

SUSPECT - Steven Chu

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Steven Chu

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12th United States Secretary of Energy

In office

January 21, 2009 – April 22, 2013

President Barack Obama

Deputy Daniel Poneman

Preceded by Samuel Bodman

Succeeded by Ernest Moniz

Personal details

Born February 28, 1948 (age 65)

St. Louis, Missouri, U.S.

Political party Democratic^{[1][2]}

University of Rochester

Alma mater University of California, Berkeley

Website [Official website](#)

Steven Chu

Chinese 朱棣文

Hanyu Pinyin Zhū Diéwén

[\[show\]](#) Transcriptions

Steven Chu (Chinese: 朱棣文; pinyin: Zhū Diéwén; 韩语: 주득문) born February 28, 1948^[3] is an American physicist who became the 12th United States Secretary of Energy in 2009. Chu is known for his research at Bell Labs in cooling and trapping of atoms with laser light, which won him the Nobel Prize in Physics in 1997, along with his scientific colleagues Claude Cohen-Tannoudji and William Daniel Phillips.^[4] At the time of his appointment as Energy Secretary, he was a professor of physics and molecular and cellular biology at the University of California, Berkeley, and the director of the Lawrence Berkeley National Laboratory, where his research was concerned primarily with the study of biological systems at the single molecule level.^{[1][5]} Previously, he had been a professor of physics at Stanford University. He is a vocal advocate for more research into renewable energy and

nuclear power, arguing that a shift away from fossil fuels is essential to combating climate change.^{[11][12][13]} For example, he has conceived of a global "glucose economy", a form of a low-carbon economy, in which glucose from tropical plants is shipped around like oil is today.^[14] On February 1, 2013, he announced he would not serve for the President's second term and resigned on April 22, 2013.^[15]

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Personal life

Chu^[16] was born in [St. Louis, Missouri](#), with ancestry from [Taicang](#), in [Jiangsu](#).^[17] and graduated from [Garden City High School](#).^[18] He received both a [B.A.](#) in mathematics and a [B.S.](#) in physics in 1970 from the [University of Rochester](#). He went on to earn his [Ph.D.](#) in physics from the [University of California, Berkeley](#) in 1976, during which he was supported by a [National Science Foundation Graduate Research Fellowship](#).^[19]

Chu comes from a family of scholars. His father earned an advanced chemical engineering degree at the [Massachusetts Institute of Technology](#) and taught at [Washington University in St. Louis](#) and [Brooklyn Polytechnic Institute](#), while his mother studied economics. His maternal grandfather, Dr. [Shu-Jian Li](#), earned a Ph.D. degree from [Cornell University](#) and his mother's uncle, [Li Shuchu](#), a physical scientist, studied physics at the [Sorbonne](#) before they returned to [China](#).^[19] His older brother, [Gilbert Chu](#), is a professor and researcher of biochemicals and medicine at [Stanford University](#). His younger brother, [Morgan Chu](#), is a partner and the former Co-Managing Partner at the law firm [Kroll & Manella LLP](#).^[20] According to Chu, his two brothers and four cousins earned three [M.D.s](#), four [Ph.D.s](#), and a [J.D.](#) among them. In 1997, he married Jean Fetter, a [British American](#) and an [Oxford](#)-trained physicist.^[16] He has two sons, Geoffrey and Michael, from a previous marriage to Lisa Chu-Thiébar.^[16]

Beside his scientific career, Chu has also developed interest in various sports, including [baseball](#), [swimming](#) and [cycling](#). He taught himself [tennis](#) by reading a book in the eighth grade, and was a second-string substitute for the school team for three years. He also taught himself how to [pole vault](#) using bamboo poles obtained from the local carpet store.^[16] Chu said he never learned to speak [Chinese](#) because his parents always talked to him and his brothers in [English](#), although he said (in 1997) that he was trying to learn [Mandarin](#), believing that if he could stay in China for "at least six months", he would become fluent.^[16]

Career and research



Steven Chu lecturing.

After obtaining his doctorate, Chu remained at Berkeley as a [postdoctoral researcher](#) for two years before joining [Bell Labs](#), where he and his several co-workers carried out his Nobel Prize-winning [laser cooling](#) work. He left Bell Labs and became a professor of physics at [Stanford University](#) in 1987.^[21] Serving as the chair of its Physics Department from 1990 to 1993 and from 1999 to 2001. While at Stanford, Chu, together with three other professors, initiated the [Bio-X](#) program, which focuses on interdisciplinary research in biology and medicine,^[21] and played an important role in securing the funding of the [Kavli Institute for Particle Astrophysics and Cosmology](#).^[22] In August 2004, Chu was appointed as the director of the Lawrence Berkeley National Laboratory, a [U.S. Department of Energy National Laboratory](#), and joined UC Berkeley's Department of Physics and Department of Molecular and Cell Biology.^[23] Under Chu's leadership, the Lawrence Berkeley National Laboratory has been a center of research into [biofuels](#) and [solar energy](#) technologies.^[11] He spearheaded the laboratory's [Helios](#) project, an initiative to develop methods of harnessing solar power as a source of [renewable energy](#) for transportation.^[24]

Chu's early research focused on [atomic physics](#) by developing [laser cooling](#) techniques and the [magneto-optical trapping](#) of atoms using [lasers](#). He and his co-workers at Bell Labs developed a method of cooling atoms by employing six laser beams opposed in pairs and arranged in three directions at right angles to each other. Trapping atoms with this method allows scientists to study individual atoms with great accuracy. Additionally, the technique can be used to construct an [atomic clock](#) with great precision.^[24]

While at Stanford, Chu's research interests expanded into [biological physics](#) and [polymer physics](#) at the [single molecular level](#). In the field of biological physics, he studied [enzyme](#) activity and [protein](#) and [RNA folding](#) using techniques such as [fluorescence resonance energy transfer](#), [atomic force microscopy](#), and [optical tweezers](#). Chu's research in [polymer physics](#) made use of individual molecules of [DNA](#) to study [polymer dynamics](#) and [phase transitions](#) associated with these dynamics. He further continued his research in atomic physics as well, developing new methods of laser cooling and trapping.^[24]

Energy and climate change

Chu has been a vocal advocate for more research into [renewable energy](#) and [nuclear power](#), arguing that a shift away from [fossil fuels](#) is essential to combat [climate change](#) and [global warming](#).^{[11][12][13]} He also spoke at the 2009 and 2011 National Science Bowl about the importance of America's science students, emphasizing their future role in environmental planning and global initiative. Chu said that a typical [coal power](#) plant emits 100 times more radiation than a nuclear power plant.^[25]

Chu warns that [global warming](#) could wipe out California farms within the century.^[26]

He has joined the [Copenhagen Climate Council](#),^[28] an international collaboration between business and science, established to create momentum for the [2009 United Nations Climate Change Conference in Copenhagen](#).

Chu was instrumental in submitting a winning bid for the [Energy Biosciences Institute](#), a [BP](#)-funded \$500 million multi-disciplinary collaborative project between UC Berkeley, the Lawrence Berkeley Lab and the [University of Illinois](#). This sparked controversy on the Berkeley campus, where some fear the alliance could harm the school's reputation for academic integrity.^{[29][30][31][32]}

Based partially on his research at UC Berkeley, Chu has speculated that a global "glucose economy", a form of a [low-carbon economy](#), could replace the current system. In the future, special varieties of high-glucose plants would be grown in the [tropics](#), processed, and then the chemical would be shipped around like [oil is today](#) to other countries. The [St. Petersburg Times](#) has stated that Chu's concept "shows vision on the scale needed to deal with global warming."^[14]

Chu has also advocated making the roofs of buildings and the tops of roads around the world white or other light colors, which could possibly reflect a lot of [sunlight](#) back into space and significantly [mitigate global warming](#). The effect would be, according to Chu, similar to taking every car in the world off the roads for about 11 years.^[14] Samuel Thernstrom, a resident fellow at the [American Enterprise Institute](#) and co-director of the AEI [Geoengineering](#) Project, expressed support in [The American](#) and remarked "Chu has done the nation a service" since "the idea has an important role to play in the climate debate."^[33]

Honors and awards

Steven Chu is a co-winner of the [Nobel Prize in Physics](#) in 1997 for the "development of methods to cool and trap atoms with laser light", shared with [Claude Cohen-Tannoudji](#) and [William Daniel Phillips](#). He is a member of the [United States National Academy of Sciences](#), the [American Academy of Arts and Sciences](#), the [American Philosophical Society](#) and the [Academia Sinica](#), and is a foreign member of the [Chinese Academy of Sciences](#) and of the [Korean Academy of Science and Engineering](#).^[34] He was also awarded the [Humboldt Prize](#) by the [Alexander von Humboldt Foundation](#) in 1995.

Dr. Chu received an honorary doctorate from [Boston University](#) when he was the keynote speaker at the 2007 commencement exercises.^[35] He is a Senior Fellow of the [Design Futures Council](#),^[36] Diablo magazine, based east of Berkeley in Walnut Creek, California, honored Dr. Chu with one of its annual Eco Awards in its April 2009 issue.^[37] shortly after he was nominated as energy secretary. [Washington University in St. Louis](#) and [Harvard University](#) awarded him an honorary doctorate during their 2010 and 2009 commencement exercises, respectively.^{[38][39]} He was awarded an honorary degree from [Yale University](#) during its 2010 commencement.^[40] He was also awarded an honorary degree from the [Polytechnic Institute of New York University](#), the same institution at which his father taught for several years, during its 2011 commencement.^[41] [Penn State University](#) awarded him an honorary doctorate during their 2012 commencement exercises.^[42]

Secretary of Energy



Steven Chu meeting with President Barack Obama on February 5, 2009.

His nomination to be Secretary of Energy was unanimously confirmed by the [U.S. Senate](#) on January 20, 2009.^[43] On January 21, 2009, Chu was sworn in as Secretary of Energy in the [Barack Obama administration](#). Chu is the first person appointed to the US Cabinet after having won a Nobel Prize.^[44] He is also the second Chinese American to be a member of the US Cabinet after [Elaine Chao](#).^[45]

His scientific work continues, however, including a paper on [gravitational redshift](#) published in [Nature](#) (463, 926–929) in February 2010.^[46] and a second one co-authored in July 2010.^{[47][48]}

In March 2011 Chu said that federal regulators should not delay approving construction licenses for planned U.S. nuclear power plants because of the [Fukushima Daiichi nuclear disaster](#). "I think those things can proceed," Chu told reporters on Capitol Hill, referring to construction license applications pending at the U.S. [Nuclear Regulatory Commission](#).^[49]

In August 2011 Chu praised an advisory panel's report on curbing the environmental risks of natural-gas development. Chu responded to the panel's report on [hydraulic fracturing](#), the controversial drilling method that is enabling a U.S. gas boom while bringing fears of groundwater contamination. The report called for greater data collection of air and water data, as well as "rigorous" air pollution standards and mandatory disclosure of chemicals used in the hydraulic fracturing process, among other steps. "The report ... recommends a range of tools for implementing these measures, including regulation, continuous improvement in best practices by industry, and ongoing research and development," Chu said in a statement. "I will be working closely with my colleagues in the Administration to review the recommendations and to chart a path for continued development of this vital energy resource in a safe manner," he added.^[50]

On February 1, 2013, Chu announced his intent to resign.^[51] In his resignation announcement to Energy Department employees, he warned of the risks of climate change from continued reliance on fossil fuels, and wrote, "As the saying goes, the Stone Age did not end because we ran out of stones; we transitioned to better solutions."^[52] He resigned on April 22, 2013.

See also

 [Government of the United States portal](#)

 [Biography portal](#)

 [Energy portal](#)

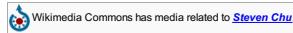
 [Asian Americans portal](#)

- [United States Department of Energy](#)
- [Timeline of low-temperature technology](#)
- [Energy policy of the United States](#)

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External links



- [Secretary of Energy Steven Chu at United States Department of Energy](#)
- [The Nobel Prize in Physics 1997](#) from [Nobel Prize](#) with biography, lecture, diploma, photos, symposia and links
- [Bio from Lawrence Berkeley National Laboratory](#)
 - [Energy@Berkeley: Solutions for Global Warming](#), [Berkeley University](#), November 13, 2007 includes link to event on [YouTube](#)
 - [BP Makes Berkeley World Center for Biofuels](#) press release on the BP collaboration February 16, 2007
 - [Alternative Energy Sources](#) March 28, 2005, Chu's PowerPoint presentation
- [Boulder's physicists give Chu thumbs-up](#) Article on other Nobel laureates' reactions to Chu as Secretary of Energy
- [Biography and Bibliographic Resources](#), from the [Office of Scientific and Technical Information, United States Department of Energy](#)
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- [Bio and personal page](#) from [Stanford University](#) Department of Physics
 - [Steven Chu: Uncovering the secret life of molecules](#) from [Stanford \[Online\] Report](#) (July 16, 1997)
- [Chu's biophysics research group](#) at [University of California, Berkeley](#)
 - [Growing energy: Berkeley Lab's Steve Chu on what termite guts have to do with global warming](#) from [UC Berkeley News](#) (September 30, 2005)
- [Chu's lecture on the Helios Project for renewable energy](#) on [YouTube](#) March 12, 2008
- ["Climate Disasters a 'Significant Possibility'](#) Interview with Steve Chu at [Copenhagen Climate Council](#), November 3, 2008.
- [Interview with Steven Chu from "Growing Energy"](#) from the PBS series [e" energy](#)
- [Appearances](#) on [C-SPAN](#)
 - [Steven Chu](#) at the [Internet Movie Database](#)
 - [Steven Chu](#) collected news and commentary at [The Washington Post](#)
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- ["Weird Little Bacteria" in Our Energy Future](#) by Steven Chu in April 16, 2012 [Scientific American](#)
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Jul 30, 2013 ... Steven Chu, former U.S. Secretary of Energy and Nobel laureate in physics. Bonnie Bassler, chair, Department of Molecular Biology, Princeton ...

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[Chu stepping down: "I came with dreams and am leaving with a set ...](#)

Feb 1, 2013 ... Energy Secretary Steven Chu will be leaving his post, the White House confirmed Friday, exiting the ... This crook should be in Gitmo.

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[Energy Secretary Chu Tries to Walk Back His Desire for Higher Gas ...](#)

Mar 13, 2012 ... In a stunning round of questioning this afternoon, Energy Secretary Steven Chu said he no longer wishes for gas prices to rise to historic levels, ...

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[The Absent-Minded Energy Secretary | RealClearPolitics](#)

Nov 20, 2011 ... You would think that means that Chu is a brainiac who makes shrewd decisions and is ... 9: "Fundraising support after conditional commitment: Steven Chu visits Solyndra with press ... Clive Crook: Democrats Are Stupid, Too.

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[Ten Most Wanted Corrupt Politicians - Judicial Watch](#)

: "The final decisions on Solyndra were mine," said Secretary of Energy Steven Chu in his testimony before the ...

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[Charles Homans: How Steven Chu Lost his Battle with Washington ...](#)

Jan 25, 2012... went to Denver to collect his nomination, Steven Chu stepped onto a ... Everything that I know about [Chu] is that he is not a corrupt guy.

www.newrepublic.com/article/politics/magazine/100037/steven-chu-energy-obama-solyndra - [View by Iquick Proxy](#) - [Highlight](#)

[PATRIOT OR TRAITOR | Steven Chu](#)

May 30, 2013 ... On March 12, 2012, Rep. Darrell Issa's (R-CA) Energy and Oversight Committee exposed the full extent of Chu's incompetence and corruption ...

www.patriotortraitor.com/steven-chu/ - [View by Iquick Proxy](#) - [Highlight](#)

[Most Corrupt Politicians 2012 - YouTube](#)

Sep 12, 2013 ... Most Corrupt Politicians 2012 "The final decisions on Solyndra were mine," said Secretary of Energy Steven Chu in his testimony before the ...

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[Top 10 "Most Corrupt" List Dominated by Obama Administration](#)

Jan 3, 2013 ... Judicial Watch, which investigates and prosecutes official corruption, was ... Secretary of Energy Steven Chu, meanwhile, earned his spot ...

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[Steven Chu must go - Energy Dept. Disaster - Stand Up America US](#)

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[The Green Corruption Files : Senator Harry Reid's Part in Green ...](#)

Jul 15, 2012 ... Senator Harry Reid's Part in Green-Energy Crony-Corruption, Part ... Leader Harry Reid (D-NV) and U.S. Secretary of Energy Steven Chu ...

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[Steven Chu | National Legal and Policy Center](#)

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[Michelle Malkin | Summer of Corruption: Obama's billion-dollar ...](#)

Aug 10, 2010 ... Washington, D.C. – Today, U.S. Energy Secretary Steven Chu and U.S. Senator Dick Durbin announced the awarding of \$1 billion in Recovery ...

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[Articles: Solar Energy: Popular but Corrupt - American Thinker](#)

Mar 15, 2012 ... A former Obama campaign staffer suggested in February, 2011, that DOE Secretary Dr. Steven Chu be fired to counter GOP attacks that surely ...

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[House Oversight investigation reveals politics and corruption at the ...](#)

Nov 1, 2012 ... For a change, he doesn't blame them on George Bush, but instead on Energy Secretary Steven Chu, who is academically gifted, but an ...

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[Green Corruption: Department of Energy "Junk Loans" and ...](#)

May 1, 2012 ... While the media was "tripping out" over Energy Secretary Chu giving ... Secretary Steven Chu Stalls Natural Gas Exports · Green Corruption ...

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Feb 4, 2013 ... Author, 'Oil and Finance: The Epic Corruption Continues' ... In his letter of resignation from the post of Energy Secretary, Chu characterized his ...

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Oct 4, 2011 ... The long-shot presidential candidate attacked Chu on his website ... into the mismanagement and potential corruption in the loan for Solyndra.

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[Energy Secretary Steven Chu leaving administration](#)

Feb 1, 2013 ... Secretary of Energy Steven Chu announced Friday that he was resigning ... Chu, a Nobel Prize winner in physics and former director of the ...

[View by Iquick Proxy - Highlight](http://www.washingtonpost.com/blogs/post-politics/wp/2013/02/01/energy-secretary-stephen-chu-leaving-administration/)

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Jan 2, 2013 ... Secretary of Energy Steven Chu ... Judicial Watch goes into a detailed analysis of the misdeeds of each of the above listed corrupt politicians.

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[On Solyndra, the buck stops with Secretary Steven Chu - Darren ...](#)

Sep 29, 2011 ... Energy Secretary Steven Chu is taking responsibility for making the final decisions at two critical moments in the rise and fall of Solyndra.

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Apr 5, 2012 ... Miller in 2010 urged DOE Secretary Steven Chu to approve the loan ... This corrupt Democrat will stay in Congress for at least another ten years ...

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[Daily Kos: Open thread for night owls: Steven Chu has some ...](#)

Feb 1, 2013 ... Steven Chu, the nation's Nobel laureate secretary of energy for the what they do know they believe in graft and corruption over the free ...

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[Chu stepping down: "I came with dreams and am leaving with a set ...](#)

Feb 1, 2013 ... Energy Secretary Steven Chu will be leaving his post, the White House corrupt administration) or did he leave so someone even worse

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[Citing Solyndra, House GOP Whip Says Steven Chu Should Be ...](#)

Nov 18, 2011 ... Citing Solyndra, House GOP Whip Says Steven Chu Should Be Replaced ... increase the opportunity for and likelihood of fraud and corruption.

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Steven Chu resigns and a tree falls in the forest. 02/02/2013 | POWER. By Kennedy Maize (@kennedy_maize). Washington, D.C., 3 February 2013 – Steven Chu ...

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Feb 27, 2012 ... While the cronyism and corruption appeared extensive, until recently no one ... the Westly Group, and an adviser to DOE Secretary Steven Chu.

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[Video: Did Valerie Jarrett Push Corrupt Solyndra Loan Deal?](#)

Sep 16, 2011... review by September 4, 2009, when Joe Biden and Energy Secretary Steven Chu hoped to attend the company's groundbreaking ceremony.

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Solyndramobile: How bribery, corruption & **organized crime** destroyed taxpayer jobs and American leadership ~ An Online Newspaper about Tesla Motors, Fisker, and the whole CAR-GATE affair

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[Ex-Energy chief Chu joins carbon capture company - KAUZ-TV...](#)

Former Energy Secretary Steven Chu is joining the board of directors of a Canadian company that says it has a cost-effective way to capture and reuse carbon ... Lawton Crime Stoppers need your help finding a man accused of sexually ... Restrictions are **organized** city by city. Community Service ...

[Organized Crime Finds Green Energy Subsidies Irresistible #...](#)

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[LiveLeak.com - Solyndra: How Far obama and the democrats Will...](#)

... which had won praise from the White House and Energy Secretary Steven Chu, ... point of a much larger racketeering project in which the White House and Democrat lawmakers are guilty of running an **organized crime** ring. Republican lawmakers are just now getting on the ball. ...

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