

# **CARIBBEAN ACADEMY OF SCIENCES**

## **20<sup>th</sup> GENERAL ASSEMBLY AND BIENNAL MEETING**

**2016 Nov. 24<sup>th</sup> to 26<sup>th</sup>, Guadeloupe**

**“Biodiversity, Energy, Risks and Health”**

**From scientific knowledge to the emergence of innovative development  
strategies in the Caribbean”**



**The 20th CAS  
General Meeting and Conference  
Guadeloupe 2016**



## PROGRAMME

**THURSDAY - NOVEMBER 24<sup>TH</sup>**

<b>Main Conference Room</b>	
13:15	<b>CAS GENERAL ASSEMBLY</b>

<b>Main Conference Room</b>	
<b>OPENING CEREMONY</b>	
16 :10	- Thomas Forissier, CAS president of chapter DFA. - Opening welcome
16 :20	- Trevor Alleyne, CAS president
16 :30	- Jacky Narayaninsamy, Université des Antilles, provisional administrator or his representative
16 :40	- Annick Suzor-Weiner, Conference of University Presidents
16 :50	- Ary Chalus, region chairperson or his representative
17 :00	- Camille Galap, Rector of the Academy of Guadeloupe or his representative
17 :10	- CAS-TWAS Young Scientist Award, Nagarani Ponakala, presentation

<b>Main Conference Room</b>	
<b>Keynote Speakers</b>	
17 :30	- Dr Dalila ALDANA Instituto Politécnico Nacional, Mexico
18 :00	- Pr Jean-François THIMUS Université Catholique de Louvain, Belgium

Poster area
Poster Session
18 :30 - Poster Session and Welcome cocktail

Posters	Session : Mathematics and Informatics	Posters	Session : Interface and Material Physics – Natural Risks
Jean-Charles and Regis	Use of programmable floor robots for children with psychomotor disorders: a first short experience at microscopic level with unexpected results <b>Error! Reference source not found.</b>	Monjoly et al.	Forecasting of irradiance using Multiscale Methods
Biabiany et al.	Climate Informatics: Identifying relevant weather types in the Lesser Antilles	Jean-Baptiste et al.	Study of the effect of oxobiodegradable additives on the degradability of polyethylene under various ageing conditions by infrared spectroscopy
Cholet et al.	Affective Computing: Classification and prediction of emotional states	Molza et al.	In situ Raman and fluorescence micro-spectrometry investigations of contact lubrication in the presence of nanoparticles in dispersion in low viscosity lubricant bases
		Thomas et al.	Development of new nanoadditives for lubricants: friction performances of fluorinated carbon blacks

Session : Physics of the Atmosphere			Session : Medical Sciences
Biabiany et al.	Climate Informatics: Identifying relevant weather types in the Lesser Antilles	Goindin et al.	Screening of Deltamethrin, Malathion and Temephos resistance mechanisms in <i>Aedes aegypti</i> mosquitoes from Guadeloupe and Saint-Martin islands (French West Indies)
Hernandez-Garces et al.	FLEXPART and CALPUFF intercomparison. Guadeloupe study case	Cirederf et al.	Diabetes ketoacidosis in Afro-Caribbean subjects: characteristics and predictive factors
Plocoste et al.	Use of modeling tools to predict Methane Emission from a rehabilitated waste dome in tropical insular climate	Meunier et al.	PSA density is a predictor of aggressive tumors after radical prostatectomy in Caribbean patients initially under active surveillance
André et al.	Solar spatio-temporal forecasting in order to increase the integration of solar energy	Belia et al.	Somatostatin receptor scintigraphy
Session : Biology			Session : Hydrology and Hydrodynamics
Dartron and Gros	Description of a new filamentous tropical marine cyanobacteria ( <i>Oscillatoriaceae</i> ) in prokaryotic mat colonizing Guadeloupe shallow-water environments	Ducreux et al.	Hydrogeological functioning and groundwater contamination of two contrasted tropical volcanic basins belonging to the Observatory of Agricultural Pollution in the French West Indies (OPALE)
Dulorme et al.	The drought resistance of the tree species in the Caribbean forests		

Grimonprez et al.	Study of sulfur-oxidizing bacteria colonizing meiofauna in shallow marine environments		<b>Session : Chemistry</b>
Guéné et al.	Contamination of food webs by chlordecone in three marine coastal habitats (mangroves, seagrass beds, coral reefs) in Guadeloupe	Brudey et al.	Lead adsorption by chemical activated carbons from three lignocellulosic precursors
Rousteau et al.	Biomass mapping for Caribbean Island rainforests	Rambinaisaing et al.	Investigating Dechlorination of Organochlorine Insecticide chlordecone for soils and water remediation
Obertan et al.	Biodiversity, alimentation and health : a politically under-exploited potential for development	Rangin and Gaspard	Exploring the use of locally produced activated carbon for treatment of chlordecone contaminated animals
Lemoine et al.	Occurrence of <i>Perkinsus</i> sp. in the wild oyster <i>Crassostrea rhizophorae</i> in the Caribbean ( French West Indies ; Guadeloupe)	Manduca-Artiles et al.	Degradation of diazepam by ultrasonic and gamma radiations
Alleyne and Ignacio	Ligand Binding at Heme a3 of Cytochrome c Oxidase Induces Conformational Changes in Transmembrane Segments of Subunit-II of the Enzyme	González Hernández et al.	Modelling of activated sludges considering growth and simultaneous storage and extracellular polymeric substances production
Dulorme et al.	Conservation of the <i>Pterocarpus offinalis</i> swamp forest in the Lesser Antilles: Experimental reforestation of herbaceous swamps and wet meadows	Gamboa-Carballo et al.	Adsorption of chlordecone into cyclodextrins: a theoretical study
		Saint-Martin et al.	Waste and biomass valorization by solar pyrolysis : The SMO process (solar micro wave)

## FRIDAY – NOVEMBER 25<sup>TH</sup>

MAIN CONFERENCE ROOM			SECOND CONFERENCE ROOM		
Session : Mathematics and Informatics			Session : Science Education		
8:00	Ponakala	Understanding Physiological Situations with Modelling	8:00	Rémi et al.	Multimodal study of the impact of graphomotor training
			8:15	Anjou et al.	Highlighting Context Effects in a Pedagogical Innovation on Geothermal Energy in the Caribbean and North America
8:30	Mahdi	Copula methodology for risk analysis	8:30	Césaire	Traditional 'Ka' drum from Guadeloupe : Study on wood quality and vibrational characterization
8:45	Henry and Stattner	Understanding Diffusion Behaviors Through Individual Characteristics	8:45	Silvy et al.	Foundation of the interpretative activity of professors of conduct of elementary pupils
9:00	Cesar et al.	Some actions to control e-rumor	9:00	Mounsamy	Creole and mathematics
9 :15	Valmy et al.	Healthcare procedures in the poor population of Cayenne, French Guiana	9 :15	Jeannot-Fourcaud	Linguistic and biodiversity: some irrefutable links?
9 :30	St Rose and Vaillant	Contribution of scan statistics in detecting fragility spots in Martinique	9 :30	Beaubrun	Teaching of French as a language for integration to migrants in Guadalupe French West Indies: From linguistic insecurity to contextual pedagogic tools

9 :45	Nagau and Henry	A mechanism for a simplified interface for automatic identification of plants	9 :45	Anciaux	Bilingualism and Science Education in Guadeloupe
<b>Coffee break</b>			<b>Coffee break</b>		
10 :30	Destyl et al.	Analysis and numerical solution of a quantum physics phenomenon modeled by Nonlinear Schrödinger Equation	<b>Session : Medical Sciences</b>		
10 :45	Gros et al.	Simulations of Bacterias motion in a complex area	10 :30	Georges et al.	Assessing the quality of data available for inclusion in a national antimicrobial resistance surveillance system
<b>Session : Physics of the Athmosphere</b>			10 :45	Sealy and Swanston	The Challenge to Interpret Antimicrobial Susceptibility at a Small Community Hospital
11 :00	Barnacin et al.	Infrared Desert Dust Index over the tropical rainforest of French Guyana	11 :00	Gaete and Deloumeaux	Building a network of Biological Resources Centers for research purposes in the Caribbean: a shared vision for a common goal
11 :15	Euphrasie-Clotilde et al.	Dust event intensity statistics related to air masses trajectories climatology over Guadeloupe	11 :15	Brureau et al.	Polymorphisms of genes related to oestrogen metabolism and the risk of prostate cancer in two populations of African descent
11 :30	Mathieu et al.	Air Pollution Biomonitoring with Bees of Guadeloupe: Experiments and first outcomes	11 :30	Meunier et al.	PSA density is a predictor of aggressive tumors after radical prostatectomy in Caribbean patients initially under active surveillance

11 :45	Pierre-George et al.	Comparison between biogas concentrations emitted by two open landfills: Truitier (Haiti) and Gabarre (Guadeloupe)	11 :45	Ignacio et al.	Prostate cancer: Tropical plant extract shows anticancer potential
12 :00	Atwel et al.	Determining the variability of electromagnetic signals as affected by land use in a tropical savanna	12 :00	Ranu and Sanders	Utilizing 20Hz Flash Stimulation to Effect Consistent EEG Changes
			12 :15	Moureaux et al.	Pelvimetrics measures as predictives factors of positives surgical margins after robot-assisted laparoscopic prostatectomy
		<b>Lunch</b>			<b>Lunch</b>

MAIN CONFERENCE ROOM			SECOND CONFERENCE ROOM		
Session : Interface and Material Physics – Natural Risks			Session : Radiochemistry and Nuclear Medecine and Biomolecules		
14:00	Symithe and Calais	Strain Accumulation on Active faults in the Caribbean Plate	14:00	Gee et al.	Novel carbon-11 chemistry for <i>in vivo</i> molecular imaging
14:15	Zahibo et al.	Lessons learned from the collaborative program TSUNAHOULE (INTERREG CARIBBEAN): from storm surge and tsunami hazard assessment to risk management in Guadeloupe			



14:30	Jean and St Fleur	Experimental evaluation using MASW and H/V - noise in the estimation of site effects lithological of Damien's site (Haiti)	14:30	Blanco et al.	Computational modeling in the study of Tc and Re DMSA radiopharmaceuticals
14:45	Guerrier et al.	A rheological approach to the mechanical behavior of some marls samples in Haiti	14:45	Belia et al.	IMoINu-Caraibes: a platform for nuclear medicine and research on cancer
15:00	Radford	Results of IODP Leg 340 in the West Indies	15:00	Goudou et al.	First detection of bioactive glycerolipids extracted from bacterial gill-endosymbionts colonizing the marine bivalve <i>Codakia orbicularis</i> (Lucinidae)
15 :15	Minatchy et al.	How nanotribological investigations can help the understanding of macrofriction behaviors	15 :15	Brureau et al.	Chlordecone exposure and prostate cancer: Interactions with genes encoding the oestrogen
15 :30	Romana et al.	Use of nanoindentation techniques as a flash test to predict polymer composite ageing under tropical environment	15 :30	Jagessar et al.	Antimicrobial profile of <i>Montrichardia arborescens</i> (Moco moco) stems and combined extract of <i>Montrichardia arborescens</i> stems and <i>Azadirachta indica</i> (Neem) leaves
15 :45	Mikosch-Cuka et al.	Nanomanipulation in SEM			
		<b>Coffee break</b>			<b>Coffee break</b>
16 :30	Petit et al.	Tribological, chemical and structural study of tribofilms generated during friction of nanoparticles of lamellar compounds in the presence of low viscosity bases			<b>Session : INTERDISCIPLINARY ORAL SESSION</b>
		<b>Session : INTERDISCIPLINARY ORAL SESSION</b>	16 :30	Segretier et al.	Precision Agriculture in the Carribean Area and Big Data Techniques : Review and Perspectives

16 :45	Jayaraman and Ramsubhag	Developing Integrated Disease Management systems for vegetable crops of the Southern Caribbean region	16 :45	Odacre et al.	Context related evolution of conception of students during professional traineeship in Guadeloupe
17 :00	Belia et al.	IMolNu-Caraibes: a platform for nuclear medicine and research on cancer	17 :00	Segretier et al.	A data-oriented approach for flash flood prediction in the Caribbean area
17 :15	Marti	Mathematics	17 :15	Pun and Beharry	Enhancing the Value-Added Output of Manufacturing Sector through Innovation Practices: A Case of the Caribbean
17 :30	Rivas et al.	Degradation of three pharmaceutical compounds, pollutant of superficial waters, by gamma radiation	17 :30	Benjamin and Pun	The Entrepreneurial Motivations of Engineering Students: Case from the SIDS of the Caribbean
		<b>Break</b>			<b>Break</b>
18 :00		<b>Round Table</b>  <b>« Science and Industry for the Energetic Transition in the Caribbean »</b>  <b>Synerg'iles</b>			

## SATURDAY – NOVEMBER 26<sup>TH</sup>

MAIN CONFERENCE ROOM			SECOND CONFERENCE ROOM		
Session : Biology			Session : Hydrology and Hydrodynamics		
8:00	Mira and Dulorme	Are tropical dry forest seedlings equally drought resistant than adult trees? A case study in a Caribbean island	8:00	Mansot et al.	New developments in electricity generation using wave energy
8:15	Rolle and Rousteau	Forest management: Forest fragmentation and biodiversity corridor function of riparian forest in Lesser Antilles	8:15	Farrick et al.	Prediction of clay and sand content using a chilled-mirror dewpoint technique
8:30	Marcon et al.	Estimation of the number of tree species in French Guiana by extrapolation of permanent plots richness	8:30	DeLaTorre and Longueville	Monitoring coastal erosion in the French Caribbean: Regional surveys in Guadeloupe and French Guiana
8:45	Stone	Investigating the 'dry gets drier and wet gets wetter' paradigm in Trinidad and Tobago	8:45	Clair and Ducreux	Quantitative and qualitative monitoring of groundwater in Guadeloupe (FWI): Usefulness and limits
9:00	Séne et al.	<i>Scleroderma bermudense</i> pantropical dissemination <i>via</i> seeds of its host plant <i>Coccoloba uvifera</i>	9:00	Boutouchent et al.	Modelling river hydrokinetic energy in Large rivers : Maroni river in French Guiana
9 :15	Prêcheur et al.	Year round at-sea distribution of Audubon's shearwater <i>Puffinus l. lherminieri</i> , from the Lesser Antilles (Martinique Is.)	9 :15	Brathwaite and Villarroel-Lamb	The Influence of Infiltration and Exfiltration Processes on Maximum Wave Run-up – A Study on Trinidad Beaches

9 :30	Priam	Wind turbines and Pelecanidae: recommendations based on a 6 years study of <i>Pelecanus occidentalis</i> in a wind farm in Puerto Rico	9 :30	Bilionière and Maurin	An analysis of the evolution of the time series of rainfall and temperature of Guadeloupe
9 :45	Frotté et al.	How dams & waterworks impact Caribbean freshwater species biodiversity?	9 :45	Miniño and León	Rise in water level of lake Enriquillo, Dominican Republic
		<b>Coffee break</b>			<b>Coffee break</b>
		<b>Session : Material and Environmental Chemistry</b>			<b>Symposiums</b>
10 :30	Flory	Tuning polyolefin reactor design technology and rheological property for high performing data cable	10 :30		<b>Solar Energy Symposium</b>  « Solar geoengineering and the Caribbean: science and governance of research »  <b>Andy Parker</b>
10 :45	Smith and Thomas	Plastic Recycling with a Caribbean Perspective			
11 :00	Jeanne Rose et al.	Electrochemical properties of activated carbon from <i>Turbinaria turbinata</i> and <i>Sargassum fluitans</i> for use in supercapacitor			
11 :15	Yacou et al.	Structural investigation of carbon-based sorbents synthetized from Caribbean biomass for water processing			

11 :30	Melchor Rodriguez et al.	Molecular modeling of chlordecone and $\beta$ -hexachlorocyclohexane interaction with acidic surface groups in an activated carbon model	11 :30	<b>Forestry symposium,</b> <b>Alain Rousteau</b>
11 :45	Cruz Julcour et al.	Degradation of chlordecone and $\beta$ -HCH by photolysis, photo-fenton and ozonation processes	Gayot et al.	Dynamics of Caribbean Island rainforests: first measurements
12 :00	Liber and Letondor	Bioaccumulation of chlordecone in grasses	Rousteau et al.	Biomass mapping for Caribbean Island rainforests
12 :15	Mohadissa et al.	Determination and removal of phosphorous and chloride in surface and ground waters from the three counties in Guyana		
	<b>Lunch</b>			<b>Lunch</b>

<b>Main Conference Room</b>
<b>Keynote Speakers</b>
<p>14 :00 - Pr Bruno HOEN Infectious and Tropical Disease Center University Hospital, Université des Antilles</p> <p>14 :30 - Dr Sonia PETER Departments of Chemistry and Environmental Sciences Division of Natural Sciences, Barbados Community College</p>
<b>Plenary presentation</b>
<p>15 :00 - Israel Melendez Alicea SHIMADZU Analytical and Measuring Instruments</p>

MAIN CONFERENCE ROOM			SECOND CONFERENCE ROOM	
Session : Medical Sciences			Meetings	
15:30	Garnier et al.	Biological, cellular and genetic abnormalities associated with alteration of red blood cells filterability from sickle cell trait blood donors	15 :30	<b>Haiti collaboration symposium, Annick Suzor-Weiner</b>
15:45	Garnier et al.	Microparticles of sickle cell patients: modulators of endothelial cell phenotype		
16:00	Velayoudom et al.	Testosterone deficiency and cardiovascular profile in Afro Caribbean subjects with type 2 diabetes		
16:15	Drané et al.	Ethnobotanic study and therapeutic potential of <i>Solanum triste</i> Jacq		
16:30	Antoine-Jonville et al.	Effect of heat exposure and exercise on food intake regulation and glucose tolerance: a randomized crossover study in young healthy men		
16 :45	Rinaldi et al.	Effect of cold menthol water immersion on recovery in tropical climat		
17 :00	Möckesh et al.	Vasculopathy in Sickle Cell Disease		

17 :15	Jumet et al.	Arterial stiffness in young patients with sickle cell disease
<b>Break</b>		
18 :00		<b>Round Table</b> <b>« Radiochemistry »</b> <b>Tony Gee and Ulises Jaurégui-Haza</b>

19 :30	<b>Awards Ceremony and Closure of the Conference</b> <b>Gala Dinner</b>
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