

The Physical Review 100th Anniversary Volume
Compilation of CWRU Related Papers
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The year 1993 was the one hundredth anniversary of the founding of the Physical Review. To celebrate this occasion, the American Physical Society and the American Institute of Physics decided to join in producing a centennial collection of noteworthy articles from The Physical Review and Physical Review Letters to be published as a book and a CD-ROM under the title: "The First Hundred Years, A Selection of Seminal Papers and Commentaries." Approximately 200 of the articles are reproduced in the book along with commentaries, while these and the remainder of the thousand-odd papers are contained on the CD-ROM. The joint collection was published in 1995.

While the number of papers in the collection is described at "more than a thousand," my own count of them is somewhat less, namely 979. The number of authors (including co-authors) is 1725. The selection of papers from those nominated was overseen by an expert, with aid and assistance from others in a dozen different fields of physics. The experts each also introduced the material in a chapter with an appropriate commentary. The Editor of the book was H. Henry Stroke of New York University with assistance from various individuals and particularly, Maria Taylor, Publisher of the AIP Press at the American Institute of Physics. The book itself contains 1266 printed pages; the CD-ROM more than 7500 pages. While most the papers are printed in full, some of the older ones had to be abbreviated because of their length.

Of the 979 papers, I found that at least 21 of them had an author or authors who had a connection with CWRU in that they had been students, professors, or research associates at CWRU or one of its predecessor institutions. The total number of these authors was 16. Prof. A. A. Michelson was not among these because his early papers were published in the American Journal of Science.

ABBREVIATIONS :

- o CIT: CASE INSTITUTE OF TECHNOLOGY (previously Case School of Applied Science)
- o WRU: Western Reserve University
- o CWRU: Case Western Reserve University (formed from merger of CIT and WRU)

PAPERS: All papers were originally published in *The Physical Review* or *Physical Review Letters* between the years 1893 and 1985, with the exception of the last paper in the list (Bratton, et al) on the observation of neutrinos from the Supernova 1987. References are listed according to standard *Physical Review* convention (Journal, Volume, Pages, Year (in parentheses)). The papers are arranged chronologically.

AUTHORS: Authors and co-authors are listed in the same order as in the original publication. Authors who have a "CWRU connection" have their names in capitals and are followed by square brackets containing information about their CWRU connection.

CWRU CONNECTION: To qualify as having a CWRU connection it is required that an author, at some time, received a Baccalaureate or Graduate Degree from CWRU or one of its predecessor institutions (not including honorary degrees), and/or served or is serving as a regular Faculty member, a Visiting Faculty member, an Emeritus Professor, or a Research Associate in the Department of Physics. (Adjunct faculty are not included though we are not aware that any such person was included as an author in PR100). Attribution of an institution to each author who was a faculty member or a research associate is given as CWRU if he is still associated with CWRU or if his association terminated after merger (1967). Otherwise it is given as CIT or WRU, whichever was appropriate at the time of termination. For authors who were students at CWRU, CIT or WRU, the brackets referred to above contain the degree or degrees earned, the institution which granted the degree, and the year it was granted.

**CWRU RELATED PAPERS CONTAINED IN THE PUBLICATION:
THE PHYSICAL REVIEW, THE FIRST HUNDRED YEARS.**

Piezoelectric and allied phenomena in Rochelle salt, Phys. Rev. **15** 537-538(A) (1920). J. VALASEK, [BS, CIT, 1917].

Diatomic molecules according to the wave mechanics. II. Vibrational levels, Phys. Rev. **34**, 57-64 (1929). P. M. MORSE [BS, CIT, 1926].

Direct Detection of the Angular Momentum of Light, Phys. Rev. **48** 47 (1935) R. A. BETH, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, WRU, 46-55].

The quantum-mechanical basis of statistical mechanics, Phys. Rev. **37**, 1146-1164 (1939). E. C. KEMBLE [BS, CIT, 1911].

On the neutron-proton interaction, Phys. Rev. **59**, 436-452 (1941). W. RARITA [VISITING PROFESSOR, CIT, 1955-56] and J. Schwinger.

On the theory of particles with half-integral spin, Phys. Rev. **60**, 61 (L) (1941). W. RARITA [VISITING PROFESSOR, CIT, 1955-56] and J. Schwinger.

Precision measurement of the ratio of the atomic 'g values' in the $2P_{3/2}$ and $2P_{1/2}$ states of gallium, Phys. Rev. **72**, 1256-1257 (L) (1947). P. KUSCH [BS, CIT, 1932] and H. M. Foley.

On the Dirac theory of spin 1/2 particles and its non-relativistic limit. Phys. Rev. **78**, 29-36 (1950). L. L. FOLDY [BS, CIT. 1941; FACULTY, CWRU, 1948-PRESENT] and S. A. Wouthuysen.

Some effects of ionizing radiation on the formation of bubbles in liquids. Phys. Rev. **87**, 665 (L) (1952). D. A. GLASER [B., CIT, 1946].

Bubble Chamber Tracks of Penetrating Cosmic Ray Particles. Phys. Rev. **91** 62-763 (L) (1953). D. A. GLASER [BS, CIT, 1946].

Fluctuations and irreversible processes, Phys. Rev. **91**, 1505-1512, (1953). L. Onsager and S. MACHLUP [FACULTY, CWRU, 1956-PRESENT].

Detection of the free neutrino. Phys. Rev. **92** 830-831 (L) (1954). F. REINES, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, CWRU, 1959-1966], C. L. Cowan, Jr.

Conservation of the number of nucleons. *Phys. Rev.* **96** 1157 (L) (1954). F. REINES, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, CWRU, 1959-1966], C. L. Cowan, Jr. and M. Goldhaber.

Application of formal scattering theory to many-body problems. *Phys. Rev.* **105** 1099-1100 (1957). L. L. FOLDY [BS, CIT, 1941; FACULTY, CWRU, 1948-PRESENT] and W. TOBOCMAN [RESEARCH ASSOCIATE, CIT, 1956-1957; FACULTY, CWRU, 1960-PRESENT].

Demonstration of parity non-conservation in hyperon decay. *Phys. Rev.* **108** 1353-1355 (L) (1957). D. A. GLASER [BS, CIT, 1946] and 19 coauthors.

Observations of the Failure of Conservation of Parity and Charge Conjugation in Meson Decays: the Magnetic Moment of the Free Muon. *Phys. Rev. Lett.* **105** 1415-1417 (1957). R. L. GARWIN [BS, CIT, 1947], L. M. Lederman, and M. Weinreich.

Free antineutrino absorption cross-section. I. Measurement of the free antineutrino absorption cross-section by protons. *Phys. Rev.* **113** 273-279 (1959). F. REINES, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, CWRU, 1959-1966], C. L. Cowan, Jr.

Phase-parameter representation of proton-proton scattering from 9.7 to 345 Mev. *Phys. Rev.* **120** 2227-2249 (1960). G. Breit, M. H. Hull, Jr., K. E. LASSILA [RESEARCH ASSOCIATE, CIT, (WITH L. L. FOLDY), 1961-63], and K. D. Pyatt (1960).

Cosmological density fluctuations produced by vacuum strings. *Phys. Rev. Lett.* **46** 1169-1172 (1981). A. VILENKIN [RESEARCH ASSOCIATE, CWRU (WITH P. L. TAYLOR), 1977-78].

Detection of the free antineutrino. *Phys. Rev.* **117** 159-173 (1960). F. REINES, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, CWRU, 1959-1966], C. L. Cowan, Jr., F. B. Harrison, A. D. McGuire, and H. W. Kruse.

Observation of a Neutrino Burst in Coincidence with Supernova 1987 in the Large Magellanic Cloud, *Phys. Rev.* **58**, 1490-1493 (1987). C. B. BRATTON [BA, WRU, 1956, MA, WRU, 1958, PhD, WRU, 1964], M. CROUCH, [FACULTY, CWRU, 1950-PRESENT], D. Casper, W. R. KROPP [PhD, CIT, 1964], F. REINES, [PROFESSOR AND CHAIRMAN, DEPARTMENT OF PHYSICS, CWRU, 1959-1966], H. W. SOBEL [PhD, CIT, 1969] and 31 other co-authors.