

PROFESSOR ADEREMI OLUYOMI KUKU -----ABRIDGED VITAE.

- I) SOME PERSONAL DETAILS: Born March 20, 1941; Nigerian; Male; Married with four children; USA Permanent Resident (Green Card) since March 2002
- II) ACADEMIC QUALIFICATIONS: B.Sc (Special Honours) Mathematics, University of London, 1965; M.Sc (Maths) University of Ibadan Nigeria (1968); Ph.D (mathematics) University of Ibadan Nigeria (1971).(Ph.D thesis written under Professor H. Bass of Columbia University, N.Y. USA
- II) CURRENT POSITION: William W. S. Claytor Endowed Professor of Mathematics, Grambling State University, Grambling, LA 71245, USA.
- III) PREVIOUS POSITIONS AT UNIVERSITY LEVELS:
- A) POSITIONS HELD IN NIGERIA: Lecturer University of Ife, Nigeria, 1967-68; Lecturer, Senior Lecturer, Reader in Maths, Univ. of Ibadan, Nigeria(1968-1980); Professor of Mathematics, Univ. of Ibadan, 1982-2002); Head, Dept of Maths, Univ. of Ibadan, 1983-1986; Dean, Post-graduate School, University of Ibadan, 1986 -1990; Chairman, Committee of Deans of Post-graduate Schools in Nigerian Universities, 1987 -88.
- B) PERMANENT POSITION HELD OUTSIDE NIGERIA: Professor of Mathematics, International Centre for Theoretical Physics (ICTP) Trieste, Italy. (a United nations Research Centre in Mathematics and Physics under UNESCO) 1995-2003) *Had to retire in 2003 at the UNESCO mandatory age of 62.*
- C) VISITING POSITIONS OUTSIDE NIGERIA: These include: Member Institute of Advanced Study Princeton, NJ, USA, 2003 -2004; Vist, Research Prof, Mathematical Sciences Research Institute (MSRI) Berkeley, CA, USA, 1992, 2004; Vist, Prof, Cornell Univ. Ithaca, NY, USA 1993; Distinguished Vist. Prof. , Miami Univ. Oxford, OH; 2005-06; Vist. Prof, Howard Univ, Washington DC, 1994, Vist. Prof., Univ. of Iowa, Iowa-City, USA, 2007-2008; Vist. Prof. Max Planck Inst .fur Math, Bonn, Germany 1994, 2007; Vist. Prof. Ohio State Univ. Columbus, OH, USA, 2005. Vist. Prof, IHES, Paris, France, 2006. etc, etc, (See page 6 of my full CV for more visiting positions).
- IV) HONORS AND DISTINCTIONS. These include: Member of 1) The Third World Academy of Sciences, 1989 -; 2) European Academy of Arts Sciences and Humanities 1986-; 3) African Academy of Sciences, 1986 -; 4) Nigerian Academy of Sciences, 1989-; Foreign Member of the Mongolian academy of Sciences, 2005-; President , African Mathematical Union (AMU), 1986-1995; Honorary President of AMU (for life) 2005; AMU Medal(2000); Virginian Chatelain (Endowed) Lecture, Kansas State University, Manhattan, KS, USA (2007); Nigerian National Honours OON (Officer of the order of the Niger) awarded by the President of Nigeria, 2008.; Numerous invitations by top Universities and Research Centres to give colloquia and seminar Lectures in the USA, Canada, Germany, France, Sweden, Switzerland, Russia, Poland; United Kingdom, Italy, Hong Kong, China, Singapore, India, Iran, West Indies, South Africa, West/Central/East Africa; Also special invited addresses by Mathematical societies, etc

(See pages 2-5 of my full CV for more information on Honours and Distinctions).

2

- V) HIGHLIGHTS OF ADMINISTRATIVE AND ORGANIZATIONAL EXPERIENCE: Such experiences Include: Head of Maths Dept, University of Ibadan, Nigeria, 1983-86; Dean, Postgraduate School, University of Ibadan, Nigeria, 1986-90; Chairman , Committee of Deans of Postgraduate Schools in Nigerian Universities , 1987 -88; President , African Mathematical Union (AMU) for nine years, 1986-95; Honorary President, (AMU) for life, 1995-; Vice Chairman, First congress of African Scientists which in 1987 created the Pan-African Union for Science Technology; Member, International Mathematical Union Commission on Development and Exchange (IMUCDE) for eight years (1986-94); Organised or co-organised numerous International Conferences, Workshops, Schools, Symposia, Congresses, e.g Chairman, Organising Committee, AMU Pan-African Congress of Mathematicians, Jos, Nigeria ,1986; Nairobi, Kenya 1991, Ifrane, Morocco , 1995; Chairman, Organising Committee, International Symposium on "Mathematics Education in Africa for the 21st century", Cairo, Egypt, 1992; Organiser, Sessions on " Undergraduate Mathematics Education for Specialists, future researchers and maths teachers" at the International Congress on Maths Education, Quebec, Canada, 1992; Director, School and Conference on "Algebraic K-theory and its applications' Trieste, Italy, 1997, 2003; 2007; (See my full CV , page 6-8 for further information).
- VI) TEACHING EXPERIENCE AT UNIVERSITY LEVEL: By now, I have over 35 years of Teaching and research experience. By now, I have taught Calculus, Real and complex Analysis Algebra (Linear and Abstract) ,Topology, and Geometry at undergraduate and beginning Graduate levels. I have written a book "Abstract Algebra" suitable for undergraduate and beginning graduate levels . I have also taught graduate courses on various topics including Homological algebra, Algebraic Topology, Algebraic Number theory, Representation Theory, Algebraic K-theory, Category theory, Algebraic Geometry, and Non-commutative Geometry.
- IN THE USA, I have taught undergraduate and graduate courses at Columbia University, NY; University of Illinois at Urbana -Champaign; Cornell Univ. Ithaca, NY; the University of Iowa, Iowa City; Howard Univ. Washington, DC; Miami Univ. Oxford, OHIO; Currently, at Grambling state University, I have taught Pre-Calculus, Calculus III, Modern Algebra I & II Introd. to topology, Topics in Mathematics I, (See my full CV pages 8 and 9 for more details)
- VII) I HAVE GIVEN INVITED LECTURES AT NUMEROUS MAJOR INTERNATIONAL CONFERENCES , WORKSHOPS , SYMPOSIA, ALL OVER THE WORLD.
- See pages 9 to 16 of my full CV containing a comprehensive list of 126 such Conferences, Workshops and Symposia. I gave invited lectures at 71 out of the 126 meetings.
- VIII) MATHEMATICAL RESEARCH INTERESTS AND CONTRIBUTIONS:
- My research area is Algebraic K-theory and related Mathematics . My research over the years have focused on Commutative and Non-commutative Algebra/Arithmetic/Geometry through methods of K-theory, Cyclic Homology encompassing algebra, Number theory, Representation theory, Algebraic topology, Operator algebras , Algebraic Geometry and Differential Geometry. Such non-commutative structures include: 1) Orders in algebras over number fields and p-adic Fields; 2) Groupings and Representations of finite, Discrete, profinite, algebraic and compact Lie

Groups ; 3) C^* -algebras, and Lie group C^* -algebras; 4) Hopf algebras and Quantum groups. Note

3

that K-theory and Cyclic Homology of the latter two structures belong to non-commutative geometry. My research contributions include the following:

- 1) Formulating all Higher Algebraic K-theory (abstract topological constructions) in the Representation theoretic language of Mackey functors leading to the discovery of Equivariant Higher algebraic K-theory and its relative generalizations in the contexts of exact and Waldhausen categories and his computations of Quillen and Waldhausen Higher K-theory of groupings via induction techniques.
- 2) Developing methods of computing Higher Algebraic K-theory of non-commutative rings such as non-commutative orders and groupings as well as twisted polynomials and Laurent series rings over orders with applications to the computations of Higher K-theory of virtually infinite cyclic groups in the context of Farrell-Jone's conjecture.
- 3) Formulating the famous Baum-Connes conjecture (hitherto available for group actions) for the actions of quantum groups and verifying the conjecture in some situations, e.g for quantum SU_2 .
- 4) Computing K-theory and Cyclic homology and hence non-commutative Chern characters of Lie group C^* -algebras and quantum groups.
- 5) Constructing profinite (continuous) Higher K-theory as an extraordinary cohomology theory in the context of exact categories and proving several finiteness and l-completeness results for profinite Higher K-theory of orders, and G-schemes (G an algebraic group) and in part for twisted flag varieties and Brauer-Severi varieties.

(See pages 16-19 for details of my mathematical research contributions)

IX) PUBLICATIONS: I have a total of 77 publications made up of 47 mathematical research articles, 10 books/monographs/edited conference proceedings and journals and 20 articles on topical Issues on Mathematics Education, Science and Technology.

A) 47 MATHEMATICAL RESEARCH ARTICLES: Most of the 47 articles have appeared in highly reputable journals e. g Journal of algebra, Journal of the London Mathematics Society; Mathematisches Zeitschrifts. K-theory Journal, Journal of Pure and Applied algebra; Mathematisches Annalen; Communications in algebra; Proceedings of the American Math. Society; Topology and its Applications; Beitrage zur Algebra und Geometrie (Contributions to Algebra and Geometry); Algebras and Representation theory; Algebra Colloquim; And in such highly reputable publications e.g. Handbook of Algebra (Elsevier); American math. Society (AMS) Contemporary Mathematics; Springer Verlag Lecture note series; International Centre for Theoretical Physics (ICTP), Trieste, Italy, Lecture Notes Series.

(See pages 21-24 of my full CV for the list of research articles)

B) 10 BOOKS, MONOGRAPHS, EDITED CONFERENCE PROCEEDINGS AND JOURNALS.

Nine of these are at graduate and post-doctoral levels and one titled "Abstract Algebra" at the honours undergraduate/beginning graduate level. Two of them are special issues of the "K-theory Journal" which I co-edited as Guest Editor of the journal. My latest research book "Representation Theory and Higher algebraic K-theory" published in 2007 by Chapman and Hall is the first book on this topic. The Editors of this book describe me as

"A premier authority in the field". (See pages 24 and 25 of my full CV for the list)

C) 20 ARTICLES ON TOPICAL ISSUES IN MATHEMATICS EDUCATION, SCIENCE AND TECHNOLOGY. (see pages 25 and 26 of my full CV)