CURRICULUM VITAE: Jin Sung Kim, PhD

POSITION: Assistant Professor
Chief Medical Physicist, Research Director
ADDRESS: Dept. of Radiation Oncology
Yonsei University College of Medicine, Yonsei Cancer Center
50-1 Yonsei-ro, Seodaemun-gu
Seoul, 03722, Korea
TEL: W) 82-2-2228-8110 C) 82-10-3485-2846
F) 82-2-2227-7823
EMAIL: jinsung@yuhs.ac jinsung.k@gmail.com

EDUCATION

Ph.D. [03/2003 – 02/2007]
Department of Nuclear and Quantum Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea
Dissertation title: *A Study on Computer Aided Detection Algorithm for Pulmonary Nodule using Multi-Detector CT*
Supervisor(s): Dr. Gyuseong Cho

M.Sc. [03/2000 – 02/2003, visiting researcher for 1 year in USA].
Department of Nuclear and Quantum Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea
Thesis title: *Effect of Slice Thickness and Reconstruction Interval on Automatic Detection of Pulmonary Nodules in Multi-slice CT*
Supervisor(s): Dr. Gyuseong Cho

B.Sc. [03/1996 – 02/2000].
Department of Nuclear and Quantum Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Korea

POST GRADUATE EDUCATION TRANINING

1) **Medical Physics Residency** [04/2008 – 02/2009].
Korean Society of Medical Physics-Accredited Medical Physics Residency Training Program, Department of Radiation Oncology,
Proton Therapy Center, National Cancer Center, Korea
Clinical Supervisor(s): Dr. Sung Yong Park
2) **Postdoctoral Fellowship** [03/2007 – 03/2008].
Department of Radiation Oncology,
Proton Therapy Center, National Cancer Center, Korea
Supervisor(s): Dr. Sung Yong Park

PROFESSIONAL ACCREDITATION

American Board of Radiology (ABR) Certification

: Therapeutic Radiologic Physics - Part 2 passed in 2013 (ABR ID: P6758)

ACADEMIC APPOINTMENTS AND WORK EXPERIENCE

1) **Assistant Professor** [03/01/2016 – Present]
   Department of Radiation Oncology, Yonsei University College of Medicine
   Yonsei Cancer Center, Yonsei University Health System
2) **Clinical Assistant Professor** [03/01/2009 - 02/29/2016]
   Department of Radiation Oncology, Sungkyunkwan University, School of Medicine
3) **Research Assistant Professor** [09/01/2010 - 02/29/2016]
   Department of Radiation Oncology, Sungkyunkwan University, School of Medicine
4) **Medical Physics Resident Physicist**[04/01/2008 – 02/28/2009]
   Department of Radiation Oncology,
   Proton Therapy Center, National Cancer Center, Korea
5) **Post-doctoral fellow** [03/01/2007 – 03/31/2008]
   Department of Radiation Oncology,
   Proton Therapy Center, National Cancer Center, Korea
6) **Visiting Researcher** [07/01/2001 – 07/01/2002]
   Electronic Radiological Laboratory, Mallinckrodt Institute of Radiology,
   Washington University School of Medicine, St. Louis, USA
   Advisor: Kyongtae T. Bae, MD, PhD
7) **Visiting Researcher** [01/01/2000 – 04/30/2001]
   Department of Radiation Oncology, Sungkyunkwan University, School of Medicine

PROFESSIONAL MEMBERSHIPS

- Young Korean Academy of Science and Technology (2018 ~)
- American Association of Physicists in Medicine (AAPM, Full Member)
- Korean Society of Medical Physics (KSMP)
  - Board of Director (2010 ~ Present)
- Korean Society for Radiation Oncology (KOSRO)
- Korean Nuclear Society (KNS)
- Korean Physical Society (KPS)

GRANT AS PRINCIPLE INVESTIGATOR

- **Feasibility analysis about proton therapy system development by the quantitative investigation about national and international markets and technologies**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $100,000
  Role: PI Project fiscal year: 2018. 04. 01 ~ 2019. 01.31 (1 year)
- **Kilovoltage X-ray Intensity Modulated Radiation Therapy using 3D Printing Compensator for companion animal**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $375,000
  Role: PI Project fiscal year: 2017. 09. 21 ~ 2020. 02.29 (2.5 year)
- **Development of Prediction Technique for Therapeutic Response of Liver Cancer Using Classical Biomaker Based on Multiple CT Images**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $390,000
  Role: PI Project fiscal year: 2017. 09. 21 ~ 2020. 02.29 (2.5 year)
- **Development of Next Generation Breast CT Reconstruction Algorithm**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $600,000
  Role: PI Project fiscal year: 2015. 11. 1 ~ 2020. 07.31 (5 year)
- **Secondary Neutron Spectrometry For Medical Proton Accelerator**
  Nuclear Safety and Security Commission (NSSC), KOREA
  Received Budget: US $250,000
  Role: PI Project fiscal year: 2014. 12. 1 ~ 2016. 11.30 (2 years)
- **Nuclear Energy That I Chose**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $50,000
  Role: PI Project fiscal year: 2014. 12. 1 ~ 2015. 11.30 (1 year)
- **Ultrafast Low-Dose Cone Beam CT Reconstruction Algorithm Development**
  Ministry of Education, Science and Technology (MEST), KOREA
  Received Budget: US $180,000
  Role: PI Project fiscal year: 2011. 9. 1 ~ 2014. 8.31 (3 years)
- **Imaging Parameter Optimization and Algorithm Development for Dual Energy Radiography**
  Samsung Electronics, KOREA
  Received Budget: US $50,000
  Role: PI Project fiscal year: 2010. 11. 1~ 2011. 4.30 (6 months)
- **Patient Alignment System Using 3D Volumetric Digital Tomosynthesis Imaging For Image Guided Radiation Therapy**
  Ministry of Education, Science and Technology (MEST)
  Received Budget: US $300,000, KOREA
  Role: PI Project fiscal year: 2009. 4. 1~ 2011. 3.31 (2 years)

PATENT

- US Patent 7949169 Method and Apparatus for Automatic Detection of Target Structures from Medical Images Using a 3D Morphologic Matching Algorithm
- KR 10-2009-0101833 Reconstruction method for 4D Digital Tomosynthesis
- PCT/KR2009/006655 Method and Apparatus for Radiation Therapy Treatment Control

TEACHING EXPERIENCE

- Radiation Physics (1 semester at Sungkyunkwan University School of Medicine)
- Imaging in Radiation Therapy (1 semester at Sungkyunkwan University School of Medicine)
- Medical Imaging Processing (1 semester at Sungkyunkwan University School of Medicine)
- Medical Imaging Equipment (1 semester at Seoul Woman University)

INVITED TALK AT INTERNATIONAL MEETING

1. Invited speaker at the MIM Annual User meeting 2014 – Austin, TX, USA. July 20, 2014. Title: MIM Experience at Samsung Medical Center
2. Invited speaker at the Annual meeting of Korean Society of Medical Physics for Radiosurgery. – Seoul, KOREA. July 19, 2013. Title: SABR with particle therapy

EXPERIENCE

- Chief physicist, Director of research in Yonsei Cancer Center (Severance Hospital)
    - Key role in introducing the 1st hospital based carbon ion therapy in Korea
    - Leading IMRT treatment technique and QA procedures
        - 4 Elekta LINAC
        - 1 Elekta VersaHD
        - 4 Tomotherapy
        - 1 Cyberknife (Robotic IMRT)
    - MIM, MOSAIQ, RayStation, Pinnacle, Monaco and etc
- Lead physicist for installing and commissioning first scanning beam proton therapy center in Seoul, Korea.
    - Oversaw initial contract and managed project timeline for acceptance testing and beam commissioning.
    - Played key role in adopting new vendor solutions: OIS (MOSAIQ), TPS (RayStation) and dosimetry equipments
    - Lead the designing of QA program and documentations for beam calibration, daily, monthly, annual and patient specific QA.

  - MR Radiation Therapy Solution collaboration with Philips HealthCare
  - Participated in proton therapy onsite education programs.
    - MDACC proton therapy center (2 weeks) with X. Ronald Zhu, Ph.D
    - Provision center for proton therapy (2 months) with Niek Schreuder for IBA PBS Gantry commissioning
    - UFPTI, Upenn, Procure at Chicago, PSI, HIT, Essen, CGMH, NCCHE, NIRS, Gunma, Aizawa and etc.
- Routine x-ray clinical services
  - Comprehensive monthly and annual accelerator QA on
    - NovalixTx, Varian 2100 CD, 6EX, 21EX, iX, Tomotheapy,
  - Routinely performed patient QA and all related chart checks
  - Routinely performed linear accelerator based SRS program that includes patient simulation, image fusion, treatment planning, and QA
  - Routinely performed imaging QA on CBCT, OBI, and simulation CT
    - GE LightSpeed 16 Big Bore CT scanner
  - Treatment planning with 3DCRT, IMRT, and VMAT for various tumor sites.
    - ARIA/Eclipse, RayStation, and Pinnacle
  - HDR brachytherapy planning, daily/monthly QA (Ir-192) with Oncentra
  - Teaching medical residents
- Research Activities
  - Neutron dose simulation and energy spectrum measurement
  - Advanced image reconstruction algorithm (Tomosynthesis, iterative CBCT and etc.)
  - Monte Carlo Simulation for CBCT reconstruction
  - Radiobiology for DNA repair process, Advanced radiation detector
  - Proton therapy including 3D printing for compensator, range verification and others

PUBLICATIONS IN PEER-REVIEWED JOURNALS

*: co-1st author or corresponding author

1. Sang Hoon Jung*, **Jin Sung Kim*,** Yoonsun Chung, Bilgin Keserci, Hongryul Pyo, Hee Chul Park, Won Park, "Magnetic Resonance Image-Based Tomotherapy Planning for Prostate Cancer", Journal of Cancer Research and Clinical Oncology. 2018 (in revision)
2. Seo Hee Choi, So Hyun Park, Jason Joon Bock Lee, Jong Geol Baek, **Jin Sung Kim*,** Hong In Yoon*, "Combining Deep-inspiration Breath Hold and Intensity-modulated Radiotherapy for Gastric Mucosa-associated Lymphoid Tissue Lymphoma: Dosimetric Evaluation using Comprehensive Plan Quality Indices", Scientific Report, 2018 (in revision)
3. Jaehyeon Seo, Jaeman Son, Yeona Cho, Nohwon Park, Dong Wook Kim, **Jin Sung Kim*,** Myonggeun Yoon*, "Kilovoltage Radiotherapy for Companion Animals: Dosimetric Comparison of 300 kV, 450 kV, and 6 MV X-ray Beams", Journal of Veterinary Science, 2018 (accepted)
4. So Hyun Park, Jinhyun Choi, **Jin Sung Kim**, Sohyun Ahn, Min Joo Kim, Ho Lee, Seo Hee Choi, Kwangwoo Park, "Impact of the Respiratory Motion and Longitudinal Profile on Helical Tomotherapy", Progress in Medical Physics 29(1), March 2018
5. Jeongmin Yoon, Kwangwoo Park, **Jin Sung Kim**, Yong Bae Kim, Ho Lee, "Acceptance Testing and Commissioning of Robotic Intensity-Modulated Radiation Therapy M6 System Equipped with InCiseTM2 Multileaf Collimator", Progress in Medical Physics 29(1), March 2018
6. Sven Olberg, Olga Green, Bin Cai, Deshan Yang, Vivian Rodriquez, Hao Zhang, **Jin Sung Kim*,** Parag J. Parikh, Sasa Mutic, Justin C. Park, "Optimization of treatment planning workflow and tumor coverage during daily adaptive Magnetic Resonance Image Guided Radiation Therapy (MR-IGRT) of pancreatic cancer", Radiation Oncology, 24;13(1):51, 2018, https://goo.gl/uhdxKW
7. Kihong Son, Jieun Chang, Hoyeon Lee, Changhwan Kim, Taewon Lee, Seungryong Cho, Sohyun Park, **Jin Sung Kim*,** "Optimal dose reduction algorithm using an attenuation-based tube current modulation method for cone-beam CT imaging", PLoS ONE 13(2): e0192933, 2018, https://goo.gl/KpvK9S
8. Hosang Jeon, Hanbean Youn, **Jin Sung Kim*,** Jiho Nam*, Jayoung Lee, Juhye Lee, Dahl Park, Wontaek Kim, Yongkan Ki, Donghyun Kim, "Generation of polychromatic projection for dedicated breast computed tomography simulation using anthropomorphic numerical phantom", PLoS ONE 12(11): e0187242, 2017, https://goo.gl/vPxsfH
9. Chaeyeong LEE, Sangmin Lee, Seung-Jae Lee, Dae-Hyun Kim, Sungkoo Cho, Kwanghyun Jo, Youngyih Han, Doo Ho Choi, Yong Hyun Chung, **Jin Sung Kim*,** "Monte Carlo simulation of secondary neutron dose for scanning proton therapy using FLUKA", PLoS ONE 12(10): e0186544, 2017, https://goo.gl/KCG2MJ
10. Sangmin Lee, Chaeyeong Lee, Eun Hyuk Shin, Sungkoo Cho, Dae-Hyun Kim, Youngyih Han, Doo Ho Choi, Sung-Joon Ye, **Jin Sung Kim*,** "Measurement of neutron ambient dose equivalent in proton radiotherapy with line-scanning and wobbling mode treatment

system", Radiation Protection Dosimetry, Dec 1;177(4):382-388, 2017, https://goo.gl/hTifsK

11. Heui Chang Lee , Bongyong Song , **Jin Sung Kim*,** James Jung , H. Harold Li , Sasa Mutic , Justin Park, "Variable Step Size Methods for Solving Simultaneous Algebraic Reconstruction Technique (SART)-Type CBCT Reconstructions", Oncotarget, 2017, Vol. 8, (No. 20), pp: 33827-33835 https://goo.gl/6ehpqY
12. Kihong Son, **Jin Sung Kim**, Hoyeon Lee, Seungryong Cho*, "Imaging Dose Of Human Organs from Kv-CBCT In Image-Guided Radiation Therapy", Radiat Prot Dosimetry, Jun 15;175(2):194-200, 2017, https://goo.gl/X4Q5TM
13. Heui Chang Lee , Bongyong Song , **Jin Sung Kim*,** James Jung , H. Harold Li , Sasa Mutic , Justin Park, "An efficient iterative CBCT reconstruction approach using gradient projection sparse reconstruction algorithm", Oncotarget. 2016; 7:87342-87350, https://goo.gl/aB6cHd
14. Lee B, Ahn SH, Kim H, Son J, Sung J, Han Y, Huh SJ, **Jin Sung Kim**, Kim DW, Yoon M*, "Secondary cancer-incidence risk estimates for external radiotherapy and high-dose-rate brachytherapy in cervical cancer: phantom study", J Appl Clin Med Phys. 2016 Sep 8;17(5):6087., https://goo.gl/Yg1MLq
15. Chaeyeong Lee, Sangmin Lee, Kwangzoo Chung, Youngyih Han, Yong Hyun Chung, **Jin Sung Kim*,** "Secondary Neutron Dose Measurement for Proton Line Scanning Therapy", Progress in Medical Physics, 2016 Sep;27(3): 162~168, https://goo.gl/K2cPeM
16. C.Y Lee, H Song, C. W. Park, Y.H. Chung*, **Jin Sung Kim*,** J. C. Park, "Optimization of Proton CT Detector System and Image Reconstruction Algorithm for On-Line Proton Therapy", PLoS ONE, 2016, 11(5): e0156226, https://goo.gl/AfYUcC
17. Kim H, Park HC, Yoon SM, Kim TH, **Jin Sung Kim**, Kang MK, Jung J, Kim SW, Yea JW, Park SH, Park YS, "Evaluation of quality of life using a tablet PC-based survey in cancer patients treated with radiotherapy: a multi-institutional prospective randomized crossover comparison of paper and tablet PC-based questionnaires (KROG 12–01)", Support Care Cancer. 2016 Oct;24(10):4399-406 https://goo.gl/cKp15r
18. Noh JM, Kim JM, Ahn YC, Pyo H, Kim B, Oh D, Ju SG, **Jin Sung Kim**, Shin JS, Hong CS, Park H, Lee E. "Effect of Radiation Therapy Techniques on Outcome in N3-positive IIIB Non-small Cell Lung Cancer Treated with Concurrent Chemoradiotherapy". Cancer Res Treat. 2016 Jan;48(1):106-14. https://goo.gl/afjKHF
19. Hong CS, Oh D, Ju SG, Ahn YC, Noh JM, Chung K, **Jin Sung Kim**, Suh TS. "Carotid-Sparing TomoHelical 3-Dimensional Conformal Radiotherapy for Early Glottic Cancer". Cancer Res Treat. 2016 Jan;48(1):63-70. https://goo.gl/638N7A
20. Chung K, Han Y, **Jin Sung Kim**, Ahn SH, Ju SG, Jung SH, Chung Y, Cho S, Jo K, Shin EH, Hong CS, Shin JS, Park S, Kim DH, Kim HY, Lee B, Shibagaki G, Nonaka H, Sasai K, Koyabu Y, Choi C, Huh SJ, Ahn YC, Pyo HR, Lim do H, Park HC, Park W, Oh DR, Noh JM, Yu JI, Song S, Lee JE, Lee B, Choi DH. The first private-hospital based proton therapy center in Korea; status of the Proton Therapy Center at Samsung Medical Center. Radiat Oncol J. 2015 Dec;33(4):337-43 https://goo.gl/hw6n9y
21. H Jung, O Kum, Y Han, HC Park, **Jin Sung Kim**, DH Choi, "A virtual simulator designed for collision prevention in proton therapy", Med Phys, 2015, Oct;42(10):6021-7

22. **Jin Sung Kim**, J. Shin, D. Kim, E. Shin, K. Chung, S. Cho, S Ahn, S. Ju, Y Chung, S Jung, Y Han, "Feasibility Study of Neutron Dose for Real Time Image Guided Proton Therapy: A Monte Carlo Study", Journal of the Korean Physical Society, July 2015, Volume 67, Issue 1, pp 142-146, https://goo.gl/1ReS4m
23. K. Chung, **Jin Sung Kim**, D. Kim, S. Ahn, Y Han, "The Proton Therapy Nozzles at Samsung Medical Center: A Monte Carlo Simulation Study using TOPAS", Journal of the Korean Physical Society, July 2015, Volume 67, Issue 1, pp 170-174 *(SCI IF: 0.476)*
24. H Jung, J Shin, K Chung, Y Han, **Jin Sung Kim**, D.H Choi, "Feasibility of Using Geant4 Monte Carlo Simulation for IMRT Dose Calculations of Novalis Tx with a HD-120 Multi-leaf Collimator", Journal of the Korean Physical Society, May 2015, Volume 66, Issue 10, pp 1489-1494
25. M Kim, S Ju, K Chung, C Hong, **Jin Sung Kim**, J. Kim, S Ahn, S Jung, Y. Han, Y Chung, S Cho, D Shin and D.H Choi, " Development of a 3D optical scanning-based automatic quality assurance system for proton range compensators ", Med. Phys. 42, 2015, https://goo.gl/fTn9H7
26. Justin C. Park, **Jin Sung Kim***, Sung Ho Park, Matthew J. Webster, soyoung Lee, William Y. Song , Youngyih Han, "Four Dimensional Digital Tomosynthesis using on-Board Imager for the Verification of Respiratory Motion", PLoS ONE 9(12); e115795, 2014 http://goo.gl/JmrNZ3
27. Kihong Son, Seungryong Cho, **Jin Sung Kim***, Youngyih Han, Sang Gyu Ju, Doo Ho Choi, "Evaluation of Radiation Dose to Organs during Kilovoltage Cone Beam Computed Tomography using Monte Carlo Simulation", J Appl Clin Med Phys. Mar 6; 15(2); 4556, 2014 http://goo.gl/SM9nDR
28. Jiseoc Lee, **Jin Sung Kim**, Seungryong Cho, "Improving Image Accuracy Of Region Of Interest In Cone-Beam CT using Prior Image", J Appl Clin Med Phys. Mar 6;15(2):4628. 2014
29. Sang Gyu Ju, Min Kyu Kim, Chae-Seon Hong, **Jin Sung Kim**, Youngyih Han, Doo Ho Choi, Dongho Shin, Se Byeong Lee, "New Technique for Developing a Proton Range Compensator With Use of a 3-Dimensional Printer", Int. J. Radiat. Oncol. Biol. Phys. Feb 1;88(2):453-8, 2014*)* http://goo.gl/N0O2ql
30. Justin C. Park, **Jin Sung Kim**, Sung Ho Park , Zhaowei Liu, Bongyong Song, William Y. Song, "Motion-Map Constrained Image Reconstruction (MCIR): Application to Four-Dimensional Cone-Beam Computed Tomography", Medical Physics. , vol. 40 (12) pp. 121710, 2013*)* http://goo.gl/gAfbl9
31. Kihong Son, Seungryong Cho, **Jin Sung Kim***, Youngyih Han, Sang Gyu Ju, Sung Hwan Ahn, Eunhyuk Shin, Jung Suk Shin, Won Park, Hongryul Pyo, Doo Ho Choi, "Comparison of Intensity-modulated Radiation Therapy (IMRT), Uniform Scanning Proton Therapy (USPT), and Intensity-modulated Proton Therapy (IMPT) for Prostate Cancer: A Treatment Planning Study", Progress in Medical Physics. 2013 Sep;24(3):154-161
32. **Jin Sung Kim**, Ju SG, Hong CS, Jeon J, Son K, Shin JS, Shin E, Ahn SH, Han Y, Choi DH, "Development of Video Image-Guided Setup (VIGS) System for Tomotherapy: Preliminary Study", Progress in Medical Physics. 2013 Jun;24(2):85-91, http://goo.gl/WoD7zB

33. Cho BC, Huh HD, **Jin Sung Kim**, Choi JH, Kim SH, Cho KH, Cho SJ, Min CK, Shin DO, Lee SH, Park DW, Kim KB, Choi SH, Kim HY, Ahn WS, Kim TH, Han SC, "Guideline for Imaging Dose on Image-Guided Radiation Therapy", Progress in Medical Physics. 2013 Mar;24(1):1-24, http://goo.gl/AYB76C
34. Shin E, Han Y, Park HC, **Jin Sung Kim**, Hwan Ahn S, Suk Shin J, Gyu Ju S, Ho Choi D, Lee J, "Cumulative dose on fractional delivery of tomotherapy to periodically moving organ: A phantom QA suggestion", Med Dosim. (Accepted, Epub ahead of print) *(SCIE IF: 1.009)* http://goo.gl/zEkKnZ
35. Ju SG, Huh SJ, Shin JS, Park W, Nam H, Bae S, Oh D, Hong CS, **Jin Sung Kim**, Han Y, Choi DH, "Different effects of bladder distention on point A-based and 3D-conformal intracavitary brachytherapy planning for cervical cancer", J Radiat Res. 2013 Mar 1;54(2):349-56*)* http://goo.gl/FBZsAM
36. Jeong Il Yu, **Jin Sung Kim**, Hee Chul Park, Do Hoon Lim, Youngyih Han, Hyun Chul Lim, Seung Woon Paik, "Evaluation of Anatomical Landmark Position Differences between Respiration Gated MRI and 4-dimensional CT for Radiation Therapy in Patients with Hepatocellular", Br J Radiol. 2013 Jan;86(1021):20120221. http://goo.gl/f9uQ1M
37. Song C, Pyo H, **Jin Sung Kim**, Lim YK, Kim WC, Kim HJ, Kim DW, Cho KH.. "Superiority of conventional intensity-modulated radiotherapy over helical tomotherapy in locally advanced non-small cell lung cancer", Strahlenther Onkol. 2012 Oct;188(10):901-9 http://goo.gl/MBl2Yi
38. Ju, Sang Gyu, Woong Huh, Chae Seon Hong, **Jin Sung Kim**, Jung Suk Shin, Eunhyuk Shin, Youngyih Han, Yong Chan Ahn, Hee Chul Park, Doo Ho Choi, "Development of a video-guided real-time patient motion monitoring system", Medical Physics, Vol. 39 (5) pp. 2396-404, 2012 http://goo.gl/YGgeK
39. Kim YI, Park HC, Lim do H, Park HJ, Kang SW, Park SY, Kim JS, Han Y, Paik SW, "Changes of the liver volume and the Child-Pugh score after high dose hypofractionated radiotherapy in patients with small hepatocellular carcinoma", Radiat Oncol J. 2012 Dec;30(4):189-96
40. Jungmin Seo, Sang Cheol Kim, Heun-Sik Lee, Jung Kyu Kim, Hye Jin Shon, Nur Lina Mohd Salleh, Kartiki Vasant Desai, Jae Ho Lee, Eun-Suk Kang, **Jin Sung Kim***, Jung Kyoon Choi*, "Genome-wide profiles of H2AX and γ-H2AX differentiate endogenous and exogenous DNA damage hotspots in human cells", Nucleic Acids, Research, 2012 Jul;40(13):5965-74,*)* http://goo.gl/h0BKx
41. **Jin Sung Kim**, Su Jung An, Yong Hyun Chung, "New concept of a range verification system for proton therapy using a photon counting detector", Nuclear Instruments and Methods in Physic Research Section A, 677 (11), pp18-21, 2012 http://goo.gl/Mux4K
42. **Jin Sung Kim**, Myonggeun Yoon, Seonkyu Kim, Dongho Shin, Se Byeong Lee, Young Kyung Lim, Dong Wook Kim, Sung Yong Park, "Three-dimensional radiochromic film dosimetry of proton clinical beams using a Gafchromic EBT2 film array", Radiation Protection Dosimetry, 2012 Aug;151(2):272-7 http://goo.gl/zCWeP
43. Sang Gyu Ju, Chae-Seon Hong, Woong Huh, Min Kyu Kim, Youngyih Han, Eunhyuk Shin, Jung Suk Shin, **Jin Sung Kim**, Hee Chul Park, Sung-Hwan Ahn, Do Hoon Lim, Doo Ho Choi, "Development of an Offline Based Internal Organ Motion Verification System

during Treatment Using Sequential Cine EPID Images", Korean Journal of Medical Physics 2012 Jun; 23(2): 91~98 http://goo.gl/O0zY2Z

44. Justin C. Park, Bongyong Song, **Jin Sung Kim**, Sung Ho Park, Ho Kyung Kim, Zhaowei Liu, Tae Suk Suh, William Y. Song, "Fast compressed sensing-based CBCT reconstruction using Barzilai-Borwein formulation for application to on-line IGRT", Med. Phys. 39(3), pp1207-1217, 2012, http://goo.gl/EHloR
45. Jun Suk Shin, Eunhyuk Shin, Youngyih Han, Sang-Gyu Ju, **Jin Sung Kim**, Sung Hwan Ahn, Tae Gyu Kim, Bae Kwon Jeong, Hee-Chul Park, Young-Chan Ahn, Doo Ho Choi, "Analysis of changes in dose distribution due to respiration during IMRT", Radiation Oncology Journal. Vol. 29 (3) pp 206-213, 2011 http://goo.gl/g45P8
46. Justin Park, Sung Ho Park , **Jin Sung Kim*** , Youngyih Han , Min Kook Cho , Ho Kyung Kim , Zhaowei Liu , Steve Jiang, "Ultra-fast digital tomosynthesis reconstruction using general-purpose GPU programming for image-guided radiation therapy", Technol. Cancer Res. Treat. Vol. 10 (4) pp. 295-306, 2011 http://goo.gl/H7b5v
47. Seonkyu Kim, Byung Jun Min, Myonggeun Yoon, **Jinsung Kim**, Dong Ho Shin, Se Byeong Lee, Sung Yong Park, Sungkoo Cho, Dae Hyun Kim, "Secondary radiation doses of intensity-modulated radiotherapy and proton beam therapy in patients with lung and liver cancer", Radiotherapy and Oncology, vol. 98(3), pp. 335-339, 2011 http://goo.gl/cG7FM
48. Eunhyuk Shin, Youngyih Han, Hee-Chul Park, **Jin Sung Kim**, Jung Suk Shin, Sang Gyu Ju, Jihea Lee, Jong Ho Ahn, Jaiki Lee, Doo Ho Choi, "Development of Movement Analysis Program and Its Feasibility Test in Streotactic Body Radiation Threrapy", Korean Journal of Medical Physics 2011 Sep; 22(3): 107~116 http://goo.gl/NYQgEZ
49. Justin Park, Sung Ho Park , Jong Hoon Kim , Sang Min Yoon , Su Ssan Kim , **Jin Sung Kim,** Zhaowei Liu, "Four-dimensional cone-beam computed tomography and digital tomosynthesis reconstructions using respiratory signals extracted from transcutaneously inserted metal markers for liver cancer radiation therapy", Medical Physics, vol. 38 (2) pp. 1028, 2011*)* http://goo.gl/8knv5
50. Myonggeun Yoon, Dong Ho Shin, **Jin Sung Kim,** Jong Won Kim, Dae Woong Kim, Sung Yong Park, Se Byeong Lee, Joo Young Kim, Hyeon-Jin Park, Byung_Kiu Park, Sang Hoon Shin, "Craniospinal irradiation techniques: A Dosimetric comparison of proton beams with standard and advanced photon radiotherapy", Int. J. Radiat. Oncol. Biol. Phys. 88(3), 637-646, 2011 http://goo.gl/HbqOG
51. Hae Sun Jeong, Youngyih Han, Oyeon Kum, Chan Hyeong Kim, Sang Gyu Ju, Jung Suk Shin, **Jin Sung Kim**, Joo Hwan Park, "Pixel-based correction method for Gafchromic EBT film dosimetry", Nuclear Engineering and Technology, 42(6), 670-679, 2010 http://goo.gl/CIDwB
52. Min Tae Kim, Soo Hyun Kim, Young Jae Kim, Kyoung Won Nam, Heon Soo Shin1, **Jin Sung Kim**, Chang Min Park, Hyun Bum Kim, Jong Sung Jeong, Kwang Gi Kim, Yung Ho Jo, "Simulation for Precise Biopsy Control with 3D CT Images and Measurement of Needle Insertion Force", Journal of the Korean Society of Imaging Informatics in Medicine, 16(1), 1-7, 2011

53. Justin C. Park, Sung Ho Park, **Jin Sung Kim*,** Yongyih Han, Sang-Gyu Ju, Eunhyuk Shin, Jung Suk Shin, Hee-Chul Park, Yong Chan Ahn, Willian Y. Song, Digital Tomosynthesis for Patient Alignment System using half-fan mode CBCT projection images. Korean J Med Phys, vol . 56(4) pp. 360-366, 2010 http://goo.gl/b5a1Y
54. Jungwon Kwak, Jungwook Shin, **Jin Sung Kim**, Sung Yong Park, Dongho Shin, Myonggeun Yoon, Soah Park, Dongwook Kim, Young Gyeung Lim, Se Byeong Lee. Dosimetric Influence of Implanted Gold Markers in Proton Therapy for Prostate Cancer. Korean J Med Phys, vol. 21 (3) pp. 291-297, 2010 http://goo.gl/rQqNw
55. Hanbean Youn, **Jin Sung Kim*,** Min Kook Cho, Sun Young Jang, William Y. Song, Ho Kyung Kim, Optimizing Imaging Conditions in Digital Tomosynthesis for Image-Guided Radiation Therapy. Korean J Med Phys, vol. 21 (3) pp. 281-290, 2010 http://goo.gl/c9wCe
56. Ju, Sang Gyu, Hong, Chae Seon, Park, Hee Chul, Ahn, Jong Ho, Shin, Eunhyuk, Shin, Jung Suk, **Jin Sung Kim**, Han, Youngyih, Lim, Do Hoon, Choi, Doo Ho. Evaluation of the Positional Uncertainty of a Liver Tumor using 4-Dimensional Computed Tomography and Gated Orthogonal Kilovolt Setup Images. J Korean Soc Ther Radiolo Oncol, vol. 28 (3) pp. 155-165, 2010 http://goo.gl/GiL2o
57. Myonggeun Yoon, Sung Hwan Ahn, **Jin Sung Kim,** Dong Ho Shin, Sung Yong Park, Se Byeong Lee, Kyung Hwan Shin, Kwan Ho Cho, "Radiation-induced cancers from modern radiotherapy techniques: imrt vs. proton therapy", Int. J. Radiat. Oncol. Biol. Phys. *77(5), pp. 1477-1485, 2010* http://goo.gl/LJgng
58. **Jin Sung Kim**, Eunhyuk Shin, Jung Suk Shin, Sang Gyu Ju, Youngyih Han, Hee-Chul Park, Doo Ho Choi, "The Clinical Implementation of 2D Dose Distribution QA System for the Patient Specific Respiratory-gated Radiotherapy", Korean J. Med. Phys. 21(2): 127-136, 2010 http://goo.gl/BWEuq
59. Sang Gyu Ju, Youngyih Han, Oyeon Kum, Kwang-Ho Cheong, Eun Hyuk, Jung Suk, Shin, **Jin Sung Kim**, Yong Chan Ahn, "Comparison of film dosimetry techniques used for quality assurance of intensity modulated radiation therapy", Medical Physics, 37(6), pp. 2925-2933, 2010 http://goo.gl/fzNj9
60. **Jin Sung Kim**, Yoon Seok Lee, Young Kyung Lim, Sung Yong Park, Joo Young Kim, "Reconstruction of a Fletcher type applicator with CT/MR compatible catheter using MR Imaging for cervical cancer brachytherapy", Journal of Korea Physics Society, 56(3), pp. 880-886, 2010 http://goo.gl/mjnfQ
61. Yoon MG, **Jin Sung Kim**, Min Ho Cheong, Kim DW, Shin DH, Lee SB, Park SY, Cho KH. "Accuracy of automatic patient positioning system based on the correlation of two edge images in proton therapy", *Journal of Digital Imaging* http://goo.gl/9VM0L
62. **Jin Sung Kim**, Myonggeun Yoon, Sung Yong Park, Jung Suk Shin, Eunhyuk Shin, Sang-Gyu Ju, Youngyih Han, Yong-Chan Ahn, "A Dose Volume Histogram Analyzer Program for external beam radiotherapy ", Journal of Korean Society for Therapeutic Radiology and Oncology, 27(4): 240-248, 2009 http://goo.gl/LAthx
63. **Jin Sung Kim**, Myonggeun Yoon*, Sunghwan Ahn, Dong Ho Shin, Young-Kyung Lim, Sung Yong Park, Se Byeong Lee, and Kwan Ho Cho, "Modeling of a digital couch for a proton treatment planning system", Journal of Korea Physics Society, 55(4): 1640-1648, 2009http://goo.gl/6hdB4

64. Min Ho Cheong, Yoon MG, **Jin Sung Kim**, Shin DH, Park SY, Lee SB, "Automated determination of prostate depth for planning in proton beam treatment", Korean J. Med. Phys. 20(3): 180-190, 2009 http://goo.gl/ZwOY3
65. Dong Wook Kim, Young-Kyung Lim, Jungwook Shin, Sunghwan Ahn, Dong Ho Shin, Myonggeun Yoon, Se Byeong Lee, Sung Yong Park, Jungwon Kwak, **Jin Sung Kim**, and Dae Yong Kim, "A Dose Verification Method for Proton Therapy by using a Plastic Scintillation Plate", Journal of Korea Physics Society, 55(2): 702-708, 2009 http://goo.gl/hgPJU
66. Young Kyung Lim, Jungwon Kwak, Dong Wook Kim, Dongho Shin, Myonggeun Yoon, Soah Park, **Jin Sung Kim**, Sung Hwan Ahn, Jungwook Shin, Se Byeong Lee, Sung Yong Park, Hong Ryeol Pyo, Dae Yong Kim, Kwan Ho Cho, "Microscopic gold particle-based fiducial markers for proton therapy of prostate cancer", Int. J. Radiat. Oncol. Biol. Phys., 74(5), pp. 1609-1616 ,*2009* http://goo.gl/5ffwq
67. **Jin Sung Kim**, Min Kook Cho, Young-bin Cho, Han bean Youn, Ho Kyung Kim, Myounggeun Yoon, Dongho Shin, Sebyeung Lee, Re-Na Lee, Sung Yong Park, Kwan Ho Cho, "Geometric calibration of cone-beam CT system for image guided proton therapy", Korean J. Med. Phys, 19(4): 209-218, 2008, http://goo.gl/92Gd6M
68. **Jin Sung Kim**, June-Sik Cho, Kyung-Sook Shin, Jin-Hwan Kim, Hosang Jeon, Gyuseong Cho, "Evaluation of automatic image segmentation for 3D volume measurement of liver and spleen based on 3D region-growing algorithm using animal phantom", Korean J. Med. Phys. 19(3): 148-185, 2008 http://goo.gl/OCEdyi
69. **Jin Sung Kim**, Yoon MG, Kim DW, Lim YK, Kwak JW, Park SA, Shin DH, Shin JW, Lee SB, Park SY, Cho KH. "Image Based Quality Assurance of Range Compensator for Proton Beam Therapy using X-ray Image: Preliminary Results" Korean J. Med. Phys. 19(1): 35-41, 2008 http://goo.gl/xn7B93
70. Myonggeun Yoon, **Jin-Sung Kim**, Dongho Shin, Sung Yong Park, Se Byeong Lee, Dae Yong Kim, Taehyun Kim, Kyung Hwan Shin, and Kwan Ho Cho, "Computerized tomography-based quality assurance tool for proton range compensators", Medical Physics, 35(8), pp. 3511-3517, 2008 *http://goo.gl/z4P7q*
71. Dongwook Kim, Myonggeun Yoon, Sung Yong Park, Se Byeong Lee, Dong Ho Shin, Doohyeon Lee, Jungwon Kwak, Soah Park, Young Kyung Lim, **Jin sung Kim**, Jungwook Shin and Kwan Ho Cho, "Comparison of helical TomoTherapy with Linear Accelerator base intensity-modulated radiotherapy for Head & Neck cases", Korean J. Med. Phys. 19(2), 2008 http://goo.gl/uD66H2
72. **Jin Sung Kim**, JH Kim, G Cho, Bae KT. "Automated Detection of Pulmonary Nodules from MDCT Images: Effect of Slice Thickness and Reconstruction Interval", Radiology. Jul;236(1):295-9, 2005 http://goo.gl/nzjee
73. Bae KT, **Jin Sung Kim**, Y Na, KG Kim, JH Kim, "Automated Detection of Pulmonary Nodules from MDCT Images: Performance of 3D Morphologic Matching Algorithm - Preliminary Results", Radiology. Jul; 236(1):286-93, 2005 http://goo.gl/61zed

REFERENCE

Kyongtae Bae, MD, PhD
Professor and Chairman,
Department of Radiology, University of Pittsburgh
O) 412-647-3540
E-mail: baek@upmc.edu

SungYoug Park, Ph.D
Chief Physicist
Proton Therapy Center, McLaren Cancer Institute,
McLaren – Flint, 4100 Beecher Rd., Suite A, Flint, MI 48532
O)810-342-3849 F)810-342-3784
E-mail: Sung.Park@mclaren.org, sungyong.park63@gmail.com

Youngyih Han, Ph.D
Professor
Department of Radiation Oncology, Samsung Medical Center
Sungkyunkwan University, Seoul, Korea
Tel) +822-3410-2604 Fax)+822-3410-2619
E-mail: Youngyih@skku.edu, youngyihhan@gmail.com

X. Ronald Zhu, PhD, FAAPM
Professor and Deputy Chief of Clinical Physics, Protons,
Department of Radiation Physics - Patient Care, Division of Radiation Oncology,
The University of Texas MD Anderson Cancer Center, Houston, TX
Tel)+1-713-563-2553 Fax)+1-713-563-1521
E-mail: xrzhu@mdanderson.org