

Bethany Broekhoven, M.S., DABR

EDUCATION

M.S., Medical Physics & Health Physics **2019**

Louisiana State University, Baton Rouge, LA

Advisor: Kenneth Matthews, Ph.D.

Thesis Title: Determination of Scatter Fractions, Albedos, and TVLs for Shielding of Synchrotron Beamline Hutches

B.S., Physics **2013**

Louisiana State University, Baton Rouge, LA

Concentration: Astronomy, Minor: Mathematics

EMPLOYMENT

Staff Medical Physicist **2021 – Present**

Willis-Knighton Cancer Center, Shreveport, LA

Medical Physics Resident **2019 – 2021**

Medical University of South Carolina, Charleston, SC

PROFESSIONAL CERTIFICATIONS

Diplomate, American Board of Radiology (DABR) **2022**

Therapeutic Medical Physics

ORAL PRESENTATIONS

B. Broekhoven, W. Donahue, W.-H. Wang, K. Matthews, *Determination of TVLS, Albedos, and Scatter fractions for Shielding of Synchrotron Beamline Hutches*. Southwest AAPM (SWAAPM) Annual Meeting. 2019.

B. Broekhoven, T.G. Guzik, *MARS Truck Outreach*. LaSPACE Council Meeting. 2015.

B. Broekhoven, M. Stewart, D. Granger, T.G. Guzik, *High Performance Computing (HPC) CALET Simulation Production Runs*. CALET Technical Interface Meeting. 2014.

B. Broekhoven, M. Stewart, D. Granger, T.G. Guzik, *High Performance Computing (HPC) at LSU*. CALET Teleconference. 2014.

B. Broekhoven, M. Stewart, D. Granger, T.G. Guzik, *Overview of the CALET Mission*. LaSPACE Colloquium. 2014.

B. Broekhoven, D. Granger, M. Stewart, T.G. Guzik, *Preliminary Data Quality Checking*. CALET Technical Interface Meeting. 2013.

B. Broekhoven, D. Granger, M. Stewart, T.G. Guzik, *U.S. CALET Data Center at LSU Progress Report*. CALET Technical Interface Meeting. 2013.

POSTER PRESENTATIONS

D.G. McDonald, C. Mart, W. Godwin, **B. Broekhoven**, S. Roles, G. Owen, A.K. Rapchak, K. Fallon, M. Maynard, J.L. Peng, *Evaluation of Treatment Plan Quality when using Aperture Shape Control to affect Arc Modulation*. ASTRO Annual Meeting. 2021.

S. McVorrnan, B. DePaoli, **B. Broekhoven**, E. Hilliard, H. Li, D. Marshall, *Early toxicity outcomes for initial implementation of Cs-131 seeds for low-dose-rate prostate brachytherapy*. ARS Annual Meeting. 2021.

B. Broekhoven, W. Godwin, J. Peng, D. McDonald, M. Maynard, K. Fallon, G. Owen, A. Rapchak, *Dosimetric Impact in Radiation Therapy when Using Dual-Energy CT Reconstructed Virtual Monoenergetic Images in Combination with Clinical Monoenergetic CT-Density Curves*. Virtual AAPM Annual Meeting. 2021.

S. Roles, **B. Broekhoven**, W. Godwin, A. Rapchak, C. Mart, D. McDonald, G. Owen, M. Maynard, J. Peng, K. Fallon, *Clinical Implementation of Varian TrueBeam Portal Dosimetry: Comparison to Sun Nuclear MapCHECK2 for Patient-Specific Quality Assurance*. Virtual AAPM Annual Meeting. 2021.

D.G. McDonald, C. Mart, A.K. Rapchak, G. Owen, K. Fallon, W. Godwin, **B. Broekhoven**, E. Hilliard, J.L. Peng, *Behavior of a Treatment Planning System Optimization Engine when using Aperture Shape Control to Affect Arc Modulation*. ASTRO Annual Meeting. 2020.

B. Broekhoven, W. Godwin, D. McDonald, *Evaluation of Dual-Energy CT Reconstructed Virtual Monoenergetic Images for Radiation Therapy Treatment Planning*. Virtual Joint AAPM COMP Annual Meeting. 2020.

B. Broekhoven, W. Donahue, W.-H. Wang, K. Matthews, *Determination of TVLS, Albedos, and Scatter fractions for Shielding of Synchrotron Beamline Hutches*. Southwest AAPM (SWAAPM) Annual Meeting. 2019.

B. Broekhoven, M. Stewart, D. Granger, T. G. Guzik, *CALET: Monte Carlo Simulations for the CALET Electron Telescope on the Space Station*. Southeastern Conference for Undergraduate Women in Physics (SCUWiP). 2013.

PROFESSIONAL AFFILIATIONS

<i>American Brachytherapy Society</i>	2020 – Present
<i>Southeastern Chapter of American Association of Physicists in Medicine</i>	2019 – Present
<i>American Association of Physicists in Medicine</i>	2016 – Present

ADDITIONAL EMPLOYMENT

Research Specialist Physics & Astronomy Department, Louisiana State University - <i>CALET Project</i> – calorimeter based instrument to investigate the High Energy Universe, from the International Space Station, to address many of the outstanding questions in High Energy Astrophysics.	2013 – 2016
Education Curator LaSPACE, Louisiana State University	2014 – 2016

- Supervise and coordinate all Mobile Astronomy Resource System (MARS) Truck events, which are education outreach events for students in grades K-12 and the general public. The MARS Truck travels to events throughout the state of Louisiana.

Student Researcher

2011 – 2013

Physics & Astronomy Department, Louisiana State University

- *CALET Project* – as described above under Research Specialist.
- *MARSLIFE-SMITH Project* – biological samples taken at a range of altitudes in the mid-stratosphere to develop fundamental astrobiological concepts and operational capabilities that would promote the success of future NASA-driven life detection missions, and increase collaboration between NASA and Louisiana.

AWARDS, GRANTS, FELLOWSHIPS, & HONORS

Health Physics Society Fellowship

2017

Health Physics Society

Louisiana State University Fellowship Program in Health Physics

2016 – 2018

Nuclear Regulatory Commission

Sigma Xi

2013

The Scientific Research Society, National Academy of Sciences Grant

Louisiana Music Hall of Fame Inductee

2013

Louisiana State University Tiger Marching Band

TOPS Honor Award

2008 – 2012

Taylor Opportunity Program for Students

Freshman Merit Scholarship

2008 – 2009

Louisiana State University

VOLUNTEER EXPERIENCE

American Association of Physicists in Medicine

2017 – 2019, 2022 – Present

Southwest Regional Chapter Meetings, Student Worker

Southwest Regional Chapter Meetings, Moderator

Southwest Regional Chapter, President

Boy Scout Nuclear Science Merit Badge Day

2018

River Bend Nuclear Plant, Student Worker

Louisiana State University Tiger Marching Band

2013

Louisiana State University, Clarinet Section Leader

Camp Challenge

2007 – 2009

Anacoco, LA, Counselor

Camp Pelican

2007 – 2008

New Orleans, LA, Counselor