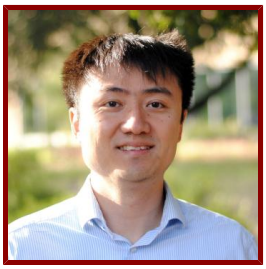
Stanford



Jia Wang

Medical/Radiation Physicist, Environmental Health and Safety (EH&S)

Bio

BIO

I am the head of the Diagnostic Medical Physics group at Environmental Health and Safety department. Our group provides medical physics services for Stanford Health Care, Lucille Packard Children's Hospital, and Veterans Affairs Palo Alto Health Care System. The scope of our work includes:

• Radiation safety of X-ray imaging practice to ascertain the compliance of State and Federal regulations, The Joint Commission recommendations, requirements from related accreditation bodies and University policies

• Quality control program of X-ray imaging practice (Computed tomography, Interventional equipment, Fluoroscopy and Radiography) for Imaging and Interventional Services at hospitals

• Radiation dose monitoring and CT protocol optimization; Work with each clinical section on task-specific CT Dose and Image Quality optimization by utilizing our state-of-the-art CT equipment and novel iterative reconstruction techniques

• Review proposed research uses of x-rays in human subjects for Stanford IRB: evaluate doses and estimate risks and advise research investigators on radiation safety issues and how to solve related problems.

• Staff and trainee education on topics including CT technology, CT dose optimization, Fluoroscopy dose optimization, and radiation risk from ionizing imaging exams

• Clinical innovation: we work with physicians and hospital imaging and interventional teams on clinical research projects and activities that can be readily translated to patient care in Stanford affiliated health care systems

HONORS AND AWARDS

- Volunteer Service Award, American Board of Radiology (2024)
- Best in Physics (Imaging), American Association of Physicists in Medicine 66th Annual Meeting (2023)
- Top Downloaded Paper, Medical Physics journal (2019)
- Featured on Image Wisely, Radiological Society of North America (RSNA) Annual Meeting (2018)
- Top Downloaded Article, Journal of Applied Clinical Medical Physics (2017)
- Editor’s Recognition Award, Radiology journal for reviewing (2011)

- Featured Cover Article, Medical Physics journal (2010)
- People's Scholarship, Nanjing University (2000-2003)

EDUCATION AND CERTIFICATIONS

- Board Certification, American Board of Radiology , Diagnostic Medical Physics (2014)
- Research Fellow, Mayo Clinic , Department of Radiology (2012)
- Ph.D., Dartmouth College , Physics/Biomedical Imaging (2009)
- B.S., Nanjing University , Physics (2003)

Professional

WORK EXPERIENCE

- Research fellow - Mayo Clinic (5/2009 - 4/2012)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Chair, Alliance for Quality Computed Tomography Working Group of AAPM (2024 - present)
- Vice Chair, AAPM Task Group No. 392: Characterization and Quality Control of Automatic Exposure Control System in CT (2023 - present)
- Member, AAPM Task Group No. 355: Characterization of Contrast-to-Noise Ratio (CNR) Optimized Interventional Angiographic Fluoroscopy Equipment (2022 - present)
- Member, Medical Physics Clinical Committee of American Board of Radiology (2019 - present)
- Member, AAPM Task Group No. 233 - Performance Evaluation of Computed Tomography Systems (2013 - 2019)
- Member, AAPM Task Group No. 257 - MPPG #6 Selection of a Patient Dose Monitoring System (2013 - 2017)
- Member, AAPM Task Group No. 220: Determination of a Patient Size Metric for CT Size Specific Dose Estimation (2012 - 2014)

Publications

PUBLICATIONS

- **OpenDosimeter: Open hardware personal X-ray dosimeter.** *Communications engineering*
  Ger, N., Ku, A., Lopez, J., Bennett, N. R., Wang, J., Ateka, G., Anyenda, E., Rosezky, M., Kilavi, P., Wang, A. S., Shaker, K.
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- **Dual-Energy CTA Iodine Map Reconstructions Improve Visualization of Residual Cerebral Aneurysms following Endovascular Coiling.** *AJNR. American journal of neuroradiology*
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  2024

- **An adult and pediatric size-based contrast administration reduction phantom study for single and dual-energy CT through preservation of contrast-to-noise ratio.** *Journal of applied clinical medical physics*
  Wang, J., Duan, X., Mahmood, U., McKenney, S. E., Brady, S. L.
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- **Standardized medical terminology for cardiac computed tomography 2023 update: An Expert Consensus Document of the Society of Cardiovascular Computed Tomography (SCCT), American Association of Physicists in Medicine (AAPM), American College of Radiology (ACR), North American Society for Cardiovascular Imaging (NASCI) and Radiological Society of North America (RSNA) with endorsement by the Asian Society of Cardiovascular Imaging (ASCI), the European Association of Cardiovascular Imaging (EACI), and the European Society of Cardiovascular Radiology (ESCR).** *Journal of cardiovascular computed tomography*
  Koweek, L., Achenbach, S., Berman, D. S., Carr, J. J., Cury, R. C., Ghoshhajra, B., Litmanovich, D., McCollough, C. H., Taylor, A. J., Truong, Q. A., Wang, J., Weigold, W. G., Arbab-Zadeh, et al

2023

- **Low-dose coronary calcium scoring CT using a dedicated reconstruction filter for kV-independent calcium measurements.** *European radiology*
  Jubran, A., Mastrodicasa, D., van Praagh, G. D., Willemink, M. J., Kino, A., Wang, J., Fleischmann, D., Nieman, K.
  1800
- **Material Decomposition and Post-processing: History and Basic Principles** *Spectral Imaging: Dual-Energy, Multi-Energy and Photon-Counting CT*
  Wang, J., Duan, X., McCollough, C. H.
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- **Efficient evaluation of low-contrast detectability of deep-CNN-based CT reconstruction using channelized Hotelling observer on the ACR accreditation phantom** *SPIE Medical Imaging*
  Fan, M., Zhou, Z., Vrieze, T., Wang, J., McCollough, C. H., Yu, L.
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- **Radiopaque Recreations of Lung Pathologies From Clinical Computed Tomography Images Using Potassium Iodide Inkjet 3-dimensional Printing: Proof of Concept.** *Journal of thoracic imaging*
  Wang, J., Falkson, S. R., Guo, H. H.
  2021
- **Coronary Artery Calcium Scoring: Toward a New Standard.** *Investigative radiology*
  van Praagh, G. D., Wang, J., van der Werf, N. R., Greuter, M. J., Mastrodicasa, D., Nieman, K., van Hamersvelt, R. W., Oostveen, L. J., Lange, F. d., Slart, R. H., Leiner, T., Fleischmann, D., Willemink, et al
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- **Multi-institution consensus paper for acquisition of portable chest radiographs through glass barriers.** *Journal of applied clinical medical physics*
  McKenney, S. E., Wait, J. M., Cooper, V. N., Johnson, A. M., Wang, J., Leung, A. N., Clements, J.
  2021
- **A calibration CT mini-lung-phantom created by 3-D printing and subtractive manufacturing.** *Journal of applied clinical medical physics*
  Guo, H. H., Persson, M., Weinheimer, O., Rosenberg, J., Robinson, T. E., Wang, J.
  2021
- **Fully Automated Quantification Method (FQM) of Coronary Calcium in an Anthropomorphic Phantom.** *Medical physics*
  van Praagh, G. D., van der Werf, N. R., Wang, J., van Ommen, F., Poelhekken, K., Slart, R. H., Fleischmann, D., Greuter, M. J., Leiner, T., Willemink, M. J.
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- **Performance Evaluation of Computed Tomography Systems: Summary of AAPM Task Group 233.** *Medical physics*
  Samei, E., Bakalyar, D., Boedeker, K. L., Brady, S., Fan, J., Leng, S., Myers, K. J., Popescu, L. M., Ramirez Giraldo, J. C., Ranallo, F., Solomon, J., Vaishnav, J., Wang, et al
  2019
- **Ferumoxytol-enhanced MRI for surveillance of pediatric cerebral arteriovenous malformations.** *Journal of neurosurgery. Pediatrics*
  Huang, Y. n., Singer, T. G., Iv, M. n., Lanzman, B. n., Nair, S. n., Stadler, J. A., Wang, J. n., Edwards, M. S., Grant, G. A., Cheshier, S. H., Yeom, K. W.
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- **Ultrafast pediatric chest computed tomography: comparison of free-breathing vs. breath-hold imaging with and without anesthesia in young children.** *Pediatric radiology*
  Kino, A., Zucker, E. J., Honkanen, A., Kneebone, J., Wang, J., Chan, F., Newman, B.
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- **Improving Spatial Resolution at CT: Development, Benefits, and Pitfalls.** *Radiology*
  Wang, J., Fleischmann, D.
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- **Can image-domain filtering of FBP CT reconstructions match low-contrast performance of iterative reconstructions?** *Proc. SPIE Medical Imaging 2018: Physics of Medical Imaging*

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- **AAPM medical physics practice guideline 6.a.: Performance characteristics of radiation dose index monitoring systems.** *Journal of applied clinical medical physics*
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- **Reduced dose CT with model-based iterative reconstruction compared to standard dose CT of the chest, abdomen, and pelvis in oncology patients: intra-individual comparison study on image quality and lesion conspicuity.** *Abdominal radiology*
  Morimoto, L. N., Kamaya, A., Boulay-Coletta, I., Fleischmann, D., Molvin, L., Tian, L., Fisher, G., Wang, J., Willmann, J. K.
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- **How to Provide Gadolinium-Free PET/MR Cancer Staging of Children and Young Adults in Less than 1 h: the Stanford Approach.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*
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- **Attenuation-based estimation of patient size for the purpose of size specific dose estimation in CT. Part II. Implementation on abdomen and thorax phantoms using cross sectional CT images and scanned projection radiograph images** *MEDICAL PHYSICS*
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- **Attenuation-based estimation of patient size for the purpose of size specific dose estimation in CT. Part I. Development and validation of methods using the CT image** *MEDICAL PHYSICS*
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- **Kidney Stone Volume Estimation from Computerized Tomography Images Using a Model Based Method of Correcting for the Point Spread Function** *JOURNAL OF UROLOGY*
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- **Radiation dose reduction to the breast in thoracic CT: Comparison of bismuth shielding, organ-based tube current modulation, and use of a globally decreased tube current** *MEDICAL PHYSICS*
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- **Noise reduction in spectral CT: Reducing dose and breaking the trade-off between image noise and energy bin selection** *MEDICAL PHYSICS*
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- **Dose Reduction to Anterior Surfaces With Organ-Based Tube-Current Modulation: Evaluation of Performance in a Phantom Study** *AMERICAN JOURNAL OF ROENTGENOLOGY*
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- **CT scanner x-ray spectrum estimation from transmission measurements** *MEDICAL PHYSICS*
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- **In vivo quantitative imaging of normal and cancerous breast tissue using broadband diffuse optical tomography** *MEDICAL PHYSICS*
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