scholarly life of the department." The resolution minces no words in saying that "the systematic hiring of unemployed PhDs part-time at substandard salaries is reprehensible and exploitative."

US PHYSICISTS WORK WITH NEW UNESCO COUNCIL

Federico Mayor, the director general of the United Nations Educational, Scientific and Cultural Organization, has appointed a Physics Action Council to work with UNESCO. Although the United States is no longer a UNESCO member, US physicists play a major role in the council.

In a work plan developed at UNESCO's Paris headquarters in April, the Physics Action Council was charged with promoting "the widest possible participation of the world's physicists in the international physics enterprise." The council will advise UNESCO on the type of programs necessary to achieve its objective.

Donald N. Langenberg, past president of the American Physical Society and chancellor of the University of Maryland system, is chairman of the council, which originated in a consultative meeting held in June 1993 at UNESCO headquarters. The theme of the meeting was "UNESCO and the International Physics Community: An Agenda for Scientific Cooperation."

In a letter last month to various physics organizations, Langenberg explained that "the council will pursue its goals with working groups drawn from the wider international community." Three working groups exist now, but more may be created.

As the work plan states, the first working group will recommend "the appropriate mechanisms for opening large physics facilities and programs to international collaboration." This group is chaired by CERN's Herwig Schopper, who is a member of the European Physical Society.

Irving A. Lerch of APS heads the second working group, on communication networks for science. According to the work plan, this group "will study means for enhancing communications among all physicists," with attention to "the means for tying scientists together into networks of local and global communities."

Working group 3, on university physics education, is chaired by Michiji Konuma of Keio University; Konuma is a member of the Physical Society of Japan. This group will examine university physics education throughout the world, recognizing the different problems faced in developing countries, eastern and central Europe, Asia, the new republics of the former Soviet Union and the industrialized nations of the West. Consistent with the overarching goal of the program, this working group "will study ways and means by which the council can revitalize international cooperation."

Through its working groups, PAC hopes to collaborate closely with physics organizations. To this end, the council's next meeting has been scheduled to coincide with a joint meeting of the physical societies from Canada, the US and Mexico, to be held in Cancun in late September.

EATON LEADS US GEOLOGICAL SURVEY

Gordon P. Eaton, director of the Lamont–Doherty Earth Observatory of Columbia University from late 1990 through March of this year, is the new director of the United States Geological Survey.

Eaton obtained his BS in geology from Wesleyan University (1951) and his master's in geology (1953) and doctorate in geology and geophysics (1957) from Caltech. His 16 years of experience at USGS and his career as an Earth scientist are complemented by his experience in university administration, as president of Iowa State University, Ames (1986–90), and as provost and vice president for academic affairs at Texas A&M University (1983–86).

TOP QUARK ARTICLE WINS AIP SCIENCE WRITING PRIZE

Dick Teresi has garnered the American Institute of Physics's science writing award to a journalist for his article on the search for the top quark.

"The Last Great Experiment of the 20th Century," which appeared in the January 1994 issue of *Omni* magazine, describes experiments being performed by physicists at Fermilab using the Tevatron particle accelerator (see page 17). Teresi is a freelance writer who has coauthored several books, including *The God Particle* with Leon Lederman (Houghton Mifflin, New York, 1993; reviewed in PHYSICS TODAY, July 1993, page 77). He was director of new magazine development for Omni Publications in New York City, where he helped launch *Omni* and *Longevity*.

Teresi accepted the award, which includes a cash prize of $3000, at the April meeting of the American Physical Society, held in Crystal City, Virginia.

'HANDS-ON' SCIENCE BOOKS RECEIVE AIP PRIZE

The creators of *Make It Work!*, a series of science books for elementary school students, are this year's recipients of the award for science writing intended for children, sponsored by the American Institute of Physics.

The four books in the series deal with electricity, sound, plants and the Earth, respectively, and they include instructions for doing science experiments using household materials. In the electricity book, for example, young readers can learn about simple and complex circuits by building models made of paper clips.

Wendy Baker and Andrew Haslam created and designed the series, and Alexandra Parsons wrote the text. Baker studied fashion at the London College of Fashion, and she currently works as a designer of hand-knitted clothing. Haslam studied graphic design at the Royal College of Art, and he has conceived and designed a wide range of children's nonfiction books. Parsons has worked as an editor and publisher in both England and Australia; at present she writes children's nonfiction books, as well as screenplays and television scripts.

Baker, Haslam and Parsons were presented with the award, which includes $3000, at the American Physical Society meeting held in April in Crystal City, Virginia. MacMillan Publishers of New York received a certificate of salutation for publishing the series.

IN BRIEF

The American Physical Society's Committee on the Status of Women in Physics sponsors WIPHYS (pronounced "wiffs"), an electronic newsgroup devoted to issues affecting women in physics. Subscribers can, for example, obtain a list of CSWP colloquium speakers, request roommates for APS meetings and post job opportunities. To subscribe to WIPHYS, send the following e-mail message to listserv@nysernet.org: "subscribe wiphys [*your name*]." ■

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THE "LAST WORD" ON THE GOLF SWING; HOOKS AND SLICES STILL UP IN THE AIR

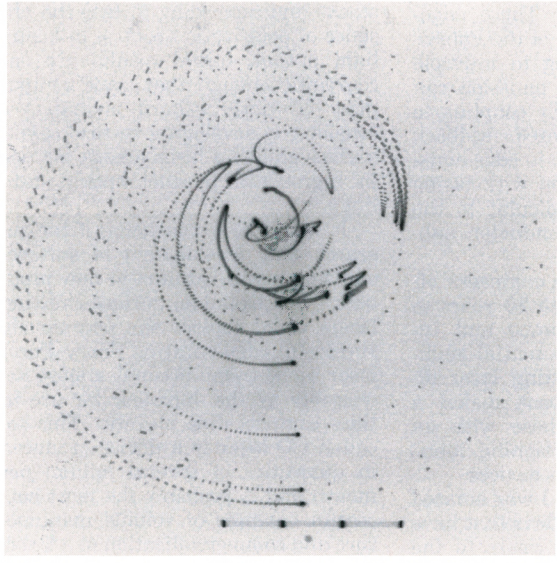
The Physics of Golf

Theodore P. Jorgensen
AIP, New York, 1994. 155 pp.
$35.00 pb ISBN 0-88318-955-0

Reviewed by Robert K. Adair

Americans watch baseball but play golf. Hence, on the shelves of the Yale Coop book department, there are ten books about baseball—about players and teams, great games and great seasons—to each one that would teach the game. But the golf books are, almost without exception, directed towards telling the reader how to play the game better. Theodore Jorgensen, professor emeritus at the University of Nebraska, whom many of us know for his significant contributions to the understanding of molecular collisions, is a golfer. As a result, notwithstanding a charming overlay of comments on the history and culture of golf and three chapters on the collision of club and ball, the flight of the ball and the handicap system, the heart of golfer Ted Jorgensen's delightful book lies in his analysis of the swing of the golf club and how, armed with insights from that analysis, you, he and I might all swing the club better and play better golf.

Jorgensen asks and largely answers the question, How does the player transfer energy to the head of the club? And he asks implicitly, and maybe answers, How can a player improve that transfer? Jorgensen's ingenious strobe photography shows that the energy transfer rate from player to club head reaches a peak of about seven horsepower at the bottom of the swing for a typical professional golfer and averages about two horsepower over the quarter-second swing time. With a maximum power output of about one horsepower per eight pounds of muscle, this energy must come largely from the large muscles of the thighs and thorax and not from the hands and wrists. With his modeling of the swing, Jorgensen tells us how that transfer is effected—and how those of us who are not on the Professional Golfers' Association tour might improve that transfer.



A near-perfect golf swing caught in a strobe photo. (Image courtesy of Theodore P. Jorgensen.)

The exposition is designed to be accessible to the casual reader while satisfying the critical student. Hence, the mathematics is complete but relegated to a non-intrusive support role, in technical appendices that make up about 20% of the book.

The physics of golf, like much sports physics, is deceptively difficult, and there are matters where my own analyses do not quite square with Jorgensen's. There is, at least, room for disagreement with some of Jorgensen's statements concerning the flight of the ball, the collision of the club and ball, the effect of spin on the drag, the difference between surlyn and balata balls, and a few other matters. I also take respectful issue with Jorgensen's describing as the Bernoulli effect the complex and poorly understood mechanisms that result in hooks and slices from a spinning ball. So familiar a label suggests a simple explanation, quantitatively useful and qualitatively reliable. But, since spinning, smoothed golf balls curve in a direction opposite to that of dimpled balls; the simple application of Bernoulli's insight doesn't even work qualitatively. Better call it the Magnus effect, which says nothing and misleads no one.

Eugene Wigner once told me that it was important to write the first paper on a subject and more important to write the last. In some areas of golf, where Jorgensen's conclusions are perhaps arguable, his book will still be the first significant statement; I suspect it may be about the last word on the swing. But first word or last, for anyone who has swung a golf club, the book is fun to read.

Robert K. Adair, Sterling Professor of Physics at Yale University, is the author of *The Physics of Baseball* (HarperCollins, 1991, 2nd Ed. 1994.)