

# Calum Buchanan

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University of Vermont  
Dept. of Mathematics & Statistics  
Innovation Hall  
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## Education **University of Vermont (UVM), Burlington, VT**

Ph.D. Candidate, Mathematics, 2019-present  
Research interests: Graph Theory, Combinatorics  
Advisor: Dr. Puck Rombach  
B.A. in Mathematics and English, December 2017  
GPA 3.87, English Departmental Honors Recipient,  
Presidential and Merit Scholarships

## **Université de Nantes, Nantes, France**

International Student Exchange Program (ISEP), Jan. – May 2016

## Teaching \* indicates that lesson plans are available at [www.uvm.edu/~cjbuchan](http://www.uvm.edu/~cjbuchan)

### **Department of Mathematics and Statistics, UVM**

Graduate Teaching Assistant (TA) / Primary Instructor (PI)  
Math019\*: Fundamentals of Calculus I, Fall 2019 (PI), Fall 2020 (TA)  
Math017\*: Applications of Finite Math, Spring 2020 (PI), Spring 2021 (PI)

### **Johns Hopkins Center for Talented Youth, Bristol, RI**

Teaching Assistant, Paradoxes and Infinities, Summer 2017/2018

### **Collège Le Grand Beauregard, La Chapelle sur Erdre, France**

Instructor, Conversational English, 2018 – 2019

### **Collège La Coutancière, La Chapelle sur Erdre, France**

Instructor, Conversational English, 2018 – 2019

### **Math Outreach\***

Currently preparing an outreach program for high school students in Vermont

### **Tutoring, Burlington, VT**

UVM Tutoring Center, 2016 – 2018, and private tutoring, 2016 – present

## Research **Department of Mathematics & Statistics, UVM**

*Expressing graphs as symmetric differences of cliques in the complete graph*,  
CB, Christopher Purcell, Puck Rombach; arXiv:2101.06180.

Workshops    **Masamu Advanced Study Institute (MASI) and Workshops**  
 Online, November 20 – 29, 2020

**Graduate Research Workshop in Combinatorics (GRWC)**  
 Online, June 14 – 25, 2021

Awards        **The Phi Beta Kappa Society**  
 Alpha of Vermont, 2017

**Graduate Teaching Assistant of the Year, UVM**  
 Lecture Instruction Category, 2021

**John F. Kenney Award, UVM**  
 Excellence in mathematics, 2021

**American Mathematical Society Travel Grant**  
 Joint Mathematics Meetings, 2021

Coursework   **University of Vermont**  
 Mathematics  
                   Combinatorics: Graph Theory, Matroids, Polytopes, Symmetric Functions,  
                   Analysis: Functional, Real, Complex, Measure  
                   Other: Alg. Topology, Linear & Abstract Algebra, Chaos Theory, O.D.E.s  
 English  
                   Advanced Writing Workshops in Poetry, Creative Nonfiction,  
                   Literary Journalism, and Short Fiction

Relevant      **Languages**  
 Skills         English (native), French (advanced)

**Coding**  
                    $\LaTeX$ , HTML, SageMath