

Rodolphe BARRANGOU

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Professional Preparation

Universite Rene Descartes, Paris V, France	Life Sciences	B.S.	1996
Universite de Technologie Compiegne, France	Biological Engineering	M.S.	2000
North Carolina State University, Raleigh, NC	Food Science	M.S.	2000
North Carolina State University, Raleigh, NC	Functional Genomics	Ph.D.	2004
University of Wisconsin, Madison, WI	Business Administration	M.B.A.	2011

Appointments

2018- Professor of Food Science, North Carolina State University, NC
2016- Todd R. Klaenhammer Distinguished Professor in Probiotics Research, NC State
2016- University Scholar, NC State University
2013-2018 Associate Professor of Food Science, North Carolina State University, NC
2010-2018 Adjunct Professor of Food Science, Pennsylvania State University, PA
2011-2013 R&D Director, Genomics, DuPont, WI
2007-2011 Group Manager, Genomics DuPont, WI
2006-2007 Sr. Scientist, Cultures Development, DuPont (Danisco), WI
2005-2006 Scientist, Cultures Development, DuPont (Danisco), WI

Professional Scholarly Activities

2020- National Academies Food Forum Board
2019- National Academies Food and Nutrition Board
2019- Co-Founder and President, TreeCo
2019- Scientific Advisory Board, Invaio
2018- Scientific Advisory Board, Inari Ag
2017- Editor in Chief, *The CRISPR Journal*
2017- Editorial Board member *Annual Reviews in Food Science and Technology*
2016- Co-Founder, Locus Biosciences (also former SAB chairman and CSO)
2015- Editorial Board Member *Applied and Environmental Microbiology*
2014- Co-Founder and member of the Scientific Advisory Board, Intellia Therapeutics

Honors and Awards

2019 Elected into the US National Academy of Inventors
2019 Elected into the US National Academy of Engineering
2018 Elected into the US National Academy of Sciences
2018 National Academy of Sciences Prize in Food and Agriculture Sciences
2018 Fellow of the American Academy of Microbiology
2017 National Academy of Sciences Award in Molecular Biology
2016 Canada Gairdner International Award
2016 Warren Alpert Foundation Prize
2016 Todd R. Klaenhammer Distinguished Scholar in Probiotics Research
2016 NC State University John S. Risley Entrepreneur of the year Award
2015 NC State University Faculty Scholar
2015 NC State University Alumni Association Outstanding Research Award

Select Publications (from 183 published, 30,000 citations, 64 h-index, 142 i10-index)

Selle K, Fletcher JR, Tuson H, Schmitt DS, McMillan L, Vridhambal GS, Rivera AJ, Montgomery SA, Fortier L-C, **Barrangou R**, Theriot CM, Ousterout DG. (2020) *In vivo* targeting of *Clostridioides difficile* using phage delivered CRISPR-Cas3 antimicrobials. *mBio* 11:e00019-20. DOI: 10.1128/mBio.00019-20.

Huang Y, Porter A, Zhang Y, **Barrangou R**. (2019) Collaborative networks in gene editing. *Nat Biotechnol.* 37:1107-1109. doi: 10.1038/s41587-019-0275-z

Hidalgo-Cantabrana C, Goh YJ, Pan M, Sanozky-Dawes R, **Barrangou R**. (2019) Genome editing using the endogenous type I CRISPR-Cas system in *Lactobacillus crispatus*. *Proc Natl Acad Sci U S A* 116:15774-15783. doi: 10.1073/pnas.1905421116.

Barrangou R, Horvath P. (2017) A decade of discovery: CRISPR functions and applications. *Nat Microbiol.* 2:17092. doi: 10.1038/nmicrobiol.2017.92

Barrangou R, Doudna JA. (2016) Applications of CRISPR technologies in research and beyond. *Nature Biotechnology* 34:933-941 doi:10.1038/nbt.3659

Select collaborators & Grants

Casery Theriot, NC State University: DuPont grant
Charlie Gersbach, Duke University : NIH grant
Jack Wang, NC State University: DOE grant
Gregg Dean, Colorado State University: NIH grant
Trent Northern, LBNL: DOE grant

Select Patents (from 15 issued, 30 published and 20 pending)

10,136,649	Methods for screening bacteria, archaea, algae, and yeast using CRISPR
10,066,233	Method of modulating cell resistance
9,951,342	Cultures with improved phage resistance
9,816,140	Tagged microorganisms and methods of tagging
8,361,725	Detection and typing of bacterial strains
7,838,276	<i>Lactobacillus acidophilus</i> nucleic acid sequences encoding carbohydrate utilization-related proteins and uses therefor
7,824,894	<i>Lactobacillus acidophilus</i> nucleic acids encoding fructo-oligosaccharide utilization compounds and uses thereof
7,495,092	Compositions comprising promoter sequences and methods of use
20190021343	Methods for screening bacteria, archaea, algae, and yeast using CRISPR
20180371405	Methods and compositions for delivery of CRISPR based antimicrobials
20170275648	Novel Cas9 proteins and guiding features for DNA targeting and genome editing
20160289700	Compositions and methods related to a CRISPR-Cas in <i>Lactobacillus buchneri</i>
20150093473	Cultures with improved phage resistance