

# GRANT C. WELDON

gcweldon@umich.edu

## EDUCATION

**B.S. Honors Physics**, *University of Michigan*  
Minor in Mathematics

2017 - 2021  
*Ann Arbor, MI*

## RESEARCH EXPERIENCE

**University of Michigan**  
LIGO SCIENTIFIC COLLABORATION - MICHIGAN GRAVITATIONAL WAVE GROUP  
*Advisor:* Prof. Keith Riles

April 2018 - Present  
*Ann Arbor, MI*

- Gravitational wave astrophysics, Advanced LIGO data analysis, and detector characterization
- Searching for continuous gravitational radiation emitted by rapidly spinning neutron stars

**Istituto Nazionale di Fisica Nucleare (INFN)**  
VIRGO COLLABORATION - TOR VERGATA GRAVITATIONAL WAVE GROUP  
*Advisors:* Prof. Viviana Fafone and Dr. Elisabetta Cesarini

June 2019 - July 2019  
*Rome, Italy*

- Metrology for thermal noise reduction in future gravitational wave interferometers

## HONORS & AWARDS

- **DOE-INFN Summer Research Fellowship**, *U.S. Department of Energy & INFN* 2019
- **Sophomore Honors Award with Distinction**, *University of Michigan LSA Honors Program* 2019
- **William J. Branstrom Freshman Prize**, *University of Michigan* 2018
- **University Honors**, *University of Michigan* 2017 - 2019
- **Dr. Sidney J. and Irene Shipman Scholarship**, *University of Michigan* 2017 - 2021  
(full tuition, four year merit scholarship)
- **Regents Merit Scholarship**, *University of Michigan* 2017
- **National Merit Scholarship Finalist**, *National Merit Scholarship Corporation* 2017

## PUBLICATIONS

1. B. P. Abbott, *et al.* (including **G. Weldon**), *All-sky search for continuous gravitational waves from isolated neutron stars using Advanced LIGO O2 data*, *Phys. Rev. D* **100**, 024004 [[arXiv:1903.01901](#)] (2019)

## PRESENTATIONS

5. **Society of Physics Students Speaker Series**, University of Michigan, Ann Arbor, MI (December 2019); presented a talk, *Metrology for Thermal Noise Reduction in Future Gravitational Wave Interferometers*
4. **UM Physics Research Fair**, University of Michigan Physics Department, Ann Arbor, MI (November 2019); presented a poster, *Signal Overlays for Evaluating Continuous Gravitational Wave Candidates*
3. **Midwest Relativity Meeting**, American Physical Society Division of Gravitation, Grand Valley State University, Grand Rapids, MI (October 2019); presented a talk, *Signal Overlays for Evaluating Continuous Gravitational Wave Candidates*
2. **APS April Meeting**, American Physical Society, Denver, CO (April 2019); presented a talk, *Strain Histograms for Evaluating Continuous Gravitational Wave Candidates*
1. **Society of Physics Students Speaker Series**, University of Michigan, Ann Arbor, MI (November 2018); presented a talk, *Continuous Gravitational Wave Simulations*

## PROFESSIONAL MEMBERSHIP

**American Physical Society (APS)**  
*Division of Gravitation*

2017 - Present

## ORGANIZATIONS

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<b>Society of Physics Students (SPS)</b> <i>Vice President</i> (2019 - 2020) <i>Outreach Chair</i> (2018 - 2019)	2017 - Present
<b>Shipman Scholarship Society</b>	2017 - Present
<b>Honors Program, College of LSA</b>	2017 - Present

## OUTREACH & SERVICE

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<b>SPS Biweekly Speaker Series</b> <i>Coordinator</i>	2019 - 2020 <i>Ann Arbor, MI</i>
<b>Michigan Science Center - Physics Demo Day</b> <i>Volunteer</i> with SPS ( <i>Coordinator</i> in 2019)	2018 - Present <i>Detroit, MI</i>
<b>Ann Arbor Hands-On Museum - Physics Palooza</b> <i>Volunteer</i> with SPS ( <i>Coordinator</i> in 2019)	2018 - Present <i>Ann Arbor, MI</i>
<b>Burns Park Elementary School - Physics Night</b> <i>Volunteer</i> with SPS	2017 <i>Ann Arbor, MI</i>

## GRADING EXPERIENCE

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<b>Course Grader</b> for PHYSICS 160: Honors Physics I (Mechanics)	Winter 2020
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## COURSEWORK

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### Physics

- General Relativity (Graduate)
- High-Energy Astrophysics
- Quantum Mechanics
- Statistical Mechanics\*
- Electromagnetism\*
- Classical Mechanics
- Modern Physics & Laboratory

### Mathematics

- Numerical Methods\*
- Probability
- Linear Algebra
- Honors Differential Equations

[\* denotes Winter 2020 enrollment]

## TECHNICAL KNOWLEDGE

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Python, MATLAB, Linux/Unix, Bash, HTML, L<sup>A</sup>T<sub>E</sub>X