

## Curriculum Vitae

**(Rev.) Michael A. Antonacci, O.S.B., Ph.D.**

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### Education

**Doctor of Philosophy**, Physics, University of North Carolina at Chapel Hill, 2019.

**Master of Divinity**, Saint Vincent Seminary, 2014.

**Bachelor of Science**, Physics, Saint Vincent College, 2007

**Bachelor of Science**, Mathematics, Saint Vincent College, 2007.

### Publications and Presentations

A.M. McCallister, S. H. Chung, M.A. Antonacci, M. Z. Powell, A. S. Ceppe, S. H. Donaldson, Y. Z. Lee, R.T. Branca, J.L. Goralski, "Comparison of single breath hyperpolarized  $^{129}\text{Xe}$  MRI with dynamic  $^{19}\text{F}$  MRI in cystic fibrosis lung disease," *Magn. Reson. Med.* **85**:1028-1038 (2021). <https://doi.org/10.1002/mrm.28457>

M.A. Antonacci, C. McHugh, M. Kelley, A.M. McCallister, S. Degan, R.T. Branca. "Direct detection of brown adipose tissue thermogenesis in UCP1 $^{-/-}$  mice by hyperpolarized  $^{129}\text{Xe}$  MR thermometry," *Sci Rep* **9**:14865 (2019). <https://doi.org/10.1038/s41598-019-51483-4>

M.A. Antonacci, C. McHugh, M. Kelley, A.M. McCallister, S. Degan, R.T. Branca, "Absolute MR thermometry by hyperpolarized  $^{129}\text{Xe}$  in UCP1 $^{-/-}$  animals reveals UCP1-independent thermogenesis," Poster Presentation, 27<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Montreal, Canada (2019).

M.A. Antonacci, L. Zhang, S. Degan, D. Erdmann, R.T. Branca, "Calibration of methylene-referenced lipid-dissolved xenon frequency for absolute MR temperature measurements," *Magn. Reson. Med.* **81**:765-772 (2019).

M.A. Antonacci, L. Zhang, A. Burant, A.M. McCallister, R.T. Branca, "Establishing an Absolute Reference for Dissolved-Phase  $^{129}\text{Xe}$  Chemical Shifts," Poster Presentation, 26<sup>th</sup> Annual Meeting of the International Society for Magnetic Resonance in Medicine, Paris, France (2018).

M.A. Antonacci, L. Zhang, A. Burant, A.M. McCallister, R.T. Branca, "Simple and robust referencing system enables identification of dissolved-phase xenon spectral frequencies," *Magn. Reson. Med.* **80**:431-441 (2018).

M.A. Antonacci, L. Zhang, A. Burant, A.M. McCallister, R.T. Branca, “Establishing an absolute reference for  $^{129}\text{Xe}$  chemical shift measurements,” Poster Presentation, Polarization in Noble Gases Conference, Park City, UT (2017).

M.A. Antonacci, A. Burant, W. Wagner, R.T. Branca, “Depolarization of Nuclear Spin Polarized  $^{129}\text{Xe}$  by Dark Rubidium During Spin-exchange Optical Pumping,” Poster Presentation, Triangle Imaging Symposium, Chapel Hill, NC (2017).

M.A. Antonacci, A. Burant, W. Wagner, R.T. Branca, “Depolarization of nuclear spin polarized  $^{129}\text{Xe}$  gas by dark rubidium during spin-exchange optical pumping,” *J. Mag. Reson.* **279**: 60-67 (2017).

M.A. Antonacci, A. Burant, R.T. Branca, “Optimizing the production of hyperpolarized  $^{129}\text{Xe}$  gas for in vivo MRI studies,” Poster Presentation, 57th ENC Conference, Pittsburgh, PA (2016).

M.A. Antonacci, A. Burant, R.T. Branca, “Optimizing the production of hyperpolarized  $^{129}\text{Xe}$  gas for in vivo MRI studies,” Poster Presentation, Triangle Imaging Symposium, Chapel Hill, NC (2016).

M.A. Antonacci, A. Burant, R.T. Branca, “Optimizing the production of hyperpolarized  $^{129}\text{Xe}$  gas for in vivo MRI studies,” Poster Presentation, Small Animal Imaging Symposium, Chapel Hill, NC (2015).

M.A. Antonacci, A. Burant, R.T. Branca, “Optimizing the production of hyperpolarized  $^{129}\text{Xe}$  gas for in vivo MRI studies,” Poster Presentation, UNC BRIC Grand Opening, Chapel Hill, NC (2015).

M.A. Maize, M.A. Antonacci, and F. Marsiglio, “The static electric polarizability of a particle bound by a finite potential well,” *Am. J. Phys.* **79**: 222-225 (2011).

M.A. Antonacci, et al., “Precision cross section measurement of Cu at 8 and 12 MeV for background reduction in the next generation of  $0\nu\beta\beta$  decay experiments,” Poster Presentation, Conference Experience for Undergraduates, Nashville, TN, 2006.

M.A. Antonacci, et al., “Pb and Cu ( $n, n'\gamma$ ) Cross-section Measurements at 8 and 12 MeV: Background subtraction in the next generation of long half-life Beta decay experiments,” Saint Vincent College Senior Research Conference. Poster Presentation and Oral Presentation. April 2007.

## **Employment**

Deacon, St. Mary's Church, St. Marys, PA, August 2013 – May 2014.  
Teaching Assistant, Department of Physics and Astronomy, University of North Carolina, August 2014 – May 2015 and August 2016 – December 2016.  
Assistant Professor, Department of Physics, Saint Vincent College, July 2019 – present.

## **Fellowships**

Dean's Graduate Fellow, College of Arts and Sciences, University of North Carolina (AY 2018-2019)

Dissertation Completion Fellowship, The Graduate School, University of North Carolina (AY 2018-2019)

## **Awards and Citations**

Saint Vincent Seminary *Diakonia* Award (2014)

Outstanding Teaching Assistant Award, Department of Physics and Astronomy, University of North Carolina at Chapel Hill (AY 2014-15)

## **Professional Affiliations and Service**

Member, Board of Directors, Saint Vincent College (2015 – 2019) Elected.

Member, Society of Catholic Scientists (2016 – present).

Member, Seminar Committee, Biomedical Research Imaging Center, University of North Carolina (Spring 2018 & 2019)

Member, International Society of Magnetic Resonance in Medicine (Spring 2019 – present)

Member, American Association of Physics Teachers (2019 – present).

Honors Program Committee, Saint Vincent College (Fall 2019 – present).

Educational Policies Committee, Saint Vincent College (Spring 2021) Elected.

Faculty Council, Saint Vincent College (Spring 2021 – present) Elected.