ROMAN BERENS

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EMPLOYMENT

Vanderbilt University Department of Physics *September 2023 – Present*
Postdoctoral Research Scholar in the Initiative for Gravity, Waves, and Fluids

EDUCATION

Columbia University *August 2016 – December 2022*
***Doctor of Philosophy candidate*, High Energy Theoretical Physics**
Advisor: Prof. Rachel Rosen
Thesis: *Perspectives on Black Holes: Astrophysical, Geometric, and Beyond General Relativity*

Harvard University *August 2012 – May 2016*
***Master of Arts*, Physics**
***Bachelor of Arts*, *cum laude* in Physics and Classics**

PUBLICATIONS

- **R. Berens, L. Krauth and R.A. Rosen, "Gravitational Collapse in Massive Gravity on de Sitter Spacetime," Phys. Rev. D 105 (2022) 064057 [arXiv:2109.10411].**
- **P. Adari, R. Berens and J. Levin, "Charging up Boosted Black Holes," Phys. Rev. D 107 (2023) 044055 [arXiv:2111.15027 [gr-qc]].**
- **R. Berens and L. Hui, "Ladder Symmetries of Black Holes and de Sitter Space: Love Numbers and Quasinormal Modes," [arxiv:2212.09367 [hep-th]].**
- **R. Berens, M. Landry and G. Sun, "Topological Defects in Solids," in preparation.**

TEACHING EXPERIENCE

Columbia Science Fellow in the Frontiers of Science Program *January 2023 – May 2023*
Columbia University Teaching Assistant *August 2016 – December 2022*

- **General Physics I Lab (1291)** *Fall 2016*
- **General Physics II Lab (1292)** *Spring 2017, Summer 2017, Summer 2018*
- **General Physics I (1201)** *Fall 2018*
- **General Physics II (1202)** *Summer 2017, Spring 2019*, Summer 2020, Summer 2021, Spring 2022*
- **Intro to Experimental Physics Lab (1494)** *Fall 2017, Spring 2018*
- **Physics I: Mechanics and Relativity (1601)** *Fall 2019*
- **Physics II: Thermodynamics and Electromagnetism (1602)** *Spring 2020*
- **Physics for Poets (1001)** *Spring 2017**
- **Basic Physics (S0065)** *Summer 2018, 2019, 2021*
- **Intro to Mechanics and Thermodynamics (1401)** *Fall 2018*
- **Intro to Electromagnetism and Optics (1402)** *Summer 2017, Spring 2019*, Spring 2022*
- **Mathematical Methods (4019)** *Fall 2017*, Fall 2019**
- **Advanced Electromagnetism (3007)** *Fall 2018**
- **Advanced Mechanics (3003)** *Spring 2018*, 2019*, 2020*, 2021*, 2022*
- **Quantum Mechanics (4021)** *Fall 2022*
- **Intro to General Relativity (4040)** *Fall 2020*
- **Physics Help Room** *Fall 2016, Summer 2017, Spring 2017, Spring 2018**

**indicates additional voluntary teaching*

Allan M. Sachs Teaching Award for outstanding graduate student instruction *2019*

CONFERENCES ATTENDED

Probing Effective Theories of Gravity in Strong Fields and Cosmology *8/17 – 9/4/2020*
Kavli Institute for Theoretical Physics at University of California, Santa Barbara

East Coast High Energy Theory Student Meeting *5/17/2019*
New York University

Many Body Quantum Dynamics: Perspectives From Field Theory and Gravity *5/9/2019*
Initiative for Theoretical Science at The City University of New York

TALKS GIVEN

High Energy Theory Group Meeting: "Building to dRGT Massive Gravity" *10/19/2021*

High Energy Theory Group Meeting: "Gravitational Collapse in Massive Gravity" *10/5/2021*

Theoretical Astrophysics Group Meeting: "Charge Accretion on a Boosted Black Hole" *6/10/2021*

High Energy Theory Group Meeting: "The Mathematics of Juggling" *3/18/2021*

High Energy Theory Group Meeting: "An Introduction to Knot Theory" *3/7/2019*

Physics 8012 (Astrophysics II) Seminar: "Signals of Scalar-Tensor Theories" *3/19/2018*

High Energy Theory Group Meeting: "An Introduction to Massive Gravity" *2/15/2018*

GRADUATE COURSEWORK

Classical Mechanics
Electricity and Magnetism
Quantum Mechanics
Statistical Mechanics
Condensed Matter
Classical Fields and Waves
Cosmology
Particle Physics
Quantum Field Theory I & II
String Theory
General Relativity
Supersymmetry
AdS-CFT Conjecture
Lie Groups
Principal Bundles & Gauge Theory
Riemann Surfaces

SERVICE/OUTREACH

Columbia Physics Graduate Council (Founding Member) *January 2017 – May 2020*
President *March 2019 – May 2020*

Reading Team Math Program (after-school math instruction in Harlem) *March 2018 – December 2022*
Team Leader *September 2019 – December 2022*

Columbia Undergraduate Society of Physics Students Seminar *4/2/2020*

Democracy Prep Outreach (presentation to students at local high school) *11/16/2020*
"Singularities, Schwarzschild Radii, and Spaghettification: The Extreme Physics of Black Holes"

TECHNICAL SKILLS

- **Advanced proficiency with *LaTeX* and *Mathematica*, including the *xAct* suite of packages.**
- **Basic knowledge of C++ and Python.**