# Curriculum Vitae

Daniel E.M. Hoff

## Current Position

Research Associate . . . . . *University of Massachusetts, Lowell*

## Education

### 2018:

Ph.D Nuclear Chemistry . . . . . *Washington University in St. Louis*

Advisor: Lee Sobotka
Thesis: *Spin Alignment in Inelastic Nuclear Reactions*

### 2013:

B.A. Physics with honors . . . . . *University of Chicago*

B.S. Mathematics . . . . . *University of Chicago*

## Publications

### 2020:

Hoff, D.E.M., Rogers, A.M., Wang, S.M. (王思敏) et al. *Mirror symmetry violation in bound nuclear ground states* Accepted for publication in *Nature*

### 2019:

Webb, T.B. et al. *Particle decays of levels in* $^{11,12}$N *and* $^{12}$O *investigated with the invariant-mass method* Physical Review C 100 (2), 024306.

Webb, T.B. et al. *First Observation of Unbound* $^{11}$O*, the Mirror of the Halo Nucleus* $^{11}$Li Physical Review Letters 122 (12), 122501.

### 2018:

Hoff, D.E.M, Potel, G. et al. *Large Longitudinal Spin Alignment Generated in Inelastic Nuclear Reactions* Physical Review C 97 (5), 054605.

Patch, S.K., Hoff, D.E.M., Webb, T.B., Sobotka, L.G., Zhao, T *Two-stage ionoacoustic range verification leveraging Monte Carlo and acoustic simulations to stably account for tissue inhomogeneity and accelerator–specific time structure- A simulation study* Medical Physics, 45: 783–793.

### 2017:

Hoff, D.E.M, Charity, R.J. et al. *Large Longitudinal Spin Alignment of Excited Projectiles in Intermediate Energy Inelastic Scattering* Physical Review Letters 119, 232501.

### 2015:

Hoff, D.E.M., Barnes, A.B. et al. *Frequency swept microwaves for hyperfine decoupling and time domain dynamic nuclear polarization* Solid State Nuclear Magnetic Resonance, Volume 72, 2015, 79-89.

## Research Experience

### 2018-Present:

Research Associate . . . . . *University of Massachusetts, Lowell*

### 2014-2018:

Graduate Research Assistant . . . . . *Washington University in St. Louis*
Advisor: Dr. Lee Sobotka

### 2013-2014:

Staff Scientist . . . . . *Washington University in St. Louis*
Advisor: Dr. Alexander Barnes

### 2010-2012:

Research Assistant . . . . . *University of Chicago*
Advisor: Dr. Scott Wakely

### 2009:

Research Assistant . . . . . *Washington University in St. Louis*
Advisor: Dr. James Buckley

## Teaching Experience

### Spring 2020:

Instructor for Phys. 1410 Classical Mechanics . . . . . *University of Massachusetts, Lowell*
First Semester Physics Lecture
Section Size: 24 Undergraduates

### Fall 2019:

Instructor for Phys. 1440 Electromagnetism . . . . . *University of Massachusetts, Lowell*
Second Semester Physics Lecture
Section Size: 10 undergraduates

### Fall 2017:

Teaching Assistant for Chem. 460 Radiochemistry . . . . . *Washington University in St. Louis*
Upper Level Undergraduate/Graduate Student Lab.
Class Size: 3 Undergraduates

2014-2016:

Teaching Assistant for Chem 151/152 General Chemistry Lab . . . . . *Washington University in St. Louis*
Introductory Level Undergraduate Lab.
Class Size: 20 Undergraduates

## Conferences and Talks

2020:

Heavy Ion Discussion at Argonne National Laboratory (ANL)
*A Crack in Nuclear Mirror Symmetry*

Nuclear and Particle Physics Colloquium at Massachusetts Institute of Technology (MIT)
*A Crack in Nuclear Mirror Symmetry*

2019:

Talk at DNP meeting of APS
*Properties of proton-emitting* $^{72,73}$Rb *isotopes*

Poster at Nuclear Chemistry Gordon Conference
$^{73}$Sr *$\beta$-delayed proton emission and the structure of* $^{73}$Rb

Talk at April Meeting of APS
*A Radio-Frequency Fragment Separator (RFFS) for FRIB*

2018:

Talk at April Meeting of APS
*Large Longitudinal Spin Alignment Generated in Inelastic Nuclear Reactions*

Poster at April Meeting of APS
*ASICs for FRIB*

Poster at SSAP Symposium
*Producing Huge Spin Alignment of Inelastically Scattered Projectiles in Clustered Nuclei*
Received Poster Award

2017:

Invited Talk at Los Alamos National Laboratory (LANL) Nuclear Data Seminar
*Large Longitudinal Spin Alignment of Excited Projectiles in Intermediate Energy Inelastic Scattering*

Poster/Talk at Nuclear Chemistry Gordon Conference
*Producing Huge Spin Alignment of Inelastically Scattered Projectiles in Clustered Nuclei*
Selected to Give Talk based on Poster Session Vote

2015:

Poster/Talk at Exotic Beam Summer School
*Spin Alignment of Excited Projectiles*
Selected to Give Talk based on Poster Session Vote

2014:

Poster at Rocky Mountain Conference on Magnetic Resonance
*Frequency Agile Gyrotron for DNP and Electron Decoupling*