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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 continued 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) of the University of Vienna in Austria where she habilitated 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 is Honorary Professor at Humboldt University in Berlin. Since 2018, she is Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens in Berlin, an independent institute that she founded together with the Max Planck Society.

Emmanuelle is recognized as a world-leading expert in regulatory mechanisms underlying processes of infection and immunity in bacterial human pathogens. Her and her lab's work has led to several seminal discoveries and insights into molecular pathways governing antibiotic resistance and virulence of bacteria causing diseases in humans. With her ground-breaking findings in the field of RNA-mediated regulation based on the CRISPR-Cas9 system (mainly in the human pathogen *Streptococcus pyogenes*), Emmanuelle has laid the foundation for the development of a novel, highly versatile and specific genome editing and engineering technology. This discovery is revolutionizing life sciences research and has opened whole new opportunities in biotechnologies and in biomedical gene therapies that are impacting society and humanity. The field of CRISPR-Cas continues to develop at dazzling speed, with exciting new developments still emerging almost weekly.

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

For her and her team's contributions to the so-called CRISPR-Cas9 discovery, Emmanuelle has received numerous international distinctions that include decorations, honors, prizes and awards, elected memberships of national and international scientific academies, and honorary doctorate degrees from Europe, Asia and North America. Among the most prestigious prizes, she has received 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 quickly developed from a specialised field of scientific research to a major topic in global affairs. Emmanuelle and her scientific contributions have been featured in *OONOM* (2017, 2018, 2019), *Forbes* (Europe's Top 50 Women in Tech 2018), *TIME* magazine (2016 short list for Person of the Year and 2015 list of the 100 Most Influential People in the World), *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 others.

Additional information about Emmanuelle can be found 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) of the University of Vienna in Austria where she habilitated 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 is Honorary Professor at Humboldt University in Berlin. Since 2018, she is Scientific and Managing Director of the Max Planck Unit for the Science of Pathogens in Berlin, an independent institute that she founded together with the Max Planck Society. Emmanuelle has laid the foundation for the development of a novel, 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 distinctions, and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics together with Rodger Novak and Shaun Foy.

Additional information about Emmanuelle can be found 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 from the University Pierre and Marie Curie and the Pasteur Institute in Paris, France. Emmanuelle has been widely recognized for her innovative research that laid the foundation for the ground-breaking CRISPR-Cas9 genome engineering technology. She has received numerous prestigious international awards and distinctions, and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics together with Rodger Novak and Shaun Foy.

Additional information about Emmanuelle can be found 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 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 innovative research that laid the foundation for the ground-breaking CRISPR-Cas9 genome engineering technology. She has received numerous prestigious international awards and distinctions, and is an elected member of national and international scientific academies. She is co-founder of CRISPR Therapeutics and ERS Genomics together with Rodger Novak and Shaun Foy.

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