



Prof. Jennifer A. Doudna

Investigator, Howard Hughes Medical Institute; Professor of Molecular and Cell Biology, UC Berkeley; Professor of Chemistry, UC Berkeley; Li Ka Shing Chancellor's Chair in Biomedical Sciences, UC Berkeley; Investigator, Gladstone Institutes; Executive Director, Innovative Genomics Institute, UC Berkeley/UCSF; Nobel laureate in Chemistry, 2020



Most important awards, prizes and academies

Honorary Doctorates of Science: University of Leuven, 2015; Yale University, 2016; Mount Sinai School of Medicine, 2017 Hong Kong University, 2017; University of Southern California, 2018 Bates College, 2019; York University, 2019 Oxford University, 2019. *Awards and Prizes:* 2020: Nobel Prize for Chemistry; Vanderbilt Prize in Biomedical Science; Wolf Prize in Medicine, The Wolf Foundation, Israel. 2019: Harvey Prize, Technion, Israel; Nierenberg Prize, Scripps Oceanographic Institute; Lui Che Woo Welfare Betterment Prize; Microbiology Society Prize Medal, Scotland. 2018: American Cancer Society Medal of Honor; Kavli Prize in Nanoscience, Norway; V de Vida Award, Spain; Croonian Medal, Royal Society; National Academy of Sciences

Award in Chemical Sciences; Gustavus John Esselen Award for Chemistry, Northeastern Sec Amer Chemical Society; Lila & Murray Gruber Memorial Cancer Research Award, American Academy of Dermatology; Dickson Prize in Science, Carnegie Mellon University; Pearl Meister Greengard Prize, Rockefeller University. 2017: Genius 100 Award, Canada; George R. Stibitz Computer & Communications Pioneer Award; The Edward O. Wilson Biodiversity Technology Pioneer Award; Golden Plate Award, International Achievement Organization; Albert Einstein Foundation Award; Wallace H. Coulter Lectureship Award, The American Association for Clinical Chemistry; Albany Medical Center Prize; BBVA Frontiers of Knowledge Award, Spain; F.A. Cotton Medal, The Texas A&M Section of the American Chemical Society; The Japan Prize, Japan Prize Foundation; Luminary Award, Precision Medicine World Conference. 2016: John Scott Medal and Premium, Philadelphia; Heineken Prize, Netherlands; Tang Prize in Biopharmaceutical Science, Taiwan; Paul Allen Distinguished Investigator; Canada Gairdner Prize, Canada; Warren Alpert Foundation Prize, Harvard Medical School; Nakasone Award, Human Frontier Science Program; Paul Ehrlich and Ludwig Darmstaedter Prize, Germany; L'Oreal-UNESCO International Prize for Women in Science. 2015: Association of Biomolecular Resource Facilities Award; Charles Butcher Award, University of Colorado; Massry Prize, UCLA/USC; Gruber Prize in Genetics; Princess of Asturias Award for Technical and Scientific Research; International Society for Transgenic Technologies Prize; Time 100, Time Magazine's 100 Most Influential People in the World. 2014: Breakthrough Prize in Life Sciences; Member, National Academy of Inventors; Foreign Policy's 100 Leading Global Thinkers; Jacob Heskell Gabbay Award in Biotechnology and Medicine; Dr. Paul Janssen Award for Biomedical Research; Lurie Prize, Foundation for the NIH. 2013: BayBio Pantheon Award; Hans Neurath Award, Protein Society; Mildred Cohn Award, ASBMB. 1996-2007: The Nucleic Acid Group Award, NACON VII, Sheffield, UK (2007); Eli Lilly Award in Biological Chemistry, American Chemical Society (2000); Jean Francois LeFevre Memorial Lectureship, CNRS, Strasbourg, France (2000); R.B. Woodward Visiting Professorship, Harvard University (2000); Alan T. Waterman Award, National Science Foundation (2000); National Academy of Sciences Award for Initiatives in Research (1999); Johnson Foundation Prize for Innovative Research (1996); Beckman Young Investigators Award (1996). *Society Membership*: Member, National Academy of Sciences, elected 2002; Member, American Academy of Arts and Sciences, elected 2003; Fellow, American Association for the Advancement of Science, elected 2008; Member, National Academy of Medicine, elected 2010; Member, National Academy of Inventors, elected 2014; Fellow, American Society for Microbiology, elected 2015; Foreign Member, The Royal Society, elected 2016; Fellow, American Association for Cancer Research, elected 2017.

Summary of scientific research

Dr. Jennifer A. Doudna's groundbreaking development of [CRISPR-Cas9](#) as a [genome](#)-engineering technology, with collaborator Emmanuelle Charpentier, earned the two the 2020 Nobel Prize in Chemistry and forever changed the course of human and agricultural [genomics](#) research. This powerful technology enables scientists to change [DNA](#) – the code of life – with a precision

only dreamed of just a few years ago. Labs worldwide have re-directed the course of their research programs to incorporate this new tool, creating a CRISPR revolution with huge implications across biology and medicine.

In addition to her scientific achievements, Doudna is a leader in public discussion of the ethical implications of [genome editing](#) for human biology and societies, and advocates for thoughtful approaches to the development of policies around the safe use of CRISPR technology.

Doudna's work led TIME to recognize her as one of the "100 Most Influential People" in 2015 and a runner-up for "Person of the Year" in 2016. She is the co-author of "A Crack in Creation," a personal account of her research and the societal and ethical implications of [gene](#) editing.

The [Doudna Lab](#) pursues a mechanistic understanding of fundamental biological processes involving [RNA](#) molecules. Recent work from Jennifer and her lab has focused on development of new tools for genome editing, cutting-edge research into delivery techniques for CRISPR-based therapies, next-generation CRISPR diagnostics, and continued investigations into the structure and mechanism of CRISPR-[Cas](#) systems. In 2020, the COVID-19 pandemic prompted Jennifer and members of the Doudna Lab to quickly establish a pop-up [diagnostic testing lab](#) at the IGI, and pivot to [rapid research projects](#) to help address the crisis.

Recent publications

[Human molecular genetics and genomics — important advances and exciting possibilities.](#) Collins FS, Doudna JA, Lander ES, and Rotimi CN. *The New England Journal of Medicine* (2021); [CRISPR-Cas \$\Phi\$ from huge phages is a hypercompact genome editor.](#) Pausch P, Al-Shayeb B, Bisom-Rapp E, Tsuchida CA, Li Z, Cress BF, Knott GJ, Jacobsen SE, Banfield JF, and Doudna JA. *Science* (2020); [Blueprint for a pop-up SARS-CoV-2 testing lab.](#) Amen AM, Barry KW, Boyle JM, Brook CE, Choo S, Cornmesser LT, Dilworth DJ, Doudna JA, Ehrenberg AJ, Fedrigo I, Friedline SE, Graham TGW, Green R, Hamilton JR, Hirsh A, Hochstrasser ML, Hockemeyer D, Krishnappa N, Lari A, Li H, Lin-Shiao E, Lu T, Lyons EF, Mark KG, Martell LA, Martins ARO, McDevitt SL, Mitchell PS, Moehle EA, Naca C, Nandakumar D, O'Brien E, Pappas DJ, Pestal K, Quach DL, Rubin BE, Sachdeva R, Stahl EC, Syed AM, Tan I, Tsuchida CA, Tollner A, Tsui CK, Turkalo TK, Urnov FD, Warf MB, Whitney ON, and Witkowsky LB. *Nature Biotechnology* (2020); [Clades of huge phages from across Earth's ecosystems.](#) Al-Shayeb B, Sachdeva R, Chen LX, Ward F, Munk P, Devoto A, Castelle CJ, Olm MR, Bouma-Gregson K, Amano Y, He C, Méheust R, Brooks B, Thomas A, Lavy A, Matheus-Carnevali P, Sun C, Goltsman DSA, Borton MA, Sharrar A, Jaffe AL, Nelson TC, Kantor R, Keren R, Lane KR, Farag IF, Lei S, Finstad K, Amundson R, Anantharaman K, Zhou J, Probst AJ, Power ME, Tringe SG, Li WJ, Wrighton K, Harrison S, Morowitz M, Relman DA, Doudna JA, Lehours AC, Warren L, Cate JHD, Santini JM, and Banfield JF. *Nature* (2020); [The promise and challenge of therapeutic genome editing.](#) Doudna JA. *Nature* (2020); [CasX enzymes comprise a distinct family of RNA-guided genome editors.](#) Liu J, Orlova N, Oakes BL, Ma E, Spinner HB, Baney KLM, Chuck J, Tan D, Knott GJ, Harrington LB, Al-Shayeb B, Wagner A, Brötzmann J, Staahl BT, Taylor KL, Desmarais J, Nogales E, and Doudna JA. *Nature* (2019).

