

Participating Faculty from University of Illinois:

Richard S. Gates, Ph.D., P.E.

Department of Agricultural and Biological Engineering
University of Illinois at Urbana-Champaign

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Richard S. Gates, Ph.D., P.E. is a Professor at the University of Illinois, Department of Agricultural and Biological Engineering where he has worked since August 2008. Previously he spent 23 years at the University of Kentucky, as Assistant, Associate and full Professor, as well as Chair of the Department of Biosystems and Agricultural Engineering. His international experiences include leading a 26-student study group to France (Dijon), overseas sabbaticals in South Africa (University of Natal), Greece (Agricultural University of Athens) and Japan (Kitasato University), and engineering work for six months at Technion University, Haifa Israel. He is past leader on a U.S.-Brazil Consortium between the University of Kentucky, Iowa State University, Federal Universities of Viçosa, Campina Grande, Lavras and the University of São Paulo-Piracicaba. He is one of two Americans on the board for Section II of the CIGR (International Agricultural Engineering Commission).

His recent research and extension work involves agricultural air quality baseline measurement and assessment of mitigation techniques, and bioinstrumentation for measuring animal welfare, including horse transport. He has taught instrumentation, environment control, structures and environment design, data acquisition and control, probability and statistics, and nonlinear optimization. Extension activities have been focused on greenhouse environment control, livestock and poultry facilities, and agricultural air quality. Gates serves on the Board of Directors of the American Society for Agricultural and Biological Engineering and is Chair of the Research Subcommittee of the United Egg Producer's Environmental Scientific panel. He is the recipient of the 2008 ASABE Henry L. Giese Structures and Environment Award. He is a registered professional engineer (Kentucky).

Relevant Experience

Publications in Refereed Journals: 107

Abstracts, Papers and Presentations at Professional Meetings: 228

- Director for FIPSE project: "Biosystems and Agricultural Engineering – Educational Consortium for Sustainable Plant and Animal Production Systems." \$204,000. With Iowa State University and four Brazilian Universities. U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE), 2003-2008. As Director, Gates served as the U.S. lead for this exchange program, with 24 U.S. student-semesters of engineering student study in Brazil, 22 Brazilian undergraduate engineers studying in the U.S., three Brazilian faculty sabbaticals, and numerous visiting scholar and student exchanges in both countries.
- Co-founder and Co-Director, Kentucky Rural Energy Consortium, 2003-2008. This Consortium has developed a grass-roots campaign to engage Kentucky leadership in a balanced and progressive energy policy for renewable energy and energy efficiency. Produced an analysis of Kentucky's ability to achieve a 25 percent utilization of renewable energy by 2025 (25 x '25 campaign).
- Co-PI, first completed U.S. EPA Air Consent Agreement field study to measure gaseous and particulate emissions from U.S. broiler facilities. \$1.3M, 2005-2007.

Alan C. Hansen, Ph.D.

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Alan C. Hansen is an Associate Professor in the Department of Agricultural and Biological Engineering at the University of Illinois at Urbana-Champaign since 2000. Previously he was on the faculty for 20 years at the University of KwaZulu-Natal in South Africa in the School of Bioresources Engineering and Environmental Hydrology, where he obtained his B.Sc. Engineering (Mechanical), M.Sc. Engineering and Ph.D. Present responsibilities in the department include chief undergraduate student adviser, courses and curriculum committee chair, and section leader for off-road equipment engineering specialization. Teaching and research interests are focused primarily in biofuels for diesel engines, engineering solutions for biomass feedstock production, and off-road equipment engineering. He has created a project-based study abroad program to South Africa that has been successfully executed on three visits in 2004, 2006 and 2008, with another visit planned for 2009.

Al Hansen is a recipient of awards for teaching at the department and college levels as well as nationally. He is an Associate editor for the American Society of Agricultural and Biological Engineers (ASABE) for six years and was a recipient of an ASABE "Superior Paper Award" in 1990 and 2006. Hansen has supervised 19 M.S. students and 2 Ph.D. students.

Relevant Experience

Co-author of one textbook

Publications in Refereed Journals: 73

Abstracts, Papers and Presentations at Professional Meetings: 77

- Director: project-based study abroad program in South Africa. Program has been successfully executed three times in 2004, 2006, and 2008, with nine, seven and eleven students respectively. Program involves the formation of teams of Illinois and South African engineering students to work on the solution of local problems in South Africa. A one month visit takes place in July/August months when the teams work intensively on the projects. A \$35,000 grant was provided by the John Deere Foundation in 2008 to support the program. This program has also resulted in collaborative exchanges with regard to teaching enhancement seminars and research opportunities.
- Departmental chief undergraduate adviser and chair of courses and curriculum committee: responsible for curriculum development and implementation in the department. Departmental undergraduate program currently ranked number one for third year in a row by U.S. News and World Report.

Angela R. Green, Ph.D.

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Angela Green, Ph.D. joined the Department of Agricultural and Biological Engineering faculty as an Assistant Professor in the Bioenvironmental Engineering Section in February 2008, with a teaching and research appointment. She completed her doctoral degree (2008) in Agricultural and Biosystems Engineering at Iowa State University, where she was supported as a National Science Foundation Ph.D. Graduate Fellow, with research emphasis on systematic assessment of laying hen housing for improved hen welfare. She earned her B.S. (2002) and M.S. (2004) in Biosystems and Agricultural Engineering from the University of Kentucky, with an emphasis on controlled environments and physiological responses of transported horses. She studied animal behavior assessment methods in 2005 at Silsoe Research Institute in Bedfordshire, England, assessing tolerance of atmospheric ammonia in laboratory mice. Her professional interests include controlled environment engineering, animal responses to environmental factors, animal-environment interactions, and animal welfare.

Angela Green is teaching undergraduate courses ABE 374 Environmental Control for Buildings; ABE 100 Introduction to Agricultural and Biological Engineering; ABE 498 Instrumentation for Biological Measurements (in development, special topic); and TSM 311 Humanity in the Food Web. Her research includes controlled environment engineering for animals, development of methods for objective quantification of animal well-being, assessment of animal-environment interactions, and monitoring technologies for animal physiological and behavioral response.

Relevant Experience

Publications in Refereed Journals: 7

Abstracts, Papers and Presentations at Professional Meetings:

Fellowships and Grants:

- Global Funding for Graduate Students, Iowa State University, \$1200 College of Agriculture and ABE Departmental Match, 2004.
- Miller Engineering Fellowship, College of Engineering, Iowa State University. \$5000/yr for 4 years. 2004.
- National Science Foundation Graduate Research Fellowship. Stipend: \$30,000/yr for 3 years (to be used within 5 years). Educational Allowance: \$10,500/yr for 3 years (to be used within 5 years). 2003.
- National Science Foundation Graduate Research Fellowship Honorable Mention. 2002.

Luis F. Rodriguez, Ph.D.

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Dr. Rodriguez got his B.S., M.S. and Ph.D. at Rutgers, the State University of New Jersey where he studied systems engineering as applied towards human-rated life support systems for Martian exploration. After completing his Ph.D., Dr. Rodriguez went to work as a postdoctoral research fellow at NASA Johnson Space Center via a National Research Council Fellowship. This led to another grant funded position with the Universities Space Research Association as a Research Scientist studying the provision of safe and reliable space systems.

Dr. Rodriguez has since joined the faculty at the University of Illinois at Urbana-Champaign as an Assistant Professor with appointments in the Department of Agricultural and Biological Engineering and the Information Trust Institute, where he hopes to bring the lessons learned studying extraterrestrial life support systems back to Earth.

His current research interests include the analysis of biomass feedstock production systems, sustainable agro-ecosystems, precision agriculture, biofuels, and life support systems. His responsibilities within the department are as section leader of the Biological Engineering Section, the undergraduate advisor for third and fourth year biological engineers, and several departmental committees. His teaching interests are in biological engineering and systems analysis. Dr. Rodriguez is currently working towards creating a new study abroad experience for students in agricultural and biological engineering with the University of Puerto at Mayagüez, Puerto Rico.

Relevant Experience

Publications in Refereed Journal: 21

Abstracts, Papers and Presentations at Professional Meetings: 27

Abbreviated List of Invited Presentations:

- Sustained agriculture on Mars, for the 44th International Association of Agricultural Students, Lisbon, Portugal.
- Considerations in life support systems analysis for research, development, and design, for the ALS-NSCORT, a NASA funded center for research and training in life support systems at Purdue University, Lafayette, IN.
- Missions to Mars and Earth Based Analogies, for the ACES Professional Development Seminar Series, Urbana, IL.
- Mission to Mars, for the Central Illinois Regional ASABE Meeting, Urbana, IL.
- Regenerative Life Support Systems for Mars and Earth, keynote address for the Colegio de Ingenieros y Agrimensores de Puerto Rico, Hato Rey, Puerto Rico.
- 10 years of Life Support Research, for the Aerospace Engineering Graduate Seminar Series, Urbana, IL.
- The Impact of Life Cycle Analyses in Controlled Environment Animal Production, for the S-1032, a USDA Multi-state Project in Systems for Controlled Environment Animal Production, Boulder, CO.

K.C. Ting, Ph.D., P.E.

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K.C. Ting is currently Professor and Head of the Agricultural and Biological Engineering Department at the University of Illinois. He received his Ph.D. in agricultural engineering from the University of Illinois. He specialized in automation, systems informatics and analysis, and alternative energy. He currently leads a BP Energy Biosciences Institute program on “Engineering Solutions for Biomass Feedstock Production.” The program is funded at \$3,003,765 for three years starting January 1, 2008 with a potential to continue for 10 years. He is currently an Editor-in-Chief for Computers and Electronics in Agriculture. He served as an Honorary Theme Editor for “Systems Analysis and Modeling in Food and Agriculture” in the UNESCO Encyclopedia of Life Support Systems. He served as the leader of the Systems Studies & Modeling Team within the New Jersey NASA Specialized Center of Research and Training during 1996-2000. He served as the editor of the Information and Electrical Technologies Division of American Society of Agricultural and Biological Engineers (ASABE) during 1996-2000. He is a co-editor/co-author of an ASABE monograph entitled “Robotics for Bioproduction Systems.” He is a co-editor of a special issue of Artificial Intelligence Review on Artificial Intelligence for Biology and Agriculture published by Kluwer Academic Publishers. He was elected to Fellow of ASABE in 2001 and to Fellow of American Society of Mechanical Engineers in 2002. He was appointed guest chair professor of Zhejiang University, Hangzhou, China in 2006. He participated as a fellow in the NASULGC Food Systems Leadership Institute during 2006-2008. He received the ASABE 2008 Kishida International Award.

Relevant Experience

Publications in Refereed Journals: 44

Abstracts, Papers, Presentations at Professional Meetings, and Reports: 167

Invited Lectures (many of them are keynotes): 72

- Pioneered and advanced a holistic approach to agricultural automation research in the forms of machine perception, reasoning/learning, communication, and task planning/execution since 1985.
- Developed, demonstrated, and implemented an automation-culture-environment systems (ACESys) concept and methodology since 1985.
- Co-PI on the Atlantis project “Policy Oriented Measures in Support of the Evolving Biosystems Engineering Studies in USA - EU (POMSEBES), 2006-2008.
- Served on the African Scientific Committee for establishment of African Institutes of Science and Technology and Subcommittee on Biological Science and Engineering, since 2004.
- Actively engaged in international activities in the subjects of controlled environment plant production systems, agricultural automation, systems informatics and analysis, agricultural and biological engineering discipline and profession, and academic, research and administrative programs in Africa, Brazil, China, Europe, India, Israel, Japan, Taiwan, and Turkey.

Yuanhui Zhang, Ph.D., P.E.

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Yuanhui Zhang, Ph.D., P.E. is a Professor at the University of Illinois, Department of Agricultural and Biological Engineering where he has worked since joining the faculty as Associate Professor in 1996. Previously he was a Research Scientist-Engineering and Adjunct Professor at the University of Saskatchewan, Canada.

Dr. Zhang is teaching both undergraduate and graduate level courses: ABE222 – Biosystems Engineering II (Bioenvironmental Engineering session); ABE476 – Indoor Air Quality Engineering; ABE501 – Graduate Research Orientation. His research includes measurement, modeling and control of airborne pollutants in indoor environment, measurement and modeling of air flow, bioenergy conversion from biomass or organic waste materials, and heating, ventilation and air conditioning for living environment (human, animals and plants) and indoor environmental control strategies.

Relevant Experience

Publications in Refereed Journal: 80

Abstracts, Papers and Presentations at Professional Meetings: 182

- Since joining UIUC in 1996, Dr. Zhang has been the PI or a Co-PI of \$12.2 million and directly responsible for \$6.32 million competitive research funding from federal and state agencies including USDA, CDC, DOE, NIH and CFAR; and from industry including Boeing and John Deere. He was also the PI or a Co-PI of \$1.15 million and directly responsible for \$815,076 between 1992-1996 while he was working at University of Saskatchewan, Canada.
- He is Graduate Program Director of the Department: Dr. Zhang is responsible for graduate curriculum, student admission and departmental graduate policies.
- Dr. Zhang has supervised 35 graduate students: 13 completed MS degrees, 2 completed PhD degrees, and 10 PhD is in process. He has also supervised 6 Postdoctoral fellows, and currently supervises four research academic professionals.
- Dr. Zhang's group has a rich experience and environment for educating students from different cultures. He has advised graduate students and hosted visiting scholars from 14 countries and regions including: Belgium, Brazil, Canada, China, France, Hong Kong, Korea, Japan, Netherland, Philippines, Portugal, Switzerland, Turkey, and United States.
- He constantly encourages students to excel in research and teaching. Almost all of his senior PhD students attended the one-semester Teaching College course (3 hours per week) in the University of Illinois at Urbana-Champaign. As a result, five of his PhD students obtained faculty positions in major universities in U.S. and Canada.

Participating Faculty from Purdue University:

Bernard A. Engel, Ph.D.

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Bernard A. Engel is a Professor and Department Head in Agricultural and Biological Engineering at Purdue University. His research interests are Soil and Water Engineering with interests in water quality, drainage, sub-irrigation, surface irrigation, and erosion control. These application areas are supported with basic research in fields of GIS, expert systems and neural networks. He is listed in Who's Who Among University Educators and Who's Who in Science and Engineering; he was a NASA Summer Faculty Fellow in 1992 and 1993. Dr. Engel has attained national and international stature in the field of information systems, focusing on the use of geographic information systems (GIS), expert systems, artificial intelligence and simulation to study and control agricultural non-point source pollution of surface and ground water. His methodologies are widely used by other universities, by local, state and federal government agencies, including NASA's Kennedy Space Center, the U.S. Army (Ft. Chaffee, Camp Shelby, Ft. Bragg, Ft. Campbell, Ft. Stewart, and Ft. Leonardwood), the USDA Natural Resources Conservation Service (NRCS), and the U.S. EPA to improve and protect water resources. His programs are in use around the world, including Jamaica, Portugal, the Netherlands, Germany, India, England, Australia, and Indonesia. In addition, personnel trained by Dr. Engel in Jamaica and Portugal are continuing the development of more site specific systems.

Relevant Experience

Publications in Refereed Journals: 113

- As Department Head, he provides leadership for the undergraduate and graduate programs, research and extension for a diverse program. He serves as programmatic lead for an agricultural engineering program, a biological engineering program, and an agricultural systems management program. He has responsibilities including personnel conflict resolution, department budget management, faculty recruitment, faculty promotion, faculty and departmental advocacy, and development. Dr. Engel helped coordinate Purdue's environmental programs and co-founded the Discovery Park Center for the Environment to coordinate environmental research at Purdue. He co-founded the graduate level interdisciplinary Environmental Sciences and Engineering program and helped form the new Division of Environmental and Ecological Engineering that is focused on undergraduate engineering education
- Dr. Engel is a founding member of the joint graduate Earth Observation Systems program with the University of Leuven in Belgium. Students from Purdue and University of Leuven spend the fall semester at Purdue in a common set of courses (including one of Engel's courses), the spring semester at Leuven in a common set of courses and then complete their research at either Purdue or Leuven. Dr. Engel currently serves as the Purdue director of the program.

Rabi H. Mohtar, Ph.D.

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Dr. Rabi Mohtar is Director of the Global Engineering Programs and Professor in the Department of Agricultural and Biological Engineering at Purdue University. Previously, he was a Research Associate in Agricultural and Biological Engineering at the Pennsylvania State University.

He received his B.S. in Agricultural Sciences and M.S. in Irrigation Sciences from the American University of Beirut. Dr. Mohtar received an M.S. in Civil and Environmental Engineering and his Ph.D. in Agricultural Technology and Systems Management from Michigan State University.

Dr. Mohtar teaches undergraduate and graduate courses in agricultural and natural resources engineering. His research includes economic, environmental, and social sustainability; efficient use of our resources while maintaining or improving productivity, economic opportunity, environmental quality, and health for all people; to meet the increasing food demand and environmental degradation; to continue the discovery and impact in environmental and natural resources conservation engineering, including: water, soil, plant, and animal; evaluation of environmental impacts of land use and water management; innovative soil and groundwater remediation technologies; application of numerical methods to food, natural and biological engineering systems; characterization of the soil water medium at the pedon, field, and watershed scales; and design and evaluation of international sustainable water management programs to deal with water shortage conditions

Relevant Experience

Publications in Refereed Journals: 55

Books: 3

Book Chapters: 9

Abstracts, Papers and Presentations at Professional Meetings: 256

- Professor Mohtar has consulted with the national Brazilian research foundation (CNPq) to address water quality issues including the use of the water quality model GLEAMS in the northeast region of Brazil: Viçosa and Lavaras and EMBRAPA (federal agricultural research station in Brazil). At the invitation of the Federal University of Vicosa, Brazil, he taught a three-credit intensive class during June 1999 on computer modeling in agriculture. He was invited to do so again in the summer of 2002; however, he could not do so because of a sabbatical commitment.
- International experience and work includes Jordan, Gaza/West Bank, Tunisia, Lebanon, France, Brazil, Qatar, and India

Oswaldo Campanella, Ph.D.

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Oswaldo Campanella is a Professor in Food Process Engineering at Purdue University. Oswaldo earned his B.S. and M.S. degrees in Chemical Engineering from the University of Buenos Aires. He earned his Ph.D. in Food Engineering from the University of Massachusetts. Before joining the faculty, he was a Senior Lecturer at Massey University (New Zealand). Dr. Campanella is chair of the Rheology Division American Association of Cereal Chemists (AACC). He has been a member at large of the Food Engineering Division of the Institute of Food Technologists (IFT) since 2003 and is a member of the Editorial Board of a number of Food Engineering Journals.

Dr. Campanella teaches undergraduate and graduate courses in thermodynamics, physic-chemical properties of biomaterials, analytical methods for carbohydrate research. He is also teaching annual courses for industry in rheology of carbohydrates and reactive extrusion. His research includes Food Processing Engineering and specifically focuses in rheology of foods and non-food materials, unit and food process operations involving heat and mass transfer, food extrusion, reactive extrusion, novel methods such as acoustics and ultrasound to characterize and monitor the formation of nanocomplexes. His extension and consulting work are related to the development of novel ingredients for the food industry and also to optimize food processes. International Experience and work includes Brazil, Mexico, Argentina, Peru, New Zealand, Australia, France.

Relevant Experience

Publications in Refereed Journals: 97

- Professor Campanella has organized and led a Maymester class of three weeks duration to Brazil and Argentina in 2004, 2006 and 2008. This course is aimed to provide U.S. students with the opportunity of exploring and applying science, technology and economic principles to agricultural industries in countries where they would not likely have the opportunity to visit or study independently. Although the course is intended for U.S. students, close relationships with the Federal University of Viçosa in the State of Minas Gerais and UNICAMP in the State of São Paulo have allowed student exchange in which Brazilian undergraduate students spent an entire semester working and studying at Purdue University. As a result of that exchange, one of those Brazilian students is now conducting his Ph.D. studies at Purdue University. In addition to the relationship with Brazilian Universities, Professor Campanella has cooperative research with many Brazilian and Brazilian-based multi-national companies like Corn Product International, Citrosucco and companies dedicated to the production of ethanol from sugar cane that may lead to the participation of Brazilian and U.S. students in International internships. New contacts with the University Federal of Santa Catarina may include visits to that University in the 2010 Maymester course. For the Maymester class, in addition to the technical Learning Objectives focusing on food processing and agricultural engineering, other Learning Objectives include:
 - Increase the understanding of the diversity in agriculture and food processing around the world including application of food processing from raw materials testing and production through processing, marketing and distribution channels.
 - Increase the students' appreciation and understanding of the history, culture and people of selected regions of Brazil and Argentina.

Holmer Savastano Junior, Dr. Sc.

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Dr. Holmer Savastano is Professor at the Universidade de São Paulo where he has worked since joining the faculty as Assistant Professor in 1992. Previously he was an Assistant and Associate Professor at the Academia da Força Aérea.

He teaches undergraduate and graduate courses in rural construction, technical drawing, materials strength, use of non-conventional materials in civil construction, and environment control. Dr. Savastano's research includes (1) cement based composites reinforced with vegetable fibers for cost effective housing and infrastructure; (2) recycling of agricultural and industrial residues, and (3) interior environmental analysis and animal welfare. Extension and consulting are related to applications of research, including characterization and optimization of non conventional composites for civil construction and infrastructure.

Related Experience

Publications in Refereed Journals: 45

Abstracts, Papers and Presentations at Professional Meetings: 170

- Member of the coordination committee of the Cyted Project “Agriculture and industrial residues as a sustainable source of building materials (Valores),” coordination action 307AC0307, 2007-2010. Coordination of Universidad Politécnica de Valencia, Spain. Participation of 18 research and academic institutions from Spain, Portugal, Latin American and Caribbean countries. Budget: U.S. \$45,000/year. As a member of the committee, Savastano served as the main lead of the Brazilian team, for cooperative action as exchange programs, academic missions and scientific meetings.
- Member of the Brazilian-French Capes Cofecub project, “Non conventional materials and technologies applied to eco-construction and civil engineering.” 2006-2009. Coordination of Pontifícia Universidade Católica do Rio de Janeiro (PUC Rio, Brazil) and Université des Antilles et de la Guyane, Guadeloupe-France. As a member, Savastano organized student and work missions.
- Dean of the Faculdade de Zootecnia e Engenharia de Alimentos, USP, July 2005 to present.

José A. Rabi, Ph.D.

Faculdade de Zootecnia e Engenharia de Alimentos
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Dr. Rabi is currently a tenure-track Professor in Animal Science and Food Engineering since 2004. Previously he was a Visiting Professor (Post-Doctoral Fellow) in the Department of Mechanical and Manufacturing Engineering, Schulich School of Engineering, University of Calgary, Canada. He was a part-time Professor for the undergraduate program in Civil Engineering at the Pontifical Catholic University of Minas Gerais (PUC-MG) - Poços de Caldas campus (Brazil).

He is teaching undergraduate courses in transport phenomena (since 2005), industrial piping (since 2004), thermodynamics (in 2004) and fundamentals of food engineering (in 2005), and a prospective graduate course in numerical methods for transport phenomena (scheduled for 2009). Dr. Rabi's research includes transport phenomena in porous media, transport phenomena in food processing, lattice-Boltzmann models, exergetic analysis of agroindustrial processes, use of phosphogypsum as alternative building material.

Relevant Experience

Publications in Refereed Journals: 12

Book Chapter: 1

Abstracts, Papers and Presentations at Professional Meetings: 62

- Member of BRAFAGRI Consortium “FZEA-ENSIA-ENSAM Academic Partnership for Internationalization and Modernization of Food Engineering Education,” Brazilian Federal Agency for Support and Evaluation of Graduate Education (CAPES, Brazil), 93,833 Euros, involving FZEA-USP, AgroParisTech Group (ENSIA - Ecole Nationale Supérieure des Industries Agricoles et Alimentaires, Massy, France) and Montpellier SupAgro (ENSAM - Ecole Nationale Supérieure Agronomique de Montpellier, France), 2007-present.
- Associate Researcher: SOLHYCO Project - Solar-Hybrid Power and Cogeneration Plants, Specific Targeted Research or Innovation Project (TTC, European Commission), USD 210,000, Brazilian solar resources, bio-fuels, electricity / heat markets and social needs, 2007-present.
- Principal Investigator: Application of finite-volume method and lattice-Boltzmann models to simulate processes and equipment towards the food industry, USD 21,845, State of São Paulo Research Foundation (FAPESP), simulators of food engineering interest, 2007-2008.
- Rotary Exchange Student: Year 12, St. Patrick's College, Goulburn, Australia, January 1989-January 1990.

Celso Eduardo Lins de Oliveira Dr. Sc.

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Dr. Lins de Oliveira is currently a Professor in Food Engineering at the University of São Paulo (USP, Brazil), since November 2004. Previously Professor for the undergraduate and Graduate program in Agricultural Engineering at West Paraná State University (Cascavel Campus, Brazil) from February 1995 to October 2004. Academic background comprises B.Sc. Agricultural Engineering (UFV, Brazil, 1992), M.Sc. Agricultural engineering (Rural Electrification-UFV, Brazil, 1995), and Ph.D. Agronomy, Energy Saving (University of Madrid-UPM, Spain, 2002). Present responsibilities in the faculty include membership in the Committee for Elaboration and Implementation of the Undergraduate Program in Biosystems Engineering and its future coordination (first program in Brazil, starting in 2009), and co-leadership in the Research Group on Recycling, Energy Efficiency and Numerical Simulation (GREEN). Other service activities include Associate editor for the Journal of Agricultural Engineering (Revista Engenharia Agrícola, Brazil).

Relevant Experience

Publications in Refereed Journals: 4

Abstracts, Papers and Presentations at Professional Meetings: 47

- Principal Researcher: SOLHYCO Project - Solar-Hybrid Power and Cogeneration Plants, Specific Targeted Research or Innovation Project (TTC, European Commission), USD 210,000, Brazilian solar resources, bio-fuels, electricity / heat markets and social needs, 2007-present.
- Principal Investigator: Energy Saving applied to Sugar Cane Mills, opportunity to distributed generation, USD 130,000 Brazilian Research Council (CNPq), bioenergy interest, 2006-at the present.
- Principal Investigator: Greenhouse energy consumption model and simulate applied to energy saving in Brazil and Spain, USD 5,000 Fundación Carolina (Spain), bioenergy interest, 2008-at the present.

Andrés Vercik, Ph.D.

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Dr. Vercik is Professor at the University of São Paulo (Brazil) since 2003. Previously he was Professor at the University of São Carlos (Brazil), Assistant Professor and Teaching Assistant at the University of Buenos Aires (Argentina).

He is teaching undergraduate courses in calculus, differential equations and physics, graduate courses in biosensors and numerical methods in transport phenomena and structural analysis using finite element method. Dr. Vercik's research includes device physics and microelectronics, simulation of semiconductor devices, electrical tomography, materials and systems for biosensors, surface modification for immobilization of bio-receptors, electrolyte/insulator/semiconductor systems, ion sensitive field effect transistors and novel detection strategies in biosensors. His extension and consulting activities are related to applications of research, including instrumentation for assessing physical properties of food and development of new materials.

Relevant Experience

Publications in Refereed Journals: 21

Abstracts, Papers and Presentations at Professional Meetings: 48

Accepted: 3

In Review: 1

In Preparation: 3

- Professor Vercik joined the University of São Paulo, in 2003. Since then he has directed his attention to problems of interest of food engineering and animal science, particularly, the application of nanotechnology and microelectronic devices such as biosensors to this field.
- He created the Nanotechnology, Biosensor and Devices (nanobiodev) Laboratory (2006). The main research work is related to physical phenomena in semiconductor devices with applications in biosensors and new material and surface modifications for implantable sensors and bio-recognition element immobilization.
- Other areas of interest are the utilization of electrical impedance spectroscopy for characterization of materials, the analogies between semiconductor devices and electrochemical systems and the study of inverse problem in reconstruction algorithms for electrical tomography.

Jadir Nogueira da Silva, Ph.D.

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Jadir N. Silva, Ph.D., is a Professor at the Federal University of Viçosa, Department of Agricultural Engineering where he has worked since November 1994. Previously he spent 18 years at the same university, as Assistant, Associate and full Professor, as well as Chair of the Department of Physics. His international experiences include leading a professional study group to Deutschland (Hanover) - 2004, overseas sabbaticals in Potsdam–Deutschland, ATB (Leibniz Institut für Agrartechnik), 2006. He is past member on a U.S.-Brazil Consortium between the University of Kentucky, Iowa State University, the Federal Universities of Viçosa, Campina Grande, Lavras and the University of São Paulo–Piracicaba. He is one of three Brazilians member of the Scientific Committee on the board for Section A5 of the CIGR (International Conference of Agricultural Engineering), Biofuels Symposium 2008, Foz do Iguassu-Brazil's Meeting.

His recent research and extension work involve agricultural uses of bioenergy. He has been working on biomass gasification and combustion for providing heated air for space heating for broiler houses as well as for coffee and grain drying. He has been leader on research projects in this subject area financed by The National Council for Scientific and Technological Development (CNPq), which is an agency linked to the Ministry of Science and Technology (MCT), as well as FAPEMIG-Minas Gerais State Finance Agency. He has taught Biomass Energy, Thermodynamics and Air Pollution. Extension activities have been focused on the use of biomass energy for drying coffee beans as well as grains.

Relevant Experience

Publications in Refereed Journals: 51

Abstracts, Papers and Presentations at Professional Meetings: 124

Selected Current Extramural Funding

- Potential of the Eucalyptus firewood gasification: Construction, Automation and Prototype Tests. Financing Institution: FAPEMIG. R\$ 57.700,00.
- Developing and Evaluation of the Performance of a Counter flow Coffee Dryer Financing Institution: FAPEMIG, R\$ 41.593,41.
- Minas Gerais State Program Fundings (PPM Program): FAPEMIG, R\$ 48.000,00.
- Development and Evaluation of an Automatic Biomass Gasification System for Drying Agricultural Products and Space Heating for Broiler Chickens. Financing Institution: CNPq: R\$ 38.880,00.

Ilda de Fátima Ferreira Tinôco, Ph.D.

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Ilda de Fátima Ferreira Tinôco is a Professor in agricultural and biological engineering at the Federal University of Viçosa, where she has worked since 1988. Previously she was on the faculty at the Federal University of Lavras, the University of Alfenas, and the University of Uberaba. Dr. Tinôco was a Visiting Professor at the Federal University of Minas Gerais, the University of Kentucky and Iowa State University.

Presently she has responsibilities in the department and university as coordinator and as a member of the Coordination, respectively, of the undergraduate (UNIUBE and UFV) and graduate (UFV) course of agricultural engineering. Dr. Tinôco is currently teaching undergraduate and graduate courses. Her research interest is focused primarily on agricultural building and livestock environment control systems in tropical climates, livestock heat stress reduction, and control systems, air quality to open facilities, animal welfare and animal production, planning and project of animal industries waste management, energy systems, design building methodology, livestock production models, and environment impacts.

Relevant Experience

Publications in Refereed Journals: 74

Abstracts, Papers and Presentations at Professional Meetings: 221

Relevant Experience

- Level A Researcher of CNPq – Nacional Brazilian Council of Research, Brazilian Dept. of Education.
- Brazilian Director for CAPES/ FIPSE project: “Biosystems and Agricultural Engineering – Educational Consortium for Sustainable Plant and Animal Production Systems.” \$204,000. With Federal University of Viçosa, Federal University of Campina Grande, Federal University of Lavras and University of São Paulo – Piracicaba, and two American Universities, Iowa State University and the University of Kentucky. CAPES, Brazilian Department of Education’s Fund for the Improvement of Postsecondary Education, 2003-2008. As Director, Tinoco served as the Brazilian lead for this exchange program, with 24 U.S. student-semester of engineering student study in Brazil, 22 Brazilian undergraduate engineers studying in the US, three Brazilian faculty sabbaticals, and numerous visiting scholar and student exchanges in both countries.
- Brazilian Coordinator of the International Umbrella Agreement between Federal University of Viçosa and the University of Kentucky and Iowa State University, September of 2001 to present.
- Brazilian Coordinator of the International Umbrella Agreement between Federal University of Viçosa and University of Évora – Portugal, July 2004 to present.
- Undergraduate Course Coordinator, Biosystems and Agricultural Engineering Undergraduate Course – DEA-UFV, January 2000 to December 2002 Engineering.
- Undergraduate Course Coordinator, Agricultural Engineering Undergraduate Course – University of Uberaba, January 1986 to July 1988.
- Coordinator of AMBIAGRO – Research Center of Engineering and Environment of Agro Industrial Systemas – DEA-UFV, July 2004 to present.

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Francisco A.C. Pinto, Ph.D., is Associate Professor at the Federal University of Viçosa (UFV), Department of Agricultural Engineering where he has worked since 1992. He is the Co-leader of the Precision Agricultural research group at UFV. He is responsible for the Laboratory of Machine Vision and Agricultural Machinery Design (PROVISAGRO), where about 30 graduate students develop their research projects and every year around 5-10 undergraduate students also work in some research project. His international experiences include earning his Ph.D. degree at the University of Illinois at Urbana-Champaign, as a visiting scholar at Universidad de Valladolid, Spain, advising American students in a previous U.S.-Brazil CAPES/FIPSE Consortium, technical visit to Japanese Universities, and spending a sabbatical leave (currently) at the University of Illinois.

Dr. Pinto teaches undergraduate and graduate courses in digital image processing, off-road equipment, precision farming, agricultural machinery design and agricultural and environmental engineering systems. His research includes precision farming, remote sensing, machine vision, coffee quality mapping, crop nutritional stress identification, agricultural machinery evaluation and design.

Relevant Experience

Publications in Refereed Journals: 44

Books and Chapter Books: 14

Abstracts, Papers and Presentations at Professional Meetings: 105

- Member of the CAPES/FIPSE project: “Biosystems and Agricultural Engineering – Educational Consortium for Sustainable Plant and Animal Production Systems.” U.S.-Brazil Consortium among the University of Kentucky, Iowa State University, the Federal Universities of Viçosa, Campina Grande, Lavras and the University of São Paulo – Piracicaba sponsored by CAPES and FIPSE, 2003-2008. Twenty-four U.S. student-semesters of engineering student study in Brazil, 22 Brazilian undergraduate engineers studying in the U.S., three Brazilian faculty sabbaticals, and numerous visiting scholar and student exchanges in both countries.
- Leader of the project “Machine vision for a center-pivot irrigation system” with Universidad Valladolid, Spain. Sponsored by CAPES for exchanging program between Federal University of Viçosa, Brazil, and Universidad de Valladolid, Spain, 2007-2009. One Brazilian graduate student goes for a year to Spain, four Brazilian faculty go to Spain as visiting scholars, and four Spanish faculty go to Brazil as visiting scholars.