Passmore, Brandon C. Collings, and Peter J. Collings, "Autocorrelation of electrical noise: An undergraduate experiment," **63** (7), 592–595 (1995).

R. Grieser, T. Kühl, and G. Huber, "Using atomic physics to verify relativity," **63** (7), 665–668 (1995).

Robert H. Romer, "Strong inequalities," **63** (8), 681–682 (1995); "Strong inequalities. II. Logarithms," **64** (2), 111–112 (1996). See also the page filler following the first item: "No wonder they haven't won a world series since 1918!," **63** (8), 682 (1995).

Gerald N. Pellegrini and Arthur R. Swift, "Maxwell's equations in a rotating medium: Is there a problem?," 63 (8), 694–705 (1995). See also Comment by Michael L. Burrows, 65 (9), 929-931 (1997); T. A. Weber, "Measurements on a rotating frame in relativity, and the Wilson and Wilson experiment," 65 (10), 946-953 (1997); Charles T. Ridgely, 'Applying relativistic electrodynamics to a rotating material medium," 66 (2), 114-121 (1998); Robert D. Klauber, "Comments regarding recent articles on relativistically rotating frames," 67 (2), 158–159 (1999) and Response by T. A. Weber, 67 (2), 159-161 (1999); Robert V. Krotkov, Gerald N. Pellegrini, Norman C. Ford, and Arthur R. Swift, "Relativity and the electric dipole moment of a moving, conducting, magnetized sphere," 67 (6), 493-498 (1999); J. B. Hertzberg, S. R. Bickman, M. T. Hummon, D. Krause, Jr., S. K. Peck, and L. R. Hunter, "Measurement of the relativistic potential difference across a rotating magnetic dielectric cylinder," **69** (6), 648–654 (2001).

Richard J. Cook, Heidi Fearn, and Peter W. Milonni, "Fizeau's experiment and the Aharonov–Bohm effect," **63** (8), 705–710 (1995).

N. J. Carron, "On the fields of a torus and the role of the vector potential," **63** (8), 717–729 (1995).

K. G. Libbrecht, R. A. Boyd, P. A. Willems, T. L. Gustavson, and D. K. Kim, "Teaching physics with 670 nm diode lasers—construction of stabilized lasers and lithium cells," **63** (8), 729–737 (1995); R. A. Boyd, J. L. Bliss, and K. G. Libbrecht, "Teaching physics with 670-nm diode lasers—experiments with Fabry–Perot cavities," **64** (9), 1109–1116 (1996).

G. Cook and R. H. Dickerson, "Understanding the chemical potential," **63** (8), 737–742 (1995).

Robert H. Romer, "Question #26. Electromagnetic field momentum," **63** (9), 777–779 (1995). See Answers by Kirk McDonald, Fritz Rohrlich, and Barry R. Holstein, **64** (1), 15–17 (1996).

Martin Ligare and Stephen Becker, "Simple soluble models of quantum damping applied to cavity quantum electrodynamics," **63** (9), 788–796 (1995).

M. P. Silverman, Wayne Strange, and J. C. H. Spence, "The

brightest beam in science: New directions in electron microscopy and interferometry," **63** (9), 800–813 (1995).

E. W. Dearden, "Demonstration of Amperian currents," **63** (9), 821–822 (1995).

R. W. Robinett, "Quantum and classical probability distributions for position and momentum," **63** (9), 823–832 (1995).

Antônio B. Nassar, J. M. F. Bassalo, and Paulo de Tarso S. Alencar, "Dispersive Airy packets," **63** (9), 849–852 (1995).

David Auerbach, "Supercooling and the Mpemba effect: When hot water freezes quicker than cold," **63** (10), 882–885 (1995); Charles A. Knight, "The Mpemba effect: The freezing times of hot and cold water," **64** (5), 524 (1996).

Kaoru Sasabe, "Question #29. Why is the Coulomb force neglected in e^+e^- pair production?," **63** (10), 875 (1995); see Answer by Matthew R. Haynes, **64** (12), 1448–1449 (1996).

J. B. Brown, J. C. Dore, C. Isenberg, and S. J. Rogers, "Pascal's demonstration experiment: Weighing the atmosphere," **63** (10), 886–888 (1995).

S. C. Colbeck, "Pressure melting and ice skating," **63** (10), 888–890 (1995).

Joseph C. Amato, Roger E. Williams, and Hugh Helm, "A 'black box' moment of inertia apparatus," **63** (10), 891–894 (1995).

Jacques D. Templin, "Exact solution to the field equations in the case of an ideal, infinite solenoid," **63** (10), 916–920 (1995).

Yaakov Kraftmakher, "Two student experiments on electrical fluctuations," **63** (10), 932–935 (1995).

Adam Chandler, "Subtleties in electromagnetic angular momentum," **63** (10), 956 (1995).

Ray C. Jones, "The Millikan oil-drop experiment: Making it worthwhile," **63** (11), 970–977 (1995).

Randall S. Jones, "Circular motion of a charged particle in an electric dipole field," **63** (11), 1042–1043 (1995).

Peter J. Collings, "Liquid crystal displays," **63** (11), 1044–1048 (1995).

Richard Rhodes, "The new morning of the world," **63** (12), 1070–1073 (1995).

D. K. de Vries and A. D. Wieck, "Potential distribution in the van der Pauw technique," **63** (12), 1074–1078 (1995).

Francis J. McCormack, "Smooth transitions between the three damping cases for the harmonic oscillator," **63** (12), 1151 (1995).

1996

Clifford E. Swartz, "Question #33. Underwater vision of dolphins and terns," **64** (1), 13 (1996). See Answer by James D. White and Laura R. White, **64** (11), 1353–1355 (1996).

Daniel F. Styer, "Common misconceptions regarding quantum mechanics," **64** (1), 31–34 (1996). See Erratum: **64** (9), 1202 (1996).

Lorenzo Basano and Pasquale Ottonello, "The ambiguity of random choices: Probability paradoxes in some physical processes," **64** (1), 34–39 (1996).

- Ying-yan Zhou, "The analogy between the calculation of a two-dimensional electrostatic field and that of a two-dimensional magnetostatic field," **64** (1), 69–72 (1996).
- Gregory J. Gemmen and N. Rouze, "Analysis of idealized Zeeman quantum beat experiments in the advanced laboratory," **64** (2), 147–150 (1996).
- Wolfgang Pauli (quoted by Victor F. Weisskopf), "Simple it is, but also wrong," (page filler), **64** (2), 163 (1996).
- Wolfgang Rueckner and Paul Titcomb, "A lecture demonstration of single photon interference," **64** (2), 184–188 (1996).
- William B. Case, "The pumping of a swing from the standing position," **64** (3), 215–220 (1996).
- John R. Graham, "Measuring the speed of digital signals (speed of light)," **64** (3), 220–224 (1996).
- Daniel T. Gillespie, "The mathematics of Brownian motion and Johnson noise," **64** (3), 225–240 (1996).
- P. Koczyk, P. Wiewiór, and C. Radzewicz, "Photon counting statistics—Undergraduate experiment," **64** (3), 240–245 (1996).
- I. D. Johnston, "Photon states made easy: A computational approach to quantum radiation theory," **64** (3), 245–255 (1996).
- Robert H. Romer, Review of "Handbook of Mathematical Formulas and Integrals," by Alan Jeffrey, **64** (3), 350–351 (1996). See also the reviews of several collections of tables of integrals and other mathematical data: **56** (10), 957–959 (1988).
- Talal A. Debs and Michael L. G. Redhead, "The twin 'paradox' and the conventionality of simultaneity," **64** (4), 384–392 (1996).
- Jeffrey J. Prentis, "Equation poems," **64** (5), 532–538 (1996).
- P. L. Krapivsky and S. Redner, "Life and death in an expanding cage and at the edge of a receding cliff," **64** (5), 546–552 (1996).
- Robert R. Wilson, "Making our country worth defending," **64** (6), 682–683 (1996), an Answer to Richard W. Peterson's "Question #8," Am. J. Phys. **62** (11), 972 (1994).
- J. M. Dudley and A. M. Kwan, "Richard Feynman's popular lectures on quantum electrodynamics: The 1979 Robb lectures at Auckland University," **64** (6), 694–698 (1996).
- George Ruppeiner, Michael Grossman, and Ali Tafti, "Test of the Biot-Savart law to distances of 15 m," **64** (6), 698–705 (1996).
- David J. Griffiths and Ye Li, "Charge density on a conducting needle," **64** (6), 706–714 (1996). See also Comment by R. H. Good, **65** (2), 155–156 (1997); Mark Andrews, "Equilibrium charge density on a conducting needle," **65** (9), 846–850 (1997); J. D. Jackson, "Charge density on thin straight wire, revisited," **68** (9), 789–799 (2000). See also Comment by O. F. de Alcantara Bonfim and David Griffiths, **69** (4), 515–516 (2001).
- Alan Wolf, Stephen J. Van Hook, and Eric R. Weeks, "Electric field line diagrams don't work," **64** (6), 714–724 (1996).
- Bruce Denardo and Miguel Bernard, "Design and measurements of variably nonuniform acoustic resonators," **64** (6), 745–751 (1996).

- M. P. Silverman and Wayne Strange, "The Newton two-knife experiment: Intricacies of wedge diffraction," **64** (6), 773–787 (1996).
- R. W. Robinett, "Quantum mechanical time-development operator for the uniformly accelerated particle," **64** (6), 803–808 (1996).
- Robert Q. Stanley, "Question #45. What (if anything) does the photoelectric effect teach us?," **64** (7), 839 (1996). See Answer by P. W. Milonni, **65** (1), 11–12 (1997).
- Clifford Swartz, "Question #46. How does the microwave oven really work?," **64** (7), 839 (1996). See Answer by Craig F. Bohren, **65** (1), 12 (1997).
- Carl E. Wieman, "Bose–Einstein Condensation in an Ultracold Gas," **64** (7), 847–855 (1996).
- J. D. Jackson, "Surface charges on circuit wires and resistors play three roles," **64** (7), 855–870 (1996).
- J. M. Aguirregabiria, A. Hernández, and M. Rivas, "Surface charges and energy flow in a ring rotating in a magnetic field," **64** (7), 892–895 (1996).
- Ricardo E. de Souza and Giovani L. Vasconcelos, "Visual appearance of a rolling bicycle wheel," **64** (7), 896–897 (1996).
- Jonathan L. Rosner, "Tabletop time-reversal violation," **64** (8), 982–985 (1996). See Erratum, **66** (6), 543 (1998).
- Heidi Fearn, Daniel F. V. James, and Peter W. Milonni, "Microscopic approach to reflection, transmission, and the Ewald–Oseen extinction theorem," **64** (8), 986–995 (1996). See also Comment by Hellmut J. Juretschke, **67** (10), 929–930 (1999).
- Clayton A. Gearhart, "Specific heats and the equipartition law in introductory textbooks," **64** (8), 995–1000 (1996).
- E. Comay, "Exposing 'hidden momentum," **64** (8), 1028–1034 (1996).
- Morris H. Shamos, "The real threat of scientific literacy," **64** (9), 1102–1103 (1996).
- Saul A. Teukolsky, "The explanation of the Trouton–Noble experiment revisited," **64** (9), 1104–1109 (1996).
- Richard W. Peterson, Stephan J. Pankratz, Trent A. Perkins, Adam Dickson, and Chad Hoyt, "Holographic real-time imaging of standing waves in gases," **64** (9), 1139–1142 (1996).
- Michael Shermer, "Hope springs eternal—Why people believe weird things," **64** (10), 1229–1230 (1996).
- Jonathan L. Rosner, "Experimental projects in graduate theoretical physics courses," **64** (10), 1231–1236 (1996).
- Harvey S. Leff, "Thermodynamic entropy: The spreading and sharing of energy," **64** (10), 1261–1271 (1996).
- Carole Smetana, David Alexander, Scott Robertson, Kim Vilkaitis, and Bob Walch, "A spherical electrostatic orrery," **64** (11), 1356–1361 (1996).
- Joshua M. Kershenbaum, "The ladder and the barn (in the style of Dr. Seuss)," **64** (12), 1447 (1996).
- Jan Hilgevoord, "The uncertainty principle for energy and time," **64** (12), 1451–1456 (1996); "The uncertainty principle for energy and time. II," **66** (5), 396–402 (1998).

Peter Heller, "Electromagnetic waves in space: Visualization of E and B, and pedagogical approaches using superposition," **65** (1), 22–25 (1997).

Thomas A. Moore and Daniel V. Schroeder, "A different approach to introducing statistical mechanics," **65** (1), 26–36 (1997).

Charles D. Geilker, "In defense of the lecture-demonstration method of teaching physics," **65** (2), 107 (1997).

Jon H. Eggert, "One-dimensional lattice dynamics with periodic boundary conditions: An analog demonstration," **65** (2), 108–116 (1997).

T. James Belich, Ryan P. Lahm, Richard W. Peterson, and Chad D. Whipple, "Optical Doppler measurements," **65** (3), 186–190 (1997).

Paul Nachman and Aaron C. Bernstein, "Scanning spherical-mirror Fabry–Perot interferometer: An upper-division optics laboratory experiment," **65** (3), 202–213 (1997).

Martin Gardner, "CSICOP—The Committee for the Scientific Investigation of the Paranormal," **65** (4), 273–274 (1997).

Martin D. Simon, Lee O. Heflinger, and S. L. Ridgway, "Spin stabilized magnetic levitation," **65** (4), 286–292 (1997).

Henry P. Stapp, "Nonlocal character of quantum theory," **65** (4), 300–304 (1997). See also N. David Mermin, "Nonlocal character of quantum theory," **66** (10), 920–924 (1998) and Henry P. Stapp, "Meaning of counterfactual statements in quantum physics," **66** (10), 924–926 (1998).

Ralph Baierlein, "The fraction of 'all different' combinations: Justifying the semi-classical partition function," **65** (4), 314–316 (1997).

Paul Nachman, Paul M. Pellegrino, and Aaron C. Bernstein, "Mechanical resonance detected with a Michelson interferometer," **65** (5), 441–443 (1997).

Ronald Gautreau and Jeffrey M. Cohen, "Birth and death of a black hole," **65** (5), 444–446 (1997).

S. C. Colbeck, L. Najarian, and H. B. Smith, "Sliding temperatures of ice skates," **65** (6), 488–492 (1997).

A. C. Funk and M. Beck, "Sub-Poissonian photocurrent statistics: Theory and undergraduate experiment," **65** (6), 492–500 (1997).

Guy Vandegrift, "Transverse bending waves and the breaking broomstick demonstration," **65** (6), 505–510 (1997).

Scott C. Dudley, Bret D. Heerema, and Ryan K. Haaland, "The human discharge chain," **65** (6), 553–555 (1997).

K. R. Brownstein, "Angles—Let's treat them squarely," **65** (7), 605–614 (1997).

Robert H. Romer, "Teaching or research, research or teaching?—Thoughts about Edward M. Purcell," **65** (8), 689–690 (1997); Edward M. Purcell, "The New Practical Physics," **65** (8), 692–693 (1997); **65** (8), 693–697 (1997).

Martin L. Perl and Eric R. Lee, "The search for elementary particles with fractional electric charge and the philosophy of speculative experiments," **65** (8), 698–706 (1997).

Alfred Romer, "Proton or prouton?: Rutherford and the

depths of the atom," **65** (8), 707–716 (1997).

Gonzalo Gutiérrez and Julio M. Yáñez, "Can an ideal gas feel the shape of its container?," **65** (8), 739–743 (1997).

Kenneth D. Skeldon, Alastair I. Grant, and Slan A. Scott, "A high potential Tesla coil impulse generator for lecture demonstrations and science exhibitions," **65** (8), 744–754 (1997).

Robert H. Romer, "Epiphanies," 65 (10), 945 (1997).

H. Brody, "The physics of tennis. III. The ball-racket interaction," **65** (10), 981–987 (1997). For earlier papers in this series, see **47** (6), 482–487 (1979) and **49** (9), 816–819 (1981).

David Markowitz, "Adventures of a physics resource person," **65** (11), 1040–1041 (1997).

Christof Schmidhuber, "On water, steam, and string theory," **65** (11), 1042–1050 (1997).

F. Rohrlich, "The dynamics of a charged sphere and the electron," **65** (11), 1051–1056 (1997).

Robert H. Romer, "Question #68. 60.000 Hz? Synchronization of the power grid," **65** (12), 1133 (1997). See Answers by Robert H. Bushnell, **66** (12), 1044–1045 (1998) and Loren Lockwood, **68** (8), 690–691 (2000).

David Griffiths, "Is there a text in this class?," **65** (12), 1141–1143 (1997).

1998

Morgan W. Mitchell and Raymond Y. Chiao, "Causality and negative group delays in a simple bandpass amplifier," **66** (1), 14–19 (1998).

Richard H. Price and Joseph D. Romano, "Aim high and go far—Optimal projectile launch angles greater than 45°," **66** (2), 109–113 (1998). See also C. W. Groetsch, "On the optimal angle of projection in general media," **65** (8), 797–799 (1997) and the Comment on that paper by Richard H. Price and Joseph D. Romano, **66** (2), 114 (1998).

Steven K. Blau, "Would a topology change allow Ms. Bright to travel backward in time?," **66** (3), 179–185 (1998).

Martin Ligare, "Numerical analysis of Bose–Einstein condensation in a three-dimensional harmonic oscillator potential," **66** (3), 185–190 (1998).

Neil M. Zimmerman, "A primer on electrical units in the Système International," **66** (4), 324–331 (1998).

Edgar Dutra Zanotto, "Do cathedral glasses flow?," **66** (5), 392–395 (1998). See also Comment by Jay M. Pasachoff, **66** (11), 1021 (1998) and Edgar D. Zanotto and Prabhat K. Gupta, "Do cathedral glasses flow?—Additional remarks," **67** (3), 260–262 (1999).

Kirk T. McDonald, "Circular orbits inside the sphere of death," **66** (5), 419–430 (1998).

Max Dresden, "Fundamentality and numerical scales—Diversity and the structure of physics," **66** (6), 468–482 (1998).

Philip B. Allen and Jonathan Kelner, "Evolution of a vibrational wave packet on a disordered chain," **66** (6), 497–506 (1998).

Barry R. Holstein, "Klein's paradox," **66** (6), 507–512 (1998).

James H. Shea, "Ole Rømer, the speed of light, the apparent period of Io, the Doppler effect, and the dynamics of Earth and Jupiter," 66 (7), 561-569 (1998).

Sun-chong Wang, Jun-wei Zhou, O. Redi, H. H. Stroke, N. Coron, and J. Leblanc, "Neutrino mass and low-temperature calorimetry," **66** (7), 574–583 (1998).

Robert Buderi, "Ropes and Pulleys (Purcell's great high-school teacher)," (page filler), 66 (7), 633 (1998).

Jonathan F. Reichert, "Jack Spratt," **66** (8), 664–665 (1998).

Matthew J. Moelter, James Evans, Greg Elliott, and Martin Jackson, "Electric potential in the classical Hall effect: An unusual boundary-value problem," **66** (8), 668–677 (1998).

T. D. Donnelly and Carl Grossman, "Ultrafast phenomena: A laboratory experiment for undergraduates," **66** (8), 677–685 (1998).

Carl S. Schneider and John P. Ertel, "A classroom jumping ring," **66** (8), 686–692 (1998).

Francesca M. F. Mascarenhas, C. M. Spillmann, John F. Lindner, and D. T. Jacobs, "Hearing the shape of a rod by the sound of its collision," **66** (8), 692–697 (1998).

D. Singleton, "Electromagnetic angular momentum and quantum mechanics," **66** (8), 697–701 (1998); Jerzy Dryzek and Douglas Singleton, "Field angular momentum in atomic sized systems," **67** (10), 930–931 (1999).

Chet Raymo, "Scientific literacy or scientific awareness?," **66** (9), 752 (1998).

N. David Mermin, "What is quantum mechanics trying to tell us?," **66** (9), 753–767 (1998).

R. Parthasarathy, C. Frank, R. Treffers, D. Cudaback, C. Heiles, C. Hancox, and R. Millan, "A rooftop radio observatory: An undergraduate telescope system at the University of California at Berkeley," **66** (9), 768–771 (1998).

Rod Cross, "The sweet spot of a baseball bat," **66** (9), 772–779 (1998). See Comment and Response by Robert K. Adair and Rod Cross, **69** (2), 229–232 (2001). See also Robert H. Romer, "Australian–American major league baseball players?," **67** (2), 104 (1999).

Martin S. Tiersten and Harry Soodak, "Propagation of a Feynman error on real and inertial forces in rotating systems," **66** (9), 810–811 (1998).

Robert H. Romer, "The sign makes a difference!," **66** (10), 849–850 (1998).

Kenneth D. Skeldon, Valerie J. Nadeau, and Christopher Adams, "The resonant excitation of a wineglass using positive feedback with optical sensing," **66** (10), 851–860 (1998).

Kenneth D. Skeldon, Lindsay M. Reid, Viviene McInally, Brendan Dougan, and Craig Fulton, "Physics of the Theremin," **66** (11), 945–955 (1998). See also Nick Holonyak, Jr., "Theremin oscillators and oscillations," **67** (5), 369 (1999).

A. J. Cox, "Angular momentum and motorcycle countersteering: A discussion and demonstration," **66** (11), 1018–1020 (1998).

Kenneth D. Hahn, Erik M. Johnson, Allen Brokken, and

Steven Baldwin, "Eddy current damping of a magnet moving through a pipe," **66** (12), 1066–1076 (1998).

1999

Robert H. Romer, "Units—SI-Only, or Multicultural Diversity?," **67** (1), 13–16 (1999). See also letters on units, the "SI Jelly Donut," etc., by Mario Iona, Robert D. Freeman, A. John Mallinckrodt, David F. Bartlett, Val L. Fitch, Roy H. Garstang, Herman Erlichson, Richard D. Peterson, Arnold Arons, R. G. Chambers, John T. Scott, Lloyd C. Kannenberg, Robert E. Daniell, Jr., E. T. David, and Robert H. Romer, **67** (6), 465–470 (1999), and by Marvin L. Goldberger, E. Roelofsen, and Samuel Ibbetson, **68** (6), 497–498 (2000), and an earlier letter by Ernest L. Asten, "A plea for the metric system," **59** (2), 103 (1991).

Sidney R. Nagel, "Physics at the breakfast table—or waking up to physics," **67** (1), 17–25 (1999).

Stephen P. Smith, Sameer R. Bhalotra, Anne L. Brody, Benjamin L. Brown, Edward K. Boyda, and Mara Prentiss, "Inexpensive optical tweezers for undergraduate laboratories," **67** (1), 26–35 (1999).

D. A. Van Baak, "Variational alternatives to Kirchhoff's loop theorem in dc circuits," **67** (1), 36–44 (1999).

J. D. Jackson, "A curious and useful theorem in two-dimensional electrostatics," **67** (2), 107–115 (1999).

Emmanuel Fort and Holger Vach, "Multiplexed fingerprint recognition using holography," **67** (2), 116–119 (1999).

J. Arnaud, J. M. Boé, L. Chusseau, and F. Philippe, "Illustration of the Fermi-Dirac statistics," **67** (3), 215–221 (1999).

D. F. Holcomb, "Quantum electrical transport in samples of limited dimensions," **67** (4), 278–297 (1999).

Alan Lightman, "Word problems" (page filler), 67 (4), 319 (1999).

David R. Rowland and Colin Pask, "The missing wave momentum mystery," 67 (5), 378–388 (1999).

E. L. Foley, D. Candela, K. M. Martini, and M. T. Tuominen, "An undergraduate laboratory experiment on quantized conductance in nanocontacts," **67** (5), 389–393 (1999).

David Griffiths and Stephen Walborn, "Dirac deltas and discontinuous functions," **67** (5), 446–447 (1999).

Wayne M. Saslow, "Voltaic cells for physicists: Two surface pumps and an internal resistance," **67** (7), 574–583 (1999).

Brian Avants, Dustin Soodak, and George Ruppeiner, "Measuring the electrical conductivity of the earth," **67** (7), 593–598 (1999).

Daniel A. Russell, Joseph P. Titlow, and Ya-Juan Bemmen, "Acoustic monopoles, dipoles, and quadrupoles: An experiment revisited," **67** (8), 660–664 (1999).

H. Thomas Williams, "Semantics in teaching introductory physics," **67** (8), 670–680 (1999).

Wolfgang Pauli (quoted by Charles P. Enz), "Bullfighters and chemists" (page filler), 67 (8), 680 (1999).

S. K. Lamoreaux, "Resource Letter CF-1: Casimir Force," **67** (10), 850-861 (1999).

- K. Young, "Foreign exchange market as a lattice gauge theory," 67 (10), 862–868 (1999).
- Bernard H. Soffer and David K. Lynch, "Some paradoxes, errors, and resolutions concerning the spectral optimization of human vision," **67** (11), 946–953 (1999).

Kurt Wick and Keith Ruddick, "An accurate measurement of g using falling balls," **67** (11), 962–965 (1999).

Bruce Denardo, John Earwood, and Vera Sazonova, "Experiments with electrical resistive networks," **67** (11), 981–986 (1999).

2000

- William J. C. Amend III, "Jason Fox reads AJP!," **68** (1), 10 (2000).
- "American Association of Physics Teachers statement on the teaching of evolution and cosmology," **68** (1), 11 (2000).
- Wick C. Haxton and Barry R. Holstein, "Neutrino physics," **68** (1), 15–32 (2000).
- P. G. Kwiat and L. Hardy, "The mystery of the quantum cakes," **68** (1), 33–36 (2000).
- Martin S. Tiersten and Harry Soodak, "Dropped objects and other motions relative to the noninertial earth," **68** (2), 129–142 (2000).
- Ian Bruce, "Napier's logarithms," 68 (2), 148-154 (2000).
- Alan Thorndike, "Using Feynman diagrams to solve the classical harmonic oscillator," **68** (2), 155–159 (2000).
- Robert H. Romer, "Why not be editor?," **68** (3), 209 (2000).
- G. A. Finney, "Analysis of a water-propelled rocket: A problem in honors physics," **68** (3), 223–227 (2000).
- Philip B. Allen, Seth Aubin, and R. B. Doak, "Surface phonons and other localized excitations," **68** (3), 228–231 (2000).
- J. L. Hunt, B. G. Nickel, and Christian Gigault, "Anamorphic images," **68** (3), 232–237 (2000).
- Paul J. H. Tjossem and Victor Cornejo, "Measurements and mechanisms of Thomson's jumping ring," **68** (3), 238–244 (2000).
- Kirk T. McDonald, "Slow light," 68 (3), 293-294 (2000).
- Bernard Roulet and Michel Saint Jean, "Image charges revisited: Beyond classical electrostatics," **68** (4), 319–324 (2000).
- R. W. Robinett, "Visualizing the collapse and revival of wave packets in the infinite square well using expectation values," **68** (5), 410–420 (2000).
- Kirk T. McDonald, "Laser tweezers," **68** (5), 486–488 (2000).
- Harvey S. Leff, "The Boltzmann reservoir: A model constant-temperature environment," **68** (6), 521–524 (2000).
- Harry Lustig, "To advance and diffuse the knowledge of physics: An account of the one-hundred-year history of the American Physical Society," **68** (7), 595–636 (2000).
- Isaac Newton and Richard Conn Henry, "Circular motion," **68** (7), 637–639 (2000). See letter by Claude Kacser, "Are Newton's coattails there for the riding?" **69** (6), 632–633 (2001).

- J. Fajans, "Steering in bicycles and motorcycles," **68** (7), 654–659 (2000).
- Jeremy Bernstein, Reviews of "Einstein's Daughter: The Search for Lieserl" by Michele Zackheim; "Einstein and Religion: Physics and Theology" by Max Jammer; "God's Equation: Einstein, Relativity, and the Expanding Universe" by Amir D. Aczel, **68** (7), 676–682 (2000).
- William B. Case, "The field oscillator approach to classical electrodynamics," **68** (9), 800–811 (2000).
- W. F. D. Theron, "The rolling motion of an eccentrically loaded wheel," **68** (9), 812–820 (2000); W. F. D. Theron and N. M du Plessis, "The dynamics of a massless hoop," **69** (3), 354–359 (2001).
- C. G. Gray and B. G. Nickel, "Constants of the motion for nonslipping tippe tops and other tops with round pegs," **68** (9), 821–828 (2000).
- Chi-Keung Chow and Thomas D. Cohen, "Quantum coins, dice, and children: Probability and quantum statistics," **68** (9), 829–834 (2000).
- S. J. van Enk, "Paradoxical behavior of an infinite ladder network of inductors and capacitors," **68** (9), 854–856 (2000).
- James J. Carr, "The physics tutorial: Some cautionary remarks," **68** (11), 977–978 (2000).
- Alan M. Nathan, "Dynamics of the baseball-bat collision," **68** (11), 979–990 (2000).
- Jeffrey J. Prentis, "Experiments in statistical mechanics," **68** (12), 1073–1083 (2000).
- Gorazd Planinšič and Tomaž Prosen, "Conducting rod on the axis of a charged ring: The Kelvin water drop generator," **68** (12), 1084–1089 (2000).
- Daniel F. Styer, "Insight into entropy," **68** (12), 1090–1096 (2000).
- F. Rohrlich, "The self-force and radiation reaction," **68** (12), 1109–1112 (2000).
- Daniel A. Russell, "On the sound field radiated by a tuning fork," **68** (12), 1139–1145 (2000).

- John G. King, "Observation, Experiment, and the Future of Physics," **69** (1), 11–25 (2001).
- Douglas D. Osheroff, "The nature of discovery in physics," **69** (1), 26–37 (2001).
- M. E. Bacon, George Heald, and Matt James, "A closer look at tumbling toast," **69** (1), 38–43 (2001).
- Jonathan L. Rosner and Scott A. Slezak, "Classical illustrations of CP violation in kaon decays," **69** (1), 44–49 (2001).
- Eugene I. Butikov, "Relative motion of orbiting bodies," **69** (1), 63–67 (2001).
- Dennis C. Henry, "Enhancing electromagnetism experiments with clamp-on ammeters," **69** (1), 76–78 (2001).
- George W. Clark, "An electrical measurement of the speed of light," **69** (2), 110–112 (2001).
- Dwight E. Neuenschwander, "Conversations with ghosts," **69** (3), 251–254 (2001).
- D. N. Moothoo, J. Arlt, R. S. Conroy, F. Akerboom, A. Voit,

and K. Dholakia, "Beth's experiment using optical tweezers," **69** (3), 271–276 (2001).

Harold A. Daw and M. Ramona Daw Pomeroy, "The free rotator apparatus," **69** (3), 389–393 (2001).

Willis E. Lamb, Jr., "Super classical quantum mechanics: The best interpretation of nonrelativistic quantum mechanics," **69** (4), 413–422 (2001).

Ralph Baierlein, "The elusive chemical potential," **69**, (4), 423–434 (2001).

David J. Griffiths and Daniel Z. Uvanović, "The charge distribution on a conductor for non-Coulombic potentials," **69** (4), 435–440 (2001).

Barry R. Holstein, "The van der Waals interaction," **69**, (4), 441–449 (2001).

Ana Osella, Gabriel Chao, and Federico Sánchez, "How to detect buried structures through electrical measurements," **69** (4), 455–461 (2001).

J. B. Hertzberg, S. R. Bickman, M. T. Hummon, D. Krause, Jr., S. K. Peck, and L. R. Hunter, "Measurement of the relativistic potential difference across a rotating magnetic dielectric cylinder," **69** (6), 648–654 (2001).

F. Laloë, "Do we really understand quantum mechanics? Strange correlations, paradoxes and theorems," **69** (6), 655–701 (2001).

M. D. Simon, L. O. Heflinger, and A. K. Geim, "Diamagnetically stabilized magnet levitation," **69** (6), 702–713 (2001).

The following papers will appear sometime during 2001. At the time this list was compiled, they had been officially accepted for publication but had not yet been scheduled.

D. Candela, K. M. Martini, R. V. Krotkov, and K. H. Langley, "Bessel's improved Kater pendulum in the teaching lab." Accepted December 19, 2000.

B. H. Suits, "Basic physics of xylophone and marimba bars." Accepted January 5, 2001.

Eugene I. Butikov, "On the dynamic stabilization of an inverted pendulum." Accepted January 19, 2001.

John P. Costella, Bruce H. J. McKellar, and Andrew A. Rawlinson, "The Thomas rotation." Accepted February 14, 2001.

ONLY THE TENTH MIND

The lecture system to classes of hundreds, which was very much that of the twelfth century, suited Adams not at all. Barred from philosophy and bored by facts, he wanted to teach his students something not wholly useless. The number of students whose minds were of an order above the average was, in his experience, barely one in ten; the rest could not be much stimulated by any inducements a teacher could suggest. All were respectable, and in seven years of contact, Adams never had cause to complain of one; but nine minds in ten take polish passively, like a hard surface; only the tenth sensibly reacts.

Henry Adams, *The Education of Henry Adams* (The Modern Library, New York, 1931—Originally published by the Massachusetts Historical Society, 1918), p. 302.