curriculum vitæ of

Kisoo Kim, Ph.D.

Magnetic Resonance Imaging · MR-guided Focused Ultrasound
MR-guided Thermal Therapy · Drug Delivery · MRI Device Design

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google scholar

Education

Ph.D. in Biotechnology at University of Strasbourg, France 10/2016 - 11/2019
Thesis title: "Interventional MR Elastography for the monitoring of thermal ablations".

M.Sc. in Biomedical Engineering at Kyung Hee University, South Korea 3/2014 - 2/2016

BS in Biomedical Engineering at Kyung Hee University, South Korea 3/2008 - 2/2014
Compulsory Military Service in South Korea 2010-2012

Experience

Assistant Professor in Department of Biomedical Engineering, Kyung Hee University, South Korea 9/2024 - CURRENT

Postdoctoral Scholar in Department of Radiology and Biomedical Imaging, University of California, San Francisco, USA 12/2019 - 8/2024

Ph.D Candidate at ICube UMR 7357, CNRS†, France 10/2016 - 11/2019
†CNRS:The French National Centre for Scientific Research

Research Assistant in Department of Biomedical Engineering, Kyung Hee University, South Korea 2/2016-9/2016

Honors and Awards

1. 2023: **Bruce Hasegawa Award** from the 20th Annual Imaging Research Symposium, University of California, San Francisco, USA
2. 2020: **Best poster Award** from the 17th Annual Imaging Research Symposium, University of California, San Francisco, USA
3. 2020: **Young investigator Award** from 7th International Symposium on Focused Ultrasound by FUS foundation
4. 2019: **Magna Cum Laude Merit Award** from ISMRM 27th Annual Meeting, Montréal, Canada
5. 2019: **Best abstract Award 2nd place** from Interventional MR study group meeting, ISMRM 27thh Annual Meeting, Montréal, Canada
6. 2019: **Best abstract Award 3rd place** from MRE study group meeting, ISMRM 27thh Annual Meeting, Montréal, Canada

Publications

1. E.W. Lee , T.W. Nam, D. Hernandez, E. Ozhinsky, K. Narsinh, L. Sugure, Y. Han, **K. Kim**, K.N. Kim. Optimization of MR-guided Focused Ultrasound System: Comparative Study of Water Bolus and Electrically Optimized Material Using Automated Machine Learning. *International Journal of Imaging Systems and Technology 2025.* doi: 10.1002/ima.70061
2. **K. Kim**, M. Gallus, A.S. Parchure, B. Shah, H. Okada, C. Diederich, E. Ozhinsky, K. Narsinh. Protocol for Monitoring Blood-Brain Barrier Opening in Rat Models Using the RK-50 Preclinical Focused Ultrasound System. *Journal of Visualized Experiments.*

3. K. Wear, D.L. Parker, A. Payne, C.J. Diederich, C. Moonen, L. Chen, X. Chen, D. Moore, M. Eames, C. Bos, R. Hovenier, T. Lynch, D. Christensen, E. Ozhinsky, **K. Kim**, N. Ellens, S. Maruvada, K. Farahani. AAPM Task Group 333: MRI-guided Focused Ultrasound Quality Assurance. *Medical Physics.* **Under Review.**

4. D. Hernandez, T.W. Nam, E.W. Lee, **K. Kim**, K.N. Kim. Designing hybrid antenna array for combined microwave hyperthermia, 1H MR Thermometry, and 19F Drug Release Monitoring. *Plos One* **(Corresponding author)**

5. **K. Kim**, P. Gupta, K. Narsinh, C. Diederich, E. Ozhinsky. Volumetric hyperthermia delivery using the ExAblate body MRgFUS system. *International Journal of Hyperthermia 2024;41(1).* https://doi.org/10.1080/02656736.2024.2349080

6. E.W. Lee , T.W. Nam, E. Ozhinsky, K. Narsinh, D. Hernandez, **K. Kim**, K.N. Kim. MRI safety evaluation of transcranial MR-guided focused ultrasound with a large hemispherical transducer. *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology.* **(Corresponding author) Minor revision.**

7. **K. Kim**, K. Narsinh, E. Ozhinsky. Technical advances in motion-robust magnetic resonance thermometry: a review. *Magnetic Resonance in Medicine 2024* doi: 10.1002/mrm.30057 **(IF: 3.737)**

8. R.R. Mattay , **K. Kim**, E. Ozhinsky, K. Narsinh. MR Thermometry during Transcranial MR Imaging–Guided Focused Ultrasound Procedures: A Review. *American Journal of Neuroradiology 2023* https://doi.org/10.3174/ajnr.A8038. **(Co-first author, IF: 3.825)**

9. D Duex, JD Baal, R Bitton, R Brunsing, V Sheth, **K. Kim**, E Ozhinsky, R Avedian, K Ganjoo, M Bucknor,A Dobrotwir, P Ghanouni. MR-guided focused ultrasound therapy of extra-abdominal desmoid tumors: a multicenter retrospective study of 105 patients. *European Radiology 2023* https://doi.org/10.1007/s00330-023-10073-9 **(IF: 5.315)**

10. J. Ellison, **K. Kim**, Y. Li, X. Mu, O. Glenn, E. Ozhinsky, S. Peyvandi, D. Xu. Estimate of Fetal Brain Temperature Using PRF Thermometry during Fetal MRI. *Quantitative Imaging in Medicine and Surgery.* **(IF: 3.837)**

11. **K. Kim**, C. Diederich, K. Narsinh, E. Ozhinsky. Motion-robust, multi-slice, real-time MR Thermometry for MR-guided thermal therapy in abdominal organs. *International Journal of Hyperthermia 2023;40(1):2151649.* https://doi.org/10.1080/02656736.2022.2151649 **(IF: 3.91)**

12. **K. Kim**, P. Jones, C. Diederich, E. Ozhinsky. Technical Note:Low-cost MR-compatible pneumatic respiratory organ simulator for development of MR-guided thermal therapy. *Medical Physics 2022;00:1-7.* https://doi.org/10.1002/mp.15783 **(IF: 4.50)**

13. **K. Kim**, M. Zubair, M. Adams, C. Diederich, E. Ozhinsky. Sonication strategies toward volumetric ultrasound hyperthermia treatment using the ExAblate body MRgFUS system. *International Journal of Hyperthermia 2021;38(1):1590-1600.* https://doi.org/10.1080/02656736.2021.1998658 **(IF: 3.91)**

14. **K. Kim**, E. Breton, A. Gangi, J. Vappou. Simultaneous fat-referenced proton resonance frequency shift thermometry and MR elastography for the monitoring of thermal ablations. *Magnetic Resonance in Medicine 2019;00:1-9. doi.org/10.1002/mrm.28130* **(IF: 3.64)**

15. D. Hernandez, **K. Kim**, E. Michel, S.Y. Lee, Correction of Bo Drift Effects in Magnetic Resonance Thermometry using Magnetic Field Monitoring Technique. *Concepts in Magnetic Resonance Part B 2016;46(2):81-89* **(IF: 0.649)**

16. **K. Kim**, D. Hernandez, S.Y. Lee, Time-multiplexed two-channel capacitive radiofrequency hyperthermia for focused heat transfer. *Biomedical Engineering Online 2015;14(1):95* **(IF: 1.43)**

17. **K. Kim**, S.Y. Lee, Nanoparticle-mediated radiofrequency capacitive hyperthermia: a phantom study with magnetic resonance thermometry. *International Journal of Hyperthermia 2015;31(8):831-839* **(IF: 2.645)**

18. **K. Kim**, M. H. Cho, S. Y. Lee, Feasibility study on magnetic nanoparticle hyperthermia in low field MRI. *Journal of Biomedical Engineering Research 2014; 35:105-110 (Korean Journal)*

Research Grants

1. 09/2023-08/2025: **National Institute of Dental and Craniofacial Research (NIDCR) K99 Pathway to Independence Award (K99DE032397), Grant amount: $1,056,744**.
Title: Advancing Methods for MR-guided Focused Ultrasound Hyperthermia for Head and Neck Cancer, **Role: Principal Investigator**

2. 06/2023-06/2024: **UCSF RAP grant, Department Seed Grant, Grant amount: $50,000**
Title:Contrast-free MRI methods for assessment of blood-brain barrier opening upon MR-guided low-intensity focused ultrasound treatment, **Role: Co-Investigator**

3. 02/2021-02/2022: **UCSF Department Seed Grant, Grant amount: $30,000**.
   Title:Development of Real-time Magnetic Resonance (MR) Thermometry and quantitative MR imaging to assess response in MR-guided Focused Ultrasound thermal therapy, **Role: Principal Investigator**

Research, Scientific activities

1. 2025- Current: **Program Committee/Scientific Secretary**, International Congress for Hyperthermic Oncology (ICHO)
2. 2024- Current: **Academic Editor**, PloS One
3. 2024: **Co-Chair Moderator**, Focused Ultrasound Session, Society of Thermal Medicine (STM) 2024, Houston
   (The official scientific journal of STM is the International Journal of Hyperthermia, IF: 3.91)
4. 2024-2025: **Trainee Representative**, the Interventional MR Study Group of the International Society of Magnetic Resonance in Medicine
5. 2024- Current: **Active Reviewer**, Magnetic Resonance in Medicine
6. 2022- Current: **Active Reviewer**, International Journal of Hyperthermia
7. 2023- Current: **Active Reviewer**, Quantitative Imaging in Medicine and Surgery, Print ISSN 2223-4292; Online ISSN 2223-4306;
8. 2023- 2024: **Guest Editor**, Methods Collection "Magnetic Resonance Imaging Monitoring of Focused Ultrasound Treatments: Advancements and Techniques", Journal of Visualized Experiments, ISSN: 1940-087X
9. 2023: **Invited Speaker**, MR Engineering study section, 11th International Congress on MRI, Seoul
10. 2022: **Invited Speaker**, The Korean Society of medical sonographers, Virtual
11. 2022: **Invited Speaker**, MR Engineering study section, 10th International Congress on MRI, Seoul

Professional Skills

Preclinical Animal Procedure
• Study design, writing an IACUC protocol, and small animal procedures (cannulation, injection, etc)
Technical supports for Clinical Focused Ultrasound Treatments
• Clinical Brain FUS treatment using the InSightec ExAblate Neuro System (2022-Current)
• Clinical Body FUS Ablation treatment using the InSightec ExAblate Body System (2020-Current)
MRI Sequence programming
• Siemens IDEA Sequence programming / IDEA Imaging Calculation programming
• HeartVista RTHawk MRI Sequence programming
Software
• Programming languages including MATLAB, Python, Javascript, C++
• Familiarity with code-reviewing, Linux, Git
• Software proficiency in Sim4life (EM, acoustic), Comsol Multiphysics (acoustic)
Hardware
• Design of respiratory motion simulator
• Design of RF hardware related to microwave (e.g., RF switch circuit, etc.)
Image processing
• Digital image/signal processing (i.e., numerical optimization, quantitative image reconstruction such as Elastography, T1, T2, T2*, and real-time temperature mapping etc.)