1. **Name** : Dr. Rajesh Sharma

2. **Father's Name** : Sh. Ghan Shyam Dass Sharma

3. **Place of Birth** : Mandi (Himachal Pradesh), India

4. **Date of Birth** : 11.08.1966 (Eleven Aug. Nineteen sixty six)

5. **Present Designation** : Professor

6. **Area of Specialization** : Matrix Analysis and inequalities

| Exam Passed | Year | Board/University | Total Marks | %age Marks | Distinction Maths |
|---|---|---|---|---|---|
| Matriculation | 1981 | H.P. Board Shimla | 530/900 | 58.88% | |
| B.Sc. | 1985 | H.P. University, Shimla | 441/600 | 73.50% | First Position in University (92.50%) |
| M.Sc. | 1987 | H.P. University, Shimla | 558/800 | 69.75% | Third Position in University |
| M.Phil. | 1988 | H.P. University, Shimla | 480/600 | 80% | Second Position in University |
| Ph.D. | 1992 | H.P. University, Shimla | Title of Thesis: Investigations on the behaviour of composite materials | | |
| Post-Doctoral | May, 1994 to May ,1997 | I.I.T., Bombay | NBHM FELLOW | | |

**Fellowships and Awards:**

| 1 | Merit Fellowship for M.Sc. Mathematics | Himachal Pradesh University, Shimla | 1985-1987 |
|---|---|---|---|
| 2 | CSIR – Research fellow | CSIR | 14th may 1988 to 19th sept. 1990 |
| 3 | NBHM Fellowship | NBHM | 1994-1997 |

**Research Projects:**

| Title of Project | Name of the Funding Agency | Duration | Designation |
|---|---|---|---|
| Investigation on the behaviour of the composite lattice matrix | CSIR | 1988-1990 | Research Fellow |
| SAP | UGC | 2009-2014 | Investigator |

**List of Candidates completed Ph.D.**

| Sr.No. | Candidate | Title | Year |
|---|---|---|---|
| 1. | Rajeev Kumar | On inequalities involving variance and moments of arbitrary and restricted unimodal distributions with refinements, extensions and applications.(Submitted) | 2014 |
| 2. | Amrita | Refinements, Extensions and applications of the Gruss type inequalities related to the variance and covariance bounds. | 2014 |
| 3. | Madhu Gupta | On inequalities involving means, moments and variance with some refinements, extensions and applications | 2009 |
| 4. | Amit Kaura | On some inequalities between the moments of statistical distributions and generalized bounds for the expected values of the functions of a random variable | 2008 |
| 5. | Girish Kapoor | Refinements, extensions and applications of some results on bounds for variance and moments of statistical distributions | 2008 |
| 6. | Sita Ram | On a class of inequalities involving moments and weighted power means | 2005 |
| 7. | Sunita Devi | On some inequalities for moments and power means of probability distributions | 2005 |
| 8. | Sohan Singh Ranta | Stress-strain distribution and bounds on elastic moduli of a multiphase composite body | 2004 |
| 9. | Ashish Ranjan | Stress-strain analysis and elastic properties of n-phase composite body | 2002 |
| 10. | Manju Shari Dutta | On the moment values of statistical distribution | 2001 |

**List of Candidates completed M. Phil.**

| Sr.No. | Candidate | Title | Year |
|---|---|---|---|
| 1. | Saichi Kashav | A study of some inequalities involving positive linear functionals on matrices, | 2013 |
| 2. | Reena Kumari | On bounds for the spread of Hermitian and normal matrices | 2013 |
| 3. | Sunita Devi | A study of variance bounds and its applications | 2012 |
| 4. | Purnima Devi | Some inequalities involving positive linear maps on matrices | 2012 |
| 5. | Ritika Saini | A study of some properties of positive linear maps on matrices | 2011 |
| 6. | Saraswati | On some inequalities involving certain matrix norms | 2010 |
| 7. | Ravinder Kumar | On bounds for the spread of eigenvalues of real symmetric matrices | 2010 |
| 8. | Kiran Devi | On some bounds for the variance of finitely many real numbers with applications | 2009 |
| 9. | Amrita | On Kantorovich inequality and its refinements in inner | 2008 |

| | | product spaces | |
|---|---|---|---|
| 10. | Rajeev Kumar | Some inequalities involving self-adjoint operators in inner product spaces | 2008 |
| 11. | Shavnam Sharma | A study on the logarithmic and power means | 2007 |
| 12. | Rajni Bala | On some bounds for the real eigenvalues of a matrix using traces | 2007 |
| 13. | Surinder Kumar | On some bounds for the roots of the polynomial equations | 2006 |
| 14. | Jai Chand Mehalwal | On some bounds for the longitudinal and transverse modulus of multiphase composite bodies | 2006 |
| 15. | Amit Sharma | On the generalisation and application of Laguerre-Samuelson inequality to the field of micro mechanics of composite materials | 2005 |
| 16 | Girish Kapoor | On variance bounds for discrete frequency distributions | 2004 |
| 17. | Sita Ram | An inequality involving moment values of statistical distributions | 2002 |
| 18. | Sohan Singh Ranta | Bounds on transverse modulus of reinforced composite materials | 2001 |
| | | | |

## Seminars, Conferences, Symposia, Workshop etc. Attended

| Sr. No. | Name of Seminars/ Conferences/Symposia/ Workshop etc. | Name of the sponsoring Agency | Place and date |
|---|---|---|---|
| 1. | International Conference on Algebra and allied fields, | HPU | H.P. University Shimla, 26-27 March, 2014 |
| 2. | International conference on Matrices and Operators | IISc | , Indian Institute of Science Bangalore, 27-30 Dec., 2012. |
| 3. | Conference on Analysis | ISI | Indian Statistical Institute, New Delhi, 23-25 Dec., 2011 |
| 4. | National conference in Algebra | HPU | H.P.University Shimla HPU, 27-28 March, 2012 |
| 5. | National conference on role of mathematical and physical sciences in engineering and technology | | Government degree college Karanprayag ( Utrakhand), 21-22 Oct.,2011 |
| 6. | Advanced training in Mathematics in Geometric Complex Analysis | NBHM | University of Delhi, Delhi, March 21, 2011 to April 2, 2011 |
| 7. | Workshop on Symbolic Computation and use of Mathematica in Continuum Mechanics and Algebra | UGC | H.P. University Shimla, 15-20 March, 2010 |
| 8. | National Seminar on Continuum Mechanics and Algebra, | UGC | H.P.University Shimla, 7-8 Aug. 2009 |
| 9. | National symposium on functional analysis, optimization and applications | UGC | University of Delhi 19-20 Jan. 2007 |
| 10. | National Conference on | HPU | H.P.University Shimla HPU, |

| | | | |
|---|---|---|---|
| | mathematical | | 2007 |
| 11. | National conference on mathematical analysis and differential equations | UGC and CSIR | Jodhpur Jai Narain Vyas, 17 -19 Nov. 1997 |

**Visiting Faculty:**

Invited to work for collaboration at Indian Statistical Institute, New Delhi during the period

- 26 Dec. 2013 – 06 Feb. 2014
- 1 Jan. 2013–31 Jan. 2013
- 26 Dec. 2011 – 31 Jan. 2012
- 5 Jan. 2011 – 2 Feb. 2011
- 19 Jan. 2010 – 8 Feb. 2010
- 15 Jan. 2009 – 14 Feb, 2009
- 15 Jan. 2008 – 14 Feb. 2008
- 18 Jan. 2007 – 17 Feb. 2007
- 13 Feb. 2006 – 18 Feb. 2006

**Courses taught:** complex analysis and linear algebra at post-graduate level for about 17-years.

# Research Publications

1. B.B. Sharma, R. Sharma and Rajinder Gupta, *A Condition on the time of Rupture of Reinforced Materials*, Journal of Reinforced Plastics and Composites, 9(4): 362-368, 1990, USA.

2. B.B. Sharma, R. Sharma and Rajinder Gupta, *A Study on the Damage of Reinforced Materials*, Journal of Reinforced Plastics and Composites, 10(6): 585-593. November, 1991, USA.

3. B.B. Sharma, R. Sharma and Rajinder Gupta, *A study on Rupture and Economy of Composite Material,* Advanced Composite Materials, 1(3): 169-179, 1991, Japan.

4. B.B. Sharma, R. Sharma and Rajinder Gupta, *Conditions on the time of Rupture of Reinforced Materials,* Acta Ciencia India, 17(3): 440-456, 1991, India.

5. B.B. Sharma, R. Sharma and Rajinder Gupta, *A Statistical study on the Rupture of Composite Materials,* Acta Ciencia India, 17(3): 433-442, 1991, India.

6. B.B. Sharma and R. Sharma, *A Study on the Elastic Properties of Reinforced Solids,* Journal of Reinforced Plastics and Composites, 11(9): 860-967, 1992, USA.

7. B.B. Sharma, R. Sharma and Rajinder Gupta, *On the Rupture Properties of Reinforced Solids,* Journal of Reinforced Plastics and Composites, 2(1): 1-6, 1992, Japan.

8. B.B. Sharma, R. Sharma and Rajinder Gupta, *Continuum Damage Mechanics and Heterogeneity of Reinforced Composites,* Journal of Reinforced Plastics and Composites, 11(10): 1103-1110, 1992, USA.

9. B.B. Sharma and R. Sharma, *Young's modulus of Reinforced Composite*, Advanced Composite Materials, 2(4): 277-288, 1992, Japan (with B.B. Sharma).

10. R. Sharma and Anupam Sharma, *Young's modulus of Composite: Reinforced with (n-1) Different Inclusions,* Journal of Reinforced Plastics and Composites, 12(6): 670-676, 1993, USA.

11. B.B. Sharma and R. Sharma, *Elastic Constants for a two Phase Isotropic Composite*, Journal of Reinforced Plastics and Composites, Vol. 14(11): 1144-1149, 1995, USA.

12. R. Sharma, *Distribution of Body Stresses in an n-Phase Composite Body: Prior to Outside Loading,* Journal of Reinforced Plastics and Composites, 14(12): 1307-1316, 1995, USA.

13. R. Sharma and K.S. Parihar, *Young's modulus and Poission's Ratio of An n-Phase Composite Body Reinforced with Inclusions,* Journal of Reinforced Plastics and Composites, 16(2): 167-181, 1997, USA.

14. R. Sharma, J.S. Dhiman and M.S. Pattanayak, *On Reducing Banerjee-Shandil Semi-Circle,* Ganita, Vol. 50(1): 5-8, 1999, India.

15. R. Sharma and A. Ranjan, *Elastic Properties of Reinforced Solids: Analogus of Mohr Circle Diagram,* Journal of Reinforced Plastics and Composites, 19(14): 1147-1158, 2000, USA.

16. R. Sharma and A. Ranjan, *Elastic Properties of Reinforced Solids: Analogus of Mohr Circle Diagram-II,* Journal of Reinforced Plastics and Composites, 21(14): 1318-1336, 2002, USA.

17. R. Sharma and A. Ranjan, *Bounds on Transverse Modulus of a Multiphase Composite,* Journal of Reinforced Plastics and Composites, 21(16): 1467-1476, 2002, USA.

18. R. Sharma and A. Ranjan, *Bounds on Longitudinal and Transverse Modulus of a Multiphase Composite,* Journal of Reinforced Plastics and Composites, 21(11): 1017-1027, 2003, USA.

19. R. Sharma, S. Ranta and A. Ranjan, *Bounds on Elastic Modulus of a Multiphase Composite Bodies,* Journal of Reinforced Plastics and Composites, 23(3): 317-325, 2004, USA.

20. R. Sharma and S. Ranta, *On Simplified Composite Micromechanics Equation and Mixture Rule,* Journal of Reinforced Plastics and Composites, 23(14): 1465-1472, 2004, USA.

21. R. Sharma, R.G. Shandil, S. Devi and M. Dutta, *Some Inequalities between Moments of Probability Distributions*, Journal of Inequalities in Pure and Applied Mathematics, 5(4): 1-12, 20014, Australia.

22. R. Sharma, S. Ranta and A. Ranjan, *On Inverse Mixture Rule of Multiphase Composite Bodies,* Journal of Reinforced Plastics and Composites, 24(7): 2005, USA.

23. R. Sharma, *Some More Inequalities for Arithmetic Mean, Harmonic Mean and Variance,* Journal of Mathematical Inequalities, 2(1): 109-114, 1008, Croatia.

24. R. Sharma, R.G. Shandil, G. Kapoor, S. Devi and N.S. Barnett, *Some bounds on the sample variance in terms of the mean and extreme values,* Advances in inequalities from probability theory and statistics, Edited by N.S. Barnett and S.S. Dragomir and published by "Nova Publication", (2008), Australia.

25. R. Sharma, A. Kaura, M. Gupta and S. Ram, *Some bounds on sample parameters with refinements of Samuelson and Brunk inequalities*, Journal of mathematical inequalities, 3(1): 99-106, 2009, Croatia.

26. R. Sharma, S. Ram and S. Devi, *Some inequalities for the ratio and difference of moments*, International journal of theoretical and applied sciences, 1(1): 103-110, 2009, India**.**

27. R. Sharma, S. Devi, G. Kapoor, S. Ram and N.S. Barnett, *A brief note on some bounds connecting lower order moments for random variables defined on a finite interval*, International Journal of theoretical and applied sciences, 1(2): 83-85, 2009, India.

28. R. Sharma, G. Kapoor and M. Gupta, *Some better bounds on the variance with applications*, Journal of Mathematical inequalities, 4(3), 355-363, Croatia.

29. R. Sharma and M.Gupta, *Stress strain distribution and elastic moduli: multiphase composite bodies*, International J. of Math. Sci. & Engg. Appls., 4(4): 405-411**,** 2010, India.

30. R. Sharma and R. Bhandari, *On Some Kantorovich type inequalities and their applications*, Journal of Combinatorics, Information & System Sciences, 35(3-4): 459-470, 2010, India.

31. R. Sharma and P.L. Sharma, *A note on inequalities between the moments*, International Journal of theoretical and applied sciences, 2(2): 30-33, 2010, India.

32. R. Sharma and M. Gupta, *On some inequalities involving harmonic mean and moments*, Recent advances in continuum mechanics & algebra. Regal publication-New-Delhi, 2011, India.

33. R. Sharma and R. Bhandari, *On inequalities involving positive definite matrices and its extreme eigenvalues*, Recent advances in continuum mechanics & algebra. Regal publication-New-Delhi, 2011, India.

34. R. Sharma A. Thakur and R. Bhandari, *On covariance bounds related to discrete gruss type inequalities*, International J. of Math. Sci. & Engg. Appls., 5(2): 287--301 2011, India.

35. R. Sharma, R. Bhandari and A. Thakur, *Some bounds for integrals with refinements of the gruss inequality*, Indian journal of pure and applied mathematics, 42(3): 187-202, 2011, India.

36. R. Sharma, R.G. Shandil and G. Kapoor, *A note on Karl Pearson's coefficient of dispersion*, Journal of H.P. University, 1(1): 147-149, 2011, India.

37. R. Sharma, *On Jensen's inequality for positive linear functionals*, International J. of Math. Sci. & Engg. Appls.,5(5): 263-271, 2011, India.

38. R. Sharma and A. Thakur, *Inequalities related to variance of complex numbers*, Journal of inequalities and special functions, 2(1):8-15, 2011, Kosovo.

39. R. Sharma and A. Thakur, *On Inequalities involving first three moments*, International Journal of Mathematics and Scientific Computing, 1(1): 43-47, 2011, India .

40. R. Sharma and P.L. Sharma, *Some optimization problems related with inequalities between the moments*, Bulletin of pure and applied sciences, 30(1):135-144, 2011, India.

41. R. Sharma and P.L. Sharma, *Some optimization problems involving moments of discrete random variables*, International Journal of Theoretical and Applied Science, 3(2): 88-90, 2011, India.

42. R. Sharma and P.L. Sharma, *On optimization problems and inequalities involving three moments.* Int. J. of Mathematical Sciences and Applications, 2(1):245-249,

2012, India.

43. P.L. Sharma, R. Sharma and A. Thakur, *A note on inequalities involving moments of a discrete random variable*, International J. of Math. Sci. & Engg. Appls., 6(2): 133-143 2012, India.

44. R. Bhatia and R. Sharma, *Some more inequalities for positive linear maps*, Linear Algebra and Applications, 436 , 1562--1571, 2012, USA.

45. R. Sharma, R. Bhandari and M. Gupta, I*nequalities related to the Cauchy-Schwarz inequality,* Sankhya: The Indian Journal of Statistics, Series A, 74-A(1), 101-111, 2012, India.

46. R. Sharma and A. Thakur, *More inequalities for positive linear maps*, Journal of Mathematical Inequalities, 7(1),  1-9, 2013**,** Croatia.

47. R. Sharma and R. Kumar, *Remark on upper bounds for the spread of a matrix*, Linear Algebra and Applications, 438 , 4359-4362, 2013, USA.

48. R. Sharma and A. Thakur, *A Refinement of the Gruss inequality for positive linear functional, J. Of Combinatorics, Information & System Sciences, 38, 203-217, 2013, India.*

49. R. Sharma and R. Bhandari, *On bounds for moments of unimodal distributions*, Communications for Statistical Applications and Methods, 21, 201-212, 2014, Korea.

50. R. Bhatia and R. Sharma, Positive linear maps and spreads of matrices, *Amer. Math. Monthly,* 12, 619-624, 2014, USA.

51. R. Sharma and R. Bhandari, *On variance upper bounds for unimodal distributions*, Communications in Statistics-Theory and Methods, (In Press) UK**.**

52. R. Sharma and R. Saini, Generalisation of Samuelson's inequality and location of eigenvalues, *Proc. Indian Acad. Sci. (Math. Sci.)*, (In Press) India.

53. R. Sharma and R. Bhandari, Skewness, kurtosis and Newton's inequality, *Rocky Mountain Math. J., (*In Press), USA.

54. R. Sharma and R. Kumar, *On inequalities involving eigenvalues and traces of Hermitian matrices*, Annals of Functional Analysis, (In Press) Iran.