

Gilbert W. Beebe Symposium on 30 Years after the Chernobyl Accident



November 1-2, 2016 – Washington, DC



Gilbert W. Beebe's Contributions in Radiation Research

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Vanderbilt-Ingram Cancer Center



Gilbert W. Beebe's Contributions in Radiation Research



- ➔ Introduction
- Early Career
 - Atomic Bomb Survivors
 - The National Academy - MFUA
 - National Cancer Institute
 - China, Korean War, Workers, Belarus, Ukraine
 - Legacy



First Beebe Symposium (2002)



Ruth and Gil (1913 – 2003)

First Beebe Symposium (2002)



Bob and Holly Miller

First Beebe Symposium (2002)



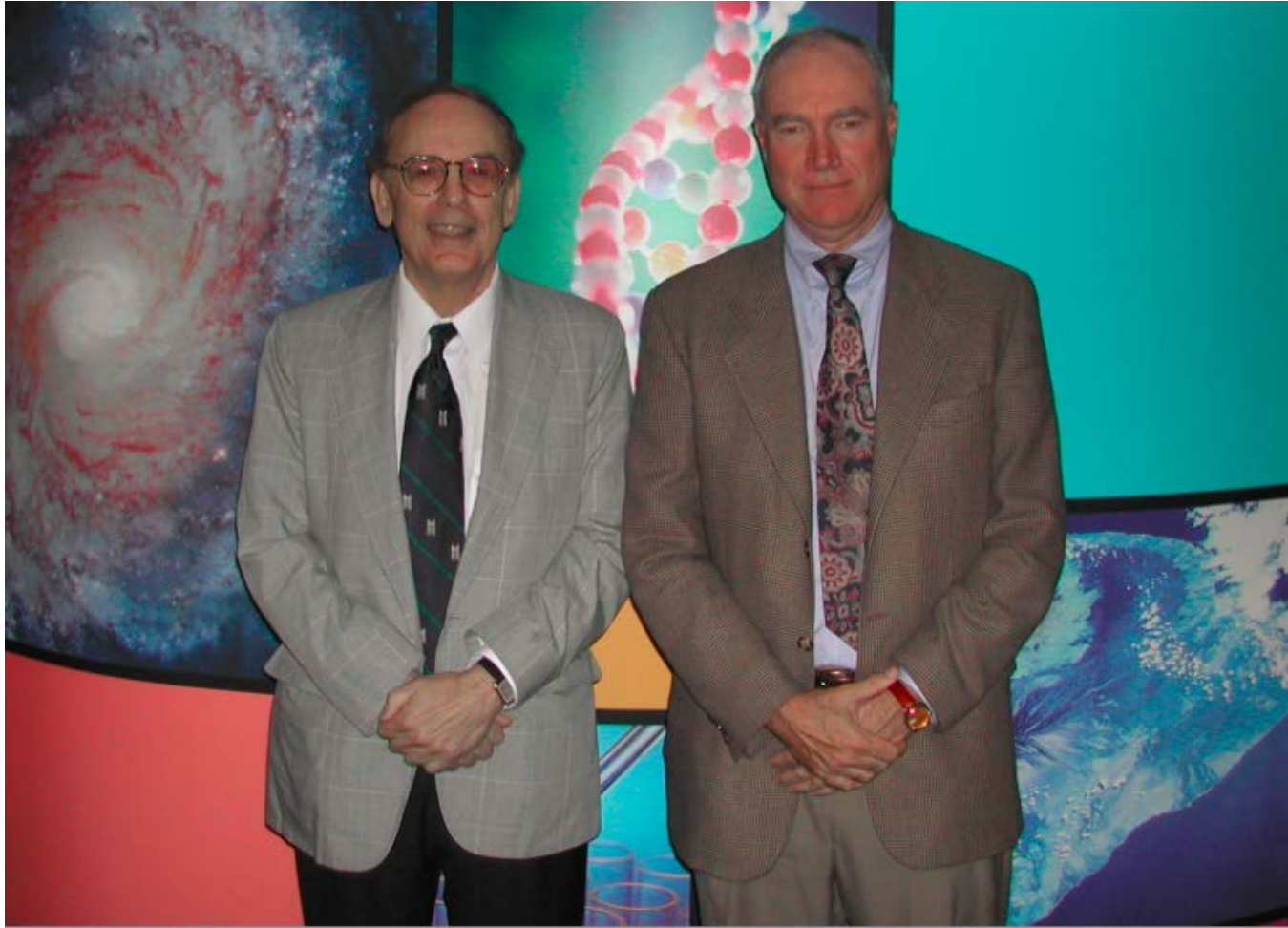
Seymour Jablon and Dale Preston

First Beebe Symposium (2002)



Jack Schull and Michael Fry

First Beebe Symposium (2002)



Joe Fraumeni and Bill Blot

First Beebe Symposium (2002)

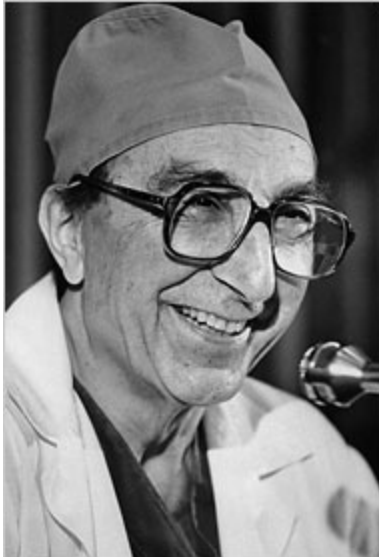


Alfred, Ruth and Gil Beebe

Medical Follow-Up Studies on Veterans

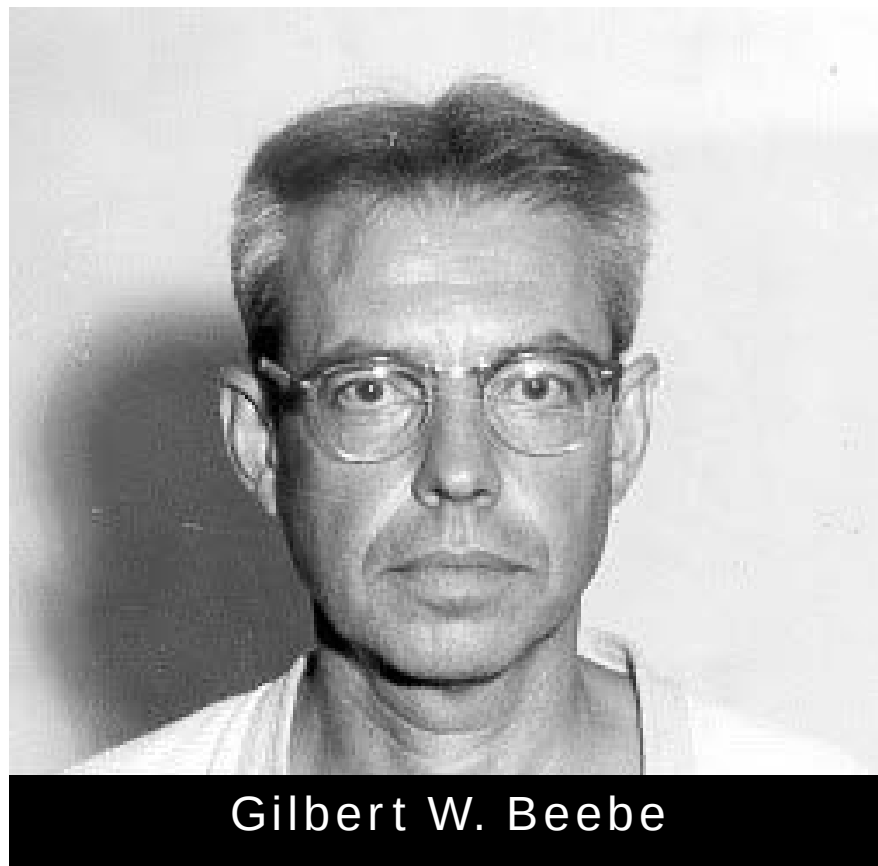
Michael E. DeBakey, MD, Houston, Tex., and Gilbert W. Beebe, PhD, Washington, D.C.

JAMA, Dec 15, 1962



- **Following the war**, Dr Beebe, together with the pioneering heart surgeon Dr Michael DeBakey, led the efforts to organize a large-scale follow-up study of the health US war veterans.
- Their efforts resulted in the creation of the National Academy of Sciences (NAS), **Medical Follow-up Agency (MFUA) in 1946.**
- As the MFUA was being created, **US President Truman** directed the NAS to organize and manage health effects studies of the atomic bomb survivors

ABCC Days



Thanks, Dale Preston

1956 - 1958



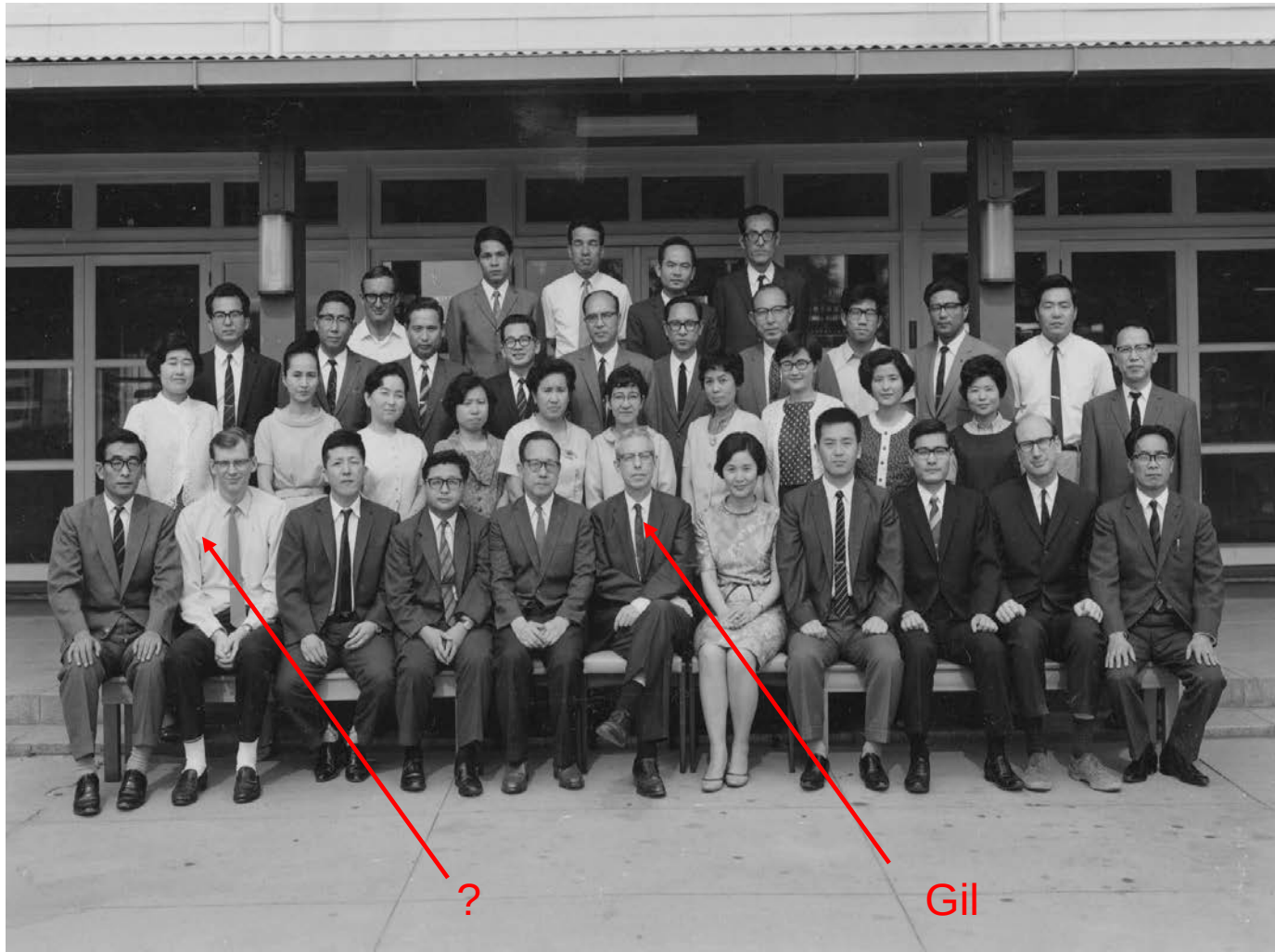
- Creation of the **LSS and AHS** cohorts
- Organization of **tumor registry**
- Establishment of **Department of Statistics**

1966-1968



- Development of **methods for assessing radiation dose effects**
- Preparation of **first LSS report based on individual dose estimates**
- Documentation of major cohorts

1966 - 1968



Thanks, Dale Preston

1973 – 1975



- Transition from **ABCC to RERF**
 - RERF's **first Chief Scientist**
 - Development of additional statistical methods
- Gil

1980s – 30 years later!



Thanks, Joe Fraumeni

Gil

The LSS and AHS

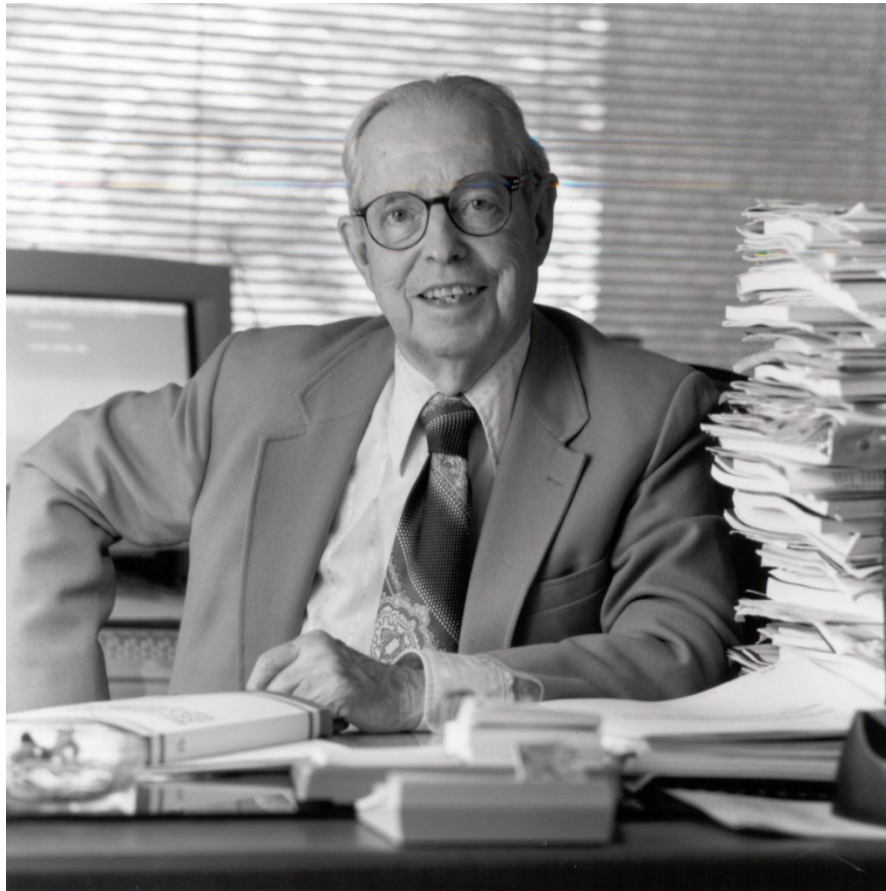
A Legacy and a Future

- One of the largest and most successful cohort studies ever undertaken
- Primary source of quantitative radiation risk estimates
- Increasing scientific value
 - Low dose cancer risk estimates
 - Understanding mechanisms
 - Noncancer effects
 - Biological materials



Dr. Beebe's Contribution to the National Cancer Institute

Joined 1979 when 65 y



Thyroid Nodularity and Chromosome Aberrations Among Women in Areas of High Background Radiation in China

Zuoyuan Wang, John D. Boice, Jr., Luxin Wei, Gilbert W. Beebe, Yongru Zha, Michael M. Kaplan, Zufan Tao, Harry R. Maxon III, Shouzhi Zhang, Arthur B. Schneider, Bingde Tan, Terrence A. Wesseler, Deqing Chen, Abby G. Ershow, Ruth A. Kleinerman, L. Gayle Littlefield, Dale Preston JNCI 1990*



Radon Studies in Homes (Case-Control)

United States

New Jersey

Missouri

Iowa

Connecticut

Utah/Idaho

Canada

Winnipeg

Europe

Southwest England

Western Germany

Czech (cohort)

Nordic Countries

Sweden

Finland

China

Shenyang

Gansu

Pooled

Lubin (1997, 1999)

North America (Krewski, 2005)

Europe (Darby, 2005)

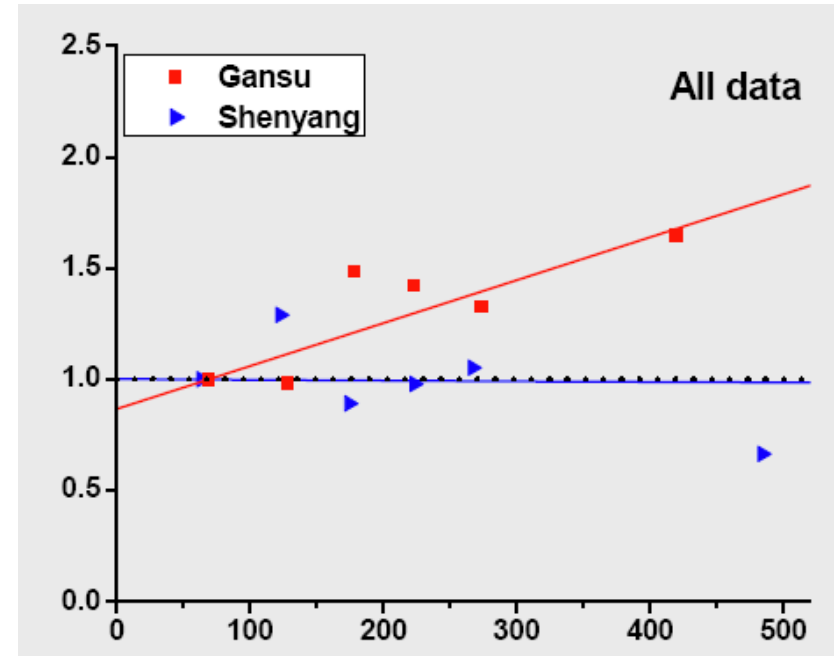
China (Lubin, 2004)

World (Darby, in progress)



Gil

Radon Studies in Homes Shenyang



Blot et al. JNCI 1990

1986 - Laying the groundwork for a Registry of Radiation Workers



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
National Cancer Institute
Bethesda, Maryland 20892

SEP 17 1986

Vincent T. DeVita, Jr., M.D.

Mr. Landow W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

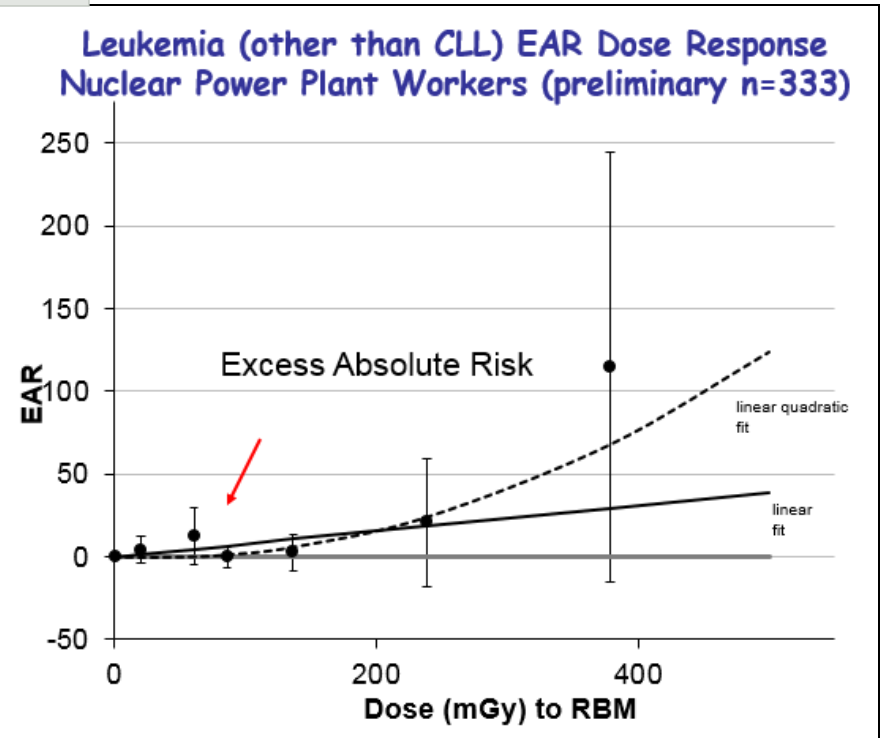
Dear Mr. Zech:

The present risk estimates for low-dose exposure to ionizing radiation, as you know, derive from unvalidated interpolations between zero and relatively high-dose, and high dose-rate, exposure. There are few exposure situations that can be studied in the expectation that risk estimates directly applicable to the low-dose region might be obtainable. One of these is employment in the nuclear power industry, but there is at present no practical way of studying the experience of nuclear power plant workers in the U.S.

In revising 10 CFR 20 I hope you will not miss the opportunity to lay the groundwork for a Registry of Radiation Workers containing the annual doses received by individual workers. The need for such a Registry has been

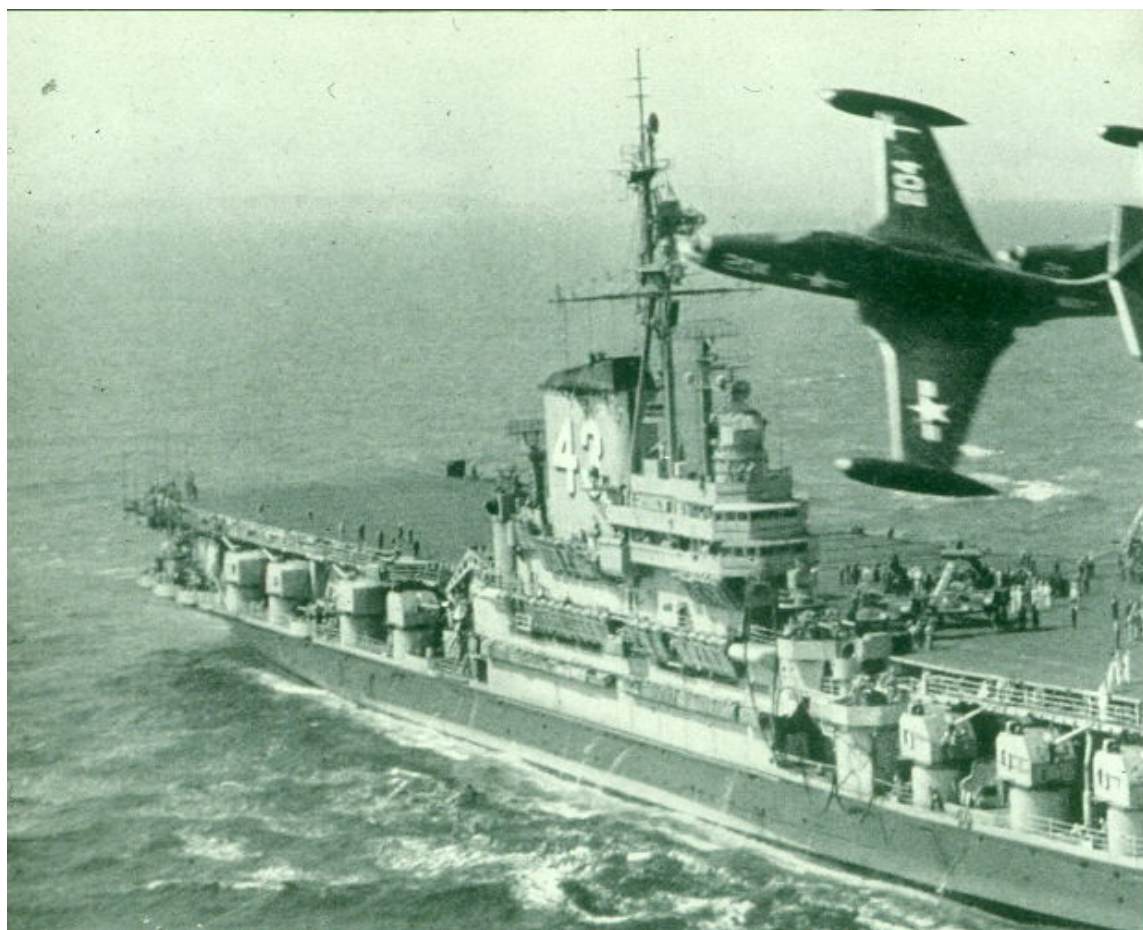
Population: One Million Persons Exposed to Radiation

- Manhattan Project 360,000
- Atomic Veterans 115,000
- Nuclear Utility Workers 150,000
- Industrial Radiographers 130,000
- Medical & other >250,000



Cancer in Korean War Navy Technicians: Mortality Survey after 40 Years

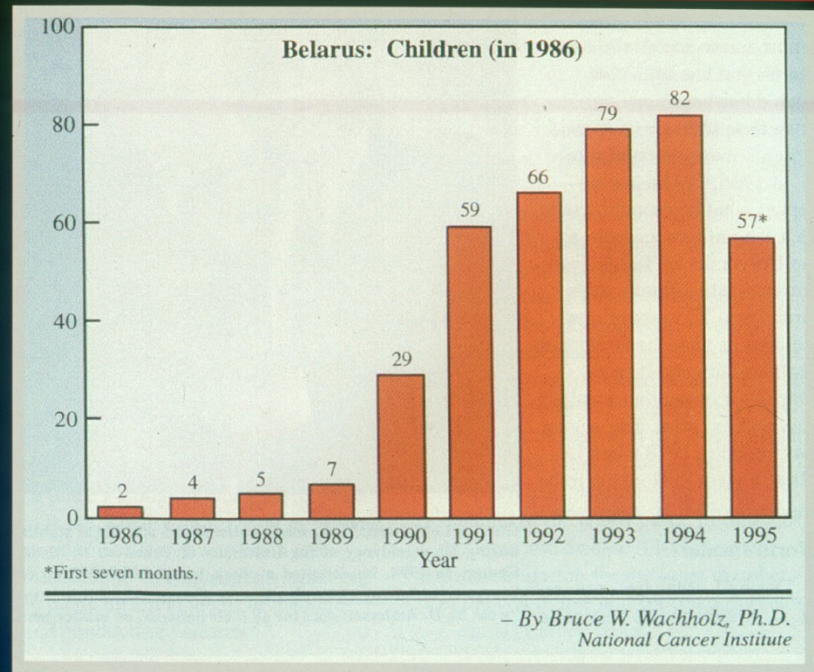
Frank D. Groves,¹ William F. Page,² Gloria Gridley,¹ Laure Lisimaque,¹ Patricia A. Stewart,¹ Robert E. Tarone,¹ Mitchell H. Gail,¹ John D. Boice, Jr.,³ and Gilbert W. Beebe¹



BELARUS



Thyroid Cancers in Children in Belarus





Jack Robbins, XB1, Valentina Drozd, Gil Beebe



Gil Beebe, Matyukhin, Valentin Stezhko, XB1, Bruce Wachholz, Jack Robbins



Lynn Anspaugh, Dimitri Rzheutsky, Nelly levleva, XB5, Gil Beebe

Chernobyl-Related Thyroid Cancer in Children of Belarus: A Case–Control Study

Larisa N. Astakhova,^a Lynn R. Anspaugh,^b Gilbert W. Beebe,^{c,1} André Bouville,^c Vladimir V. Drozdovitch,^a Vera Garber,^c
Yuri I. Gavrilin,^d Valeri T. Khrouch,^d Arthur V. Kuvshinnikov,^a Yuri N. Kuzmenkov,^a Victor P. Minenko,^a
Konstantin V. Moschik,^a Alexander S. Nalivko,^a Jacob Robbins,^e Elena V. Shemiakina,^d
Sergei Shinkarev,^d Svetlana I. Tochitskaya^a and Myron A. Waclawiw^f



Jack Robbins, XB4, Valentin Stezhko, Larisa Astakhova, Gil Beebe, Nelly Ievleva

UKRAINE



Gil Beebe, Anatoly Romanenko,
Bruce Wachholz



Vladimir Bebeshko, Gil Beebe,
Ilya Likhtarev



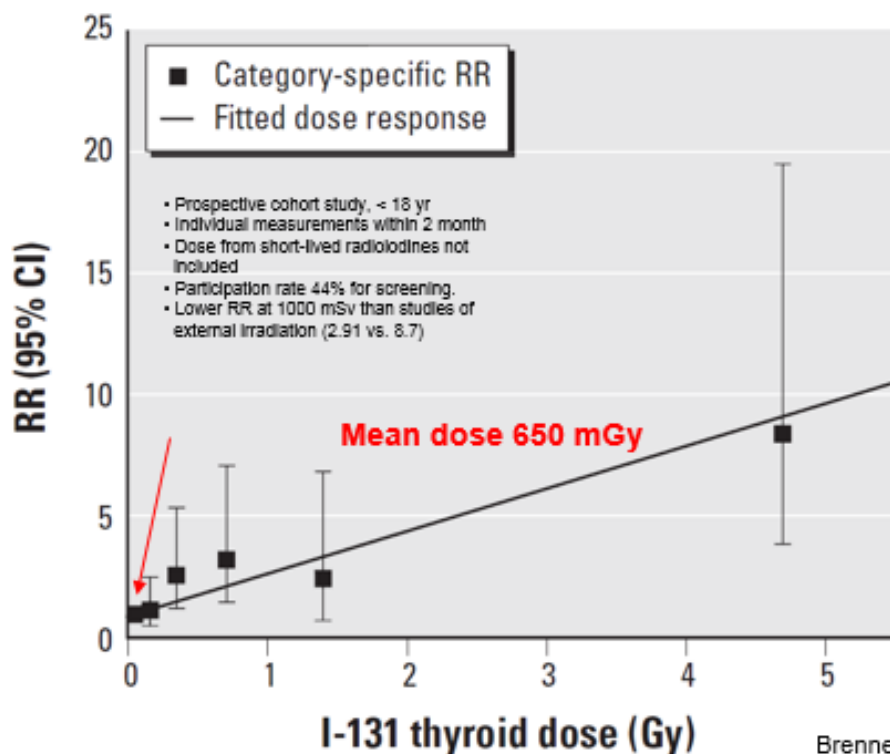
Ihor Masnyk, Gil Beebe, Bruce Wachholz, Olga Tsvetkova, Anatoly Romanenko, XU7

UKRAINE

I-131 Dose Response for Incident Thyroid Cancers in Ukraine Related to the Chernobyl Accident

Alina V. Brenner,¹ Mykola D. Tronko,² Maureen Hatch,¹ Tetyana I. Bogdanova,² Valery A. Oliynik,² Jay H. Lubin,¹ Lydia B. Zablotska,³ Valery P. Tereschenko,² Robert J. McConnell,⁴ Galina A. Zamotaeva,² Patrick O'Kane,⁵ Andre C. Bouville,¹ Ludmila V. Chaykovskaya,² Ellen Greenebaum,⁶ Ihor P. Paster,² Victor M. Shpak,² and Elaine Ron¹

Ukrainian – American Chernobyl Thyroid Study



Lasting Legacy

- 90 years spanned 5 careers, touched many lives – we are his living legacy!
- Creative, wise, warm, giving, patient, humble, a man for all ages – epidemiology & radiation
- Touched us all in ways not appreciated, registries, methods, linkage approaches, that have become the fabric of much of what is done today



Thank You

Choose a job you love,
and you will never have
to work a day in your
life.

Confucius

知之者不如好之者，好之者不如乐之者

孔子

