

David Buch

Contact Information	Department of Mathematics West Virginia University Morgantown, WV 26505	<i>Phone:</i> 304-860-5895 <i>Office:</i> 416 Armstrong Hall <i>Email:</i> dnbuch@mix.wvu.edu
Education	West Virginia University , Morgantown, WV M.S., Applied Mathematics - 4.0 GPA West Virginia University , Morgantown, WV B.S., Mathematics and Physics, <i>Summa cum Laude</i> - 3.84 GPA Area of Emphasis: Biophysics Minor: Statistics	In-Progress 2018 (<i>Honors College</i>)
Honors and Awards	West Virginia University: <ul style="list-style-type: none">• WVU Outstanding Senior, 2018• WVU Eberly Scholar, 2018• Whitehill Memorial Award, 2015 (<i>General Chemistry</i>) 2014 U.S. Presidential Scholar, 2014 National Merit Scholar	
Publications	<i>Improving performance of SEOBNRv3 by $\sim 300\times$</i> T.D. Knowles, C. Devine, D.A. Buch , S.A. Bilgili, T.R. Adams, Z.B. Etienne, S.T. McWilliams. <i>Classical and Quantum Gravity</i> . 35: 15 <i>Collective repacking reveals that the structures of protein cores are uniquely specified by steric repulsive interactions</i> J.C. Gaines, A. Virrueta, D.A. Buch , S.J. Fleishman, C.S. O'Hern, and L. Regan. <i>Protein Eng. Des. Sel.</i> 30: 387	2018 2017
Presentations	<i>SEOBNRv3-opt - A Case Study in Code Optimization for the Benefit of LIGO Science</i> Oral presentation at the 28th Annual Midwest Relativity Meeting (University of Wisconsin - Milwaukee) <i>Optimized Numerical Approximation of Einstein's Equations through Coordinate System Management</i> Poster presentation at WVU Mathematics Department Capstone Day <i>Experimental Validation of van der Pol Oscillator Theory in a Unijunction Transistor Circuit Model System</i> Poster presentation at WVU Physics Department Spring 2018 Undergraduate Research Day <i>Graphite-Lattice measurement through Matter-Wave Diffraction</i> Poster presentation at WVU Physics Department Fall 2017 Undergraduate Research Day	2018 2018 2017

	<i>Evaluating a Simplified Approach to Protein Modeling Using Rotamer Recovery Tests and the Rosetta Software Suite</i> Poster presentation and oral presentation at Raymond and Beverly Sackler Institute NSF-REU (Yale University) 2015	
Teaching Experience	<i>Math 694 (Professional Tools Seminar)</i> West Virginia University, Morgantown, WV • Data Analysis and Visualization with R	(upcoming) Spring 2019
	<i>Graduate Teaching Assistant (Mathematics)</i> West Virginia University, Morgantown, WV • Lab TA, grader for Calc 153, Fall 2018	Fall 2018
	<i>GRE Tutor</i> NextStep Test Preparation • “Premium” Tutor beginning Spring 2019	Fall 2017-
	<i>WVU Athletic Tutor</i> West Virginia University Athletic Department, Morgantown, WV	Fall 2016
	<i>Violin/Cello Instructor</i> School of Harmony, Beaver, WV	Fall 2013-Spring 2014
Academic Activities	<i>NSF INCLUDES - Graduate Research Assistantship</i> <i>LIGO Scientific Collaboration</i> <i>Raymond and Beverly Sackler NSF-REU in Biophysics</i>	(upcoming) Spring 2019 Summer 2016 Summer 2015
Community Service & Leadership	WVU Community Competitive Math Training	
	WVU Math Club Vice-President, Treasurer	
	WV Chapter of the Sierra Club, Executive Committee	
	WVU Sierra Student Coalition, Vice President	
	WV Science Public Outreach Team Ambassador	
Skills	<i>Computing:</i> C, C++, R, Python, Git, L ^A T _E X	
	<i>Operating Systems:</i> Unix, Ubuntu Linux	
	<i>Languages:</i> English (fluent), Spanish (basic-conversational)	
	<i>Music:</i> WVU Symphony Orchestra, WVU Undergraduate String Quartet, WV Symphony Vaughan Fellowship 2013, WV All-State Orchestra 2012-2014	
Other Work Experience	<i>Daily Athenaeum - Copy Writer</i> West Virginia University, Morgantown, WV	Spring 2016
	<i>Line Server</i> Qdoba Mexican Grille, Beckley, WV	Fall 2013-Spring 2014