

Short CV

Jamshid Moori

January 28, 2009

1 Personal Details

Date of Birth	21 March 1945
Citizenship	South African.
Present Position	Senior Professor Level 7
Work Address	School of Mathematical Sciences University of KwaZulu-Natal, Private Bag X01, Scottsville, Pietermaritzburg 3209, South Africa
Marital Status	Married, three children
Telephone Numbers	033-2605649 [Work] 033-3473265 [Home]
Facsimile	033-2605648
Electronic Mail	moori@ukzn.ac.za
Web Page	http://saturn.cs.ump.ac.za/~jamm/moori.html

2 Education and Qualifications

Diploma in Mathematics	1961-1964, Nowrooz High School, M. I. S, Iran.
BSc in Mathematics	1967-1971, University of Meshed, Iran. Summa Cum Laude.
MSc in Mathematics	1972-1973, University of Birmingham, England. Supervisor: Prof D Livingstone.
PhD in Mathematics	1973-1975, University of Birmingham, England. Supervisor: Prof D Livingstone.

3 Positions Held (Summary)

1970-1971	Mathematics Tutor, Student Assistant, Pre-University College, University of Meshed, Iran.
1975-1979	Assistant Professor in Mathematics, University of Jundi- Shahpur, Ahwaz, Iran.

1977–1979	Head of Dept of Mathematics, University of Jundi-Shahpur, Ahwaz, Iran.
1979–1980	Post-Doctoral, Department of Pure Mathematics, University of Birmingham, England.
1980–1983	Research Fellow, Department of Pure Mathematics, University of Birmingham, England.
1983–June 1985	Senior Lecturer in Mathematics, University of Bophuthatswana, South Africa.
1985–June 1989	Professor and Head, Department of Mathematics, University of Bophuthatswana.
1986–1987	Deputy Dean of Science, University of Bophuthatswana.
1989 (July)–1996	Professor (Full) of Mathematics, University of Natal, Pietermaritzburg, South Africa.
1997–present	Professor (Level 7) of Mathematics, University of Natal, Pietermaritzburg, South Africa.
1993(June)–1994(Feb.)	Acting Head, Department of Mathematics and Applied Mathematics, University of Natal, Pietermaritzburg.
1994(July)–1999(June)	Head, Department of Mathematics and Applied Mathematics, University of Natal, Pietermaritzburg.
1999(July)–present	Director of Mathematics Programme, School of Mathematics, Statistics and Information Technology.
2001	Deputy Head of School, School of Mathematics, Statistics and Information Technology.
2006 (July)–present	Honorary Senior Research Fellow, School of Mathematics, University of Birmingham, England.

4 Sabbatical Leaves

1979 (July)– 1980 (July)	University of Birmingham, UK.
1987	Universities of Birmingham and Warwick, UK (research and teaching).
1995 (January-July)	Universities of Birmingham and Warwick, UK (2 months); University of Central Florida, USA (one week); University of Illinois at Chicago, USA (one week); University of Nebraska-Lincoln, USA (5 weeks); RWTH, Aachen, Germany (3 months).
1998 (July–December)	University of Birmingham, UK (one month); Michigan State University, USA (4.5 months, research and teaching); Clemson University, USA (one week).
1999 (Sept - December)	University of Birmingham, UK (research and teaching).
2003 (July - December)	Universities of Birmingham and Warwick, UK.
2006 (July - December)	Universities of Birmingham and Warwick, UK (research and teaching).

5 Teaching Experience

I have taught various courses at under-graduate, honours and post-graduate levels in UK, Iran, USA and South Africa. For under-graduate and service courses, class sizes varied from less than ten to large classes of up to 350 students.

- **Under-graduate Courses:** Abstract Algebra; Advanced Calculus; Calculus; Complex Analysis; Discrete Mathematics, Galois Theory; Group Theory; Linear Algebra; Linear Transformations; Number Theory; Real Analysis; Ring Theory; Theory of Differential Equations.
- **Honours and Post-graduate Courses:** Finite Simple Groups; Further Linear Algebra; Further Group Theory; Permutation and Linear Groups; Representation Theory of Finite Groups; Rings and Modules.
- **Service Courses :** Linear Algebra; General Mathematics; Differential and Integral Calculus for Engineers; Differential and Integral Calculus for Life Sciences; Algebra and Number Theory, and Discrete Mathematics for Computer Sciences; Quantitative Methods for Commerce and Finance.

6 Research Interest

- Finite Groups, Simple Groups and Sporadic Simple Groups.
- Representation Theory of Finite Groups, Character Tables of Extension Groups, Clifford-Fischer Matrices, Presentations of Group Extensions.
- Application of Finite Groups to Combinatorial Designs and Finite Geometries.

7 Editorial Boards of Scientific Journals

- Associate Editor: Bulletin of Iranian Mathematical Society.

Reviewer

Acting as a Reviewer for the Mathematical Reviews, a publication of the American Mathematical Society.

8 Referee for Scientific Journals

- Ars Combinatoria;
- Applicable Algebra in Engineering, Communication and Computing
- Bulletin of Iranian Mathematical Society;

- Communications in Algebra;
- Designs, Codes and Cryptography;
- Discrete Applied Mathematics;
- Journal Acta Mathematica et Informatica Universitatis Ostraviensis;
- Journal of Algebra;
- Journal of Applied Mathematics and Computing;
- Journal of Computing and Mathematics (London, Math Soc.);
- Journal of Combinatorial Mathematics and Combinatorial Computing;
- Journal of Group Theory;
- Journal of Science of the University of Tehran;
- Korean J of Computational and Applied Mathematics;
- Kumamoto Journal of Mathematics;
- London Mathematical Society Lecture Notes Series;
- Mathematica Japonica;
- Quaestiones Mathematicae;
- Utilitas Mathematica.

9 Some Relevant Publications

Complete list is given in the Publications List (see attached).

1. On certain groups associated with the smallest Fischer group, *J. of London Math. Soc.*,(2), 23(1981), 61–67. (MR 82g:20041)
2. The automorphism group of the group $D_4(2)$, *J. of Algebra*, 80(1983), 216–225. (MR 84i:20038)
3. Generating sets for F_{22} and its automorphism group, *J. of Algebra*, 159 (1993), 488–499. (MR 95c:20025)
4. Subgroups of 3-transposition groups generated by four 3-transpositions, *Quaestiones Mathematicae*, 17 (1994), 83–94. (MR 95d:20032)
5. (p, q, r) -Generations for the Janko groups J_1 and J_2 , *Nova Journal of Algebra and Geometry*, 2 (1993), 277–285. (MR 95e:20026a)
6. $(2, 3, p)$ -Generations for the Fischer group F_{22} , *Communications in Algebra*, 22 (1994), 4597–4610. (MR 95e:20026b)

7. $(2, 3, t)$ -Generations of the Janko group J_3 , *Communications in Algebra*, 23(1995), 4427–4437. (With M S Ganief). (MR 96f:20021)
8. rX -Complementary generations for the Janko groups J_1, J_2 and J_3 , *Communications in Algebra*, 24(1996), 809–820. (With M S Ganief). (MR 96k:20026)
9. On the ranks of the Fischer group F_{22} , *Mathematica Japonica*, 43(1996), 365–367. (MR 97a:20025)
10. (p, q, r) -Generations and nX -complementary generations of the sporadic groups HS and McL , *J. of Algebra*, 188(1997), 531–546. (With M S Ganief). (MR 97k:20030)
11. (p, q, r) -Generations of the smallest Conway group Co_3 , *J. of Algebra*, 188(1997), 516–530. (With M S Ganief). (MR 97k:20029)
12. 2-Generations of the smallest Fischer group F_{22} , *Nova Journal of Algebra and Geometry*, 6(1997), 127–145. (With M S Ganief). (MR 98h:20025)
13. 2-Generations of the Conway groups Co_2 and Co_3 , *J. of Group Theory*, 3(1998), 237–256. (With M S Ganief). (MR 99f:20025)
14. 2-Generations of the fourth Janko group J_4 , *J. of Algebra*, 212(1999), 305–322. (With M S Ganief). (MR 99m:20025)
15. The centralizer of an involutory outer automorphism of F_{22} , *Mathematica Japonica*, 49 (1999), 93–113. (With Z E Mpono). (MR2000a:20013)
16. Fischer-Clifford matrices of the group $2^6:SP(6, 2)$, *Quaestiones Mathematicae*, 22(1999), 257–298. (With Z E Mpono). (MR2001a:20027)
17. Fischer-Clifford matrices and the character table of a maximal subgroup of $Aut(F_{22})$, *Int. J. Math. Game Theory and Algebra*, 10(2000), 1–12. (With Z E Mpono). (MR2001b:20023)
18. On the spread of the sporadic simple groups, *Communications in Algebra*, 29 (2001), 3239–3255. (With M S Ganief). (MR2002i:20025)
19. On Frattini Extensions, *Scientiae Mathematicae Japonicae on line*, 5 (2001), 121–127. *Scientiae Mathematicae Japonicae*, 55 (2002), 215–221. (With B Rodrigues). (MR2002m:20046)
20. Designs, codes and graphs from the Janko groups J_1 and J_2 , *J. Combin. Math. & Combin. Comput*, 40 (2002), 143 – 159. (With J D Key). (MR2002m:05035).
21. Fischer-Clifford matrices and character table of a maximal subgroup of F'_{24} , *Representation Theory*, 7 (2003), 300 – 303. (With F Ali). (MR2004i:20023).

22. On some designs and codes from primitive representations of some finite simple group, . *J. Combin. Math. & Combin. Comput*, 45 (**2003**), 3–19. (With J D Key and B Rodrigues). (**MR2004m:94094**).
23. Permutation decoding for binary codes from triangular graphs, *European J. Combin*, 25 (**2004**), 113-123. (With J D Key and B Rodrigues). (**MR2005c:94086**).
24. Binary codes from graphs on triples, *Discrete Mathematics*, 282 (**2004**), 171–182. (With J D Key and B Rodrigues). (**MR2005b:94054**).
25. A self-orthogonal doubly even code invariant under the $M^cL : 2$ group, *J. Comb. Theory, Series A*, 110 (**2005**), 53–69. (With B Rodrigues).
26. Some binary codes from symplectic geometry of odd characteristic, *Utilitas Mathematica*, 67 (**2005**), 121-128. (With J D Key and B Rodrigues).
27. Fischer-Clifford matrices and character table of the group $2^8 : Sp_6(2)$, *Int. J. Math. Game Theory and Algebra*, 14 (**2004**), 101–121. (With F Ali).
28. Fischer-Clifford matrices and character table of the group $2^7 : SP_8(2)$, *Int. J. Math. Game Theory and Algebra*, 14 (**2004**), 123–135. (With F Ali).
29. Permutation decoding for binary codes from graphs on triples, *Discrete Mathematics*, to appear. (With J D Key and B Rodrigues).
30. The permutation actions of the symmetric groups S_n on the groups \mathbb{Z}_m^n and $\overline{\mathbb{Z}_m^n}$, *Quaestiones Mathematica*, 28 (**2005**), 179–193. (With K Zimba).
31. Binary codes from graphs on triples and permutation decoding, *Ars Combinatoria*, 79 (**2006**), 11–19. (With J D Key and B Rodrigues).
32. Fischer-Clifford matrices of $B(2, n)$, *Quaestiones Mathematica*.29 (**2006**), 9–37. (With K Zimba).
33. On the exact spread of the sporadic simple groups, *Communications in Algebra*, 35(8) (**2007**), 2588–2599. (With J Bradley).
34. Some designs and codes invariant under the simple group Co_2 , *J. of Algebra*, 316 (**2007**), 649–661. (With B Rodrigues).
35. On the affine subgroup of the symplectic group, *Far East J. Math. Sci*, to appear. (With B Rodrigues).

10 Invited Lectures

This list excludes conference papers (see Full CV)

- 1976: University of Meshed, Iran (*Sporadic Simple Groups*).

- 1979: University of Birmingham, England (*3-Transposition Groups*).
- 1981: University of Milan, Italy (a series of lectures on *3- Transposition groups* and *Steiner Triple Systems*).
- 1981: University of Naples, Italy (a series of talks on the *Character Tables of the Maximal subgroups of F_{22}*).
- 1987: University of Birmingham, England (*Action Tables for \bar{F}_{22}*).
- 1987: University of Warwick, England (*Action Tables for \bar{F}_{22}*).
- 1989: University of Natal, Durban, South Africa (*Classification of Finite Simple Groups*).
- 1994: University of the Western Cape, South Africa (15 lectures on the *Representation theory of Finite Groups*).
- 1994: University of the Western Cape, South Africa (10 lectures on the *Fischer-Clifford Matrices and Group Extensions*).
- 1995: RWTH, Aachen, Germany (*Generations of Finite Simple Groups*).
- 1995: University of Nebraska, Lincoln, USA (*Fischer-Clifford Matrices and Group Extensions*).
- 1998: Michigan State University, East Lansing, USA (6 lectures on *Fischer-Clifford Matrices and (p,q,r) -Generations of Finite Simple Groups*).
- 1998: Clemson University, South Carolina, USA (*2-Generations of Finite Simple Groups*).
- 1999: University of Birmingham, UK (5 lectures on *(p,q,r) -Generations of Finite Simple Groups and Fischer-Clifford Matrices*).
- 2000: University of Durban-Westville, South Africa (*2-Generations of Finite Simple Groups*).
- 2002: St. Charles College, Pietermaritzburg, South Africa (*The Nature of Mathematics*).
- 2002: Florida Atlantic University, Boca Raton, USA (*Finite Simple Groups: a Short History, Classification, and Recent Developments*).
- 2003: University of Birmingham, UK (3 lectures on *Fischer-Clifford Theory, General and Special cases*).
- 2003: University of Birmingham, UK (Pure Mathematics Colloquia: *Designs and Codes from Primitive Representations of Finite Simple Groups*).
- 2003: University of Warwick, UK (Algebra Seminar: *Fischer-Clifford Theory*).

- 2003: University of Warwick, UK (Algebra Seminar: *Designs and Codes from Finite Groups*).
- 2005: AIMS, African Institute for Mathematical Sciences, Cape Town, South Africa (11 lectures on *Finite Groups and Representation Theory* with 9 *tutorial and GAP practical sessions*)

11 Research Grants

- 1979–1980: University of Jundi-Shahpur Sabbatical Grant, *Post Doctoral Research, University of Birmingham*.
- 1982: CNR Italy Visiting Professorship, *Visited Universities of Milan and Naples (May-September)*.
- 1985–1986: University of Bophuthatswana Research Fund (R3400), *Classification of the Steiner Triple Systems*.
- 1987: University of Bophuthatswana Sabbatical Grant, *Universities of Birmingham and Warwick*.
- 1987: Special Category Research Grant, University of Bophuthatswana (R8000), *Documentations of the Geometries of Finite Groups*.
- 1988: University of Bophuthatswana Research Fund (R1200), *Computations in Finite Simple Groups*.
- 1990: New Staff Research Fund, University of Natal (R10460), *Fischer-Clifford Matrices of Certain Finite Groups*.
- 1991: University of Natal Research Fund (R2900), *Computations in Finite Groups and Steiner Triple Systems*.
- 1992: University of Natal Research Fund (R5000), *Subgroups of 3-Transposition Groups*.
- 1993: University of Natal Research Fund (R11000), *(2,3,p)-Generations for the Fischer Group F_{22}* .
- 1994: University of Natal Research Fund (R18000), *Character Tables of Extension Groups*.
- 1995: University of Natal Research Fund (R11000), *(p,q,r)-Generations of Finite Groups*.
- 1995: DAAD, German Academic Exchange Service (DM10500), *Three months scholarship for research visit to RWTH, Aachen (May-July)*.
- 1996: Foundation for Research and Development (R55000), *Computer Algebra and Computational Group Theory*.

- 1996: University of Natal Research Fund (R15100), *Clifford–Fischer Matrices and Group Extensions*.
- 1997: Foundation for Research and Development (R49500), *Finite Groups and Representation Theory*.
- 1997: University of Natal Research Fund (R12500), *Computations in Finite Groups*.
- 1998: Foundation for Research and Development (R49000), *Finite Groups and Representation Theory*.
- 1998: University of Natal Research Fund (R20500), *Computations in Finite Groups*.
- 1999: Foundation for Research and Development (R45000), *Finite Groups and Representation Theory*.
- 1999: University of Natal Research Fund (R23000), *Clifford–Fischer Matrices and Group Extensions*.
- 2000: National Research Foundation (R67000), *Finite Groups and Representation Theory*.
- 2000: University of Natal Research Fund (R18000), *Clifford–Fischer Theory and Group Extensions*.
- 2001: National Research Foundation (R74000), *Finite Groups, Designs and Codes*.
- 2001: University of Natal Research Fund (R28625), *Clifford–Fischer Theory and Group Extensions*.
- 2002: National Research Foundation (R141000), *Finite Groups, Designs and Codes*.
- 2002: University of Natal Research Fund (R26000), *Representation Theory, Finite Groups and Combinatorial Structures*.
- 2003: National Research Foundation (R104000), *Finite Groups, Designs and Codes*.
- 2003: University of Natal Research Fund (R45000), *Publications Pay-Out and PhD students for 2002*.
- 2004: National Research Foundation (R104000), *Finite Groups, Designs and Codes*.
- 2004: University of KwaZulu-Natal Research Fund (R16600), *Publications Pay-Out for 2003*.

- 2005-2009: National Research Foundation (R825000.00), *Finite Groups and Combinatorial Structures Designs and Codes*.
- 2005: University of KwaZulu-Natal Research Fund (R24000), *Publications Pay-Out for 2004*.
- 2006: University of KwaZulu-Natal Research Fund (R64000), *Publications Pay-Out for 2005*.
- 2007: University of KwaZulu-Natal Research Fund (R38500), *Publications Pay-Out and PhD students for 2006*.
- 2008: University of KwaZulu-Natal Research Fund (R36000), *Publications Pay-Out and PhD students for 2007*.

In addition to the above research grants I also obtained various grants for my postgraduate students from NRF (FRD) Open Programme, NRF (FRD) Development Programme, DAAD (Germany), Anglo American (South Africa) and Anglo American (Angola).

12 Recent Collaborators

- M S Ganief (UWC, South Africa)
- JD Key (Clemson, USA)
- Z E Mpono (UNISA, South Africa)
- B Rodrigues (UNP, South Africa).
- F Ali (Lahour University, Pakistan)
- K Zimba (University of the North, South Africa)
- J Bradley (University of Birmingham, UK).

13 Membership of Societies

- London Mathematical Society, since 1978.
- American Mathematical Society, since 1983.
- South African Mathematical Society, since 1983.

14 Honours Projects Completed

- 1993, University of Natal: Mr J M Aitken: *A modular approach to the representation theory.*
- 1994, University of Natal: Mrs I Swart: *A method of constructing the Mathieu groups.*
- 1997, University of Natal: Mr B Rodrigues: *Problems on groups and representations.*
- 2008, University of KwaZulu-Natal: Mr M Laamir: *General linear groups and the simplicity of $PSL(n, q)$.*

15 Postgraduate Diplomas Completed

- 2006: African Institute of Mathematical Sciences (AIMS, Cape Town): Mr A Basheer: Essay: *Representation theory of finite groups.*

16 MSc Candidates Completed

- 1975–1979, University of Jundi-Shahpur (MSc by examination):
 - Mr M R Khadivi
 - Mr A M Aminpour
 - Mr A A Kochehpour.
- 1994, University of Natal: Miss N S Whitley: Thesis: *Fischer matrices and character tables of group extensions.*
- 1999, University of Natal: Mr B Rodrigues: Thesis: *On the theory and examples of group extensions.*
- 2008 (submitted), University of KwaZulu-Natal: Mr A B M Basheer: Thesis: *Character tables of general linear group and some of its associated groups.*

17 PhD Candidates Completed

- 1996: M S Ganief, University of Natal: 2-Generations of the sporadic simple groups.
- 1997: E Z Mpono, University of Natal: Fischer-Clifford theory and character tables of group extensions.
- 2001: F Ali, University of Natal: Fischer-Clifford matrices for split and non-split group extensions.

- 2003: B Rodrigues, University of Natal: Codes of Designs and Graphs from Finite Simple Groups.
- 2005: Zimba, PhD, University of KwaZulu-Natal: Fischer-Clifford matrices of the generalised symmetric group and some associated groups.

18 Current Postgraduate Students

- Mr T Seretlo, PhD, since 2007.
- MrA B M Basheer, PhD, since 2009.
- Mrs Lucy W Chikamai, PhD, since January 2008 (co-supervisor: Dr B Rodrigues)
- Mr P Perumal, MSc, since August 2008.