

GRANT C. WELDON

gcweldon@umich.edu

EDUCATION

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

2017 - 2021
Ann Arbor, MI

RESEARCH INTERESTS

- General relativity, gravitational waves, strong-field gravity
- Computational astrophysics, high-energy astrophysics

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, data analysis, and detector characterization
- Searches for continuous waves 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 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

3. **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*
2. **Midwest Relativity Meeting**, American Physical Society Division of Gravitational Physics, Grand Valley State University, Grand Rapids, MI (October 2019); presented a talk, *Signal Overlays for Evaluating Continuous Gravitational Wave Candidates*
1. **APS April Meeting**, American Physical Society, Denver, CO (April 2019); presented a talk, *Strain Histograms for Evaluating Continuous Gravitational Wave Candidates*

PROFESSIONAL MEMBERSHIP

American Physical Society (APS)
Division of Gravitational Physics

2017 - Present

ORGANIZATIONS

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

OUTREACH & SERVICE

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

GRADING EXPERIENCE

| | |
|--|-------------|
| Course Grader for PHYSICS 160: Honors Physics I (Mechanics) | Winter 2020 |
|--|-------------|

COURSEWORK

Physics

- General Relativity (Graduate)
- High-Energy Astrophysics
- Quantum Mechanics
- Statistical Mechanics & Thermodynamics*
- Classical Electrodynamics*
- Classical Mechanics

Mathematics

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

[* denotes Winter 2020 enrollment]

TECHNICAL KNOWLEDGE

Python, MATLAB, Linux/Unix, Bash, HTML, L^AT_EX