

# Lloyd Shapley, Nobel Prize winner in economics, dies at 92

BY MARTIN WEIL  
THE WASHINGTON POST

Lloyd S. Shapley, who shared the 2012 Nobel Prize in economic sciences for developing the theoretical underpinnings of methods for matching people with limited resources, including organ donors with patients, students with schools and doctors with hospitals, died March 12 at a nursing home in Tucson. He was 92.

A longtime researcher at the Rand Corp. think tank in Santa Monica, California, Shapley was at his death a professor emeritus of economics and mathematics at the University of California at Los Angeles. His son, Peter Shapley, confirmed the death and said the cause was complications from a broken hip.

Known as a major contributor to theoretical and mathematical economics, Shapley was regarded as one of the titans of game theory.

That branch of mathematics concerns itself with the conceptual underpinnings of the choices and interactions, conscious and unconscious, large and small, personal and institutional, that people make every day of their lives.

Game theory is an apt title for the field, because it implies the element of competition involved in the choices governing human lives and institutions; most choices involve or imply winning and losing, success and failure, satisfaction and discontent.

“Game theory, I think, was made for me, because I was always messing round with great big game-like models, the sort of thing that now they call ‘Dungeons and Dragons,’ ” Shapley once said. “I’ve always enjoyed the mathematics of it.”

There is no Nobel in mathematics. In 2012 Shapley shared the economics Nobel with Alvin E. Roth, then of Harvard University, for contributions that spanned mathematics and economics. Shapley contributed the mathematics. “I never, never in my life took a course in economics,” he said.

In many situations treated by game theory, such as those involving economic life, money may be used as the measure of wins and



Joint laureate for the 2012 Nobel Prize for Economics Lloyd Shapley (left) of the U.S. receives his prize from Sweden’s King Carl XVI Gustaf during the Nobel Prize award ceremony at the Stockholm Concert Hall in Stockholm in December 2012.

losses. Shapley concerned himself with situations in which financial incentives were often out of the picture. Nor was there unrestricted trading, with its almost infinite possibilities.

Rather it might be a matter of maximizing stability in systems of matching up members of pairs, based on innumerable individual transactions in which all choosers must also be chosen.

One of the criteria for success in such transactions is stability; that is, each side in a transaction must be satisfied and neither is to be left wishing that a different choice had been made.

One of the examples given of the Shapley’s work in this area has been given the name of the stable marriage theorem. Although perhaps unrealizable in true life situations, it involves creation of a formidably logical mathematical system for matching an unlimited number of prospective husbands and wives in such a way as to leave none with regrets.

It was the mathematics behind all this that fasci-

nated Shapley. “If there’s simply an interesting application,” he said, “well, maybe someone else can do it. . . . The mathematical discovery is the really exciting part.”

Formally, the Royal Swedish Academy of Sciences awarded the Nobel for what it called “the theory of stable allocations and the practice of market design.”

In that work, Peter Shapley said, his father “came up with the method.” The origins were a paper from the early 1960s that laid out the “Gale-Shapley algorithm,” a collaboration between Shapley and mathematician David Gale. Roth applied Shapley’s work to real-life problems.

Lloyd Stowell Shapley was born in Cambridge, Massachusetts, on June 2, 1923. He was one of five children of Martha Betz and noted Harvard astronomer Harlow Shapley.

From boyhood, Shapley’s mathematical aptitudes showed themselves. Against older siblings, he was said to be unbeatable in mathematical games by age 6 because of his knowledge of

logarithms. He was a 1940 graduate of Phillips Exeter Academy, a private school in New Hampshire, and then enrolled at Harvard University.

In 1943, amid World War II, he was drafted into the Army Air Forces in China and helped crack a Soviet meteorological code that was critical in planning bombing raids over Japan as dangerous fronts moved eastward from Siberia.

The Soviet Union was allied with the United States against Germany but was officially neutral for much of the war against Japan.

Shapley, who received the Bronze Star for his military work, completed his Harvard degree in 1948 and received a doctorate in mathematics from Princeton University in 1953.

At Princeton, he befriended mathematician and game theorist John F. Nash Jr., another future Nobel laureate in economic sciences. Shapley’s description of Nash as possessing “a keen, beautiful, logical mind” provided the title for Sylvia Nasar’s biography of Nash à “A Beautiful Mind” — and the subsequent film version. Nash, who struggled with mental illness, died last year in a car accident, along with his wife.

Shapley worked at Rand Corp. from 1954 to 1981 and thereafter at UCLA.

His wife, the former Marian Ludolph, who spent many years as a computer programmer at Rand, died in 1997 after 42 years of marriage. In addition to his son Peter, of Tucson, Shapley is survived by another son, Christopher Shapley of San Jose del Cabo, Mexico, and two grandchildren.

In their paper, “College Admissions and the Stability of Marriage,” a fundamental part of the Nobel-winning work, Gale and Shapley concluded by asking just what mathematics is.

In the paper, published in the American Mathematical Monthly, which is pitched at a wide range of readers, the two said math does not require a “head for figures.” Instead, they argued, it demanded the ability to fashion a sufficiently precise argument and to follow “a moderately involved sequence of inferences.”



Dr. Gwendolyn Graddy-Dansby, a geriatrician for Henry Ford Health Systems, talks to her patient, Annie G. Watts, 81, after her dialysis treatment at the Henry Ford Center for Senior Independence in Detroit, Michigan, in 2012.

## Some care for older people not age-appropriate

BY MICHELLE ANDREWS  
THE WASHINGTON POST

Quality over quantity. As people get older, their health-care goals may shift away from living as long as possible to maintaining a good quality of life. In key areas, however, the treatment that older people receive often doesn’t reflect this change, according to a new study.

The wide-ranging report from the Dartmouth Atlas Project uses Medicare claims data to examine aging Americans’ health care. Among other things, it identified five areas where too many older people receive treatments that don’t meet established guidelines or, often, their own goals and preferences.

Two of the five involve preventive steps that may not benefit seniors: screenings for breast cancer and prostate cancer. The other three address care at the end of life: late referral to hospice care, time in intensive care units and the placement of feeding tubes in people with dementia.

These shortcomings highlight the need for better communication and shared decision-making among patients, their families and their medical providers.

People judge the harms and benefits of treatments differently, and “that’s where the shared decision-making comes in,” said one of the report’s authors, Julie Bynum, an associate professor at the Dartmouth Institute for Health Policy and Clinical Practice in Lebanon, New Hampshire.

Mammograms to detect breast cancer and blood tests to check for prostate cancer are simple procedures. But these screenings can set off a cascade of further testing and treatment when the results are worrisome. Those follow-up efforts can harm older patients, who may be fragile or have multiple medical conditions.

In addition, older people may well die from something else before a recently revealed cancer progresses, said Richard Wender, chief cancer control officer at the American Cancer Society.

“The single hardest concept for the public to understand is the natural history of finding a cancer through a screening process,” Wender said. “Many people have the sense that had it not been found, that cancer would have threatened their life within a couple of years or maybe even a couple of months.”

Experts have cautioned older patients about both mammograms and prostate tests. The U.S. Preventive Services Task Force, an independent panel of physicians, has concluded that PSA blood tests aren’t beneficial at any age and that there’s not enough evidence to know whether the benefit of breast cancer screening after a woman reaches age 75 outweighs the risks.

Still, the Dartmouth Atlas analysis found that 20 percent of male Medicare beneficiaries age 75 and older got a PSA test to screen for prostate cancer in 2012, and 24 percent of female beneficiaries that age had a mammogram to screen for breast cancer.

Guidelines aside, clini-

cians and their patients need to discuss the pros and cons of testing and make a decision based on the patient’s values and preferences, experts say.

For example, a 75-year-old woman who is willing to accept that she might die of breast cancer within 10 years but wants to avoid the anxiety and harms of treatment might choose not to be tested.

“I ask people, ‘Do you think you’re going to be around in 10 years? Help me decide whether to order a mammogram,’” said Bynum, whose work focuses on geriatrics.

As people near the end of their lives, it’s especially important for patients and their family members to discuss their goals and wishes with clinicians. Patients often want to be kept comfortable rather than undergo medical interventions, but physicians and nurses are still trained to do everything possible to prevent death, said Diane Meier, the director of the Center to Advance Palliative Care and a professor of geriatrics at the Icahn School of Medicine at Mount Sinai in New York.

The three end-of-life criteria cited by the Dartmouth researchers are areas that geriatrics experts agree are critical, Bynum said, but it has proved difficult to get providers, health systems and the general public to address them. Late referral to hospice and spending time in a hospital intensive care unit, the report found, can adversely affect terminal patients’ health, result in higher costs and run counter to their hope for a peaceful death. For people with advanced dementia, the insertion of feeding tubes can lead to complications.

Federal data show that less than half of Medicare beneficiaries who die use hospice services, but the Dartmouth study found that even those who did turn to hospice often did it late. Seventeen percent of Medicare beneficiaries who died in 2012 weren’t enrolled in hospice until the last three days of life. Medicare will approve hospice benefits, which generally include comfort care rather than curative treatment, when a physician certifies that someone is expected to live for no more than six months.

The study also found that people spent an average of nearly four days in intensive care during the last six months of life, a figure that is trending upward.

Finally, even though it doesn’t prolong their lives to place feeding tubes in patients with dementia, who naturally lose interest in food and their ability to swallow in the final stages of the disease, 6 percent of Medicare beneficiaries with dementia received them in their last six months of life in 2012.

Communication is key, but the skills that are needed to counsel patients aren’t being taught, Meier said.

“If you unleash an oncologist who does not know how to say, ‘Your cancer has progressed,’ but they know how to say, ‘I know what we can try,’ that’s why people end up in the ICU and with feeding tubes” at the end of life, she said.

## WASP Harmon denied Arlington burial

BY PETULA DVORAK  
WASHINGTON POST

Oh, they’ve made exceptions. The men in charge of approving coveted plots at Arlington National Cemetery have made hundreds of exceptions to the strict military rules about who gets buried there.

A chief White House usher was an exception. As were a doctor who developed an oral vaccine against polio, an ambassador and a national security advisor. And don’t forget the retired brigadier general, Charles F. Blair Jr., who didn’t meet the military requirements, but was married to a famous Hollywood actress, Maureen O’Hara. Right here, sir, we have a spot.

But when it comes to a World War II pilot who happens to be a woman? Nope. No exception available. No space in Arlington for you, Second Lt. Elaine Danforth Harmon.

This isn’t some longstanding, sexist rule that’s keeping Harmon, who died at 95 a year ago, from being given full military honors at Arlington. This is last year’s reversal of the eligibility that female pilots were granted in 2002.

Still think women’s rights aren’t seeing a backslide?

Harmon and her fellow Women Airforce Service Pilots (WASPs) risked their lives just like their male counterparts did. They ferried planes, tested repaired aircraft, instructed male pilots and towed targets for air combat training.

In fact, 38 of them did die while serving their coun-

**“Harmon and her fellow Women Airforce Service Pilots (WASPs) risked their lives just like their male counterparts did. They ferried planes, tested repaired aircraft, instructed male pilots and towed targets for air combat training**

try. And Harmon often told the story of other WASPs passing a hat to cover the cost of sending one of the killed female pilot’s body home. The military wouldn’t pay for that.

For 50 years, the women who stepped forward to serve when so few welcomed their service have been fighting for recognition.

Back when they were risking their lives, they fought for equal pay, for flight insurance, they fought to get their room and board paid for.

Three decades later, in 1975, Harmon testified before Congress, lobbying for full veteran’s rights. That finally came in 1977. And in 2002, the WASPs were granted eligibility for Arlington honors.

But that changed last year when then-Secretary of the Army John McHugh reversed their eligibility for burial or even simple inurnment — to have their ashes placed in the niche wall in the cemetery.

The Army picked the wrong WASP to shut out.

Harmon raised a family of fighters. Don’t forget, this was a grandma who continued flying small airplanes most of her life. She went bungee jumping in New Zealand when she turned 80. Her photos and memories are in aviation

and war museums across America.

So after her family mourned her death last spring and had her final request — burial at Arlington — denied, the fight became a three-generation affair.

“This is a family that’s not going to let it go,” said Emily Miller, Harmon’s 39-year-old granddaughter. “My sister was a lobbyist, I’m an attorney, and we grew up watching her talking at conferences, testifying, talking to people about what she did. We’re the family to do this.”

The campaign to get grandma into Arlington began when one of her daughters, Terry Harmon, 69, started writing letters.

Miller, one of her 11 grandchildren, knew that tactic wouldn’t work. “Mom, you can write letters,” she said, “but that’s not going to accomplish much.”

And that’s when Miller launched her social media campaign. She posted the picture of her grandma’s ashes on the shelf in her mom’s closet. She followed that with photos of grandma in her bomber jacket and by her airplanes. Grandma testifying before Congress. Grandma and other WASPs receiving the Congressional Gold Medal in 2009.

Miller’s lobbying got two

bills into the pipeline to get WASPs back into Arlington.

“We don’t want to just make one exception for her. This has to be a change in the law,” Miller said.

The House bill, introduced by Rep. Martha McSally (R-Ariz), a retired Air Force pilot, has 174 co-sponsors as of this week, Miller said.

And last week, Miller visited 31 Senate offices to lobby for support of the Senate bill, introduced by Sen. Barbara Mikulski (D-Maryland).

They have more than 170,000 supporters on a Change.Org petition.

All of this, really, is pretty ridiculous for her to have to do.

There are lots and lots of women buried in Arlington. Wives, most of them.

When you look at all the exception requests, you see wives, ex-wives, first wives. Usually, the military is fine with them. There are also plenty of women buried with their parents on something once called the “spinster policy” — women who were “never married” and “childless.”

Those exceptions, in official military documents, are usually explained as “humanitarian.”

“The ridiculous thing is that if her husband was buried there, then she could be buried there, too,” Miller said. “There are 15 WASPs there buried with their husbands.”

But each of those women deserved to be there on her own merits.

Humanitarian? How about moral. And just. And right.