Jack's Early Career and Achievements

Colin G. Orton, Ph.D.
IMPCB President
Professor Emeritus
Wayne State University
Detroit, Michigan
USA

Born in and raised in Bridport, Dorset, England

Relaxing in Bridport Harbour

Education

- 1942-44: "Radio bursary", University College of the Southwest of England at Exeter, part of London University
- December, 1944: B.Sc. in Special Physics, University of London
- 1946: M.Sc. in Physics, University of London and Newcastle-upon-Tyne
- 1955: Ph.D. in Physics, University of London: Thesis title: X-ray induced conductivity in insulating materials

Pre-medical physics appointments

- 1945-47: Research Physicist, Newalls Insulation Company, Washington, Durham, England
- 1947-50: Physics Team working on the betatron at Metropolitan Vickers Electric Company, Manchester

Medical physicist appointments in the UK

- 1950-1956: Radiotherapy Physicist, Newcastle-upon-Tyne Regional Hospital Board
- 1956-1959: Principal Physicist, King's College Hospital, London
- 1959-1962: Head of Physics Section, MRC Cyclotron Unit, Hammersmith Hospital, London
- 1962-1963: Reader in Physics, St. Bartholomew's Hospital Medical College, London
- 1963-1970: Professor of Medical Physics, Royal Postgraduate Medical School, Hammersmith Hospital, London

Radiation Dosimetry Research

- Fowler JF, Farmer FT: Effect of temperature on the conductivity induced in insulators by X-rays. Nature, 171, 1020-1021, 1953
- Fowler JF, Farmer FT: Conductivity induced in polystyrene by X-rays. Nature, 174, 800-802, 1954
- Fowler JF, Farmer FT: Conductivity induced in polytetrafluoroethylene by X-rays. Nature, 174, 136-138, 1954
- Fowler JF, Farmer FT: Conductivity induced in insulating materials by X-rays. Nature, 173, 317-319, 1954

Radiation Dosimetry Research (cont'd.)

- Fowler JF, Farmer FT: Conductivity induced by X-rays in polyethylene terephthalate: A possible insulator for radiological apparatus. Nature, 175, 590-593, 1955
- Fowler JF, Farmer FT: Conductivity induced in unplasticized 'Perspex' by X-rays. Nature, 175, 516-518, 1955
- Fowler JF: X-ray induced conductivity in insulating materials. Proc. Roy. Soc., A, 236, 464-480, 1956

Radiation Dosimetry Research (cont'd.)

A Sub-standard X-ray Dose-meter

Frank T. Farmer

Royal Victoria Infirmary, Newcastle-on-Tyne

BJR

Vol. 28: Issue. 330: Pages. 304-306
(Issue publication date: June 1955)

Radiation Dosimetry Research (cont'd.)

Fowler, J.F., and M.J. Day. "HIGH-DOSE MEASUREMENT BY OPTICAL ABSORPTION."

Nucleonics, Vol. 13, No. 12, 1955

Radiation Dosimetry Research (cont'd.)

Problems in the Design of a Fluorescence Meter for Interstitial Therapy, and a Practical Design of Instrument

John F. Fowler
Royal Victoria Infirmary, Newcastle-on-Tyne
BJR
Vol. 28: Issue. 326: Pages. 104-110
(Issue publication date: February 1955)

Radiation Dosimetry Research (cont'd.)

A Simple Indicator for the Temperature-and-pressure Correction

John F. Fowler
The Royal Victoria Infirmary, Newcastle upon Tyne
BJR
Vol. 29: Issue. 344: Pages. 462-463
(Issue publication date: August 1956)

Radiation Dosimetry Research (cont'd.)

Measured Dose Distributions in Arc and Rotation Therapy: A Critical Comparison of Moving and Fixed Field Techniques

J. F. Fowler and F. T. Farmer
Royal Victoria Infirmary, Newcastle upon Tyne
BJR
Vol. 30: Issue. 360: Pages. 653-659
(Issue publication date: December 1957)

Radiation Dosimetry Research (cont'd.)

Absorbed Dose Near Bone: A Conductivity Method of Measurement

John F. Fowler

King's College Hospital, London, S.E.5

BJR

Vol. 30: Issue. 355: Pages. 361-366
(Issue publication date: July 1957)

Radiation Dosimetry Research (cont'd.)

A Whole-Body Radioactivity Counter for Bed Patients

By J. F. Fowler, Ph.D., M.Sc.
Physics Department, King's College Hospital, London, S.E.5

Physics in Med. & Biol., 2, 64-67, 1957

Radiation Dosimetry Research (cont'd.)

II. The Effects of Some Variables on Arc Therapy Dosage Distributions

J. F. Fowler

Physics Department, King's College Hospital, London, S.E.5

BJR

Vol. 31: Issue. 366: Pages. 290-293
(Issue publication date: June 1958)

Effect of inhomogeneities

Radiation Dosimetry Research (cont'd.)

Small Ionization Chambers for Direct Reading of Interstitial Dose-rates

J. F. Fowler and L. D. Kitchen
Physics Department, King's College Hospital, London, S.E.5

BJR
Vol. 32: Issue. 375: Pages. 207-208
(Issue publication date: March 1959)

Radiation Dosimetry Research (cont'd.)

Radiation-induced Conductivity in the Solid State, and Some Applications†

By John F. Fowler, Ph.D., F.Inst.P.
Physics Department, King's College Hospital, London

§ 1. Introduction

There are three aspects of radiation-induced conductivity. First, as a nuisance in radiological instruments; second, as a set of theoretically interesting relationships from which the conductivity of substances under various conditions can now be predicted; and third, as the fundamental principle of a number of solid state devices with important applications to medical physics. A statement of the principles of induced conductivity in this context may therefore be useful.

PMB 1959

Radiation Dosimetry Research (cont'd.)

Symposium on Solid State Conductivity

IV. Solid State Radiation Detectors, with Particular Reference to Low Dose rates

By John F. Fowler, M.Sc., Ph.D., F.Inst.P., and Edward H. Grant, Ph.D.
Medical Physics Department, King's College Hospital, S.E.5

PMB 1960

Radiation Dosimetry Research (cont'd.)

Review Article

Solid State Dosimetry

By JOHN F. FOWLER, M.Sc., PH.D., F.INST.P.

Physics Department, Medical College of St. Bartholomew's Hospital, London, E.C.1

Phys. Med. Biol, 8, 1-32, 1963

Radiation Dosimetry Research (cont'd.)

Fading in Thermoluminescent Lithium Fluoride used for Radiation Dosimetry

J. F. FOWLER
E. SHUTTLEWORTH
Department of Medical Physics, Hammersmith Hospital, London, W.12.

VESNA ŠVABCIĆ
Department of Physics, Medical School, Rijeka, Yugoslavia.

J. T. WHITE
Department of Physics, St. Bartholomew's Hospital Medical School, London, E.C.1.

C. J. KARZMARK
Department of Radiology, Stanford Medical Center, Palo Alto, California.

Nature 1965

Image intensifier research

Solid State Image Intensifiers: Problems in Design

John F. Fowler

Physics Department, King's College Hospital, London, S.E.5

BJR

Vol. 32: Issue. 379: Pages. 455-463
(Issue publication date: July 1959)

Image intensifier research (cont'd.)

I. The Fundamental Limits of Information Content in Solid State Image Intensifying Panels Compared with Other Intensifying Systems

J. F. Fowler

King's College Hospital, London, S.E.5

BJR

Vol. 33: Issue. 390: Pages. 352-357
(Issue publication date: June 1960)

Early radiobiology papers

Dose-rate Effects on Mice and Rats in the Range 2 to 340 Rads/Minute

J. F. Fowler and J. M. Lawrey

Medical Physics Department, King's College Hospital, London, S.E.5

BJR

Vol. 33: Issue. 390: Pages. 382-388
(Issue publication date: June 1960)

Early radiobiology papers (cont'd.)

DOSE-RATE EFFECTS: SOME THEORETICAL AND PRACTICAL CONSIDERATIONS

By John F. Fowler, M.Sc., Ph.D., F.Inst.P.

King's College Hospital, London, S.E.5
(Present address: M.R.C. Radiotherapeutic Research Unit, Hammersmith Hospital, London, W.12)

and

Babette E. Stern, B.Sc., F.Inst.P., A.M.I.E.E

Marie Curie Hospital, London, N.W.3
(Present address: Physics Department, Battersea College of Technology, London, S.W.11)

Brit. J. Radiol., 33, 389-395, 1960

Proposed that, for fractionated radiotherapy with n fractions of dose d/fraction:

Biological effect = $nd + (b/a)nd^2$

Early radiobiology papers (cont'd.)

I. The Biological and Physical Advantages and Problems of Neutron Therapy

J. F. Fowler, R. L. Morgan and C. A. P. Wood

Medical Research Council Radiotherapeutic Research Unit, London, W.12

BJR

Vol. 36: Issue. 422: Pages. 77-80
(Issue publication date: February 1963)

Early radiobiology papers (cont'd.)

DOSE-EFFECT RELATIONSHIPS FOR RADIATION DAMAGE TO ORGANIZED TISSUES

By J. F. FOWLER

Department of Physics, St. Bartholomew's Hospital Medical College, Charterhouse Square, E.C.1

D. K. BEWLEY, R. L. MORGAN and J. ANN SILVESTER

Medical Research Council Cyclotron Unit, Hammersmith Hospital, W.12

AND

TIKVAH ALPER and SHIRLEY HORNSEY

Medical Research Council Experimental Radiopathology Research Unit, Hammersmith Hospital, London

Nature 1963

Early radiobiology papers (cont'd.)

II. Dose-time Relationships in Radiotherapy and the Validity of Cell Survival Curve Models

J. F. Fowler and Babette E. Stern

M.R.C. Cyclotron Unit, Hammersmith Hospital, London, W.12

Department of Physics, Battersea College of Technology, London, S.W.11

BJR

Vol. 36: Issue. 423: Pages. 163-173
(Issue publication date: March 1963)

Early radiobiology papers (cont'd.)

Differences in Survival Curve Shapes for Formal Multi-target and Multi-hit Models†

By J. F. Fowler, Ph.D., M.Sc., F.Inst.P.

Physics Department, Medical College of St. Bartholomew's Hospital, London, E.C.1.

Phys. Med. Biol., 9, 177-187, 1964

Early radiobiology papers (cont'd.)

The Effect of Divided Doses of 15 MeV Electrons on the Skin Response of Mice

Fowler JF, Kragt K, Ellis RE, Lindop PJ, Berry RJ
Int. J. Radiat. Biol., 9, 241-252, 1965

Early radiobiology papers (cont'd.)

Experiments with Fractionated X-irradiation of the Skin of Pigs II. – Fractionation up to Five Days

J. F. Fowler, D. K. Bewley, R. L. Morgan and J. A. Silvester

Postgraduate Medical School

Medical Research Council Cyclotron Unit, Hammersmith Hospital, London, W.12

BJR

Vol. 38: Issue. 448: Pages. 278-284
(Issue publication date: April 1965)

Early radiobiology papers (cont'd.)

The Estimation of Total Dose for Different Numbers of Fractions in Radiotherapy

J. F. Fowler
Postgraduate Medical School, London, W.12

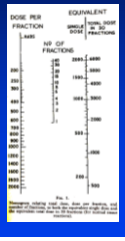
BJR
Vol. 38: Issue. 449: Pages. 365-368
(Issue publication date: May 1965)

1966: Nomogram for fractionated radiotherapy

Correspondence

E. Shuttleworth and J. F. Fowler
Medical Physics Department, Postgraduate Medical School, Hammersmith Hospital, London, W.12

BJR
Vol. 39: Issue. 458: Pages. 154-157
(Issue publication date: February 1966)



Jack Fowler: 1925-2016

Great scientist

Wonderful colleague

Everyone's friend

Amazing dancer!

We'll all miss him