

# Christopher Lee Phan

## Curriculum vitæ December 2011

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## Education

- **Ph.D. in mathematics**, University of Oregon, Eugene, Oregon, June 2009.
  - Dissertation: *Koszul and generalized Koszul properties for noncommutative graded algebras*
  - Advisor: Prof. Brad Shelton
  - Jack and Peggy Borsting Award for Scholastic Achievement in Graduate Mathematics, 2008.
- **M.S. in mathematics**, University of Oregon, Eugene, Oregon, June 2005.
- **B.A. in mathematics and communication**, Lewis & Clark College, Portland, Oregon. May 2003.
  - *Summa cum laude*, department honors in communication, Phi Beta Kappa.

## Academic positions

- **Visiting Assistant Professor**, Department of Mathematics, Bucknell University, Lewisburg, Pennsylvania, August 2010–August 2012.
- **Temporary Lecturer**, Department of Mathematics, University of Glasgow, Glasgow, Scotland, September 2009–August 2010.
- **Adjunct Instructor**, General Education Department, Cooking & Hospitality Institute of Chicago, Chicago, Illinois, August–September 2009.
- **Graduate Teaching Fellow**, Department of Mathematics, University of Oregon, Eugene, Oregon, September 2003–June 2009.

## Teaching experience

- **At Bucknell University:**
  - **Discrete Structures** (Math 241). Logic, proofs, sets, basic number theory, congruences, combinatorics, discrete probability, and graph theory, primarily for computer science and computer engineering students: Spring 2011.
  - **Differential Equations** (Math 212). Ordinary differential equations, systems of linear differential equations, Laplace transform. Fall 2010, Fall 2011.
  - **Calculus I** (Math 201). Differential calculus: Fall 2010, Fall 2011.
  - **Calculus II** (Math 202). Integral calculus, basic differential equations, sequences and series, and parametric and polar equations: Spring 2011.
- **At the University of Glasgow:**
  - **Complex Algebraic Curves** (Maths 5M). Plane algebraic curves, Bézout's Theorem, degree-genus formula, Riemann surfaces: Spring 2010.
  - **Discrete Mathematics** (Maths 4H). Congruences, recurrence relations, combinatorics, quadratic reciprocity, graph theory: Spring 2010.
  - **Mathematics for Electrical Engineering** (EE1Y). Differentiation and integration, for electrical engineering students: Spring 2010.
- **At the Cooking and Hospitality Institute of Chicago:** (6-week term)
  - **General College Mathematics** (Mat 1121). Weights and measures, recipe conversions, recipe costing, introductory statistics, algebra, and financial mathematics, for culinary students: August–September 2009.
  - **Basic College Mathematics** (Mat 099). Arithmetic of whole numbers, fractions, decimals; ratios, proportions, and measurements, basic algebra, for culinary students: August–September 2009.
- **At the University of Oregon:** As a graduate teaching fellow, I taught the classes listed below. I delivered lectures, wrote and graded quizzes and exams, administered homework (including use of the WebAssign or WeBWorK computerized homework scoring system or supervising an undergraduate paper marker), and assigned final grades.
  - **Calculus I** (Math 251). Differential calculus for math and science majors : Winter 2005, Fall 2008, Spring 2009.
  - **Calculus II** (Math 252). Integral calculus for math and science majors: Spring 2005, Summer 2006.
  - **Calculus III** (Math 253). Calculus with parametric functions and in polar coordinates, series and sequences, for math and science majors: Fall 2006, Fall 2007.

- **Calculus for Business and Social Science I** (Math 241). Differential calculus with a focus on business applications: Summer 2007.
- **Calculus for Business and Social Science II** (Math 242). Integral calculus with a focus on business applications: Summer 2005.
- **Calculus for the Biological Sciences I** (Math 246). Differential calculus and series with a focus on biological applications: Winter 2008.
- **Introduction to Probability and Statistics** (Math 243). Introduction to probability, significance testing, and regression: Summer 2004.
- **Elementary Functions** (Math 112). Trigonometry and complex numbers: Winter 2006.
- **College Algebra** (Math 111). Functions, function notation, graphing functions, rational functions, exponential and logarithmic functions: Fall 2003, Winter 2003, Fall 2004, Fall 2005 (2 sections), Winter 2007 (2 sections), Fall 2007.
- **University Mathematics II** (Math 106). General education course touching on a variety of topics from geometry, the mathematics of finance, and exponential and logarithmic models: Summer 2008.

## Research interests

- Homological conditions on noncommutative algebras (e.g. Koszul algebras and generalizations).
- Deformations of graded algebras.
- Filtered algebras.

## Research articles

- *The Yoneda algebra of a graded Ore extension*, Communications in Algebra, to appear. Preprint available at [arXiv:1002.2318](https://arxiv.org/abs/1002.2318) [math.RA].
- *Localization algebras and deformations of Koszul algebras* (with T. Braden, A. Licata, N. Proudfoot, and B. Webster), Selecta Mathematica, 17 (2011) 533–572. Preprint available at [arXiv:0805.1335](https://arxiv.org/abs/0805.1335).
- *Noncommutative Koszul algebras from combinatorial topology* (with T. Cassidy and B. Shelton), Journal für die reine und angewandte Mathematik (Crelle’s Journal), 646 (2010), 45–63. Preprint available at [arXiv:0811.3450](https://arxiv.org/abs/0811.3450).
- *The Yoneda algebra of a  $\mathcal{K}_2$  algebra need not be another  $\mathcal{K}_2$  algebra* (with T. Cassidy and B. Shelton), Communications in Algebra, 38 (2010) 46–48,. Preprint available at [arXiv:0810.4656](https://arxiv.org/abs/0810.4656).

- *Generalized Koszul properties for augmented algebras*, Journal of Algebra 321 (2009) 1522–1537. Preprint available at arXiv:0711.3480.

## Recent and Upcoming Presentations

- “Delayed Koszul duality”, Joint Mathematics Meetings, Boston, Massachusetts, January 6, 2012.
- “Delayed Koszul duality”, Southeastern Section AMS Meeting, Wake Forest University, September 24, 2011.
- “Structural results for the Yoneda algebra of a connected-graded algebra”, Joint Mathematics Meetings, New Orleans, Louisiana, January 7, 2011.
- “Graded Ore extensions and the  $\mathcal{K}_2$  property”, Southeastern Section AMS Meeting, University of Kentucky, March 27, 2010.
- “Generalised Koszul properties for noncommutative graded algebras”, University of Edinburgh and Heriot–Watt University Algebra Seminar, March 21, 2010.
- “Noncommutative Koszul algebras from combinatorial topology”, University of Glasgow Algebra Seminar, January 13, 2010.
- “Noncommutative Koszul algebras from combinatorial topology”, Joint Mathematics Meetings, Washington, District of Columbia, January 5, 2009.
- “ $\mathcal{K}_2$  properties for augmented algebras”, Western Section AMS Meeting, University of British Columbia, October 5, 2008.
- “Generalized Koszul properties for augmented algebras”, University of Oregon Algebra Seminar, May 27, 2008.
- “Generalized Koszul properties for filtered algebras”, Pure Math Graduate Student Seminar, Simon Fraser University, October 12, 2007.

## Academic service

- Graduate Affairs Committee student representative, Spring 2006–Winter 2007.
- Final exam co-coordinator, MATH 112 (Elementary Functions), Winter 2006.
- Final exam co-coordinator, MATH 111 (College Algebra), Fall 2005.
- Ring Theory Seminar organizer, Spring 2005–Spring 2007.