

# CURRICULUM VITAE

## Jasbir S. Chahal

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### Education

M.A., Punjab University (India), 1970  
Ph.D., Johns Hopkins University, 1979

### Professional Experience

Professor (2001–present), Brigham Young University.  
Associate Professor (1987–2001), Brigham Young University.  
Assistant Professor (1982–1987), Brigham Young University  
Postdoc (1979–1982), University of Wisconsin.

### Visiting Positions

Visiting Professor, University of Casablanca (March 2018)  
Visiting Professor, Indian Inst. of Tech.–Bombay, (1 January–31 March 2016).  
Visiting Fellow, Princeton University, Fall 2005.  
Gast Professor, University of Salzburg, 1 March–30 June 1997.  
Visitor, University of Wisconsin, Madison, Summer 1993.  
Gast Professor, 1 March–30 June 1992, University of Salzburg, Austria.  
Reader, Punjab University (India), 1 September–31 May 1990.  
Visiting scholar, Cambridge University (England), 1 June–31 August 1989.

### Awards

NSF award for a conference (cohosted with Michael Barrus) at Sundance, Utah 2016  
Fulbright Fellowship, 2025–2026

### Recent Scholarly Presentations

1. *On a conjecture of Poincare*, Monash University, Melbourne, Australia (May 2025).
2. *Rational triangles and elliptic curves*, Howard University, Washington, D.C. (February 2024).
3. *Role of topology in number theory*, University of Ljubljana, Slovenia, (May 2023).

All scheduled talks between 2020–2022 cancelled (COVID)

4. *Some applications of algebraic geometry*, Johannes Kepler University, Linz, Austria (May 2019).

5. *Four color problems*, University of Salzburg, Austria (May 2019).
6. *Application of algebraic geometry to number theory*, Sfax University, Sfax, Tunisia (April 2019).
7. *Congruent number problem*, Howard University, Washington, D.C. (April 2019).
8. *Elliptic curves and rational albime triangles*, University of Casablanca, Morocco (March 2019).
9. *Tales of 3 elliptic curves*, Einstein Institute of Mathematics, Jerusalem University, Israel (May 2017).
10. *Tales of 3 elliptic curves*, Bar Ilan University, Ramat Gan (Tel Aviv), Israel (May 2017).
11. *Further remarks on albime triangles*, American University of Cairo, Egypt (February 2017).
12. *Algebra, arithmetic, and geometry – an interplay*, Stellenbosch Conference on Number Theory, Stellenbosch, South Africa (January 2017).
13. *Why study elliptic curves?*, Ljubljana University, Slovenia, (June 2016).
14. *Application of arithmetic of elliptic curves*, Vienna University of Technology, Vienna, Austria (June 2016).
15. *Algebra-arithmetic-geometry*, Leibniz University, Hannover, Germany (June 2016).
16. *Some remarks on polygonal numbers*, Harish-Chandra Institute of Mathematics, Allahabad, India (April 2016).
17. *Albime triangles and congruent numbers*, Indian Institute of Technology, Bombay, India (March 2016).
18. *Albime triangles over rational numbers*, University of Debrecen, Debrecen, Hungary (July 2015).

## Publications

1. *Number Theory and Geometry through History*, CRC Press (2025).
2. Some remarks on rational right triangles, *Expo. Math.* **42** (2024), 1–6.
3. (with Omar Khadir), Counting points on elliptic curves modulo  $a$  prime power, *Creat. Math. Inform.*, **31** (2022), 1–6.
4. (with R. Bassett, J. Canizales, T. Fackrell, and V. Rico), Four color problem, *Resonance* **26** (2021), 1–8.
5. *Algebraic Number Theory—A Brief Introduction*, CRC Press, (2021).
6. What do graphs and elliptic curves have in common? *Amer. Math. Monthly*.  
<https://www.tandfonline.com/doi/full/10.1080/00029890.2022.2141548>
7. (with J.Top), The Last Chapter of Gauss' Disquisitiones Arithmetica, *Hardy-Ramanujan J. Math.*, **44** (2021), 152–159
8. (with J. Canizales), Note on the 4 Color Theorem, *Aequationes Math.*  
<https://doi.org/10.1007/s00010-022-00929-8>
9. (with undergraduate students R. Bassett, J. Canizales, T. Fackrell, and V. Rico), How many ways to color America? arXiv (August 2019).

10. (with Omar Khadir), Polynômes chromatiques de certains graphes de la vie réelle, *C. R. Math. Acad. Sci. R. Canada*, **41** (1019), 7–19.
11. (with M. Griffin and N. Priddis), When are the multiples of polygonal numbers again polygonal numbers, *Hardy-Ramanujan J.*, **41** (2018), 58–67.
12. (with S.R. Ghorpade) Carlitz-Wan conjecture for permutation polynomials and Weil bound for curves over finite fields, *Finite Fields Appl.* **54** (2018), 58–67.
13. *Fundamentals of Linear Algebra*, CRC Press (2018).
14. (with J. Top), Albime triangles over quadratic fields, *Rocky Mountain J. Math.* **47** (2017), 2095–2106.
15. (with J. Kooij and J. Top), Further remarks on albime triangles, *C. R. Math. Rep. Acad. Sci. Canada*, **39** (2017), 67–76.
16. (with E. Bakker & J. Top), Albime triangles and Guy’s favorite elliptic curve, *Exp. Math.* **34** (2016), 82–94.
17. (with J. Top), F. van der Blij and Kletter triangles (in Dutch), *Nieuw Arch. Wisk.*, **16** (2016), 83–87.
18. (with A. Soomro, J. Top), A supplement to Manin’s proof of the Hasse Inequality, *Rocky Mountain J. Math.* **44** (2014) 1457–1470.
19. (with N. Priddis), Some congruence properties of the Pell equation, *Ann. Sci. Math. Québec* **35** (2011) 175–184.
20. (with B. Osserman), Riemann Hypothesis for Elliptic Curves, *The Monthly*, **115** (2008), 431–442.
21. *A Historical Perspective of Mathematics*, Kendrick Press (2006).
22. (with Ram Murty) *Irreducible polynomials over number fields*, Proc. of the conference on the 60th Birthday of Professor K. Ramachandra, a publication of the Ramanujan Math. Soc. (2006), 39–43.
23. *Congruent numbers and elliptic curves*, American Math. Monthly, **113** (2006), 308–317.
24. *A Brief Introduction to Algebraic Number Theory*, Kendrick Press (2005).
25. *On an idea of Euclid, Kronocker and Galois*, Proc. of the Congress of the Canadian Federation of the Humanities and Social Sciences, 28 May-4 June 2003, Halifax, Nova Scotia.
26. *The unity of mathematics*, in History of Math Sc. (Ed. I. Grattam-Guinness), Hindustan Book Agency, New Delhi (2004), 163–170.
27. J. S. Chahal, *Algebraic Number Theory*, Kendrick Press (2003).
28. (with N. M. Singhi) *Tags on k-sets and t-designs I*, Jour. Combinatorial Info. and System Sc., **26** (2001), 33–50.
29. J.S. Chahal, M. Meijer, J. Top, Sections of certain  $j = 0$  elliptic surfaces. *Comment. Math. Univ. St. Pauli*, **49** (2000), 79–89.
30. *Torsion subgroups of elliptic curves*, J. Pure and Appl. Algebra, **115** (1997), 321–323.
31. (with J. Top) *Triangular numbers and elliptic curves*, accepted in Rocky Mtn. J. of Math. (special issue to honor Professor Wolfgang M. Schmidt), **26** (1996), 937–949.

32. *Manin's proof of Hasse's inequality revisited*, Nieuw. Arch. Wisk. **13** (1995), 219–232.
33. *Rank of quadratic twists of an elliptic curve*, Math. Nachr. **161** (1993), 55–58.
34. *Arithmetic functions associated with diophantine equations*, Grazer Math. Berichte **318** (1992), 3–7.
35. (with H. D'Souza) *Some remarks on triangular numbers*, Number theory with an Emphasis on Markoff Spectrum, (ed. A. Pollington and W. Moran), Marcel Dekker (1993), 61–67.
36. *Some applications of Bezout's theorem*, XI Escola de Algebra, Sao Paulo, Brazil (1990).
37. *Elliptic curves and congruent numbers*, Proc. X Escola de Algebra, Vittoria, Brazil (1989), 19–28.
38. *Topics in Number Theory*, Plenum Press, (March 1988).
39. *Mordell-Weil rank of elliptic curves*, Tohoku J. Math **39** (1987), 101–103.
40. *On an identity of Desboves*, Proc. Japan Acad., Ser. A **60** (1984), 105–108.
41. *Arithmetic subgroups of algebraic groups*, Indiana U. Math. J. **33** (1984), 799–804.
42. *Congruence properties of the solutions of Pell's equation*, C. R. Math. Rep. Acad. Sci. Canada **3** (1981), 251–252.
43. *Solution of the congruence subgroup problem for solvable algebraic groups*, Nagoya Math. J. **79** (1980), 141–144.
44. *A note of the discontinuous subgroups of the orthogonal group*, Math. Zeit. **167** (1979), 181–185.
45. *Arithmetic subgroups of  $SL(n, k)$* , Arch d. Math. **32** (1979), 359–547.
46. *Arithmetic subgroups of the symplectic group*, Osaka J. of Math. **14** (1977), 487–500.

## Synergistic Activities

Developed the following courses at BYU:

- Number Theory, Topics in
- Cryptography
- History of Math

Organizer for the Undergrad Colloquium (Public Lectures targeted at the undecided freshmen and sophomores to induct them into math) The speakers included Ken Ribet, John Milnor, Ronald Graham, Carl Pomerance, M. Ram Murty, Frank Morgan and Jim Yorke.

## Collaborators

E. Bakker, J. Kooij, M. Meijer and J. Top, University of Groningen, The Netherlands

H. D'Souza, University of Michigan

M. Griffin and N. Priddis, Department of Mathematics Brigham Young University, Provo, UT

O. Khadir, University of Casablanca, Morocco

M. Ram Murty, Queen's University, Kingston, Canada

Takashi Ono<sup>1</sup>, The Johns Hopkins University  
B. Osserman, University of California, Berkeley  
Navin M. Singhi, Tata Inst. of Fund. Res., Bombay, India

## Conferences Organized and Sessions Chaired

1. Organized NSF-funded CBMS Conference on Zeta Functions at Sundance, Utah, 12–16 May 2014.
2. Organized American Mathematical Society Meeting, Salt Lake City, Utah, 7–8 October 2006.
3. Chaired session on the History of Math, Int'l Congress of Mathematicians, Beijing, China, 20–28 August 2003.
4. Chaired session on Recent History, First Congress of the New Millennium on the History of Math, New Delhi, 20–23 December 2001.
5. Chaired session on Curves and Surfaces, Western Number Theory Conference, San Diego, California, 16–20 December 2000.

## Students Supervised

William Cocke, research project 2013-Present  
Nathan Priddis, chair, master's thesis, 2009  
Hugh Brown, chair, master's project, 1998  
Andreas Weingartner, member doctoral committee, 1998.  
Served on several other graduate committees.

## Undergraduate Mentoring (Recent years)

These undergraduates presented, or will present, their projects supervised by me at our college Student Research Conferences.

Rebekah Bessett, Catherine Billings, Jennifer Canizales, Jason Colgrove, Kirsti Dorman, Hannah Dudley, Nick Jensen, Chris Johnson, Vanessa Rico, Michael Saunders, Christian Wheeler, and Alex Snow, Isaac Smith, and Jun Bo Sim.

## Department Committees

Curriculum Committee  
Graduate Committee member responsible for evaluations of MS theses and PhD dissertations  
Colloquia/Seminar Committee  
Minor Advisement Committee

## Professional Service

Reviewer for: *Math. Reviews* and *Zentralblatt Math*.

Referee for: *Canadian Number Theory Association*, *The American Math. Monthly*, *J. Number Theory*, *Hardy-Ramanujan J.*, *Canadian Math. Bull.*, *Indian J. Pure & Appl. Math.*, and *Fibonacci Quarterly*.

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<sup>1</sup>Thesis Advisor.