

# Clive Newstead

## ADDRESS:

Department of Mathematical Sciences, Carnegie Mellon University  
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## TEL:

*Redacted from public CV*

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## WEBSITE:

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## EDUCATION

PhD in Mathematical Sciences, *Carnegie Mellon University*  
*Advised by Steve Awodey. Current GPA: 4.0.* Aug 13 – present  
*Expected completion in summer 2018.*  
Master of Mathematics ('Part III'), *University of Cambridge* Oct 12 – Jun 13  
BA in Mathematics, *University of Cambridge* Oct 09 – Jun 12

## TEACHING

Teaching portfolio available at <http://math.cmu.edu/~cnewstea/teaching/>

### *As course instructor*

Mathematical Foundations for Computer Science (SAMS program) Summer 2017  
Concepts of Mathematics (21-127) Summer 2015  
Multivariate Analysis (21-256) Summer 2015

### *As teaching assistant*

Mathematical Concepts and Proofs (21-128) Fall 2016  
Mathematical Concepts and Proofs (21-128) Fall 2015  
Calculus in Three Dimensions (21-259) Fall 2014  
Concepts of Mathematics (21-127) Spring 2014  
Differential and Integral Calculus (21-120) Fall 2013

### *Professional development*

Senior Graduate Teaching Fellow, *Carnegie Mellon University* Jan 17 – present  
Graduate Teaching Fellow, *Carnegie Mellon University* Jan 15 – Dec 16  
Future Faculty Program, *Carnegie Mellon University* Apr 14 – Dec 15

## TEXTBOOK

*An infinite descent into pure mathematics*. Preprint. Current version: Oct 2017, 366 pages.  
Accessible at <http://math.cmu.edu/~cnewstea/book/>. Used by 3 instructors in 7 courses  
to teach 700+ undergraduates at Carnegie Mellon.

## AWARDS

University Graduate Student Teaching Award, <i>Carnegie Mellon University</i>	April 2016
Hugh D. Young Teaching Award, <i>Carnegie Mellon University</i>	April 2016
Robinson College Prize and Scholarship, <i>University of Cambridge</i>	July 2012
Crausaz–Wordsworth Essay Prize, <i>University of Cambridge</i>	November 2011
Adrian Knight Prize in Mathematics, <i>University of Cambridge</i>	July 2011

## RESEARCH

My research investigates connections between logic, algebra and topology. Using category theoretic tools, I study algebraic structures arising in dependent type theory, and I am also investigating equivalences between  $\infty$ -categorical models of homotopy type theory.

## CONFERENCES AND WORKSHOPS

† indicates conferences where a talk was given

### *Relating to mathematics*

Joint Mathematics Meeting, <i>San Diego, CA</i>	(January 2018)
†Category Theory Octoberfest, <i>Carnegie Mellon University</i>	October 2017
AMS MRC Workshop on Homotopy Type Theory, <i>Snowbird, UT</i>	June 2017
†Homotopy Type Theory MURI meeting, <i>Carnegie Mellon University</i>	March 2017
†International Category Theory Conference, <i>Dalhousie University</i>	August 2016
†ASL Logic Colloquium, <i>University of Leeds</i>	August 2016
†Homotopy Type Theory MURI meeting, <i>Carnegie Mellon University</i>	March 2016
Workshop on Homotopy Type Theory, <i>Max Planck Institute for Mathematics</i>	February 2016
†Homotopy Type Theory MURI meeting, <i>Carnegie Mellon University</i>	March 2015
Homotopy Type Theory Workshop, <i>University of Oxford</i>	November 2014
International Category Theory Conference, <i>University of Cambridge</i>	August 2014
†Kan Extension Seminar at CT 2014, <i>University of Cambridge</i>	August 2014

### *Relating to teaching and learning*

Teaching and Learning Summit, <i>Carnegie Mellon University</i>	October 2017
†Teaching and Learning Summit, <i>Carnegie Mellon University</i>	October 2016
†POD Network Conference, <i>San Francisco, CA</i>	November 2015

## PAPERS IN PREPARATION

Type theory and polynomial monads <i>Joint work with Steve Awodey</i>	expt. early 2018
Categories of models of homotopy type theory <i>Joint work with Simon Cho, Cory Knapp and Liang Ze Wong</i>	expt. early 2018

## OTHER ACTIVITIES AND SKILLS

### *Service on committees*

MCS Graduate Student Advisory Council, <i>Carnegie Mellon University</i>	Jun 14 – <i>present</i>
MCS College Council, <i>Carnegie Mellon University</i>	Aug 15 – May 16
Graduate Student Assembly executive board, <i>Carnegie Mellon University</i>	Jun 15 – Sep 17
Graduate Student Assembly representative, <i>Carnegie Mellon University</i>	Sep 13 – May 15
Board of the Faculty of Mathematics, <i>University of Cambridge</i>	Nov 11 – Nov 12
University Library Syndicate, <i>University of Cambridge</i>	Oct 11 – Oct 12
Faculty of Mathematics Teaching Committee, <i>University of Cambridge</i>	Oct 10 – Jun 13

### *Society memberships*

American Mathematical Society  
Association for Symbolic Logic  
Mathematical Association of America

### *Languages*

English (native), French (advanced), Spanish (basic), Russian (basic)

### *Technology*

Programming and scripting:  $\text{\LaTeX}$ , Github, HTML, PHP, CSS, R, Python  
Educational technology: Canvas, Blackboard, Piazza