Stanford

Sarvesh Periyasamy

Resident in Rad/Interventional Radiology

Bio

BIO

Resident in the Integrated Interventional Radiology Residency. I completed my Internship in General Surgery at Stanford Health Care (2024).

I am a former MD-PhD student part of the Medical Scientist Training Program (MSTP) at the University of Wisconsin School of Medicine and Public Health. I earned my PhD in Biomedical Engineering in the Image-Guided Interventions Lab under Dr. Paul Laeseke MD, PhD. My thesis work investigated novel X-ray based image guidance techniques and device development for image-guided interventions.

I am interested in a career where I can integrate advances in physics and engineering research into a translational career as a physician-scientist. My research interests focus on the development and use of advanced imaging techniques to improve diagnosis and intervention of a variety of vascular and oncologic diseases.

CLINICAL FOCUS

- Residency
- Interventional Radiology
- Diagnostic Radiology

HONORS AND AWARDS

- 14th Annual GEST Fellow, Resident, and Medical Student Scholarship, Global Embolization Oncology Symposium Technologies (2020)
- Ruth L. Kirschstein National Service Award, F30 Fellowship Grant, National Cancer Institute (2020)
- SIO Fellow & Residents Scholarship, Society of Interventional Oncology (2020)
- University of Wisconsin Department of Radiology MD-PhD Graduate Research Fellowship, University of Wisconsin School of Medicine and Public Health (2019)
- Young Investigator Award, American Association of Physicists in Medicine, North Central Chapter (2019)
- Dr. Norman Fost Award for Best Medical Student Bioethics Essay, University of Wisconsin School of Medicine and Public Health (2017)
- Hilldale Undergraduate Research Fellowship, University of Wisconsin - Madison (2013)
- Stueber Prize for Excellence in Writing, University of Wisconsin - Madison, College of Engineering (2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Society of Interventional Radiology (2021 - present)
- Member, Radiological Society of North American (RSNA) (2021 - present)

- Executive Committee President, University of Wisconsin Medical Scientist Training Program (2021 - 2023)
- Medical Student Council, Research Committee Chair, Society of Interventional Radiology, Resident, Fellow, Student Section (2019 - 2021)
- University of Wisconsin Chapter President, American Medical Association - Medical Student Section (2016 - 2017)

PROFESSIONAL EDUCATION

- MD, University of Wisconsin School of Medicine and Public Health , Medicine (2023)
- PhD, University of Wisconsin - Madison , Biomedical Engineering (2022)
- MS, University of Wisconsin - Madison , Biomedical Engineering (2015)
- BS, University of Wisconsin - Madison , Biomedical Engineering (2014)

Research & Scholarship

CURRENT CLINICAL INTERESTS

- Interventional Oncology
- Vascular Intervention

Publications

PUBLICATIONS

- **Quantitative 2D Digital Subtraction Venography for Venous Interventions: Validation in Phantom and In Vivo Porcine Models.** *Journal of vascular and interventional radiology : JVIR*
  Periyasamy, S., Oberstar, E. L., Whitehead, J. F., Kutlu, A. Z., Pieper, A. A., Hoffman, C. A., Li, G., Brace, C. L., Speidel, M. A., Laeseke, P. F.
  2024
- **A Quantitative Digital Subtraction Angiography Technique for Characterizing Reduction in Hepatic Arterial Blood Flow During Transarterial Embolization.** *Cardiovascular and interventional radiology*
  Periyasamy, S., Hoffman, C. A., Longhurst, C., Schefelker, G. C., Ozkan, O. S., Speidel, M. A., Laeseke, P. F.
  2021; 44 (2): 310-317
- **Quantitative Digital Subtraction Angiography Measurement of Arterial Velocity at Low Radiation Dose Rates.** *Cardiovascular and interventional radiology*
  Whitehead, J. F., Hoffman, C. A., Wagner, M. G., Periyasamy, S., Meram, E., Keller, M. E., Speidel, M. A., Laeseke, P. F.
  2024
- **Safety and efficacy of histotripsy delivery through overlying gas-filled small bowel in an ex vivo swine model.** *International journal of hyperthermia : the official journal of European Society for Hyperthermic Oncology, North American Hyperthermia Group*
  Kisting, M. A., White, J. K., Periyasamy, S., Kutlu, A. Z., Kisting, A. L., Zhang, X., Mao, L., Laeseke, P. F., Wagner, M. G., Vlaisavljevich, E., Lee, F. T., Ziemlewicz, T. J.
  2024; 41 (1): 2369305
- **Histoplasty Modification of the Tumor Microenvironment in a Murine Preclinical Model of Breast Cancer.** *Journal of vascular and interventional radiology : JVIR*
  Pieper, A. A., Stowe, N. A., Periyasamy, S., Burkel, B. M., Tsarovsky, N. W., Singh, A. P., Rakhmilevich, A. L., Sondel, P. M., Ponik, S. M., Laeseke, P. F., Yu, J. J.
  2024; 35 (6): 900-908.e2
- **Spatiotemporal frequency domain analysis for blood velocity measurement during embolization procedures.** *Medical physics*
  Wagner, M. G., Whitehead, J. F., Periyasamy, S., Laeseke, P. F., Speidel, M. A.
  2024; 51 (3): 1726-1737
- **Motion-compensation approach for quantitative digital subtraction angiography and its effect on in-vivo blood velocity measurement.** *Journal of medical imaging (Bellingham, Wash.)*
  Whitehead, J. F., Periyasamy, S., Laeseke, P. F., Speidel, M. A., Wagner, M. G.
  2024; 11 (1): 013501

- **Quantification of Iliac Arterial Blood Velocity in Stenotic Phantom and Porcine Models Using Quantitative Digital Subtraction Angiography.** *Journal of vascular and interventional radiology : JVIR*
  Meram, E., Hoffman, C., Periyasamy, S., Hetzel, S., Kutlu, A. Z., Pieper, A. A., Laeseke, P. F.
  2023
- **In silico simulation of hepatic arteries: An open-source algorithm for efficient synthetic data generation.** *Medical physics*
  Whitehead, J. F., Laeseke, P. F., Periyasamy, S., Speidel, M. A., Wagner, M. G.
  2023; 50 (9): 5505-5517
- **A Multimodal Phantom for Visualization and Assessment of Histotripsy Treatments on Ultrasound and X-Ray Imaging.** *Ultrasound in medicine & biology*
  Kutlu, A. Z., Laeseke, P. F., Zeighami Salimabad, M., Minesinger, G. M., Periyasamy, S., Pieper, A. A., Hall, T. J., Wagner, M. G.
  2023; 49 (6): 1401-1407
- **Device safety assessment of bronchoscopic microwave ablation of normal swine peripheral lung using robotic-assisted bronchoscopy.** *International journal of hyperthermia : the official journal of European Society for Hyperthermic Oncology, North American Hyperthermia Group*
  De Leon, H., Royalty, K., Mingione, L., Jaekel, D., Periyasamy, S., Wilson, D., Laeseke, P., Stoffregen, W. C., Muench, T., Matonick, J. P., Kaluza, G. L., Cipolla, G.
  2023; 40 (1): 2187743
- **Hepatic and Renal Histotripsy in an Anticoagulated Porcine Model.** *Journal of vascular and interventional radiology : JVIR*
  Mauch, S. C., Zlevor, A. M., Knott, E. A., Couillard, A. B., Periyasamy, S., Williams, E. C., Swietlik, J. F., Laeseke, P. F., Zhang, X., Xu, Z., Abel, E. J., Lee, F. T., Ziemlewicz, et al
  2023; 34 (3): 386-394.e2
- **An X-Ray C-Arm Guided Automatic Targeting System for Histotripsy.** *IEEE transactions on bio-medical engineering*
  Wagner, M. G., Periyasamy, S., Kutlu, A. Z., Pieper, A. A., Swietlik, J. F., Ziemlewicz, T. J., Hall, T. L., Xu, Z., Speidel, M. A., Jr, F. T., Laeseke, P. F.
  2023; 70 (2): 592-602
- **Staging Liver Fibrosis by Fibroblast Activation Protein Inhibitor PET in a Human-Sized Swine Model.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Pirasteh, A., Periyasamy, S., Meudt, J. J., Liu, Y., Lee, L. M., Schachtschneider, K. M., Schook, L. B., Gaba, R. C., Mao, L., Said, A., McMillan, A. B., Laeseke, P. F., Shanmuganayagam, et al
  2022; 63 (12): 1956-1961
- **A C-arm photon counting CT prototype with volumetric coverage using multi-sweep step-and-shoot acquisitions.** *Physics in medicine and biology*
  Treb, K., Ji, X., Feng, M., Zhang, R., Periyasamy, S., Laeseke, P. F., Dingle, A. M., Brace, C. L., Li, K.
  2022; 67 (21)
- **A Dagger (†) Photon Counting Detector System for both 2D and 3D Interventional Imaging**
  Treb, K., Ji, X., Periyasamy, S., Feng, M., Zhang, R., Bushe, D., Laeseke, P., Li, K.
  edited by Zhao, W., Yu, L.
  SPIE-INT SOC OPTICAL ENGINEERING.2022
- **Enlarging the longitudinal coverage of a prototype C-arm photon counting CT system for image-guided interventions**
  Treb, K., Ji, X., Feng, M., Zhang, R., Periyasamy, S., Laeseke, P. F., Li, K.
  edited by Linte, C. A., Siewerdsen, J. H.
  SPIE-INT SOC OPTICAL ENGINEERING.2022
- **Continuous-sweep limited angle fluoroscopy guidance for percutaneous needle procedures**
  Wagner, M. G., Periyasamy, S., Whitehead, J. F., Laeseke, P. F., Speidel, M. A.
  edited by Linte, C. A., Siewerdsen, J. H.
  SPIE-INT SOC OPTICAL ENGINEERING.2022
- **A Motion Compensated Approach to Quantitative Digital Subtraction Angiography**
  Whitehead, J. F., Hoffman, C. A., Periyasamy, S., Laeseke, P. F., Speidel, M. A., Wagner, M. G.
  edited by Zhao, W., Yu, L.
  SPIE-INT SOC OPTICAL ENGINEERING.2022

- **Real-time respiratory motion compensated roadmaps for hepatic arterial interventions.** *Medical physics*
  Wagner, M. G., Periyasamy, S., Longhurst, C., McLachlan, M. J., Whitehead, J. F., Speidel, M. A., Laeseke, P. F.
  2021; 48 (10): 5661-5673

- **Three-dimensional catheter navigation of airways using continuous-sweep limited angle fluoroscopy on a C-arm.** *Journal of medical imaging (Bellingham, Wash.)*
  Wagner, M. G., Periyasamy, S., Schafer, S., Laeseke, P. F., Speidel, M. A.
  2021; 8 (5): 055001

- **A technique for intra-procedural blood velocity quantitation using time-resolved 2D digital subtraction angiography.** *CVIR endovascular*
  Hoffman, C., Periyasamy, S., Longhurst, C., Medero, R., Roldan-Alzate, A., Speidel, M. A., Laeseke, P. F.
  2021; 4 (1): 11

- **Method for 3D navigation of airways on a single C-arm using multi-sweep limited angle acquisition and frame-by-frame device reconstruction**
  Wagner, M. G., Periyasamy, S., Schafer, S., Laeseke, P. F., Speidel, M. A.
  edited by Linte, C. A., Siewerdsen, J. H.
  SPIE-INT SOC OPTICAL ENGINEERING.2021

- **Feasibility of 3D Motion-Compensated Needle Guidance for TIPS Procedures**
  Wagner, M. G., Periyasamy, S., Speidel, M. A., Laeseke, P. F.
  edited by Fei, B., Linte, C. A.
  SPIE-INT SOC OPTICAL ENGINEERING.2021

- **Evaluation of real-time guidewire navigation using virtual endoscopic 4D fluoroscopy**
  Davis, B. J., Wagner, M. G., Periyasamy, S., Mistretta, C. A., Strother, C. M., Laeseke, P. F., Speidel, M. A.
  edited by Fei, B., Linte, C. A.
  SPIE-INT SOC OPTICAL ENGINEERING.2021

- **Histotripsy Ablations in a Porcine Liver Model: Feasibility of Respiratory Motion Compensation by Alteration of the Ablation Zone Prescription Shape.** *Cardiovascular and interventional radiology*
  Longo, K. C., Zlevor, A. M., Laeseke, P. F., Swietlik, J. F., Knott, E. A., Rodgers, A. C., Mao, L., Zhang, X., Xu, Z., Wagner, M. G., Periyasamy, S., Lee, F. T., Ziemlewicz, et al
  2020; 43 (11): 1695-1701

- **Simulation of Hepatic Arteries and Synthesis of 2D Fluoroscopic Images for Interventional Imaging Studies**
  Whitehead, J. F., Nikolau, E. P., Periyasamy, S., Torres, L. A., Laeseke, P. F., Speidel, M. A., Wagner, M. G.
  edited by Chen, G. H., Bosmans, H.
  SPIE-INT SOC OPTICAL ENGINEERING.2020

- **Power injector for angiographic flow analysis using custom contrast density profiles**
  Oberstar, E. L., Periyasamy, S., Laeseke, P. F., Speidel, M. A.
  edited by Chen, G. H., Bosmans, H.
  SPIE-INT SOC OPTICAL ENGINEERING.2020

- **HIF2α Is an Essential Molecular Brake for Postprandial Hepatic Glucagon Response Independent of Insulin Signaling.** *Cell metabolism*
  Ramakrishnan, S. K., Zhang, H., Takahashi, S., Centofanti, B., Periyasamy, S., Weisz, K., Chen, Z., Uhler, M. D., Rui, L., Gonzalez, F. J., Shah, Y. M.
  2016; 23 (3): 505-16