

# GRANT C. WELDON

gcweldon@umich.edu

## EDUCATION

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**B.S. Honors Physics**, *University of Michigan*

2017 - 2021

Minors in Mathematics and Astronomy

*Ann Arbor, MI*

Honors Thesis Advisor: Prof. Keith Riles

## RESEARCH EXPERIENCE

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**NASA Goddard Space Flight Center**

June 2020 - August 2020

GRAVITATIONAL ASTROPHYSICS LABORATORY · LISA GROUP

*Virtual* (COVID-19 pandemic)

*Advisors:* Dr. Jacob Slutsky, Dr. Ira Thorpe

- Gravitational wave data analysis and instrumentation for the upcoming space-based LISA interferometer
- Developed Bayesian routine to jointly remove tilt-to-length noise and search for gravitational waves

**Istituto Nazionale di Fisica Nucleare (INFN)**

June 2019 - July 2019

UNIVERSITY OF ROME TOR VERGATA · VIRGO GROUP

*Rome, Italy*

*Advisor:* Dr. Elisabetta Cesarini

- Optical coating metrology for thermal noise reduction in the Virgo gravitational wave interferometer
- Streamlined Gentle Nodal Suspension (GeNS) procedure and performed novel coating measurements

**University of Michigan Physics Department**

April 2018 - Present

LIGO SCIENTIFIC COLLABORATION · MICHIGAN GRAVITATIONAL WAVE GROUP

*Ann Arbor, MI*

*Advisor:* Prof. Keith Riles

- Advanced LIGO data analysis in searches for continuous gravitational waves from spinning neutron stars
- Developed robust infrastructure to simulate astrophysical signals for evaluation of candidates

## HONORS & AWARDS

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- **DOE-INFN Summer Research Fellowship**, *U.S. Department of Energy & INFN* 2019
- **Sophomore Honors Award with Distinction**, *University of Michigan Honors Program* 2019
- **University Honors**, *University of Michigan* 2017 - 2020
- **Dr. Sidney J. and Irene Shipman Scholarship**, *University of Michigan* 2017 - 2021  
(full-tuition merit scholarship awarded to top ~25 incoming students annually)
- **Regents Merit Scholarship**, *University of Michigan* 2017
- **National Merit Scholarship Finalist**, *National Merit Scholarship Corporation* 2017

## PUBLICATIONS

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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

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4. **NASA Intern Presentation Symposium**, Virtual (COVID-19 pandemic) (August 2020); presented a talk, *Data analysis impacts of tilt-to-length couplings in the LISA gravitational wave detector*
3. **University of Michigan Physics Research Fair**, Ann Arbor, MI (November 2019); presented a poster, *Signal Overlays for Evaluating Continuous Gravitational Wave Candidates*
2. **Midwest Relativity Meeting**, APS Division of Gravitational Physics, Grand Valley State University (October 2019); presented a talk, *Signal Overlays for Evaluating Continuous Gravitational Wave Candidates*
1. **American Physical Society (APS) April Meeting**, Denver, CO (April 2019); presented a talk, *Strain Histograms for Evaluating Continuous Gravitational Wave Candidates*

## PROFESSIONAL MEMBERSHIP

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<b>American Physical Society (APS)</b> <i>Division of Gravitational Physics</i>	2017 - Present
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## ORGANIZATIONS

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<b>Society of Physics Students (SPS)</b> <i>President</i> (2020 - 2021) <i>Vice President</i> (2019 - 2020) <i>Outreach Co-Chair</i> (2018 - 2019)	2017 - Present
<b>Student Astronomical Society</b>	2017 - Present
<b>Shipman Scholarship Society</b>	2017 - Present

## OUTREACH & SERVICE

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<b>Novi High School - STEM Without Boundaries Tech Series</b> <i>Panelist</i>	June 2020 <i>Virtual</i>
<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>

## OTHER ACADEMIC EXPERIENCE

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<b>Course Grader</b> for PHYSICS 160: Honors Physics I (Mechanics)	Winter 2020, Winter 2021
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## TECHNICAL KNOWLEDGE

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