Jonathon Van Schelt PhD DABR

Rush University Medical Center
Department of Radiation Oncology
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Employment History

Medical Physicist, 2017–Present, Dept. of Radiation Oncology, Rush University Medical Center, Chicago, IL
Provides general coverage at the university clinic and the satellite clinic at Rush Oak Park Hospital
Focus includes SRS/SBRT and prostate HDR brachytherapy
Assistant Professor in Rush Medical College

Medical Physics Resident, 2015–2017, University of Washington Medical Center, Seattle, WA

Scientific Associate, 2012–2013, **Laboratory Graduate Fellow**, 2007–2012, Argonne National Laboratory, IL
Basic research in experimental nuclear astrophysics

Certification

American Board of Radiology, Certification in Therapeutic Medical Physics, 2018–Present

Registered Therapeutic Physicist, State of Illinois, 2018–Present

Authorized User of ^{192}Ir HDR Brachytherapy, Rush, License IL-01766-01, 2019–Present

Education

Postgraduate Certificate, Medical Physics, University of Chicago, 2015
PhD, Physics, University of Chicago, 2012
MS, Physics, University of Chicago, 2006
BS, Engineering Physics, University of Illinois at Urbana-Champaign, 2005
Minor in Mathematics

Research Experience

Rush University Medical Center, 2017–Present

- Small-field dosimetry with Exradin W1 Scintillator
- Out of field lens dosimetry for standing electron patients
- Commissioning of orthovoltage irradiator for radiobiology research

University of Washington, 2015–2017

- Development of compensator-based IMRT technology for low- and middle-income countries
- In-vivo surface dosimetry for HDR brachytherapy via OSLD

Argonne National Laboratory, 2007–2013

- Precision atomic mass measurements for experimental nuclear astrophysics
- Discovered ^{155}Pr and ^{157}Nd

University of Illinois at Urbana-Champaign, 2002–2005

- Simulations of dark matter halo evolution during galaxy collisions
- Algorithm development for event triggers for B-meson events in the CDF detector at Fermilab

Teaching Experience

Rush University Medical Center Department of Radiation Oncology

- Mentorship of medical physics residents
- Lecturer in the therapy physics didactic course for medical and physics residents

University of Washington Medical Center Department of Radiation Oncology

- Training of junior physics residents, 2016–2017

- Continuing Education seminar: "The Applications of Medical Imaging to Radiation Oncology", Dec. 2016
- Hands On SBRT Workshop: "Pretreatment Localization" lab session, October 2016
- Quality and safety improvement monthly department meeting talks: "Lessons from RO-ILS: Plan Review", April 2016, "Couch Overrides and Tolerance Tables", March 2016
- Continuing Education seminar: "The Goals and Challenges of ABC", January 2016
- Medical resident physics labs: "Linac QA" and "IMRT QA", January & February 2016

University of Chicago Department of Physics

- Teaching Assistant, Physics GRE Preparation, Autumns 2007–2010
- Teaching Assistant, Electronics, Spring 2007
- Teaching Assistant, General Physics, Autumn 2005;Winter, Spring, and Autumn 2006; Winter 2007

University of Illinois at Urbana-Champaign Department of Physics

- Teaching Assistant, University Physics, Spring 2004 & Spring 2005

Additional Training

- Hands-On SBRT Workshop, Seattle, October 2016
- Seventh Exotic Beam Summer School, Argonne National Laboratory, 2008

Awards and Honors

- Third Place, Young Investigator Symposium, 2017 AAPM Spring Clinical Meeting.
- Good Catch safety award, UWMC Department of Radiation Oncology, Sept. 2015 and Aug. 2017
- Editors' Suggestion for main thesis paper, Physical Review Letters, 2013
- David W. Grainger Graduate Fellowship, University of Chicago Department of Physics, 2010–2011
- BS with High Honors, University of Illinois at Urbana-Champaign, 2005
- Edmund J. James Scholar, University of Illinois at Urbana-Champaign, 2001–2002, '02–'03, '04–'05
- Dean's List, University of Illinois at Urbana-Champaign College of Engineering, 2002–2004
- Lorella M. Jones Summer Research Award, University of Illinois at Urbana-Champaign Department of Physics, 2004
- Richard K. Cook Scholarship, University of Illinois at Urbana-Champaign Department of Physics, 2003

Peer-Reviewed Publications

1. **J. Van Schelt**, D. Smith, L. Young, J. Kim, L. Wootton, J. Meyer, C. Dempsey, "In-vivo surface dosimetry of HDR breast brachytherapy treatments via OSLDs" (In Preparation).
2. **J. Van Schelt**, "Lens Dose to Standing Patients Treated With Electrons to the Hand", Medical Dosimetry, 46(4), e7-e10 (2021).
3. **J. Van Schelt**, D. Smith , N. Fong , D. Toomeh , P.A. Sponseller , D.W. Brown , M.W. Macomber , N.A. Mayr , S.A. Patel , A. Shulman , G.V. Subrahmanyam , K.Govindarajan , E.C. Ford "A Ring-based Compensator IMRT System Optimized for Low- and Middle-Income Countries: Design and Treatment Planning Study", Medical Physics, 45(7), 3275-3286 (2018).
4. G. Li, S. Caldwell, J. A. Clark, S. Gulick, A Hecht, D. D. Lascar, T. Levand, G. Morgan, R. Orford, G. Savard, K. S. Sharma, **J. Van Schelt**, "A compact cryogenic pump", Cryogenics, 74, 35 (2016).
5. M. G. Sternberg, R. Segel, N. D. Scielzo, G. Savard, J. A. Clark, P. F. Bertone, F. Buchinger, M. Burkey, S. Caldwell, A. Chaudhuri, J. E. Crawford, C. M. Deibel, J. Greene, S. Gulick, D. Lascar, A. F. Levand, G. Li, A. Pérez Galván, K. S. Sharma, **J. Van Schelt**, R. M. Yee, and B. J. Zabransky, "Limit on Tensor Currents from 8Li β Decay", Physical Review Letters, 115, 182501 (2015).
6. N.D. Scielzo, R.M. Yee, P.F. Bertone, F. Buchinger, S.A. Caldwell, J.A. Clark, A. Czeszumska, C.M. Deibel, J.P. Greene, S. Gulick, D. Lascar, A.F. Levand, G. Li, E.B. Norman, S. Padgett, M. Pedretti, A. Perez Galvan, G. Savard, R.E. Segel, K.S. Sharma, M.G. Sternberg, **J. Van Schelt**, B.J. Zabransky, "A Novel Approach to β-delayed Neutron Spectroscopy Using the Beta-decay Paul Trap", Nuclear Data Sheets, 120, 70 (2014).

7. **J. Van Schelt**, D. Lascar, G. Savard, J. A. Clark, P. F. Bertone, S. Caldwell, A. Chaudhuri, A. F. Levand, G. Li, G. E. Morgan, R. Orford, R. E. Segel, K. S. Sharma, and M. G. Sternberg, "First Results from the CARIBU Facility: Mass Measurements on the r-Process Path", Physical Review Letters, 111, 061102 (2013). (Editors' Suggestion)
8. G. Li, R. Segel, N. D. Scielzo, P. F. Bertone, F. Buchinger, S. Caldwell, A. Chaudhuri, J. A. Clark, J. E. Crawford, C. M. Deibel, J. Fallis, S. Gulick, G. Gwinner, D. Lascar, A. F. Levand, M. Pedretti, G. Savard, K. S. Sharma, M. G. Sternberg, T. Sun, **J. Van Schelt**, R. M. Yee, and B. J. Zabransky, "Tensor Interaction Limit Derived From the α-β-ν Correlation in Trapped ^{8}Li Ions", Physical Review Letters, 110, 092502 (2013).
9. R. M. Yee, N. D. Scielzo, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, C. M. Deibel, J. Fallis, J. P. Greene, S. Gulick, D. Lascar, A. F. Levand, G. Li, E. B. Norman, M. Pedretti, G. Savard, R. E. Segel, K. S. Sharma, M. G. Sternberg, **J. Van Schelt**, and B. J. Zabransky, "β-Delayed Neutron Spectroscopy Using Trapped Radioactive Ions", Physical Review Letters, 110, 092501 (2013).
10. **J. Van Schelt**, D. Lascar, G. Savard, J. A. Clark, S. Caldwell, A. Chaudhuri, J. Fallis, J. P. Greene, A. F. Levand, G. Li, K. S. Sharma, M. G. Sternberg, T. Sun, and B. J. Zabransky, "Mass measurements near the r-process path using the Canadian Penning Trap mass spectrometer", Physical Review C, 85, 045805 (2012).
11. N. D. Scielzo, G. Li, M. G. Sternberg, G. Savard, P. F. Bertone, F. Buchinger, S. Caldwell, J. A. Clark, J. Crawford, C. M. Deibel, J. Fallis, J. P. Greene, S. Gulick, A. A. Hecht, D. Lascar, J. K. P. Lee, A. F. Levand, M. Pedretti, R. E. Segel, H. Sharma, K. S. Sharma, I. Tanihata, **J. Van Schelt**, R. M. Yee, B. J. Zabransky, "The β-decay Paul trap; A radiofrequency-quadrupole ion trap for precision β-decay studies", Nuclear Instruments and Methods A, 681, 94 (2012).
12. J. Fallis, J. A. Clark, K. S. Sharma, G. Savard, F. Buchinger, S. Caldwell, A. Chaudhuri, J. E. Crawford, C. M. Deibel, S. Gulick, A. A. Hecht, D. Lascar, J. K. P. Lee, A. F. Levand, G. Li, B. F. Lundgren, A. Parikh, S. Russell, M. Scholte-van de Vorst, N. D. Scielzo, R. E. Segel, H. Sharma, S. Sinha, M. G. Sternberg, T. Sun, I. Tanihata, **J. Van Schelt**, J. C. Wang, Y. Wang, C. Wrede, and Z. Zhou, "Mass measurements of isotopes of Nb, Mo, Tc, Ru, and Rh along the vp- and rp-process paths using the Canadian Penning Trap mass spectrometer", Physical Review C, 84, 045807 (2011).
13. N. D. Scielzo, S. Caldwell, G. Savard, J. A. Clark, C. M. Deibel, J. Fallis, S. Gulick, D. Lascar, A. F. Levand, G. Li, J. Mintz, E. B. Norman, K. S. Sharma, M. Sternberg, T. Sun, and **J. Van Schelt**, "Double-β decay Q values of ^{130}Te, ^{128}Te, and ^{120}Te", Physical Review C, 80, 025501 (2009).
14. J. Fallis, J. A. Clark, K. S. Sharma, G. Savard, F. Buchinger, S. Caldwell, J. E. Crawford, C. M. Deibel, J. L. Fisker, S. Gulick, A. A. Hecht, D. Lascar, J. K. P. Lee, A. F. Levand, G. Li, B. F. Lundgren, A. Parikh, S. Russell, M. Scholte-van de Vorst, N. D. Scielzo, R. E. Segel, H. Sharma, S. Sinha, M. Sternberg, T. Sun, I. Tanihata, **J. Van Schelt**, J. C. Wang, Y. Wang, C. Wrede, and Z. Zhou, "Determination of the proton separation energy of 93Rh from mass measurements", Physical Review C, 78, 022801 (2008).

Medical Physics Abstracts

1. K. Jones, A. Templeton, Y. Liao, **J. Van Schelt**, Z. Grelewicz, J. Turian, "Assessment of the Dosimetric Impact of Rogue Leaf Pair Openings in Modulated Stereotactic Radiosurgery Plans", AAPM 2021: TH-F-TRACK 6-6.
2. **J. Van Schelt**, "Lens Dose to Standing Patients Treated With Electrons to the Hand", AAPM 2020: PO-GeP-T-560.
3. K Jones, Z Grelewicz, **J Van Schelt**, A Templeton, D Wang, J Turian, "Quantification of Prostate Positioning Accuracy and Movement During SBRT with CBCT Imaging", AAPM 2020:PO-GeP-M-348.
4. L Young, **J Van Schelt**, D Wang, A Kalet, N Cao, J Meyer, R Price, C Dempsey, J Kim, "Skin Dose Measurements with Optically Stimulated Luminescence Dosimeters for SAVI Breast Brachytherapy Treatment Quality Assurance" AAPM 2019:SU-I430-GePD-F4-5.
5. **J. Van Schelt**, A. Templeton, D. Bernard, G. Cifter, J. Turian, "Validation of linac small-field commissioning with a commercial plastic scintillator detector.", AAPM 2018:SU-I-GPD-T-366.
6. M.W. Macomber, N. Fong, P.A. Sponseller, **J. Van Schelt**, G. Subrahmanyam, S. Vijayaraghavan, K. Govindarajan, A. Shulman, D.W. Brown, S.A. Patel, N.A. Mayr, E.C. Ford "A Novel Compensator Device to Deliver IMRT With Cobalt-60 Units in Low- and Middle-Income Countries: A Comparative Dosimetric Analysis", ASTRO 2017:1138.
7. D. L. Smith, N. F., **J. Van Schelt**, P. Sponseller, A. Shulman, D. Brown, K Govindarajan, E. Ford "Evaluation of a Ring-Mounted Compensator IMRT System for Efficient and Cost-Effective Radiotherapy in Low- and Middle-Income Countries", AAPM 2017:TH-CD-708-2.

8. **J. Van Schelt**, L. Young, L. Wootton, J. Meyer, C. Dempsey "Characterization and validation of optically stimulated luminescent dosimeters for in-vivo surface dosimetry of HDR breast brachytherapy treatments", AAPM 2017 Spring Clinical Meeting:SA-B-BRA | B-9.

Oral Presentations

Medical Physics:

- "Characterization and validation of optically stimulated luminescent dosimeters for in-vivo surface dosimetry of HDR breast brachytherapy treatments", J. Van Schelt, L. Young, L. Wootton, J. Meyer, C. Dempsey, 2017 AAPM Spring Clinical Meeting.

Nuclear Physics:

- 8 talks at regional-international conferences, 2008–2012
- 4 invited departmental talks at Argonne National labs, 2008–2011

Service

Served as Referee for:

- *The International Journal of Medical Physics Research and Practice*
- *Australasian Physical & Engineering Sciences in Medicine*
- *Technology in Cancer Research & Treatment*

Advised ANL's ATLAS Program Advisory Committee on evaluation of medical physics beam time (unofficial).

Society Membership

- American Association of Physicists in Medicine, 2014–Present