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Leading Low-Carbon Technology in Italy and the United States:

Moving research from the laboratory to the market

Scott E. Baker
Pacific Northwest National Laboratory
Department of Energy

Dr. Scott E. Baker is a Scientist V at the US Dept. of Energy's Pacific Northwest National Laboratory in Richland, Washington. He leads research projects that use genetic, genomic and proteomic strategies to understand important problems in the biology of fungi with the goal of translating scientific research into economically viable bioprocesses for production of biofuels and chemicals.. His research projects often involve collaboration that span industry, government and academic labs. Before joining PNNL in 2003, Dr. Baker studied epithelial cell adhesion in mammalian cell and tissue culture. Further study included cell adhesion in a genetic system, i.e., the fruitfly, *Drosophila melanogaster*. Dr. Baker's experience also includes work at the Torrey Mesa Research Institute/Syngenta, where he was a member of a team that took a genomics-based approach to the study of fungal plant pathogens. When TMRI was sold to Diversa, a biotech company, he continued to work on fungal genomics, but with an industrial emphasis. Currently, Dr. Baker is PI on multiple fungal biology and biotechnology projects funded by the DOE Office of Biological and Environmental Research (Science) and the DOE Office of the Biomass Program (Energy Efficiency and Renewable Energy). He is also a Program Coordinator for scientific and strategic aspects of the DOE Joint Genome Institute (JGI) Fungal Genomics Program.

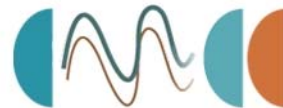


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Yoav Banin
Co-Founder and CEO
Solergy

Yoav Banin has a proven track record of creating and selling innovative high tech products for new markets. Currently he is the Co-Founder and CEO of Solergy, a well-funded startup company developing a novel, high efficiency solar energy conversion system.

Prior to launching Solergy, Mr. Banin was Director of Products at Mercury Interactive, an enterprise software company (>\$1B in revenue, acquired by HP for \$4.5B). While there, he invented and launched new products that generated >\$50M in revenue within 3 years and also led to a spin-out company that was acquired for \$70M within 2 years from incorporation. He was also one of the early pioneers in Voice-over-IP (VoIP) telecommunication technology, launching a suite of products for testing, monitoring and managing VoIP networks in 1998 while at Radcom.

Mr. Banin holds a Masters of Science Degree in Materials Science & Engineering from Stanford University and a Bachelor's Degree in Applied Mathematics from UC Berkeley and is a member of the Materials Research Society.

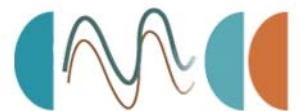


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Tullio Caselli
CEO
SHAP SpA

Tullio Caselli received a degree in architecture from the *Istituto Universitario di Architettura di Venezia* in 1972.

From 1972 to 1980, he designed and coordinated projects for the Municipality, the League and the Consortium of Cooperatives of Ferrara. From 1980-1998 he dedicated himself to the design of rail lines, including high speed rail and subways, as well as design activities in civil and industrial fields regarding architecture, layout and production flows. He has worked for civil and industrial organizations in the United States of America, Monaco, France, South Africa, Algeria, Ivory Coast, Spain, Portugal, the Tibet Autonomous Region, and China.

He worked as the R&D Manager in renewable energies applied to civil and industrial construction from 1998-2002, focusing specifically on the following topics:

- Development of solar cell concentrator, with the support of the Department of Physics, University of Ferrara;
- Development of multi-array thick film sensors for analysis combustion engine exhaust;
- Development of a thick film sensors for CO and NOx;
- Development of chromatograph Micromachined silicon based semiconductors and metal oxides in collaboration with the Department of Chemistry, University of Turin;
- Development of systems based on photo-dioxide nanostructured titanium;
- Development of solar technology in concentration, in cooperation with the Weizman Institute of Science, Israel;
- Development of the Multi Tower Solar Array, in collaboration with the Department of Physics, University of Sydney;
- Development of heliostats ACTA, in collaboration with the Malaysian Institute of Technology in Kuala Lumpur;
- Draft of wind turbine with vertical axis with Coanda effect, in collaboration with the University of Rome La Sapienza.

In 2002, Mr. Caselli began SHAP - Solar Heat and Power S.p.A, where he current acts as CEO, using the vast expertise in the field of research on small- and medium-sized installations for the production of electricity from renewable energy sources. SHAP's mission is to established small- and medium-sized plants fueled by renewable energy - primarily solar, wind and biomass. The strategy is to bring new products to market through the facilitation of technology transfer from public R & D centers.



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Corrado Clini

**Director General for Environmental Research and Development
Ministry for the Environment, Land and Sea**

Corrado Clini, is the Director General of the Ministry of the Environment and Territory and Sea Protection of Italy, responsible for international and global issues, climate change, ozone layer protection, sustainable development and international co-operation for the protection of the global environment, as well as environmental European regulations. He graduated in Medicine at the University of Parma, and specialized in occupational health and hygiene and public health. Dr. Clini directed in the 1980s the Department of Environmental Protection and Industrial Medicine of Venice-Porto Marghera, the most important industrial area in Italy, with a high density of chemical plants, refineries and power plants. As Director General of the Environment Ministry, he had in the 1990s the responsibility for the elaboration and the adoption of regulations on air and noise pollution, industrial safety, and environmental standards for industrial and transportation sectors. Dr. Clini headed the Italian expert-level delegation at the Rio Conference on Environment and Development in 1992, and the Kyoto Conference on Climate Change in 1997. In 2000-2001 Dr. Clini was the co-chair of the G8 task force on Renewable Energy. Dr. Clini is the co-chair of the European Environmental and Health Committee of the United Nations Economic Commission for Europe. Since 2006, Dr. Clini is the chairman of the Global Bioenergy Partnership.

He is a Visiting Professor at the Department for Environmental Sciences and Engineering of Tsinghua University (Beijing) and at Harvard's Kennedy School of Government.

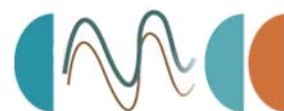


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Lucio Gallo
CEO
Ansaldo Fuel Cells

Lucio Gallo, has a Doctorate in Electrical Engineering with “laude” from Naples Federico II University, and a Master of Business Administration with “Alto Merito” from Milan Bocconi SDA University. Since March 2007 he has been the CEO of Ansaldo Fuel Cells, developing and manufacturing molten carbonate fuel cells applicable for distributed power generation and Carbon Capture (CCS) on small and large power plants. He is also the Head of Renewable Energy Business Unit of Ansaldo Energia, with a portfolio which includes fuel cells, photovoltaic systems, hydrogeneration, geothermic power generation, and microturbines. He is also a member of the Board of Directors of Ansaldo Nucleare SpA.

From 2005 – 2007 Dr. Gallo was the General Manager of AnsaldoBreda SpA, and previous to that he spent five years as the Executive and Senior Vice President at Fincantieri SpA; one of the largest groups in the world in the design and construction of merchant and naval vessels. From 1997 – 1999 he was the Executive Director of Management Control at Ansaldo Trasporti (Group) SpA, and from 1991 until 1997 held the position of Executive Strategic Business Units Director for Transformers, Rotating machines, and Service at Ganz Ansaldo Ltd in Hungary. From 1989 to 1991 he worked as the Assistant to General Manager for Reorganization Program and Chief Vehicle B.U. Controller at Ansaldo Trasporti SpA. He has also worked as a Manager for the Divisional Engineering Staff at 3M Italy SpA, and as the Chief of Design and the Project Management Dept at Pragma SpA – ENI Group.

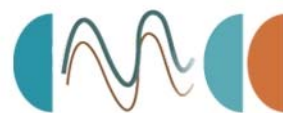


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Roberto Garavaglia
CEO
Arendi (Gruppo Marcegaglia)

Roberto Garavaglia has a degree in Electrical Engineering from the Politecnico di Milano, and is currently with the Marcegaglia Group's energy sector, encompassing the following:

- Chairman and CEO of EuroEnergy Group S.r.l., active in the development and ownership of renewable energy plants;
- CEO of Arendi S.p.A., a thin film PV modules production company located in Northern Italy;
- Vice President of CO.GE.AM, active in the business of Urban Waste Treatment in Puglia Region;
- CEO in six project companies located in Puglia region;
- CEO of Oikothén S.C.r.l., active in the business of Industrial Waste Treatment in Sicily Region;
- CEO of Eco Energia S.r.l., an electric power plant owner in Puglia Region;
- CEO of Appia Energy S.r.l an electric power plant owner in Puglia Region;
- Chairman and CEO of Fuelco Uno S.r.l., active in the biomass treatment in Calabria Region;
- CEO of E.T.A. Energie Tecnologie Ambiente S.p.a., an electric power plant owner in Calabria and Puglia Regions;
- Chairman and CEO of Marcegaglia Taranto S.p.A., a pressure parts manufacturer located in Puglia Region.

Prior to his current position, he was active in the following sectors:

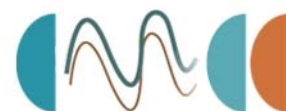
- 1993-1996: General Manager in a company active in industrial steam boiler manufacturing;
- 1990-1993: General Manager in a company active in power plants installation;
- 1987-1990: Proposal Manager in a company active in the environmental field;
- 1985-1987: Proposal Manager in a company active in the steel production field;
- 1979-1985: Technical role in a company active in cement plants field.



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Ibrahim Gulyurtlu
President
SHAP Engineering

Ibrahim Gulyurtlu has a Chemical Engineering degree from the University College, University of London, United Kingdom, a M.Sc. degree on "Combustion Science & Pollution Control" from University of Sheffield, United Kingdom., and a Ph.D. degree from University of Sheffield, United Kingdom. He is the Research Program Coordinator of INETI, and since 1994 has been an Invited Associate Professor at the Universidade Nova de Lisboa. Prior to 1994, he spent three years as an Invited full Professor at the University of Aveiro. He has worked on the Coordination of 20 projects funded by the Portuguese industry on energy related areas, and on the Coordination of more than 50 RD&D projects on energy and environment funded by European Union through DG XII. He was a National delegate in the implementing agreement of the International Energy Agency on "Fluidised Bed Combustion," and an invited expert of the ECSC programme on "Combustion and Gasification of Coals." He has published over 250 articles and holds five patents. Dr. Gulyurtlu has been an invited speaker at the following scientific conferences:

- International Conference on Fluidised Bed Combustion, organised by "American Society of Mechanical Engineers;"
- International Conference on Circulating Fluidised Beds;
- Combustion Technologies for Clean Air;
- European Conference on Biomass for Energy;
- IEA International Conference on "Natural Gas Technologies."

Additionally, he is a reviewer for the following scientific journals:

- *Combustion & Flame*;
- *Combustion Science & Technology*;
- *Energy and Fuel*;
- *Waste Management Journal*;
- *Clean Air - Int. J. Environmental Combustion Technology*;
- *Fuel*.

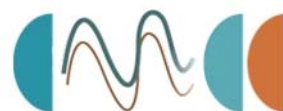


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Domenico Laforgia
Rector
University of Salento (Puglia)

Domenico Laforgia, born in 1951, is a Full Professor of Energy Systems and Environment at the University of Salento and, since 2007 he's also the Rector of the same University. Among the different Professional Registrations he has, it's worth mentioning he is a Licensed Professional Engineer since 1976 and a Certified Energy Manager since 1995. He's author of more of 250 scientific papers and 12 books in the field of energy transformation and combustion.

Prof. Laforgia has been Dean of Engineering Faculty of the University of Lecce (now University of Salento) in 2001-2007, Professor of Mechanical Thermodynamic Measurements at the Polytechnics of Bari in 1992-1998, Professor of Applied Mechanics at the Polytechnics of Bari in 1992-1994, Professor of Statistics at the Faculty of Engineering at the University of Basilicata in 1984-1985, Professor of Applied Thermodynamics at the University of Bari in 1978-1979.

Since 1989, as Consultant of ENEA [Italian National Agency for New Technologies, Energy and Environment], he carried out several feasibility studies and energy diagnoses for significant enterprises and public administrations.

He's been for 9 years (1999-2008) Member of the Board of Directors of Provincial Energy Agency in Lecce and since 2001 he's Member of the Guide Committee of the Inter-University Centre of Science and Environmental Engineering and of the National Council of Professors of 'Machines' and 'Energy Systems and Environment'.

As Senior Expert Engineer of the Institute for University Cooperation (ICU Rome), Prof. Laforgia started the research activity in the field of emissions of engines at the Istituto Tecnologico de Cartago, Costa Rica, in a laboratory he projected himself and, as Project director of the new department of Electro-Mechanical Engineering of the Universidad Particular de Piura, Perù, for the Institute for University Cooperation (ICU Rome) he supervised the installation and the start-up of a wind energy station in the city of Jasila, Perù.

He is an expert consultant, assessing research projects (ex-ante, in itinere and ex-post) for the MIUR (Italian Ministry for Education); San Paolo-IMI (Istituto Mobiliare Italiano); Monte dei Paschi di Siena Merchant Bank; Medio Credito Centrale; and the Regione Puglia.

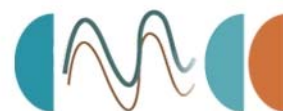


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Marco G. Monroy
CEO
MGM International

Marco Monroy is the founder, President and CEO of MGM International. Under Mr. Monroy's leadership, MGM has become one of the leading carbon project development companies in the industry and the first one to win the "Best CDM/JI Project Developer Award" in 2005. Back in the early years of the carbon market, he pioneered concepts such as success fee based compensation, local presence in developing countries, integrated teams of professionals (e.g., scientists, engineers, financiers, lawyers, translators) to offer clients a "one-stop-solution" and innovative commercialization structures, including a diversified portfolio approach with significant benefits for both buyers and sellers.

Mr. Monroy is an attorney licensed to practice law in Colombia and the State of New York. Prior to establishing MGM International he worked as an Advisor on climate change market mechanisms for the Japanese government and other private and public institutions. In 2002, the World Economic Forum named Mr. Monroy one of the 100 Global Leaders of Tomorrow (GLT).

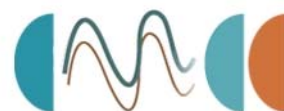


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Pete McGrail
Laboratory Fellow
Pacific Northwest National Laboratory

Dr. McGrail has a Ph.D. in Environmental Engineering, and an M.S. and B.S. in Nuclear Engineering. He has been a staff member at PNNL for over 26 years and is the principal investigator and manager of a diverse range of projects involving reaction and transport processes in porous media, including five prestigious Environmental Remediation Science Projects (ERSP). Dr. McGrail's recent interests have taken him into new research areas related to global climate change. He directs a wide variety of research projects in greenhouse gas emission management, which covers subjects from hydrodynamics and chemistry of supercritical CO₂-brine mixtures to development of new organic clathrates for CO₂ capture from fossil-fuel power plants, work that was recently featured in *Nature Materials*. He and his team completed the first study of the economics of these new solid sorbents for CO₂ capture in an IGCC power plant application. He is pioneering new ideas for geological storage of CO₂, and recently discovered how key minerals in basalt rock formations naturally convert CO₂ to stable carbonate minerals, permanently sequestering the CO₂ from return to the atmosphere. Dr. McGrail manages the Zero Emission Research & Technology Center at PNNL, which is conducting groundbreaking work on the reactivity of molecular water solvated in supercritical CO₂ among other basic science studies of key importance for sequestration system design. Dr. McGrail also is conducting research on gas hydrates, an ice-like solid clathrate containing methane. He has teamed with researchers from the University of Alaska and British Petroleum Exploration Alaska, Inc. to study advanced production concepts he and colleagues developed, including one that involves a "guest-molecule swap" reaction where CO₂ replaces CH₄ in the hydrate structure. He has invented new test equipment (most high-pressure capable) to support his research including scanning laser Raman spectroscopy, x-ray microtomography and diffraction, environmental scanning electron microscopy, and resonant ultrasound spectroscopy. He has over 200 publications and presentations at international conferences on his research.

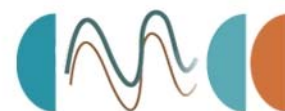


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Sauro Pasini
Executive Vice President Technical Area Research,
Engineering & Innovation Division,
ENEL Ingegneria e Innovazione, SpA

Sauro Pasini, student of Scuola Superiore Sant'Anna in Pisa, graduated in Chemical Engineering at the University of Pisa in 1979. After one year as assistant professor of Transfer Processes and Equipments in the Department of Chemical Engineering (Pisa), he joined ENEL Thermal & Nuclear Research Centre in 1980.

Since 2008 he is executive vice president of the Research Technical Area. His fields of interest include: combustion and flue gas cleaning, power stations, fbc, IGCC, USC boilers, advanced generating systems, CO₂ capture and storage, biofuels, biomass, radiative heat transfer, furnace modelling.

Mr. Pasini is author of more than 150 papers and technical contributions in the field of heat transfer and clean combustion. He is Member of EU-RFCS TGC n°3, VGB Technical Advisory Board and Emax Steering Committee, ENCAP Technical Advisory Committee, and ASME Member since 1990. He has been serving RFCS for the evaluation of coal proposals and has been acting for three years as Member of the European Jury for the EU Contest for Young Scientists.



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Francesco Profumo
Rector
Turin Polytechnic University

Francesco Profumo graduated in Electrical Engineering from the Politecnico di Torino, Italy, in 1977. From 1978 to 1984, he worked as Senior Engineer for the R&D Ansaldo Group in Genova (Italy). In 1984 he joined the Department of Electrical Engineering of the Politecnico di Torino, where he was Associate Professor till 1995. Since September 2003, he was the Dean of the Engineering Faculty at the Politecnico di Torino and since October 2005 he is the Rector of the Politecnico di Torino.

His fields of interest are power electronics conversion, high power devices, applications of new power devices, integrated electronic/electromechanical design, high response speed servo drives, new electrical machines structures, power conditioning systems for fuel cells applications. He published more than 230 papers in International Conferences and Technical Journals.

He was awarded the *Signum Aureum Facultatis Mechanicae Universitatis Miskolciensis*, July 1, 2000, University of Miskolc (Hungary); the *Honorary Professorship*, University of Cordoba (Argentina), August 11, 2004; the *Honorary Doctor Degree*, Technical University of Riga (Latvia), October 12, 2006; the *Honorary Doctor Degree*, Politecnica of Bucarest (Romania), June 15, 2007; and the *Honorary Doctor Degree*, University of Miskolc (Hungary), June 26, 2007; and the *Honorary Professorship*, Jiao Tong University, Xi An (Cina), September 11, 2007.

He is member of the selection Committee of the Italgas Awards.

He has been the Coordinator or partner of several projects in the frame of the European Commission activities (Tempus, Comett, Joule, Human Capital and Mobility, Alfa, European Union S&T Grant Programme in Japan, Leonardo da Vinci) and he is the Coordinator of the "Hydrogen Group" of the Politecnico di Torino.

He is a member of the Academy of Science in Italy (since 2007) and is a Registered Professional Engineer in Italy.

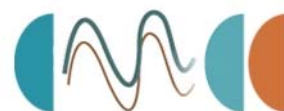


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Fedora Quattrocchi

**UF Manager, UF Fluid Geochemistry, Geological Storage & Geothermics
INGV University Tor Vergata – Industrial Engineering**

Dr. Fedora Quattrocchi was born in Rome on 05/06/65, and earned an “Earth Sciences” Degree with Laudem at University “La Sapienza” of Rome in geochemical/geo-structural disciplines in November 1988, with a 110/110 cum Laude. She accomplished the “Abilitazione all’ Esercizio della Professione del Geologo” (Professional Category State Examination), in April, 1989 at the “Facoltà di Scienze M.F.N. dell’ Università La Sapienza di Roma”. In October 2005 she obtained the title of the first International Master in “Technologies for the Greenhouse Gases reduction” University of Perugia, May – December, 2004. Master. With thesis titled “The ECBM Sulcis project in the frame of the GHGM technologies”. She has participated in courses at the Bocconi school of management, has authored over 150 papers including international and national reviews, and was a tutor in 17 degree theses and a PhD thesis. Dr. Quattrocchi was a speaker on CCS at the Congress WEC 2007 (20th World Energy Congress), as well as a “teacher” at the II level International Master “Ridef Energy per Kyoto” (November 2007-October 2008) with lesson on “CO₂ Capture & Storage.” She was also a teacher for the II level International Master “Global Environmental Protection and International Policies” at the University of la Tuscia–Viterbo. She has been nominated permanent member, representing the INGV institution, of the Italian political-technical international organization CSLF (*Carbon Sequestration Leadership Forum*), since September 2003, dealing with scientific divulgation about the CO₂ sequestration EC Projects on Italian newspapers. Additionally, she was selected as the Italian member of the EC European Platform ZEFFPP (Zero Emission Fossil Fuels Power Plants Platform) inside the WG 2 (Working Group 2: CO₂ Geological Storage) as of January 2006. She was also selected for the Technological Group ZEP 2006-2007. Dr. Quattrocchi is currently a “First Researcher–technologist” at INGV (Associated Professor level in Italy), responsible since 2007 of the Functional Unit (UF) “Fluid Geochemistry, geological storage and geothermics” of the Rome 1 Section of INGV, after being responsible of the “Fluid Geochemistry Laboratory, of the Rome 1 Section of INGV, since 1990.

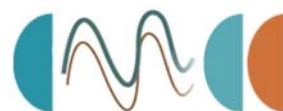


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Rinaldo Rinolfi
Executive Vice President, Research & Technology
FIAT Powertrain Technologies

Dr. Rinaldo Rinolfi joined Fiat Research Centre in 1971, after obtaining his degree in Physics from the University of Turin, and was initially involved in numerous advanced R&D projects related to Electronic Fuel Injection in gasoline engines and combustions in Direct Injection Diesel engines. In 1984 Dr. Rinolfi was nominated Vice President for Engine Research and in 1987 transferred to series production the Cromo 1.9 Direct Injection Turbo Diesel, the world's first DI Diesel engine on a passenger car.

In 1993, under his management, Fiat Research Centre and Magneti Marelli completed the development of the "Unijet" Diesel Fuel Injection System which today, under the name of Common Rail, represents the state-of-the-art technology applied in almost all Diesel engines. Soon after that, in 1997, Fiat in collaboration with Bosch, put into series production the Alfa Romeo 156 1.9 JTD, the world's first vehicle with a Common Rail Diesel engine.

In the following years Dr. Rinolfi and his staff pursued the further development of the, still young, Common Rail Technology which led to the introduction of the Multiple Injections Concept and to the development of the world's smallest Direct injection Diesel engine for passenger cars, the Fiat 1.3 Multijet.

In 2002 Dr. Rinolfi was awarded the Economist Innovation Prize in the field of Energy and Environment, in recognition of the industrial and economical impact of his research and development work.

Since 2005 he is Executive Vice President of FIAT Powertrain Research & Technology.

From 2005 Dr. Rinolfi completed the development of the "Multiair" Advanced Electronic Valve Control technology, whose initial research dates back to 1996. The world's first Multiair Turbocharged gasoline engine will equip the Alfa Romeo Mito on September 2009.

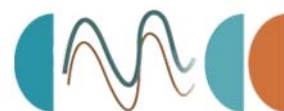


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Leading Low-Carbon Technology in Italy and the United States:

Moving research from the laboratory to the market

Giorgio Rizzoni
Director, Center for Automotive Research
The Ohio State University

Giorgio Rizzoni, the *Ford Motor Company Chair in ElectroMechanical Systems*, is a Professor of Mechanical and Electrical Engineering, and an Adjunct Professor of Industrial Design at The Ohio State University. He received his B.S. (ECE) in 1980, his M.S. (ECE) in 1982, his Ph.D. (ECE) in 1986, all from the University of Michigan (UM). Between 1986 and 1990 he was a post-doctoral fellow, assistant research scientist and lecturer at UM. He joined the Ohio State University Department of Mechanical Engineering in 1990. He has held visiting positions at the Università di Bologna, Italy, the Swiss Federal Polytechnic Institute (ETH), Zürich, Switzerland, Politecnico di Milano, and Politecnico di Torino. Since 1999 he has been the director of the Ohio State University Center for Automotive Research (CAR), an interdisciplinary university research center in the college of engineering. CAR conducts research on advanced automotive and transportation technologies and systems engineering, focusing on sustainable mobility, advanced propulsion systems, human safety and the environment.

Dr. Rizzoni's research interests are in system dynamics, measurements, control and fault diagnosis with application to automotive systems. He has a special interest in future ground vehicle propulsion systems, including advanced Diesel engines, electric and hybrid-electric drivetrains, advanced batteries, and fuel cell systems. He manages a personal research portfolio worth about \$2M per year in these areas, and has contributed to the development of a realted graduate curriculum. He has served as the director of the U.S. Department of Energy Graduate Automotive Technology Education *Center for Hybrid Drivetrains and Control Systems*, and more recently *Center for Advanced Propulsion System*. He has developed undergraduate and graduate courses in system dynamics, mechatronics, fault diagnosis, powertrain dynamics and hybrid-electric vehicles. His book, *Principles and Applications of Electrical Engineering*, published by McGraw-Hill, is in the fifth edition and has been translated into seven languages. Prof. Rizzoni is a Fellow of IEEE (2004), a Fellow of SAE (2005), a recipient of the 1991 National Science Foundation Presidential Young Investigator Award, of the 1992 SAE Ralph R. Teetor Educational Award; of the 1996 Stanley Harrison Award for Excellence in Engineering Education, of four College of Engineering Lumley Research Awards and of several other technical and teaching awards. He is a past Chair of the International Federation of Automatic Control (IFAC) Technical Committee on Automotive Control, and is on the Executive Committee of the ASME Dynamic Systems and Control Division. He has been an Associate Editor for the IEEE Transactions on Vehicular Technology (10 years) and for the ASME Transactions, Journal of Dynamic Systems, Measurement and Control (6 years).

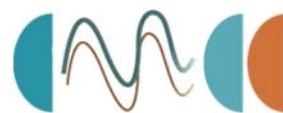


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Guido Saracco, PhD
Professor of Industrial Chemistry
Head of the Department of Materials Science and Chemical Engineering
Politecnico di Torino

Prof. Guido Saracco graduated in Chemical Engineering at Politecnico di Torino in 1989, where he got his PhD and is now full professor in Industrial and Technological Chemistry. Author of more than 200 papers on refereed journals in the fields of chemical reaction engineering, environmental catalysis, hydrogen & fuel cells and separation processes, he has been scientific responsible of a number of EU and industrial projects in the above fields. He is the Head of the Department of Materials Science and Chemical Engineering. He has funded in 2008 at the Politecnico di Torino the Biosolar Lab, a research lab on solar energy conversion into fuels, co-managed with Prof. Jim Barber. He is currently the coordinator of the Solhydromics EU project on "Nanodesigned electrochemical converter of solar energy into hydrogen hosting natural enzymes or their mimics".

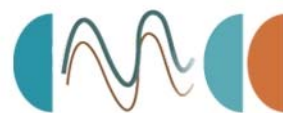


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Jonathan Shrier
Principal Deputy Assistant Secretary
Office of Policy and International Affairs
U.S. Department of Energy

Jonathan Shrier currently serves as Principal Deputy Assistant Secretary for the Office of Policy and International Affairs (PI). In this role, he is the primary policy advisor to the Secretary, Deputy Secretary, and Under Secretary of Energy on domestic and international policy development and implementation as well as DOE policy analysis and activities. Previously, Mr. Shrier served as the Director for International Energy Security at the National Security Council and the National Economic Council at the White House. In this capacity, he was also the principal climate change advisor to the Assistant to the President for International Economic Affairs from the beginning of the Major Economies Meetings (MEM) on Energy Security and Climate Change. The MEM process provided a forum for the world's largest users of energy and producers of greenhouse gases to work toward a common approach to confronting the twin challenges of climate change and energy security. Mr. Shrier also advised the President's National Security Advisor and the Director of the National Economic Council on all international energy policy matters and guided interagency work on U.S. international energy policy. In addition, he also helped to launch the Cabinet-level Strategic Economic Dialogue with China and helped to establish the Ten Year Framework for Energy and Environment Cooperation between the United States and China. Mr. Shrier is a career Foreign Service Officer from the State Department, with two decades of government service. Before moving to the National Security Council, he was Special Assistant to the Under Secretary of State for Economic, Business, and Agricultural Affairs. Prior to that, he was Director for Investment Affairs at the U.S. Trade Representative's Office. Mr. Shrier has spent the bulk of his career working on or in China, including three tours of duty at the U.S. Embassy in Beijing. He has also served in Riyadh, Saudi Arabia. Mr. Shrier has an MBA, with a Mark of Merit, from the University of London; an MSc in International Relations, with a Mark of Distinction, from the London School of Economics; and a Bachelor of Arts with High Honors in Government from Dartmouth College.

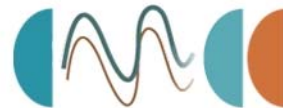


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Riccardo Valentini

**Director, Impacts on Agriculture, Forests, and Ecosystems Development
Euro-Mediterranean Climate Change Center**

Riccardo Valentini, born in 1959, is full Professor of Forest Ecology at the University of Tuscia in Italy. His expertise concerns the role of land use changes and forestry in the carbon cycle, biodiversity and bioenergy. He is also involved through IPCC and governmental bodies on policies about the global carbon cycle and the role of land use changes and forestry. Prof. Valentini is coordinator of several EU projects aiming to understand and quantify the terrestrial carbon budget and greenhouse gases emissions. He is also Coordinator of the EU-Proiect CARBOAFRICA. Prof. Valentini is Doctor Honoris Causa Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgium and a Nobel Prize for Peace as member of the IPCC board. He is Director of the Impacts Division of the Euro-Mediterranean Center on Climate Change and Member of the Biogeoscience Committe of the European Research Council.

Prof. Valentini is author and co-author of almost 200 scientific publications related to his expertise. Following five recent ones:

- Ciais, P., M. J. Schelhaas, S. Zaehle, S. L. Piao, A. Cescatti, J. Liski, S. Luysaert, G. Le-Maire, E. D. Schulze, O. Bouriaud, A. Freibauer, R. Valentini and G. J. Nabuurs (2008). "Carbon accumulation in European forests." **Nature Geosci** 1(7): 425-429;
- Dolman, A. J., A. Freibauer and R. Valentini (2008). The continental scale greenhouse gas balance of Europe. New York, Springer;
- Magnani, F., M. Mencuccini, M. Borghetti, P. Berbigier, F. Berninger, S. Delzon, A. Grelle, P. Hari, P. G. Jarvis, P. Kolari, A. S. Kowalski, H. Lankreijer, B. E. Law, A. Lindroth, D. Loustau, G. Manca, J. B. Moncrieff, M. Rayment, V. Tedeschi, R. Valentini and J. Grace (2007). "The human footprint in the carbon cycle of temperate and boreal forests." **Nature** 447(7146): 849-851;
- Reichstein, M., D. Papale, R. Valentini, M. Aubinet, C. Bernhofer, A. Knohl, T. Laurila, A. Lindroth, E. J. Moors, K. Pilegaard and G. Seufert (2007). "Determinants of terrestrial ecosystem carbon balance inferred from European eddy covariance flux sites." **Geophysical Research Letters** 34(L0142);
- Ciais, P., M. Reichstein, N. Viovy, A. Granier, J. Ogee, V. Allard, M. Aubinet, N. Buchmann, C. Bernhofer, A. Carrara, F. Chevallier, N. D. Noblet, A. Friend, P. Friedlingstein, T. Grunwald, B. Heinesch, P. Keronen, A. Knohl, G. Krinner, D. Loustau, G. Manca, G. Matteucci, F. Miglietta, J. M. Ourcival, D. Papale, K. Pilegaard, S. Rambal, G. Seufert, J. F. Soussana, M. J. Sanz, E. D. Schulze, T. Vesala and R. Valentini (2005). "Europe-wide reduction in primary productivity caused by the heat and drought in 2003." **Nature** 437: 529-533.
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Leading Low-Carbon Technology in Italy and the United States:

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Umberto Vattani
President
Italian Trade Commission

Born in Skopje, Macedonia, on 5 December 1938. Studies in France, Great Britain and the United States (with a Fulbright Scholarship). Doctor in Law (1960) and Political Sciences (1962) at Rome University, *summa cum laude*. Through a national competitive exam, he entered the "Banca d'Italia" – Department for Research and International Economics in 1961. He then entered the Diplomatic Service (1962), where he subsequently worked at the Italian Mission to the U.N., New York, 1963-1965, the Italian Mission to the OECD in Paris, 1966-1969, and as the Counsellor at the Italian Embassy in London, 1969-1974. He was in the Cabinet of the Minister of Foreign Affairs from 1975-1978, and was the Principal Private Secretary of the Prime Minister from 1980-1981. From 1982-1987, Dr. Vattani was the Deputy Head of Mission at the Italian Embassy in London, and then performed the role of Diplomatic Advisor to the Prime Minister and Personal Representative for the G7 Summits from 1988-1992. He was the Italian Ambassador to Germany from 1992-1996, and the Secretary General of the Ministry of Foreign Affairs, 1997-2001. From 2001-2004, Dr. Vattani served as the Permanent Representative of Italy to the European Union in Brussels, until in 2004 he was appointed for the second time Secretary General of the Ministry of Foreign Affairs. He is currently the President of the Italian Trade Commission (ICE), a position to which he was appointed in July 2005.

* * *

- *Ehrenbürger* of the Rheinische Friedrich-Wilhelms-Universität Bonn, 1993.
- Honorary Member of the Academic Senate of the Freie Universität Berlin, 1998.
- Professor at the LUISS University (European Integration) Rome, 1999-2001.
- President of Venice International University (VIU), Island of San Servolo, since 2000.
- *Member of the Board of Trustees and Honorary Professor of Tongji University, Shanghai, 2007.*
- President of the *Fondazione Italia-Giappone, 2007.*

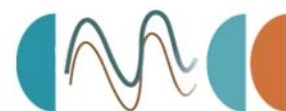


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Maja Wessels
Senior Vice President, Global Public Affairs
First Solar

Maja Wessels is Senior Vice President, Global Public Affairs for First Solar, Inc. Based in Brussels, Belgium, she oversees First Solar's government affairs as well as community relations activities..

First Solar manufactures solar modules with an advanced semiconductor technology and provides comprehensive PV solutions that significantly reduce solar electricity costs. First Solar is headquartered in Phoenix, Arizona and has manufacturing sites in Frankfurt (Oder), Germany; Ohio, United States; and Kulim Malaysia.

Ms Wessels joined First Solar in May 2008 after 4 years serving as Senior Vice President for Honeywell for the EMEA region. Before joining Honeywell in 2003, Ms Wessels worked for United Technologies Corporation, where she served as President, United Technologies International Operations, Europe. From 1997-2000 Ms Wessels was Vice President of Government Affairs for Daimler Chrysler in Brussels.

She has a strong background in both policy and finance, having served the U.S. General Accounting Office as senior analyst in Washington and as financial markets core group manager in Frankfurt. Prior to that, she held positions with Lehman Brothers, Public Strategies Inc., and the National Association of Manufacturers.

From January 2001 until March 2004, Ms Wessels served as President of the American Chamber of Commerce to the EU, the key organization representing the views of 130 companies of American parentage committed to Europe. From 2006-2007 Ms Wessels chaired the American Electronics Industry Association Europe (AeA Europe). She is currently a member of the European PV Technology Platform Steering Committee.

A German-born U.S. citizen fluent in English and German and conversant in French, Ms Wessels is a 1980 graduate of Dartmouth College. She also holds a master's degree in international economics and European studies from the School of Advanced International Studies of Johns Hopkins University.

She is married and has a 16 year-old son.

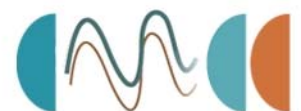


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