



Joseph Maurice McCourt
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SUMMARY

Physics PhD working as postdoctoral appointee at Argonne National Laboratory with 6+ years research experience involving data acquisition and analysis in conjunction with the development of computational models

SKILLS

RESEARCH AND DEVELOPMENT	Data Analysis Laboratory Skills Problem Solving Communication
PROGRAMMING LANGUAGES	Python Linux/Unix OS Bash C++ LaTeX MATLAB
SOFTWARES	Git Microsoft Office ParaView GROMACS Mathematica
FRAMEWORKS & LIBRARIES	Jupyter Numpy/Cupy OpenCV Pandas Scipy Skimage MDAnalysis Pytorch
LANGUAGES	Native: English Proficient: Mandarin Chinese Beginner: Spanish
COURSEWORK	Physics Materials Science Applied Mathematics Chemical Engineering

EDUCATION

NORTHWESTERN UNIVERSITY, EVANSTON, IL PH.D. IN PHYSICS • Associations: Hierarchical Materials Cluster Program Fellowship, Center for Computation and Theory of Soft Materials (CCTSM)	2018-2023
NORTHWESTERN UNIVERSITY, EVANSTON IL M.S. IN PHYSICS	2017-2018
COLLEGE OF THE HOLY CROSS, WORCESTER, MA B.A. IN PHYSICS WITH CHINESE MINOR, <i>MAGNA CUM LAUDE</i> • Associations: Sigma Pi Sigma Physics Honor Society, Student Programs for Urban Development (SPUD)	2012-2016
首都师范大学 (CAPITAL NORMAL UNIVERSITY), BEIJING, CHINA • Full Language Immersion Study Abroad Program (Spoke exclusively in Mandarin Chinese)	2015

EXPERIENCE

ARGONNE NATIONAL LABORATORY POSTDOCTORAL APPOINTEE • Develop techniques and pipelines for reduction and analysis of multimodal X-ray diffraction data for nano-scale structure characterization	2023-Pres.
NORTHWESTERN UNIVERSITY RESEARCH ASSISTANT • Analyze the self-assembly of lipid molecules and nano-particles with techniques including X-ray scattering experiments and molecular dynamics simulations	2018-2023
NORTHWESTERN UNIVERSITY RESEARCH ASSISTANT • Involved in the design and construction of multi-view microscope for the analysis of colloidal particles in an applied magnetic field	2017-2018
YESHIVA OHR YISRAEL HIGH SCHOOL FOR BOYS HIGH SCHOOL TEACHER • AP Calculus Instructor, Physics Enrichment Program Director, Language Program Coordinator, Gym Teacher	2016-2017

PUBLICATIONS

- Joseph M. McCourt, Sumit Kewalramani, Changrui Gao, Eric W. Roth, Steven J. Weigand, Monica Olvera de la Cruz, and Michael J. Bedzyk *ACS Central Science* **2022** 8 (8), 1169-1181 DOI: [10.1021/acscentsci.2c00447](https://doi.org/10.1021/acscentsci.2c00447)
- Changrui Gao, Sumit Kewalramani, Dulce Maria Valencia, Honghao Li, Joseph M. McCourt, Monica Olvera de la Cruz, and Michael J. Bedzyk, *Proceedings of the National Academy of Sciences, U.S.A.* **2019** 116 (44) 22030-22036 DOI: [10.1073/pnas.191363211](https://doi.org/10.1073/pnas.191363211)