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MAX-PLANCK-GESELLSCHAFT



# FIRST MAX PLANCK - CUBA FRONTIERS OF SCIENCE SYMPOSIUM

UNIVERSIDAD DE  
LA HABANA,  
CUBA

MARCH 6-7, 2019



Embajada  
de la República Federal de Alemania  
La Habana



Embajada de la República  
de Cuba en Alemania



Ministerio Federal  
de Relaciones Exteriores



MES  
MINISTERIO  
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SUPERIOR



CENTRO DE INGENIERÍA GENÉTICA  
Y BIOTECNOLOGÍA



Sociedad Cubana de  
Química



Sociedad Cubana de Física



Centro latinoamericano de Física  
Centre Latino-Américain de Physique  
Centro Latino Americano de Física



# Max Planck – Cuba Symposium Frontiers of Science



MAX-PLANCK-GESELLSCHAFT

Wednesday, March 6

Aula Magna, La Habana University

8:00-8:30		<b>Registration - Ground floor of the central library, opposite Aula Magna</b>
8:30-8:50	Opening	<b>Jürgen Renn</b> - MPI for the History of Science, Berlin <b>H.E. Thomas Karl Neisinger</b> Ambassador of Germany in Cuba
8:50-9:10		<b>Miriam Nicado Garcia</b> – Rector of La Habana University <b>Aurora Fernández González</b> - Vice Minister of Higher Education of Cuba
9:10-9:30		Transfer from the Aula Magna to the venue of the symposium Habana Libre Hotel - Salón Solidaridad
9:30-9:50		<b>Jan-Michael Rost</b> - MPI for Physics of Complex Systems, Dresden <i>"Rydberg excitation in random and regular environments "</i>
9:50-10:10	Finite Systems	<b>Aliezer Martínez</b> – Department of Theoretical Physics, Faculty of Physics, La Habana University <i>"Semiclassical modelling of the photoinduced dynamics of molecular systems in gas and condensed phases "</i>
10:10-10:20		<b>Q&amp;A Session</b>
10:20-10:50		Coffe Break
10:50-11:10	Biomolecular Systems	<b>Peter Seeberger</b> - MPI for Colloids and Interfaces, Potsdam <i>"Preventing and Fighting Infectious Disease: Synthetic Carbohydrate Vaccines and Continuous Flow Synthesis of Affordable Malaria Drugs"</i>
11:10-11:30		<b>Vicente Verez-Bencomo</b> -Center of Bimolecular Chemistry <i>"Development of vaccines against Bacterial Meningitis and Pneumonia in Cuba."</i>
11:30-11:40		<b>Q&amp;A Session</b>
11:40-12:00		<b>Katharina Landfester</b> - MPI of Polymer Research, Mainz <i>"Nanocarriers for targeted delivery of drugs"</i>
12:00-12:20	Chemistry of Polymers	<b>Carlos Peniche Covas</b> — Faculty of Chemistry – La Habana University <i>"Chitosan based systems for biomedical and pharmaceutical applications".</i>
12:20-12:30		<b>Q&amp;A Session</b>

12:30–12:50

**Udo Reichl**-MPI of Dynamics of Complex Technical Systems, Magdeburg  
*“Cell Culture-based Viral Vaccines: Process Intensification and Monitoring”*

12:50-13:10

Bioprocess  
Engineering

**Roberto Mulet** - Department of Theoretical Physics, Faculty of Physics, La Habana University  
*“Modeling the metabolism of continuous mammalian cultures”*

13:10-13:20

**Q&A Session**

13:20–15:00

Lunch hosted by La Habana University

15:00–15:20

**Wolfgang Baumeister**- MPI for Biochemistry, Martinsried  
*“Structural Biology in situ: The Promise and Challenges of Cryo-Electron Tomography”*

15:20-15:40

Molecular  
Structural Biology

**Carlos Álvarez**- Center for Protein Studies, Faculty of Biology, La Habana University  
*“Unveiling the pore - forming mechanism in membrane by sticholysins: the protein - membrane interplay and beyond”*

15:40-15:50

**Q&A Session**

15:50–16:10

**Stefan Offermanns** -MPI of Heart and Lung Research, Bad Nauheim  
*Microvascular functions in tumor cell metastasis //Flow-dependent cellular mechanotransduction in atherosclerosis*

16:10-16:30

Pharmacology

**Maday Fernández Mayola** -Department of Pharmaceuticals, Center for Genetic Engineering and Biotechnology  
*“GHRP-6: The wizardry of small peptide before worldwide challenging diseases. Insights in cardioprotection”*

16:30-16:40

**Q&A Session**

16:40–17:10

Coffe Break

17:10-17:30

**Wilhelm Boland** - MPI for Chemical Ecology, Jena  
*Chemical factors controlling the composition of the microbiome of the agricultural pest *Spodopteralittoralis**

17:30-17:50

Chemical Ecology

**Daniel García Rivera** - Center for the Study of Natural Products  
*“Synthetic Approaches to Natural Products for Medicinal and Agricultural Applications”*

17:50-18:10

**Q&A Session**



# Max Planck – Cuba Symposium Frontiers of Science



**Thursday, March 7**

Habana Libre Hotel - Salón Solidaridad

**8:30–8:50**

Keynote  
speech

**Klaus von Klitzing** – Nobel Prize in Physics, MPI for Solid State Research, Stuttgart.

*“Metrology: The science of measurement”*

**8:50–9:10**

**Arno Villringer** - MPI for Human Cognitive and Brain Sciences, Leipzig

*“Neurocognition of obesity”*

**9:10-9:30**

Neurology

**Mitchell Valdes** - Center of Neurosciences of Cuba

*“Parsing the visual system with multivariate pattern analysis and functional connectivity”*

**9:30-9:40**

**Q&A Session**

**9:40–10:00**

Neurophysics

**Nikolaus Weiskopf** - MPI for Human Cognitive and Brain Sciences, Leipzig

*“Characterizing Brain Microstructure Using Magnetic Resonance Imaging (MRI) – Towards In-Vivo Histology”*

**10:00-10:20**

**Jorge Iglesias-Fuster** - Center of Neurosciences of Cuba

*“Electrophysiological markers of pre-symptomatic Alzheimer's Disease”*

**10:20-10:30**

**Q&A Session**

**11:00–11:20**

Human development

**Azzurra Ruggeri** - MPI for Human Development, Berlin.

*“Ecological learning: How children adapt their active learning strategies to achieve efficiency”*

**11:20-11:40**

**Nancy Estévez**- Center of Neurosciences of Cuba

*“Numerical cognition: contribution of basic abilities to academic achievement”*

**11:40-11:50**

**Q&A Session**



# Max Planck – Cuba Symposium Frontiers of Science



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11:50-12:10

Translational  
Neurocircuitry

**Marc Tittgemeyer** -MPI for Metabolism Research, Cologne

*"The Brain in Control of Bodily States: Exploring the link between food intake regulation and cognition"*

12:10-12:30

**Prof. Eduardo Martinez Montes** - Center of Neurosciences of Cuba

*"Modeling the functional activity of the brain using message passing algorithms in criticality on the Human Connectome"*

12:30-12:40

**Q&A Session**

12:40-13:00

Cooperation  
with Max  
Planck

**Andreas Trepte** – Max Planck Liaison Office for Latin America, Buenos Aires

*"Study or do research abroad to succeed in Cuba - Opportunities for scientific training in and cooperation with Max Planck Institutes"*

13:00-14:40

Lunch hosted by La Habana University

14:40-15:00

Physics

**C. Trallero-Giner** -Latin-AmericanCenter of Physics

*"Latin American Center for Physics a Challenge for the Development of Science"*

15:00-15:20

Molecular Catalysis

**Walter Leitner**- MPI for Chemical Energy Conversion, Mülheim

*"Catalytic Conversion of Carbon – Challenges and Opportunities at the Interface of Energy and Chemistry"*

15:20-15:40

**Lidice Vaillant**- Institute of Materials Science and Technology - University of La Habana

*"Inorganic Nanostructures for emerging solar cells: low cost approach"*

15:40-15:50

**Q&A Session**

15:50-16:10

Knowledge Evolution

**Jürgen Renn**- MPI for the History of Science, Berlin

*"The Anthropocene from a Humanities' Perspective "*

16:10-16:30

**Luis Alberto Montero Cabrera** - Chemistry Faculty – UH, President of the Scientific Council of La Habana University

*"Science in Cuba: A natural scientist overview in 2019"*

16:30-16:40

**Q&A Session**

16:40-17:10

Coffe Break



## Max Planck – Cuba Symposium Frontiers of Science



MAX-PLANCK-GESellschaft

17:10- 17:30

**Mason Dean** - MPI Colloids and Interfaces, Potsdam

*"Seedpods, spider fangs and shark cartilage: Interdisciplinary research in biological and biomimetic materials at the MPIKG"*

17:30-17:50

**Amisel Amirall La Serna** – Center of Biomaterials, La Habana University

*"Biomaterials for bone and cartilage regeneration"*

17:50-18:00

**Q&A Session**

18:00-18:45

Roundtable to reconcile collaboration initiatives

**Vilma Hidalgo** - Vice-rector for research, La Habana University

Biomaterials