

The 2016 Bi-annual Meeting of the Global WTER Council

COLUMBIA UNIVERSITY, NEW YORK CITY, OCTOBER 6 & 7, 2016

Location:

**Davis Auditorium, Schapiro Center for Engineering and Physical Science Research
Fu Foundation School of Engineering and Applied Science**

520 West 120th St. (between Broadway and Amsterdam Avenue), Manhattan, New York City

A campus map can be found on page 4 of the Program



No.2 Renewable Energy Facility of Palm Beach County, Florida

WTER 2016 Bi-annual Meeting, Day One: Thursday, October 6, 2016

Time	Speaker or Event	Venue or Title of presentation	Speaker affiliation
8:30	Continental Breakfast	Lobby of Davis Auditorium, Schapiro Research Center (Sponsored by HRD Engineering)	
9:00	Nickolas Themelis	Introduction to WTER 2016 –The onset of Anthropocene and the disposition of municipal solid wastes (MSW)	Director, EEC-Columbia; Chair, GWC
9:20	Stephen Jones	Looking into the future of the U.S. WTE industry)	CEO, Covanta Energy
9:40	Chen Xiaoping	The 21 st century Chinese WTE industry	CEO, China Everbright International
10:00	Julia Watsford	Role of WTE in sustainable waste management	VP, Strategic Planning, Wheelabrator Technologies
10:20	Kathryn Garcia	Managing the MSW of a megacity	Commissioner, Dept. of Sanitation, New

			York City
10:40	Coffee break	Lobby of Davis Auditorium	
11:00	Antonis Mavropoulos	The 4th Industrial Revolution and the future of waste management	President, International Solid Waste Association (ISWA)
11:20	Lighea Speziale	The role of WTE in Circular Economy	Senior Analyst, Confederation of European WTE Plants (CEWEP)
12:10	Ron Gonen	Corporations for resource recovery	President, Closed Loop Fund, Inc.
12:30	David Biderman	A national waste management policy for the U.S? Obstacles and opportunities.	Executive Director, Solid Waste Association of North America (SWANA)
12:50 – 14:00 Lunch (venue will be announced at the Conference)			
14:00	Craig Cookson	Advocacy to advance the recovery of non-recycled plastics (NRP)	Director, Recycling & Energy Recovery, American Chemistry Council
14:20	Helmut Rechberger	One-year monitoring of biogenic and fossil carbon emissions from WTE plants in Austria	Director, Waste and Resource Management Center, Technical University of Vienna
14:40	Victor de Avila Rueda	The SACYR integrated waste management in Spain and potential for application in the U.S.	Director, Strategy and Development, SACYR, Spain and U.S.A.
15:00	Peter Chromec	Increasing energy and materials recovery from WTE while keeping capital cost down	Senior Sales Director, Hitachi Zosen Inova, Switzerland
15:20	Ralf Koralewska	Martin technologies for the future	Senior Research Engineer, Martin GmbH, Germany
15:40	Coffee break	Lobby of Davis Auditorium	
16:00	Qunxing Huang	Growth of the Circulating Fluid Bed WTE in China	Professor, Inst. Thermal Process Eng. Zhejiang University, China; WTER-China
16:20	Joost Boggemann	Advances in the Inashco metals recovery process	VP, Inashco, Netherlands and U.S.A.
16:40	Ljupka Arsova	Prospects for anaerobic digestion in the U.S.	Senior Consultant, GBB, Inc., U.S.A.
17:00	Marco Castaldi	Research efforts to advance sustainable waste management	Director, Earth Engineering Center, City College of New York
17:20	Dan Pellowitz	Palm Beach County experience with PB-REF#1 WTE plant and building PB-REF#2	Managing Director, Palm Beach County Solid Waste Authority, Florida; SWA is recipient of 2016 WTER Award

Poster Presentations by Columbia University and City College of New York: Open October 6, from 9:00 – 18:00 in the Lobby of Davis Auditorium

18:30 – 21:30 Reception and Awards Dinner at Faculty House of Columbia University

Global WTER Council Awards Dinner – Faculty House of Columbia University

(see map below; Dinner ticket required)

Welcome by Ms. Susan Raila, HDR and Chair of MER-ASME; Presentation of 2016 WTER Award to Solid Waste Authority (SWA) of Palm Beach County, Florida for their integrated waste management system and the new 3,000 ton/day Renewable Energy Facility No. 2, the first U.S.WTE project of its size in the 21st century. The Award will be received by Mr. Dan Pellowitz, Managing Director of SWA.

The 2016 Awards Dinner is sponsored by the Materials and Energy Recovery (MER) Division of the [American Society of Mechanical Engineers \(ASME\)](#)

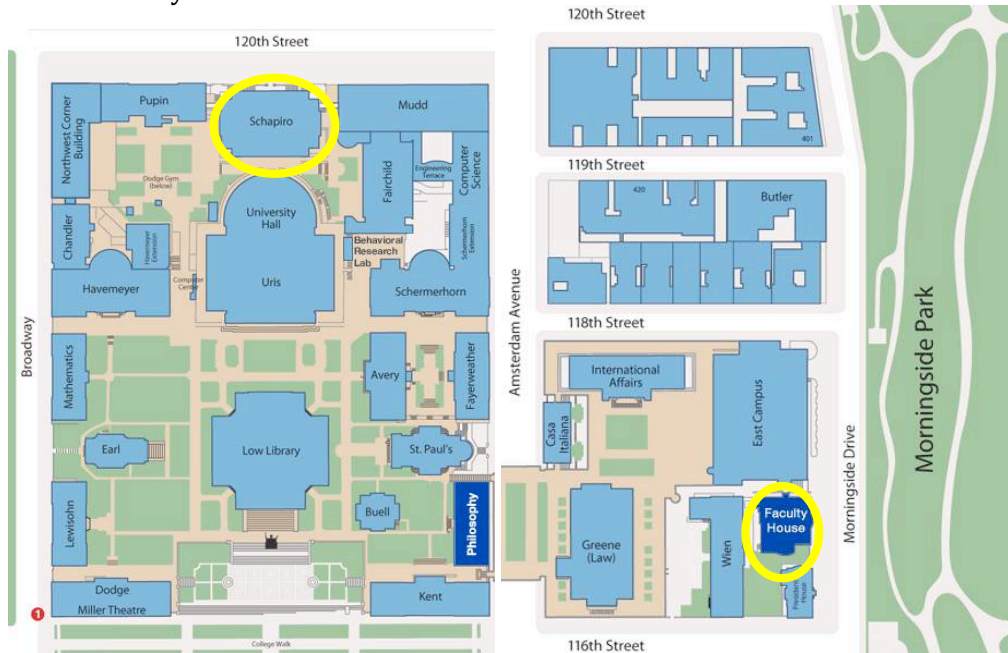
WTERT 2016 Meeting - Day Two: Friday, October 7, 2016

Time	Speaker or event	Subject	Speaker affiliation
8:30	Continental breakfast	Lobby of Davis Auditorium, Schapiro Research Center	
9:00	Stefano Consonni	Waste management research in Italy	Head, WTERT-Italy
9:20	Werner Bauer	Waste management progress in Germany and Eastern Europe	Director, WTERT-Germany
9:40	Stuart Wagland	Thermal Treatment of MSW in the U.K.	Professor, Cranfield University, U.K.
10:00	Yong-Chil Seo	Waste management practice and research in Korea	Professor, Yonsei University,. Korea
10:20	Coffee break	Lobby of Davis Auditorium	
10:40	Sunil Kumar	Waste management in India	NEERI; Vice Pres. WTERT-India
10:55	Sergio Guerreiro	Waste management in Brazil	Head, WTERT-Brazil
11:10	Alex Godoy	Waste management in Chile and Latin America	Univ. del Desarrollo, Chile; Head, WTERT-Chile
11:25	Kostas Aravossis	WTE opportunities in Greece and the Balkans	National Technical University of Athens; Head, WTERT-Greece
11:40	A.C. (Thanos) Bourtsalas - Daniele Coppola	Resource recovery from WTE residues - Dry discharge systems	Columbia University, WTERT-Columbia – Magaldi Power (Italy and U.S.)
12:00	All	Questions, Answers, Discussion on all subjects discussed at Meeting	
13:00	End of Conference		

Columbia Morningside Heights Campus Map

If you come by subway (No.1 Uptown), get off at 116 - Columbia station and enter campus through Columbia gate on Broadway and 116th Street. If you come from 120th Street, enter Schapiro Research Center (yellow circle) and take elevator to 4th floor (campus level) where Davis Auditorium is located.

Awards Dinner: Faculty House (yellow circle on far right) is a short walk from Schapiro Center: Walk to St. Paul's Chapel and then turn left to overpass over Amsterdam Avenue, past Green Hall and down the stairs to Faculty House. If you enter campus through the gates at 116th and Broadway, ask guard for directions to Schapiro Center or Faculty House.



Parking: You may park on the street or use one of the [local parking garages](#), within a 5-10-minute walk from Schapiro Center. Street parking may be found in the neighborhood (RARE!). The following parking garages are located in the Columbia neighborhood:

- Riverside Church 120th St. between Riverside Drive & Claremont Avenue (212) 870-6736
- Hospital Parking 114th St. between Broadway & Amsterdam Avenue (212) 523-1051
- GGMC 122th St. between Broadway & Amsterdam Avenue (212) 865-1754
- Morningside Garage Broadway at 124th Street (212) 864-9877
- Park Yorkshire 108th St. between Columbus & Amsterdam Avenue (212) 865-2314

GLOBAL WTERT COUNCIL (GWC): www.wtert.org

Some of the national members of the Global WTERT Council (GWC)

	GWC: www.wtert.org		http://www.wtert.in
	Italy:www.mater. polimi.it/mater/		www.wtert.co.uk
	www.wtert.ca		www.wtert.eu
	www.wtert.cn		www.wtert.com.br
	Universidad de Desarollo		www.wtert.ph Philippines
	Yonsei University		

Under development: Colombia, Cuba

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BIOGRAPHICAL SKETCHES OF SPEAKERS AT WTERT 2016 CONFERENCE

Aravossis, Konstantinos

Konstantinos Aravossis is Associate Professor (Mech. Eng.) at National Technical University of Athens) and Professor at the MBA program of Athens University of Economics. He is Coordinator of the “Environmental Economics and Sustainable Development Research” of the Sector of Industrial Management and Operations Research of Mech. Eng. (NTUA). He is Chair of the Coordinating Committee of the Institute of Production and Operations Management/Hellenic Management Association and heads the Waste to Energy Research and Technology Council in Greece (www.wtert.gr).



Ljupka Arsova

Ljupka Arsova is a GBB Senior Consultant, with 10 years of international experience in solid waste management. She specializes in anaerobic digestion and advanced technologies for processing organic and mixed solid waste. At GBB, her responsibilities include project management and business development.

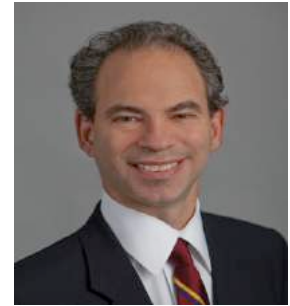


Bauer, Werner

Werner Bauer in 1996 founded a network of municipalities which today is known as the greatest benchmark platform for municipalities in German waste management. In 2015 he founded ASK (Access Sustainable Network) the “Cleantech Community” which now has listed about 25.000 experts. Werner Bauer has approximately 60 published articles / conference papers, 3 books as an editor in the fields of waste management and knowledge management, including the latest research work about the “Synergistic Effects by Thermal and Biological Waste Treatment Facilities at Integrated Sites”.

**Biderman, David**

David Biderman is Executive Director and CEO of the Solid Waste Association of North America (SWANA). Prior to SWANA, David was General Counsel and Vice President for Government Affairs of the National Waste & Recycling Association. He has litigated cases before the Supreme Court, testified before federal agencies, state legislatures and municipal councils, including the New York City Council; and provided safety and compliance training to thousands of workers throughout the United States, including New York.

**Böggemann, Joost**

Joost Böggemann is VP Business Development of Inashco- North America, the US subsidiary based in Annapolis Maryland. Inashco recovers metals from WTE ash and prepares the minerals for beneficial reuse. The Inashco-U.S. team has expanded to 17 direct and 30 JV-colleagues including Eco-Recovery Solutions (a Wheelabrator/Inashco JV company). With 5 million tons of ash under contract worldwide, Inashco plans to be the global leader in sustainable ash management.

**Bourtsalas, A.C. (Thanos)**

A.C. (Thanos) C. Bourtsalas is Adjunct Professor at the Earth and Environmental Engineering Department of Columbia University and Manager of WTERT-Columbia. He is Principal Investigator of a project funded by the President's Global Initiative Fund of Columbia for advancing waste management and WTE in Latin America and member of the technical advisory panel of Singapore's Environmental Protection Agency on beneficial use of WTE ash.



Castaldi, Marco

Prof. Marco Castaldi of the City College of New York (CCNY) has over 60 peer-reviewed research articles, 40 peer-reviewed conference papers, three book chapters and eleven patents in the fields of catalysis, combustion and gasification. Some of his research findings have been covered by The New York Times, The Observer, CNN, and other publications. Prior to his academic career, Professor Castaldi worked as Manager of Fuel Processor Component Development for Precision Combustion Inc. in New Haven, CT.

**Chen, Xiaoping**

Chen Xiaoping, Chief Executive Officer of China Everbright International has been honored as the "2010-2011 Man of the Year in China's Green Industry" for developing CEI into a leading enterprise in China's environmental protection industry and his other contributions to advancing environmental quality in China. In the last decade, China Everbright International has invested in over one hundred environmental projects, including thirty six waste-to-energy projects and has owns/operates 23 WTE plants.

**Chromec, Peter**

Peter Chromec is Senior Sales Director at Hitachi Zosen Inova Ltd., Zurich – Switzerland, responsible for the North American, Caribbean and Eastern European markets. Hitachi Zosen Inova is a leading Energy-from-Waste technology supplier with over 80 biological and over 500 thermal reference plants world-wide. Before, Mr. Chromec was CEO of Hitachi Zosen Inova USA. He has worked in the WTE sector since 1996.

**Consonni, Stefano**

Prof. Stefano Consonni of the Department of Energy of Politecnico di Milano is President of LEAP (Laboratory for Energy and Environment, Piacenza), where he also directs the study center MatER (Material & Energy from Refuse), the Italian affiliate of the Global WTER Council. He has led or pa Prof. Consonni has lead or participated in many national and international research programs on gas turbines, combined cycles, cogeneration, gasification, energy from biomass, energy from waste and residues, decarbonization of fossil fuels, and environmental impacts of energy systems. His latest activity focuses on energy from waste and biomass, carbon capture, reduction of greenhouse gas emissions. He is author of over 90 papers published in international journals and conference proceedings.

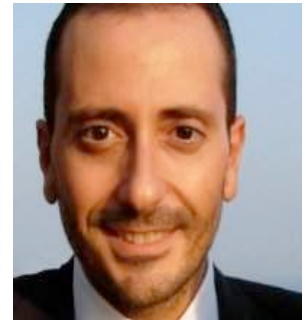


Cookson, Craig

Craig Cookson is Senior Director of Recycling & Energy Recovery for the Plastics Division of the American Chemistry Council, a trade association representing the leading companies in the chemical industry of the U.S. Craig is responsible for leading the Plastics Division's strategic national initiatives to increase the recycling of plastics, advance opportunities for energy recovery, and promote awareness of plastics' role in providing sustainable solutions to society's greatest challenges.

**Coppola, Daniele**

Daniele Coppola is Sales Area Manager for the Magaldi Power S.p.A. (Italy), which designs and manufactures dry bottom ash handling systems for solid fuel-fired boilers. He is responsible for the North American and East European markets. He is co-author of white papers presented at several conferences in US and Russia on the subject of the dry ash handling.

**de Avila Rueda, Victor**

Victor de Avila has worked in more than fifteen countries across Europe, North and South America, Africa and Asian. He has more than 15 years of experience in the waste management and WTE, having developed a number of projects in Spain, Africa and Latin America. He is currently the Chief Strategy & Corporate Development Officer of the Sacyr Group, Valoriza, headquartered in Spain.

**Garcia, Kathryn**

Kathryn Garcia is Commissioner of the Department of Sanitation of New York City. She has been Chief Operating Officer of the New York City Department of Environmental Protection, where she oversaw the operations of the Bureaus of Water Supply, Water and Sewer Operations, and Wastewater, with a combined staff of 4,000 employees, a \$540 million expense budget, and a \$1.9 billion four-year capital budget. Ms. Garcia developed and managed DEP's performance program, H2OStat, and developed a number of DEP's crisis management plans, including the Continuity of Operations Plan and a Water Contamination Response Plan.



Godoy, Alex

Prof. Alex Godoy of Universidad del Desarrollo (Santiago, Chile) is Director of Sustainability Research Centre & Strategic Resource Management, Academic Director of MS program in Sustainability Management, Research Associate of Water Research Center for Agriculture and Mining (WARCAM). Prof. Godoy is Head of WTERT-Chile.

**Gonen, Ron**

Ron Gonen is co-founder and CEO of the Closed Loop Fund, formed by a group of the world's largest manufacturers and consumer goods companies to invest in municipal recycling and waste diversion programs. He was Deputy Commissioner of NYC Department of Sanitation and co-founder and CEO of RecycleBank a company that has increased recycling rates at several communities. Mr. Gonen is a Columbia graduate (MBA) and lecturer.

**Guerreiro, Sergio**

Dr. Guerreiro has been working on improving the efficiency of WTE and biomass plants since 2004. His objective is to improve economic feasibility of WTE in Brazil by efficiency improvements combining natural gas and MSW. In 2010 he created the WTERT-Brasil organization and has contributed to several conferences on waste management and WTE in Brazil. He holds several patents in Brazil and Europe about high efficiency hybrid power plants burning MSW/biomass and natural gas/biogas. Currently he is working with Siemens, Gas Brasileiro (Petrobras) and several ethanol plants to increase the power generation from over 400 CHP units located in the State of São Paulo.

**Huang, Qunxing**

Prof. Huang is member of China's national key lab for clean energy at Zhejiang University and he is also Head of WTERT in China. His main research is focused on waste to energy and materials, including advanced thermal waste treatment technology, hydrocarbon recovery from oil sludge, tar cracking and fly ash treatment. He has published more than 50 peer reviewed papers and has received two national awards.



Jones, Stephen

Steve Jones, CEO of Covanta Energy joined this company in January, 2015 following a lengthy tenure with Air Products and Chemicals, Inc. based in Allentown, PA, where he held a variety of senior-level management positions including the company's industrial gases, equipment and energy businesses, as well as the Industrial Chemicals Division; culminating to his role as president of Air Products-China, based at the company's offices in Shanghai.

**Koralewska, Ralf**

Dr. Koralewska is project engineer for the Research & Development Department of MARTIN GmbH, Munich since 1999. He has been involved in many projects related to Waste-to-Energy and he has been the author of many scientific publications and White Papers. He is highly respected in the WTE field and has contributed to the development of the BREF documents introduced by the European Union.

**Kumar, Sunil**

Mr., Sunil Kumar is Senior Scientist, Solid and Hazardous Waste Management Division, CSIR-National Environmental Engineering Institute (NEERI), Nagpur, India and Co-ordinator, Academy of Scientific and Innovative Research, CSIR-NEERI, Nagpur, India. His main research area: Waste & Biomass to Energy and Biological Treatment of MSW, Hazardous Waste Management, MSW Management. He is Vice Chair of WTER-India.

**Mavropoulos, Antonis**

Antonis Mavropoulos is founder and CEO of D-Waste, developed in cooperation with GIZ SWEEPNET, ISWA, WTER, SWAPI and Leeds University. He is the newly elected president of the International Solid Waste Association (ISWA). He has been involved in solid waste management projects for 20 years and in more than 20 countries. Mavropoulos has published and participated in the writing of several books and scientific publications. His recent research work deals with globalization, megacities, mobile apps and the challenge of Internet of Things. He has also designed several mobile apps for recycling and waste management purposes.



Pellowitz, Dan

Dan Pellowitz is Managing Director of the Solid Waste Authority of Palm Beach County (SWA), the government agency responsible for providing an integrated solid waste management system to 1.4 million permanent residents of Palm Beach County, Florida. Mr. Pellowitz manages all of the operational, financial, and environmental functions of SWA (390 employees, annual budget of \$280 million).

**Rechberger, Helmut**

Helmut Rechberger is Professor for Resource Management and head of the Research Center of Waste and Resource Management at Vienna University of Technology. His research interests are: investigation on the morphological and chemical composition of urban stocks including dynamics; resource accounting as a basis for decision making; further development of evaluation methods and concepts in waste and resource management including statistical entropy; introduction of mathematical-statistical tools to Material Flow Analysis to consider data uncertainty; recovery of valuable substances from ashes and slag; waste characterization. Under his lead, the software STAN (world-wide used for MFA studies) has been developed (www.stan2web.net).

**Seo, Yong-Chil**

Prof., Yong-Chil Seo, is Professorat Department of Environmental Engineering, Yonsei University, Korea. His Main area of research is waste and biomass to energy and thermal processing recycling of ELVs and E-Waste, Air Pollution Control (HAPs-HMs including Hg). He was the Principal Researcher and Head of the Radioactive Waste Treatment Lab. in Korea Atomic Energy Research Institute and the Leader of BK21, Regional Core Scientific Field, Treatment of Multi- Pollutants in Multi-phases. He received a \$1.5 M fund Post Graduate studies supporting Program by Government

**Speziale, Lighea**

Lighea Speziale is an Environmental Engineer and currently covers environmental and energy topics in the Confederation of European Waste to Energy plants (CEWEP) based in Brussels. She is involved in the BREF Waste Incineration Review and also follows the review of BREF Large Combustion Plants and Waste Treatment.



Themelis, Nickolas

Nickolas J. Themelis in the first part of his career developed metallurgical processes for the extraction and refining of copper and other metals, including the Noranda Process that did away with the emission of sulphur to the atmosphere. At Columbia University, he was Chair of the School of Mines and first Chair of the new Department of Earth and Environmental Engineering. He is founder of Columbia's Earth Engineering Center and of the Global WERT Council. He is co-author of the waste management section in the IPCC 2014 Assessment Report and member of the U.S. National Academy of Engineering.

**Wagland, Stuart**

Stuart Wagland, a lecturer (assistant professor) at Cranfield University, is a chartered chemist and has a PhD in environmental chemistry. He has extensive experience in waste processing technologies and energy from waste processes, including the development and operation of the pilot-scale thermal facilities at Cranfield. His current research includes assessing the available metals and waste-derived fuels from closed landfill sites and a UK research council-funded project on the pyrolysis and advanced thermal conversion of RDF. He is the course director for the MSc in Energy from Waste, which is accredited by the Chartered Institute for Wastes Management [CIWM].¹¹

**Watsford, Julia**

Julia Watsford is Vice President, Corporate Strategy & Market Planning of Wheelabrator Technologies. Prior to joining Wheelabrator, Ms. Watsford was director of strategy in the management consulting practice at PriceWaterhouseCoopers in Australia. She played a key leadership role within the strategic accounts portfolio, leading business transformation, operational improvement, pre-deal synergy evaluation, separation / carve out advice and pricing strategies with a range of ASX 200 clients in the transportation and industrial services sectors.

**Poster Presentations by CCNY and Columbia (lobby of Davis Auditorim)**

- Integrated Sustainable Waste Management for Santiago de Chile (F. Cabanas, A.C.(Thanos) Bourtsalas, A. Godoy)-Columbia
- Life Cycle Analysis of Processes for Resource Recovery from Waste-to-Energy Bottom Ash (A. C. (Thanos) Bourtsalas, C. R. Cheeseman, V. M.Fthenakis, Yi Xu)-Columbia
- Application of Thermal Spray Techniques for Combatting High Temperature Corrosion in Waste-to-Energy Boilers (Dianyi Yan, A.C.(Thanos) Bourtsalas, N.J.Themelis)-Columbia
- Inventory of dioxin emissions of China (Yating Yu, Nickolas J. Themelis, A.C. (Thanos) Bourtsalas)-Columbia
- Understanding High-Temperature Corrosion in Thermal Treatment Facilities (Timothy Sharobem, Marco J. Castaldi, Nickolas J. Themelis)-CCNY and Columbia
- Diversion of Municipal Solid Waste From Landfills: Recycling and Waste-to-Energy Facilities (Deepak Kumar Sharma, William Brandes, Elizabeth Rice, Marco J. Castaldi)-CCNY
- Characterization of Char Properties Contributing to Catalytic Activity for the Reduction of NO_x (Michaela)-Columbia
- Food Waste Energy Analysis: Characterizing Energy Content as a Function of Proximate Analysis Factors (Yooshin)-CCNY
- WERT-Columbia Recent Achievements (Vasilis Axiotis and A.C. (Thanos) Bourtsalas)-Columbia