

Jason R. Sherman, M.S.

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Education

- 8/08 M.S. **University of Buffalo, NY**
Toshiba Stroke Research Center
Masters of Science: Medical Physics
Coursework: Physics of Medical Imaging, Modeling and Systems, Nuclear Medicine, Advanced Nuclear Medicine Emission Imaging, Medical Physics Imaging Problems
Thesis: The fabrication of patient specific aneurysm phantoms (PSAPs) in order to evaluate the effectiveness of various endovascular image-guided interventional (EIGI) treatment techniques.
- 5/04 B.S. **University of Rochester, NY**
Bachelors of Science: Biomedical Engineering
Coursework: Concentration in Mechanical Engineering
Senior Design Project: Designed a high-energy x-ray filter that accounted for tumor movement during the treatment of lung and liver cancers.

Work Experience

- 4/08 – Present **Medical Physicist, Upstate Medical Physics, Inc., Victor New York**
- Conduct quarterly medical physics surveys of Radiographic and Fluoroscopic x-ray equipment for clients in New York, Connecticut and Pennsylvania.
 - Skilled in performing annual Computed Radiography medical physics surveys for Kodak, Fuji, Agfa and Konica CR systems.
 - Licensed by the FDA to conduct medical physics surveys of mammography equipment
- 8/06 – 4/08 Assistant **Radiation Safety Officer, Erie Community Medical Center, Buffalo New York**
- Responsible for carrying out the required monthly duties of film badge distribution and collection, quarterly assessment of external radiation exposures being as low as reasonably achievable (ALARA) and T60 wipe tests.
 - Conduct monthly radiation safety lectures to hospital personal.

- Participate in the quality control (QC) requirements
 - Annual: Cardiac Catheterization Labs and all portable fluoroscopy units.
 - Semi-annual mammography QC including; collimation assessment, Automatic Exposure Control system performance, image quality performance, kVp accuracy and reproducibility and beam quality measurement (HVL).

8/06-Present

Laboratory Technician, *University of Buffalo, Toshiba Stroke Research Center, Buffalo New York*

- Conduct research based experiments to investigate new flow modifying endovascular image-guided interventional (EIGI) techniques for the treatment of cerebral aneurysms.
 - Developed a method of fabricating patient specific aneurysm phantoms for preliminary evaluations of new EIGI devices
 - Evaluations conducted optically and angiographically
- Assist in animal (rabbit) studies to evaluate the effectiveness of new EIGI devices and treatment techniques
 - Elastase Model used to create aneurysms
 - Treat using modified stents
 - Flat Panel Digital Subtraction Angiography with contrast injections is used to evaluate the effectiveness of the treatment
 - Time density curves are generated and analyzed

Presentations

- **JR Sherman***, HS Rangwalla, AC Dohatcu, K Minsuok, CN Ionita, S Rudin, “Patient Specific Angiography Phantoms for Investigating New Endovascular Image-Guided Interventional (EIGI) Devices”; The American Association of Physicists in Medicine (AAPM) July 2007
- **JR Sherman***, HS Rangwalla, CN Ionita, AC Dohatcu, JW Lee, DR Bednarek, KR Hoffmann, S Rudin, “Investigation of new flow modifying endovascular image-guided interventional (EIGI) techniques in patient-specific aneurysm phantoms (PSAPs) using optical imaging”; The International Society for Optical Engineering (SPIE) February 2008 (accepted for presentation & publication)

Skills

- Experience with Windows (Excel, PowerPoint, Word), IDL, Matlab, Solidworks & Pinnacle.
- Knowledgeable in using Ultrasound, Fluoroscopy (Image Intensifier & Flat Panel) and Mammography machines.
- Exposed to numerous quality control protocols including; semi-annual QC of a mammography machine and annual QC of Cardiac Catheterization labs and portable fluoroscopy machines.

- Proficient in conducting monthly hospital QA including; badge collection & distribution, ALARA and source inventory wipe tests.

Certifications

New York State Limited Permit to Practice Medical Physics
 Food and Drug Administration & Pennsylvania Department of Environmental Protection certification to conduct medical physicist surveys of mammography equipment.

Professional Associations

2006-present The American Association of Physicists in Medicine (AAPM)
 2007-present The International Society for Optical Engineering (SPIE)

Abstracts

1. AC. Dohatcu, CN. Ionita, **J. Sherman**, HS Rangwala, D. Bednarek, K Hoffman and S. Rudin, "Regional time density curves (R-TDC) derived from angiographic sequences of aneurismal flow modification resulting from endovascular image-guided interventions" in the *49th Annual Meeting of the American Association of Physicists in Medicine (AAPM)*, Volume 34, Issue 6 pp 2367, Minneapolis, MN, July 21 – July 26, 2007.
2. T. Stanley, **J. Sherman**, A. McUmber, D. Bednarek and S. Rudin, "Monitoring hospital entrances to prevent radioactive contamination: disaster planning" in the *49th Annual Meeting of the American Association of Physicists in Medicine (AAPM)*, Volume 34, Issue 6 pp 2399, Minneapolis, MN, July 21 – July 26, 2007.
3. Y. Yu, T.K. Podder, Y. Zhang, W.S. Ng, **J. Sherman**, D. Fuller, V. Mistic, L. Fu, E.M. Messing, D.J. Rubens, J.G. Strang, and R. A. Brasacchio, "A Robotic Platform for Image-Guided Brachytherapy (IGBT)," in the *48th Annual Meeting of the American Association of Physicists in Medicine (AAPM)*, Volume 33, Issue 6 pp 2061, Orlando, FL, July 30 – Aug.3, 2006.
4. T.K. Podder, E.M. D. Fuller, T.K. Podder, D.P. Clark, E.M. Messing, D.J. Rubens, J.G. Strang, **J. Sherman**, R.A. Brasacchio, W.S. Ng, and Y. Yu, "In Vivo Force-Torque Measurement during Prostate Brachytherapy," in the *In the 47th Annual Meeting of the American Association of Physicists in Medicine (AAPM)*, Volume 32, Issue 6, pp. 1996-1997, Seattle, WA, July 24-28, 2005.
5. Y.D. Zhang, **J. Sherman**, T.K. Podder, L. Fu, V. Mistic, D.P. Clark, D. Fuller, W.S. Ng, H.S. Liu, R. Brasacchio, D.J. Rubens, J.G. Strang, E.M. Messing, W. O'Dell, L. Liao, M. Schell, V. Dogra, P. Okunieff, and Y. Yu, "RAPID Design and Experiments," in the *10th Annual Scientific Symposium*, University of Rochester James P. Wilmot Cancer Center, Rochester, NY, November 10, 2005.
6. T. Podder, D. Clark, D. Fuller, **J. Sherman**, E. Messing, D. Rubens, J. Strang, W.S. Ng, and Y. Yu , "Effects of Coating on Friction Force during Needle Insertion in Soft Materials," in the *Proceedings of the 51st Annual Meeting of Canadian Organization of Medical Physics (COMP)*, Volume 32, Issue 7 pp. 2421, Hamilton, Canada, July 6-9, 2005.
7. Messing, D.J. Rubens, J.G. Strang, D.P. Clark, D. Fuller, **J. Sherman**, R.A. Brasacchio, W.G. O'Dell, Y.D. Zhang, W.S. Ng, and Y. Yu, "Measurement and Analysis of *in Vivo* Force-Torque and Motion of Surgical Needle during Prostate Brachytherapy," in the *Annual Meeting of Upstate New York Chapter of American Association of Physicist in Medicine (UNYAAPM)*, May 2, 2005.

Publications

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1. **J. Sherman**, HS. Rangwala, CN. Ionita, AC. Dohatcu, JW. Lee, DR. Bednarek, KR. Hoffman and S. Rudin, "Investigation of new flow modifying endovascular image-guided interventional (EIGI) techniques in patient-specific aneurysm phantoms (PSAPs) using optical imaging" in *Society of Photographic Instrumentation Engineers (SPIE)*, (accepted), February 2008
 2. T.K. Podder, **J. Sherman**, L. Li, J. Joseph, D.R. Rubens, E.M. Messing, J. Huang, Y. Yu, "Mechanical properties of human prostate tissue in the context of surgical needle insertion", in the *International Journal of Computer Assisted Radiology and Surgery (CARS)*, Vol. 2, pp. S106-108, June 2007.
 3. Y.D. Zhang, T.K. Podder, W.S. Ng, **J. Sherman**, V. Mistic, D. Fuller, E.M. Messing, D.J. Rubens J.G. Strang, R. Brasacchio, and Y. Yu, "Semi-automated Needling and Seed Delivery Device for Prostate Brachytherapy" in the *IEEE International Conference on Intelligent Robots and Systems (IROS) 2006*
 4. T.K. Podder, **J.R. Sherman**, D.J Fuller, E.M. Messing, D.J. Rubens, J.G. Strang, and R.A. Brasacchio, and Y. Yu "In vivo measurement of surgical needle intervention parameters during prostate brachytherapy," in ASTRO, Philadelphia, PA, 2006.
 5. T.K. Podder, **J. Sherman**, D. Fuller, E.M. Messing, D.J. Rubens, J.G. Strang, R.A. Brasacchio, and Y. Yu, "Needle Insertion Force Estimation Model using Procedure-specific and Patient-specific Criteria," in the *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS/EMBC)*, New York, NY, Aug. 31 – Sept. 3, 2006.
 6. T.K. Podder, **J. Sherman**, D. Fuller, E.M. Messing, D.J. Rubens, J.G. Strang, R.A. Brasacchio, and Y. Yu, "Surgical Needle Intervention in Soft Tissue: In-vivo Force Measurement," in the *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS/EMBC)*, New York, NY, Aug. 31 – Sept. 3, 2006.
 7. T.K. Podder, Y. Yu, Y.D Zhang, W.S. Ng, **J. Sherman**, E.M. Messing, D.J. Rubens, and J.G. Strang, "Ultrasound Image-guided Robotic System for Prostate Brachytherapy," in the *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS/EMBC)*, New York, NY, Aug. 31 – Sept. 3, 2006.
 8. **J. Sherman**, T. K. Podder, L. Fu, V. Mistic, D. Fuller, E. M. Messing, D. J. Rubens, J. G. Strang, R. A. Brasacchio, and Y. Yu, "Efficacy of Prostate Stabilizing Techniques during Brachytherapy Procedure," in the *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS/EMBC)*, New York, NY, Aug. 31 – Sept. 3, 2006.
 9. Y. Yu, T.K. Podder, Y. Zhang, W.S. Ng, **J. Sherman**, D. Fuller, V. Mistic, L. Fu, E.M. Messing, D.J. Rubens, J.G. Strang, and R. A. Brasacchio, "Robot-assisted prostate brachytherapy," in the *Int. Conf. on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Copenhagen, Denmark, October 2-4, 2006.
 10. Y.D. Zhang, T.K. Podder, L. Fu, **J. Sherman**, V. Mistic, D. Fuller, E.M. Messing, D.J. Rubens, J.G. Strang, W.S. Ng, and Y. Yu, "Design and Experiments of Seed Delivery Device for Prostate Brachytherapy," in the *IEEE International Conference on Intelligent Robots and Systems (IROS)*, Beijing, China, October 9-14, 2006.
 11. Y. Yu, T.K. Podder, Y. Zhang, W.S. Ng, **J. Sherman**, D. Fuller, V. Mistic, L. Fu, E.M. Messing, D.J. Rubens, J.G. Strang, and R. A. Brasacchio, "Robot-Assisted Platform for Intratumoral Delivery (RAPID)," in the *World Congress on Medical Physics and Biomedical Engineering (WC-BME)*, Seoul, Korea, (accepted for presentation & publication) Aug. 27 – Sept.1, 2006.
 12. T.K. Podder, L. Liao, **J. Sherman**, D. Fuller, V. Mistic, D.J. Rubens, E.M. Messing, J.G. Strang, W.S. Ng, and Y. Yu, "A Method to Minimize Puncturing Force and Organ Deformation," in the *International Congress & Exposition on Computer Assisted Radiology & Surgery (CARS)*, Osaka, Japan (accepted for presentation and publication), June 28 – July 1, 2006.

13. T.K. Podder, D.P. Clark, D. Fuller, **J. Sherman**, W.S. Ng, L. Liao, D.J. Rubens, J.G. Strang, E.M. Messing, Y.D. Zhang, and Y. Yu, "Effects of Velocity Modulation during Surgical Needle Insertion," in the *Proceedings of the 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS/EMBC)*, pp. 2224-2228, Shanghai, China, September 1-4, 2005.
14. T.K. Podder, E.M. Messing, D.J. Rubens, J.G. Strang, D.P. Clark, D. Fuller, **J. Sherman**, R.A. Brasacchio, W.S. Ng, and Y. Yu, "Brachytherapy Needle Insertion: an in Vivo Data Analysis," in the *Proceedings of the 14th International Conference of Medical Physics (ICMP)*, Vol. 2, pp. 913-914, Nuremberg, Germany, September 14-17, 2005.
15. T.K. Podder, **J. Sherman**, D.P. Clark, D. Fuller, D.J. Rubens, E.M. Messing, J.G. Strang, L. Liao, W.S. Ng, and Y. Yu, "Method to Reduce Force and Target Movement during Surgical Needle Interventions," in the *IFMBE Proceedings of the 3rd European Medical & Biological Engineering Conference (EMBE)*, Vol. 11, pp. 4315-4320, Prague, Czech Republic, November 20-25, 2005.
16. T.K. Podder, D.P. Clark, **J. Sherman**, D. Fuller, E.M. Messing, D.J. Rubens, J.G. Strang, W. O'Dell, Y.D. Zhang, W.S. Ng, and Y. Yu, "Effects of Tip Geometry of Surgical Needles: an Assessment of Force-Torque and Deflection," in the *IFMBE Proceedings of the 3rd European Medical & Biological Engineering Conference (EMBE)*, Vol. 11, pp. 1641-1644, Prague, Czech Republic, November 20-25, 2005.
17. T.K. Podder, D.P. Clark, **J. Sherman**, D. Fuller, D.J. Rubens, W.S. Ng, E.M. Messing, W. O'Dell, J.G. Strang, Y.D. Zhang, and Y. Yu, "Robotic Needle Insertion in Soft Material Phantoms: An Evaluation of Properties of Commonly used Soft Materials," in the *IFMBE Proceedings of the 12th International Conference on Biomedical Engineering (ICBME)*, Vol. 12, Singapore, December 7-10, 2005.
18. T.K. Podder, L. Liao, **J. Sherman**, V. Mistic, Y.D. Zhang, D. Fuller, D.J. Rubens, E.M. Messing, J.G. Strang, W.S. Ng, and Y. Yu, "Assessment of Prostate Brachytherapy and Breast Biopsy Needle Insertions and Methods to Improve Targeting Accuracy," in the *IFMBE Proceedings of the 12th International Conference on Biomedical Engineering (ICBME)*, Vol. 12, Singapore, December 7-10, 2005.

Journal Article

1. **J. Sherman**, T. K. Podder, L. Fu, V. Mistic, D. Fuller, E. M. Messing, D. J. Rubens, J. G. Strang, R. A. Brasacchio, and Y. Yu, "Efficacy of Prostate Stabilizing Techniques during Brachytherapy Procedure," in *Physics of Medicine and Biology*.
2. Tarun K. Podder, Douglas P. Clark, **Jason Sherman**, Dave Fuller, Edward M. Messing, Deborah J. Rubens, Ralph Brasacchio, John G. Strang, Lydia Liao, Wan-Sing Ng, and Yan Yu, "In vivo Motion and Force Measurement of Surgical Needle Intervention during Prostate Brachytherapy," in the *Journal of American Association of Medical Physics*, Volume 33, Issue 8, pp. 2915-2922, August 2006.