James N Graham

jsnsgraham@gmail.com • +44 7960 778220
jngraham.com • linkedin.com/in/j-n-graham

Education

University of Oxford, Oxford, UK

DPhil Theoretical Physics	2020—2024
MSc Mathematical & Theoretical Physics, *Distinction*	2016—2017

Northwestern University, Evanston, IL

BS Applied Mathematics, *summa cum laude*	2012—2016

Employment

Teacher of Physics, St Edward's School, Oxford — Aug. 2024—Aug. 2025
- Taught GCSE and IB physics curricula to 113 pupils in years 9-13;
- Presented progress and outlook to parents during termly virtual parent meetings;
- Led small group sessions during weekly physics clinic;
- Provided one-on-one tuition across sciences during weekly boarding house duty;
- Developed scheme of work to integrate IB knowledge and skills targets with Fundamental British Values.

Tutor, St. Hilda's College, University of Oxford — Oct.—Nov. 2023
- Marked problem sheets on mathematical methods for eight students per week;
- Facilitated three tutorials per week.

Education Coordinator, Mathnasium of Tysons, Vienna, VA — Oct. 2019—Jul. 2020
- Maintained individualized curricula for more than 150 students to respond to long-term learning needs and short-term school requirements;
- Supervised more than 15 instructors to ensure consistent, responsive and personalized instruction;
- Managed relationships with parents to set expectations, report students' progress and achieve learning goals.

Mathematics Tutor, Washington, DC — 2019—present
- Tutored a pair of brothers on topics from arithmetic with fractions and decimals up to IB Analysis.

Research Assistant, Applied Mathematics, Northwestern University — Mar. 2014—Jan. 2015
- Modeled the activity and synchronization of a network of neurons using Python;
- Developed tools to visualize simulation data using MATLAB and Mathematica;
- Investigated synchronization of neural firing in presence of periodic stimulus.

Publications

J. N. Graham, G. Zhang and J. M. Yeomans*, Soft Matter*, 2024, **20**, 2955-2960.

Adams W, **Graham JN**, Han X, Riecke H (2019) Top-down inputs drive neuronal network rewiring and context-enhanced sensory processing in olfaction. *PLoS Comput Biol* 15(1): e1006611. https://doi.org/10.1371/journal.pcbi.1006611

Karamchandani, A. J., **Graham, J. N.**, & Riecke, H. E. (2018). Pulse-coupled mixed-mode oscillators: Cluster states and extreme noise sensitivity. *Chaos*, *28*(4), [043115]. https://doi.org/10.1063/1.5021180

Posters — Conferences — Schools — Seminars

Pre-APS-DFD Satellite Meeting on Enivronmental and Biological Fluid Dynamics	Nov. 2023
EMBO Workshop on Physics of cells: PhysCell2022	Sept. 2022
International School on Biological Physics of Cells	Sept. 2022
XXVIII International Summer School Instituto Nicolás Cabrera	Sept. 2022

Awards

Senior Studentship at Pembroke College, Oxford	2023
Outstanding Graduate Prize in Applied Mathematics at Northwestern University	2016