

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

12/09/2022

Katsuyuki “Ken” Taguchi

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments *(in chronological order, earliest first by start date under each subcategory)*

2019–present Professor, Department of Radiology, Johns Hopkins University School of Medicine
Secondary Appointment at Department of Biomedical Engineering, Johns Hopkins University School of Medicine and Johns Hopkins Whiting School of Engineering

Personal Data

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Education and Training

1985–1989	B.Sc., Tokyo Institute of Technology, Tokyo, Japan	Mechanical Engineering Science
1989–1991	M.Sc., Tokyo Institute of Technology, Tokyo, Japan	Mechanical Engineering Science
2002	Ph.D., University of Tsukuba, Ibaraki, Japan	Information Science and Electrical Engineering

Professional Experience

1991–1998	Researcher (Shuji), Toshiba Medical Systems Corporation, Tochigi, Japan
1998–2002	Project Researcher (Shumu), Toshiba Medical Systems Corporation, Tochigi, Japan
1998–2000	Visiting Scientist, University of Utah, Salt Lake City, UT
2002–2005	Senior Specialist (Shusa), Toshiba Medical Systems Corporation, Tochigi, Japan
2002–2005	Senior Imaging Scientist, Toshiba America Medical Systems, Tustin, California
2005–2007	Instructor, Department of Radiology, Johns Hopkins University School of Medicine
2007–2012	Assistant Professor, Department of Radiology, Johns Hopkins University School of Medicine
2012–2019	Associate Professor, Department of Radiology, Johns Hopkins University School of Medicine
2016–2019	Guest Researcher, National Institutes of Health, Bethesda, MD
2018–2019	Associate Professor, Department of Biomedical Engineering, Johns Hopkins University School of Medicine and Johns Hopkins Whiting School of Engineering
2019–present	Professor, Department of Radiology, Johns Hopkins University School of Medicine Secondary Appointment at Department of Biomedical Engineering, Johns Hopkins University School of Medicine and Johns Hopkins Whiting School of Engineering

PUBLICATIONS:

Katsuyuki Taguchi’s H-index is 35; i10-index is 88; cited by 5,784 times in total (Google Scholar, as of July 20, 2022). Three most significant publications are OR2, OR28, and RA2 listed below.

Original Research [OR]

- 1 Obikawa T, **Taguchi K**, Sasahara H, Shirakashi T, Usui E. Finite element analysis on discontinuous chip formation. *J JSPE*. 1993;59(5):821–826.
- 2 **Taguchi K**, Aradate H. Algorithm for image reconstruction in multi-slice helical CT. *Med Phys*. 1998;25 (4):550–561. [SI]
- 3 **Taguchi K** Anno H. High temporal resolution for multi-slice helical computed tomography. *Med Phys*. 2000;27(5):861–872. [SI]
- 4 **Taguchi K**, Miyashita S, Ogawa Y. New image reconstruction algorithm for increasing spatial resolution in trans-axial plane with helical CT: Principles and physical characteristics. *J JAMIT*. 2001;19(3):175–186.
- 5 **Taguchi K**, Zeng GL, Gullberg GT. Cone-beam image reconstruction using spherical harmonics. *Phys Med Biol*. 2001;46:N127–N138.

- 6 **Taguchi K**. Temporal resolution and the evaluation of candidate algorithms for four-dimensional CT. *Med Phys*. 2003;30(4):640–650. ([PMC12722816](#)). [QI]
- 7 Mori I, Kazama M, Igarashi N, **Taguchi K**. Method for suppressing alias artifacts in R/R-type CT. *J JAMIT*. 2003;21(4):254–264. [QI]
- 8 Hein IA, **Taguchi K**, Silver MD, Kazama M, Mori I. Feldkamp-based cone-beam reconstruction algorithm for gantry-tilted helical multislice CT. *Med Phys*. 2003;30(12):3233–3242. [QI].
- 9 **Taguchi K**, Chiang BS, Silver MD. A new weighting scheme for cone-beam helical CT to reduce the image noise. *Phys Med Biol*. 2004;49:2351–2364. [QI]
- 10 **Taguchi K**, Aradate H, Saito Y, Zmora I, Han KS, Silver MD. The cause of the artifact in 4-slice helical CT. *Med Phys* 2004;31(7):2033–2037.
- 11 Zamyatin AA, **Taguchi K**, Silver MD. Helical cone beam reconstruction with an asymmetrical detector. *Med Phys*. 2005;32(10):3117–3127. ([PMC16279064](#))
- 12 **Taguchi K**, Chiang BS, Hein IA. Direct cone-beam cardiac reconstruction algorithm with a cardiac banding artifact correction. *Med Phys*. 2006;33(2):521–539. ([PMID 16532960](#)) [SI/QI]
- 13 Zamyatin AA, **Taguchi K**, Silver MD. Practical hybrid convolution algorithm for CT reconstruction. *IEEE T Nucl Sci*. 2006;53:167–174.
- 14 Katsevich A, **Taguchi K**, Zamyatin AA. Formulation of four Katsevich algorithms in native geometry. *IEEE T Med Imaging*. 2006;25:855–868. ([PMC16827487](#)). [SI]
- 15 **Taguchi K** Kudo H. Motion compensated fan-beam reconstruction for non-rigid transformation. *IEEE T Med Imaging*. 2008;27:907–917. ([PMID 18599396](#)) [SI]
- 16 Funama Y, Awai K, **Taguchi K**, Hatemura M, Yanaga Y, Shimamura M, Yamashita Y. Cone-beam technique for 64-MDCT of lung: Image quality comparison with stepwise (step-and-shoot) technique. *Am J Roentgenol*. 2009;192:273–278. ([PMC19098210](#)).
- 17 **Taguchi K**, Funama Y, Zhang M, Fishman EK, Geschwind JFH. Quantitative measurement of iodine concentration in the liver using abdominal C-arm computed tomography. *Acad Radiol*. 2009;16(2):200–208. ([PMC19124106](#)).
- 18 Tashima H, **Taguchi K**. Nonrigid 3D motion-compensated image reconstruction for cone-beam x-ray computed tomography. *J JAMIT*, Sept 2009;27(4):224–228.
- 19 Funama Y, **Taguchi K**, Awai K, Sakabe D, Shimamura M, Yamashita Y. Image noise and radiation dose using an automatic tube current modulation technique at 64-detector CT: Effect of the object off-center position, the bowtie filter type, and scan projection radiograph. *J Comput Assist Tomo*. 2009;33:973–977. ([PMC19940670](#)).
- 20 **Taguchi K**, Frey EC, Wang X, Iwanczyk JS, Barber WC. An analytical model of the effects of pulse pileup on the energy spectrum recorded by energy resolved photon counting x-ray detectors. *Med Phys*. 2010;36(8):3957–3969. ([PMC20879558](#)). [SI]
- 21 Xu J, **Taguchi K**, Tsui BMW. Statistical projection completion in x-ray CT using consistency condition. *IEEE T Med Imaging*. 2010;29:1528–1540. ([PMC20442046](#)). [SI]
- 22 Lin MD, Loffroy R, Niels N, **Taguchi K**, Alessandro R, Blijd J, Balquid A, Geschwind JH. Evaluating Tumors In Transcatheter Arterial Chemoembolization (TACE) Using Dual-Phase Cone-Beam CT. *Minim Invasiv Ther*. 2011;20(5):276–281. ([PMC21082901](#)).
- 23 **Taguchi K**, Zhang M, Frey EC, Wang X, Iwanczyk JS, Nygard E, Hartsough NE, Tsui MWT, Barber WC. Modeling the performance of a photon counting x-ray detector for CT: energy response and pulse pileup effects. *Med Phys*. 2011;37(2):1089–1102. ([PMC3045417](#)). [SI]
- 24 **Taguchi K**, Xu J, Srivastava S, Tsui BMW, Cammin J, Tang Q. Interior region-of-interest reconstruction using a small, nearly piece-wise constant sub-region. *Med Phys*. 2011;37(3):1307–1312. ([PMC3055906](#))([PMC459860](#)). [SI]
- 25 Wang X, Meier D, **Taguchi K**, Wagenaar D, Patt BE, Frey EC. Material separation in x-ray CT with energy resolved photon-counting detectors. *Med Phys*. 2011;37(3):1534–1546. ([PMC3060934](#)).
- 26 Funama Y, **Taguchi K**, Utsunomiya D, Oda S, Kuwahara S, Hatemura M, Yanaga Y, Yamashita Y, Awai K. Combination of a low-tube voltage technique with the hybrid iterative reconstruction (iDose) algorithm for coronary CT angiography. *J Comput Assist Tomo*. 2011;35(4):480–485. (NIHMS297425, [PMC3151159](#), [PMID21765305](#)).
- 27 Funama Y, **Taguchi K**, Daisuke Utsunomiya D, Oda S, Murasaki H, Yamashita Y, Awai K. Dose profiles for lung and breast regions at prospective and retrospective CT coronary angiography using optically stimulated luminescence dosimeters on a 64-detector CT scanner. *Phys Medica*. 2012;28(1):76–82. ([PMC21353800](#)).
- 28 Tang Q, Cammin J, Srivastava S, **Taguchi K**. A fully four-dimensional, iterative motion estimation and compensation method for cardiac CT. *Med Phys*. 2012;38(7):4291–4305. ([PMC3396707](#)). [SI]
- 29 Fung GSK, Kawamoto S, Matlaga BR, **Taguchi K**, Fishman EK, Tsui BMW. Differentiation of kidney stones using dual-energy CT with and without a tin filter. *Am J Roentgenol*. 2012;198(6):1380–1386. ([PMC22623552](#)).

- 30 Funama Y, Oda S, Utsunomiya D, **Taguchi K**, Shimonobo T, Yamashita Y, Awai K. Coronary artery stent evaluation by combining iterative reconstruction and high-resolution kernel at coronary CT angiography. *Acad Radiol*. 2012;19(11):1324-1331. ([PMC22951109](#)).
- 31 Zbijewski W, Gang G, Xu J, Wang AS, Stayman JW, **Taguchi K**, Carrino J, Siewerdsen JH. Dual-Energy Cone-Beam CT with a Flat-Panel Detector: Effect of Reconstruction Algorithm on Material Classification. *Med Phys*. 2014;41(2):021908. ([PMID24506629](#)).
- 32 Funama Y, Utsunomiya D, **Taguchi K**, Oda S, Shimonobo T, Yamashita Y, Awai K. Automatic exposure control at single- and dual-heartbeat CTCA on a 320-MDCT volume scanner: effect of heart rate, exposure phase window setting, and reconstruction algorithm. *Phys Medica* 2014;30(3):385–390. ([PMID24662097](#)).
- 33 Cammin J, Xu J, Barber WC, Iwanczyk JS, Nygard E, Hartsough NE, **Taguchi K**. A cascaded model of spectral distortions due to spectral response effects and pulse pileup effects in a photon-counting x-ray detector for CT. *Med Phys*. 2014;41(4):041905. ([PMC3979165](#)).
- 34 Funama Y, Oda S, Utsunomiya D, **Taguchi K**, Shimonobo T, Yamashita Y, Awai K. Image quality assessment of an iterative reconstruction algorithm applied to abdominal CT imaging. *Phys Medica*. 2014;30(4):527–534. ([PMID24662097](#); [PMC6347105](#)).
- 35 Ashikaga H, Cammin J, Tang Q, Knudsen K, Inoue Y, Fishman EK, **Taguchi K**. Quantitative assessment of atrial regional function using motion estimation CT. *J Comput Assist Tomo*. 2014;38(5):773–778. ([PMID24983435](#), [PMC4167165](#)).
- 36 Xu J, Zbijewski W, Gang G, Stayman JW, **Taguchi K**, Lundqvist M, Fredenberg E, Carrino JA, Siewerdsen JH. Cascaded systems modeling of signal, noise, and DQE for x-ray photon counting detectors. *Med Phys*. 2014;41(10):101907. ([PMC4281040](#)). This paper was selected to be highlighted under the Editor’s Pick column as one of four highest quality papers in October issue. This paper also received **Moses and Sylvia Greenfield Award** selected by AAPM for the best paper published in *Med Phys* in 2014.
- 37 Funama Y, **Taguchi K**, Shimonobo T, Oda S, Utsunomiya D, Yamashita Y. A newly-developed metal artifact reduction algorithm improves the visibility of oral cavity lesions on 320-MDCT volume scans. *Phys Medica*. 2015;31(1):66–71. ([PMID 25455439](#)).
- 38 **Taguchi K**, Cammin J. A new redundancy weighting scheme for non-stationary data for computed tomography. *Med Phys*. 2015;42:2659–2667. ([PMID 25979064](#); [PMC 4443724](#)).
- 39 Nakada K, **Taguchi K***, Fung GSK, Amaya K. Joint estimation of tissue types and linear attenuation coefficients for photon counting CT. *Med Phys*. 2015;41:5329–5341. ***Corresponding author**. This paper was selected to be highlighted under the Editor’s Pick column as one of four highest quality papers in September issue. ([PMID 26328982](#)). [SI/QI]
- 40 Funama Y, **Taguchi K**, Utsunomiya D, Oda S, Shimonobo T, Yuki H, Kidoh M, Yamashita Y. Simultaneous achievement of accurate CT number and image quality improvement for myocardial perfusion CT at 320-MDCT volume scanning. *Phys Medica*. 2015;31(7):702–707. ([PMID 26084583](#))
- 41 Al-Issa A, Inoue Y, Cammin J, Tang Q, Nazarian S, Calkins H, Fishman EK, **Taguchi K**, Ashikaga H. Regional function analysis of left atrial appendage using motion estimation CT and risk of stroke in patients with atrial fibrillation. *Eur Heart J-Card Img*. 2016;17(7):788–796. ([jev207](#), 9/4/15). (doi:10.1093/ehjci/jev207) ([PMID 26341293](#); [PMC4907380](#))
- 42 Sisniega A, Zbijewski W, Stayman JW, Xu J, **Taguchi K**, Fredenberg E, Lundqvist M, Siewerdsen JH. Volumetric Cone Beam CT image with sparse detectors: application to Si-strip photon counting CT. *Phys Med Biol*. 2016;61(1):90–113. ([PMID 26611740](#); [PMC5070652](#); [NIHMS820155](#)).
- 43 Cammin J, Kappler S, Weidinger T, **Taguchi K**. Evaluation of models of spectral distortions in photon-counting detectors for CT. *J Med Imaging*. 2016;3(2):023503 (12 pages). [PMID 27213165](#); [PMCID: PMC4859407](#).
- 44 **Taguchi K**, Polster C, Lee Q, Stierstorfer K, Kappler S. Spatio-energetic cross-talk in photon counting detectors: Detector model and correlated Poisson data generator. *Med Phys*. 2016;43(12):6386–6404. This paper outlined an earlier version of Photon Counting Toolkit (PcTK); see Ref. 51. ([PMID 27908175](#)) [SI]
- 45 Lee Q, Kappler S, Polster C, **Taguchi K**. Estimation of basis line-integrals for spectral distortion compensation in photon counting detector using low-order Gram polynomials. *IEEE T Med Imaging*. 2017;36(2):560–573. ([PMID 27810801](#)). [SI]
- 46 Funama Y, Utsunomiya D, Hirata K, **Taguchi K**, Nakaura T, Oda S, Kidoh M, Yuki H, Yamashita Y. Improved estimation of coronary plaque and luminal attenuation using a vendor-specific model-based iterative reconstruction algorithm in contrast-enhanced CT coronary angiography. *Acad Radiol*. 2017;24(9):1070–1078. <http://dx.doi.org/10.1016/j.acra.2017.02.006> Epub 2017 Apr 7. ([PMID 28396126](#), [PMC 5557674](#), [NIHMS 861742](#))
- 47 Fung GSK, Ciuffo L, Ashikaga H, **Taguchi K**. Motion estimation for cardiac function analysis using two x-ray computed tomography scans. *Med Phys* 2017;44(9):4677–4686. ([NIHMS 886699](#), [PMID 28639400](#); [PMC5603222](#)).

- 48 [Lee O](#), Kappler S, Polster C, **Taguchi K**. Estimation of basis line-integrals in a spectral distortion-modeled photon counting detector using low-rank approximation-based x-ray transmittance modeling: K-edge imaging application. *IEEE T Med Imaging*. 2017;36(11):2389–2403. [DOI:10.1109/TMI.2017.2746269](#). ([PMID 28866486](#)) [SI]
- 49 Sakabe D, Funama Y, **Taguchi K**, Nakaura T, Utsunomiya D, Oda S, Kidoh M, Nagayama Y, Yamashita Y. Image quality characteristics for virtual monoenergetic images using dual-layer spectral CT: comparison of conventional tube-voltage images. *Phys Medica* 2018;49:5–10. [PMID 29866343](#).
- 50 [Kidoh M](#), Utsunomiya D, Funama Y, Ashikaga H, Nakaura T, Oda S, Yuki H, Hirata K, Iyama Y, Nagayama Y, Choi S, Jung JI, Fukui T, Yamashita Y, **Taguchi K**. Vectors through a cross-sectional image (VCI): A visualization method for four-dimensional motion analysis using an image-based motion-estimation algorithm for cardiac computed tomography. *J Cardiovasc Comput* 2017;11(6):468–473. DOI:10.1016/j.jcct.2017.09.010. [PMID 28967574](#), [PMC5712277](#).
- 51 **Taguchi K**, Stierstorfer K, Polster C, [Lee O](#), Kappler S. Spatio-energetic cross-talk in photon counting detectors: Numerical detector model (PcTK) and workflow for CT image quality assessment. *Med Phys* 2018;45(5):1985–1998. This paper outlined Photon Counting Toolkit (PcTK), a software tool for modeling photon counting detectors (PCD) and synthesizing PCD data for CT, made available to academic researchers ([pctk.jhu.edu](#)). ([PMID 29537627](#)) [SI]
- 52 **Taguchi K**, Itoh I, Fuld MK, Fournie E, [Lee O](#), Noguchi K. Non-contrast-enhanced dual-energy computed tomography for acute ischemic stroke: “X-map 2.0” for consistent edema signal enhancement. *Invest Radiol* 2018;53(7):432–439. This paper was mentioned in “A note from the Editor” and part of Figure 4 was highlighted in the image carousel in the online journal. ([PMID 29543692](#)) [SI]
- 53 **Taguchi K**, Stierstorfer K, Polster C, [Lee O](#), Kappler S. Spatio-energetic cross-talk in photon counting detectors: $N \times N$ binning and sub-pixel masking. *Med Phys* 2018;45(11):4822–4843. This is the first paper that discusses the merit of anti-scatter grids on decreasing charge sharing between PCD pixels. ([PMID 30136278](#))
- 54 **Taguchi K**. Multi-energy inter-pixel coincidence counters for charge sharing correction and compensation in photon counting detectors. *Med Phys* 2020;47(5):2085–2098. [PMID 31984498](#); [DOI:10.1002/mp.14047](#).
- 55 **Taguchi K**. Assessment of multi-energy inter-pixel coincidence counters (MEICC) for charge sharing correction or compensation for photon counting detectors with boxcar signals. *IEEE T Radiation and Plasma Medical Sciences* 2021;5(4):465–475. [PMID 34250325](#); [PMC8270007](#); [DOI:10.1109/TRPMS.2020.3003251](#).
- 56 **Taguchi K**, Sauer TJ, Segars WP, Frey EC, Xu J, Liapi E, Stayman JW, Hong K, Hui FK, Unberath M, Du Y. Three-dimensional regions-of-interest-based intra-operative 4-dimensional soft tissue perfusion using a standard x-ray system with no gantry rotation: A simulation study for a proof of concept. *Med Phys* 2020;47(12):6087–6102. ([PMID 33006759](#); [DOI:10.1002/mp.14514](#)).
- 57 [Lee O](#), Rajendran K, Polster C, Stierstorfer K, Kappler S, Leng S, McCollough CH, **Taguchi K**. X-ray transmittance model-based material decomposition using photon-counting detector CT system. *IEEE T Radiation and Plasma Medical Sciences* 2021;5(4):508–516. [DOI:10.1109/TRPMS.2020.3028363](#)). 13th as last author
- 58 **Taguchi K**, Iwanczyk JS. Assessment of multi-energy inter-pixel coincidence counters (MEICC) for photon counting detectors at the presence of charge sharing and pulse pileup: a simulation study. *Med Phys* 2021;48(9):4909–4925. ([PMID 34287966](#); [DOI:10.1002/mp.15112](#)).
- 59 **Taguchi K**, Polster C, Segars WP, Aygun N, Stierstorfer K. Model-based pulse pileup and charge sharing compensation for photon counting detectors: a simulation study. *Med Phys* 2022;49(8):5038–5051. ([DOI:10.1002/mp.15779](#)). 23rd as 1st author.
- 60 Ghammraoui B, **Taguchi K**, Glick SJ. Inclusion of a GaAs detector model in the Photon Counting Toolkit software for the study of breast imaging systems (submitted to PLOS, under review).
- 61 Schaeffer C, Ghammraoui B, **Taguchi K**, Glick SJ. Theoretical comparison and optimization of CdTe and GaAs photon-counting detectors for contrast-enhanced spectral mammography (submitted to Journal of Medical Imaging, under review).
- 62 **Taguchi K**, Hsieh SS. Direct energy binning for photon counting detectors: simulation study (submitted to Medical Physics, 10/14/2022).
- 63 **Taguchi K**. The number of energy windows for photon counting detectors: Is more actually more? *Physics in Medicine and Biology* 2022 (ready for submission).

Review Articles [RA]

- 1 McCollough CH, Chen GH, Kalender W, Leng S, Samei E, **Taguchi K**, Wang G, Yu L, Pettigrew R. Achieving routine sub-millisievert CT scanning: Report from the summit on management of radiation dose in CT. *Radiology*. 2012;264(2):567–580. ([PMC22692035](#)).
- 2 **Taguchi K**, Iwanczyk JS. Vision 20/20: Single photon counting x-ray detectors in medical imaging. *Med Phys*. 2013;40(10):100901. ([PMC3786515](#)).

- 3 **Taguchi K.** Energy-sensitive photon counting detector-based x-ray computed tomography. *Radiological Physics and Technology*. 2017;10:8–22. DOI 10.1007/s12194-017-0390-9 ([PMID 28138947](https://pubmed.ncbi.nlm.nih.gov/28138947/)). This paper received the Most Citation Award 2019 by Japanese Society of Medical Physics.
- 4 **Taguchi K**, Ballabriga R, Campbell M, Darambara DG. Photon counting detector computed tomography. *IEEE T Radiation and Plasma Medical Sciences* 2022;6(1):1–4. [DOI: 10.1109/TRPMS.2021.3133808](https://doi.org/10.1109/TRPMS.2021.3133808).

Book Chapters, Monographs [BC]

- 1 **Taguchi K**, Saito Y. Multi-slice CT. *Japanese Journal of Radiological Technology*. 1999;55(2):155–164.
- 2 **Taguchi K.** Improvement of the temporal resolution in helical scan. JIRA technical report. 2001;20(19).
- 3 **Taguchi K.** Image reconstruction in helical CT,” *Journal of Japanese Society of Medical Imaging Technology*. 2001;19(6):436–443.
- 4 **Taguchi K.** Multi-slice CT toward the four-dimensional CT. (In) *All about multidetector helical CT*. Edited by Takahashi M, Arakawa A. (Kanehara Publishing, Inc., Tokyo, Japan). 2002:16–20.
- 5 **Taguchi K**, Geschwind JFH. Interventional oncology on a C-arm system with XperCT: targeting liver cancer. *MedicaMundi*. 2007;51(2+3):29–33.
- 6 Holz A, Lodge MA, **Taguchi K.** CT and PET for stomach cancer. Special edition of *Rinshoioy*. 2008;66(Suppl. 5):159–163.
- 7 **Taguchi K.** Toward motion compensated four-dimensional CT imaging. *Medical Imaging and Information*. 2008;40(13):1225–1229.
- 8 **Taguchi K**, **Khaled A.** Artifacts in cardiac computed tomography images. *Journal of the American College of Radiology*. 2009;6:590–593. ([PMID 19643389](https://pubmed.ncbi.nlm.nih.gov/19643389/); [PMC6360940](https://pubmed.ncbi.nlm.nih.gov/PMC6360940/)).
- 9 **Taguchi K.** Image reconstruction algorithms. (In) *Medical Imaging Handbook*. Edited by Ishida T., Katsuragawa S., and Fujita H. (Ohmsha, Inc., Tokyo, Japan). 2010, Vol. 3, Chapter 2.
- 10 **Taguchi K.** Multi-slice CT. (In) *Medical Imaging Handbook*. Edited by Ishida T., Katsuragawa S., Fujita H. (Ohmsha, Inc., Tokyo, Japan). 2010, Vol. 3, Chapter 3.
- 11 **Taguchi K**, **Tang Q.** Four-dimensional cardiac imaging using x-ray CT. *Medical Imaging and Information*. 2011;43(13):1105–1110.
- 12 **Taguchi K.** X-ray spectral CT imaging methods using photon-counting detectors: Clinical merits and technical challenges. In special issue on Multi-slice CT. *Medical Imaging and Information*. 2012;44(13):1154–1159.
- 13 **Cammin J**, **Taguchi K.** X-ray physics. In *Stem Cell Labeling for Delivery and Tracking using Non-invasive Imaging*. Edited by Kraitichman D, Wu J. (CRC Press, Inc.). 2011. ISBN-10:1439807515.
- 14 **Taguchi K.** Photon counting CT. In special issue on the Principals and the Current Status of Dual-energy CT. *Clinical Imagiology*. 2015;31(4):n–n.
- 15 **Cammin J**, Iwanczyk JS, **Taguchi K.** Spectral/Photon-counting Computed Tomography. (In) *Emerging Imaging Technologies in Medicine (Imaging in Medical Diagnosis and Therapy Series* edited by Handee WR). Edited by Anastasio MA, La Riviere PJ. (Taylor & Francis Books, Inc.). 2012, Chapter 2, pp. 23–39.
- 16 **Taguchi K**, Fishman E.K. Cardiac CT imaging. (In) *Cone-beam CT (Imaging in Medical Diagnosis and Therapy Series* edited by Handee WR). Edited by Shaw C. (Taylor & Francis Books, Inc.). 2013, Chapter 13:nn–m.
- 17 **Taguchi K.** Image Reconstruction Algorithms for X-ray CT. (In) *Medical Imaging – Technologies and Applications*. Edited by Troy Farncombe, Krzysztof Iniewski. (CRC Press, Taylor & Francis Books, Inc.). 2013, Chapter 8, 189–215.
- 18 **Taguchi K.** Imaging Technologies and Potential Clinical Applications of Photon Counting X-Ray Computed Tomography. (In) *Radiation Detectors for Medical Imaging (Devices, Circuits, and Systems)*. Edited by Jan S. Iwanczyk, Krzysztof (Kris) Iniewski, (CRC Press, Taylor & Francis Books, Inc.). 2015, Chapter 6, 149–168.
- 19 Lee O, **Taguchi K.** Spectral Distortion Compensation for Spectral CT. (In) *Spectral, Photon Counting Computed Tomography: Technology and Applications (Devices, Circuits, and Systems)*. Edited by Taguchi K, Blevis I, Iniewski K. (CRC Press, Taylor & Francis Books, Inc.). July 14, 2020 (ISBN-13: 978-1138598126, ISBN-10: 1138598127).
- 20 Amaya K, **Taguchi K.** Novel Regularization Method with Knowledge of Region Types and Boundaries. (In) *Spectral, Photon Counting Computed Tomography: Technology and Applications (Devices, Circuits, and Systems)*. Edited by Taguchi K, Blevis I, Iniewski K. (CRC Press, Taylor & Francis Books, Inc.). July 14, 2020 (ISBN-13: 978-1138598126, ISBN-10: 1138598127).
- 21 **Taguchi K.** Photon Counting Detector Simulator: Photon Counting Toolkit (PcTK). (In) *Spectral, Photon Counting Computed Tomography: Technology and Applications (Devices, Circuits, and Systems)*. Edited by Taguchi K, Blevis I, Iniewski K. (CRC Press, Taylor & Francis Books, Inc.). July 14, 2020 (ISBN-13: 978-1138598126, ISBN-10: 1138598127).

- 22 **Taguchi K.** Imaging Technologies and Potential Clinical Applications of Photon Counting X-Ray Computed Tomography. (In) Radiation Detectors for Medical Imaging (Devices, Circuits, and Systems). 2nd edition. Edited by Jan S. Iwanczyk, Krzysztof (Kris) Iniewski, (CRC Press, Taylor & Francis Books, Inc.). 2021, Chapter 2, 43–66.

Books, Textbooks [BK]

- 1 **Taguchi K,** Blevis I, Iniewski K. Spectral, Photon Counting Computed Tomography: Technology and Applications (Devices, Circuits, and Systems). (CRC Press, Taylor & Francis Books, Inc.). July 14, 2020 (ISBN-13: 978-1138598126, ISBN-10: 1138598127).

Other Publications: 27 US patents and 90 Japanese patents are listed later in Inventions, Patents, Copyrights in RESEARCH ACTIVITIES

Proceedings Reports [PR]

- 1 **Taguchi K,** Farina D, Kanebako T, Nakayama H, Asahina H. Automatic contour tracing of the left ventricle from one cardiac cycle images of DF. Proceedings of the 13th conference of the *JAMIT* 1994;12(4):531–532.
- 2 **Taguchi K,** Zeng GL, Gullberg GT. Cone-Beam image reconstruction using spherical harmonics: Short-object problem with midsize-detector. *IEEE Nucl Sci Conf R* 2000, 147 (Lyon, France) (New York: IEEE).
- 3 **Taguchi K,** Zeng GL, Gullberg GT. Cone-Beam image reconstruction from equi-angular sampling using spherical harmonics. *SPIE Medical Imaging*. 2001;4322-96, San Diego, CA, U.S.A.
- 4 Silver MD, **Taguchi K,** Han K. Field of view dependent helical pitch in cone-beam CT. *SPIE Medical Imaging*. 2001;4320-103, San Diego, CA, U.S.A.
- 5 **Taguchi K.** High temporal resolution for four-dimensional computed tomography (4D-CT). *Fully 3D meeting*, October 2001, 175–178.
- 6 Silver MD, **Taguchi K,** Hein IA. A simple algorithm for increased helical pitch in cone-beam CT. *Fully 3D meeting*, October 2001, 70–73.
- 7 Silver MD, **Taguchi K,** Hein IA, Chiang BS, Kazama M, Mori I. Windmill artifact in multi-slice helical CT. *SPIE Medical Imaging*. 2003;5032–212, San Diego, CA, U.S.A.
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FUNDING

EXTRAMURAL Funding

Research Extramural Funding - Grants or contracts obtained to support a research initiative

Current

- | | |
|------------------|--|
| 1/22/20–11/30/22 | Intra-operative 4-D soft tissue perfusion using no gantry rotation (IPEN)
NIH NIBIB R21 EB029049
\$275,000 direct
Role: PI (20% effort) |
| 4/1/20–1/31/23 | Quasi-ideal photon counting x-ray CT with multi-energy inter-pixel coincidence counter (MEICC) |

	NIH NIBIB R21 EB029739 \$275,000 direct Role: PI (20% effort)
10/1/20–1/31/23	Photon Counting CT Project Neuro Phase 5 Siemens Healthineers Research Agreement \$149,254 direct (\$200,000 total) Role: PI (40% effort)
3/1/22–2/28/26	Assessing brain perfusion using IPEN during intra-arterial stroke intervention NIH R01 NS126256 ~\$1,600,000 direct cost (\$2,640,000 total) Role: PI (38% effort)
3/1/22–2/28/24	Spectral distortion correction for photon counting CT using parallel processing of detector energy channels Canon Medical Systems Corporation Research Agreement \$200,000 direct (\$344,000 total) Role: PI (10% effort)
Pending	
4/1/23–3/31/28	Development of quasi-ideal photon counting x-ray CT with MEICC NIH U1 EB034221 \$1,300,000 direct cost for JHU (\$4,500,000 total) Role: Contact PI (MPI) (40% effort)
7/1/22–6/30/23	Toward <i>in vivo</i> vasa vasorum density measurement Canon Medical Systems Corporation Research Agreement \$29,070 direct if on campus (\$50,000 total) Role: PI (5% effort)
1/15/23–1/14/25	Photon Counting CT Project High Reso 6 Siemens Healthineers Research Agreement \$149,254 direct (\$200,000 total) Role: PI (40% effort)
Previous	
9/22/05–8/31/08	Simulation Tools for Dynamic CT R01 EB 001838 National Institutes of Health (NIBIB) \$773,442 SPI: egars WP Role: Co-Investigator (10% effort)
1/1/06–3/31/09	Three-dimensional imaging for interventional tumor oncology I/O #90027610/Grant #100006 \$180,000 PI: Geshwind JFH Role: Co-Investigator (10–90% effort, varied over time)
7/1/06–6/30/08	Compensation of the non-periodic heart motion for cardiac CT 0665431U American Heart Association beginning grant-in-aid (AHA) \$120,000 Role: PI (15% effort), NCX to 6/30/2009
3/1/07–2/29/08	Banding artifact reduction and radiation dose reduction in cardiac CT images using estimated motion

JHU-2006-CT-06-01
Siemens Healthcare Research Agreement
\$59,758
Role: PI (20% effort)

1/1/08–12/31/10 Development of technologies for the detectability improvement and radiation dose reduction for 64-slice CT
Grant-in-aid for scientific research C #20591449
Japan Society for the Promotion of Science (Nihon Gakujutsu Shinkou Kai)
\$50,000
Role: Co-Investigator (5% effort)

4/1/08–3/31/10 Next generation microCT
R44 RR021794
National Institutes of Health (NIBIB)
\$199,000 (JHU part)
PI: Wagenaar D, Gamma Medica-Ideas (Frey EC for PI of JHU)
Role: Co-Investigator (4% effort)

4/1/08–11/30/10 Novel photon counting clinical CT detector
R43/R44 EB008612
National Institutes of Health (NIBIB)
\$198,000 (JHU part)
Barber W, DxRay, Inc
Role: PI of JHU (4% effort), NCX to 11/30/11

7/1/08–6/30/10 Motion compensated reconstruction for cardiac computed tomography
0865315E
American Heart Association beginning grant-in-aid (AHA)
\$120,000
Role: PI (10% effort), NCX to 6/30/11

8/1/08–5/31/12 Time resolved cardiac CT imaging with patient dose reduction
R01 HL087918 and 087918-S1
National Institutes of Health (NHLBI)
\$1,000,000 for the parent grant and \$142,000 for S1
Role: PI (50% effort) , NCX to 5/31/14

8/1/09–7/31/11 Motion estimation and compensation for cardiac CT
JHU-2009-CT-61-01
Siemens Healthcare Research Agreement
\$26,293
Role: PI (20% effort)

7/1/10–6/30/14 The energy sensitive photon counting x-ray detectors for clinical K-edge CT
R43/R44 EB012379
National Institutes of Health (NIBIB)
\$240,000 (JHU part)
PI: Barber W, DxRay, Inc
Role: PI of JHU (5% effort), NCX to 6/30/2015

7/1/10–6/30/14 Image science for the new x-ray: Taking Dual-Energy CT to task
R01 CA112163
National Institutes of Health (NCI)
\$1,000,000
PI: Siewerdsen JH
Role: Co-Investigator (5% effort)

9/1/12–8/31/14	Photon counting detector (PCD)-CT: Models, calibrations and compensations for Siemens' PCDs JHU-2012-CT-114-01-Taguchi-40630 Siemens Healthcare Research Agreement \$101,744 Role: PI (20% effort), NCX to 8/31/2015
9/1/13–8/31/14	Tissue type and density maps estimation in MDCT JHU-2013-CT-125-01-Taguchi-C00212554 Siemens Healthcare Research Agreement \$58,000 Role: PI (3% effort); NCX-8/31/2018
9/1/15–8/31/16	NoisyData Combination CR JHU-2015-CT-1xx-01-Taguchi-C00219287 Siemens Healthcare Research Agreement \$22,000 Role: PI (5% effort)
9/1/15–6/30/17	Investigation of Models & Compensation Schemes for Siemens' Photon Counting Detectors JHU-2015-CT-1-01-Taguchi-C00218347 Siemens Healthcare Research Agreement \$101,744 + \$33,450 Role: PI (20% effort)
9/4/15–8/31/16	Motion-compensated contrast-enhanced cardiac CT for perfusion and angiography R56 HL125680 National Institutes of Health (NHLBI) \$291,000 Role: PI (40% effort); NCX to 8/31/2018
9/1/16–8/31/18	JHU_Taguchi_Photon3_Combination_CR JHU-2013-CT-125-01-Taguchi-C00212554 Siemens Healthcare Research Agreement \$203,500 Role: PI (27% effort)
9/1/18–8/31/20	Photon Counting CT Project Phase 4 Siemens Healthineers Research Agreement \$235,075 direct (\$315,000 total) Role: PI (40% effort)

INTRAMURAL Funding

Research Intramural Funding

Current

7/1/19–6/30/21	Deep X-map for acute ischemic stroke using non-contrast-enhanced dual-energy CT Discovery Award \$100,000 direct (no indirect) Role: PI (10% effort)
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Educational Intramural Funding

Previous

9/28/98–3/27/00	Global Training Grant Toshiba Corporation \$10,000 plus 100% salary, fringe, housing, and other supports Role: PI (100% effort)
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6/18/12–8/17/12 Johns Hopkins Medical Student Research Opportunities Program
Johns Hopkins School of Medicine
\$3,000
Role: Primary Supervisor

EDUCATIONAL ACTIVITIES

Teaching

Classroom instruction

JHMI/Regional

- 2009–present (Spring Semester); Co-lecturer. Graduate and undergraduate students. X-ray CT, Image Reconstruction, and X-ray Systems (3 parts). In Modern Biomedical Imaging Instrumentation and Technology (Director: Tsui BMW). BME 580.773; BME 580.473; ECE 520.434; ECE 520.634. 8×1.25 hours
- 2010 (Spring Semester); Supervisor. Graduate students. Interventional C-arm project. In Advanced Computer-Integrated Surgery Course (Director: Taylor R). CS 600.446/646/452. 13-week project
- 2017–2020 (Spring Semester); Co-lecturer. Graduate and undergraduate students. X-ray CT, Image Reconstruction, and X-ray Systems (3 parts). In X-ray Imaging and Computed Tomography (Director: Siewerdsen JH). BME 580.479; BME 580.679. 6×1.25 hours
- 2021/4/15 (Spring Semester); 1-class seminar. Graduate and undergraduate students. X-ray CT, Image Reconstruction, and X-ray Systems. In X-ray Imaging and Computed Tomography (Director: Zbijewski W). BME 580.479; BME 580.679. 1.25 hours. “Spectral (photon counting) CT.”
- 2022/2/10 (Spring Semester); a seminar. Master’s degree Medical Physics Seminar. ME 420.705. 1 hour. “Spectral, photon counting x-ray computed tomography (CT).”
- 2022/4/26 (Spring Semester); 1-class seminar. Graduate and undergraduate students. X-ray CT, Image Reconstruction, and X-ray Systems. In X-ray Imaging and Computed Tomography (Director: Zbijewski W). BME 580.479; BME 580.679. 1.25 hours. “Spectral, photon counting x-ray computed tomography.”

CME instruction

International

- 7/26–28/02 Lecturer. Radiologists and Radiological Technicians at different levels. Principles and characteristics of 16-slice CT: Image acquisition, reconstruction and artifact considerations. Goldcoast, Australia. CT/MRI symposium.

Workshops /seminars (Organizer)

International

- 2007–present Chairperson. Divisional Research Seminar series for faculty, staff, fellows, and students.
- 2/19/08 Imaging Scientists at different levels. Multi-energy x-ray and CT imaging: Where we are and where we will go? In conjunction with International Society for Optical Engineering (SPIE) Medical Imaging Conference 2008. San Diego, CA
- 10/28/13 Fundamental and Applications of Photon-Counting X-Ray Detectors. In conjunction with IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2013. Seoul, South Korea
- 4/20–23/15 The Third Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland
- 5/15–18/17 The Fourth Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland
- 8/30–9/3/22 The Fifth Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland

Mentoring

Pre-doctoral Advisees /Mentees

- 9/06–8/08 Zhihui Sun, MSc (ECE, JHU). Senior Imaging Engineer at GE Healthcare (Beijing, China). Received her MSc degree from JHU. Published PR (MIC 2008).

- 9/06–8/08 Mengxi “Michelle” Zhang, BSc (ECE, JHU). Global Marketing Director at Siemens Healthcare (Shanghai, China and Boston, MA); Entrepreneur at Medical Device Startup (Shanghai, China). Received her MSc degree from JHU. Published OR 23 and PR (MIC 2008).
- 6/07–9/07 Mahmoud Ghandi, BSc (BME, JHU). Received his PhD degree from JHU. Senior Group Leader at Cancer Models Atlas Genomics (Cambridge, MA). A summer intern during the first year.
- 6/08–12/08 Hideaki Tashima, BSc (Tokyo Institute of Technology, Japan). Received his PhD degree from TITech. Research Fellow of National Institute of Radiological Science Technology (Inage, Japan). Was an international visiting student during his PhD training as the Center of Excellence in Japan. Received his PhD degree from TITech after returning to Japan. Published OR 18.
- 9/08–8/09 Alia S. Khaled, BSc (ECE, JHU). Received her MSc degree from JHU in May 2009 and PhD degree in 2013. Published BC 8.
- 9/11–12/11 Tatsuya Kigure, BSc (Tokyo Institute of Technology, Japan). Was an international visiting student during his MSc training as the Center of Excellence in Japan. Received his MSc degree from TITech after returning to Japan.
- 6/12–8/12 Jennifer Xu, BSc (BME, JHU). A summer intern during the first year. Received her PhD from JHU in 2016. Published OR 32 and 35 (the latter supervised by Siewerdsen JH), the latter of which received Moses and Sylvia Greenfield Award selected by AAPM for the best paper published in Med Phys in 2014.
- 6/12–2/13 Liwei Jiang, BSc (SOM, JHU). Was a research intern. Resident at Brigham and Women’s Hospital (Boston, MA) for 2016–2020. Staff at Memorial Sloan Kettering Cancer Center since 2022. Received his MD degree from JHU. Published PR (SPIE MI 2013).
- 8/13–8/14 Kento Nakada, MSc (Tokyo Institute of Technology, Japan). At Sony Corporation (Tokyo, Japan). Was an international visiting student during his MSc training. Published OR 38 and contributed to US patent 27; the former was selected to be highlighted under the Editor’s Pick column as one of four highest quality papers in the issue.
- 6/15–6/16 Zeyang Shen, BSc (Southeast Univeristy, Nanjing, China). At Biomedical Engineering (MSc course) at University of California at San Diego. Was in international exchange student during his BSc training. Published PR (SPIE MI 2016), PR (SPIE MI 2017), and a journal paper in preparation.
[6/15–8/15; 2/16–6/16]
- 3/16–6/16 Yuki Suzuki, MSc (Osaka University, Osaka, Japan; Nara Advanced Institute of Science and Technology, Nara, Japan). At Osaka University and Nara Advanced Institute of Science and Technology. Was an international visiting student as a part of his PhD training; received his PhD degree from Osaka University. Published PR (SPIE MI 2017).
- 8/21–present Shalini Subramanian, MSc (BME, JHU).

Post-doctoral Advisees /Mentees

- 9/03–4/05 Alexander A. Zamyatin, PhD (TMRU). At Analogic (former Toshiba Medical Research Institute in U.S.A., Samsung, United Imaging). Co-mentor, Silver MD.
- 9/05–2/07 David S. Graff, PhD (Radiology, JHU). At Apple, Inc. Co-mentor, Tsui BMW.
- 8/06–12/06 Yoshinori Funama, PhD (Kumamoto University). Professor at Kumamoto University. Was an international visiting scientist. Published OR 16, 17, 19, 26, 27, 30, 33, 36, 39, 45, 48, 49.
- 5/09–8/14 Jochen Cammin, PhD (Radiology, JHU). Assitant Professor of University of Maryland School of Medicine (Baltimore, MD) (former Washington University at St. Louis (St. Louis, MO). Published OR 24, 28, 32, 34, 37, 40, and 42, and BC 14.
- 9/09–2/12 Somesh Srivastava, PhD (Radiology, JHU). At GE Healthcare, Computed Tomography (Waukesha, WI). Published PR (SPIE, CT meeting).
- 5/10–4/13 Qiulin Tang, PhD (Radiology, JHU). At Canon Medical Institute (Vernon Hills, IL) (former Toshiba Medical Research Institute in U.S.A.). Published OR 24, 28, 34, 40, and BC 11.
- 5/15–8/18 Okkyun Lee, PhD (Radiology, JHU). Assistant Professor at Daegu Gyeongbuk Institute of Science and Technology (DGIST) (Daegu, South Korea). Published OR 43, 44, 47, and PR (CT meeting 2016, SPIE MI 2017x2)
- 9/16–3/17 Masafumi “Mike” Kidoh, MD, PhD (Kumamoto University). Assistant Professor at Kumamoto University. Was an international visiting scientist. Published OR 49 and PR (SPIE MI 2017)
- 4/22–present Donghyeon Lee, PhD (Radiology, JHU). Postdoc.

Thesis committees

JHMI/Regional

- 2011–2012 Lishui Chen, PhD (BME, JHU). One of 3 committee members.

2012–2015	Hao Dang, PhD (BME, JHU). Model-based reconstruction in cone-beam computed tomography: Advanced models of imaging physics and prior information. One of 4 committee members.
2014–2016	Jennifer Xu, PhD (BME, JHU). Image quality model-based design and development of a dedicated cone-beam computed tomography system for imaging of the head. One of 3 committee members.
2015–2019	Steven W. Tilley II (PhD course, BME, JHU). One of 4 committee members.
2018	Andrew Mao (MSc course, BME, JHU). One of committee members.
2020–2021	Pengwei Wu (PhD course, BME, JHU). The chair of the committee. 4 members
2020–2022	Mathew Tivnan (PhD course, BME, JHU). One of committee members. 3 members?
2020–2022	Wenying Wang (PhD course, BME, JHU). The chair of the committee. 5 members.

International

9–11/10	Christopher Rohkohl, PhD. Technische Fakultät, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany (The primary supervisor: Joachim Hornegger)
6–7/13	Raja Aamir Younis, PhD. Using MARS spectral CT for identifying biomedical nanoparticles. University of Canterbury, Christchurch, New Zealand (The primary supervisor: Phil H. Butler)
1–3/16	Kishore Rajendran, PhD. MARS spectral CT technology for orthopedic applications. University of Otago, Christchurch, New Zealand (The primary supervisor: Anthony H. Butler)

Graduate/Doctoral Board Oral Examiners

3/2009	Mahmoud Ghandi (BME, JHU)
4/2009	Alia Khaled (ECE, JHU)
3/2010	Lishui Chen (BME, JHU)
12/2012	Shadi Toghi Eshghi (BME, JHU)
?/ 2013	Tao Feng (ECE, JHU)
3/2013	Hao Dang (BME, JHU)
3/2014	Jennifer Xu (BME, JHU)
3/2014	Jianting Yue (ECE, JHU)
5/2017	Ye “Gary” Li (ECE, JHU)
7/2018	Pengwei Wu (BME, JHU)
11/2020	Matthew Tivnan (BME, JHU)

RESEARCH ACTIVITIES *(in chronological order, earliest first by start date under each subcategory)*

Research Focus

We aim at game-changing developments or discoveries in Radiology and Biomedical Engineering. We wish to develop something that will drastically change how images are generated and used in Radiology and with other disciplines; and we believe in adding a new concept and dimension to clinical information/images. For x-ray CT imaging, the new dimension is the temporal-axis (motion or perfusion or both) and the material-axis via spectral information. We tackle research topics with practical value, take scientifically sound approaches, and publish in top journals. We enjoy the work, respect our colleagues in the world, and hope to be respected and recognized. We believe that we provide a great opportunity to our students and postdocs for their growth.

Research Program Building / Leadership

2005/6–present Director of KU Research Laboratory, Radiological Physics Division (former CT Research Group, Division of Medical Imaging Physics), Radiology

Inventions, Patents, Copyrights

Patents (US)

- 1 **Taguchi K**, Yamada S, Ema T. Medical information processing system for supporting diagnosis (The way to display results of computer aided diagnosis (CAD)). No. 5,807,256. Sep 15, 1998. **Cited by 157**
- 2 **Taguchi K**. X-ray computed tomographic imaging device and X-ray computed tomographic method (Generalized helical Feldkamp algorithm). No. 5,825,842. Oct 20, 1998. **Cited by 72**
- 3 **Taguchi K**, Kobayashi T. Radiation computed tomography apparatus (Double centering). No. 5,838,756. Nov 17, 1998. **Cited by 16**
- 4 **Taguchi K**, Aradate H. X-ray CT scanning apparatus (Helical filter interpolation algorithm, HFI). No. 5,974,108. Oct 26, 1999. **Cited by 21**
- 5 **Taguchi K**. X-ray CT scanning apparatus (Helical QQ algorithm). No. 6,028,908. Feb 22, 2000. **Cited by 23**
- 6 Saito Y, Ihira K, **Taguchi K**, Suzuki T, Miyazaki H, Muraki K, Aradate H. X-ray CT scanner with two-dimensional x-ray detector having unequal element pitch in slice-thickness direction (Adaptive type of multi-slice CT detector array). No. 6,157,696. Dec 5, 2000. **Cited by 13.**

- 7 Nambu K, **Taguchi K**, Oishi S. X-ray diagnostic system preferable to two dimensional x-ray detection (Volumetric imaging algorithm using digital tomo-synthesis apparatus). No. 6,196,715. Mar 6, 2001. **Cited by 149**
- 8 Saito Y, **Taguchi K**, Aradate H. X-ray CT scanner using x-ray detector acquiring multi-slice data of unequal slice pitches (Multi-row detector with uniform sensitivity). No. 6,215,843. Apr 10, 2001. **Cited by 12**
- 9 **Taguchi K**, Suzuki T. Multi-slice x-ray computed tomography apparatus (Gantry-tilt helical filter interpolation, T-HFI). No. 6,415,012. Jul 2, 2002. **Cited by 25**
- 10 **Taguchi K**. Computed tomography system and method (Helical half-scan, fan-beam cardiac imaging). No. 6,466,640. Oct 15, 2002. **Cited by 22**
- 11 **Taguchi K**. X-ray computed tomography apparatus (A method for obtaining z -coverage independent of xy -field-of-view in cone-beam CT). No. 6,584,166. Jun 24, 2003
- 12 Aradate H, Saito Y, **Taguchi K**. Reconstruction and scan of 4D-CT. No. 6,546,067. Apr 8, 2003
- 13 Silver MD, **Taguchi K**. Method and system for reconstructing computed tomography images using redundant data (A generalized Feldkamp helical reconstruction algorithm). No. 6,778,630. Aug 17, 2004
- 14 **Taguchi K**. Three dimensional reconstruction algorithm for X-ray apparatus and cone-beam CT (using data reliability-based weighting scheme). Application No. 11/094,468, 2006. Pending. Filed Oct 24, 2002
- 15 Hein IA, **Taguchi K**. Tilted gantry helical cone-beam Feldkamp reconstruction for multislice CT. No. 6,904,117. Jun 7, 2005. **Cited by 8**
- 16 Hein IA, **Taguchi K**. Tilted gantry helical cone-beam Feldkamp reconstruction for multislice CT. No. 7,154,986. Dec 26, 2006
- 17 Hein IA, **Taguchi K**, Silver MD. Method for helical windmill artifact reduction with noise restoration for helical multislice CT. No. 7,623,691 B2. Nov 24, 2009
- 18 **Taguchi K**, Chiang BS. Cone-beam reconstruction apparatus and computed tomography apparatus (using detector row-dependent weighting scheme for helical scan). No. 6,917,663. Jul 12, 2005
- 19 **Taguchi K**. Radius-in-image dependent detector row filtering for windmill artifact reduction. Application No. 10/812,187. 2005. Pending. Filed Mar 30, 2004
- 20 Zamyatin AA, **Taguchi K**. Image reconstruction method using Hilbert transform. No. 7,424,088. Sept 9, 2008.
- 21 Zamyatin AA, **Taguchi K**, Silver MD. Method for restoring truncated cone-beam tomography data. No. 7,359,478. Apr 15, 2008.
- 22 **Taguchi K**. Volumetric computed tomography system for cardiac imaging. Pending. Filed Mar 6, 2005
- 23 **Taguchi K**. X-ray computerized tomographic apparatus (changing the amount of extrapolation along detector row based on the size of field-of-view). No. 6,584,166. Jun 24, 2003
- 24 **Taguchi K**. Cone beam type of x-ray CT system for three-dimensional reconstruction (Redundancy weight of 3D Radon data for cone-beam FBP reconstruction). No. 6,907,100. Jun 14, 2005. **Cited by 14**
- 25 **Taguchi K**. Subtle dynamic helical scan for uniform z-resolution and noise. No. 7,418,075. Aug 26, 2008
- 26 **Taguchi K** and Kudo H. Methods for motion compensated image reconstruction and system *and* A simple motion tracking backprojection for a class of affine transformation. (Two patents combined and filed on June 15, 2007). No. 9,514,550. Dec 6, 2016.
- 27 **Taguchi K**, Amaya K, and Nakada K. Joint estimation of tissue types and linear attenuation coefficients for computed tomography. Provisional application No. 61/895,542 filed on Oct. 25, 2013; the final version filed on Oct. 21, 2014; published on May 14, 2015 as No. 2015/0131883 A1.
- 28 **Taguchi K**. Multi-energy inter-pixel coincidence counters for charge sharing correction and compensation in photon counting detectors. Provisional application filed on Jan 27, 2020 as No. 62/966,463.

Patents (Japan)

- 1 **Taguchi K**, Yamada S, Ema T. Tokkyo Kokai Hei No. 6-251038, "Computer-aided medical diagnosis systems," Sept 9, 1994.
- 2 **Taguchi K**, Yamada S, Ema T. Tokkyo Kokai Hei No. 6-259486, "Computer-aided medical diagnosis systems," Sept 16, 1994.
- 3 **Taguchi K**, Yamada S, Ema T. Tokkyo Kokai Hei No. 6-292655, "Computer-aided medical diagnosis systems," Oct 21, 1994.
- 4 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai Hei No. 6-335456, "Computer-aided medical diagnosis systems," Dec 6, 1994.
- 5 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai Hei No. 7-31591, "Computer-aided reading report generation systems," Feb 3, 1995.
- 6 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai Hei No. 7-36935, "Computer-aided preparing reference images systems," Feb 7, 1995.
- 7 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai Hei No. 7-37056, "Computer-aided medical diagnosis systems," Feb 7, 1995.

- 8 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai Hei No. 7-37061, “Computer-aided medical diagnosis systems,” Feb 7, 1995.
- 9 **Taguchi K**. Tokkyo Kokai Hei No. 7-79956, “Recursive filter,” Mar 28, 1994.
- 10 Tsukamoto A, Nagai S, Nishiki M, Nabuchi K, Saisu R, Tomisaki R, Yamada S, **Taguchi K**. Tokkyo Kokai Hei No. 8-33621, “Mammography systems,” Feb 6, 1996.
- 11 **Taguchi K**, Ohashi A, Oishi S. Tokkyo Kokai Hei No. 8-166995, “Computer-aided medical diagnosis systems,” Jun 25, 1996.
- 12 Yamada S, Nagai S, Nishiki M, Nabuchi K, **Taguchi K**, Saisu R, Tomisaki R, Tsukamoto A. Tokkyo Kokai Hei No. 8-186762, “Mammography systems,” Jul 16, 1996.
- 13 Ohashi A, **Taguchi K**, Oishi S. Tokkyo Kokai Hei No. 8-294485, “Image display systems and image display methods using the system,” Nov 12, 1996.
- 14 **Taguchi K**. Tokkyo Kokai Hei No. 9-19425, “X-ray computed tomography system,” Jan 21, 1997.
- 15 **Taguchi K**. Tokkyo Kokai Hei No. 9-154838, “Methods to generate projection data along helical orbit and X-ray computed tomography system,” Jun 17, 1997.
- 16 **Taguchi K**. Tokkyo Kokai Hei No. 9-154839, “X-ray computed tomography system,” Jun 17, 1997.
- 17 **Taguchi K**, Kobayashi T. Tokkyo Kokai Hei No. 9-154839, “Image reconstruction system,” Jul 22, 1997.
- 18 **Taguchi K**. Tokkyo Kokai Hei No. 9-187450, “X-ray computed tomography system,” Jul 22, 1997.
- 19 **Taguchi K**. Tokkyo Kokai Hei No. 9-192126, “X-ray computed tomography system,” Jul 29, 1997.
- 20 **Taguchi K**, Aradate H. Tokkyo Kokai Hei No. 9-234195, “X-ray computed tomography system,” Sept 9, 1997.
- 21 Saito Y, **Taguchi K**. Tokkyo Kokai Hei No. 10-5210, “X-ray computed tomography system and misalignment correction methods,” Jan 13, 1998.
- 22 Muraki K, **Taguchi K**. Tokkyo Kokai Hei No. 10-14908, “X-ray computed tomography system, image display methods and systems,” Jan 20, 1998.
- 23 **Taguchi K**, Aradate H. Tokkyo Kokai Hei No. 10-21372, “X-ray computed tomography system,” Sept 9, 1997.
- 24 Saito Y, Muraki K, Miyazaki H, **Taguchi K**, Ihira K, Suzuki T, Aradate H. Tokkyo Kokai Hei No. 10-24031, “X-ray computed tomography system,” Jan 27, 1998.
- 25 Miyazaki H, **Taguchi K**, Aradate H. Tokkyo Kokai Hei No. 10-52423, “X-ray computed tomography scanner,” Feb 24, 1998.
- 26 Suzuki T, **Taguchi K**. Tokkyo Kokai Hei No. 10-71141, “X-ray computed tomography scanner,” Mar 17, 1998.
- 27 **Taguchi K**. Tokkyo Kokai Hei No. 10-75943, “Multi-slice computed tomography system,” Mar 24, 1998.
- 28 **Taguchi K**. Tokkyo Kokai Hei No. 10-75947, “Artifact reduction methods for image reconstruction processing systems,” Mar 24, 1998.
- 29 **Taguchi K**, Nambu K. Tokkyo Kokai Hei No. 10-80419, “Image reconstruction methods for image reconstruction systems,” Mar 31, 1998.
- 30 Suzuki T, **Taguchi K**. Tokkyo Kokai Hei No. 10-127616, “X-ray computed tomography scanner,” May 19, 1998.
- 31 Saito Y, **Taguchi K**, Aradate H. Tokkyo Kokai Hei No. 10-127617, “X-ray computed tomography system,” May 19, 1998.
- 32 **Taguchi K**. Tokkyo Kokai Hei No. 10-127618, “X-ray computed tomography scanner,” May 19, 1998.
- 33 Miyazaki H, **Taguchi K**, Saito Y, Suzuki T, Muraki K, Ihira K, Aradate H. Tokkyo Kokai Hei No. 10-127621, “X-ray computed tomography system,” May 19, 1998.
- 34 Ihira K, Suzuki T, **Taguchi K**. Tokkyo Kokai Hei No. 10-127622, “X-ray computed tomography system,” May 19, 1998.
- 35 **Taguchi K**. Tokkyo Kokai Hei No. 10-243941, “Image reconstruction system,” Sept 14, 1998.
- 36 **Taguchi K**. Tokkyo Kokai Hei No. 10-248837, “X-ray computed tomography system,” Sept 22, 1998.
- 37 **Taguchi K**. Tokkyo Kokai Hei No. 10-286253, “X-ray computed tomography system,” Oct 27, 1998.
- 38 Nambu K, **Taguchi K**. Tokkyo Kokai Hei No. 10-295680, “X-ray tomography system,” Nov 10, 1998.
- 39 Miyazaki H, Suzuki T, **Taguchi K**, Ihira K, Saito Y, Aradate H, Muraki K. Tokkyo Kokai Hei No. 10-295683, “Electron-beam X-ray computed tomography system,” Nov 10, 1998.
- 40 Miyazaki H, Saito Y, Suzuki T, Ihira K, **Taguchi K**, Aradate H. Tokkyo Kokai Hei No. 10-337287, “X-ray computed tomography system,” Dec 22, 1998.
- 41 **Taguchi K**. Tokkyo Kokai Hei No. 11-9582, “X-ray computed tomography system,” January 19, 1999.
- 42 Ihira K, Saito Y, Miyazaki H, Suzuki T, **Taguchi K**, Muraki K, Aradate H. Tokkyo Kokai Hei No. 11-76223, “X-ray computed tomography system,” Mar 23, 1999.
- 43 **Taguchi K**, Miyazaki H. Tokkyo Kokai Hei No. 11-146871, “X-ray computed tomography system,” Jun 2, 1999.
- 44 **Taguchi K**. Tokkyo Kokai Hei No. 11-167622, “Image processing system,” Jun 22, 1999.
- 45 **Taguchi K**. Tokkyo Kokai Hei No. 11-206752, “X-ray computed tomography system,” Aug 3, 1999.
- 46 **Taguchi K**. Tokkyo Kokai Hei No. 11-239577, “X-ray computed tomography system,” Sept 7, 1999.
- 47 **Taguchi K**. Tokkyo Kokai Hei No. 11-253432, “X-ray computed tomography system,” Sept 21, 1999.

- 48 **Taguchi K**, Hiraoka M. Tokkyo Kokai Hei No. 11-253438, “X-ray computed tomography system,” Sept 21, 1999
- 49 **Taguchi K**. Tokkyo Kokai Hei No. 11-299768, “X-ray computed tomography system,” Nov 2, 1999.
- 50 **Taguchi K**. Tokkyo Kokai Hei No. 11-347027, “X-ray computed tomography system,” Dec 21, 1999.
- 51 **Taguchi K**. Tokkyo Kokai No. 2000-51197, “Medical image processing system,” Feb 22, 2000.
- 52 **Taguchi K**. Tokkyo Kokai No. 2000-83941, “X-ray computed tomography system,” Mar 28, 2000.
- 53 **Taguchi K**. Tokkyo Kokai No. 2000-93418, “X-ray detection system and X-ray imaging system,” Apr 4, 2000.
- 54 **Taguchi K**. Tokkyo Kokai No. 2000-93421, “X-ray computed tomography system,” Apr 4, 2000.
- 55 Mori I, **Taguchi K**. Tokkyo Kokai No. 2000-102532, “X-ray computed tomography scanner,” Apr 11, 2000
- 56 Miyazaki H, **Taguchi K**. Tokkyo Kokai No. 2000-166911, “X-ray computed tomography system,” Jun 20, 2000
- 57 Hiraoka M, **Taguchi K**. Tokkyo Kokai No. 2000-175903, “X-ray computed tomography system,” Jun 27, 2000.
- 58 **Taguchi K**, Suzuki T. Tokkyo Kokai No. 2000-237182, “X-ray computed tomography system,” Sept 5, 2000.
- 59 **Taguchi K**. Tokkyo Kokai No. 2000-262510, “X-ray computed tomography system,” Sept 26, 2000.
- 60 **Taguchi K**. Tokkyo Kokai No. 2001-149365, “X-ray computed tomography system,” Jun 5, 2001.
- 61 Yamada S, **Taguchi K**, Ema T. Tokkyo Kokai No. 2001-187044, “Image acquisition system,” Jul 10, 2001.
- 62 **Taguchi K**. Tokkyo Kokai No. 2002-58666, “X-ray computed tomography system,” Feb 26, 2002.
- 63 **Taguchi K**, and Saito Y. Tokkyo Kokai No. 2002-282246, “X-ray computed tomography system, volume display methods, and recording device,” Oct 2, 2002.
- 64 **Taguchi K**. Tokkyo Kokai No. 2002-360562, “X-ray computed tomography system,” Dec 17, 2002.
- 65 **Taguchi K**. Tokkyo Kokai No. 2002-360562, “X-ray computed tomography system, 3-D image reconstruction methods, and weighting schemes,” Jul 15, 2003.
- 66 **Taguchi K**, Aradate H. Tokkyo Kokai No. 2003-275201, “X-ray computed tomography system,” Sept 30, 2003
- 67 **Taguchi K**, Aradate H. Tokkyo Kokai No. 2003-275202, “X-ray computed tomography system,” Sept 30, 2003
- 68 Y, Yamada S, Nagai S, Nishiki M, Nabuchi Y, **Taguchi K**, Saisu R, Tomisaki T, and Tsukamoto A. Tokkyo Kokai No. 2004-33790, “Mammography systems,” Feb 5, 2004.
- 69 **Taguchi K**. Tokkyo Kokai No. 2004-89720, “Mammography systems,” Mar 25, 2004.
- 70 Yamada S, Nagai S, Nishiki M, Nabuchi Y, **Taguchi K**, Saisu R, Tomisaki T, Tsukamoto A. Tokkyo Kokai No. 2004-97830, “Mammography systems,” Apr 2, 2004.
- 71 Yamada S, Nagai S, Nishiki M, Nabuchi Y, **Taguchi K**, Saisu R, Tomisaki T, Tsukamoto A. Tokkyo Kokai No. 2004-105746, “Mammography systems,” Apr 8, 2004.
- 72 Hein I.A, and **Taguchi K**. Tokkyo Kokai No. 2004-160218, “X-ray computed tomography system and X-ray computed tomography control methods,” Jun 10, 2004.
- 73 **Taguchi K**, Chiang BS. Tokkyo Kokai No. 2005-7169, “Cone-beam image reconstruction system and X-ray computed tomography system,” Jan 13, 2005.
- 74 **Taguchi K**. Tokkyo Kokai No. 2005-95644, “Image reconstruction processing system,” Apr 14, 2005.
- 75 Miyazaki H, **Taguchi K**, Aradate H. Tokkyo Kokai No. 2005-224616, “Image display system,” Aug 25, 2005.
- 76 Saito Y, **Taguchi K**. Tokkyo Kokai No. 2005-224637, “X-ray computed tomography system and misalignment correction methods,” Aug 25, 2005.
- 77 Muraki K, **Taguchi K**. Tokkyo Kokai No. 2005-224637, “Image display methods and system,” Sept 22, 2005.
- 78 **Taguchi K**. Tokkyo Kokai No. 2005-254023, “Image reconstruction system,” Sept 22, 2005.
- 79 **Taguchi K**. Tokkyo Kokai No. 2005-279282, “Radial-dependent detector filtering methods for windmill-artifact reduction and X-ray computed tomography system,” Oct 13, 2005.
- 80 Saito Y, Muraki K, Miyazaki H, **Taguchi K**, Ihira K, Suzuki T, Aradate H. Tokkyo Kokai No. 2005-324052, “X-ray computed tomography system,” Nov 24, 2005.
- 81 Hein I.A, **Taguchi K**, Silver MD. Tokkyo Kokai No. 2006-43431, “Windmill-artifact reduction with noise recovery for helical multi-slice computed tomography,” Feb 16, 2006.
- 82 Zamyatin A, **Taguchi K**. Tokkyo Kokai No. 2006-95297, “Image reconstruction methods and X-ray computed tomography system,” Apr 13, 2006.
- 83 Nambu K, **Taguchi K**. Tokkyo Kokai No. 2006-136740, “X-ray tomography system,” Jun 1, 2006.
- 84 Nambu K, **Taguchi K**. Tokkyo Kokai No. 2006-136741, “X-ray tomography system,” Jun 1, 2006.
- 85 Zamyatin A, **Taguchi K**, Silver M.D. Tokkyo Kokai No. 2006-141999, “X-ray computed tomography system,” Jun 8, 2006.
- 86 **Taguchi K**. Tokkyo Kokai No. 2006-223910, “X-ray computed tomography system,” Aug 31, 2006.
- 87 **Taguchi K**. Tokkyo Kokai No. 2006-239390, “Image reconstruction methods and image reconstruction system,” Sept 14, 2006.
- 88 **Taguchi K**. Tokkyo Kokai No. 2007-38022, “Image reconstruction system,” Feb 15, 2007.
- 89 **Taguchi K**. Tokkyo Kokai No. 2007-185510, “Computed tomography imaging system,” Jul 26, 2007.
- 90 **Taguchi K**. Tokkyo Kokai No. 2007-190413, “X-ray computed tomography system,” Aug 2, 2007.

Technology Transfer Activities (e.g. Company Start-ups)

2/3/2018 Founder, Photon Counting Toolkit (**PcTK**; <https://pctk.jhu.edu>). We have made the software tool that models photon counting spectral detectors (PCD) and simulates PCD-based x-ray computed tomography (CT) available to academic researchers in order to help the community and advance the research in this area. As of April 12, 2018, within 2 months from the release, we have had more than 460 visitors and 1,000 page views and received 28 license requests from all over the world. (Note: We have received 72 requests as of Dec. 13, 2021.) PcTK is quickly becoming a de facto standard research tool for this emerging field. We believe that this toolkit will have a significant impact on improving the quality and value of the research work on PCD-CT, because despite very strong interest and enthusiasm among the community, the lack of access to PCD-CT images nor projection data has been a bottle-neck of many activities.

ORGANIZATIONAL ACTIVITIES

Editorial Activities

Editorial Board appointments

- 1/2010–12/2015 Editorial Board Member (Associate Editor). Medical Physics Journal, the official journal of the American Association of Physicists in Medicine (AAPM).
- 10/2012–present Editorial Board Member (Associate Editor). Computerized Medical Imaging and Graphics (Elsevier).
- 6/2015–present Editorial Board Member (Associate Editor). Radiological Physics and Technology, the official journal of the Japanese Society of Radiological Technology (JSRT) and Japan Society of Medical Physics (JSMP).

Board of Associate Editors appointments

- 2004–2010 Guest Associate Editor. Medical Physics Journal, the official journal of the American Association of Physicists in Medicine (AAPM).
- 1/2016–present Senior Associate Editor. Medical Physics Journal, the official journal of the American Association of Physicists in Medicine (AAPM).
- 2018–present Guest Associate Editor. Journal of Medical Imaging (JMI).
- 2019–2020 Guest Editor for a Special Issue on Spectral Photon Counting x-ray CT. IEEE Transaction on Radiation and Plasma Medical Science (TRPMS)

Journal peer review activities

- 1999–present Reviewer. Medical Physics Journal, the official journal of the American Association of Physicists in Medicine (AAPM).
- 2000–present Reviewer. IEEE Transactions of Medical Imaging (TMI)
- 2000–present Reviewer. Physics in Medicine and Biology (PMB) (UK)
- 2002–present Reviewer. Journal of Japanese Society of Medical Imaging Technology (JAMIT)
- 2005–present Reviewer. European Radiology Journal (The Netherlands)
- 2005–present Reviewer. International Journal of Biomedical Imaging
- 2007–present Reviewer. Radiology
- 2007–present Reviewer. Zeitschrift for Medizinische Physik (Germany)
- 2008–present Reviewer. IEEE Transactions of Nuclear Science (TNS)
- 2009–present Reviewer. IEEE Proceedings
- 2010–present Reviewer. Nature Nanotechnology
- 2012–present Reviewer. PLoS ONE
- 2012–present Reviewer. Radiological Physics and Technology
- 2013–present Reviewer. IEEE Transactions of Biomedical Engineering (TBME)
- 2013–present Reviewer. Inverse Problem
- 2014–present Reviewer. Journal of Medical Imaging (JMI)
- 2015–present Reviewer. NIMA Proceedings
- 2015–present Reviewer. Nuclear Instrumentations and Methods in Physics Research A
- 2019–present Reviewer. IEEE Transactions of Computational Imaging (TCI)

Other peer review activities

- 2006–present Abstract Reviewer. IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD)

- 2009–present Abstract Reviewer. International Symposium on Optical Engineering and Photonic Technology (OEPT)
- 2009–present Abstract Reviewer. Annual Meeting of American Association of Physicists in Medicine (AAPM)
- present Abstract Reviewer as a Conference Organizer for conferences listed in the section below

Promotion Review Committees

- 10/2013 External examiner for promotion to Associate Professor, Mayo Clinic (Rochester, MN)
- 3/2014 External examiner for promotion to Associate Professor, University of Macau (Machau)
- 5/2021 External examiner for promotion to Full Professor, University of Macau (Machau)

Advisory Committees, Review Groups/Study Sections

- 10/8/2008 Reviewer. NIH R01s. Academic-Industrial Partnership in cancer imaging program study section. ZRG1 SBIB-S (50).
- 11/20/2008 Reviewer. NIH R01s. Academic-Industrial Partnership in cancer imaging program study section. ZRG1 SBIB-S (51).
- 10/5–6/2009 Reviewer. NIH R01/R21. BMIT study section.
- 11/3/2009 Reviewer. NIH R01/R21. Member conflict study section for BMIT, MEDI, CMIP. SBIB-P(02).
- 3/3/2010 Reviewer. NIH R01/R21. Member conflict study section for BMIT, MEDI, CMIP. SBIB-P(02).
- 10/26/2010 Reviewer. NIH R01/R21. Member conflict study section for BMIT, MEDI, CMIP. SBIB-P(02).
- 6/17/2011 Reviewer. NIH P01. NIBIB special emphasis panel study section. ZEB1 OSR-D(01).
- 9/2011 Reviewer (mail). NIH R01. Stage 1 of 2-tier special emphasis panel study section. ZRG1 DTCS-A(81)S.
- 3/7/2012 Reviewer. NIH F15-P 20 L. Special emphasis panel study section. ZRG1 F15 P 20 L.
- 5/24/2012 Reviewer. NSF. Science and technology center (STC) program.
- 1/17–18/2013 Reviewer. DHS. Center of excellence (COE)—Center for explosives research (CER).
- 2/22/2013 Reviewer. NIH U01. ZEB1 OSR-D(M1).
- 6/4/2013 Reviewer. NIH SBIR. “Novel digital x-ray sources for cancer imaging applications.” ZCA1 RPRB-O(C2).
- 11/2013 International Advisory Committee. National Institute of Radiological Sciences (NIRS) Workshop on PET Imaging Physics and Applications (PIPA2013). Yokohama, Japan.
- 2/26/2014 Reviewer. NIH U01. ZEB1 OSR-D(M1).
- 5/30/2014 Reviewer (mail). Science investment round (SIR), Ministry of business, innovation and employment (MBIE) (New Zealand)
- 1/10/2015 Reviewer (mail). Discovery grants program, Natural sciences and engineering, research council (NSERC) of Canada (Canada)
- 3/13/2015 Reviewer. NIH F15-P 20 L. Special emphasis panel study section. ZRG1 F15 P 20 L.
- 10/5–6/2015 Reviewer. NIH R01/R21/R03. BMIT-A SBIB study section.
- 10–11/2015 Reviewer (mail). DHS. Center of excellence (COE) for awareness and localization of explosives related threats (ALERT).
- 11/10/2016 Reviewer. NIH U01. Bioengineering research partnerships (BRP). ZRG1 SBIB-Z (55) R PAR-16-116
- 1/9/2017 Reviewer (mail). Discovery grants program, Natural sciences and engineering, research council (NSERC) of Canada (Canada).
- 10–11/2017 Reviewer (mail). Department of Homeland Security Awareness and Localization of Explosives-Related Threats (ALERT) Biennial Letter Review 2017.
- 6/25/2018 Reviewer. NIH NIBIB Special Emphasis Panel, ZEB1 OSR-D (O1). K awards, R13 grants.
- 2/22/2019 Reviewer. NIH Anonymization Study.
- 5/3/2019 Reviewer. NIH U01, R01. NIH NIBIB Special Emphasis Panel, ZEB1 OSR-B (A1). Brain Initiative Review Meeting (RFAs EB-17-003, EB-17-004).
- 2/13–14/2020 Reviewer. NIH R01/R21/R03. NIH ITD Imaging Technology Development Study Section
- 6/18–19/2020 Reviewer. NIH R01/R21/R03. NIH ITD Imaging Technology Development Study Section
- 11/13/2020 Reviewer. NIH F15-P (20) L. Special Emphasis Panel/Scientific Review Group 2021/01 ZRG1
- 2/25–26/2021 Reviewer. NIH R01/R21/R03. NIH ITD Imaging Technology Development Study Section
- 3/22/2022 Reviewer. NIH RG1 F15-P (20) L. Fellowships: Surgical Sciences, Biomedical Imaging and Bioengineering.

Professional Societies

- 1998–2010 Japanese Radiological Society of Technology. Member
- 2000–2010 Japanese Society of Medical Imaging Technology (JAMIT). Member
- 2002–present American Association of Physicists in Medicine (AAPM). Member
- 2003–2009 Radiological Society of North America (RSNA). Member

- 2006–present IEEE. Member (2006–2017). **Senior Member** (2017–present).
 2008–2010 Nuclear Medicine and Imaging Sciences Council of the IEEE Nuclear and Plasma Sciences Society (NMISC). Council Member
 2016–present The International Society for Optical Engineering (SPIE). Member

Conference Organizer

JHMI/Regional

- 2006 Division of Medical Imaging Physics Annual Retreat. Committee Member
 2007–2008 Division of Medical Imaging Physics Annual Retreat. Committee Chairperson

International

- 2002–present International Meeting on Fully 3-D Image Reconstruction in Radiology and Nuclear Medicine (Fully 3D). Scientific Committee Member
 2006–2011 International Society for Optical Engineering (SPIE) Medical Imaging, Physics of Medical Imaging Conference. Program Committee Member
 4–11/2007 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC). Honolulu, HA. Assistant Conference Chair of MIC.
 2010–present International Meeting on Image Formation in X-Ray Computed Tomography (CT Meeting). Scientific Committee Member
 4–7/2013 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2013, Seoul, South Korea. Scientific Advisor on a focused topic (Other Imaging Modalities)
 4/20–23/2015 3rd Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland
 4–7/2015 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2015, San Diego, CA. Program Topic Convener (Spectral CT).
 5/15–18/2017 4th Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland
 4–7/2017 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2017, Atlanta, GA. Program Topic Convener (Spectral and low dose CT).
 10/24–27/2017 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2017, Atlanta, GA. Student Paper Competition Judge.
 4–7/2018 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2018, Sydney, Australia. Program Topic Convener (CT Imaging Systems).
 10/2018–11/2021 Short Course Co-Chair of Medical Imaging Conference 2021, IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2021, Yokohama, Japan.
 3–7/2019 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2019, Manchester, UK. Program Topic Convener (X-ray imaging system: CT, dual- and multi-energy CT, photon-counting, low-dose, phase-contrast, intra-operative, portable, etc.).
 5/2013–19/2019 5th Workshop on Medical Applications of Spectroscopic X-Ray Detectors. European Organization for Nuclear Research (CERN), Geneva, Switzerland
 4–7/2021 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2021, Yokohama, Japan (virtual). Program Topic Convener (CT Imaging Systems).

4–7/2022 Nuclear Medical and Imaging Sciences Council of IEEE Nuclear and Plasma Sciences Society for IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD) 2022, Rome, Italy. Program Topic Convener (CT, Spectral CT, Photon Counting CT Imaging Systems).

Session Chair

International Conferences

6/6–9/2015 8th International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine. Cardiac CT. Salt Lake City, UT

2/2017–22/2007 International Society for Optical Engineering (SPIE) Medical Imaging 2007, Physics of Medical Imaging. Advanced Reconstruction. San Diego, CA

7/9–13/2007 9th International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine. Exact reconstruction in CT. Lindau, Germany

11/1/2007 IEEE Nuclear Science Symposium and Medical Imaging Conference. X-ray CT instrumentation and Methods. Honolulu, HI

2/18–21/2008 International Society for Optical Engineering (SPIE) Medical Imaging 2008, Physics of Medical Imaging. Algorithms and Reconstructions. San Diego, CA

2/8–12/2009 International Society for Optical Engineering (SPIE) Medical Imaging 2009, Physics of Medical Imaging. Nuclear Medicine. Orlando, FL

2/13–18/2010 International Society for Optical Engineering (SPIE) Medical Imaging 2009, Physics of Medical Imaging. Detectors. San Diego, CA

6/7–9/2010 1st International Conference on Image Formation in X-ray Computed Tomography. Dynamic Imaging. Salt Lake City, UT

2/13–17/2011 International Society for Optical Engineering (SPIE) Medical Imaging 2011, Physics of Medical Imaging. Image Reconstruction. Orlando, FL

7/11–15/2011 11th International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine. CT Iterative. Potsdam, Germany

7/11–15/2011 11th International meeting on fully 3D image reconstruction in Radiology and Nuclear Medicine. Poster Session. Potsdam, Germany

6/24–28/2012 2nd International Conference on Image Formation in X-ray Computed Tomography. Motion Estimation and Compensation Techniques. Salt Lake City, UT

11/1/2013 IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD). Other Imaging Technologies II. Seoul, South Korea

11/4–5/2013 National Institute of Radiological Sciences (NIRS) Workshop on PET Imaging Physics and Applications (PIPA2013). Plenary session. Yokohama, Japan

12/1–6/2013 99th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Computed Tomography. Chicago, IL

6/22–25/2014 3rd International Conference on Image Formation in X-ray CT (CT meeting). Model-based iterative CT reconstruction. Salt Lake City, UT

11/30–12/5/2014 100th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Computed Tomography. Chicago, IL

4/20–23/2015 3rd Workshop on Medical Application of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). State of the art and round table. Genève, Switzerland.

4/20–23/2015 3rd Workshop on Medical Application of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). Imaging performance. Genève, Switzerland.

5/25–28/2015 15th International Congress of Radiation Research (ICRR). The symposium on Radiation Dose Management on CT. Kyoto, Japan

7/12–16/2015 57th Annual meeting of American Association of Physicists in Medicine (AAPM). Novel imaging systems (Imaging scientific session). Anaheim, CA

11/29–12/4/2015 101st Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Computed Tomography. Chicago, IL

7/18–22/2016 Fourth International Conference on Image Formation in X-ray CT (CT meeting). General topics. Bamberg, Germany

7/1–8/4/2016 58th Annual meeting of American Association of Physicists in Medicine (AAPM). CT – Spectral/Dual-energy Imaging (Imaging scientific session). Washington D.C.

- 11/28–12/3/2016 102nd Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Computed Tomography. Chicago, IL
- 5/15–18/2017 4th Workshop on Medical Application of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). Simulations and reconstruction. Genève, Switzerland.
- 5/15–18/2017 4th Workshop on Medical Application of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). Closing session with CERN Physics and Workshop Summary. Genève, Switzerland.
- 10/27/2017 IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD). Spectral and Low dose CT. Atlanta, GA.
- 11/26-12/1/2017 103rd Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Computed Tomography: Photon counting and spectral CT. Chicago, IL
- 5/20–23/2018 5th International Conference on Image Formation in X-ray CT (CT meeting). The four best-scored papers. Salt Lake City, UT.
- 7/29–8/2/2018 60th Annual meeting of American Association of Physicists in Medicine (AAPM). Multienergy Computed Tomography (Imaging scientific session). Nashville, TN.
- 11/25-30/2018 104th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Computed Tomography: Photon counting CT. Chicago, IL
- 11/01/2019 IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD). X-ray CT. Manchester, U.K.
- 6/12–16/2022 7th International Conference on Image Formation in X-ray CT (CT meeting). Cardiac CT and Motion Compensation. Baltimore, MD
- 11/27-12/1/2022 108th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). Physics: Photon counting CT II. Chicago, IL

Consultantships

- 6/2006–12/2007 Toshiba Medical Systems Corporation (Tokyo, Japan)
- 1/2011–12/2013 Life Saving Imaging Technologies, Inc. (Tokyo, Japan)
- 6/2011–5/2012 Quantum Medical Metrics, LLC
- 9/2014–2/2015 Mayo Clinic
- 11/2015–12/2016 Suzhou Bowing Medical Technologies Co., Ltd.
- 4/2016–2/2017 JOB Corporation
- 4/2016–3/2023 Yale University
- 4/2020–3/2024 Duke University
- 3/2022–12/2023 Suzhou Bowing Medical Technologies Co., Ltd.

Internal Organizational Activities

- 2019/5–present Committee Member, Radiology Office of Research Administration (RORA) Oversight Committee.
- 2019/5–present BrightStar Grant Application Review Committee.
- 2022/9–present Computer equipment purchase committee.
- 2022/9–present Committee Member, Joint PhD program for Medical Physics, Radiological Physics Division

RECOGNITION

Awards, Honors

- 8/1997 Global Research Fellow. Toshiba Corporation. 10–20 researchers/engineers are selected annually among 70,000 employees, who will have a chance for an international training/education
- 12/2003 Certificate of Merit. RSNA. A third prize in poster presentations
- 2003 Finalist of Japan Patent Award.
- 2008 IEEE Nuclear and Plasma Sciences Society 2008 Young Investigator Medical Imaging Science Award. IEEE Nuclear and Plasma Sciences Society. One young investigator is selected annually among the society. “For contributions to multi-slice CT, cardiac CT, and four-dimensional CT imaging”
Description: To recognize young investigators in the medical imaging science community who have made significant and/or innovative technical contributions. Judging criteria is “Exceptional contributions to the field of medical imaging science, demonstrated technical merit, proficiency, career intentions and worthiness of the candidate.”

- 2014 Moses and Sylvia Greenfield Award. AAPM. One paper is selected for the best paper published in Medical Physics in the year. Paper OR 35.
- 2017 Magna Cum Laude Award (Best educational exhibit). RSNA. “Be Aware of Tube Potential Setting When Interpreting Renal Masses on CT,” Kawamoto S, **Taguchi K**, Zimmerman SL, and Fishman EK.
- 2020 Most Citation Award 2019. Japanese Society of Medical Physics. One paper is selected for the most cited paper published in Radiological Physics and Technology. Paper RA3.

Invited Talks

National

- 2/12/2000 The “four-dimensional scanner” with realtime capability. Special seminar, Department of Radiology, University of Arizona, Tucson, AZ.
- 7/25–26/2003 Cardiac imaging with 16-slice 0.4-sec CT scanner. The 4th international conference on cardiac spiral CT. Boston/Cambridge, MA. One of invited speeches
- 2/7/2008 Motion compensated image reconstruction for time resolved 4D cardiac CT imaging with patient dose reduction. Special Seminar, Department of Radiology, University of Pennsylvania. Philadelphia, PA.
- 3/20/2008 Data processing and image reconstruction for x-ray computed tomography (CT) scanner. *Other Medical Imaging Modality* with *Medical Imaging Summit* held by Texas Instrument. Richardson, TX
- 7/28/2008 Overview of Research in Division of Medical Imaging Physics. Seminar Texas Instrument, Houston, TX.
- 7/27–31/2008 Photon counting x-ray detectors and DR and CT imaging methods. The 50th Annual meeting of American Association of Physicists in Medicine (AAPM). Houston, TX. Invited to Imaging Symposium – Advances in x-ray imaging
- 8/7/2008 Time resolved motion compensated cardiac CT imaging with patient dose reduction. Reconstruction seminar, General Electric Global Research Center. Niskayuna, NY.
- 11/11/2008 Time resolved motion compensated cardiac CT imaging. Special Seminar, Toshiba Medical Systems Research Institute in U.S.A. (TMRU). Vernon Hills, IL.
- 11/11/2008 Photon counting x-ray detector and CT imaging methods. Special Seminar, Toshiba Medical Systems Research Institute in U.S.A. (TMRU). Vernon Hills, IL.
- 11/12/2008 Time resolved motion compensated cardiac CT imaging with patient dose reduction. Reconstruction Seminar at Illinois Institute of Technology. Chicago, IL.
- 11/20–22/2008 Four-dimensional image reconstruction of deforming object for medical x-ray CT imaging. IEEE Biomedical Circuits and Systems (BioCAS) Conference. Baltimore, MD. Invited to an Imaging Symposium Session
- 8/10/2009 Time resolved motion compensated cardiac CT imaging with patient dose reduction. Special seminar, Siemens Corporate Research. Princeton, NJ
- 6/10/2010 Enabling photon counting clinical x-ray CT imaging. Spectral CT Workshop. St. Louis, MO.
- 10/5–6/2010 Spectral x-ray CT using energy sensitive photon counting detectors. Algorithm Development for Security Applications (ADSA) Workshop 4. Department of Homeland Security (DHS). Boston, MA. One of the invited panelists
- 12/7/2010 Toward color x-ray CT using energy sensitive photon counting detectors. Graduate Seminar of Department of Nuclear Plasma and Radiological Engineering, University of Illinois at Urbana-Champaign. Urbana, IL
- 1/25/2011 Spectral x-ray CT imaging using energy sensitive photon counting detectors. Special Session: Advanced Methods for Tomographic Imaging I, International Society for Optical Engineering (SPIE) Electronic Imaging (IS&T/SPIE). San Francisco, CA
- 11/27–12/2/2011 Spectral imaging using energy sensitive photon counting detectors. Radiological Society of North America (RSNA) 97th Scientific Assembly and Annual Meeting, Chicago, IL. The keynote speech of a scientific session.
- 12/17/2011 A fully 4-D imaging method for cardiac x-ray CT: Toward one-stop shopping for cardiac triple information. Special Seminar, Department of Physiology and Biomedical Engineering, Mayo Clinic. Rochester, MN.
- 10/10/2012 Spectral x-ray CT using energy sensitive photon counting detectors. Office of Science and Engineering Laboratories, Center for Devices and Radiological health, U.S. Food and Drug Administration (FDA). Silver Spring, MD
- 6/10/2014 Photon counting spectral CT: Technical challenges and clinical applications. Special Seminar, Translational and Molecular Imaging Institute, Icahn School of Medicine at Mount Sinai. New York, NY
- 7/12–16/2015 CT imaging using energy-sensitive photon-counting detectors. The 57th Annual meeting of American Association of Physicists in Medicine (AAPM). Anaheim, CA. One of three speakers at a symposium on Emerging Applications of X-ray Imaging

- 4/6/2016 Photon counting x-ray CT: Toward tissue-specific quantitative imaging. Divisional Seminar in Yale University PET Center. New Haven, CT
- 7/29–8/2/2018 Multi-energy CT using photon counting detectors. The 59th Annual meeting of American Association of Physicists in Medicine (AAPM). Nashville, TN. One of four speakers at a symposium on Multi-Energy and Multi-Contrast CT Imaging.
- 2/17/2019 Status update on photon counting–Imaging scientist’s perspectives. In Workshop on Detector Innovations: From Concept to Product to Clinical Outcome. Physics of Medical Imaging. SPIE Medical Imaging 2019. San Diego, CA.

International

- 6/10/2000 Principle of Multi-slice CT (Four dimensional scanner). Hokkaido CT image study meeting. Sapporo, Japan. One of keynote speeches.
- 7/8–9/2000 The principle of Multi-slice CT (Dreamy four-dimensional scanner). Tateyama seminar sponsored by Chubu division of Japanese society of radiological technology. Tateyama, Japan. The keynote speech.
- 5/23/2001 Image reconstruction in multi-slice CT. CT seminar, Fukushima Medical University Hospital. Fukushima, Japan.
- 4/18–20/2002 New Reconstruction Algorithm in Toshiba Advanced MultiSlice CT. 2nd international symposium of Multidetector spiral CT. Starnberg, Germany. One of keynote speeches.
- 2/24/2006 Image reconstruction and applications of cardiac CT. Scientific seminar, Department of Electrical Engineering, University of Tsukuba, Ibaraki, Japan.
- 7/16/2007 Toward cardiac 4D imaging with patient dose reduction. Physics Group Seminar, Computed Tomography, Siemens Medical Systems. Forchheim, Germany.
- 7/17/2007 Toward time resolved 4D cardiac CT imaging with patient dose reduction. Institute of Medical Physics, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany.
- 6/22/2010 Novel CT imaging methods: Cardiac 4-D imaging and spectral CT. Special Seminar, Department of Radiology, King’s College London. London, U.K.
- 4/4–6/2011 Spectral CT and x-ray using energy sensitive photon counting detectors. 1st workshop on Medical Applications of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). Genève, Switzerland. The keynote address.
- 4/18/2011 Novel CT imaging methods: Cardiac 4-D imaging and spectral CT. Special Seminar, Department of Mechanical and Environmental Informatics, Graduate School of Information Science and Engineering, Tokyo Institute of Technology. Tokyo, Japan
- 4/19/2011 Novel CT imaging methods: Cardiac 4-D imaging and spectral CT. Special Seminar, National Cancer Center. Tokyo, Japan
- 4/22/2011 Spectral CT and x-ray using energy sensitive photon counting detectors. Special Seminar, Toshiba Medical Systems. Otawara, Japan
- 4/10/2012 X-ray color CT imaging methods using energy-resolved, photon-counting detectors. Seminar of Tohoku Medical Society at Faculty of Healthcare and Welfare, Tohoku University. Sendai, Japan
- 4/12–15/2012 Photon counting CT: technical developments and clinical applications I. Japan Radiological Congress (JRC) Annual Meetings, as a joint symposium with Japan Radiological Society (JRS), Japanese Society of Radiological Technology (JSRT), and Japan Society of Medical Physics (JSMP). Yokohama, Japan. One of the four panelists of the major joint symposium.
- 12/7/2012 Medical Imaging CT State-of-the-art: Color CT and 4-dimensional imaging. Okayama Medical Device Development Professional (OBEP) Seminar 2012, Okayama, Japan. OBEP is one of Japanese government funded programs under “Reviving regions by creating human resource centers.” The only invited speakers from abroad.
- 10/28/2013 Fully 4-D image reconstruction for cardiac x-ray CT. Special Focus Workshop on Quantitative Four-Dimensional Image Reconstruction Methods, held conjunction with the IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD). Seoul, South Korea. One of six invited speakers of the Workshop
- 10/28/2013 Spectral CT Imaging Methods: How to handle spectral distortion, and more. Special Focus Workshop on Fundamental and Applications of Photon-Counting X-Ray Detectors, held conjunction with the IEEE Nuclear Science Symposium, Medical Imaging Conference, and Workshop on Room-Temperature Semiconductor X-Ray and Gamma-Ray Detectors (NSS/MIC/RTSD). Seoul, South Korea. One of six invited speakers of the Workshop

- 11/6/2013 Color imaging using photon counting detectors. 186th Congress on Radiological Science and its applications. Inage, Japan. One of the four keynote speeches of the session.
- 4/20–23/2015 Review of physics and challenges for photon-counting x-ray detectors. 3rd Workshop on Medical Application of Spectroscopic X-ray Detectors held by European Organization for Nuclear Research (CERN). Genève, Switzerland. The plenary talk.
- 5/20/2015 Photon counting x-ray CT: Toward tissue-specific quantitative imaging. Imaging Seminar at Nara Institute of Science and Technology. Ikoma City, Japan
- 5/22/2015 Computed tomography imaging methods. Special Seminar, J. Morita Manufacturing Corporation. Fushimi-ku, Kyoto, Japan
- 5/25–28/2015 Photon-counting low-dose CT: Imaging methods. 15th International Congress of Radiation Research (ICRR). Kyoto, Japan. Presented at the symposium on Radiation Dose Management on CT
- 5/29/2015 Computed tomography imaging methods. Special Seminar, JOB Corporation. Yokohama, Japan
- 1/19–22/2016 Photon counting x-ray CT: Toward tissue-specific quantitative imaging. A3 (Asian 3 countries) Winter School in Imaging Science. Gangwon, South Korea. One of two speakers invited from non-Asian areas.
- 1/29–2/3/2017 Photon counting spectral x-ray CT: Toward tissue-specific quantitative imaging. International Biomedical and Astronomical Signal Processing (BASP) Frontiers Workshop 2017. Villars-sur-Ollon, Switzerland. One of four invited speakers for “The changing face of biomedical imaging” session.
- 4/14/2019 Spectral Photon Counting CT. The 75th Japan Radiological Congress (JRC) Annual Meetings. One of fifteen internationally invited talk. Yokohama, Japan.
- 12/3/2019 Dual- and multi-energy data processing. One of three speakers in Refresher Course RC421 on Dual- and multi-energy CT, chaired by Lifeng Yu, Ph.D. The 105th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). December 1–6, 2019. Chicago, IL
- 11/29/2020 Dual- and multi-energy data processing. One of three speakers in Refresher Course RC421 on Dual- and multi-energy CT, chaired by Lifeng Yu, Ph.D. The 106th Scientific Assembly and Annual Meeting of Radiological Society of North America (RSNA). November 28–December 5, 2020. Chicago, IL (virtual).
- 4/26/2021 Spectral photon counting CT. A 1.5-hour lecture given during The fifth Barcelona Techno Week on semiconductor radiation detectors, April 19–30, 2021. Barcelona, Spain (virtual).
- 1/25/2022 Spectral, photon counting x-ray computed tomography. Department seminar, Department of Electrical and Computer Engineering, Seoul National University. Seoul, South Korea (virtual).
- 4/15/2022 Photon counting CT: Advantages over conventional CT. A symposium during The 81st Annual Meeting of the Japan Radiological Society. April 14–17, 2022. Yokohama, Japan (virtual).
- 9/26/2022 Photon counting CT: It’s revolution, not evolution. The keynote speech for the 4th Workshop on Quantum Beam Imaging (QBI). September 26–27, 2022. Wako (Riken), Japan (hybrid).
- 12/10/2022 Photon counting CT: The future is here. The keynote speech for 21st CT Technology Forum. Japan (Virtual).