

## Paul Meier

Biostatistician whose method estimates survival

They are everywhere in biomedical research today, those serrated line graphs of mortality and survival known as Kaplan-Meier curves. They are the product of a complex algorithm that takes into account missing and censored data and translates them into an elegant visual display of information, simultaneously capturing the arc of the group studied and the ragged jolts of individual change, often a death.

Paul Meier was half of the collaboration that created the algorithm, first published in 1958 as “Nonparametric estimation from incomplete observations” in the *Journal of the American Statistical Association* (1958;53:457-81).

His partnership with Edward L Kaplan was essentially a shotgun marriage arranged by an editor who did not want to publish two similar but somewhat conflicting papers. He told the pair to work it out and produce a single paper. It took four years of further refinements before the collaborative document was ready.

### Highly cited

Publication caused barely a ripple, just 25 citations in the ensuing decade. But as computing power grew and became cheaper, researchers came to discover the utility of the Kaplan-Meier algorithm. Cumulative citations have swelled to more than 35 000, the fifth most cited of any academic paper, and that figure might be higher still if many had not decided that the subject was so ubiquitous it did not require citation.

Clinical trials were Meier’s “true love,” and randomisation a crucial element that he was most proud of promoting. He was greatly influenced by Bradford Hill’s post-war study of streptomycin in treating tuberculosis in the United Kingdom.

“For a fairly long time randomization was not thought of highly. I defended randomization every chance I got...If you use randomization you could find out stuff you really need to know,” Meier said in an interview in the first issue of the journal of the Society for Clinical Trials, a group that he helped to establish and would later serve as president.

Meier “perhaps more than any other US statistician, was the one who influenced US drug regulatory agencies, and hence clinical researchers throughout the US and other countries, to insist on the central importance of randomized evidence,”

Oxford University’s Sir Richard Peto told the *New York Times* (2011 Aug 11, [www.nytimes.com](http://www.nytimes.com)).

“That strategic decision half a century ago has already saved millions of lives and those millions should be attributed to Paul,” Sir Richard added.

Meier’s independent analysis of polio vaccine in the 1950s showed as false the claims of developers and manufacturers that all of the virus had been inactivated and that the vaccine could not cause the disease. Proponents and government officials tried to suppress publication of his analysis but eventually Meier found a sympathetic editor at *Science* (1957;125:1067-107).

“Perhaps the most disturbing element of the entire program has been the disparity between the risks that were known to be involved and the repeated assurances of safety,” Meier wrote of the polio vaccine episode.

His combination of technical expertise and ethical vision led many to seek him out as a consultant in creating some of the most complex studies, or in reviewing their findings. Those studies ranged from the effect of diet on heart disease, through the impact of environmental pollution on human health, to the rare parasitic disease congenital toxoplasmosis.

He regularly served on advisory committees to the US Food and Drug Administration and the National Academy of Sciences.

“Paul was the type of person who care deeply about others and would go out of his way to help people whenever he could, whether it was a student struggling with difficult statistical concepts, an individual coping with an illness, or a colleague making a career choice,” said Theodore Karrison, a student then teaching colleague of Meier at the University of Chicago. “I’ve always looked up to

Paul as an example of how one should strive to be, both professionally and as a human being.”

“Statisticians like Paul and others were the mothers and fathers of AIDS treatment activism, they home schooled us into data driven warriors,” said the international AIDS activist Gregg Gonslaves. “They created the ‘expert-patient,’ a new phenomenon in the world of public health and medicine that has literally changed the world, not just for AIDS but for diseases like breast cancer, tuberculosis, and hepatitis.”

### Doctorate in statistics

Paul Meier was born in Newark, New Jersey, on 24 July 1924. He obtained an undergraduate degree in physics and mathematics from Oberlin College in 1945 and a doctorate in statistics from Princeton University in 1951.

He taught at Johns Hopkins University (1952-1957); he joined the University of Chicago for the bulk of his career (1957-1992) and later

the faculty of Columbia University, serving as department chair at both institutions. He was a visiting professor at Harvard, Stanford, and other universities.

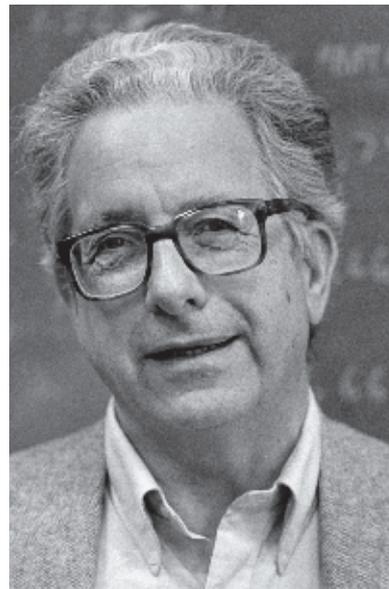
Among his many honours were selection as a fellow to the American Academy of Arts and Sciences, the Royal Statistical Society, the John Guggenheim Memorial Foundation, the Institute of Medicine, and the National Academy of Sciences.

Meier died at his home in New York and leaves Louise Goldstone Meier, his wife of 63 years, and three children.

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Paul Meier, biostatistician (b 1924), died from complications of a stroke on 7 August 2011.

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UNIVERSITY OF CHICAGO

**Meier’s independent analysis of polio vaccine in the 1950s showed as false the claims of developers and manufacturers that all of the virus had been inactivated and that the vaccine could not cause the disease**

## Kerry-Jane Hogg



Consultant cardiologist Stobhill Hospital, Glasgow, and Golden Jubilee National Hospital, Clydebank (b 1959; q Glasgow 1982; MSc, MD, FRCPGlas), died from metastatic bronchial adenocarcinoma on 25 December 2010. Kerry-Jane Hogg graduated with commendation and the prize for most distinguished female graduate in the year. She combined academic excellence with an impressive work ethic. Appointed consultant cardiologist at Stobhill Hospital aged 31, she was the first female interventional cardiologist in Scotland, as well as implanting the first cardiac resynchronisation therapy pacemaker in Scotland. Latterly training programme director for the west of Scotland, she also contributed to the work of the Royal College of Physicians and Surgeons of Glasgow, and was council member and secretary of the Scottish Cardiac Society. She approached her diagnosis as she approached life: with courage, determination, and organisation. She leaves a husband, Michael Aitchison, and two children.

**Frank Dunn, Margaret McEntegart**  
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## Bernard Louis Mallett

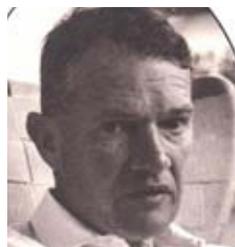
Former consultant psychiatrist Lister Hospital, Stevenage, Hertfordshire (b 1924; q Guy's Hospital, London, 1952; MRCP, DPM, FRCPsych), died from disseminated carcinomatosis on 18 April 2011.



When he left school Bernard Louis Mallett saw active service in the Royal Naval Volunteer Reserve. Before qualifying in medicine with honours he gained a full blue in fencing, received critical acclaim for his acting and playwriting, and was offered a place at the Royal Academy of Dramatic Arts. He trained in neurology and psychiatry in London before being appointed consultant psychiatrist to Fairfield and the North Hertfordshire Hospitals in 1963. He helped plan and design the new psychiatry department at Lister Hospital and was its head until his retirement in 1989. Predeceased by his first wife, Vera, in 1985, he leaves his second wife, Beryl, and a son from his first marriage.

**Richard B Mallett**  
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## Frank Donal Schofield



Former academic, consultant in tropical medicine, and staff member World Health Organization, Geneva (b 1921; q Cambridge 1944; MA (Cantab), MD (Cantab), FRCP, DTM&H), d 5 February 2011. Frank Donal Schofield's seminal work (with Westbrook and Tucker; *BMJ* 1961;ii:785) on using tetanus toxoid immunisation in pregnant women to prevent neonatal tetanus became global public health policy almost overnight, saving the lives of over one million infants annually. During 1973-80 Frank was inaugural director of the World Health Organization's Expanded Programme of Immunization (EPI), having held senior roles in public health in Papua and New Guinea, Ethiopia, and Kenya. During 1980-7 until retirement he was professor of social and preventive medicine, head of department, and convener of the tropical health programme at the University of

Queensland, Australia. He leaves a wife, Lorna; three sons; and five grandchildren.

**Anthony Radford**  
**Louis Schofield**  
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## Jean Mary Scott (née Neville)



Former consultant haematologist and pathologist Glasgow (b 1921; q Glasgow 1944; DSTJ, MD, FRCPath), d 5 November 2010. Jean Mary Scott (née Neville) graduated and obtained her MD thesis with commendation. Her thesis and first paper in the *BMJ* in 1949 highlighted anaemia as the most common and serious complication of pregnancy. She established the first antenatal blood clinic in the west of Scotland and did much of the initial research on intravenous and intramuscular use of iron in pregnancy. On retiring in 1981 Jean became president of the Women's Medical Federation, and was an advocate for all women in medicine, and she served on committees furthering good causes. She cycled till the year before her death, recycling her bicycle in Malawi. Predeceased by her husband, Tom, in 1995, she leaves a daughter.

**Jane Cook, Jane Short,**  
**David A Cruikshank**  
Cite this as: *BMJ* 2011;343:d5444

## David Skeggs

Pioneer of modern radiation therapy (b 1928; q Oxford 1952; MA, FRCR, FFR), d 22 December 2010. David Skeggs invented computer controlled precision radiation therapy, which was developed to become the current international standard for safety and effectiveness. As director of cancer services at the Royal Free



and Royal Northern Hospitals, he developed conformational therapy in the 1970s. He had to leave the NHS through illness in 1988, but he later became director of radiotherapy at Cromwell Hospital. He pioneered the combination of chemotherapy and radiotherapy, was among the first to use computed tomography for planning radiation, and helped to develop radiation therapy for allogeneic bone marrow transplantation. In retirement he became chairman of the UCL Cancer Institute Research Trust, and was also governor of the English-Speaking Union. He leaves a wife, Anne, and two daughters.

**Richard Begent**  
Cite this as: *BMJ* 2011;343:d5295

## Charles Peter William Warren

Former professor of medicine and associate dean for undergraduate medical education University of Manitoba, Winnipeg, Canada (b 1940; q Cambridge/Guy's Hospital, London, 1964; MA, FRCP, FRCPC), d 3 May 2011.

Charles Peter William Warren ("Peter") won five accolades as a clinical student, as well as rowing in the first VIII of the Hospital Boat Club. He progressed to senior medical registrar in chest diseases at the Brompton Hospital before moving to Canada, having married a Canadian in 1971. An outstanding teacher, Peter was an authority on allergic lung diseases and the risks of grain dust exposure in particular. His major interest in the history of medicine culminated in a masters degree during retirement, and he was president of the Canadian Society of the History of Medicine when he died. He leaves a wife, Faye; two sons; and three grandchildren.

**David K C Cooper**  
Cite this as: *BMJ* 2011;343:d5435