

Xiaojia J. Xu • Curriculum Vitae

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Research interests

Condensed matter (hard and soft) • biophysics
ab initio simulations • many-body problems • nonlinear dynamics

Research experience

- Aug - Dec 2017 Undergraduate researcher for Professor Norman Tolk.
 • Center for Molecular and Atomic Studies at Surfaces, Vanderbilt University.
 • I studied ultrafast dynamics in condensed matter systems using pump probe spectroscopy. I assisted with carrying out experiments and doing data analysis.
- Apr - Aug 2017 Undergraduate researcher for Professor Kalman Varga.
 • Department of Physics and Astronomy, Vanderbilt University.
 • Time-dependent density functional theory simulations of nanoscale systems.
- Jan 2016 – Apr 2017 Undergraduate researcher for Professor Ralf Bennartz.
 • Department of Earth and Environmental Science, Vanderbilt University.
 • I learned to develop software for processing data from a Multi-Angle Snowflake Camera and helped to set up a sun photometer as part of the NASA Aerosol Robotic Network.

Education

- 2015 - 2019 **B.A. in Physics**, Vanderbilt University (Expected)
 • Physics GPA: 3.888/4.000
 • Advisor: Prof. Steven Csorna
 • Minors: Scientific Computing; Earth and Environmental Science.
- 2011 - 2015 **GCE A-LEVELS**, Shenzhen College of International Education
 • A-Levels in Physics, Mathematics, Biology and Geography
 • SAT Reading: 750 (98th percentile); SAT Math: 800 (99th); SAT Physics: 800 (89th)
- 2013 SUMMER SESSION in Physics, Stanford University
 • PHYSICS 21S, 23S, 25S with lab

Publications & talks

JOURNAL ARTICLES

- 2018 Daniel Kidd, **Xiaojia Xu**, Cody Covington, Kazuyuki Watanabe, Kalman Varga, "Simulation of laser-induced rectification in a nanoscale vacuum-tube diode", *Journal of Applied Physics* 123, 054501

TALKS

- 2018 American Physical Society March Meeting, Los Angeles, *Contributed talk*
 2017 Vanderbilt Undergraduate Research Fair, *Poster presentation*
 2017 Vanderbilt Summer Science Academy 15th Annual Research Symposium, *Poster presentation*
 2017 Vanderbilt Physics & Astronomy Summer Symposium, *Oral presentation*

Teaching & tutoring

- Aug 2017 - now **Vanderbilt Tutoring Services**
 • Physics and mathematics tutor
 • Classes tutored: Physics for life sciences (PHYS 1501, 1502); General physics (PHYS 1601, 1602); Single-variable calculus (MATH 1300, 1301); Multivariable calculus (MATH 2300); Linear algebra (MATH 2410); Ordinary differential equations (MATH 2420).
 Aug 2017 - now **Department of Physics and Astronomy**
 • Grader and help desk tutor for introductory physics

Employment

- June 2016 - now **Vanderbilt Outdoor Recreation Center**
 • Climbing wall staff • Equipment specialist • Trip coordinator

Honours & awards

- 2018 Vanderbilt Undergraduate Conference Travel Award (\$1000)
 2017 Summer research funding received (\$5000) under Professor Kalman Varga's grants NSF OISE 1261117 and PHY 1314463
 2015-18 Dean's List, College of Arts and Science, Vanderbilt University
 2012 Bronze Award, United Kingdom Senior Mathematical Challenge
 2012 Highest score, Cambridge IGCSE Geography
 2010 1st Place, University of Waterloo Gauss Mathematics Contest

Organizations and Societies

- American Physical Society, undergraduate member
- Sigma Pi Sigma Physics Honor Society, Vanderbilt Chapter, member
- Vanderbilt University Rock Climbing Club, founder and president
- Zeta Beta Tau Fraternity, Vanderbilt Alpha Gamma Chapter, member

Community Service

- 2016 Vanderbilt Student Volunteers for Science (VSVS) science teacher
 2016 Vanderbilt Alternative Spring Break (ASB) service trip participant

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<http://xj-xu.github.io>