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## *Statisticians in History*

# Gladys H. Reynolds

From the Centers for Disease Control and Prevention  
web site, [www.cdc.gov](http://www.cdc.gov)



**G**ladys Reynolds' start in public health was, according to her, all chance. As a senior at Yankton College, Yankton, South Dakota (majoring in history and political science, math, and education), she planned to continue her education in math, history, political science, or law when the chair of the math department encouraged her to apply to graduate school in the field of statistics at Virginia Polytechnic Institute, where they awarded her a National Institutes of Health (NIH) fellowship. Reynolds earned her master's degree in statistics and was then recruited to work at the Centers for Disease Control and Prevention (CDC). After five years as a statistician and unit chief in the Statistics Section of CDC's Epidemiology Branch, she was recruited to join the biometry department faculty at Emory University, where she also worked toward her PhD with a major in biometry and a minor in biostatistics. After two years, Reynolds received a special NIH research fellowship, which paid her full faculty salary, books, and travel. She was the first woman without an MD or PhD to receive this fellowship. The topic of her dissertation was "A Control Model for Gonorrhea."

## Career

Reynolds has always been especially concerned about the biases women and minorities face in professional and management positions and has served as a role model for statisticians and women in management positions and professional societies. She was the first woman and the first statistician to serve as the head of a statistics branch at CDC. As chief of the Evaluation and Statistical Services Branch, Division of Sexually Transmitted Diseases (1979–1989) and senior statistician in the Office of Minority Health (1989–2007), her contributions included responsible administrative assignments and extensive collaborative work on major public health problems, especially the health of women and minorities.

Reynolds' work on mathematical modeling of sexually transmitted diseases was among the earliest in this area, and the statistical work that continued under her direction on modeling—including simulation models and time series—has been vital in clarifying relationships between risk factors, incidence and prevalence of disease, and control methods. In addition to her work in modeling, she was involved in research design implementation, analysis and interpretation of program evaluation, and clinical trials.

At CDC, Reynolds was the only woman to have served both as an epidemic intelligence service officer and a supervisory public health advisor, pioneering these roles for women. She also served as president of the Association of Executive Women at CDC.

## Applying Affirmative Action

As a member of the CDC Equal Employment Opportunity Advisory Council (1986–1987) and chair of the Affirmative Action Committee (1987), Reynolds developed two models. The first estimated the approximate percentage of positions that must be filled by each race-sex category to meet parity (e.g., workforce or population representation) in a certain number of years. The second model projected the number of persons needed in each race-sex category in year 1, 2, (N-1) to ensure progress toward the goal. The purpose of the workforce analysis was to help managers set achievable goals in affirmative employment planning and management.

For the American Statistical Association, Reynolds served on the board of directors, representing nine southeastern states, for a two-year term (1965–1967); secretary-treasurer and chair of the Biopharmaceutical Section; and chair of the Statistics in

## Reynolds' Firsts

In 1967, Gladys Reynolds became the first woman without an MD or PhD to receive the special NIH research fellowship. (She was awarded her PhD in 1973.)

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Reynolds is the only woman to have served as both an Epidemic Intelligence Service (EIS) officer and a supervisory public health advisor at CDC, pioneering these roles for women. She served as president of the Association of Executive Women at the Centers for Disease Control and Prevention and was an organizing member of this association.

In 1985, Reynolds was the first person at CDC in Atlanta to be named a Fellow by the American Statistical Association.

Reynolds organized and chaired the first Statistical Symposium on Statistics in Surveillance in 1988. She also organized the third Statistical Symposium on Statistics in Evaluating Interventions in 1990.

In 1991, Reynolds chaired the Annual Meeting of the American College of Epidemiology and became the guest editor of the special volume of the proceedings. This may have been the first time the issue of racism as a cause of disparities in morbidity and mortality was openly discussed during a large professional conference.

Reynolds chaired the CDC Tribal Consultation Policy Workgroup, 1996–1998, and the CDC Tribal Colleges and Universities (TCUs) workgroup, 1997–1998.

Epidemiology Section. She served on or chaired numerous ASA committees, including nominating committees and Fellow committees, where she helped ensure women and minorities were put forth as candidates for office or Fellow. She served as vice chair of the EEO Committee from 1987 to 1990 and vice chair and chair of the ASA Committee on Minorities from 1996 to 2002.

As senior statistician for minority health in CDC's Office of Minority Health, Reynolds served on a number of Department of Health and Human Services (HHS) committees and work groups (e.g., HHS Data Council Working Group on Racial and Ethnic Data, HHS Workgroup on Measuring Disparities, Healthy People 2010 Black American Workgroup, and Health Disparities and Environmental Justice Workgroup of the National Children's Study).



Gladys Reynolds (left) accepts the Elizabeth L. Scott Award from Linda J. Young, chair, Committee of Presidents of Statistical Societies, at the 2004 Joint Statistical Meetings held in Toronto.



Gladys Reynolds in 1990 as chair of the Symposium on Statistical Methods for Evaluation of Intervention and Prevention Strategies

## Achievements

Reynolds has been an invited participant/speaker at numerous meetings, including the Conference on Statistics, Science, and Public Policy in England; Joint Statistical Meetings; and Annual Meeting of the National Rural Minority Health Association.

Reynolds received the CDC Award for Contributions to the Advancement of Women in 1986. As a member of the CDC Equal Employment Opportunity Advisory Council and chair of the Affirmative Action Committee, she was especially concerned with collecting and analyzing data on women and minorities by grade level and over time. For her efforts and scientific achievements, she was awarded the Women in Science and Engineering (WISE) Lifetime Achievement Award in 1989.

Reynolds was instrumental in establishing awards and programs to bring recognition and influence to the work of

statisticians at CDC. In 1987, she organized and chaired the first CDC Awards Committee for the best paper written by a statistician or statisticians. Reynolds then organized and chaired both the first Statistical Symposium on Statistics in Surveillance in 1988 and the third Statistical Symposium on Statistics in Evaluating Interventions in 1990. In 1991, she chaired the Annual Meeting of the American College of Epidemiology, which focused on “The Morbidity/Mortality Gap: Is It Race or Racism?,” and was the guest editor of the special volume of *Annals of Epidemiology* that came from that meeting. This may have been the first time the issue of racism as a cause of disparity in morbidity and mortality was openly discussed in a large professional conference. She served on the Minority Affairs Committee of the American College of Epidemiology from 1992 to 1994 and as liaison to the ASA’s Statistics in Epidemiology Section from 1995 to 1998.

Reynolds was elected a Fellow of the American College of Epidemiology in 1983. In 1985, she was the first person at CDC in Atlanta to be named a Fellow by the ASA. She was elected a member of the International Statistical Institute in 1986, and she is still the only scientist to be elected to the ISI from CDC in the Atlanta location. In 1999, she received the ASA Founders Award for longstanding service to the ASA’s Biopharmaceutical and Statistics in Epidemiology Sections, service to many ASA committees, and leadership in advancing women and minorities in the profession.

Reynolds retired from the CDC in January of this year. Since then, she has been working in her garden, helping students, and visiting family. “I have a lot of things to catch up on because I let things go for years,” she said. But even after cleaning up, planting bushes, and throwing things out, Reynolds has found that she enjoys retirement. “There’s more time for leisure, more time to travel, more time to cook and exercise more.” ■