2025-09-18
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YEON SOO YEOM(염연수), PH.D.

(Date of birth: 1987.02.13)

BIOGRAPHY

Prof. Yeon Soo Yeom is an associate professor in Department of Radiological Science (undergraduate) / Department of Radiation Convergence Engineering (graduate) at Yonsei University, South Korea. Prof. Yeom received a Ph.D. degree in 2017 from Departemt of Nuclear Engineering at Hanyang University, South Korea. He subsequently worked at Hanyang University as a postdoctoral fellow before joining the Radiation Epidemiology Branch (REB) at National Cancer Institute (NCI) / National Institutes of Health (NIH), USA, as a visiting fellow in 2018. Prof. Yeom is an internationally recognized expert on computational radiation dosimetry using computational human phantoms and Monte Carlo particle transport simulation. His doctoral thesis was the development of the new adult reference computational phantoms of International Commission on Radiological Protection (ICRP), so called Mesh-type Reference Computational Phantoms (MRCPs), released with ICRP Publication 145 (2020). Prof. Yeom is currently a member of the ICRP Committee 2 (Doses from Radiation Exposure). He has served as a member of six ICRP Task Groups (90, 96, 103, 113, 128, and 130), which are working for the development of the ICRP reference phantoms and production of the ICRP reference dose coeffiicents, contributing to four ICRP Publications (143, 144, 145, and 156) so far. Prof. Yeom also has been very productive and recognized in his research, publishing about 90 peer-reviewed journal papers, delivering more than 30 invited lectures at both domestric and international events, and receiving several honors and awards including Intramural Research Award (National Cancer Institute, 2019) and Charles Land Best Oral Presentation Award (Conference on Radiation and Health, 2018). Very recently, Prof. Yeom has been selected as the awardee for 2025 ICRP Bo Lindell Medal for the Promotion of Radiological Protection.

EMPLOYMENT HISTORY

2024 – Now	**Associate Professor**, Department of Radiological Science / Department of Radiation Convergence Engineering, Yonsei University, Wonju, South Korea
2021 – 2024	**Assistant Professor**, Department of Radiological Science / Department of Radiation Convergence Engineering, Yonsei University, Wonju, South Korea
2018-2021	**Visiting Fellow**, Radiation Epidemiology Branch, DCEG/ NCI/NIH/DHHS, Bethesda MD
2017-2018	**Postdoctoral Researcher**, Department of Nuclear Engineering, Hanyang University, Seoul, South Korea

EDUCATION

2011-2017	**Ph.D. (Nuclear Engineering)** Hanyang University, Seoul, South Korea

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2006-2011 **BSc (Nuclear Engineering)** Hanyang University, Seoul, South Korea (1st place in class)

HONORS AND AWARDS

2025 2025 ICRP Bo Lindell Medal for the Promotion of Radiological Protection, International Commission on Radiological Protection (ICRP) – the first awardee in South Korea

2024 Future Generation of Radiation Protection Award, Korean Association for Radiation Protection, South Korea

2019 KAMPiNA MC2 Awards – Best Journal Paper (*Paper Title: Posture-dependent dose coefficients of mesh-type ICRP reference computational phantoms for photon external exposures*), Korean Association of Medical Physicists in North America, USA

2019 Intramural Research Award (*Proposal Title: A Novel Method to Estimate Normal Tissue Doses for a large-Scale Epidemiologic Cohort of Proton Therapy Patients*), DCEG, NCI, Bethesda, MD

2019 Fellowship Achievement Award, DCEG, NCI, Bethesda, MD

2018 Korean Visiting Scientist Training Award (KVSTA), Korea Health Industry Development Institute (KHIDI), South Korea

2018 Early Stage Radiation Investigator Award: The Charles Land Best Oral Presentation, the 2018 Conference on Radiation and Health & Radiation Research Society, USA

2018 Early Stage Radiation Investigator Award: Best Poster Award Runner-Up, the 2018 Conference on Radiation and Health & Radiation Research Society, USA

2018 Early Stage Radiation Investigator Travel Award, the 2018 Conference on Radiation and Health & Radiation Research Society, USA

2017 Best Presentation Award, Korean Association for Radiation Protection 2017 Spring Conference, South Korea

2017 Best Ph.D. Dissertation Award, Research Institute of Industrial Science, South Korea

2016 Best Presentation Award, Korean Association for Radiation Protection 2016 Spring Conference, South Korea

2015 Best Presentation Award, Korean Association for Radiation Protection 2015 Winter Conference, South Korea

2015 Best Presentation Award, Korean Association for Radiation Protection 2015 Spring Conference, South Korea

2013 Best Presentation Award, Korean Association for Radiation Protection 2013 Winter Conference, South Korea

2013 Excellence Award in 2013 Medical Physics Training, Korean Society of

	Medical Physics, South Korea
2012	Best Paper Award of the "Advanced Phantoms" Session at ICRS-12 & RPSD-2012, Japan
2011	Global Ph.D. Fellowship, Ministry of Science, ICT and Future Planning, South Korea
2011	Doctoral Scholarship, Hanyang University, South Korea

COMMITTEE AND OTHER SERVICE

International Commission on Radiological Protection (ICRP)

2023-Present	Member, ICRP Committee 2
2025-Present	Member, ICRP Committee 130 on Doses from Diagnostic Radiophamaceutricals During Pregnancy and Breastfeeding
2023-Present	Member, ICRP Task Group 128 on Individualisation and Stratification in Radiological Protection: Implications and Areas of Application
2019-Present	Member, ICRP Task Group 113 on Reference Organ and Effective Dose Coefficients for Common Diagnostic X-ray Imaging Examinations
2018-Present	Member, ICRP Task Group 96 on Computational Phantoms and Radiation Transport
2016-Present	Member, ICRP Task Group 103 on Mesh-type Reference Computational Phantoms (MRCP)
2016-2020	Member, ICRP Task Group 90 on Age-dependent Dose Conversion Coefficients for External Exposures to Environmental Sources

International Radiation Protection Association (IRPA)

2022-Present	Member, IRPA YGN Leadership Committee

Korean Society of Medical Physics (KSMP)

2023-Present	Member, Scientific Committee
2024-Present	Chair, Standardization Committee

The Korean Association for Radiation Protection (KARP)

2025-Present	Chair, Young Scientist Committee
2022-2024	Member, Young Scientist Committee
2023-Present	Member, Editoral board for Journal of Radiation Protection and Research
2024-Present	Member, External Cooperation Committee
2024-Present	Member, International Cooperation Committee

The 11th International Symposium on Radiation Safety and Detection Technology (ISORD-11)

2023.07 Secretary General, ISORD-11 Organizing Committee

PROFESSIONAL SOCIETIES

2018-Present Member, Korean Association of Medical Physicists in North America (KAMPiNA)

2018-Present Member, Radiation Research Society

2011-Present Member, The Korean Association for Radiation Protection

2017-Present Member, Korean Nuclear Society

REVIEWS - JOURNALS

Journal of Nuclear Science and Technology
Journal of Radiation Protection and Research
Biomedical Physics & Engineering Express
Radiation Measurement
Journal of Radiological Protection
Medical Physics
RAD Conference Proceedings
Nuclear Science and Techniques
Radiation Research
Radiation & Environmental Biophysics
Health Physics
Journal of injury, function and rehabilitation
Radiation Physics and Chemistry
IEEE Journal of Biomedical and Health Informatics
Physica Medica
Applied Radiation and Isotopes

MENTORING

2024–Present Woori Choi (primary mentor)
Current Position: Ph.D student, Yonsei University

2024–Present Nahyun Kim (primary mentor)
Current Position: Ph.D student, Yonsei University

2022–Present Ji Won Choi (primary mentor)
Current Position: Ph.D student, Yonsei University

2021–Present Yumi Lee (primary mentor)
Current Position: Ph.D. student, Yonsei University

2021–Present Soo Min Lee (co-primary mentor)

Current Position: MS&PhD student, Yonsei University

2019–2020 Hyeong Yun Aiden Choi (primary mentor)
Current Position: BS student, University of Maryland

2019–2020 Natasha Greenstein (primary mentor)
Current Position: BS student, Princeton University

2018–2021 Keith Griffin (co-primary mentor)
Current Position: Postdoc Fellow, REB/DCEG/NCI

PATENTS

1. Kim CH, Kim SH, Han MC, **Yeom YS**, Lee SH. Dose calculation method, dose calculation device, and computer-readable storage medium. *US10016622B2* Grant (2018-07-10)

PUBLICATIONS

Peer-reviewed Journal Articles

*Corresponding author
^Co-first author

2010

1. Min CH, Lee HR, **Yeom YS**, Cho S, Kim CH. Determination of the distal dose edge in a human phantom by measuring the prompt gamma distribution: a Monte Carlo study. *Journal of the Korean Physical Society* 2010; 56:2059-62.

2011

2. Jeong JH, Kim CH, **Yeom YS**, Cho S, Chung MS, Cho KW. Direct Monte Carlo Dose Calculation Using Polygon-surface Computational Human Model. *Progress in Nuclear Science and Technology* 2011; 1: 130-33.

2012

3. Ham BK, Cho KW, **Yeom YS**, Jeong JH, Kim CH, Han MC. Development of the Reference Korean Female Voxel Phantom. *Journal of Radiation Protection and Research* 2012; 37: 36-44.

4. Jeong JH, **Yeom YS**, Han MC, Kim CH, Ham BK, Hwang SB, Kim SH, Lee D. Development of a Korean Adult Female Voxel Phantom, VKH Woman, Based on Serially Sectioned Color Slice Images. *Progress in Medical Physics* 2012; 23: 199-208.

5. Kim CH, Jeong JH, **Yeom YS**. Recent Advances in Computational Human Phantom for Monte Carlo Dose Calculation. *Progress in Nuclear Science and Technology* 2012; 3: 7-10.

6. **Yeom YS**, Jeong JH, Kim CH, Hwang SB, Ham BK, Cho KW. Development of Voxel Phantom Representing Reference Korean Female for Use in Radiation Protection Dosimetry. *Progress in Nuclear Science and Technology* 2012; 3: 86-89.

2013

7. **Yeom YS,** Han MC, Kim CH. Preliminary Study for Polygon-Surface Prepresentation of ICRP Reference Phantoms. *Transactions of American Nuclear Society* 2012; 109: 1270-1273.

8. Han MC, Kim CH, Jeong JH, **Yeom YS**, Kim SH, Willson P, Apostolakis J. DagSolid: a new Geant4 solid class for fast simulation in polygon-mesh geometry. *Physics in Medicine and Biology* 2013; 58: 4595-609.

9. **Yeom YS**, Han MC, Kim CH, Jeong JH. Conversion of ICRP male reference phantom to polygon-surface phantom. *Physics in Medicine and Biology* 2013; 58: 6985-7007.

2014

10. Park S, **Yeom YS**, Kim JH, Lee HS, Han MC, Jeong JH, Kim CH. Development of Reference Korean Organ and Effective Dose Calculation Online System. *Journal of Radiation Protection and Research* 2014; 39: 30-37.

11. **Yeom YS**, Jeong JH, Han MC, Kim CH. Tetrahedral-mesh-based computational human phantom for fast Monte Carlo dose calculations. *Physics in Medicine and Biology* 2014; 59: 3173-85.

12. **Yeom YS**, Jeong JH, Kim CH, Han MC, Ham BK, Cho KW, Hwang SB. HDRK-Woman: whole-body voxel model based on high-resolution color slice images of Korean adult female cadaver. *Physics in Medicine and Biology* 2014; 59: 3969-84.

13. Park JG, Jung SH, Kim JB, Moon J, **Yeom YS**, Kim CH. Performance evaluation of advanced industrial SPECT system with diverging collimator. *Applied Radiation Isotopes* 2014; 94: 125-30.

2015

14. Go HJ, Noh S, Lee JH, **Yeom YS**, Lee JK. Development of the Monte Carlo Simulation Radiation Dose Assessment Procedure for NORM added Cosumber Adhere · Non-Adhere Product based on ICRP 103. *Journal of Radiation Protection and Research* 2015; 40: 124-31.

15. Han MC, **Yeom YS**, Kim CH, Kim S, Sohn JW. New approach based on tetrahedral-mesh geometry for accurate 4D Monte Carlo patient-dose calculation. *Physics in Medicine and Biology* 2015; 60: 1601-12.

16. Nguyen TT, **Yeom YS**, Kim HS, Wang ZJ, Han MC, Kim CH, Lee JK, Zankl M, Petoussi-Henss N, Bolch WE, Lee C, Chung BS. Incorporation of detailed eye model into polygon-mesh versions of ICRP-110 reference phantoms. *Physics in Medicine and Biology* 2015; 60: 8695-707.

2016

17. Kim CH, **Yeom YS**, Nguyen TT, Wang ZJ, Kim HS, Han MC, Lee JK, Zankl M, Petoussi-Henss N, Bolch WE, Lee C, Chung BS. The reference phantoms: voxel vs polygon. *Annals of the ICRP* 2016; 45(1 Suppl): 188-201.

18. **Yeom YS**, Kim HS, Nguyen TT, Choi C, Han MC, Kim CH, Lee JK, Zankl M, Petoussi-Henss N, Bolch WE, Lee C, Chung BS. New small-intestine modeling method for surface-based computational human phantoms. *Journal of Radiological Protection* 2016; 36: 230-45.

19. **Yeom YS**, Kim CH, Nguyen TT, Choi C, Han MC, Jeong JH. Construction of new skin models and calculation of skin dose coefficients for electron exposures. *Journal of the Korean Physical Society* 2016; 69: 512-17.

20. **Yeom YS**, Wang ZJ, Nguyen TT, Kim HS, Choi C, Han MC, Kim CH, Lee JK, Chung BS, Zankl M, Petoussi-Henss N, Bolch WE, Lee C. Development of skeletal system for mesh-type ICRP reference adult phantoms. *Physics in Medicine and Biology* 2016; 61: 7054-73.

21. Yoo DH, Shin WG, Lee HC, Choi HJ, Testa M, Lee JK, **Yeom YS**, Kim CH, Min CH. An effective dose assessment techqniue with NORM added consumer products using skin-point source on computational human phantom. *Applied Radiation and Isotopes* 2016; 118: 56-61.

22. Han MC, Seo JM, Lee SH, Kim CH, **Yeom YS**, Nguyen TT, Choi C, Kim S, Jeong JH, Sohn JW. Continuously deforming 4D voxel phantom for realistic representation of respiratroy motion in Monte Carlo dose calculation. *IEEE Transactions on Nuclear Science* 2016; 63: 2918-24.

23. Han MC, **Yeom YS**, Nguyen TT, Choi C, Lee HS, Kim CH. TET2MCNP: A Conversion Program to Implement Tetrahedral-mesh Models in MCNP. *Journal of Radiation Protection and Research* 2016; 41: 389-94.

2017

24. Kim HS, **Yeom YS**, Nguyen TT, Choi C, Han MC, Lee JK, Kim CH, Zankl M, Petoussi-Henss N, Bolch WE, Lee C, Qiu R, Eckerman K, Chung BS. Inclusion of thin target and source regions in alimentary and respiratroy tract systems of mesh-type ICRP adult reference phantoms. *Physics in Medicine and Biology* 2017; 62: 2132-52.

25. Seo J, Han MC, **Yeom YS**, Lee HS, Kim CH, Jeong JH, Kim S. Temporal Resolution Required for Accurate Evaluation of the Interplay Effect in Spot Scanning Proton Therapy. *Journal of the Korean Physical Society* 2017; 70: 720-25

26. Furuta T, Sato T, Han MC, **Yeom YS**, Kim CH, Brown J, Bolch WE. Implementation of tetrahedral-mesh geometry in Monte Carlo radiation transport code PHITS. *Physics in Medicine and Biology* 2017; 62: 4798-810

27. **Yeom YS**, Nguyen TT, Choi C, Han MC, Lee H, Han H, Kim CH. Implications of Using 50-um-Thick Skin Target Layer in Skin Dose Coefficient Calculation for Photons, Protons, and Heliuum ions. *Nuclear Engineering and Technology* 2017; 49: 1495-504

28. Zvereva A, Schlattl H, Zankl M, Becker J, Petoussi-Henss N, **Yeom YS**, Kim CH, Hoeschen C, Parodi K. Feasiblity of reducing differences in estimated doses in nuclear medicine between a patient-specific and a reference phantom. *Physica Medica* 2017; 39: 100-12

29. Yoo DH, Shin WG, Lee J, **Yeom YS**, Kim CH, Chang BU, Min CH. Development of an effective dose coefficient database using a computational human phantom and Monte Carlo simulations to evaluate exposure dose for the usage of NORM-added consumer products. *Applied Radiation and Isotopes* 2017; 124: 42-48.

2018

30. Choi C, **Yeom YS**, Nguyen TT, Lee H, Han H, Shin B, Zhang X, Kim CH, Chung BS. Korean Anatomical Reference Data for Adults for Use in Radiolgocial Protection. *Journal of the Korean Physical Society* 2018; 72: 183-91.

31. **Yeom YS**, Han H, Choi C, Nguyen TT, Lee H, Shin B, Kim CH, Han MC. Calculation of Local Skin Doses with ICRP Adult Mesh-type Reference Computational Phantoms. *Journal of the Korean Physical Society* 2018; 72: 177-82.

32. Kim CH, **Yeom YS**, Nguyen TT, Han MC, Choi C, Lee H, Han H, Shin B, Lee J-K, Kim HS, Zankl M, Petoussi-Henss N, Bolch WE, Lee C, Chung BS, Qiu R, Eckerman K. New mesh-type phantoms and their dosimetric applications including emergencies. *Annals of the ICRP* 2018 (https://doi.org/10.1177/0146645318756231)

33. Zankl M, Becker J, Lee C, Bolch WE, **Yeom YS**, Kim CH. Computational Phantoms, ICRP/ICRU and further developments. *Annals of the ICRP* 2018 (https://doi.org/10.1177/0146645318756229)

34. Han MC, **Yeom YS**, Lee HS, Kim CH, Furuta T. Multi-threading performane of Geant4, MCNP6, and PHITS Monte Carlo codes for tetrahedral-mesh geometry. *Physics in Medicine in Biology* 2018; 63: 09NT02

2019

35. Kainz W, Neufeld E, Bolch WE, Graff C, Kim CH, Kuster N, Lloyd B, Morrison T, Segars P, **Yeom YS**, Zankl M, Xu XG, Tsui BMW. Advances in Computational Human Phantoms and Their Applications in Biomedical Engineering – A Topical Review. *IEEE Transactions on Radiation and Plasma Medical Sciences* 2019; 3:1-23

36. Lee H, **Yeom YS**, Nguyen TT, Choi C, Han H, Shin B, Zhang X, Kim CH, Beom SC. Percentile-specific computational phantoms constructed from ICRP mesh-type reference computational phantoms (MRCPs). *Physics in Medicine and Biology* 2019; 64: 045005

37. **Yeom YS** (*co-first author*), Han MC (*co-first author*), Choi C, Han H, Shin B, Furuta T, Kim CH. Computational speeds and memory requirements of mesh-type ICRP reference computational phantoms (MRCPs) in Geant4, MCNP6, and PHITS. *Health Physics* 2019; 116 (5):664-679

38. **Yeom YS**, Choi C, Han H, Lee H, Shin B, Nguyen TT, Han MC, Lee C, Kim CH. Dose coefficients of mesh-type ICRP reference computational phantoms for idealized external exposures of photons and electrons. *Nuclear Engineering and Technology* 2019; 51 (3): 843-852

39. **Yeom YS**, Han H, Nguyen TT, Choi C, Shin B, Lee C, Kim CH. Posture dependent dose coefficients of mesh-type ICRP reference computational phantoms for photon external exposures. *Physics in Medicine and Biology* 2019; 64 (7): 075018

40. Choi C, Nguyen TT, **Yeom YS**, Lee H, Han H, Shin B, Zhang X, Kim CH, Beom SC. Mesh-type Reference Korean Phantoms (MRKPs) for Adult Male and Female for Use in Radiation Protection Dosimetry. *Physics in Medicine and Biology* 2019; 64: 085020

41. Lee C, Badal-Solar A, **Yeom YS**, Griffin K, McMillan D. Dosimetric impact of voxel resolutions of computational human phantoms for external photon exposure. *Biomedical Physics & Engineering Express* 2019; 5: 065002

42. Han MC, Ku Y, Lee HS, **Yeom YS**, Han H, Kim CH. New calculation method for 3D dose distribution in tetrahedral-mesh phantoms in Geant4. *Physica Medica* 2019; 66: 97-103

43. Lee HS, Choi C, Kim CH, Han MC, **Yeom YS**, Nguyen TT, Kim S, Choi SH, Lee SS, Kim J, Hwang J, Kang Y. Extra-phase Image Generation for Its Potential Use in Dose Evaluation for a Broad Range of Respiratory Motion. *Journal of Radiation Protection and Research* 2019; 44(3):103-109

44. Jung JW, Lee C, Mosher E, Mille M, **Yeom YS**, Jones E, Choi M, Lee C. Automatic segmentation of cardiac structures and dosimetry evaluation fro breast cancer radiotherapy. *Physics and Imaging in Radiation Oncology* 2019; 12:44-48

2020

45. **Yeom YS**, Kuzmin G, Griffin K, Mille M, Polf J, Langner U, Jung JW, Lee C, Ellis D, Shin J, Lee C. A Monte Carlo Model for Organ Dose Reconstruction of Patients in Pencil Beam Scanning (PBS) Proton Therapy for Epidemiologic Studies of Late Effects. *Journal of Radiological Protection* 2020; 40:225-242

46. **Yeom YS**, Han H, Choi C, Shin B, Kim CH, Lee C. Dose Coefficients of Percentile-specific Computational Phantoms for Photon External Exposures. *Radiation and Environmental Biophysics* 2020; 59:151-160

47. Han H, Zhang X, **Yeom YS**, Choi C, Nguyen TT, Shin B, Ha S, Moon S, Kim CH. Development of Detailed Korean Adult Eye Model for Lens Dose Calculation. *Journal of Radiation Protection and Research* 2020; 45:45-52

48. **Yeom YS**, Choi C, Han H, Shin B, Nguyen TT, Kim CH, Lee C. Dose Coefficients of Mesh-type ICRP Reference Computational Phantoms for External Exposures of Neutrons, Protons, and Helium Ions. *Nuclear Engineering and Technology* 2020; 52:1545-1556

49. Choi C(*co-first author*), **Yeom YS** (*co-first author*), Lee H, Han H, Shin B, Nguyen TT, Kim CH. Body-size dependent phantom library constructed from mesh-type ICRP reference computational phantoms. *Physics in Medicine and Biology* 2020; 65:125014

50. Lee C, **Yeom YS**, Griffin K, Lee C, Lee A, Choi H. Organ dose conversion coefficients calculated for Korean pediatric and adult voxel phantoms exposed to external photon fields. *Journal of Radiation Protection and Research* 2020; 45(2):69-75

51. **Yeom YS**, Villoing D, Greenstein N, Kitahara CM, Folio LR, Kim CH, Lee C. INVESTIGATION OF THE INFLUENCE OF THYROID LOCATION ON IODINE-131 S VALUES. *Radiation Protection Dosimetry* 2020; 189(2): 163-171

52. **Yeom YS**, Griffin K, Mille M, Jung JW, Lee C, Lee C. A Dose Voxel Kernel Method for Rapid Reconstruction of Out-of-Field Neutron Dose of Patients in Pencil Beam Scanning (PBS) Proton Therapy. *Physics in Medicine and Biology* 2020; 65: 175015

53. Han H, **Yeom YS**, Choi C, Moon S, Shin B, Ha S, Kim CH. POLY2TET: A Computer Program for Conversion of Computational Human Phantoms from Polygonal Mesh to Tetrahedral Mesh. *Journal of Radiological Protection* 2020; 40: 962

54. Bolch WE, Eckerman KF, Endo A, Hunt JGS, Jokisch DW, Kim CH, Kim KP, Lee C, Petoussi-Henss N, Sato T, Schlattl H, **Yeom YS**, Zankl M. ICRP Publication 143: Pediatric Reference Computational Phantoms. *Annals of ICRP* 2020; 49(1)

55. Petoussi-Henss N, Satoh D, Endo A, Eckerman KF, Bolch WE, Hunt J, Jansen JTM, Kim CH, Lee C, Saito K, Schlattl H, **Yeom YS**, Yoo SJ. ICRP Publication 144: Dose Coefficientis for External Exposures to Environmental Sources. *Annals of ICRP* 2020; 49(2)

56. **Yeom YS,** Griffin K, Shin B, Choi C, Han H, Moon S. Body-size-dependent iodine-131 S values. *Journal of Radiological Protection* 2020; 40(4): 1311

57. Kim CH, **Yeom YS**, Petoussi-Henss N, Zankl M, Bolch WE, Lee C, Choi C, Nguyen TT, Eckerman K, Kim HS, Han MC, Qiu R, Chung BS, Han H, Shin B. ICRP Publication 145. Adult Mesh-type Reference Computational Phantoms. *Annals of ICRP* 2020;49(3)

2021

58. **Yeom YS**, Griffin K, Han H, Choi C, Shin B, Nguyen TT, Kim CH, Lee C. Dose Conversion Coefficients for Neutron External Exposures with Five Postures: Walking, Sitting, Bending, Kneeling, and Squatting. *Radiation and Environmental Biophysics* 2021;60:317-328

59. Choi C, Shin B, **Yeom YS,** Han H, Ha S, Moon S, Son G, Nguyen TT, Kim CH, Chung BS, Bolch WE. Development of skeletal systems for ICRP pediatric mesh-type reference computational phantoms. *Journal of Radiological Protection* 2021; 41:139

60. Shin B, Choi C, **Yeom YS**, Han H, Nguyen T, Ha S, Moon S, Son G, Kim CH, Beom C. Detailed tooth models for ICRP mesh-type reference computational phantoms. *Journal of Radiological Protection* 2021; 41:669

61. Han H, **Yeom YS**, Nguyen TT, Choi C, Shin B, Moon S, Ha S, Son G, Augusteyn R, Kim CH. Development of Detailed Pediatric Eye Models for Lens Dose Calculations. *Journal of Radiological Protection* 2021; 41:305

62. Choi C, Shin B, **Yeom YS**, Nguyen TT, Han H, Ha S, Chung BS, Bolch W, Kim CH. Development of Pediatric Mesh-type Reference Computational Phantom Series of International Commission on Radiological Protection. *Journal of Radiological Protection* 2021; 41:S160

63. Jung JW, Mille M, Ky B, Kenworthy W, Lee C, **Yeom YS**, Kwag A, Bosch W, MacDonald S, Cahlon O, Bekelman JE, Lee C on behalf of the RadComp Consortium. Application of an automatic segmentation method for evaluating cardiac structure doses received by breast radiotherapy patients. *Physics and Imaging in Radiation Oncology* 2021; 19: 138-144

2022

64. Lee C, Won T, **Yeom YS**, Griffin K, Lee C, Kim KP. Organ dose conversion coefficients in CT scans for Korean adult males and females. *Nuclear Engineering and Technology* 2022; 54:682-688

65. **Yeom YS**, Shin B, Choi C, Han H, Kim CH. Iodine-131 S values for Use in Organ Dose Estimation of Korean Patients in Radioiodine Therapy. *Nuclear Engineering and Technology* 2022; 54:689-700

66. **Yeom YS,** Griffin KT, Mille MM, Lee C, O'Reilly S, Dong L, Jung JW, Lee C. Fetal dose from proton pencil beam scanning craniospinal irradiation during pregnancy: A Monte Carlo study. *Physcics in Medicine and Biology* 2022; 67:035003

67. Choi C, Shin B, **Yeom YS**, Nguyen TT, Han H, Kim S, Son G, Moon S, Kim H, Kim CH. Development of alimentary tract organs for ICRP pediatric mesh-type reference computational phantoms. *Journal of Radiological Protection* 2022; 42:031508

68. Shin B, **Yeom YS**, Choi C, Bolch WE, Han H, Nguyen TT, Moon S, Son G, Kim S, Kim H, Kim CH. Incorporation of micro-CT-based detailed bone models into ICRP adult mesh-type reference computational phantoms. *Physics in Medicine and Biology* 2022; 67:185008

69. Seong S, Choi SH, Ahn JJ, Choi H, Chung YH, You SH, **Yeom YS**, Choi C, Min CH. Preliminary Study of Artificial Intelligence-based Fuel-rod Pattern Analysis of Low-quality Tomographic Image of Fuel Assembly. *Nuclear Engineering and Technology* 2022; 54:3943-3948

70. **Yeom YS**, Choi C, Shin B, Kim S, Han H, Moon S, Son G, Nguyen TT, Chung BS, Lee SH, Kim CH. New thyroid models for ICRP pediatric mesh-type reference computational phantoms. *Nuclear Engineering and Technology* 2022; 54:4698-4707

71. Lee C, **Yeom YS**, Folio L. CT organ dose calculator size adaptive for pediatric and adult patients. *Biomedical Physics & Engineering Express* 2022; 8:065020

72. Griffin K, **Yeom YS**, et al. Comparison of out-of-field normal tissue dose estimates for pencil beam scanning proton therapy: MCNP6, PHITS, and TOPAS. *Biomedical Physics & Engineering Express* 2022; 9:015008

2023

73. Han H, Choi JW, Lee Y, Lee J, Lee SM, Kim CH, Choi HJ*, **Yeom YS***. An investigation of body-size impact on organ doses for neutron external exposures using MRCP-based phantom library. *Health Physics* 2023;124(4): 316-325

74. Shin B, Lee Y, Choi JW, Lee SM, Choi HJ, **Yeom YS***. New Skeletal Dose Coefficients of the ICRP-110 Reference Phantoms for Idealized External Fields to Photons and Neutrons Using Dose Response Functions (DRFs). *Nuclear Engineering and Technology* 2023;55(6): 1949-1958

75. Lee C*, **Yeom YS***, Shin J, Streitmatter S, Kitahara CM. NCIRF: an organ dose calculator for patients undergoing radiography and fluoroscopy. *Biomedical Physics & Engineering Express* 2023; 9(4): 045014

76. Seong S, Lee M, Choi HJ, Park H, Cheon BW, Min CH, **Yeom YS**, Kim H, You SH, Choi HJ*. Feasibility study of internal-source tracking with C-arm CT/SPECT imaging with limited-angle projection data for online in vivo dose verification in brachytherapy. *Brachytherapy* 2023; online published

77. Lee SM, Choi C, Shin B, Lee Y, Choi JW, Cheon BW, Min CH, Chung BS, Choi HJ*, **Yeom YS***. Implementation of Visible Monkey into general-purpose Monte Carlo codes: MCNP, PHITS, and Geant4. *Nuclear Engineering and Technology* 2023; 55(11): 4019-4025

78. Choi C, Shin B, **Yeom YS**, et al. Development of respiratroy tract organs for ICRP pediatric mesh-type reference computational phantoms. *Health Physics* 2023; 125(6): 434-445

2024

79. Shin B, Choi C, Qiu R, Kim S, Kim H, Moon S, Son G, Kim J, Han H, **Yeom YS***, Kim CH*. Photon Dose Response Functions for Accurate Skeletal Dosimetry for Korean and Asian Populations. *Nuclear Engineering and Technology* 2024; 56(6): 2195-2207

80. Lee SM^, Choi C^, Choi JW, Min CH, Ko S, Shin B, Kim CH, **Yeom YS***. Implication of ICRP pediatric reference voxel phantoms on dose assessment of patients in radioiodine therapy. *Nuclear Engineering and Technology* 2024; 56(6): 2247-2257

81. Choi HJ, Park H, Cheon BW, Cho K, Lee H, Chung YH, **Yeom YS**, You SH, Choi HJ, Min CH*. Optimization of Yonsei Single-Photon Emission Computed Tomography (YSECT) Detector for Fast Inspection of Spent Nuclear Fuel in Water Storage. *Journal of Radiation Protection and Research* 2024; 49(1): 29-39

82. Lee Y, Choi JW, Braunstein L, Lee C, **Yeom YS***. Investigation on individual variation of organ doses for photon external exposures: a Monte Carlo simulation study. *Journal of Radiation Protection and Research* 2024; 49(1): 50-64

83. Kim S, Shin B, Choi C, Kim H, Ha S, Chung BS, Han H, Moon S, Son G, Kim J, Choi JW, Kim CH*, **Yeom YS***. Pediatric phantom library constructed from ICRP mesh-type reference computational phantoms (MRCPs). *Nuclear Engineering and Technology* – in press

84. Kim D, Dahal L, Lo YJ, **Yeom YS**, Kim CH, Segars WP*. Random walk small intestine models for virtual patient populations. Medical Imaging 2024: Physics of Medical Imaging 2024; 12925Q

85. **Yeom YS***, Braunstein L, Morton LM, Bolton KL, Choi JW, Choi HY, Greenstein N, Lee C. A Novel Method for Rapid Estimation of Active Bone Marrow Dose for Radiotherapy Patients in Epidemiological Studies. *Medical Physics* 2024; 51(6): 4472-4481

86. Choi JW, Lee Y, Shin B, Choi C*, **Yeom YS***. Korean-specific dose coefficients for external environmental exposures: soil contamination. *Nuclear Engineering and Technology* 2024; 56 (10): 4375-4383

87. Shin B, Kim S, Choi C, Kim H, **Yeom YS**, Chung B, Nguyen TT, Moon S, Bolch WE, Kim CH*. ICRP Pregnant-female Mesh-type Reference Computational Phantoms Part 1: Development of Fetal Phantoms. *Physics in Medicine and Biology* 2024; 69: 245015

88. ICRP, 2024. Paediatric mesh-type reference computational phantoms. ICRP Publication 156. Ann. ICRP 53(1-2) – Authors on behalf of ICRP: C.H. Kim, C. Choi, W.E. Bolch, N. Petoussi-Henss, M. Zankl, C. Lee, B. Shin, **Y.S. Yeom**, T.T. Nguyen, H. Han, B.S. Chung, K. Eckerman, R. Qiu, S. Kim, G. Son

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89. Moon S, Choi C, Shin B, Son G, Han H, Kim H, Kim S, Kim J, Lee Y, Jeong JH, Kim CH*, **Yeom YS***. Dose coefficients of mesh-type reference Korean phantoms (MRKPs) for idealized external exposure geometries of photons and electrons. *Nuclear Engineering and Technology* 2025; 57(4): 103298

90. Choi C, Shin B, Lee SM, **Yeom YS***. Advancing Pediatric Organ Dose Assessment in Radioiodine Therapy with ICRP Pediatric Mesh-type Reference Computational Phantoms. *Nuclear Engineering and Technology* 2025; 57(7): 103513

91. Choi C*, Shin B, **Yeom YS**, Bolch WE, Kim CH. Dose coefficients for the ICRP pediatric mesh-type reference computational phantoms under idealized external photon exposure geometries. *Nuclear Engineering and Technology* 2025; 57(9): 103621

92. Shin B, Choi C, Lee Y, Choi JW, **Yeom YS***. Korean dose coefficients for external exposures from air contamination. *Nuclear Engineering and Technology* 2025; 57(10): 103668

93. Shin B, Kim S, Choi C, Kim H, **Yeom YS**, Chung BS, Nguyen TT, Bolch WE, Moon S, Han H, Kim CH*. ICRP Pregnant-female Mesh-type Reference Computational Phantoms Part 2: Development of Maternal Phantoms. *Physics in Medicine and Biology* 2025; 70(9): 095008

94. Choi C, Shin B, Moon S, **Yeom YS,** Kim CH*, Bolch WE*. Dose coefficients for ICRP pediatric mesh-type reference computational phantoms under idealized external electron exposures. *Nuclear Engineering and Technology* 2025; 57(12): 103852

95. Shin B, Thang NT, Choi C, Bolch WE, **Yeom YS***. Tetrahedral Mesh Visible Monkey Phantom for Radiation Dosimetry Research. *Nuclear Engineering and Technology* 2026; 58(1): 103903

Book Chapters

1. Han H, **Yeom YS**, Choi C, Lee H, Shin B, Zhang X, Qiu Rui, Petoussi-Henss N, Kim CH. Dose coefficients for use in rapid dose estimation in industrial radiography accidents. In: Makarov S., Horner M., Noetscher G. (eds) Brain and Human Body Modeling. Springer, Cham 2019: 295-304

INVITED TALKS

1. Preliminary Study of Polygon-surface Representation of ICRP Reference Phantoms. *2013 ANS Winter Meeting and Technology Expo.* Washington DC (Nov 2013)

2. Invited Lecture: Implementation of Korean Computatinal Phantoms in MCNP. 2014 Radiation Protection Autumn Meeting – Workshop 2 (Development and Use of Human Computational Phantoms). Jeju Island, South Korea (Nov 2014).

3. Invited Lecture: ICRP Adult Mesh-type Reference Computational Phantoms and Appliation to Individualized Dose Assessment. Korea Institute of Radiological & Medical Sciences, Seoul, South Korea (May 2017).

4. Current Status of Development of New Mesh-type Reference Phantoms of International Commission on Radiological Protection. *EMBC' 2017 – Modeling of Modern Devices and Technologies with Computational Human Phantoms.* Jeju Island, South Korea (July 2017).

5. Tetrahedral-mesh Counterparts of ICRP Reference Computational Phantoms. *12th Congress of the World Federation of Nuclear Medicine and Biology.* Melbourne (April 2018).

6. Invited Talk: Radiation Dosimetry Researches at National Cancer Institue. Department of Nuclear Engineering, Hanyang University, Seoul, South Korea (Dec 2018)

7. Invited Lecture: Dosimetry for Epidemiologic Studies of Emerging Radiotherapy, 2019 Radiation Epidemiology & Dosimetry Course, NCI, Rockville, MD (Oct 2019)

8. Invited Lecture: Advances in Computational Human Phantoms and Their Applications in Radiation Dosimetry, Yonsei University, Wonju, South Korea (Feb 2021) (Zoom Online Workshop)

9. Invited Lecture: MC Dosimetry for Radiation Protection, Monte Carlo Simulation (Geant4 & TOPAS) Online Symposium (Nov 2021) (Zoom Online Workshop)

10. Invited Lecture: Next-generation computational human models for radiation dosimetry applications, New faculty research worshop, Yonsei University, Wonju, South Korea (Nov 2021)

11. Invited Lecture: Introduction of computational human phantoms, Cancer Research Seminar, Yonsei University, Seoul, South Korea (July 2022)

12. Invited Lecture: Principles of Radiation Dosimetry for Epidemiological Studies, Korea Institute of Radiological & Medical Sciences, Seoul, South Korea (Aug 2022).

13. Invited Lecture: Normal Tissue Dose Estimate of Radiotherapy Patients for Risk Assessment of Late Health Effects, Seoul National University Hospital, Seoul, South Korea (Oct 2022)

14. Invited Lecture: Advances in Computational Human Phantoms and Their Medical Applications, KSRO & KSMP joint workshop, Seoul, South Korea (Oct 2022)

15. Invited Lecture: Progress on ICRP Task Group 113: Reference Dose Coefficients for Common Diagnostic X-ray Imaging Examinations, KARP-JHPS-CSRP Joint YGN Workshop, Online (Oct 2022)

16. Invited Lecture: Mesh-type reference computational phantoms and their compatilibity with Geant4, 9th International Geant4 Tutorial in Korea 2022, Daejeon, Korea (Dec 2022)

17. Invited Lecture: Development of Adult Mesh-type Reference Computational Phantoms, Introducing ICRP Publication 145: Adult Mesh-type Reference Computational Phantoms, Virtual Event (Jan 2023) - https://www.icrp.org/page.asp?id=575

18. Invited Lecture: Activities of Young Scientist Group of Korean Association for Radiation Protection, AOCRP6, Mumbai, India (Feb 2023)

19. Invited Lecture: Radiation Protection, Space Radiation?, Seminar for Radiation Safety and Technology, Hanyang University, Seoul, Korea (May 2023)

20. Invited Lecture: Introduction of Mesh-type Reference Computational Phantoms, Seminar at Department of Radiological Science in Kangwon National University, Samcheok, Korea (July 2023)

21. Invited Lecture: Current status of next generation of ICRP reference phantoms, 2023 KMPCB-KSMP Tutorial, Seoul, Korea (Oct 2023)

22. Invited Lecture: Advances in Computational Dose Assessments in Epidemiologic Studies, KIRAMS Invited Lecture Seminar for Radiation Epidemology, Seoul, Korea (Oct 2023)

23. Invited Lecture: Mesh-type Reference Computational Phantoms (MRCPs) for the Next General Recommendations, 7th International Symposium on the System of Radiological Protection – ICRP 2023, Tokyo, Japan (Nov 2023)

24. Invited Lecture: Current Activities of ICRP Committee 2: Doses from Radiation Exposure, 2023 KREDOS Annual Meeting, Tongyeong, Korea (Dec 2023)

25. Invited Lecture: New ICRP Reference Computational Phantoms for the Next General Recommendations, 2024 IEEE NPSS Seoul Chapter, Daejeon, Korea (March 2024)

26. Invited Lecture: Calculation of Dose Coefficients, ICRP Task Group 113 Workshop - Reference Organ Absorbed and Effective Dose Coefficients for Common Radiographic Examinations, Online (July 2024) - https://www.icrp.org/page.asp?id=641

27. Invited Lecture: Introduction of ICRP Mesh-type Reference Computational Phantoms for Next General Recommendations, 2024 ARADOS AM, Dalian, China (Sep 2024)

28. Invited Lecture: The use of MRCP VRT, KAERI Seminar, Daejeon, Korea (Sep 2024)

29. Invited Lecture: Computational Human Phantoms: Development and Applications in Radiation Protection from Medical Exposures, PSMM 6102 and PSMM 7101 Special Lecture of Chulabhorn Royal Academy, Online (Sep 2024)

30. Invited Lecture: Potential Contributions to G4 Advanced Examples for ICRP Reference Phantoms, 2024 Geant4 Collaboration Meeting, Catania, Italy (Oct 2024)

31. Invited Lecture: Advances in Computational Human Phantoms for Radiation Dosimetry, Special Seminar, Department of Radiological Science, Gachon University, Incheon, Korea (Oct 2024)