Janet Yellen's computer screen saver on a neat desk in her office at the Federal Reserve is a photo of the garden at her home in Berkeley, Calif. If the Senate confirms her to be the central bank's next leader, the colorful patch of ground will remain a distant memory for much of the next four years.

Wealth of Policy Experience

Personal: Born Aug. 13, 1946, in Brooklyn, N.Y.; married to George Akerlof, winner of the 2001 Nobel Prize in economics; one son, Robert Akerlof, an economist at the University of Warwick in the U.K.

Education: Graduated summa cum laude from Brown University with a degree in economics in 1967 and earned a Ph.D. in economics from Yale University in 1971

Current affiliations: Vice chairwoman, Federal Reserve Board of Governors; professor emeritus at University of California, Berkeley

Milestones:

1971-76 Served as assistant professor in Harvard University's economics department

1977-78 Served as economist for the Federal Reserve Board of Governors, division of international finance

1978-80 Served as lecturer at the London School of Economics and Political Science

1980 Joined the faculty at UC Berkeley

1994-97 Served as Federal Reserve governor

1997-99 Served as chairwoman of the White House Council of Economic Advisers

1997-99 Served as chairwoman of the Economic Policy Committee of the Organization for Economic Cooperation and Development

2004-10 Served as president of the Federal Reserve Bank of San Francisco

Oct. 4, 2010-present Fed vice chairwoman under Chairman Ben Bernanke

These days Ms. Yellen is more focused on helping other things grow, such as consumer spending, investment and most of all jobs—all reasons President Barack Obama plans to announce Wednesday he will nominate the methodical and meticulous economist to run the Fed.

As the Fed's vice chairwoman since 2010, Ms. Yellen, 67 years old, has been at the forefront of pushing the Fed to use new and risky policies to nurse the crisis-damaged economy back to health. These policies include buying trillions of dollars of bonds to hold down long-term rates in hopes of lowering unemployment, a program known as quantitative easing, or QE.

While the easy-money leaning aligns her with current Fed Chairman Ben Bernanke, it puts her at odds with a minority of Fed policy makers. They say the extraordinary policies have done little to help the economy and risk triggering higher inflation and financial instability.

Her willingness to push boundaries to goose a listless economy reflects her intellectual heritage as a protégé of the late Nobel laureate James Tobin, a Yale University economist who advised presidents Kennedy and Johnson. Mr. Tobin's work built upon the ideas of Depression-era economist John Maynard Keynes and supported government action to combat problems such as high unemployment and poverty.

Ms. Yellen earned her Ph.D. in economics at Yale in 1971 with Mr. Tobin as her thesis adviser. As an academic, she specialized in the costs and causes of unemployment. She embraced her mentor's conviction that government and especially central banks can help reduce it.

Mr. Tobin encouraged his students to do "work that would not only meet a high intellectual standard, but would improve the well-being of mankind," Ms. Yellen told the Yale Daily News when he died in 2002.

The Fed's dual mandate from Congress is to foster maximum employment and price stability. Ms. Yellen's drive to use Fed policy to lower unemployment has caused some critics to question her commitment to keeping inflation under control. Sen. Richard Shelby (R., Ala.), for instance, voted against her confirmation as vice chairwoman in 2010 saying she had an "inflationary bias."

Her supporters counter that Ms. Yellen has often demonstrated her determination to prevent prices from rising too fast. For instance, as a Fed governor in September 1996, she and fellow governor Laurence Meyer urged then-Chairman Alan Greenspan to raise short-term interest rates to contain inflation, according to Mr. Meyer. (Mr. Greenspan didn't yield, but inflation remained in check.)

She also was a leader of the drive at the Fed to formally establish an inflation target of 2%, a longtime goal of hers and Mr. Bernanke's. Transcripts of the Fed's meeting in July 1996 show Ms. Yellen argued then that the central bank should set a goal of lowering inflation from 3% to 2%, a goal the Fed adopted informally for more than a decade. It formalized the 2% inflation target in 2011 under an agreement forged by Ms. Yellen. She has said 2% was a good objective given imperfections in the measurement of inflation, and the tradeoffs around inflation above and below that level.

Ms. Yellen went to Yale to study with Mr. Tobin after graduating summa cum laude from Brown University and before that as class valedictorian from her public high school in Brooklyn, N.Y. Her father, a doctor, worked out of the basement of the family's brownstone. Her mother, who quit teaching elementary school to raise her children, managed the family's finances and translated books into Braille in her free time, said Ms. Yellen's brother John Yellen, the archaeology program director at the National Science Foundation.

Ms. Yellen has served longer at the Fed than any other current official, having done stints in the 1970s as a staff researcher, the mid-1990s as a board governor and a decade as the San Francisco Fed chief followed by her time as vice chairwoman. She also served as head of President Bill Clinton's Council of Economic Advisers.

It was at the Fed in 1977—in the cafeteria, to be exact—that Ms. Yellen met her future husband, George Akerlof, who was a visiting economist. They married the following June.

"Not only did our personalities mesh perfectly, but we have also always been in all but perfect agreement about macroeconomics," Mr. Akerlof wrote in an autobiographical essay published when he won the Nobel Prize for economics in 2001. "Our lone disagreement is that she is a bit more supportive of free trade than I."

In 1980, they took positions at the University of California, Berkeley. Their son Robert Akerlof was born the next year. He is now an economist teaching at the U.K.'s University of Warwick.

"They seem like a very close couple," said Robert Shiller, a longtime friend of both and co-author with Mr. Akerlof. He describes Mr. Akerlof as a "free spirit" and Ms. Yellen as "more dignified."

The couple became frequent collaborators on a variety of research topics, including the role of community attitudes in controlling gang-related crime and the causes of rising out-of-wedlock births in the U.S. They also explored why unemployment exists and its relationship to wages.

"Whenever they would write a paper it became their whole life. It's all they wanted to talk about," said Christina Romer, a UC Berkeley economist, former Obama adviser and longtime friend of the couple. She recalled Ms. Yellen dashing off to Germany at Christmastime to seek some promising data for a paper the couple was working on looking at the economic consequences of the country's reunification.

Mr. Akerlof has skeptical views on free markets, which Ms. Yellen hasn't discussed as a Fed official. His famous "markets for lemons" paper, published in 1970, used malfunctions in used-car markets to challenge economic orthodoxy about efficient markets and helped him win the Nobel Prize.

In a talk at Warwick last year, Mr. Akerlof argued that "the public and economists have too great an acceptance that whatever markets do is right."

Colleagues describe Ms. Yellen as a voracious digester and synthesizer of data, who is constantly questioning and testing the view of the economy she constructs through careful work. She doesn't make decisions—or even statements at Fed meetings—off the cuff but only after careful research and preparation.

Among the public economic predictions made by Fed officials from 2009 to 2012, Ms. Yellen's have been the most accurate, according to a Wall Street Journal analysis.

As president of the San Francisco Fed, she made several prescient warnings about risks in the real-estate market in the years leading up to the 2008 financial crisis, though like most she underestimated the severity of the fallout from a national decline in housing prices.

At the Fed's December 2007 meeting, as financial markets were seizing up, Ms. Yellen warned that "the possibilities of a credit crunch developing and of the economy slipping into recession seem all too real." A committee of economists later determined the U.S. recession began that December.

Early in Ms. Yellen's career, it was hard to imagine she would go on to hold a senior position at the Fed, said Rachel McCulloch, international finance professor emerita at Brandeis University, who taught with Ms. Yellen at Harvard University in the 1970s. "I think at that time, she assumed she would continue on the academic track."

The macroeconomic ranks Ms. Yellen ascended were "a very male, very macho world," said Harvard economist Claudia Goldin, who met Ms. Yellen when they taught together as assistant professors in the mid-1970s. As for the recipe to Ms. Yellen's success: "You begin with a level of smarts, you add to that an ability to convey and a determination that comes without a sense of self-importance."