466

Fractional Calculus & Applied Analysis
An International Journal for Theory and Applications
VOLUME 12, NUMBER 4 (2009) ISSN 1311-0454

PROF. MOURAD E.H. ISMAIL – BIOGRAPHICAL DATA

Personal data: Born April 27, 1944, in Cairo, Egypt.
Canadian and Egyptian citizen, permanent resident in the United States

Education:
Ph.D. 1974 (Alberta), M.Sc. 1969 (Alberta), B.Sc. 1964 (Cairo).

Affiliation: Department of Mathematics, University of Central Florida, Orlando, FL 32816 – USA

Web-page: http://shell.cas.usf.edu/~ismail/

Research Interests: approximation theory, asymptotics, combinatorics, integral transforms and operational calculus, mathematical physics, orthogonal polynomials and special functions.

Editorial Boards:

1. *Constructive Approximation*, Springer-Verlag, 1988 - present.
2. *Encyclopedia of Mathematics*, Cambridge University Press, 1992 -present.
3. *Journal of Approximation Theory*, formerly published by Academic Press and now by Elsevier, 2000 - present.
4. *Journal of Physics A: Mathematical and General*, 2001-2004.
5. *The Ramanujan Journal*, formerly published by Kluwer and now by Springer-Verlag , 1996 - present.
6. *Methods and Applications of Analysis*, International Press, 1992-1999.
7. *International Journal of Mathematics and Mathematical Sciences*, 1993 - 2008.
8. *J. of Computational Analysis and Applications*, Plennum, 1998 - 2008.
9. *The Indian Journal of Mathematics*, 1997 - present.
10. *Fractional Calculus and Applied Analysis*, 1998 - present.
11. *The Egyptian Journal of Mathematics*, 2003 - present.
12. Collaborating Problem Editor, *American Math. Monthly*, 1992-1997.

Honors and Awards:

- Undergraduate Merit Scholarship, Cairo University 1960-1964;
- Dissertation Fellowship, University of Alberta, 1973-1974;
- Theodore and Venette Askounes-Ashford Distinguished Scholar Award University of South Florida, 1992-1993.
- Leverhulme research fellow, Imperial College, London, 1996.
- University visiting research professorship, City University of Hong Kong, 2000-2001.
- USF Presidential Excellence Award (= 10 % raise), 2003.
- Listed among the highly cited: *www.isihighlycited.com*
- Elected fellow of the Institute of Physics, December 2004.
- Elected fellow of the European Society of Computational Mathematics in Science and Engineering.

Visiting Positions:

2008	Von Neumann Professor, the Technical University of Munich, Munich, Germany, June&July
2008	Visiting Scholar, Hong Kong U of Sc. and Tech., May & June
2006	Visiting Scholar,City University of Hong Kong, May & June
2002	Visiting Scholar, Hong Kong U of Sc. and Tech., May & June
2000-2001	Visiting university professor, City University of Hong Kong
1999	Visiting member, Mat. Sc. Res. Inst., Berkeley, three months.
1996	Visiting Professor and Leverhulme research fellow, Imperial College, London
1990-1991	Adjunct Professor, University of Toronto
1990	Visiting Professor, University of Paris VII (10 weeks in the summer)
1988	Visiting Professor, National University of Colombia (1 month)
1987-1990	Adjunct Professor, York University
1987	Visiting Professor, University of Alberta (1 month in the summer)
1986	Visiting Professor, University of Paris VII (10 weeks in the summer)
1984-1985	Visiting Professor, University of Minnesota, Minneapolis
1982	Visiting Professor, Kuwait University (winter and summer semesters)
1976	Visiting Scholar, Mathematics Research Center University of Wisconsin, Madison
1975-1976	Visiting Lecturer and Res. Associate, University of Toronto
1974-1975	Assistant Scientist, Dept. of Mathematics and Mathematics Research Center, University of Wisconsin, Madison

Master's Students:

1. Richard Ruedemann, Arizona State University, August 1987.
Thesis title: "Positivity Results in Combinatorics".
2. Ruiming Zhang, Arizona State University, August 1987.
Thesis title: "The Hellmann-Feynman Theorem and Zeros of Special Functions".
3. David Milligan, University of South Florida, December 1997,
Thesis title: "How Mathematics Aids Engineering and Engineering stimulates Mathematics and an Example Involving Fuel Spray".
4. David Wallace, University of Central Florida, July 2005,
Thesis title: "The Hellmann-Feynman Theorem".

Doctoral Students:

1. Edward Bank, Arizona State University, April 1984.
Dissertation title: "Pollaczek Polynomials and Functions".
2. Jairo Charris, Arizona State University, August 1984.
Dissertation title: "Sieved Pollaczek and Random Walk Polynomials".
3. Li-Chen Chen, University of South Florida, August 1989.
Dissertation title: "On Asymptotics of Certain Hypergeometric Functions and 6 - j Symbols".
4. Richard Ruedemann, University of South Florida, August 1992.
Dissertation title: "Relation Between Polynomials Orthogonal on the Unit Circle With Respect to Different Weights".
5. Ruiming Zhang, University of South Florida, April 1993.
Dissertation title: "Some Formulas of W. Gosper and Spectral Properties of Certain Operators in Weighted Spaces".
6. Jifeng Ma, University of South Florida, May 1997.
Dissertation title: "Spectrum of Some Integral Operators"
7. Zeinab Mansour, Co-supervisor with Mahmoud Annaby, Cairo University, January 2006
Dissertation title: "q-Di_erence Equations"
8. Jemal Gishe, University of South Florida, July 2006.
Dissertation title: "A Finite Family of q-Orthogonal Polynomials and Resultants of Chebyshev Polynomials".

LIST OF PUBLICATIONS of MOURAD E.H. ISMAIL

Journal articles (some selection of more than 250 items)

1. Product formulas for q-Hahn polynomials, SIAM J. Math. Anal. 11 (1980), 100-107.
2. Some q-Krawtchouk polynomials on Chevalley groups, Amer. J. Math. 102 (1980), 625-662.
3. A short proof of a generating function for Jacobi polynomials, Proc. AMS 80 (1980), 398-400.

4. Some Erdes-Ko-Rado theorems for Chevalley groups, SIAM J. Alg. Disc. Meth. 1 (1980), 160-163.
5. Three addition theorems for some q-Krawtchouk polynomials, Geom. Ded. 10 (1981), 403-425.
6. A partially ordered set and q-Krawtchouk polynomials, J. Comb. Th. A 30 (1981), 276-284.
7. Strange evaluations of hypergeometric series (with I. Gessel), SIAM J. Math. Anal. 13 (1982), 295-308.
8. Coefficients in expansions of certain rational functions (with R. Evans and M. Ismail), Can. J. Math. 34 (1982), 1011-1024.
9. Generalized n-gons and Chebychev polynomials, J. Comb. Th. A 34 (1983), 15-27.
10. Applications of q-Lagrange inversion to basic hypergeometric series (with I. Gessel), Trans. AMS 277 (1983), 173-202.
11. An upper bound for the cardinality of an *s*-distance subset in real Euclidean space (with E. Bannai and E. Bannai), Combinat. 3 (1983), 147-152.
12. Group actions on Stanley-Reisner rings and invariants of permutation groups (with A. Garsia), Adv. in Math. 51 (1984), 107-201.
13. Asymptotic formulas for zero-balanced hypergeometric series (with R. Evans), SIAM J. Math. Anal. 15 (1984), 1010-1020.
14. Modularly complemented lattices and shellability (with M. Wachs), Cont. Math. 34 (1984), 197-206.
15. Short proofs of Saalschutz's and Dixon's theorems (with I. Gessel), J. Comb. Th. A 38 (1985), 87-90.
16. A Schensted algorithm for rim-hook tableaux (with D. White), J. Comb. Th. A 40 (1985), 211-247.
17. Harmonics on posets, J. Comb. Th. A 40 (1985), 136-149.
18. Another infinite family of q-Lagrange inversion formulas (with I. Gessel), Rocky Mountain J. Math. 16 (1986), 373-384.
19. The triplication formula for Gauss sums (with J. Greene), Aequationes Math. 30 (1986), 134-141.
20. A character sum evaluation and Gaussian hypergeometric series (with J. Greene), J. Number Th. 23 (1986), 136-148.
21. Sign variations of the Macdonald identities, SIAM J. Math. Anal. 17 (1986), 1454-1460.
22. The combinatorics of the q-Hermite polynomials and the Askey-Wilson integral (with M. Ismail and G. Viennot), Eur. J. Comb. 8 (1987), 379-392.
23. On the Askey-Wilson and Rogers polynomials (with M. Ismail), Can. J. Math. 40 (1988), 1025-1045.
24. Association schemes and quadratic transformations for orthogonal polynomials (with L. Chihara), Graphs and Combinatorics 2 (1986), 101-112.
25. t-designs in classical association schemes, Graphs and Combinatorics 2 (1986), 283-286.

26. Bijective proofs of basic hypergeometric series identities (with J. Joichi), Pac. J. Math. 127 (1987), 103-120.
27. An involution for Jacobi's identity (with J. Joichi), Discrete Math., 73 (1989), 261-271.
28. Zeros of generalized Krawtchouk polynomials (with L. Chihara), J. Approx. Th. 60 (1990), 43-57.
29. Unimodality and Young's lattice, J. Comb. Th. A 54 (1990), 41-53.
30. The combinatorics of the z^{AB} theorem (with D. White), Disc. Math. 83 (1990), 105-114.
31. The Odlyzko conjecture and O'Hara's unimodality proof (with D. Zeilberger), Proc. AMS 107 (1989), 39-43.
32. More zeros of Krawtchouk polynomials (with L. Habsieger), Graphs and Combinatorics 9 (1993), 163-172.
33. Sieved partition functions and q-binomial coefficients (with F. Garvan), Math. Comp. 55 (1990), 299-311.
34. Cranks and t-cores (with F. Garvan and D. Kim), Inv. Math. 101 (1990), 1-17.
35. A unimodality identity for Schur functions (with F. Goodman and K. O'Hara), J. Comb. Th. A 60 (1992), 143-146.
36. An algorithmic involution for p(n) (with J. Joichi), J. Algorithms 15 (1993), 223-228.
37. Specializations of generalized Laguerre polynomials (with R. Simion), SIAM J. Math. Anal. 25 (1994), 712-719.
38. The combinatorics of q-Charlier polynomials (with A. de Medicis and D. White), J. Comb. Th. A, 69 (1995), 87-114.
39. Octabasic Laguerre polynomials and permutation statistics (with R. Simion), J. Comp. Appl. Math. 68 (1996), p. 297-329.
40. More monotonicity theorems for partitions (with J. Friedman and J. Joichi), Experimental Math. 3 (1994), 31-37.
41. A matrix equation for association schemes (with L. Chihara), Graphs and Combinatorics 11 (1995), 103-108.
42. Combinatorial orthogonal expansions (with A. de Medicis), PAMS, 124 (1996), 469-473.
43. Classical orthogonal polynomials as moments (with M. Ismail), Can. J. Math. 49 (1997), 520-542.
44. Unimodality of differences of specialized Schur functions (with V. Reiner), J. Alg. Comb.7 (1998), 91-107.
45. Rim hook lattices (with S. Fomin), St. Petersburg Math. J. 9 (1998), 1007-1016.
46. Determinants in plane partition enumeration (with G. Andrews), Eur. J. Comb 19 (1998), 273-282.
47. A hypergeometric hierarchy for the Andrews evaluations, Ramanujan J. 4 (1998), 499-509.
48. Lattice paths and positive trigonometric sums (with M. Ismail and D.

Kim), Const. Approx. 15 (1999), 69-81.
49. Quadratic q-exponentials and connection coefficient problems (with M. Ismail and M. Rahman), PAMS 127 (1999), 2931-2941.
50. A convolution formula for the Tutte polynomial (with W. Kook and V. Reiner), J. Comb. Th. B 76 (1999), 297-300.
51. Addition theorems for the q-exponential function (with M. Ismail), Cont. Math., Cont. Math. 254 (2000), 235-245.
52. Combinatorial Laplacians of matroid complexes (with W. Kook and V. Reiner), J. AMS 13 (1999), 129-148.
53. Regular realizations of abstract polyhedra of types {3,6} and {6,3} (with H. Burgiel), J. Disc. Comp. Geom. 24 (2000), 241-255.
54. Simultaneous maj statistics (with D. Kim), Sem. Loth. Comb. 42 B42g (1999), 12 pp.
55. Variants of the Rogers-Ramanujan identities (with T. Garrett and M. Ismail), Adv. Appl Math. 23 (1999), 274-299.
56. Change of base in Bailey pairs (with D. Bressoud and M. Ismail), Ramanujan J. 4 (2000), 435-453.
57. Open positivity conjectures for integer partitions, Trends in Mathematics 2 (1999), 19-25 (electronic).
58. Schur's Determinants and Partition Theorems (with M. Ismail and H. Prodinger), Sem. Loth. Comb. 44 B44a, (2000) 10 pp.
59. q-Integral and Moment Representations for q-Orthogonal Polynomials (with Mourad Ismail), Can. J. Math. 54 (2002), 701-735.
60. The Bailey-Rogers-Ramanujan group, Cont. Math. 291 (2001), 55-70.
61. Applications of q-Taylor theorems (with Mourad Ismail), J. Comp. Appl. Math., to appear.
62. Tribasic integrals and identities of Rogers-Ramanujan type (with Mourad Ismail), TAMS, to appear.
63. Proof of a monotonicity conjecture (with Thomas Prellberg), JCT A, 103 (2003), 377-381.
64. q-Taylor theorems, polynomial expansions, and interpolation of entire functions (with Mourad Ismail), J. Approx. Th., 123 (2003), 125-146.
65. Some positive sums, J. Comp. Appl. Math. 153 (2003), p. 537.
66. The cyclic sieving phenomenon (with V. Reiner and D. White), JCT A 108 (2004), 17-50.
67. The Charney-Davis quantity for certain graded posets (with V. Reiner and V. Welker), Sem. Lothar. Combin. 50 2003-2004.
68. Springer's regular elements over arbitrary fields (with V. Reiner and P. Webb), Math. Proc. Cambridge Philos. Soc. 141 (2006), no. 2, 209-229.
69. Ramanujan Continued Fractions Via Orthogonal Polynomials (with M.

Ismail), Adv. Math. 203 (2006), 170-193. 70. The Combinatorics of the Al-Salam-Chihara q-Charlier Polynomials (with D. Kim and J. Zeng), Sem. Loth. Comb. 42 B54i (2006).
71. Block inclusions and cores of partitions (with B. Olsson), Aequat. Math. 74 (2007), 90-110.
72. Bimahonian distributions (with H. Barcelo and V. Reiner) J. London Math. Soc. (2) 77 (2008), 627-646.
73. q-analogues of Euler's Odd=Distinct Theorem, Ramanujan J, to appear.

Conference Proceedings:
1. Orthogonal Polynomials and Chevalley Groups, Special Functions: Group Theoretic Aspects and Applications, ed. by Askey, Koornwinder, and Schempp, Reidel, 1984, 87-128.
2. Recent results for the q-Lagrange inversion formula, Ramanujan Revisited, ed. by Askey, Berndt, Ramanathan, Rankin, Academic Press, 1988, 525-536.
3. An elementary approach to the Macdonald identities, in q-Series and Partitions, ed. by D. Stanton, IMA Volumes in Mathematics and its Applications, Springer, New York, 1989, pp. 139-149.
4. An introduction to group representations and orthogonal polynomials, Orthogonal Polynomials: Theory and Practice, ed. P. Nevai, Proceedings of NATO-ASI, Columbus, 1990, 419-433.
5. More orthogonal polynomials as moments (with M. Ismail), Mathematical Essays in Honor of Gian-Carlo-Rota, Birkhauser 1998, 377-396.
6. Three statistics for lattice paths (with D. Kim), Proc. Algebraic Methods and q-Special Functions Workshop CRM, CRM Proc. and Lecture Notes 22 (1999), 201-214.
7. Orthogonal polynomials and combinatorics, in Special Functions 2000: Current Perspective and future directions, Kluwer, 2001, 389-410.
8. Gaussian Integrals and the Rogers-Ramanujan identities, in "Symbolic computation, number theory, special functions, physics, and combinatorics, ed. by F. Garvan and M. Ismail, Kluwer, 2001, 255-266.
9. Enumeration and special functions, in Springer LNM volume 1817, ed. E. Koelink and W. van Assche, 2003, p. 137- 165.
10. Summable sums of hypergeometric series, in Theory and Applications of Special Functions, ed. M. Ismail and E. Koelink, p. 401-410, 2005.

Books:
- *Constructive Combinatorics* (with Dennis White), Springer, New York, 1986.
- *q-Series and Partitions* (Editor Mourad E. Ismail), IMA Volumes in Mathematics and its Applications, Vol. 18, Springer, New York, 1989.
- *Invariant Theory and Tableaux* (Editor Mourad E. Ismail), IMA Volumes in Mathematics and its Applications, Vol. 19, Springer, New York, 1989.

- *Mathematical Analysis, Wavelets, and Signal Processing*, Proceedings of an International Conference on Mathematical Analysis and Signal Processing, co-edited with M.Z. Nashed, A.I. Zayed and A.F. Ghaleb, Contemporary Mathematics, Volume 190, American Mathematical Society, Providence, 1995.
- *Special Functions, q-Series and Related Topics*, co-edited with D. Masson and M. Rahman, Fields Institute Communications, Volume 14, American Mathematical Society, Providence, 1997.
- *q-Series From a Contemporary Perspective*, co-edited with D. Stanton, Contemporary Mathematics, Volume 254, American Mathematical Society, Providence, 2000.
- *Special Functions*, co-edited with C. F. Dunkl and R. Wong, World Scientific, 2000.
- *Special Functions 2000, Current Perspectives and Future Directions*, co-edited with J. Bustoz, and S. K. Suslov, Kluwer, Dorchester, 2001.
- *Symbolic Computation, Number Theory, Special Functions, Physics and Combinatorics 2001*, co-edited with F. G. Garvan, Developments in Mathematics, Volume 4, Kluwer, Dorchester, 2001.
- *Special Functions and q-Series*, co-edited with H. Koelink, Developments in Mathematics, Kluwer, 2003.
- *Theory and Applications of Special Functions*: A Volume Dedicated to Mizan Rahman (edited by Mourad E.H. Ismail and Erik Koelink), Springer, ISBN-13: 9780387242316, Publ. 2005.
- *Classical and Quantum Orthogonal Polynomials in One Variable* (by Mourad E.H. Ismail), Cambridge Univ. Press, 2005 / 2009, 726 pp.

Editorial Note:

Many colleagues in our field know well the "big" man and great mathematician and friend Mourad. Many of us experienced and have been impressed by his expertise in wide variety of topics, his big heart and readiness to help, advise and encourage. So, can confess also his numerous pupils and students.

I had many occasions to meet him personally, starting from his visits at conferences in Bulgaria, through various conferences in Arab countries (as Kuwait, Tunisia, etc) and my participation in the NATO Conference on Special Functions, at Arizona State University – USA, 2000.

Personally, and on behalf of the Editorial Board, I would like to thank Professor Mourad Ismail for his valuable service to the journal *"FCAA"* and to wish him on his 65^{th} birthday good health, happiness in family and new great success in research and teaching.

Virginia Kiryakova, Managing Editor *"FCAA"*,
Institute of Mathematics and Informatics – Bulgarian Academy of Sciences