

# CURRICULUM VITAE

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## Education

2015                                      PhD in Medical Physics, The University of Chicago  
2009                                      BA in Physics, The University of Chicago

## Professional Experience

July 2017 – Present                      Instructor, Rush University Medical Center, Chicago, IL  
July 2015 – July 2017                    Resident, Northwestern Memorial Hospital, Chicago, IL

## Professional Associations

Feb. 2014 – Present                      American Association of Physicists in Medicine

## Professional Activities

2014 – Present                              Reviewer, *Journal of Applied Clinical Medical Physics*  
2011 – Present                              Reviewer, *Medical Physics*

## Original Peer-Reviewed Articles

- J1.     **Grelewicz Z**, Zerrusen B, Sathiaseelan V, Zhang H: A feasibility study of using advanced external beam techniques to create a vaginal cuff brachytherapy-like endometrial boost plan. *Medical Dosimetry* 43(1): 30-38 (2018)
- J2.     Liu X, Pelizzari C, Belcher AH, **Grelewicz Z**, Wiersma RD: Use of proximal operator graph solver for radiation therapy inverse treatment planning. *Medical Physics* 44(4): 1246-1256 (2017)
- J3.     Belcher AH, Liu X, **Grelewicz Z**, Wiermsa RD: Spatial and rotational quality assurance of 6DOF patient tracking systems. *Medical Physics* 43: 2785-2793 (2016)
- J4.     Liu X, Belcher AH, **Grelewicz Z**, Wiermsa RD: Robotic real-time translational and rotational head motion correction during frameless stereotactic radiosurgery. *Medical Physics* 42: 2757-2763 (2015)
- J5.     **Grelewicz Z**, Wiersma RD: Combined MV+kV inverse treatment planning for optimal kV dose incorporation in IGRT. *Phys. Med. Biol.* 59: 1607-1621 (2014) *Featured in AAPM Newsletter Vol. 39 No. 5 and medicalphysicsweb.org*
- J6.     Belcher AH, Liu X, **Grelewicz Z**, Pearson E, Wiersma RD: Development of a 6DOF robotic motion phantom for radiation therapy. *Medical Physics* 41:121704 (2014)

- J7. Wiersma RD, Tomarken SL, **Grelewicz Z**, Belcher AH, Kang H: Spatial and temporal performance of 3D optical surface imaging for real-time head position tracking. *Medical Physics* 40: 111712, 2013.
- J8. **Grelewicz Z**, Kang H, Wiersma RD: An EPID based method for performing high accuracy calibration between an optical external marker tracking device and the LINAC reference frame. *Medical Physics* 39: 2771-2779, 2012.
- J9. Kang HJ, **Grelewicz Z**, Wiersma RD: Development of an automated region of interest selection method for 3D surface monitoring of head motion. *Medical Physics* 39: 3270-3282, 2012.

### **Poster Presentation**

- A1. **Grelewicz Z**, Cutright D, Sathiaseelan V, Zhang H: Producing a Look-up Table for Mesh Brachytherapy Dosimetry with I-125, Pd-103, and Cs-131. *Medical Physics* 44: 2837 (2017)
- A2. Kang Z, Gopalakrishnan M, **Grelewicz Z**, Lee B, Sathiaseelan V, Zhang H: Dosimetric Coverage Evaluation of Personalized MR/CT Guided Ring and Tandem HDR Brachytherapy for Cervical Cancer. *Medical Physics* 44: 3175-3176 (2017)
- A3. **Grelewicz Z**, Lee B, Cutright D, Kang Z, Gopalakrishnan M, Sathiaseelan V, Zhang H: Dosimetry Considerations in the Use of Hanging-Eye Block for Lesions of the Conjunctiva. *Medical Physics* 43: 3478-3479 (2016)
- A4. Lee B, **Grelewicz Z**, Kang Z, Cutright D, Gopalakrishnan M, Sathiaseelan V, Zhang H: Brachytherapy Film Dosimetry in a Water Phantom for a Ring and Tandem HDR Applicator. *Medical Physics* 43: 3463 (2016)
- A5. Liu X, Belcher AH, **Grelewicz Z**, Wiersma RD: Use of a 6D Couch for Real-Time Full Translational and Rotational Head Motion Correction During Stereotactic Radiosurgery: A Feasibility Study. *Medical Physics* 42: 3264 (2015)
- A6. Liu X, Belcher AH, **Grelewicz Z**, Wiersma RD: A Biomechanical Lung Model for Respiratory Motion Study. *Medical Physics* 42: 3302 (2015)
- A7. Wiersma R, **Grelewicz Z**, Belcher A, Liu X: A Cloud Based CT and LINAC QA Data Management System. *Medical Physics* 42: 3333 (2015)
- A8. **Grelewicz Z**, Wiersma RD: Combining CBCT Dose Into IMRT Treatment Planning. *Medical Physics* 41: 163 (2014)
- A9. **Grelewicz Z**, Pearson E, Alaei P, Pelizzari C, Wiersma R: Investigation of Combined MV-KV Prostate Treatment Dose Planning for Real-Time MV-KV IGRT. *Medical Physics* 37: 3163, 2010.
- A10. **Grelewicz Z**, Suzuki K, Kohlbrenner R, Obajuluwa A, Ng E, Tompkins R, Epstein M, Hori M, Baron R: Computer-Aided Diagnostic Scheme for Detection of Hepatocellular Carcinoma in Contrast-Enhanced Hepatic CT: Preliminary Results. *Medical Physics* 36: 2434, 2009.

**Oral Presentations**

- L1. Lee B, **Grelewicz Z**, Kalapurakal G, Helenowski I, Sathiaseelan V, Kalapurakal JA: Differences in Prostate Gland Geometry and Dosimetry After Pre-operative and Intra-operative Ultrasound Planning in Patients Undergoing Prostate Seed Brachytherapy: Implications for Current Practice. 103<sup>rd</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL, 2017 (Presented by **Z Grelewicz**)
- L2. **Grelewicz Z**: Twelve Angry Men: Applying FMEA Analysis to TG-142 Monthly Tests at Northwestern Memorial Hospital. American Association of Physicists in Medicine Midwest Chapter Fall Meeting, Lombard, IL, 2016
- L3. Liu X, Belcher AH, **Grelewicz Z**, Wiersma R: Direct-Aperture Optimization for Combined MV+kV Dose Planning in Fluoroscopic Real-Time Tumor-Tracking Radiation Therapy. 58<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Washington DC, 2016
- L4. Belcher AH, Liu X, **Grelewicz Z**, Wiersma R: Spatial and Rotational Quality Assurance of 6DOF Patient Tracking Systems. 58<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Washington DC, 2016
- L5. **Grelewicz Z**, Wiersma R: Combining DAO with MV + KV Optimization to Improve Skin Dose Sparing with Real-Time Fluoroscopy. 57<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Anaheim, CA, 2015
- L6. **Grelewicz Z**, Wang J, Vanderhoek MV: Preparing for the ABR Therapy Medical Physics Exam. 56<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Austin, TX, 2014
- L7. Liu X, Belcher AH, **Grelewicz Z**, Wiersma R: Optimal Feedback Control with Feed Forward for a Robotic 4D Stage in Frameless Stereotactic Radiosurgery. 56<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Austin, TX, 2014
- L8. Belcher AH, Liu X, **Grelewicz Z**, Wiersma R: Development and Evaluation of a Real-Time Robotic 6D Quality Assurance Phantom. 56<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Austin, TX, 2014
- L9. **Grelewicz Z**, Wiersma R: kV OBI Spectroscopy: Measurement Vs Monte Carlo Simulation. 55th Annual Meeting of the American Association of Physicists in Medicine, Indianapolis, IN, 2013
- L10. **Grelewicz Z**, Wiersma R: Combined MV+kV Beam Optimization for Enabling Real-Time KV Tumor Tracking. 55th Annual Meeting of the American Association of Physicists in Medicine, Indianapolis, IN, 2013
- L11. **Grelewicz Z**: A Feasibility Study on Incorporating kV Dose Considerations into the Treatment Planning Stage for IGRT of the Lung. American Association of Physicists in Medicine Midwest Chapter Spring Meeting, Winfield, IL, 2013
- L12. Wiersma R, Belcher A, **Grelewicz Z**: Development of a 4DOF Robotic Frameless SRS System for Both Translational and Rotational Head Motion Cancellation. 55th Annual Meeting of the American Association of Physicists in Medicine, Indianapolis, IN 2013. (presentation by R Wiersma)

- L13. **Grelewicz Z**, Kang H, Wiersma R: An EPID based method for High Accuracy Calibration of an Optical Marker Tracking Device with the LINAC Reference Frame. 53rd Annual Meeting of the American Association of Physicists in Medicine, Vancouver, B.C., 2011.

**Patents**

- P1. Rodney Wiersma and **Zachary Grelewicz**: Systems and methods for radiation treatment planning using combined imaging and treatment dose (US Patent number 9782607)