Boston University Chobanian & Avedisian School of Medicine

Big Celebration for Framingham Heart Study's 75 Years of Groundbreaking Research

Speakers from l to right: Dr. April Carson, Framingham Mayor Charlie Sisitsky, FHS Interim Co-PI Joanne Murabito, Tom Grassia, Rev. J. Anthony Lloyd, Rep. Katherine Clark, NIH Director Monica Bertagnolli, Dr. David Goff, Dean Karen Antman, FHS Interim Co-PI George O'Connor, Dr. David Levy.

On April 8, study participants, researchers, local, state and federal officials celebrated the 75th anniversary of the Framingham Heart Study, the longest running cohort study in biomedical research. Fittingly, the event took place in Nevins Hall at

the Memorial building, in the city that enthusiastically embraced the federally funded proposal in the mid-1940s for a long-term participant study focused on discovering the causes of heart disease.

"Over three generations of participants this groundbreaking study has transformed our understanding of heart disease: how to predict it, how to prevent it and how to treat it," said Monica Bertagnolli, MD, director of the National Institutes of Health, speaking at the celebration.

Audience members listening to presentations

"Much of what we've learned specifically from this study has become common knowledge. Americans, not just their doctors, now understand the risk factors for heart disease; among them high blood pressure, high cholesterol, smoking, lack of physical activity, unhealthy diets, unhealthy weight. And just as important, we've learned that we can change these risk factors, and if we do, it saves lives."

Three years after President Franklin Delano Roosevelt's death in 1945 from a cerebral hemorrhage due to runaway hypertension, President Harry Truman signed the National Heart Act funding a study to identify the common factors contributing to cardiovascular disease by tracking its development over a lifetime. The study was centered in Framingham and 5,209 people, nearly half the adult population at the time, volunteered to participate in periodic physicals and other testing throughout their lives. As the study progressed and findings proved significant, a second and third generation, the sons and daughters, grandsons and granddaughters of the original participants were recruited. Eventually, members of underrepresented minorities also were invited to participate.

"People have said it takes a village to do something important, but in this case, it took a small city to do something with this kind of impact," said Karen Antman, MD, Boston University Chobanian & Avedisian School of Medicine dean and BU Medical Campus provost.

"It's a very powerful database," she said, noting that information from the study was being used in ways not envisioned 75 years ago, like genetic research and therapies.

BU has been the academic partner and the study's contractor under the National Heart Lung and Blood Institute (NHLBI), since 1971. A total of 15,447 people have volunteered for testing during that time period and the areas of research expanded to include stroke risk, Alzheimer's disease research, and investigations into genetic risks and traits.

Tom Grassia, a corporate attorney and new chair of the study's ethics advisory board, is a second-generation study participant. He's been returning to Framingham for physicals and other testing for more than 50 years and complimented FHS staff for making that process efficient, comfortable and accommodating. He lauded the efforts of his fellow participants.

"We are a large group of people who remain mostly unknown to one another, but collectively serve as an army of helpers," said Grassia. "We are a force for good health and we carry with us the collective sense of pride about what we do."

Rep. Katherine Clark speaking on stage

U.S. Representative Katherine Clark, the House minority whip representing Framingham as one of her district towns and cities, spoke of the "hopeful selflessness" of study participants.

"You are part of a critical contribution to health care. Not just to Framingham, not just to our country, but to all people. You have the rare distinction of making impacts of truly global proportions," she said. "What could be more awe inspiring than the task that you have taken on, forging the keys to a longer life, a healthier life, a better life; not for yourselves but for everyone."

Massachusetts Senate President Karen Spilka, who counts Framingham among the towns she represents, presented a legislative proclamation honoring the study's 75th anniversary as did Framingham Mayor Charlie Sisitsky. U.S. Senators Elizabeth Warren and Ed Markey could not attend but sent congratulatory videos.

"What you have achieved is an incredible example of what people can achieve when they put their heads together to tackle big challenges," said Warren in her recorded message played at the event.

Markey hailed the groundbreaking research and inclusion of those historically underrepresented in scientific research.

"Given that heart disease is the leading cause of death in the United States, nothing could be more essential," he said.

Warren revealed that her father died of a heart attack when she was just 12. Like most heart conditions at the time, it went undiagnosed. As recently as 1968, heart disease was only treated after it had impacted health and the effects of smoking, cholesterol and obesity on heart disease and stroke were unknown, high blood pressure was considered a product of aging and largely untreated.

Framingham Mayor Charlie Sisitsky cuts the cake with event speakers behind him

"In the early 1960s everybody thought that diseases came from infectious organisms, the germ theory of medicine, and Dr. Kannel (longtime FHS director

William Kannel, MD) introduced a new way of thinking based on the Framingham Heart Study and the world changed as a result of that. And now we commonly speak to risk factors (like smoking, cholesterol, obesity, lifestyle)," said David Goff, MD, PhD, NHLBI director of cardiovascular sciences. He described the concept of risk factors as the study's greatest contribution to world health.

"We could predict who is at higher risk for developing a heart attack or stroke or heart failure within the next 10 years. We could identify people who were apparently healthy who had a high risk of (heart) disease in the short term, within a decade, so they could be identified for more intensive therapy whether that's lifestyle intervention, medical management of cholesterol or blood pressure. That changed the world of medicine forever."

Goff cited the National Institutes of Health and NHLBI, the primary funder of the study, for its enduring financial support. He thanked BU for its long-term commitment, as well as the researchers, students, interns from all over the world and staff who worked at the study for the past 75 years, and the participants.

Over the decades the study has contributed data and insight beyond just heart research, including conditions involving the heart, brain, lung, liver, kidneys, bone, blood, as well as the burgeoning field of genetic studies of illnesses thanks to the foresight of involving whole families and generations of participants.

The study has had significant scientific impact, Goff said, noting that a quick search prior to the event revealed more than 280,000 references to FHS in medical literature.

April Carson, PhD, professor of medicine and director of the Jackson Heart Study at the University of Mississippi Medical Center, said the impacts of the Framingham study go far beyond the science, inspiring researchers and communities.

As participants in a long, highly regarded study, Carson said Framingham investigators have helped other studies do their work, advancing science nationally.

"I have worked very closely with Framingham investigators, and they tell me about participant and staff feedback, as well as (aspects) we should consider moving forward. We're learning from Framingham and continue to learn," Carson said.

Goff noted that the fight against heart disease isn't over, and the study's relevance continues. While FHS discoveries and the development of preventive therapies and medications helped contribute to the 75 percent reduction in cardiovascular disease mortality in the U.S. from 1955 to 2010, that progress has since stalled and the past several years revealed what Goff called "disturbing" evidence of increases in mortality rates in the U.S., in part due to heart disease mortality rates going up again, including in young and middle-aged adults.

"The important work that is going on here in Framingham, I would say, has never been more important than it is today," Goff said. "We need new knowledge about what's happening now with current generations so that we can do an even better job of preventing heart disease and stroke and other problems over the decades to come."

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