



Andrea De Gaetano, Curriculum Vitae

Personal data:

Born March 5th, 1959 in Milan, Italy.
Nationality: Italian.
Married with children.
C.F. DGTNDR59C05F205X

Contact address:

Viale Pinturicchio, 34 - 00196 Roma, Italy
Ph. (home) +39-06-64.52.08.55,
(cell.) +39-335-5942.411
(office) +39-06-30.15.53.89
(fax) +39-06-305-7845,
Email: andrea.degaetano@cnr.it
Web: www.biomatematica.it

Academic degrees

- M.D., Doctor of Medicine (Università Cattolica, Facoltà di Medicina e Chirurgia, Roma, Italy, 1984; summa cum laude)
- Specialty in Emergency Surgery (Università Statale, Milano, Italy, 1989; 70/70 score)
- M.Sc., Master in Applied Mathematics (UMBC, University of Maryland at Baltimore County, Baltimore, USA, 1991; core curricula in Analysis and Algebra)
- Ph.D. in Applied Mathematics (Universite' de Pau et des Pays de l'Adour, Pau, France, 1995; Dynamical Systems, Mention Tres Honorable et Félicitations, full score summa cum laude)
- J.D., *Juris Doctor* (Laurea Magistrale in Giurisprudenza, Facoltà di Giurisprudenza, Università di Urbino, 2009, five-year curriculum, score 106/110)
- Italian Bar examination, November 2014 (Court of Appeals district of Rome).

Positions

- 2016-present: Board Member, International Council for Industrial and Applied Mathematics (ICIAM)
- 2014-present: Board Member, European Society for Mathematical and Theoretical Biology (ESMTB).
- 2012-present: Coordinator, CNR IASI UOS at Università Cattolica, Policlinico Gemelli.
- 2006-present: Visiting, then Adjunct Professor of Mathematical Statistics, Dept. of Mathematics, Mahidol University, Bangkok, Thailand
- 2003-2005: Visiting Professor of Mathematical Statistics, Dept. of Biostatistics, University of Copenhagen, Denmark
- 2001-2004: Professor of Mathematical Statistics, Università di Urbino, Facoltà di Scienze.
- 2001-present: Dirigente di Ricerca, CNR Istituto di Analisi dei Sistemi ed Informatica "A. Ruberti", Rome.
- 1997-present: Coordinator, BioMathematics Lab, CNR IASI, Rome.
- 1995-2007: Professor of Statistics, School of Internal Medicine, Catholic University, Rome.
- 1990-2001: Ricercatore, CNR Centro di Studio per la Fisiopatologia dello Shock, Rome.
- 1988-1989: Resident in General Surgery, Union Memorial Hospital, Baltimore, MD.

- 1987-1988: Deputy Director, Mathematical Research, Maryland Institute for Emergency Medical Services Systems, Baltimore, MD.
- 1986-1987: Research Fellow, Mathematical Research, Maryland Institute for Emergency Medical Services Systems, Baltimore, MD.

Languages

- Bilingual Italian-English
- good spoken and written French
- good spoken and written German
- Programs fluently in C++, R and MATLAB.

Affiliations

- Member and Board member, ESMTB European Society for Mathematical and Theoretical Biology
- Member, EASD European Association for the Study of Diabetes

Synthesis of the work performed

Since the early years of Medical School, Dr. De Gaetano developed what would become a lifetime commitment to mathematical and statistical methods in biomedical research. He studied and taught biostatistics while still in medical school. He then enrolled in the Master program in Applied Mathematics at UMBC in Baltimore, concurrently with his duties as a post-graduate Resident in General Surgery. After his Surgery board, he obtained M.Sc. and Ph.D. degrees in Applied Mathematics, focusing on the mathematical statistics of parameter estimation for highly nonlinear and for stochastic dynamical models. He has taught post-graduate and doctoral courses in mathematical statistics and its applications to biomedicine for many years at universities in Rome, Urbino, Copenhagen and Bangkok.

He enrolled in Law School at the University of Urbino in 2002 (where he was teaching Mathematical Statistics at the time), completing the full Laurea Magistrale curriculum in 2009, with a dissertation in Civil Procedure, on quantitative modeling of the impact of the newly introduced Class Action regulations. He completed his post-graduation Legal Practice with the Studio Legale Pottino in Rome and passed his Italian Bar examination, becoming eligible for counsel and litigation in Italian Tribunals. As a direct link with his activity as a researcher in biomathematics, his legal interests focus on the protection of Intellectual Property Rights, particularly in the framework of European and International Law.

Scientific activity

Major scientific contributions so far concern diagnostics for flawed estimation in case of high model nonlinearity (as well as numerical schemes to obtain reliable parameter estimates), innovative stochastic differential models in physiology, and the formulation of new models for the glucose/insulin system together with the demonstration of their appropriate physiological behavior and statistical robustness. Through collaboration with Medical Doctors and Physiologists on one side, with Engineers, Mathematicians and Statisticians on the other side, different research topics have been investigated, with publications on energy metabolism, pulmonary circulation, respiratory pathophysiology particularly in intensive care, pharmacoeconomy of the control of psychoses, kinetics of bioactive molecules such as hormones and drugs, inhaled drug pharmacokinetics modeling in chronic obstructive pulmonary disease and asthma, immunology of transplant rejection, effects of sublethal exposure to magnetic fields. The reasons for this width of applications lie in the combination of a solid physiological background with the general applicability of statistical and mathematical analysis for biomedical problems, and with the careful fostering of a team approach to research problems, integrating contributions from people with diverse expertise. Such work has been conducted in close collaboration with several national and foreign research groups, among which Copenhagen, Graz, NCSU Raleigh and Mahidol Bangkok Departments of Mathematics; Paris V Department of Biostatistics; Roskilde Department of BioEngineering; Athens and Harvard Medical Schools.

Main research interests concern parameter estimation for ordinary, delay and stochastic differential models; modelling energy metabolism and contractual protection of Intellectual Property Rights in the scientific collaboration between public research Organizations and private enterprises. In particular, current specific topics of research are: more advanced models for glucose metabolism, insulin secretion and long-term diabetes development; efficient algorithms for (population) parameter estimation; general algorithms for parameter estimation of stochastic differential models; the application of modeling for preparedness against health crises (in particular regarding the physiological assessment of a large number of trauma victims); the development of diagnostic procedures for Cerebral Auto-Regulation dysfunction; the extension of estimation techniques to Individual Based Models; the modeling of violence outbreaks as a support to security decision-makers; the characterization of foreground finalized to the protection of IPR's within research consortia funded by the European Commission.

Bibliographic indicators (January 2nd, 2015):

Papers considered:125 (include Proceedings, Abstracts, Posters and other material not reported in the References list below)

Citations: 3137 over 26 years, Cites/year: 120.65, Cites/paper: 25.10, Authors/paper: 4.10
h-index:28, g-index:54, hc-index:16, hl-index:6.13, hl-norm:13, AWCR:471.07, AW-index:21.70, AWCRpA:116.43, e-index:41.62, hm-index:11.95

(Source: Harzing's Publish-or-Perish software, Google scholar)

Management

As a result of years of application of computational methods to medicine, he founded in 1997 what is now the Bio-Mathematics Laboratory (BioMatLab) at CNR Istituto di Analisi dei Sistemi ed Informatica "A. Ruberti" (IASI). Through BioMatLab, he persistently engaged in the support of young researchers, suggesting scientific themes and providing funding, thus attracting, over the years, a succession of some thirty doctoral and post-doctoral fellows, Italian and foreign, all supported through funding directly acquired by the Laboratory, particularly with EC grants, but also with national and international applied research contracts. BioMatLab now counts eight units of personnel, including researchers with permanent positions, technicians, post-docs and doctoral students. The "A. Gemelli" IASI unit (geographically detached from the main Institute), which he coordinates, includes one other CNR researcher and four Catholic University Associate Researchers: the unit has produced more than 60 papers on international, peer-reviewed, indexed journals over the period 2011-2013, and the average paper output increases every year.

He has also actively participated in European biomathematics conferences, organizing four EU-funded BioMathematics summer schools as well as contributing to the organization of many different meetings. He has collaborated with the "Direzione Generale per l'Internazionalizzazione della Ricerca" of the then Italian Ministry of University and Research (MIUR), helping to improve Italian participation in European-funded programs. He has actively participated in a number of European projects, coordinating the Operating Units concerned with methodological support and results analysis. Above all, he has written and helped to write more than 30 grant proposals to be submitted to the different Framework Programs of the European Commission (FP-4 through Horizon 2020), participating as a consequence to a series of financed projects. Within these, he has typically coordinated the Operative Units implicated in methodological support and analysis of results. Also as a result of this track record, he has been elected to the Board of the European Society for Mathematical and Theoretical Biology (ESMTB) in 2014.

As a consequence of his legal background, he has generally been entrusted with the drafting of the Intellectual Property sections of the Proposals on behalf of the Consortia with which IASI BioMatLab has competed for EC grants. He has recently formed, within BioMatLab, a new unit (ELMS Ethical and Legal Monitoring Section), through which his Institute offers ethics and legal services to the project consortia. This activity opens further expansion possibilities and offers more opportunities to access EU funding.

The development of his peculiar cultural background (biomedical, mathematical and legal) has had the objective to improve, facilitate and accelerate the organization of scientific projects: both helping to translate quickly and intelligibly needs and issues between physicians/biologists on one hand and mathematicians/statisticians/engineers on the other, as well as allowing the identification of institutionally and administratively practicable solutions to address needs and ambitions of pure researchers.

He has taken particular care in the development of young researchers, taking care to expose them to a network of international research collaborations (Lab alumni have been working in New Delhi, Ann-Harbor, Berlin, Raleigh, as well as in several Italian universities). Further, he pushed them to publish, helping them to find rapid and often creative solutions to the research problems encountered.

Grants

- Italian Work Ministry 1990-1992, responsible statistician: "Determinants of the mortality from trauma" (multi-center, principal investigator Daniele Gui).
- Telethon 1998-1999, responsible modeller-statistician: "Botulinum toxin in hypertrophic pyloric stenosis (single-center, principal investigator Daniele Gui)
- CNR, National Research Council, 1998-2000, within the strategic project "Mathematical Methods and Models in the Biological Sciences" (principal investigator Mimmo Iannelli): coordinator of subproject "Delay Differential Equations for Endocrine Modelling"
- European Commission 1999, principal investigator : "Summer School on Mathematics in Cell Physiology and Proliferation, Termoli 1999".
- European Commission 2000, principal investigator : "BIOMATHMFRANCA2000 Biomathematics Euro Summer School on 'Spatial Structures in Biology and Ecology: Models and Methods', Martina Franca September 2000".
- Italian Health Ministry 2000-2002, responsible modeller-statistician: "Homocysteine kinetics and health risk" (multi-center, principal investigator Letizia Petroni).
- MURST (Italian Ministry for University and Scientific Research) 2000-2001 "Botulinum toxin action pathways in the central nervous system" (principal investigator Giovanni Zaninotto): responsible statistician for the subunit "Human studies" (Daniele Gui).
- MURST (Italian Ministry for University and Scientific Research) 1999-2001, responsible modeller-statistician: "Integrated strategies for the reduction of mortality in ICU-admitted multiple trauma patients" (multi-center, principal investigator Marco Castagneto).
- European Commission 2001, principal investigator : "URBIOMATH2002: Biomathematics Euro Summer School on 'Dynamical Systems in Physiology and Medicine', Urbino, July 2002".
- European Commission 2002, head of Operating Unit CNR IASI for project "IST-2001-37403 **HEARTS** Health Early Alarm Recognition and Telemonitoring System", FP5 Information Society Technologies (IST).
- Eli Lilly and Co., 2005 -2007: Research Grant on the modeling of the development of Type 2 Diabetes Mellitus (Principal Investigator)
- European Commission 2006, BioMathTech 07-10: Mathematical Modeling of Physiological Systems with Biomedical Applications (FP6 Marie Curie Series of Events): Coordinator of the 2009 School on Parameter Estimation for Dynamical Systems.
- European Commission 2008, Scientific Coordinator and Head of CNR IASI Operating Unit for project "FP7-SEC-2007-1-217855 **SICMA** Simulation of Crisis Management Activities", FP7 Security: Intelligent Decision Support.
- European Commission 2013, Task leader and Head of CNR Operating Unit for project "FP7-SEC-2013 **IMPRESS** Improving Preparedness and Response of hEalth Services in major criseS" (Health Emergency Management decision support system), contribution to Operating Unit 408 K€ (3.4 M€ total), **ongoing**.
- European Commission 2013 responsible for modeling and statistical assessment of the results, "FP7-SEC-2013 **EDEN** End-user Driven dEmo for cbrNe", contribution to Operating Unit 289 K€ (24.8 M€ total), **ongoing**.
- European Commission 2013 responsible for overall modeling and statistical assessment of the results, "FP7-SEC-2013 **PULSE** Platform for European Medical Support during major emergencies", contribution to Operating Unit 745 K€ (2.8 M€ total), **ongoing**.
- European Commission 2013 responsible for Type 1 Diabetes clinical trials, overall modelling and assessment of the results, "FP7-ICT-2011 **COMMODITY12** COntinuous Multi-parametric and Multi-layered analysis Of DIabetes TYpe 1 & 2 for enhanced care of the diabetic patient, contribution to Operating Unit 190 K€ (4 M€ total), **ongoing**.

Teaching

He has taught Statistics in Medicine for several years, and has taught university courses in Mathematical Statistics at the universities of Urbino, Copenhagen and Mahidol-Bangkok. Even though teaching is not part of the standard duties of a CNR researcher, this intense teaching activity has been determined by two kinds of reasons. First, the need to review again and again, through teaching (particularly teaching different topics than those routinely treated) the methodological bases of his research activity. Secondly, the opportunity to attract good students and fellows to his laboratory and Institute.

Academic duties (graduate program advisor)

Faculty of Computer Science, State University at Milan

Faculty of Statistics, State University at Rome 1

Faculty of Medicine, Catholic University, Rome

Faculty of Engineering, State University at Rome 1

PhD Program, Operations Research, State University at Rome 1

PhD Program, Methodological Statistics, State University at Rome 1

PhD Program, Mathematical Statistics, Copenhagen University, Denmark

PhD Program, Mathematics, Mahidol University, Bangkok Thailand

Editorial work

- Editor, Mathematical Physiology (in EOLSS, the UNESCO Encyclopedia of Life Support System)
- Associate Editor, International Journal of Mathematics and Mathematical Sciences.
- Associate Editor (Statistics), Intensive Care Medicine 06/2008 – 12/2008
- Past Editor, European Communications in Mathematical and Theoretical Biology
- Reviewer for several peer-review journals, among which Clinical Chemistry, Diabetologia, American Journal of Physiology, Discrete and Continuous Dynamical Systems, Bulletin of Mathematical Biology, PLOS ONE, PLOS Computational Biology, Journal of Mathematical Biology, Mathematical Biosciences, etc..

Clinical Activity

Even though he does not actively practice clinical medicine (while remaining a Physician regularly certified to practice in Italy), he has obtained a specialty in Emergency Surgery and has been admitted to the Residency program in General Surgery at Union Memorial hospital in Baltimore (MD, USA), where he has practiced surgery for two years before being recalled to Rome as CNR researcher. While his original specialty is Surgery, he has a specific competence in pathophysiology, particularly in the cardiocirculatory, respiratory, excretory and hormonal/metabolic areas.

Extended papers on international indexed, peer-review journals:

- (1) Pizzi R, De Gaetano A, Guadalupi P, Chiara O (1988) On- and off-line surveillance of the critically ill patient. *J Clin Comput* 17:67-72.
- (2) Laghi F, Siegel JH, Rivkind AI, Chiarla C, De Gaetano A, Blevins S, Stoklosa JC, Borg UR, Belzberg H (1989) Respiratory index/pulmonary shunt relationship: quantification of severity and prognosis in the post-traumatic adult respiratory distress syndrome. *Crit Care Med* 17:1121-1128.
- (3) Coleman WP, Sanford DP, De Gaetano A, Geisler FH (1990) Functional models of neurobiological processes. *J Math Comput Modelling* 14:317-321.
- (4) Coleman WP, Siegel JH, Giovannini I, De Gaetano A, Goodarzi S, Tacchino RM, Sganga G (1990) Probability and the patient state space. *Int J Clin Monit Comput* 7:201-215.
- (5) Rivkind AI, Siegel JH, Littleton M, De Gaetano A, Mamantov T, Laghi F, Stoklosa JC (1991) Neutrophil oxidative burst activation and the pattern of respiratory physiologic abnormalities in the fulminant post-traumatic adult respiratory distress syndrome. *Circ Shock* 33:48-62.
- (6) Coleman WP, Sanford DP, De Gaetano A (1992) Sintassi e semantica del linguaggio descrittivo dell'informazione medica (Syntax and semantics of the language describing medical information). *Medicina e Informatica* 3:169-171.
- (7) Greco AV, Mingrone G, Raguso C, Tataranni A, Finotti E, Tacchino RM, Capristo E, De Gaetano A, Castagneto M (1992) Metabolic effects and disposition of sebacate, an alternate dicarboxylic fuel substrate. *Ann Nutr Metab* 36:1-11.
- (8) Tataranni PA, Mingrone G, De Gaetano A, Raguso C, Greco AV (1992) Tracer study of metabolism and tissue distribution of sebacic acid in rats. *Ann Nutr Metab* 36:296-303.
- (9) Coleman WP, Siegel JH, Giovannini I, Sanford DP, De Gaetano A (1993) Computational logic: a method for formal analysis of the ICU knowledge base. *Int J Clin Monit Comput* 10:67-79.
- (10) De Gaetano A, Coleman WP, Pizzi R, Tomasella E, Castagneto M, Greco AV (1993) Hydra: a C-language environment for real-time DOS multitasking at the bedside. *Int J Clin Monit Comput* 10:147-154.
- (11) Greco AV, Mingrone G, Tataranni PA, Raguso C, De Gaetano A, Tacchino RM, Lavielle R, Ghirlanda G (1993) Turnover and oxidation rates of plasma-free fatty acids in obese patients treated with dexfenfluramine. *Ann Nutr Metab* 37:237-244.
- (12) Mingrone G, De Gaetano A, Greco AV, Capristo E, Raguso C, Tataranni PA, Castagneto M (1993) A rapid GLC method for the direct analysis of plasma medium chain fatty acids. *Clin Chim Acta* 214:21-30.
- (13) Mingrone G, Greco AV, Castagneto M, De Gaetano A, Tataranni PA, Raguso C (1993) Kinetics and thermogenesis of medium-chain monocarboxylic and dicarboxylic acids in man: sebacate and medium-chain triglycerides. *JPEN J Parenter Enteral Nutr* 17:257-264.
- (14) Castagneto M, De Gaetano A, Mingrone G, Tacchino R, Nanni G, Capristo E, Benedetti G, Tataranni PA, Greco AV (1994) Normalization of Insulin Sensitivity in the Obese Patient after Stable Weight Reduction with Biliopancreatic Diversion. *Obes Surg* 4:161-168.

- (15) De Gaetano A, Castagneto M, Mingrone G, Gangeri G, Sganga G, Tataranni PA, Raguso C, Greco AV (1994) Kinetics of medium-chain triglycerides and free fatty acids in healthy volunteers and surgically stressed patients. *JPEN J Parenter Enteral Nutr* 18:134-140.
- (16) De Gaetano A, Castagneto M, Mingrone G, Coleman WP, Sganga G, Tataranni PA, Gangeri G, Greco AV (1994) PC-based differential model fitting as a support for clinical research. *Int J Clin Monit Comput* 11:35-41.
- (17) Mingrone G, Greco AV, De Gaetano A, Tataranni A, Raguso C, Castagneto M (1994) Pharmacokinetic profile of dodecanedioic acid, a proposed alternative fuel substrate. *JPEN J Parenter Enteral Nutr* 18:225-230.
- (18) Raguso CA, Mingrone G, Greco AV, Tataranni PA, De Gaetano A, Castagneto M (1994) Dicarboxylic acids and glucose utilization in humans: effect of sebacate. *JPEN J Parenter Enteral Nutr* 18:9-13.
- (19) Scambia G, Benedetti PP, Foti E, Amoroso M, Salerno G, Ferrandina G, Battaglia F, Greggi S, De Gaetano A, Puglia G (1994) Squamous cell carcinoma antigen: prognostic significance and role in the monitoring of neoadjuvant chemotherapy response in cervical cancer. *J Clin Oncol* 12:2309-2316.
- (20) Tataranni PA, Mingrone G, Greco AV, Caradonna P, Capristo E, Raguso CA, De Gaetano A, Tacchino RM, Castagneto M (1994) Glucose-induced thermogenesis in postobese women who have undergone biliopancreatic diversion. *Am J Clin Nutr* 60:320-326.
- (21) Greco AV, Tataranni PA, Mingrone G, De Gaetano A, Manto A, Cotroneo P, Ghirlanda G (1995) Daily energy metabolism in patients with type 1 diabetes mellitus. *J Am Coll Nutr* 14:286-291.
- (22) Greco AV, Mingrone G, Capristo E, De Gaetano A, Ghirlanda G, Castagneto M (1995) Effects of dexfenfluramine on free fatty acid turnover and oxidation in obese patients with type 2 diabetes mellitus. *Metabolism* 44:57-61.
- (23) Mingrone G, De Gaetano A, Greco AV, Capristo E, Castagneto M, Gasbarrini G (1995) Medium-chain triglycerides for parenteral nutrition: kinetic profile in humans. *Nutrition* 11:418-422.
- (24) De Gaetano A, Mingrone G, Castageneto M (1996) NONMEM improves group parameter estimation for the minimal model of glucose kinetics. *Am J Physiol* 271:E932-E937.
- (25) Gui D, Spada PL, De Gaetano A, Pacelli F (1996) Hypocholesterolemia and risk of death in the critically ill surgical patient. *Intensive Care Med* 22:790-794.
- (26) Mingrone G, De Gaetano A, Greco AV, Benedetti G, Capristo E, Castagneto M, Gasbarrini G (1996) Plasma clearance and oxidation of dodecanedioic acid in humans. *JPEN J Parenter Enteral Nutr* 20:38-42.
- (27) Tataranni PA, Mingrone G, Raguso CA, De Gaetano A, Tacchino RM, Castagneto M, Greco AV (1996) Twenty-four-hour energy and nutrient balance in weight stable postobese patients after biliopancreatic diversion. *Nutrition* 12:239-244.
- (28) Bertuzzi A, Mingrone G, De Gaetano A, Gandolfi A, Greco AV, Salinari S (1997) Kinetics of dodecanedioic acid and effect of its administration on glucose kinetics in rats. *Br J Nutr* 78:143-153.

- (29) Greco AV, Mingrone G, De Gaetano A, Amigo L, Puglielli L, Castagneto M, Nervi F (1997) Uptake of dodecanedioic acid by isolated rat liver. *Clin Chim Acta* 258:209-218.
- (30) Mingrone G, De Gaetano A, Greco AV, Capristo E, Benedetti G, Castagneto M, Gasbarrini G (1997) Reversibility of insulin resistance in obese diabetic patients: role of plasma lipids. *Diabetologia* 40:599-605.
- (31) Mingrone G, De Gaetano A, Greco AV, Capristo E, Benedetti G, Castagneto M, Gasbarrini G (1997) Dodecanedioic acid infusion induces a sparing effect on whole-body glucose uptake, mainly in non-insulin-dependent diabetes mellitus. *Br J Nutr* 78:723-735.
- (32) Castagneto M, De Gaetano A, Mingrone G, Capristo E, Benedetti G, Tacchino RM, Greco AV, Gasbarrini G (1998) A surgical option for familial chylomicronemia associated with insulin-resistant diabetes mellitus. *Obes Surg* 8:191-198.
- (33) Greco AV, Mingrone G, Capristo E, Benedetti G, De Gaetano A, Gasbarrini G (1998) The metabolic effect of dodecanedioic acid infusion in non-insulin-dependent diabetic patients. *Nutrition* 14:351-357.
- (34) Mingrone G, Benedetti G, Capristo E, De Gaetano A, Greco AV, Tataranni PA, Gasbarrini G (1998) Twenty-four-hour energy balance in Crohn disease patients: metabolic implications of steroid treatment. *Am J Clin Nutr* 67:118-123.
- (35) Andreotti F, Sciahbasi A, De Gaetano A, Benedetti G, Mingrone G, Greco AV, Maseri A (1999) Comparison of insulin response to intravenous glucose in healed myocardial infarction, in "cooled-off" unstable and stable angina pectoris, and in healthy subjects. *Am J Cardiol* 84:870-875.
- (36) Capristo E, De Gaetano A, Mingrone G, Addolorato G, Greco AV, Castagneto M, Gasbarrini G (1999) Multivariate identification of metabolic features in inflammatory bowel disease. *Metabolism* 48:952-956.
- (37) Capristo E, Mingrone G, De Gaetano A, Addolorato G, Greco AV, Gasbarrini G (1999) A new HPLC method for the direct analysis of triglycerides of dicarboxylic acids in biological samples. *Clin Chim Acta* 289:11-21.
- (38) De Gaetano A, Mingrone G, Castagneto M, Benedetti G, Greco AV, Gasbarrini G (1999) Kinetics of dodecanedioic acid triglyceride in rats. *Am J Physiol* 276:E497-E502.
- (39) De Gaetano A, Arino O (1999) Probabilistic Determination of Stability for a Delay-Differential Model of the Glucose-Insulin Dynamical System. *J Biol Systems* 7(2):131-144.
- (40) De Gaetano A, Mingrone G, Castagneto M, Calvani M (1999) Carnitine increases glucose disposal in humans. *J Am Coll Nutr* 18:289-295.
- (41) Mingrone G, De Gaetano A, Greco AV, Capristo E, Benedetti G, Castagneto M, Gasbarrini G (1999) Comparison between dodecanedioic acid and long-chain triglycerides as an energy source in liquid formula diets. *JPEN J Parenter Enteral Nutr* 23:80-84.
- (42) Mingrone G, De Gaetano A, Pugeat M, Capristo E, Greco AV, Gasbarrini G (1999) The steroid resistance of Crohn's disease. *J Investig Med* 47:319-325.
- (43) Mingrone G, Greco AV, Capristo E, Benedetti G, Giancaterini A, De Gaetano A, Gasbarrini G (1999) L-carnitine improves glucose disposal in type 2 diabetic patients. *J Am Coll Nutr* 18:77-82.

- (44) Mingrone G, Capristo E, Greco AV, Benedetti G, De Gaetano A, Tataranni PA, Gasbarrini G (1999) Elevated diet-induced thermogenesis and lipid oxidation rate in Crohn disease. *Am J Clin Nutr* 69:325-330.
- (45) Torrioli MG, Vernacotola S, Mariotti P, Bianchi E, Calvani M, De Gaetano A, Chiurazzi P, Neri G (1999) Double-blind, placebo-controlled study of L-acetylcarnitine for the treatment of hyperactive behavior in fragile X syndrome [letter]. *Am J Med Genet* 87:366-368.
- (46) Bartolozzi F, De Gaetano A, Di Lena E, Marino S, Nieddu L, Patrizi G (2000) Operational Research Techniques in Medical Treatment and Diagnosis. A Review. *European Journal of Operations Research*, *EJOR* 121/3:435-466.
- (47) Capristo E, Addolorato G, Mingrone G, De Gaetano A, Greco AV, Tataranni PA, Gasbarrini G (2000) Changes in body composition, substrate oxidation, and resting metabolic rate in adult celiac disease patients after a 1-y gluten-free diet treatment. *Am J Clin Nutr* 72:76-81.
- (48) De Gaetano A, Arino O (2000) Mathematical modelling of the intravenous glucose tolerance test. *J Math Biol* 40:136-168.
- (49) De Gaetano A, Arino O (2000) A statistical approach to the determination of stability for dynamical systems modelling physiological processes. *J Math Comput Modelling* 31:41-51.
- (50) Giancaterini A, De Gaetano A, Mingrone G, Gniuli D, Liverani E, Capristo E, Greco AV (2000) Acetyl-L-carnitine infusion increases glucose disposal in type 2 diabetic patients. *Metabolism* 49:704-708.
- (51) Gui D, De Gaetano A, Spada PL, Viggiano A, Cassetta E, Albanese A (2000) Botulinum toxin injected in the gastric wall reduces body weight and food intake in rats. *Aliment Pharmacol Ther* 14:829-834.
- (52) Manco M, Mingrone G, Greco AV, Capristo E, Gniuli D, De Gaetano A, Gasbarrini G (2000) Insulin resistance directly correlates with increased saturated fatty acids in skeletal muscle triglycerides. *Metabolism* 49:220-224.
- (53) Purro A, Appendini L, De Gaetano A, Gudjonsdottir M, Donner CF, Rossi A (2000) Physiologic determinants of ventilator dependence in long-term mechanically ventilated patients. *Am J Respir Crit Care Med* 161:1115-1123.
- (54) Calvani M, Iddio D, De Gaetano A, Mariotti P, Mosconi L, Pomponi MG, Tabolacci E, Torrioli MG, Vernacotola S, Neri G (2001) [L acetylcarnitine treatment on fragile X patients hyperactive behaviour]. *Rev Neurol* 33 Suppl 1:S65-S70.
- (55) Giancaterini A, Mingrone G, De Gaetano A, Capristo E, Calvani M, Caso V, Greco AV, Gasbarrini G (2001) Effects of propionyl-L-carnitine topical irrigation in distal ulcerative colitis: a preliminary report. *Am J Gastroenterol* 96:2275-2276.
- (56) Mingrone G, Marino S, De Gaetano A, Capristo E, Heymsfield SB, Gasbarrini G, Greco AV (2001) Different limit to the body's ability of increasing fat-free mass. *Metabolism* 50:1004-1007.
- (57) Graziano F, Bissoni R, Catalano V, Silva R, Rovidati S, Mencarini E, Ferraro B, Canestrari F, Baldelli AM, De Gaetano A, Giordani P, Testa E, Lai V (2002) Potential role of levocarnitine supplementation for the treatment of chemotherapy-induced fatigue in non-anaemic cancer patients. *Br J Cancer* 86:1854-1857.

- (58) Gui D, Runfola M, Rossi S, Panunzi S, De Gaetano A (2002) Academic recruitment in Spain and Italy. *Science* 297:770-771.
- (59) Marino S, De Gaetano A, Giancaterini A, Giordano D, Manco M, Greco AV, Mingrone G (2002) Computing DIT from energy expenditure measures in a respiratory chamber: a direct modeling method. *Comput Biol Med* 32:297-309.
- (60) Gasbarrini G, Mingrone G, Giancaterini A, De Gaetano A, Scarfone A, Capristo E, Calvani M, Caso V, Greco AV (2003) Effects of propionyl-L-carnitine topical irrigation in distal ulcerative colitis: a preliminary report. *Hepatogastroenterology* 50:1385-1389.
- (61) Muretto P, Graziano F, Staccioli MP, Barbanti I, Bartolucci A, Paolini G, Giordano D, Testa E, De Gaetano A (2003) An endogastric capsule for measuring tumor markers in gastric juice: an evaluation of the safety and efficacy of a new diagnostic tool. *Ann Oncol* 14:105-109.
- (62) Ruzzo A, Graziano F, Costagliola A, Arduini F, Testa E, Bearzi I, Cortese G, De Gaetano A, Andreoni F, Lai V, Magnani M (2003) The G/A nucleotide change at cDNA position 2494 in the E-cadherin gene (CDH1): analysis in Italian patients. *Tumour Biol* 24:147-150.
- (63) Severini M, Dattilo AM, De Gaetano A (2003) Sublethal effect of a weak intermittent magnetic field on the development of *Xenopus laevis* (Daudin) tadpoles. *Int J Biometeorol* 48:91-97.
- (64) De Gaetano A, Cremona G (2004) Direct Estimation of General Pulmonary Vascular Models From Occlusion Experiments. *Cardiovascular Engineering* 4:103-114.
- (65) De Gaetano A, Cortese G, Pedersen MG, Panunzi S, Picchini U, Morelli A (2004) Modeling Serum Creatinine in Septic ICU Patients. *Cardiovascular Engineering* 4:173-180.
- (66) Morelli A, Rocco M, Conti G, Orecchioni A, De Gaetano A, Cortese G, Coluzzi F, Vernaglione E, Pelaia P, Pietropaoli P (2004) Effects of terlipressin on systemic and regional haemodynamics in catecholamine-treated hyperkinetic septic shock. *Intensive Care Med* 30:597-604.
- (67) Morelli A, Rocco M, Conti G, Orecchioni A, De Gaetano A, Coluzzi F, Vernaglione E, Pelaia P, Pietropaoli P (2004) Effects of short-term fenoldopam infusion on gastric mucosal blood flow in septic shock. *Anesthesiology* 101:576-582.
- (68) Mukhopadhyay A, De Gaetano A, Arino O (2004) Modelling the Intra-Venous Glucose Tolerance Test: a global study for a single-distributed-delay model. *Discr Cont Dyn Syst B*.
- (69) Ciampelli M, Leoni F, Cucinelli F, Mancuso S, Panunzi S, De Gaetano A, Lanzzone A (2005) Assessment of insulin sensitivity from measurements in the fasting state and during an oral glucose tolerance test in polycystic ovary syndrome and menopausal patients. *J Clin Endocrinol Metab* 90:1398-1406.
- (70) De Gaetano A, Di Martino D, Germani A and Manes C. Mathematical Models and State Observation of the Glucose-Insulin Homeostasis. *System Modeling and Optimization* 166, 281-294. 2005. IFIP International Federation for Information Processing.
Ref Type: Internet Communication
- (71) Ditlevsen S, De Gaetano A (2005) Stochastic vs. deterministic uptake of dodecanedioic acid by isolated rat livers. *Bull Math Biol* 67:547-561.
- (72) Ditlevsen S, De Gaetano A (2005) Mixed effects in stochastic differential equations models. *REVSTAT* 3:137-153.

- (73) Morelli A, Tritapepe L, Rocco M, Conti G, Orecchioni A, De Gaetano A, Picchini U, Pelaia P, Reale C, Pietropaoli P (2005) Terlipressin versus Norepinephrine to Counteract Anesthesia-induced Hypotension in Patients Treated with Renin-Angiotensin System Inhibitors: Effects on Systemic and Regional Hemodynamics. *Anesthesiology* 102:12-19.
- (74) Morelli A, Ricci Z, Bellomo R, Ronco C, Rocco M, Conti G, De Gaetano A, Picchini U, Orecchioni A, Portieri M, Coluzzi F, Porzi P, Serio P, Bruno A, Pietropaoli P (2005) Prophylactic fenoldopam for renal protection in sepsis: a randomized, double-blind, placebo-controlled pilot trial. *Crit Care Med* 33:2451-2456.
- (75) Panunzi S, De Gaetano A, Mingrone G (2005) Approximate linear confidence and curvature of a kinetic model of dodecanedioic acid in humans. *Am J Physiol Endocrinol Metab* 289:E915-E922.
- (76) Picchini U, De Gaetano A, Panunzi S, Ditlevsen S, Mingrone G (2005) A mathematical model of the Euglycemic Hyperinsulinemic Clamp. *Theor Biol Med Model* 2:44.
- (77) Clausen WH, De Gaetano A, Volund A (2006) Within-patient variation of the pharmacokinetics of subcutaneously injected biphasic insulin aspart as assessed by compartmental modelling. *Diabetologia* 49:2030-2038.
- (78) Morelli A, Teboul JL, Maggiore SM, Vieillard-Baron A, Rocco M, Conti G, De Gaetano A, Picchini U, Orecchioni A, Carbone I, Tritapepe L, Pietropaoli P, Westphal M (2006) Effects of levosimendan on right ventricular afterload in patients with acute respiratory distress syndrome: a pilot study. *Crit Care Med* 34:2287-2293.
- (79) Palumbo P, Ong Clausen WH, Panunzi S, De Gaetano A (2006) Linear Periodic Models of Subcutaneous Insulin Absorption: Mathematical Analysis. *HERMIS Journal* 7:60-79.
- (80) Pavoni E, Pucci A, Vaccaro P, Monteriu G, Ceratti AP, Lugini A, Viridis RA, Cortesi E, De Gaetano A, Panunzi S, Felici F, Minenkova O (2006) A study of the humoral immune response of breast cancer patients to a panel of human tumor antigens identified by phage display. *Cancer Detect Prev* 30:248-256.
- (81) Picchini U, Ditlevsen S, De Gaetano A (2006) Modeling the euglycemic hyperinsulinemic clamp by stochastic differential equations. *J Math Biol* 53:771-796.
- (82) Rusciani L, Proietti I, Rusciani A, Paradisi A, Sbordoni G, Alfano C, Panunzi S, De Gaetano A, Lippa S (2006) Low plasma coenzyme Q10 levels as an independent prognostic factor for melanoma progression. *J Am Acad Dermatol* 54:234-241.
- (83) Palumbo P, Panunzi S, De Gaetano A (2007) Qualitative behavior of a family of delay-differential models of the glucose-insulin system. *Discrete and Continuous Dynamical Systems - Series B* 7:399-424.
- (84) Panunzi S, Palumbo P, De Gaetano A (2007) A discrete Single Delay Model for the Intra-Venous Glucose Tolerance Test. *Theor Biol Med Model* 4:35.
- (85) Rusciani L, Proietti I, Paradisi A, Rusciani A, Guerriero G, Mammone A, De Gaetano A, Lippa S (2007) Recombinant interferon alpha-2b and coenzyme Q10 as a postsurgical adjuvant therapy for melanoma: a 3-year trial with recombinant interferon-alpha and 5-year follow-up. *Melanoma Res* 17:177-183.
- (86) De Gaetano A, Hardy T, Beck B, Abu-Raddad E, Palumbo P, Bue-Valleskey J, Porksen N (2008) Mathematical models of diabetes progression. *Am J Physiol Endocrinol Metab* 295:E1462-E1479.

- (87) Giang DV, Lenbury Y, De Gaetano A, Palumbo P (2008) Delay model of glucose-insulin systems: Global stability and oscillated solutions conditional on delays. *Journal of Mathematical Analysis and Applications* 343:996-1006.
- (88) Morganti AG, Deodato F, Zizzari S, Cilla S, Digesu' C, Macchia G, Panunzi S, De Gaetano A, Piermattei A, Cellini N, Valentini V (2008) Complexity index (COMIX) and not type of treatment predicts undetected errors in radiotherapy planning and delivery. *Radiother Oncol* 89:320-329.
- (89) Palumbo P, Picchini U, Beck B, van GJ, Delbar N, De Gaetano A (2008) A general approach to the apparent permeability index. *J Pharmacokinet Pharmacodyn* 35:235-248.
- (90) Picchini U, Ditlevsen S, De Gaetano A (2008) Maximum likelihood estimation of a time-inhomogeneous stochastic differential model of glucose dynamics. *Math Med Biol* 25:141-155.
- (91) Picchini U, Ditlevsen S, De Gaetano A, Lansky P (2008) Parameters of the diffusion leaky integrate-and-fire neuronal model for a slowly fluctuating signal. *Neural Comput* 20:2696-2714.
- (92) De Gaetano A, Panunzi S, Rinaldi F, Risi A, Sciandrone M (2009) A patient adaptable ECG beat classifier based on neural networks. *Applied Mathematics and Computation* 213:243-249.
- (93) Morganti AG, Cilla S, Valentini V, Digesu' C, Macchia G, Deodato F, Ferrandina G, Cece MG, Cirocco M, Garganese G, Di LL, Traficante D, Scarabeo F, Panunzi S, De Gaetano A, Sallustio G, Cellini N, Sofo L, Piermattei A, Scambia G (2009) Phase I-II studies on accelerated IMRT in breast carcinoma: technical comparison and acute toxicity in 332 patients. *Radiother Oncol* 90:86-92.
- (94) Morganti AG, Digesu C, Panunzi S, De Gaetano A, Macchia G, Deodato F, Cece MG, Cirocco M, Di CA, Iacoviello L, Valentini V, Cellini N, de Gaetano G (2009) Radioprotective effect of moderate wine consumption in patients with breast carcinoma. *Int J Radiat Oncol Biol Phys* 74:1501-1505.
- (95) Palumbo P, Pepe P, Panunzi S, De Gaetano A (2009) Robust closed-loop control of plasma glycemia: a discrete-delay model approach. *Discr Cont Dyn Syst B* 12:455-468.
- (96) Palumbo P, De Gaetano A (2010) An islet population model of the endocrine pancreas. *J Math Biol* 61:171-205.
- (97) Panunzi S, De Gaetano A, Mingrone G (2010) Advantages of the single delay model for the assessment of insulin sensitivity from the intravenous glucose tolerance test. *Theor Biol Med Model* 7:9.
- (98) Picchini U, Ditlevsen S, De Gaetano A (2010) Stochastic Differential Mixed-Effects Models. *Scand J Stat* 37:67-90.
- (99) Digesu C, Cilla S, De Gaetano A, Massaccesi M, Macchia G, Ippolito E, Deodato F, Panunzi S, Iapalucci C, Mattiucci GC, D'Angelo E, Padula GD, Valentini V, Cellini N, Piermattei A, Morganti AG (2011) Postoperative intensity modulated radiation therapy in high risk prostate cancer: a dosimetric comparison. *Med Dosim* 36:231-239.
- (100) Fagiolini A, Matone A, Gaz C, Panunzi S, De Gaetano A (2011) Confronto farmaco-economico di ziprasidone con altri antipsicotici atipici per il trattamento della schizofrenia. *Farmoeconomia* 12:29-40.

- (101) Iaconelli A, Panunzi S, De Gaetano A, Manco M, Guidone C, Leccesi L, Gniuli D, Nanni G, Castagneto M, Ghirlanda G, Mingrone G (2011) Effects of Bilio-Pancreatic Diversion on Diabetic Complications: A 10-year follow-up. *Diabetes Care* 34:561-567.
- (102) Morganti AG, Cilla S, De Gaetano A, Panunzi S, Digesu C, Macchia G, Massaccesi M, Deodato F, Ferrandina G, Cellini N, Scambia G, Piermattei A, Valentini V (2011) Forward planned intensity modulated radiotherapy (IMRT) for whole breast postoperative radiotherapy. Is it useful? When? *J Appl Clin Med Phys* 12:3451.
- (103) Antonelli M, De PG, Ranieri VM, Pelaia P, Tufano R, Piazza O, Zangrillo A, Ferrario A, De Gaetano A, Guaglianone E, Donelli G (2012) Comparison of triple-lumen central venous catheters impregnated with silver nanoparticles (AgTive((R))) vs conventional catheters in intensive care unit patients. *J Hosp Infect* 82:101-107.
- (104) De Gaetano A, Matone A, Agnes AM, Palumbo P, Ria F, Magalini S (2012) Modeling Rejection Immunity. *Theor Biol Med Model* 9:18.
- (105) Gaz C, Cremona G, Panunzi S, Patterson B, De Gaetano A (2012) A geometrical approach to the PKPD modelling of inhaled bronchodilators. *J Pharmacokinet Pharmacodyn* 39:415-428.
- (106) Hardy T, Abu-Raddad E, Porksen N, De Gaetano A (2012) Evaluation of a mathematical model of diabetes progression against observations in the Diabetes Prevention Program. *Am J Physiol Endocrinol Metab* 303:E200-E212.
- (107) Li J, Wang M, De Gaetano A, Palumbo P, Panunzi S (2012) The range of time delay and the global stability of the equilibrium for an IVGTT model. *Math Biosci* 235:128-137.
- (108) Magalini S, Pepe G, Panunzi S, Spada PL, De Gaetano A, Gui D (2012) An economic evaluation of *Clostridium difficile* infection management in an Italian hospital environment. *Eur Rev Med Pharmacol Sci* 16:2136-2141.
- (109) Mingrone G, Panunzi S, De Gaetano A, Guidone C, Raffaelli M, Callari C, Lombardi PC, Bellantone R (2012) Protocol for a randomised clinical study comparing the effect of Roux-en-Y gastric bypass and sleeve gastrectomy on reactive hypoglycaemia in morbidly obese subjects. *BMJ Open* 2.
- (110) Mingrone G, Panunzi S, De Gaetano A, Guidone C, Iaconelli A, Leccesi L, Nanni G, Pomp A, Castagneto M, Ghirlanda G, Rubino F (2012) Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 366:1577-1585.
- (111) Palumbo P, Pepe P, Panunzi S, De Gaetano A (2012) Time-delay model-based control of the glucose-insulin system, by means of a state observer. *European Journal of Control* 6:591-606.
- (112) Toghaw P, Matone A, Lenbury Y, De Gaetano A (2012) Bariatric surgery and T2DM improvement mechanisms: a mathematical model. *Theor Biol Med Model* 9:16.
- (113) De Gaetano A, Panunzi S, Matone A, Samson A, Vrbikova J, Bendlova B, Pacini G (2013) Routine OGTT: a robust model including incretin effect for precise identification of insulin sensitivity and secretion in a single individual. *PLoS One* 8:e70875.
- (114) Iesari S, le Roux CW, De Gaetano A, Manco M, Nanni G, Mingrone G (2013) Twenty-four hour energy expenditure and skeletal muscle gene expression changes after bariatric surgery. *J Clin Endocrinol Metab* 98:E321-E327.

- (115) Iesari S, le Roux CW, De Gaetano A, Manco M, Nanni G, Mingrone G (2013) Twenty-four hour energy expenditure and skeletal muscle gene expression changes after bariatric surgery. *J Clin Endocrinol Metab* 98:E321-E327.
- (116) Juagwon K, Lenbury Y, De Gaetano A, Palumbo P (2013) Application of modified Watanabe's approach for reconstruction of insulin secretion rate during OGTT under non-constant fraction of hepatic insulin extraction in *International journal of mathematics and computers in simulation*. *International journal of mathematics and computers in simulation* 7:304-313.
- (117) Leccesi L, Panunzi S, De Gaetano A, Familiari P, Iaconelli A, Guidone C, Mazzarella A, Costamagna G, Mingrone G (2013) Effects of Transoral Gastroplasty on Glucose Homeostasis in Obese Subjects. *J Clin Endocrinol Metab* 98:2901-2910.
- (118) Leccesi L, Panunzi S, De Gaetano A, Familiari P, Iaconelli A, Guidone C, Mazzarella A, Costamagna G, Mingrone G (2013) Effects of transoral gastroplasty on glucose homeostasis in obese subjects. *J Clin Endocrinol Metab* 98:1901-1910.
- (119) Magalini S, Pepe G, Panunzi S, De Gaetano A, Abatini C, Di Giorgio A, Foco M, Gui D (2013) Observational study on preoperative surgical field disinfection: Povidone-iodine and Chlorhexidine-alcohol. *Eur Rev Med Pharmacol Sci* 17:3367-3375.
- (120) Palumbo P, Ditlevsen S, Bertuzzi A, De Gaetano A (2013) Mathematical modeling of the glucose-insulin system: a review. *Math Biosci* 244:69-81.
- (121) Sloan-Lancaster J, Abu-Raddad E, Polzer J, Miller JW, Scherer JC, De Gaetano A, Berg JK, Landschulz WH (2013) Double-Blind, Randomized Study Evaluating the Glycemic and Anti-inflammatory Effects of Subcutaneous LY2189102, a Neutralizing IL-1beta Antibody, in Patients With Type 2 Diabetes. *Diabetes Care*.
- (122) De Gaetano A, Panunzi S, Eliopoulos D, Hardy T, Mingrone G (2014) Mathematical modeling of renal tubular glucose absorption after glucose load. *PLoS One* 9:e86963.
- (123) Maggiore SM, Idone FA, Vaschetto R, Festa R, Cataldo A, Antonicelli F, Montini L, De Gaetano A, Navalesi P, Antonelli M (2014) Nasal High-Flow versus Venturi Mask Oxygen Therapy after Extubation. Effects on Oxygenation, Comfort, and Clinical Outcome. *Am J Respir Crit Care Med* 190:282-288.
- (124) Palumbo P, Pizzichelli G, Panunzi S, Pepe P, De Gaetano A (2014) Model-based control of plasma glycemia: Tests on populations of virtual patients. *Math Biosci* 257:2-10.
- (125) Borri A, Panunzi S, De Gaetano A (2015) A glycemia-structured population model. *J Math Biol*.
- (126) Cibella F, Cuttitta G, Della MR, Ruggieri S, Panunzi S, De Gaetano A, Bucchieri S, Drago G, Melis MR, La GS, Viegi G (2015) Effect of indoor nitrogen dioxide on lung function in urban environment. *Environ Res* 138:8-16.
- (127) De Gaetano A, Gaz C, Palumbo P, Panunzi S (2015) A Unifying Organ Model of Pancreatic Insulin Secretion. *PLoS One* 10:e0142344.
- (128) Mingrone G, Panunzi S, De Gaetano A, Guidone C, Iaconelli A, Nanni G, Castagneto M, Bornstein S, Rubino F (2015) Bariatric-metabolic surgery versus conventional medical treatment in obese patients with type 2 diabetes: 5 year follow-up of an open-label, single-centre, randomised controlled trial. *Lancet* 386:964-973.

- (129) Panunzi S, De Gaetano A, Carnicelli A, Mingrone G (2015) Predictors of remission of diabetes mellitus in severely obese individuals undergoing bariatric surgery: do BMI or procedure choice matter? A meta-analysis. *Ann Surg* 261:459-467.
- (130) Panunzi S, D'Orsi L, Iacoviello D, De Gaetano A (2015) A stochastic delay differential model of cerebral autoregulation. *PLoS One* 10:e0118456.
- (131) Panunzi S, Carlsson L, De Gaetano A, Peltonen M, Rice T, Sjostrom L, Mingrone G, Dixon JB (2016) Determinants of Diabetes Remission and Glycemic Control After Bariatric Surgery. *Diabetes Care* 39:166-174.
- (132) Yokrattanasak, J.; De, G. A.; Panunzi, S.; Satiracoo, P.; Lawton, W. M.; Lenbury, Y. A Simple, Realistic Stochastic Model of Gastric Emptying. *PLoS. One.* **2016**, *11*, e0153297.
- (133) Sakulrang, S.; Moore, E. J.; Sungnul, S.; De Gaetano, A. A fractional differential equation model for continuous glucose monitoring data. *Adv.Difference Equations* , 150. 2017.
Ref Type: Generic

Book chapters:

- (1) De Gaetano, A.; Coleman, W. P. Surgical Informatics. In *General Surgery: Current Status and Future Trends*; Starzl, T. E., Montorsi, W., Eds.; Raven Press: New York, 1990.
- (2) Tataranni, P. A.; Ghirlanda, G.; Mingrone, G.; Cotroneo, P.; Manto, A.; Raguso, C. A.; De Gaetano, A.; Greco, A. V. Energy Balance in Insulin-Dependent Diabetes Mellitus Patients by Respiration Chamber. In *Current Topics in Diabetes Research, Frontiers in Diabetes*; Belfiore, F., Bergman, R. N., Molinatti, G. M., Eds.; Karger: Basel, 1993.
- (3) De Gaetano, A. Perspectives and Challenges of BioMathematics for the First Years of the New Millennium. In *Applicable Mathematics*; Misra, J. C., Ed.; Narosa: 2000.
- (4) Mukhopadhyay, A.; De Gaetano, A.; Arino, O.; Mingrone, G.; Castagneto, M. A Single-Distributed-Delay Model of the Intra-Venous Glucose Tolerance Test: a Global Study. In *Applicable Mathematics*; Misra, J. C., Ed.; Narosa: 2000.
- (5) De Gaetano, A.; Panunzi, S. Nonlinear Estimation and Confidence Regions: a Biological Case Study. In *Mathematical Models for Bioengineering and Probabilistic Systems*; Misra, J. C., Ed.; Narosa: New Delhi, 2005.
- (6) De Gaetano, A.; Panunzi, S.; Beck, B.; Boulanger, B. Statistical Modeling in Pharmaceutical Research and Development. In *Computer Applications in Pharmaceutical Research and Development*; Ekins, S., Ed.; Wiley: Hoboken NJ, 2006; Chapter 3.
- (7) Palumbo, P.; De Gaetano, A. State-Feedback Control of the Glucose-Insulin System. In *Math Everywhere. Deterministic and Stochastic Modelling in Biomedicine, Economics and Industry.*; Aletti, G., Burger, M., Micheletti, A., Morale, D., Eds.; Springer: Heidelberg, 2007.
- (8) De Gaetano, A.; Panunzi, S.; Palumbo, P.; Gaz, C.; Hardy, T. Data-Driven Modeling of Diabetes Progression. In *Data-Driven Modeling for Diabetes*; Marmarelis, V., Mitsis, G., Eds.; Springer Verlag: 2014.
- (9) Panunzi, S.; De Gaetano, A. Pitfalls in Model Identification: Examples From Glucose-Insulin Modelling. In *Data-Driven Modeling for Diabetes*; Marmarelis, V., Mitsis, G., Eds.; Springer Verlag: 2014.

Extended papers on international Conference Proceedings:

- (1) Guadalupi, P.; De Gaetano, A.; Pizzi Bonafous, R.; Chiara, O.; Nespoli, A.; Bevilacqua, G. VICTOR: Versatile Intensive Care Tool for Organization and Research, Workshop Di Informatica Medica, Milano 1986. *Ricerca Scientifica ed Educazione Permanente* **1986**, 51, 55-56.
- (2) Pizzi Bonafous, R.; De Gaetano, A.; Guadalupi, P.; Chiara, O.; Nespoli, A.; Bevilacqua, G. Rebecca: Archivio Chirurgico Relazionale in Linguaggio Naturale (Rebecca: Relational Surgical DBMS Using Natural Language Interpretation), in Workshop Di Informatica Medica, Milano 1986. *Ricerca Scientifica ed Educazione Permanente* **1986**, 51, 55-56.
- (3) Chiara, O.; Pizzi, R.; Guadalupi, P.; Di Mattia, D.; Chiappa, A.; De Gaetano, A. A Prospective Evaluation of the Critically Ill Surgical Patient by Means of Physiologic Trajectories. *8th International Congress of Emergency Surgery, Milano* **1987**, 2, 173-180.
- (4) De Gaetano, A.; Guadalupi, P.; Chiara, O.; Pizzi Bonafous, R.; Coleman, W. P.; Sanford, D.; Bevilacqua, G. Informatics in the Emergency Surgery Department: Using Clinical Data to Infer Physiologic States - Invited Talk. *8th International Congress of Emergency Surgery, Milano* **1987**, 1, 137-145.
- (5) Guadalupi, P.; De Gaetano, A.; Pizzi, R.; Chiara, O.; Segala, M.; Nespoli, A. VICTOR: Versatile Intensive Care Tool for Organization and Research. *8th International Congress of Emergency Surgery, Milano* **1987**, 2, 683-688.
- (6) Pizzi, R.; De Gaetano, A.; Guadalupi, P.; Chiara, O.; Segala, M.; Nespoli, A. Rebecca: Natural Language System for the Filing and Retrieval of Surgical Data. *8th International Congress of Emergency Surgery, Milano* **1987**, 2, 469-472.
- (7) Coleman, W. P.; De Gaetano, A. Topology of Medical Dynamical Systems. *Workshop Informatics in Surgery, 26th World Congress International Coll. Surgeons* **1988**, 19.
- (8) De Gaetano, A.; Coleman, W. P.; Goodarzi, S. Measure of Sets of Fractional Dimension. *Workshop Informatics in Surgery, 26th World Congress International Coll. Surgeons* **1988**, 23-25.
- (9) De Gaetano, A.; Guadalupi, P.; Pizzi, R.; Chiara, O. Alcune Implicazioni Cliniche Dei Concetti Di Geometria Frattale (Some Clinical Implications of the Concepts of Fractal Geometry). *Workshop Informatics in Surgery, 26th World Congress International Coll. Surgeons* **1988**, 3-6.
- (10) De Gaetano, A.; Coleman, W. P. Physiologic Trajectories in Probability Spaces. *Workshop Informatics in Surgery, 26th World Congress International Coll. Surgeons* **1988**, 91-94.
- (11) Pizzi, R.; Chiara, O.; De Gaetano, A. A Petri Nets Procedure for the Prognostic Evaluation of the Critically Ill Surgical Patient. *Workshop Informatics in Surgery, 26th World Congress International Coll. Surgeons* **1988**, 77-81.
- (12) Pizzi, R.; Chiara, O.; Guadalupi, P.; De Gaetano, A. On and Off-Line Surveillance of the Critically Ill Patient. *Forum delle Soluzioni, Milano* **1988**.
- (13) Pizzi, R.; De Gaetano, A.; Guadalupi, P.; Chiara, O.; Columbano, C.; Sicurello, F. Prediction of MSOF Evolution by Means of Nine Vital Systems Trajectories. In *Lecture Notes in Medical Informatics (36)*; Springer Verlag: New York, 1988.
- (14) Coleman, W. P.; Sanford, D.; De Gaetano, A. Syntax and Semantics of Languages for Medical Information Processing. *15th Northeast Bioengineering Conference (IEEE), Boston* **1989**, 189-190.
- (15) Guadalupi, P.; Pizzi, R.; De Gaetano, A.; Chiara, O.; Verna, C. Data Analysis and Modelling in the Evaluation of Multiple System Organ Failure. In *Reliability Data Collection and Use in Risk and Availability Assessment*; Springer Verlag: 1989.
- (16) Coleman, W. P.; Sanford, D. P.; De Gaetano, A.; Geisler, F. H. Modularity of Neural Network Architecture. In *Proceedings of the IEEE/INNS Joint Conference on Neural Networks, Washington D.C*; Caudill, M., Ed.; Lawrence Erlbaum Associates: Hillsdale, NJ, 1990.
- (17) Agnes, S.; Gangeri, G.; Magalini, S.; Avolio, A. W.; Foco, M.; De Gaetano, A.; Sganga, G.; Castagneto, M. Raro Leiomioma Retroperitoneale Pelvico Coinvolgente Il Retto. Descrizione Di Un Caso. (Rare Pelvic Retroperitoneal Leiomyosarcoma Involving the Rectum. Description of a Clinical Case.). *93° Congresso Nazionale, Societa` Italiana di Chirurgia, Firenze* **1991**, 389-392.
- (18) Chiara, O.; De Gaetano, A.; Segala, M.; Pizzi, R. Il Monitoraggio Computerizzato in Terapia Intensiva: Storia e Prospettive (Computerized Monitoring in the Intensive Care Unit: History and

- Perspectives). *Convegno Sistemi Informativi Integrati nell'Urgenza e nell'Emergenza, Milano 1991*, 113-114.
- (19) Coleman, W. P.; Sanford, D. P.; De Gaetano, A.; Geisler, F. H. Logical Structure of Neurobiological Information Processing. In *Computing in the 90's - Lecture Notes in Computer Science (507)*; Sherwani, N., Ed.; Springer Verlag: New York, 1991.
 - (20) De Gaetano, A.; Rivkind, A.; Sganga, G.; Gangeri, G.; Siegel, J. H. Classificazione Multiparametrica Nella Fascite Nectrotizzante Come Guida Prognostica e Terapeutica. *1° Forum Nazionale "Chirurgia 2000", Torino 1991*, 227-233.
 - (21) Raguso, C.; De Gaetano, A.; Mingrone, G.; Tataranni, A.; Finotti, E.; Capristo, E.; Greco, A. V. Modificazioni Del Metabolismo Glucidico Durante Infusione Di Sabacato, Substrato Lipidico Alternativo Nell'Alimentazione Parenterale Totale (Modifications of Glucose Metabolism During the Infusion of Sebacate, an Alternate Lipid Substrate in TPN). *3° Workshop "Nutrizione e Diabete", Societa` Italiana di Diabetologia 1991*.
 - (22) Tataranni, A.; De Gaetano, A.; Mingrone, G.; Raguso, C.; Ghirlanda, G.; Greco, A. V.; Manto, A.; Cotroneo, P. Valutazione Della Spesa Energetica Nel Diabete Mellito Insulino- Dipendente Mediante Camera Calorimetrica (Evaluation of Energy Consumption in Insulin-Dependent Diabetes Mellitus by Calorimetric Chamber). *3° Workshop "Nutrizione e Diabete", Societa` Italiana di Diabetologia 1991*.
 - (23) Castagneto, M.; Avolio, A. W.; Agnes, S.; De Gaetano, A.; Crucitti, F. Selezione Del Donatore D'Organo Per Il Trapianto Di Fegato: Analisi Multifattoriale Dei Parametri Predittivi Della Primary Dysfunction (Selection of the Organ Donor for Liver Transplantation: Multifactorial Analysis of the Predictive Parameters of Primary Dysfunction). *94° Congresso Nazionale, Societa` Italiana di Chirurgia 1992*, 3, 278-286.
 - (24) Castagneto, M.; De Gaetano, A.; Gangeri, G.; Mingrone, G.; Sganga, G.; Greco, A. V. Pharmacokinetics of Medium Chain Lipid Substrates. *Recent Advances in Anesthesia, Pain, Intensive Care and Emergency 1992*, 7, 393-398.
 - (25) Gangeri, G.; Sganga, G.; De Gaetano, A.; Lippa, S.; Carducci, P.; Castagneto, M. Danno Da Radicali Liberi e Deficit Di Antiossidanti Endogeni Nella Sepsi Clinica (Free Radical Damage and Deficit of Endogenous Antioxidants in Clinical Sepsis). *2° Forum Nazionale "Chirurgia 2000", Torino 1992*.
 - (26) Bertuzzi, A.; De Gaetano, A.; Gandolfi, A.; Greco, A. V.; Mingrone, G.; Salinari, S. Pharmacokinetics of Dodecanedioic Acid in Rats. *IEEE Engineering in Medicine and Biology Society 1993*, 15, 572-573.
 - (27) De Gaetano, A. Evoluzione Nell'Elaborazione Automatica Dei Dati in Medicina (Evolution of Automatic Data Analysis in Medicine). *Corso di Aggiornamento "Applicazioni del Computer in Terapia Intensiva" 1993*.
 - (28) De Gaetano, A. Mathematical Modelling in Physiology. *Invited Talk, University of Cambridge Heart Lung Transplant Unit, Papworth 1993*.
 - (29) De Gaetano, A.; Mingrone, G.; Raguso, C. A.; Tataranni, P. A.; Castagneto, M.; Greco, A. V. Carnitine Increases Glucose Disposition and Oxidation in the Healthy Volunteer. *5th International Symposium on Insulin Receptor and Insulin Action, Munich 1993*.
 - (30) Coleman, W. P.; Mingrone, G.; De Gaetano, A.; Greco, A. V.; Castagneto, M.; Siegel, J. H. A theoretical design for investigating Leucine metabolism. *IFAC Symposium of Modeling and Control in Biomedical Systems, Galveston . 1994*.
 - (31) Coleman, W. P.; De Gaetano, A.; Bruognoli, P.; Gui, D.; Giovannini, I.; Castagneto, M.; Siegel, J. H. Mathematical techniques for investigating respiratory control. *IFAC Symposium of Modeling and Control in Biomedical Systems, Galveston . 1994*.
 - (32) De Gaetano, A.; Mingrone, G.; Coleman, W. P.; Castagneto, M.; Raguso, C.; Tataranni, P. A. Population Estimates of Insulin Sensitivity by NONMEM-Analyzed IVGTT. *2nd International Meeting, EGIR European Group on Insulin Resistance, Padova 1994*.
 - (33) De Gaetano, A.; Mingrone, G.; Coleman, W. P.; Castagneto, M.; Raguso, C. A.; Tataranni, P. A.; Greco, A. V. Minimal modelling of glucose kinetics by NONMEM estimation. *IFAC Symposium of Modeling and Control in Biomedical Systems, Galveston . 1994*.

- (34) De Gaetano, A.; Raguso, C. A.; Mingrone, G.; Coleman, W. P.; Tataranni, P. A.; Greco, A. V.; Castagneto, M. Insulin Sensitivity in Populations by NONMEM-Estimated Minimal Model. *Invited Talk, 3rd International Conference on Minimal Modelling, Baton Rouge 1994*.
- (35) De Gaetano, A. Mathematical Modelling in the Study of Glucose Metabolism. *Seminar, NIH National Institute for Diabetes, Digestive and Kidney Diseases 1994, Phoenix (AZ), March*.
- (36) Sganga, G.; De Gaetano, A.; Castagneto, M. Hospital Infection Risk in Surgery, Intensive Care, Resuscitation, Transplant Surgery. In *Course on Prevention of Hospital Infections*; Council of Europe: Strasbourg, 1994.
- (37) De Gaetano, A.; Sganga, G.; Vescio, M. F.; Mingrone, G.; Castagneto, M. Impiego Dei Trigliceridi a Catena Media Nella Nutrizione Parenterale. *23° Congresso Nazionale, Societa` Italiana di Chirurgia d'Urgenza, Milano 1995*.
- (38) Nanni, G.; Panocchia, N.; Magalini, S. C.; Sollazzi, L.; Perilli, W.; Pennisi, M.; De Gaetano, A.; Vescio, M. F.; Castagneto, M. Successo Del Regime Di Immunosoppressione Duplice Nel Trapianto Di Polmone (Success of Two-Drug Immunosuppression in Lung Transplant). In *Stato Attuale Dei Trapianti Di Organo e Di Tessuto in Italia, XXIII Congresso Societa` Italiana Di Trapianti D'Organo*; Schena, F. P., Selvaggi, F. P., Eds.; Wichtig: Milano, 1995.
- (39) Nanni, G.; Panocchia, N.; De Gaetano, A.; Castagneto, M. Terapia Immunosoppressiva Del Trapianto Di Polmone (Immunosuppressive Treatment of Lung Transplant). In *Stato Attuale Dei Trapianti Di Organo e Di Tessuto in Italia, XXIII Congresso Societa` Italiana Di Trapianti D'Organo*; Schena, F. P., Selvaggi, F. P., Eds.; Wichtig: Milano, 1995.
- (40) De Gaetano, A.; Arino, O.; Castagneto, M. A Globally Asymptotically Stable Delay Differential Model for the Glucose-Insulin System. *European Society for Mathematical and Theoretical Biology, ECMBM, Heidelberg 1996*, 82-83.
- (41) De Gaetano, A.; Arino, O. A Statistical Approach to the Determination of Stability for a Delay-Differential Model of the Glucose-Insulin System. *Conference on Dynamical Systems in Biology and Medicine - Veszprem 1996*, 24.
- (42) De Gaetano, A.; Arino, O.; Mingrone, G.; Castagneto, M. A Delay-Differential Model of Glucose-Insulin Interaction. *Eur. J. Appl. Physiol. 1997*.
- (43) De Gaetano, A.; Arino, O. Parameter Estimation for Sparse-Data Dynamical Models. *Matematica e Ambiente III, Napoli 1998*.
- (44) De Gaetano, A. Stima Di Parametri Fisiologici e Stabilita`. *Giornate di Biomatemica, ENEA, Lercici (SP) 1998*.
- (45) Gui, D.; Michetti, F.; De Gaetano, A.; Spada, P. L.; Viggiano, A.; Geloso, M. C. Botulinum Toxin on Experimental Hypertrophic Pyloric Stenosis. *Telethon Scientific Convention, November 1998*, 372.
- (46) De Gaetano, A.; Beretta, E.; Solimano, F.; Di Mascio, M.; Arino, O. Modelling the Euglycemic Hyperinsulinemic Clamp With Delay Differential Equations. *Theory and Mathematics in Biology and Medicine (European Society for Mathematical and Theoretical Biology), Amsterdam 1999*.
- (47) De Gaetano, A. Nonlinear Model Parameter Estimation and the Geometry of the Expectation Surface. *Course held at the Termoli Biomathematics Summer School 1999*.
- (48) De Gaetano, A.; Fergola, P. Stima Di Parametri Di Modelli Dinamici Con Dati Sparsi. *Invited Talk, Domus Galileiana meeting on Mathematical Modeling in Biology, Pisa, October 8th 1999 1999*.
- (49) De Gaetano, A. Sensitivity Analysis of a Growth Model by Analytic and Monte Carlo Methods. *Mathematics and Environment IV, Napoli 2000*, 3.
- (50) Ditlevsen, S.; De Gaetano, A. A Model of the Uptake of Alternative Fatty Acids by Isolated Rat Liver Based on Stochastic Differential Equations. In *Workshop on Dynamical Stochastic Modeling in Biology, 8-10 January 2003*; Huebner, M., Sorensen, M., Eds.; 2003.
- (51) Clausen, W. H. O.; De Gaetano, A. A model for exogenous glucose regulation in IDDM. 2005. European Conference on Mathematical and Theoretical Biology 2005. 7-18-0005.
- (52) De Gaetano, A.; Di Martino, D.; Germani, A.; Manes, C.; Palumbo, P. Distributed-Delays Models of the Glucose-Insulin Homeostasis and Asymptotic State Observation. *IFAC 16th World Congress, Prague 2005*.

- (53) De Gaetano, A.; Palumbo, P.; Panunzi, S.; Clausen, W. H. O. Analysis of an impulsive model of subcutaneously delivered insulin kinetics. 2005. Hellenic European Research on Computer Mathematics and its applications 2005. 9-22-2005.
- (54) Ong Clausen, W. H.; De Gaetano, A. A Model for exogenous glucose regulation in IDDM. 2. 2005. ECMTB 2005 European conference.
- (55) Palumbo, P.; De Gaetano, A. A Closed-Loop Optimal Control of the Plasma Glycemia. *PROCEEDINGS OF THE 45TH IEEE CONFERENCE ON DECISION AND CONTROL, VOLS 1-14 Book Series: IEEE Conference on Decision and Control* **2006**, 679-684.
- (56) Palumbo, P.; Pepe, P.; De Gaetano, A.; Panunzi, S. Robust Closed-Loop Control of Plasma Glycemia. *47th Conference on Decision and Control* **2008**.
- (57) Palumbo, P.; Pepe, P.; Panunzi, S.; De Gaetano, A. Observer-Based Closed-Loop Control of Plasma Glycemia. *48th IEEE Conference on Decision and Control (CDC09), Shanghai, China* **2009**.
- (58) Palumbo, P.; Pepe, P.; Panunzi, S.; De Gaetano, A. Digital Closed-Loop Control of Plasma Glycemia. *49TH IEEE CONFERENCE ON DECISION AND CONTROL (CDC)* **2010**, 833-838.
- (59) Palumbo, P.; Pizzichelli, G.; Panunzi, S.; Pepe, P.; De Gaetano, A. Tests on a Virtual Patient for an Observer-Based, Closed-Loop Control of Plasma Glycemia. *50TH IEEE CONFERENCE ON DECISION AND CONTROL AND EUROPEAN CONTROL CONFERENCE (CDC-ECC)* **2011**, 6936-6941.
- (60) Palumbo, P.; Pepe, P.; Panunzi, S.; De Gaetano, A. Glucose Control by Subcutaneous Insulin Administration: a DDE Modelling Approach. *18th IFAC World Congress on Automatic Control (IFAC2011), Milan* **2011**.
- (61) Juagwon, K.; Lenbury, Y.; De Gaetano, A.; Palumbo, P. Reconstruction of Insulin Secretion Under the Effects of Hepatic Extraction During OGTT: a Modelling and Convolution Approach. *13rd WSEAS American Conference on Applied Mathematics (AMERICAN-MATH'13), Cambridge, Massachusetts, USA* **2013**, 85-90.
- (62) Palumbo, P.; Pepe, P.; Kong, J. D.; Kumar, S. S.; Panunzi, S.; De Gaetano, A. Regulation of the Human Plasma Glycemia by Means of Glucose Measurements and Subcutaneous Insulin Administration. *3rd IFAC International Conference on Intelligent Control and Automation Science (ICONS13), ChengDu (China)* **2013**, 96-101.
- (63) Palumbo, P.; Pepe, P.; Panunzi, S.; De Gaetano, A. Observer-Based Closed-Loop Control for the Glucose-Insulin System: Local Input-to-State Stability With Respect to Unknown Meal Disturbances. *American Control Conference (ACC13), Washington, DC, USA* **2013**, 1751-1756.