

## James Graham

jngraham@u.northwestern.edu • +1 (571) 447 3328

jngraham.com • github.com/jngraham • linkedin.com/in/j-n-graham

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### Education

<b>University of Oxford</b> , Oxford, UK	2017
MSc Mathematical & Theoretical Physics, Distinction	
<b>Northwestern University</b> , Evanston, IL	2016
BS Applied Mathematics, summa cum laude	

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### Research & Coursework

<b>Non-Perturbative Methods in Quantum Field Theory</b> , University of Oxford	Mar.–Apr. 2017
<ul style="list-style-type: none"><li>Simulated a U(1) gauge theory with C++;</li><li>Implemented the Metropolis algorithm;</li><li>Extracted physical quantities from correlation functions with MATLAB and Excel.</li></ul>	
<b>Architectural Engineering and Design</b> , Northwestern University	Sept.–Dec. 2014
<ul style="list-style-type: none"><li>Synthesized a design concept for a model site to satisfy client's needs;</li><li>Constructed detailed scale model of house and environs;</li><li>Pitched my solution to a panel of architects and engineers.</li></ul>	
<b>Research Assistant</b> , Engineering Science & Applied Mathematics, Northwestern University	Mar. 2014–Jan. 2015
<ul style="list-style-type: none"><li>Simulated Hodgkin-Huxley neurons using the BRIAN package in Python;</li><li>Investigated synchronization of neural firing in presence of periodic stimulus.</li></ul>	
<b>Research Assistant</b> , Engineering Science & Applied Mathematics, Northwestern University	Apr.–Sept. 2013
<ul style="list-style-type: none"><li>Integrated memory cortex model into simulation of signal decorrelation with MATLAB;</li><li>Investigated synapse survival through stimulation by memories.</li></ul>	

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### Employment

<b>Education Coordinator</b> , Mathnasium of Tysons, Vienna, VA	Oct. 2019—present
<ul style="list-style-type: none"><li>Maintained individualized curricula for more than 150 students;</li><li>Managed relationships with parents to set expectations, report students' progress and achieve learning goals;</li><li>Supervised more than 15 instructors to ensure consistent and excellent instruction;</li><li>Coordinated the training of new team members.</li></ul>	
<b>Instructor</b> , Mathnasium of Mount Vernon, Alexandria, VA	Dec. 2017 – Nov. 2018, Apr. 2019 – Oct. 2019
<ul style="list-style-type: none"><li>Taught students topics from elementary through high school in a small group setting;</li><li>Managed individualized workflows of several students simultaneously;</li><li>Enthused students in mathematics by relating my experiences to theirs.</li></ul>	
<b>Teaching Assistant</b> , Department of Mathematics, Northwestern University	Sept. 2015–Mar. 2016
<ul style="list-style-type: none"><li>Led a weekly discussion section on calculus for one hour;</li><li>Answered students' questions about problem sets;</li><li>Invigilated and marked two department-wide quizzes and up to three exams per term.</li></ul>	

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### Publications

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>

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>

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### Awards

<b>Outstanding Graduate Prize in Applied Mathematics</b>	2016
<b>Roger Boye Oxbridge Bursary</b> to support study at Oxford	2016
<b>Summer Research Opportunities Award</b> to support summer research	2014
<b>Merck Index Award</b> for outstanding performance in organic chemistry	2013

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### Skills

C++ • Python • MATLAB • Mathematica • LaTeX • HTML • CSS

Communication • Teaching • Time Management • Self-Motivation • Teamwork