Thomas B. Malthouse

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Education

BA, Reed College, 2016–Present

- Graduation expected May 2020
- Physics, with extensive Economics coursework
- Senior Thesis: Modeling the Dynamics of Open Quantum Systems with Neural Networks (working title)

Northwestern University, Summer 2018

- Non-degree coursework in Economics

Research Experience

Borders Research Fellow | Reed College Physics Department | Portland, OR | Summer 2019

- Researched amplitude death in coupled nonlinear oscillators and nonlinear dynamics
- Topics covered by this research included network dynamics, electronics design, and numerical bifurcation theory
- Work performed with Professor Lucas Illing

Research Assistant | Northwestern University BISOL Group | Evanston, IL | Summer 2018

- Worked to develop and profile a high-speed infrared camera for astrophysical applications
- Developed software to import, process, and save camera data in real-time
- Studied the theory behind optical engineering and camera sensor design
- Work performed with Cobi Rabinowitz, in Hooman Mohseni's research group

Reed Research Reactor | Fall 2017–Present

- Research has focused on flux measurements, radiation-induced data corruption, and the Batemann decay model
- Work performed through reactor training programs
- Training included radiation safety, radiochem lab procedure, and gamma spectroscopy

Reed College Summer Research Fellow | Reed College Physics Department | Portland, OR | Summer 2017

- Developed and tested an astrophysical simulator to model the evolution of disk galaxies
- Studied recent papers and prepared reports on the state of the field
- Work performed with Professor Johnny Powell

Work Experience

Training Supervisor | Reed Research Reactor | Portland, OR | May 2019–Present

- Responsible for designing and implementing a training program for NRC licensing and reactor work for fifteen trainees. Responsibilities include
  - Tracking trainee progress towards meeting requirements
  - Participating in the hiring and interview process

    - Delivering and organizing lectures on aspects of the training program
    - Teaching weekly practical labs for students to gain hands-on experience in reactor procedures
- Other duties include document and procedure review, and the duties of a senior reactor operator
    - Supervision of reactor operators and technicians, to ensure a safe and functional work environment
    - Maintenance and inspection of safety-critical systems
    - Monitoring and surveying for radiation and contamination
    - Assessing and improving emergency readiness
    - Ensuring compliance with all applicable state and federal regulations

Drop-in Tutor | Reed College | Portland, OR | Sept. 2018–May 2019

- Ran tri-weekly group tutoring sessions for students in introductory physics
- Collaborated with the professor and tutor coordinator to maximize value of tutoring for students and the department

Individual Tutor | Reed College | Portland, OR | Sept. 2018–Present

- Worked one-on-one with Reed students and high schoolers to build scientific and mathematical skills and confidence

Operator | Reed Research Reactor | Portland, OR | Sept. 2017–May 2019

- Passed NRC senior operator licensing exam (license number SRO-503138)
- Trained in health physics, reactor maintenance, and operations
- Carried out project investigating radiation damage in electronics

Other Extracurriculars

- Reed Telescope Operator
- Reed Kayak Club

Relevant Coursework

- ECON 201—Introductory Economics
- ECON 310-1—Intermediate Macroeconomic, taken at Northwestern University
- ECON 312—Econometric Theory
- ECON 341—Monetary and Fiscal Policy
- POL 220—Introduction to Comparative Politics
- POL 367—Politics, Poverty, and Development
- ECON 314—Macroeconomic Theory (planned Spring 2020)
- ECON 348—Economics of the Public Sector (planned Spring 2020)

Skills

- Proficiency with C, Python, LaTeX, and Mathematica
- Data collection and statistical analysis
- Public speaking and lecturing
- Near-native fluency in German (speaking, reading, and writing)
- Troubleshooting and repair of analog electronics

Honors and Awards

- James Borders Physics Research Fellowship, Summer 2019
- Reed College Summer Research Fellowship (RCSRF), Summer 2017
- President's Commendation for Excellence for the 2016-17 and 2018-19 school years