Applicant: Cody Petrie
Faculty Advisor: Kevin Schmidt

I am a soon to be a fifth year graduate student in physics at ASU. I have completed my core courses with a GPA of 4.0. My research interest are aimed toward understanding one of the four fundamental forces in nature, the strong force. I do calculations that statistically solve for properties of nuclear systems, including nuclei and nuclear matter. I have completed my comprehensive exams and have successfully presented my prospectus to my research committee. We have recently submitted a paper on our work to the journal Physical Review C with a few of our collaborators. I work with Kevin Schmidt in the physics department who has instilled in me, by his example, a love for understanding and hard work. Currently I am visiting Los Alamos National Laboratory working with a few of our collaborators. While at ASU I have been a TA almost every semester teaching both in person and on-line physics labs on a variety of introductory physics topics. I have also been an adjunct faculty member at Mesa Community College teaching a combined physics lecture and lab course on Newtonian physics to beginning undergraduate students.

After graduate school and any needed post-doctoral positions, I would like to become a physics professor where I could instill in other young adults a love for learning and for physics. If needed I plan to work in the private sector or at a national laboratory before teaching, to get the needed experience to become a more effective and knowledgable teacher.

I am applying for the following scholarships, Molecular Imaging Corporation Endowment, Wally Stoelzel Physics Scholarship and Fellowship and the William J. and Carol M. Motil Scholarship. I am a happy father of three kids, two boys and a baby girl. My wife and I try to instill in them our love for learning. I work hard to balance my responsibilities at home with my responsibilities at school and work. This scholarship would give me additional support, alleviating some of the financial burden associated with those responsibilities, ultimately allowing me to focus on the goals at hand.

Arizona State University

Kevin E. Schmidt
Professor of Physics
Department of Physics
Tempe, Arizona 85287-1504
Telephone: (480) 965-8240
Fax: (480) 965-7954
E-mail: Kevin.Schmidt@asu.edu

February 28, 2018

Graduate program committee

Dear colleagues,

I am pleased to write a letter in support of a summer graduate felloship for Cody Petrie.

After completing his first two semesters of core courses and research rotations, Cody chose to work with me on his Ph.D. research. Cody's current project is to improve the trial wave function that guide auxiliary field diffusion Monte Carlo calculations. He has already improved over our previous single pair correlations, adding a correlation for a second pair both independent pair correlations and symmetrized pair correlations. He has mastered the programming methods, and has implemented the correlations along with the corresponding operator expectation values. His results show that the alpha particle wave function currently used is adequate, but results improve for ^{16}O and nuclear matter with these new correlations. Along with collaborators at Los Alamos National Laboratory, we have submitted an article to Physical Review C which contains Cody's methods and results.

Cody is continuing to work to improve the auxiliary field diffusion Monte Carlo method to describe nuclei, and is exploring several original ideas.

Cody is a talented scientist. He is making good progress on this research, and his progress would be further enhanced by a summer graduate fellowship.

Please feel free to contact me if you require any additional information.

Best regards,

Prof. Kevin E. Schmidt

Arizona State University

Unofficial Transcript

Name: **Cody L Petrie**
Student ID: **1207904122**

Print Date: 03/01/2018
External Degrees
Brigham Young University Provo
Bachelor of Science 08/01/2014

Degrees Awarded

Degree: Master of Science
Confer Date: 08/09/2017
Degree GPA: 4.00
Plan: Physics
College of Liberal Arts and Sciences

Beginning of Graduate Record

2014 Fall

Course	Description	Attempted	Earned	Grade	Points
PHY 500	**Research Methods**	3.000	3.000	A	12.000
PHY 521	**Classical&Continuum Mechanics**	3.000	3.000	A	12.000
PHY 541	**Statistical Physics**	3.000	3.000	A	12.000

			Attempted	Earned	Points
Term GPA:	4.00	Term Totals	9.000	9.000	36.000
Cum GPA:	4.00	Cum Totals	9.000	9.000	36.000

2015 Spring

Course	Description	Attempted	Earned	Grade	Points
PHY 500	**Research Methods**	3.000	3.000	A	12.000
PHY 531	**Electrodynamics**	3.000	3.000	A	12.000
PHY 576	**Quantum Theory**	3.000	3.000	A-	11.001

			Attempted	Earned	Points
Term GPA:	3.89	Term Totals	9.000	9.000	35.001
Cum GPA:	3.94	Cum Totals	18.000	18.000	71.001

2015 Summer

Course	Description	Attempted	Earned	Grade	Points
PHY 792	**Research**	1.000	1.000	Y	0.000

			Attempted	Earned	Points
Term GPA:	0.00	Term Totals	1.000	1.000	0.000
Cum GPA:	3.94	Cum Totals	19.000	19.000	71.001

2015 Fall

Course	Description	Attempted	Earned	Grade	Points
PHY 523	**General Relativity**	3.000	3.000	A+	12.999
PHY 598	**Special Topics**	3.000	3.000	A	12.000
Course Topic:	Quantum Field Theory				
PHY 792	**Research**	3.000	3.000	Y	0.000

			Attempted	Earned	Points
Term GPA:	4.00	Term Totals	9.000	9.000	24.999
Cum GPA:	4.00	Cum Totals	28.000	28.000	96.000

2016 Spring

Course	Description	Attempted	Earned	Grade	Points
PHY 462	**Particle and Nuclear Physics**	3.000	0.000	X	0.000
PHY 792	**Research**	9.000	9.000	A	36.000

			Attempted	Earned	Points
Term GPA:	4.00	Term Totals	9.000	9.000	36.000
Cum GPA:	4.00	Cum Totals	37.000	37.000	132.000

2016 Fall

Course	Description	Attempted	Earned	Grade	Points
PHY 792	**Research**	9.000	9.000	A	36.000

			Attempted	Earned	Points
Term GPA:	4.00	Term Totals	9.000	9.000	36.000
Cum GPA:	4.00	Cum Totals	46.000	46.000	168.000

2017 Spring

Course	Description	Attempted	Earned	Grade	Points
PHY 792	**Research**	9.000	9.000	A	36.000

			Attempted	Earned	Points
Term GPA:	4.00	Term Totals	9.000	9.000	36.000
Cum GPA:	4.00	Cum Totals	55.000	55.000	204.000

2017 Summer

Course	Description	Attempted	Earned	Grade	Points
PHY 792	**Research**	1.000	1.000	Y	0.000

			Attempted	Earned	Points
Term GPA:	0.00	Term Totals	1.000	1.000	0.000
Cum GPA:	4.00	Cum Totals	56.000	56.000	204.000

2017 Fall

Course	Description	Attempted	Earned	Grade	Points
PHY 792	**Research**	9.000	0.000	NR	0.000

			Attempted	Earned	Points
Term GPA:	0.00	Term Totals	0.000	0.000	0.000
Cum GPA:	4.00	Cum Totals	56.000	56.000	204.000

END OF TRANSCRIPT