

Univ.-Prof. Dr. sc. techn. Mark E. Ladd (born September 7, 1967 in Wayne, Michigan, USA)

Head of the Division of Medical Physics in Radiology (E020)
German Cancer Research Center (DKFZ), Heidelberg, Germany

Professor of Medical Physics in Radiodiagnosics and Biophysics
Faculty of Medicine, Heidelberg University, Germany

Associated Principle Investigator, Erwin L. Hahn Institute for MRI
University of Duisburg-Essen, Germany

Co-opted Member, Faculty of Physics and Astronomy
Heidelberg University, Germany

Co-opted Member, Faculty of Medicine
University of Duisburg-Essen, Germany



Research areas

Methodological advances in magnetic resonance imaging and spectroscopy, including imaging with ultra-high magnetic fields, radiofrequency hardware, parallel transmission, MRI safety, and MR-guided radiotherapy

Academic education

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| 2001 | Habilitation with <i>venia legendi</i> for “Diagnostic Radiology with focus on magnetic resonance physics”, University of Duisburg-Essen, Germany |
| 1998 | PhD (Dr. sc. techn.), Swiss Federal Institute of Technology (ETH), Zurich, Switzerland |
| 1991 | Master of Science in Electrical Engineering, Stanford University, USA |
| 1989 | Bachelor of Science in Electrical Engineering, University of Michigan, USA |

Academic positions

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| since 2022 | Coordinator, Research Program Imaging and Radiooncology, DKFZ, Heidelberg, Germany |
| since 2013 | Head, Division of Medical Physics in Radiology, DKFZ, Heidelberg, Germany |
| since 2013 | Professor (W3), Faculty of Medicine, Heidelberg University, Germany |
| since 2013 | Associated Principle Investigator, Erwin L. Hahn Institute for Magnetic Resonance Imaging, University of Duisburg-Essen, Germany |
| 2006 - 2013 | Director, Erwin L. Hahn Institute for Magnetic Resonance Imaging, University of Duisburg-Essen, Germany |
| 2004 - 2013 | Professor (C3) of Biomedical Imaging, Department of Diagnostic and Interventional Radiology and Neuroradiology, Faculty of Medicine and University Hospital Essen, Germany |
| 1999 - 2004 | Senior Physicist, Department of Diagnostic and Interventional Radiology and Neuroradiology, University Hospital Essen, Germany |
| 1994 - 1999 | MR Advanced Applications Scientist / Advanced Systems Engineer / Software Engineer, General Electric Medical Systems and University Hospital Zurich, Zurich, Switzerland |
| 1992 - 1994 | Engineer, General Electric Medical Systems, Wisconsin, USA |
| 1989 - 1991 | Research Assistant, Space, Telecommunications, and Radioscience Laboratory, Stanford University, California, USA |

Scientific honors

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| 2021 | Senior Fellow, International Society for Magnetic Resonance in Medicine (ISMRM) |
| 2021 | Guest Associate Editor, “Frontiers in Physics”, Research Topic on Innovations in MR Hardware from Ultra-Low to Ultra-High Field |
| 2019 - 2022 | Member, Annual Meeting Program Committee, ISMRM |
| 2019 | Finalist for the German President’s Award for Innovation in Science and Technology (Deutscher Zukunftspreis) |
| 2018 - 2020 | Editorial Board, “Magnetic Resonance in Medicine” |
| 2017 - 2022 | President and Vice President, Deutsche Gesellschaft für Medizinische Physik [German Society for Medical Physics] (DGMP) |
| 2016 | Co-Chair, ISMRM Workshop “UHF MRI: Technological Advances & Clinical Applications” |
| since 2013 | Scientific Advisory Board, “Der Radiologe” |

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| 2013 - 2017 | Governing Committee of the High Field Systems & Applications Study Group, ISMRM |
| 2013 | Guest Editor, "Investigative Radiology", Special Issue on Clinical Advances with 7T |
| 2012 - 2018 | Deputy Editor, "Magnetic Resonance in Medicine" |
| 2012 - 2017 | ERC Advanced Grant, "MRexcite: Unlocking the potential of ultra-high-field MRI through manipulation of radiofrequency excitation fields in human tissue" |
| 2012 | Outstanding Teacher Award, ISMRM |
| 2010 - 2013 | Member, Board of Trustees, ISMRM |
| 2000 | Award Winner, "Competition for the Promotion of Young Academicians", Program for Research Innovation of the State of North Rhine-Westphalia |

Publication summary

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| Scientific papers | > 340 |
| Review articles | > 20 |
| Book chapters | > 15 |

Key recent publications

1. **Ladd ME**, Quick HH, Speck O, Bock M, Doerfler A, Forsting M, Hennig J, Ittermann B, Möller HE, Nagel AM, Niendorf T, Remy S, Schaeffter T, Scheffler K, Schlemmer HP, Schmitter S, Schreiber L, Shah NJ, Stöcker T, Uder M, Villringer A, Weiskopf N, Zaiss M, Zaitsev M. Germany's journey toward 14 Tesla human magnetic resonance. *MAGMA*. 2023 Apr;36(2):191-210. doi: 10.1007/s10334-023-01085-z.
2. Boyd PS, Breitling J, Korzowski A, Zaiss M, Franke VL, Mueller-Decker K, Glinka A, **Ladd ME**, Bachert P, Goerke S. Mapping intracellular pH in tumors using amide and guanidyl CEST-MRI at 9.4 T. *Magn Reson Med*. 2022 May;87(5):2436-2452. doi: 10.1002/mrm.29133.
3. Fiedler TM, Orzada S, Flöser M, Rietsch SHG, Schmidt S, Stelter JK, Wittrich M, Quick HH, Bitz AK, **Ladd ME**. Performance and safety assessment of an integrated transmit array for body imaging at 7 T under consideration of specific absorption rate, tissue temperature, and thermal dose. *NMR Biomed*. 2022 May;35(5):e4656. doi: 10.1002/nbm.4656.
4. Orzada S, Solbach K, Gratz M, Brunheim S, Fiedler TM, Johst S, Bitz AK, Shooshtary S, Abuelhaija A, Voelker MN, Rietsch SHG, Kraff O, Maderwald S, Flöser M, Oehmigen M, Quick HH, **Ladd ME**. A 32-channel parallel transmit system add-on for 7T MRI. *PLoS One*. 2019 Sep 12;14(9):e0222452. doi: 10.1371/journal.pone.0222452.
5. **Ladd ME**, Bachert P, Meyerspeer M, Moser E, Nagel AM, Norris DG, Schmitter S, Speck O, Straub S, Zaiss M. Pros and cons of ultra-high-field MRI/MRS for human application. *Prog Nucl Magn Reson Spectrosc*. 2018 Dec;109:1-50. doi: 10.1016/j.pnmrs.2018.06.001.

For a more complete list of publications, see <https://pubmed.ncbi.nlm.nih.gov/?term=ladd-me&sort=date>