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## Biography (Long Version)

### Emmanuelle Charpentier

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**Emmanuelle Charpentier** studied biochemistry, microbiology and genetics at the University Pierre and Marie Curie (now Sorbonne University), Paris, France and obtained her Ph.D. in microbiology for her research performed at the Pasteur Institute, Paris, France. She then pursued her scientific career in the United States at The Rockefeller University, New York University Medical Center (now NYU Langone Health) and the Skirball Institute of Biomolecular Medicine (all in New York, NY) and at St. Jude Children's Research Hospital (in Memphis, TN). Emmanuelle returned to Europe to establish her own research group as Assistant and Associate Professor at the Max F. Perutz Laboratories (now Max Perutz Labs) at the University of Vienna in Austria where she obtained her habilitation in the field of microbiology. She was then appointed Associate Professor at The Laboratory for Molecular Infection Medicine Sweden (MIMS, part of Nordic European Molecular Biology Laboratory (EMBL) Partnership for Molecular Medicine) at Umeå University in Sweden, where she habilitated in the field of medical microbiology and was active as a Visiting Professor until 2017. Between 2013 and 2015, Emmanuelle was Head of the Department of Regulation in Infection Biology at the Helmholtz Centre for Infection Research, Braunschweig, and Professor at the Medical School of Hannover in Germany. In 2013, she was awarded an Alexander von Humboldt Professorship, which she held in 2014 and 2015. In 2015, Emmanuelle was appointed Scientific Member of the Max Planck Society. From 2015 to 2018, she was Scientific Director and Head of the Department of Regulation in Infection Biology at the Max Planck Institute for Infection Biology in Berlin, Germany. Since 2016, Emmanuelle has been an Honorary Professor at Humboldt University in Berlin. Since 2018, she has been Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens in Berlin, an independent institute she founded together with the Max Planck Society.

Emmanuelle is recognized as a world expert on the regulatory mechanisms underlying processes of infection and immunity in bacteria that cause diseases in humans. Her work and that of her lab have led to several fundamental discoveries and to a better understanding of the molecular pathways that regulate antibiotic resistance and virulence in bacterial pathogens. With her groundbreaking discoveries in the field of RNA-mediated regulation based on the CRISPR-Cas9 system (primarily in the human pathogen *Streptococcus pyogenes*), Emmanuelle has laid the foundation for the development of a highly versatile and specific genome editing and engineering technology. This discovery is revolutionizing life science research and opening up new opportunities in the field of biotechnologies and biomedical gene therapies that have an impact on society and humanity. The field of CRISPR-Cas continues to grow at a rapid pace, with exciting new developments emerging almost weekly.

Emmanuelle is inventor and co-owner of the core intellectual property of the CRISPR-Cas9 technology. She is co-founder of CRISPR Therapeutics and ERS Genomics, two companies she founded with Rodger Novak and Shaun Foy to develop the CRISPR-Cas genome engineering technology for biotechnology and biomedical applications.

For her and her team's contributions to the discovery of CRISPR-Cas9, Emmanuelle has received numerous international distinctions, including decorations, honors, prizes and awards, elected memberships of national and international scientific academies, and honorary doctorates from Europe, Asia and North America. Among the most prestigious awards, she has received the Nobel Prize in Chemistry, the Japan Prize, the Kavli Prize in Nanoscience, the Wolf Prize, the Tang Prize for Biopharmaceutical Science, the Breakthrough Prize in Life Sciences, the Canada Gairdner International Award, the Massry Prize and many others.

CRISPR-Cas9 has rapidly move from a specialized area of scientific research to a major topic in world affairs. Emmanuelle and her scientific contributions have been featured in *OONOM* (2017, 2018, 2019, 2020, 2022), *Forbes* (Europe's Top 50 Women in Tech 2018, 50 over 50 EMEA 2022), *TIME* magazine (2016 short list for Person of the Year and 2015 list of the 100 Most Influential People in the World), *Global Leaders Today* (Global 100 Inspirational Leaders 2022), *Vanity Fair* (2014, 2015, 2018 lists of the 50 Most Influential French People, 2016 list of The New Establishment), *Foreign Policy* (2014 list of 100 Leading Global Thinkers) and many more.

More information about Emmanuelle is available at <[www.emmanuelle-charpentier.org](http://www.emmanuelle-charpentier.org)>.

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## Biography (Shorter Versions)

### Emmanuelle Charpentier

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**Emmanuelle Charpentier** studied biochemistry, microbiology and genetics at the University Pierre and Marie Curie (now Sorbonne University), Paris, France and obtained her Ph.D. in microbiology for her research performed at the Pasteur Institute, Paris, France. She then continued her work in the United States, at The Rockefeller University, New York University Medical Center (now NYC Langone Health) and the Skirball Institute of Biomolecular Medicine (all in New York, NY) and at St. Jude Children's Research Hospital (in Memphis, TN). Emmanuelle returned to Europe to establish her own research group as Assistant and Associate Professor at the Max F. Perutz Laboratories (now Max Perutz Labs) at the University of Vienna in Austria where she obtained her habilitation in the field of microbiology. She was then appointed Associate Professor at The Laboratory for Molecular Infection Medicine Sweden (MIMS, part of Nordic European Molecular Biology Laboratory (EMBL) Partnership for Molecular Medicine) at Umeå University in Sweden, where she habilitated in the field of Medical Microbiology and was active as a Visiting Professor until 2017. Between 2013 and 2015, Emmanuelle was Head of the Department of Regulation in Infection Biology at the Helmholtz Centre for Infection Research, Braunschweig, and Professor at the Medical School of Hannover in Germany. In 2013, she was awarded an Alexander von Humboldt Professorship, which she held in 2014 and 2015. In 2015, Emmanuelle was appointed Scientific Member of the Max Planck Society. From 2015 to 2018, she was Scientific Director and Head of the Department of Regulation in Infection Biology at the Max Planck Institute for Infection Biology in Berlin, Germany. Since 2016, Emmanuelle has been an Honorary Professor at Humboldt University in Berlin. Since 2018, she has been Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens in Berlin, an independent institute she founded together with the Max Planck Society. Emmanuelle has laid the foundation for the development of a highly versatile and specific genome editing technology – CRISPR-Cas9 – that is revolutionizing life sciences, biotechnology and medicine. For her groundbreaking discovery and innovative research, she has received numerous prestigious international awards and honors, including the Nobel Prize in Chemistry in 2020, and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics with Rodger Novak and Shaun Foy.

More information about Emmanuelle is available at <[www.emmanuelle-charpentier.org](http://www.emmanuelle-charpentier.org)>.

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#### Short Version (#200 words)

**Emmanuelle Charpentier, Ph.D.** is Founding, Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens and Honorary Professor at Humboldt University, Berlin, Germany. Prior to her current appointments, she was Scientific Director at the Max Planck Institute for Infection Biology, Berlin; Alexander von Humboldt Professor, Department Head at the Helmholtz Centre for Infection Research, Braunschweig and Professor at the Hannover Medical School, Germany; Visiting and Associate Professor at the Laboratory for Molecular Infection Medicine Sweden (EMBL Partnership), Umeå University, Sweden; Assistant and Associate Professor at the Max Perutz Labs, University of Vienna, Austria. Emmanuelle held several research associate positions in the US: The Rockefeller University, New York University Medical Center and Skirball Institute of Biomolecular Medicine, New York, and St. Jude Children's Research Hospital, Memphis. She received her education in microbiology, biochemistry and genetics at the University Pierre and Marie Curie and the Pasteur Institute in Paris, France. Emmanuelle has been widely recognized for her groundbreaking research that laid the foundation for the revolutionary CRISPR-Cas9 genome engineering technology. She has received numerous prestigious international awards and honors and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics with Rodger Novak and Shaun Foy.

More information about Emmanuelle is available at <[www.emmanuelle-charpentier.org](http://www.emmanuelle-charpentier.org)>.

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#### Short Version (#100 words)

**Emmanuelle Charpentier, Ph.D.** is a French microbiologist, geneticist and biochemist. She has developed her scientific career in academic research institutions in France, the United States, Austria, Sweden and Germany. She is Founding, Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens and Honorary Professor at Humboldt University, Berlin, Germany. Emmanuelle has been widely recognized for her groundbreaking research that laid the foundation for the revolutionary CRISPR-Cas9 genome engineering technology. She has received numerous prestigious international awards and honors and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics with Rodger Novak and Shaun Foy.

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