

# Stephen Bigelow

## Employment

2000-2002 Research Fellow, University of Melbourne  
2002-2007 Assistant Professor, University of California at Santa Barbara  
2007-2016 Associate Professor, University of California at Santa Barbara  
2016- Professor, University of California at Santa Barbara  
2021-2024 Chair of the mathematics department, University of California at Santa Barbara

## Education

1992 BSc(Hons)(First class), University of Melbourne, Australia  
1994 MSc, University of Melbourne, Australia  
2000 PhD, Mathematics, University of California at Berkeley  
Advisor: Robion Kirby

## Research Interests

Braid groups, knot theory, representation theory, quantum topology, diagrammatic algebra.

## Teaching

1991 Volunteer tutor, University of Melbourne Summer School.  
1993 Tutor at University of Melbourne, Australia.  
1996-1999 Teaching Assistant at UC Berkeley,  
including the “Professional Development Program” for underrepresented groups.  
2002 Lecturer at University of Melbourne.  
2002- Professor at University of California, Santa Barbara,  
Standard course load of 1 or 2 courses each quarter.

## Awards

1993-1994 Australian Postgraduate Awards Scholarship  
1995-2000 Fulbright Award  
2000 Blumenthal Prize for outstanding thesis in pure mathematics  
2001-2002 Australian Postdoctoral Research Fellowship  
2002-2006 Sloan fellowship  
2003-2006 NSF grant  
2003 UCSB Junior Faculty Research Incentive Award  
2013 Fellow of the AMS, Inaugural Class

### Selected conference talks

- 1994 Gruppentheorie (Permutationsgruppen) in Oberwolfach,  
“The truth about supplements of  $B_\lambda$ ”.
- 2000 KNOTS 2000 in Korea,  
“Does the Jones polynomial detect the unknot?”.
- 2002 International Congress of Mathematics, Geometric Topology satellite in Xian,  
“Braid groups and symmetric groups”.
- 2002 International Congress of Mathematics in Beijing,  
“Representations of braid groups”.
- 2011 Southern California Topology Conference at Claremont,  
“Algebras that count graph colorings”.
- 2013 Banff International Research Station,  
“Diagrammatic knot invariants that ought to be categorified”.
- 2013 DARPA and Shanks Workshop at Vanderbilt,  
“Diagrammatic quantum groups”.
- 2017 Isaac Newton Institute,  
“A diagrammatic approach to Ocneanu cells”.

### Selected papers

- 1998 “Supplements of bounded permutation groups”, Journal of Symbolic Logic.
- 2000 “Braid groups are linear”, Journal of the American Mathematical Society.
- 2002 “A homological definition of the Jones polynomial”, Geometry & Topology Monographs.
- 2012 “Constructing the extended Haagerup planar algebra”, Acta Mathematica,  
with Emily Peters, Scott Morrison, and Noah Snyder.
- 2014 “Principal graph stability and the jellyfish algorithm”, Mathematische Annalen,  
with David Penneys.
- 2018 “Bowling ball representations of braid groups”, J. Knot Theory & its Ramifications.
- 2018 “An exact entangling gate using Fibonacci anyons”, Bull. Australian Mathematical Society,  
with Claire Levallant.