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EDITORIAL

FCAA RELATED MEETINGS, BOOKS, IN MEMORIAM (FCAA - VOLUME 15 - N^{O} 3)

Virginia Kiryakova

Dear readers,

in the Editorial Notes we announce some important news for our journal, information on new books, international meetings and events in the FCAA (Fractional Calculus and Applied Analysis) areas, etc.

1. Report on the FDA'2012 Symposium Nanjing, China, 14-17 May, 2012

The 5th Symposium on Fractional Differentiation and Its Application (FDA'2012) was held on 14th-17th May 2012 in Hohai University, Nanjing, China. This Symposium has received 325 abstracts and 256 full papers, covering most theoretical and application fields of fractional calculus. More than 260 delegates attended this conference, including 110 plus from 31 countries and regions outside mainland China as well as those for Sino-German Bilateral Workshop. The FDA'2012 slogan was "To be challenged, excited and inspired". The FDA'2012 was financially supported by the National Natural Science Foundation of China and Hohai University.

The FDA series of meetings is held every two years, previously as workshops, in France (2004), Portugal (2006), Turkey (2008) and Spain (2010). The 5th Symposium FDA was the largest of its kind, with 6 plenary speeches, 10 semi-plenary speeches, 27 keynote lectures, 12 minisymposia as well as many posters. For more details, see http://em.hhu.edu.cn/fda12 and the Newsletter *FDA Express*, Vol. 3, No. 3 & 4 (May 30, 2012), at http://em.hhu.edu.cn/fda/index.htm.

The FDA'2012 highlighted the cross-disciplinary interaction, cross-fertilization and world-wide participation. Delegates came from a wide variety of disciplines, such as mechanics, physics, mathematics, control engineering, material sciences, biology, geological engineering, signal processing, just to mention a few. The contributed papers of high quality will be peer-reviewed for publication in special issues of 4 SCI indexed journals, one of them is *FCAA* (will be as part of Volume 16, 2013).

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According to the voting results, the Honors and Awards Committee conferred the international academic awards: Mittag-Leffler FDA Achievement Award, Riemann-Liouville Best FDA Papers Award on Theory and Application, Grünwald-Letnikov Best Student Papers Award on Theory and Application and FDA Dissemination Award, to 6 Awardees (or groups): Fawang Liu / Changpin Li, Yutian Ma / Hai-Tao Qi, Huan-Ying Xu, Xin-Wei Guo / Tatiana Odzijewicz, Agnieszka B. Malinowska, Delfim F. M. Torres / Michailas Romanovas, Lasse Klingbeil, Martin Traechtler, Yiannos Manoli / Virginia Kiryakova. See http://em.hhu.edu.cn/fda12/Awards.html.

During the FDA'2012 conference, the Steering Committee decided that the 2014 FDA conference will be held in Italy (Catania, Sicily), with Prof. Riccardo Caponetto as a Chairmain. The tentative calendar of the next FDA events includes also 2016 FDA in Serbia (Novi Sad University, Chair: Teodor Atanackovic) and 2018 FDA in Jordan (Chair: Shaher Momani).

2. Forthcoming Meetings Related to FCAA Topics

FDA'2013, The 6th IFAC Workshop on Fractional Differentiation and Its Applications Grenoble, France, February 4-6, 2013

This workshop will be held in frames of the SSSC joint conferences, as its Track D: Fractional Differentiation and Its Applications, with topics as: Analysis tools, biomedical engineering, fractional earth science, fractional filters, fractional order modeling and control, fractional transforms and their applications, filtering, image processing, mechanics, observation, wavelet applications, electrochemistry, thermal systems, economy, mathematics, etc.

As for all IFAC events, all the papers will be peer-reviewed. The reviews will be done on a 6 pages draft (full paper, no abstract).

Important dates: – Invited session submissions: July 2, 2012; – Regular Paper Submissions: July 16, 2012; – Final Paper Submissions: November 15, 2012. Call for papers, download at
http://www.gipsa-lab.fr/SSSC2013/dld/CFP_IFAC2013.pdf

For more information, follow the conference website:
http://www.gipsa-lab.fr/SSSC2013/

Reported by J. Sabatier and J. Tenreiro Machado,
Co-Chairs of FDA' 2012 and Editors at FCAA journal.

ICNAAM 2012, The 10th International Conference of Numerical Analysis and Applied Mathematics Kos, Greece, September 19-25, 2012

Website: http://www.icnaam.org/ .

The topics to be covered include all the research areas of Numerical Analysis and Computational Mathematics and of Applied and Industrial Mathematics. More than 188 Sessions (Minisymposia) have been already approved in the program, see the list at
http://www.icnaam.org/Sessions_Minisymposia.htm .
Among them, they might be of closer interest for this audience the sessions:

– Session 65): "Applied Studies of Fractional Differential Equations" (Org. by M. Kurulay, Turkey);

– Session 90): "Fractional Calculus and Applications" (Org. by M. Duarte Ortigueira, Portugal);

– Sessions 3), 4), 53) (with respect to Special Functions);

– Several sessions dedicated to Differential Equations and Numerical Methods, etc.

The Proceedings of ICNAAM 2012 will be published in the well known AIP (American Institute of Physics) Conference Proceedings. More information can be found at http://www.icnaam.org/proceeding.htm. For the requirements on the papers to be submitted to the AIP Conference Proceedings of ICNAAM 2012, see at conference website. It is a policy of ICNAAM not to publish papers in the Proceedings without payment of the fees.

Reported by M. Duarte Ortigueira, contacts by e-mail: mdo@fct.unl.pt

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AMADE–2012, The 7th International Workshop
Analytical Methods of Analysis and Differential Equations
Minsk, Belarus, September 11-14, 2012

It is organized by the Belarusian State University and the Institute of Mathematics of the Belarusian National Academy of Sciences together with Moscow State University, also under the guidance of the International Society for Analysis, its Applications and Computation (ISAAC) and the Belarusian Fund for Fundamental Scientific Research.

The Workshop continues the traditions of the previous conferences "Boundary Value Problems, Fractional Calculus and Special Functions" (1996) and AMADE – 1999, 2001, 2003, 2006, 2009, the main organizer of which was Professor A.A. Kilbas (1948 - 2010). The Conference AMADE–2011 was dedicated to his memory.

During AMADE–2012 invited lectures of the well-known experts will be given and selected short reports will be presented. The Topics of AMADE' 2012 include: 1. Integral Transforms and Special Functions. 2. Differential Equations. 3. Integral, Difference, Functional Equations and Fractional

Calculus. 4. Real and Complex Analysis. 5. Mathematical Methods in Economics. 6. Modern Problems of Mechanics, Biomechanics and Nanomechanics, etc.

To receive more details and the second announcement (of May 2012), contacts are by e-mail: amade@bsu.by

Address: Belarus, 220030 Minsk 30, 4 Nezavisimosti Ave, Belarusian State University, Economics Faculty AMADE-2012

From: Sergei Rogosin, e-mail: rogosinsv@gmail.com
Chairman of the Organizing Committee and Editor in FCAA

International Congress
in Honour of Professor Hari M. Srivastava
Bursa, Turkey, August 23-26, 2012

The forthcoming International Congress in Honour of Professor H. M. Srivastava is motivated by the remarkable popularity and success of the well-attended four-day International Congress Dedicated to Professor Srivastava on the Occasion of his 70th Birth Anniversary, which was held in August 2010 in Bursa under the auspices of Uludag University.

This congress will be organized at the Gorukle Campus of Uludag University in the fourth largest city, Bursa in Turkey. It will cover a wide range of topics of Mathematics, Statistics and related sciences.

The Proceedings of this new International Dedication Congress (2012) will be published appropriately in Special Issues of the following Open Access journals (all in SCI) which are published by the Springer Open:
- Advances in Difference Equations (IF 0.89); - Boundary Value Problems (IF 1.05); - Fixed Point Theory and Applications (IF 1.94); - Journal of Inequalities and Applications (IF 0.88). Springer is considering to give a 50% discount to all accepted papers for each of the four above-mentioned Special Issues.

Deadline for submission of Abstracts: July 20, 2012. Use the sample files "abstract.tex" and "abstract.pdf" and send your abstract (as pdf- and LaTeX-files) to Dr. Ahmet Tekcan via e-mail: tekcan@uludag.edu.tr, with a carboncopy to cangul@uludag.edu.tr. Deadline for submission of Full Texts: November 30, 2012.

For more details, see the website http://srivastava2012.uludag.edu.tr/

3. New Books Related to FCAA Topics

Mark M. Meerschaert, Alla Sikorskii, *Stochastic Models for Fractional Calculus*, De Gruyter, Dec. 2011, 291 pp.

http://www.degruyter.com/view/product/129781.

Series: De Gruyter Studies in Math. 43; ISBN: 978-3-11-025816-5 (EBook: EUR 99,95 / USD 140.00*); DOI: 10.1515/9783110258165

Aims and Scope: Fractional calculus is a rapidly growing field of research, at the interface between probability, differential equations, and mathematical physics. It is used to model anomalous diffusion, in which a cloud of particles spreads in a different manner than traditional diffusion. This monograph develops the basic theory of fractional calculus and anomalous diffusion, from the point of view of probability.

In this book, we will see how fractional calculus and anomalous diffusion can be understood at a deep and intuitive level, using ideas from probability. It covers basic limit theorems for random variables and random vectors with heavy tails. This includes regular variation, triangular arrays, infinitely divisible laws, random walks, and stochastic process convergence in the Skorokhod topology. The basic ideas of fractional calculus and anomalous diffusion are closely connected with heavy tail limit theorems. Heavy tails are applied in finance, insurance, physics, geophysics, cell biology, ecology, medicine, and computer engineering.

The goal of this book is to prepare graduate students in probability for research in the area of fractional calculus, anomalous diffusion, and heavy tails. Many interesting problems in this area remain open. This book will guide the motivated reader to understand the essential background needed to read and understand current research papers, and to gain the insights and techniques needed to begin making their own contributions to this rapidly growing field.

Table of Contents: Preface; Chapter 1. Introduction; Chapter 2. Fractional Derivatives; Chapter 3. Stable Limit Distributions; Chapter 4. Continuous Time Random Walks; Chapter 5. Computations in R; Chapter 6. Vector Fractional Diffusion; Chapter 7. Applications and Extensions; Bibliography; Index.

Keywords: Probability; Fractional Calculus Model; Anomalous Diffusion; Fractional Derivative; Particle Jump; Vector Fractional Derivative; Tempered Fractional Derivative; Fractional Diffusion Equation; Random Walk; Statistical Physics

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S. V. Rogosin (Editor), ***Analytic Methods of Analysis and Differential Equations, AMADE-2011.*** Proc. of the 6th International Conference AMADE, dedicated to the memory of Professor A.A.Kilbas, Minsk: Publ. Center of Belarusian State University, 2012, 256 pp.

Research articles by scientists from different countries, working in cooperation with Professor A.A. Kilbas, and research articles by his students

are presented in this book. Among these articles are selected works of participants of the 6-th International Conference "AMADE-2011", dedicated to the memory of Anatoly Alexandrovich Kilbas. This volume includes also memoirs of his colleagues and friends. The book is of interest for researches, PhD and Master students, working in different branches of mathematical analysis, differential equations and their applications in mechanics and mathematical physics. Contents:

– Professor Anatoly Alexandrovich Kilbas (20.07.1948 - 28.06.2010)

– Part I. Memoirs:

* Anatoly Alexandrovich Kilbas. Researches and person (S.V. Rogosin, M. V. Dubatovskaya); * Anatoly Alexandrovich Kilbas. Friend, colleague, coauthor (S.G. Samko); * What the fellow he was ... (from the memoirs of his student mates); * Selected poetry by A.A. Kilbas

– Part II. Scientific Works:

* Fractional order impulsive hyperbolic implicit differential equations with state-dependent delay (S. Abbas, M. Benchohra, J.J. Trujillo); * Laplace-Analysis of the fractional Poisson process (R. Gorenflo, F. Mainardi); * Piecewise affine mappings: geometrical properties and analytical representations (V.V. Gorokhovik); * Analytic properties of solutions to Painleve equations (V.I. Gromak); * To the theory of integral transforms with special functions in kernels E. Gromak); * The problem of recovery of the boundary condition for a heat equation (A.I. Kozhanov); * Solution to initial-boundary value problem for wave equation with boundary condition with fractional derivatives (V.I. Korzyuk, I.S. Kozlovskaya, Yu.V. Sheiko); * New method of investigation of properties of special functions (A.A. Koroleva); * On radial functions and classical stationary equations in Euclidean spaces of fractional dimension (L.N. Lyakhov); * Two worlds of mathematical functions: Classical and computer's in Mathematica (O. Marichev, M. Trott); * New boundary value problems and their applications to invisible materials (V.V. Mityushev); * On oscillation generated by the operator of interaction in discrete kinetic equations (E.V. Radkevich); * An analogue of Tricomi problem for differential equations with partial derivatives, containing diffusion equation of fractional order (O.A. Repin); * Characteristic singular integral equation on the line in the exceptional case with zeroes of arbitrary order (A.P. Soldatov, T.M. Urbanovich); * Operators of fractional calculus and associated Mittag-Leffler type functions (H.M. Srivastava); * Interpolation functional polynomials of Newton type with twofold nodes (L.A. Yanovich, M.V. Ignatenko).

A limited number of printed copies of this volume has been left with the family of late Prof. A.A. Kilbas. For queries and contacts:

Sergei Rogosin, e-mail: rogosinsv@gmail.com

A. A. Potapov, V. A. Chernykh, *Fractional Calculus of A. V. Letnikov in Physics of Fractals.*, LAMBERT Academic Publ., 2012, 688 pp., ISBN 978-3-8465-5328-2; Website: http://www.lap-publishing.com.

In first part of monograph main scientific results in the establishment of fractional calculus, given by the outstanding mathematician of Russia, A. V. Letnikov [March, 1st (13th) 1837, Moscow - February, 27th (March, 10th) 1888; corresponding member of the Petersburg Academy of Sciences (1884)] are presented. Letnikov has published all works (with exception of one minor paper) in Russian language, in "Mathematichesky Sbornik". Unfortunately, these works remained unknown abroad and have been almost forgotten in Russia. The fundamental role of A. V. Letnikov in the creation of fractional calculus, which mathematical apparatus based on concepts of integrals and derivatives of fractional order, is shown in this book. These mathematical tools, based on fractional integrals and derivatives have wide application in fractal physics today and represent the basis of Theory of Fractals. Many fundamental examples of practical use of the fractional calculus, fractals, scaling effects in current tasks of radiophysics, radiolocation, electrodynamics, functional electronics and processing of ultra-weak multidimensional signals in the intensive non-Gaussian noise, and also in simulation of biological systems and processes of filtering of oil and gas, are presented in second part of monograph.

The fractal derivatives in equations are interpreted as a reflection of the special property of the processes - memory, or non-Markov property (hereditarity), and also self-similarity of medium or structure, i.e. fractality. The theory of fractional calculus, still remaining as an exotic theory for most of the experts, in the last decades is in the permanent development. Research works at this direction, in connection with fractional analysis have trend to more expansion. Its evidence is in the presence of increasing flow of original papers, published in Russia and abroad, organization of many specialized international conferences, new productive formulations of problems and application of apparatus of fractional calculus and fractals in wide variety fields of science and technique.

The research in fractal radiophysics and fractal radiolocation, partially presented in monograph, was supported by Russian Foundation of Basic Research (Projects No. 04-07-08013, No. 05-07-90349-, No. 07-07-07005-, No. 07-07-12054, No. 07-08-00637-, No. 11-07-00203-) and by international project of ISTC No. 0874.2 (USA, 2001-2005). It contains some main results of the Moscow Scientific School of Fractal Methods, leading in Russia. The founder of this school - Professor Alexander Alexeevich Potapov, is Dr.Sc., academician of Russian Academy of Natural Sciences, academician

of Academy of Engineering Sciences named after A. M. Prokhorov, chief researcher of Kotel'nikov Institute of Radio-engineering and Electronics, chief editor of the journal "Nelineyny Mir" (Moscow), President of International Chinese-Russian Laboratory of Informational Technology and Fractal Signal Processing (JiNan University, Guangzhou, China - Kotel'nikov IREE RAS, Moscow, Russia), honorary professor of JiNan University.

Content of book: Foreword of editor, A. Potapov; Introduction; Chapter 1. Initial stage of fractional calculus development; Chapter 2. The mathematical dissertation of A. V. Letnikov on the theory of fractional order integro-differentiation; Chapter 3. Analysis of main issues in theory of A. V. Letnikov (answer to Sonin N. Y.); Chapter 4. Doctoral dissertation of A. V. Letnikov on the theory of fractional calculus; Chapter 5. A. V. Current stage Letnikov's ideas development; Chapter 6. Application of fractional operators of A. V. Letnikov in underground hydrodynamics; Chapter 7. Application of fractional operators of A. V. Letnikov in models of populations dynamics; Chapter 8. Fundamentals of the measure theory and Dimension; Chapter 9. Nondifferentiable functions and fractals; Chapter 10. Applications of fractals, scaling and fractional operators in multidimensional signal processing problems; Chapter 11. Applications of fractals, scaling and fractional operators in radio wave propagation problems and electrodynamics; Chapter 12. Applications of fractals, scaling and fractional operators in radiosystem synthesis; Chapter 13. Historical materials about personality, life and works of A. V. Letnikov; Conclusion; Bibliography.

In general, the monograph provides representative panorama of present state of interdisciplinary approach to formulation fractal and fractional operator issues. The book can serve as stimulus for further applications of fractional calculus, fractals and scaling in breakthrough information technology for issues of modern science and technique. Certainly, the book will be useful for wide range of readers, both scientists and engineers, whose activities are related with information processing in physics, optics, radioengineering, radiolocation, geophysics, biology and cybernetics. Also, this book may be useful for students of older years and graduate students.

The book has been published in Russian, waiting translation in English. For contacts:

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4. In Memoriam: Professor Gary F. Roach, Founding Editor of FCAA

Gary Francis Roach was born in South Wales on 8th October 1933. After gaining his BSc Honours degree in Mathematics and Physics from

the University of Wales in 1955, he joined the Education Branch of the Royal Air Force, attaining the rank of Flight Lieutenant, before moving on, in 1958, to a post as Research Mathematician with the British Petroleum Company. While working for BP, he studied part-time at Birkbeck College in London and was awarded an MSc with distinction in 1960. In 1961 he accepted his first full-time academic post as a Lecturer in Mathematics at the University of Manchester Institute of Science and Technology (UMIST) from where he gained his PhD in 1964. His thesis, entitled "*Dynamical Theory of Viscous Tides in Close Binary Systems*" led to the immediate award of a Fellowship of the Royal Astronomical Society. In 1966-67 he spent a year as a Visiting Professor at the University of British Columbia where he worked with Robert Adams. On returning to the UK, Gary joined the staff of the University of Strathclyde in Glasgow. He was promoted to Senior Lecturer in 1971 and then to Reader in 1972. He was appointed Professor in 1979 and in 1982 was awarded the prestigious 1825 Chair of Mathematics in succession to Donald Pack.

Gary had a long and distinguished research career in *Applied Analysis*, leading to several books, many papers and contributions to conference proceedings and a number of patents. His first book, "*Green's Functions*", was published in 1970 with a second edition appearing in 1981 and the book remains a standard reference in the field to this day. His experience in *Industry*, both in his early career and through subsequent consultancy with bodies such as the Ministry of Defence, Ferranti, ICI and British Gas, led to the study of many problems of practical importance in which applications of Functional Analysis and Operator Theory played a major role. Much of his consultancy work was not published.

The classical *Scattering Theory* was a major strand of his research. He studied linear and nonlinear evolutionary equations, modelling both stationary and time-dependent scattering processes involving moving boundaries and time-dependent potentials. A major focus was on *Inverse Problems* in radar, sonar and ultrasonic testing. In the course of this research he established many fruitful collaborations, with Ralph Kleinman in Delaware, Rolf Leis in Bonn, George Dassios in Patras, Ioannis Stratis in Athens, etc.

Another of Gary's research interests was the *Multi-parameter Spectral Theory*. Initially inspired by F.V. Atkinson's seminal 1964 paper and subsequent textbook, "*Multiparameter Eigenvalue Problems*", he collaborated in this area with Patrick Browne and Paul Binding (Calgary) and Mel Faierman (Witwatersrand) as well as leading his own group of research students in Strathclyde.

From 1979 until his retirement in 1996, Gary led the *Applied Analysis Group in the Strathclyde University, Glasgow*. He instituted a series of

annual workshops, covering the group's various research interests, held in the beautiful surroundings of Ross Priory on the shores of Loch Lomond. Proceedings of these workshops were produced under Gary's editorship. Another notable event for the group was hosting a conference on Evolution Equations in 1994, which was a sequel to a similar conference organized by Jerry Goldstein and colleagues at Louisiana State University in Baton Rouge the previous year.

The University of Strathclyde had a long-standing exchange agreement with the *Technical University of Lodz*, which Gary embraced with enthusiasm. There were regular visits by staff in both directions, while 3 students came from Lodz to study for Strathclyde PhDs under Gary's supervision, most notably Jacek Banasiak. In recognition of his contributions to the exchange agreement and his eminence in the field of Applied Analysis, Gary was awarded an Honorary Doctorate (ScD) by Lodz in 1993. This was in addition to the DSc which he was awarded by the University of Manchester in 1991 in recognition of his major research achievements.

Gary achieved many other *distinctions and awards*. He was elected a Fellow of the Royal Society of Edinburgh in 1977. He gained the prestigious award of a Killam Research Professorship in Canada, the first mathematician to receive this accolade. He was a Fellow of the Institute of Mathematics and its Applications and of the Royal Society for encouragement of Arts, Manufactures and Commerce.

Apart from being a prolific author in his own right, Gary was heavily involved in the *editing of journals*. In particular, he was a founding managing editor of "*Mathematical Methods in the Applied Sciences*" and continued to oversee its development for over 25 years. He also served on the Editorial Boards of "*Applicable Analysis*" and "*Fractional Calculus and Applied Analysis*" and on the Advisory Board for the highly regarded *Pitman/Longman series of Monographs and Research Notes*. On his retirement in 1996, Gary was appointed Emeritus Professor. He retained an office in the Mathematics Department in Strathclyde for a number of years, continuing his research and his editorships. Books entitled "*Wave Scattering by Time Dependent Perturbations: An Introduction*" and "*An Introduction to Echo Analysis: Scattering Theory and Wave Propagation*" appeared in 2007 and 2008, respectively. His last book "*Mathematical Analysis of Deterministic and Stochastic Problems in Complex Media Electromagnetics*", jointly authored with I. G. Stratis & A. N. Yannacopoulos, was published in 2012 by Princeton University Press. Sadly, he never saw the book in print.

In all, *Gary wrote 5 books, edited 8 others, authored over 150 research papers and supervised 20 PhD students.*

Gary gave *loyal and distinguished service* to many bodies at the local, national and international levels. Within the University of Strathclyde, he was Head of the Department of Mathematics from 1980 to 1982 before being appointed the first Dean of the new enlarged Faculty of Science from 1982 to 1985. He served on both the Senate and the University Court. He was convener of the Military Education Committee (joint with the University of Glasgow) from 1992 to 1995. Outwith the University, he was President of the Edinburgh Mathematical Society in Session 1981-82, and served as Convener of the Conference of Professors of Applied Mathematics and of the University and Colleges Admissions Service (Scotland) Coordinating Committee.

He held office *in a range of charitable organisations*. In 1997, he was Deacon of the Incorporation of Bonnetmakers and Dyers, one of the 14 Incorporated Crafts of the Trades House of Glasgow. In this role he played an active part in the City's affairs for that year, with an emphasis on charitable work and education.

In addition to all these activities, Gary pursued *various hobbies*. After Mathematics, classical music was perhaps his greatest passion. He was a member of a philatelic club called The Vikings and specialized in the stamps of the Faroe Islands. Another interest was radio-controlled model planes. At flying displays, he acted as air traffic control, ensuring that no two planes were using the same radio frequency. Gary was an enthusiastic and talented sportsman. His first love was rugby and as a teenager, he was invited to participate in trials for the Welsh Under-21s. Unfortunately, a week before this event, he suffered a serious neck injury that ended his rugby career.

Gary was proud of his Welsh heritage. While working for BP, Gary met a young Scottish lady called Isobel Nicol and they enjoyed over 50 years of happy marriage. For 44 years they lived north of Glasgow in the Stirlingshire village of Fintry, which Gary loved dearly.

Prof. G.F. Roach died in Bannockburn Hospital on 17th March 2012 having that afternoon watched his beloved Welsh rugby team defeat France to win the Grand Slam.

Adam McBride

Ed. Note: A more detailed CV, list of publications and congratulating addresses for Prof. G.F. Roach's 70th anniversary were published in FCAA, Volume 6, No 4 (2003), http://www.math.bas.bg/∼fcaa/.