

## David Buch

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<b>Contact Information</b>	416 Armstrong Hall 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 <i>Website:</i> davidbuch.github.io
<b>Research Interests</b>	Semi-Supervised Learning, Scalable Posterior Estimation	
<b>Education</b>	<b>West Virginia University</b> , Morgantown, WV M.S., Applied Mathematics - [Not Yet Available] GPA	<b>In-Progress</b>
	<b>West Virginia University</b> , Morgantown, WV B.S., Mathematics and Physics, <i>Summa cum Laude</i> - 3.84 GPA Area of Emphasis: Biophysics Minor: Statistics	<b>2018</b> ( <i>Honors College</i> )
<b>Honors and Awards</b>	West Virginia University: <ul style="list-style-type: none"><li>• WVU Outstanding Senior, 2018</li><li>• WVU Eberly Scholar, 2018</li><li>• Whitehill Memorial Award, 2015 (<i>General Chemistry</i>)</li></ul> 2014 U.S. Presidential Scholar, 2014 National Merit Scholar	
<b>Publications</b>	<i>Improving performance of SEOBNRv3 by <math>\sim 300\times</math></i> T.D. Knowles, C. Devine, <b>D.A. Buch</b> , S.A. Bilgili, T.R. Adams, Z.B. Etienne, S.T. McWilliams. <i>Classical and Quantum Gravity</i> . 35: 15	<b>2018</b>
	<i>Collective repacking reveals that the structures of protein cores are uniquely specified by steric repulsive interactions</i> J.C. Gaines, A. Virrueta, <b>D.A. Buch</b> , S.J. Fleishman, C.S. O'Hern, and L. Regan. <i>Protein Eng. Des. Sel.</i> 30: 387	<b>2017</b>
<b>Presentations</b>	<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)	<b>2018</b>
	<i>Optimized Numerical Approximation of Einstein's Equations through Coordinate System Management</i> Poster presentation at WVU Mathematics Department Capstone Day	<b>2018</b>
	<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	<b>2018</b>

	<i>Graphite-Lattice measurement through Matter-Wave Diffraction</i>	<b>2017</b>
	Poster presentation at WVU Physics Department Fall 2017 Undergraduate Research Day	
	<i>Evaluating a Simplified Approach to Protein Modeling Using Rotamer Recovery Tests and the Rosetta Software Suite</i>	<b>2015</b>
	Poster presentation and oral presentation at Raymond and Beverly Sackler Institute NSF-REU (Yale University)	
<b>Teaching Experience</b>	<i>Graduate Teaching Assistant (Mathematics)</i>	Fall 2018-
	West Virginia University, Morgantown, WV	
	<ul style="list-style-type: none"> <li>• Lab TA, grader for Calc 153, Fall 2018</li> </ul>	
	<i>GRE Tutor</i>	Fall 2017-
	NextStep Test Preparation	
	<ul style="list-style-type: none"> <li>• “Premium” Tutor beginning Spring 2019</li> </ul>	
	<i>WVU Athletic Tutor</i>	Fall 2016
	West Virginia University Athletic Department, Morgantown, WV	
	<i>Violin/Cello Instructor</i>	Fall 2013-Spring 2014
	School of Harmony, Beaver, WV	
<b>Academic Activities</b>	<i>LIGO Scientific Collaboration</i>	<b>Summer 2016</b>
	<i>Raymond and Beverly Sackler NSF-REU in Biophysics</i>	<b>Summer 2015</b>
<b>Community Service &amp; Leadership</b>	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	
<b>Skills</b>	<i>Computing:</i> C, C++, R, Python, Git, L <sup>A</sup> T <sub>E</sub> X	
	<i>Operating Systems:</i> Unix, Ubuntu Linux	
	<i>Languages:</i> English (fluent), Spanish (low-conversational), Chinese, Arabic, French, German, Greek (familiar)	
	<i>Music:</i> WVU Symphony Orchestra, WVU Undergraduate String Quartet, WV Symphony Vaughan Fellowship 2013, WV All-State Orchestra 2012-2014	
<b>Other Work Experience</b>	<i>Daily Athenaeum - Copy Writer</i>	Spring 2016
	West Virginia University, Morgantown, WV	
	<i>Line Server</i>	Fall 2013-Spring 2014
	Qdoba Mexican Grille, Beckley, WV	