
BIOGRAPHICAL SKETCH

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NAME: Herrmann, Ken

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY
Charite Berlin (Germany)	M.D.	09/97-07/04	Medicine
TU Muenchen (Germany)	Residency, Board Certif.	08/04-04/11	Nuclear Medicine
TU Muenchen (Germany)	Habilitation	03/07-04/11	Nuclear Medicine
University of Zuerich (Switzerland)	MBA	08/09-03/11	Economics

A. Personal Statement

I am a board certified nuclear medicine physician with 18 plus years of experience in the field of theranostics. After being introduced to radionuclide therapy in thyroid cancer patients and neuroendocrine tumor patients as part of my clinical training, I very quickly discovered the novel and quickly growing field of theranostics as my scientific passion. For more than 15 years I have been dedicating my work to the translation of novel theranostic concepts into the clinic, attempting to significantly impact survival and quality of life of patients.

My translational activities include collaboration within preclinical teams, first in human evaluation of new diagnostic and therapeutic concepts, as well as the evolution of such concepts within later phase 2 and 3 studies, aiming for approval by regulatory bodies such as EMA and FDA. Moreover, I have a track record in setting up new theranostic programs, building out infrastructure and initiating investigator led studies going all the way to FDA approval.

Apart from my own interests and achievements, I intend to enable collaborators, team members and students to pursue their own aspirations and goals. I am passionate about supporting and encouraging young colleagues as they develop into great clinicians, curious researchers, and successful clinical scientists. I pride myself in fostering outstanding achievements and great careers in others.

My biggest personal achievements include the first in human application of the CXCR4-directed ¹⁷⁷Lu-Pentixather, the initiation of the theranostic program at UCLA, the initiation of the joint UCSF/UCLA ⁶⁸Ga-PSMA-11 study resulting in FDA approval, the initiation of the first prospective ¹⁷⁷Lu-PSMA-617 phase 2 study in the United States, as well as more recently the introduction of new preclinical and translational programs at Universitätsmedizin Essen, Germany.

Ongoing and recently completed projects that I would like to highlight include:

German Research Foundation
PI: K Herrmann, BA Hadaschik
January 2020 – ongoing

Title: Machbarkeit und Genauigkeit neuartiger intraoperativer molekularer Bildgebungsverfahren unter Verwendung zweier PSMA-Tracer beim Prostatakarzinom

German Research Foundation

PI: T Higuchi, K Herrmann

2014 – 2017

Title: Cardiovascular Imaging for Personalized Medicine

German Research Foundation/Collaborative Research Center

PI: K Herrmann, MP Ebert, A Walch

2009 – 2013

Title: Imaging for Selection, Monitoring and Individualization of Cancer Therapies

B. Positions, Scientific Appointments and Honors

University training and advanced academic qualifications

2009 - 2011 Master of Business Administration (MBA), University of Zürich, Switzerland

2011 Habilitation and *venia legendi* in Nuclear Medicine; TU München, Munich

2010 Board Certification for Nuclear Medicine, Germany

2005 - 2007 Medical Thesis, Research Group Cellular Neurosciences, Max Delbrück Centrum Berlin (MDC, Chair: Prof. Dr. H. Kettenmann)

2004 Medical Degree, Humboldt University, Berlin

2003 Memorial Sloan-Kettering Cancer Center, New York, USA (Clinical Elective)

2003 Universidad Austral de Chile, Valdivia, Chile (Clinical Elective)

2000 - 2001 Université de Lausanne, Lausanne, Switzerland (4th year Medical School)

1997 - 2004 Charite Medical School, Humboldt University, Berlin

Postgraduate Professional Career

2016-present Chair, Department of Nuclear Medicine, University Medicine Essen

2015 - 2021 Associate Professor, Step II, Director of Translational Research, Ahmanson Translational Imaging Division/Nuclear Medicine, Department of Molecular and Medical Pharmacology, David Geffen School of Medicine at UCLA, Los Angeles, USA

2012 - 2016 Vice Chair, Department of Nuclear Medicine (Chair: Prof. Dr A. Buck), Director of PET/CT, University Würzburg

2012 - 2014 Part-time Visiting Assistant Professor, Ahmanson Translational Imaging Division/Nuclear Medicine, Department of Molecular and Medical Pharmacology, David Geffen School of Medicine at UCLA, Los Angeles, USA

2011 - 2012 Visiting Assistant Professor, Ahmanson Translational Imaging Division/Nuclear Medicine, Department of Molecular and Medical Pharmacology, David Geffen School of Medicine at UCLA

2008 Research Fellow at Department of Nuclear Medicine, (Chair: Prof. Dr. N. Tamaki), Hokkaido University, Japan

2004 - 2011 Resident, Department of Nuclear Medicine (Chair: Prof. Dr. M. Schwaiger), TU München

Awards

2022 27th Annual William D. Kaplan Lecture, Dana-Farber / Harvard Cancer Center

2022 The SNMMI 2022 International Best Abstract Award for Germany

2022 Delegate of the Advanced Prostate Cancer Consensus Conference (APCCC)

2016 „Wolfgang Becker Gedächtnis-Vorlesung“, Deutsche Gesellschaft für Nuklearmedizin 2016

2013 Award „Dagmar-Eissner-Preis“, Mittelrheinische Gesellschaft für Nuklearmedizin

2012 Award „Förderpreis der DGN für Leistungen auf dem Gebiet der Bildgebung“ 2012

2009 Young Investigator Award of “New Trends in Molecular Imaging and Nuclear Medicine”

2008 SNM Travel Award (SNM 2008) Scholarship of “Japanese-German Radiological Affiliation”

2007 Award for Young Scientists from the Department of Nuclear Medicine, TUM

2003 Scholarship of “Stiftung Nuklearmedizin” for clinical elective at MSKCC New York

2002 Admission to Graduate School GRK 238 “Damage cascades in neurological disorders – Studies with imaging techniques”

2000 Admission to Stiftung der Deutschen Wirtschaft, Studienförderwerk Klaus Murmann (Foundation of German Trade Association)

Scientific Appointments

Since 2006	Ad-hoc reviewer for Research Foundation Flanders (FWO), Institut National du Cancer (INCA), INSERM France, Swiss Cancer League, Cancer Research UK, Deutsche Forschungsgemeinschaft (DFG), Leukemia & Lymphoma Research, Clinical Cancer Research, Journal of Nuclear Medicine, Clinical Nuclear Medicine, European Journal of Nuclear Medicine and Molecular Imaging, PLOS One, British Journal of Cancer, European Radiology, BMC Cancer, Nuclear Medicine Communications, Molecular Imaging and Biology, International Journal of Molecular Science, Pancreas, Clinical and Translational Imaging: Reviews in Nuclear Medicine and Molecular Imaging, Nuclear Medicine, Annals of Nuclear Medicine, Cancers, Applied Radiation and Isotopes, Cancer Chemotherapy and Pharmacology, Journal of Experimental & Clinical Cancer Research, Science Translational Medicine
Since 2016	Section Editor Theranostics Journal of Nuclear Medicine and BMC Cancer
Since 2020	Chair of the EANM Oncology and Theranostics Committee, Chair Arbeitsgemeinschaft Bildgebung in der Onkologie

C. Contributions to Science

Cancer deaths remain on the rise despite ongoing investment into research and extended overall life expectancy. With the recent success of immunotherapy in a few particular tumors, the attention and hope has shifted to the concept of targeted radionuclide therapy, so called theranostics. Since the early days of using radioactive iodine for diagnosis and treatment of benign and malignant thyroid diseases the field of theranostics has come a long way with EMA- and FDA-approvals of ²²³Ra for treatment of bone metastases in prostate cancer and ¹⁷⁷Lu-DOTATATE for the treatment of well-differentiated gastro-entero-pancreatic neuroendocrine tumors.

The recent successes have fueled interest in expanding theranostics beyond bone metastases and neuroendocrine tumors. The successful targeting of the prostate specific membrane antigen (PSMA) for imaging and therapy of prostate cancer, as well as the emerging new targets chemokine receptor-4 (CXCR-4) and fibroblast activation protein (FAP) have sparked my research interest in evaluating and translating these theranostic concepts into the clinic. The clinical translation encompasses first in human evaluation including assessment of biodistribution, the dosimetry evaluation, the first clinical experiences, including the understanding of physiological uptake patterns and pitfalls, addressing questions of clinical unmet need, and progressing theranostic concepts from phase 1 to pivotal regulatory approval aiming studies. My research efforts of the last 20 years have focused on all these parts of the major theranostic concepts targeting the somatostatin 2 receptor, PSMA, FAP and CXCR-4. A subselection of my 10 most relevant papers in this specific area of interest are outlined below.

My biggest personal achievements include first in human application of the CXCR4-directed ¹⁷⁷Lu-Pentixather, the initiation of the theranostic program at UCLA, the initiation of the joint UCSF/UCLA ⁶⁸Ga-PSMA-11 study resulting in FDA approval, the initiation of the first prospective ¹⁷⁷Lu-PSMA-617 phase 2 study in the United States, as well as more recently the introduction of new preclinical and translational programs at Universitätsmedizin Essen, Germany.

This is the selection of 10 papers best representing my academic activities until today:

1. Philipp-Abbrederis K, Herrmann K, Knop S, Schottelius M, Eiber M, Luckerath K, Pietschmann E, Habringer S, Gerngross C, Franke K, Rudelius M, Schirbel A, Lapa C, Schwamborn K, Steidle S, Hartmann E, Rosenwald A, Kropf S, Beer AJ, Peschel C, Einsele H, Buck AK, Schwaiger M, Gotze K, Wester HJ, Keller U. In vivo molecular imaging of chemokine receptor CXCR4 expression in patients with advanced multiple myeloma. *EMBO molecular medicine*. 2015;7(4):477-87. Epub 2015/03/05. doi: 10.15252/emmm.201404698. PubMed PMID: 25736399; PMCID: PMC4403048.

2. Herrmann K, Schottelius M, Lapa C, Osl T, Poschenrieder A, Hanscheid H, Luckerath K, Schreder M, Bluemel C, Knott M, Keller U, Schirbel A, Samnick S, Lassmann M, Kropf S, Buck AK, Einsele H, Wester HJ, Knop S. First-in-Human Experience of CXCR4-Directed Endoradiotherapy with ¹⁷⁷Lu- and ⁹⁰Y-Labeled Pentixather in Advanced-Stage Multiple Myeloma with Extensive Intra- and Extramedullary Disease. *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*. 2016;57(2):248-51. Epub 2015/11/14. doi: 10.2967/jnumed.115.167361. PubMed PMID: 26564323.

3. Lapa C, Luckerath K, Kleinlein I, Monoranu CM, Linsenmann T, Kessler AF, Rudelius M, Kropf S, Buck AK, Ernestus RI, Wester HJ, Lohr M, Herrmann K. (68)Ga-Pentixafor-PET/CT for Imaging of Chemokine Receptor 4 Expression in Glioblastoma. *Theranostics*. 2016;6(3):428-34. Epub 2016/02/26. doi: 10.7150/thno.13986. PubMed PMID: 26909116; PMCID: PMC4737728.
4. Fendler WP, Calais J, Eiber M, Flavell RR, Mishoe A, Feng FY, Nguyen HG, Reiter RE, Rettig MB, Okamoto S, Emmett L, Zacho HD, Ilhan H, Wetter A, Rischpler C, Schoder H, Burger IA, Gartmann J, Smith R, Small EJ, Slavik R, Carroll PR, Herrmann K, Czernin J, Hope TA. Assessment of 68Ga-PSMA-11 PET Accuracy in Localizing Recurrent Prostate Cancer: A Prospective Single-Arm Clinical Trial. *JAMA Oncol*. 2019;5(6):856-63. Epub 2019/03/29. doi: 10.1001/jamaoncol.2019.0096. PubMed PMID: 30920593; PMCID: PMC6567829.
5. Herrmann K, Schwaiger M, Lewis JS, Solomon SB, McNeil BJ, Baumann M, Gambhir SS, Hricak H, Weissleder R. Radiotheranostics: a roadmap for future development. *The Lancet Oncology*. 2020;21(3):e146-e56. Epub 2020/03/07. doi: 10.1016/S1470-2045(19)30821-6. PubMed PMID: 32135118; PMCID: PMC7367151.
6. Hope TA, Eiber M, Armstrong WR, Juarez R, Murthy V, Lawhn-Heath C, Behr SC, Zhang L, Barbato F, Ceci F, Farolfi A, Schwarzenbock SM, Unterrainer M, Zacho HD, Nguyen HG, Cooperberg MR, Carroll PR, Reiter RE, Holden S, Herrmann K, Zhu SJ, Fendler WP, Czernin J, Calais J. Diagnostic Accuracy of Ga-68-PSMA-11 PET for Pelvic Nodal Metastasis Detection Prior to Radical Prostatectomy and Pelvic Lymph Node Dissection A Multicenter Prospective Phase 3 Imaging Trial. *Jama Oncology*. 2021;7(11):1635-42. doi: 10.1001/jamaoncol.2021.3771. PubMed PMID: WOS:000696616700003.
7. Sartor O, de Bono J, Chi KN, Fizazi K, Herrmann K, Rahbar K, Tagawa ST, Nordquist LT, Vaishampayan N, El-Haddad G, Park CH, Beer TM, Armour A, Perez-Contreras WJ, DeSilvio M, Kpamegan E, Gericke G, Messmann RA, Morris MJ, Krause BJ, Investigators V. Lutetium-177-PSMA-617 for Metastatic Castration-Resistant Prostate Cancer. *N Engl J Med*. 2021;385(12):1091-103. Epub 2021/06/24. doi: 10.1056/NEJMoa2107322. PubMed PMID: 34161051; PMCID: PMC8446332.
8. Bodei L, Herrmann K, Schoder H, Scott AM, Lewis JS. Radiotheranostics in oncology: current challenges and emerging opportunities. *Nat Rev Clin Oncol*. 2022;19(8):534-50. Epub 2022/06/22. doi: 10.1038/s41571-022-00652-y. PubMed PMID: 35725926.
9. Fendler WP, Pabst KM, Kessler L, Fragoso Costa P, Ferdinandus J, Weber M, Lippert M, Lueckerath K, Umutlu L, Kostbade K, Mavroei IA, Schuler M, Ahrens M, Rischpler C, Bauer S, Herrmann K, Siveke JT, Hamacher R. Safety and efficacy of 90Y-FAPI-46 radioligand therapy in patients with advanced sarcoma and other cancer entities. *Clinical cancer research : an official journal of the American Association for Cancer Research*. 2022. Epub 2022/07/15. doi: 10.1158/1078-0432.CCR-22-1432. PubMed PMID: 35833949.
10. Weber M, Kersting D, Riemann B, Brandenburg T, Fuhrer-Sakel D, Grunwald F, Kreissl MC, Dralle H, Weber F, Schmid KW, Herrmann K, Jentzen W, Grafe H, Rischpler C, Theurer S, Bockisch A, Nagarajah J, Fendler WP. Enhancing Radioiodine Incorporation Into Radio Iodine Refractory Thyroid Cancer With MAPK Inhibition (ERRITI): A Single-Center Prospective Two-Arm Study. *Clinical cancer research : an official journal of the American Association for Cancer Research*. 2022. Epub 2022/05/21. doi: 10.1158/1078-0432.CCR-22-0437. PubMed PMID: 35594174.



06.07.2023