



19th World Congress of the International Society for Aerosols in Medicine

University of North Carolina at Chapel Hill

William and Ida Friday Center for Continuing Education

ISAM One-Day Symposium

Inhaling Nanoparticles by Accident and on Purpose - Challenges and Opportunities for Toxicology and Therapeutics

April 6, 2013

Session1: Nanotoxicology

- 9:00 – 9:25 AM:** *Biokinetics of inhaled nanoparticles and health effects: an overview*
Wolfgang Kreyling, Helmholtz Center Munich, DE
- 9:30 – 9:55 AM:** *Health Effects of Manufactured Nanomaterials (Carbon Nanotubes and Nano-sized Metal Catalysts)*
James Bonner, North Carolina State University, USA
- 10:00 – 10:20 AM:** **Coffee Break**
- 10:25 – 10:50 AM:** *Nanoparticle Exposure of In-vitro Epithelial Co-culture Cell Systems for Risk Assessment*
Barbara Rothen-Rutishauser, Adolphe Merkle Institute, University of Fribourg, CH
- 10:55 – 11:20 AM:** *The Cellular Responses to Engineered Nanoparticles: It is a Pathway-driven Process*
Christie M. Sayes, RTI International, USA
- 11:20 – 12:20 PM:** Panel Discussion with attendees (opportunity for attendees to ask more in-depth questions and/or to discuss their own contributions to the field)
- 12:20 – 1:10 PM:** **Lunch Break**

Session 2: Nanomedicine

- 1:15 – 1:35 PM:** *From the Bad to the Good: Biomedical Nanoparticles as Inhalative Medicine*
Claus-Michael Lehr, Saarland University, DE
- 1:40 – 2:00 PM:** *Pulmonary Therapies Enabled by Mucus Penetrating Nanoparticles*
Justin Hanes, Johns Hopkins University, USA
- 2:05 – 2:25 PM:** *Nanoparticle-surfactant Interactions*
Peter Gehr, University of Bern, CH
- 2:30 – 2:50 PM:** *Macrophage Uptake: Important to Avoid?*
Fakhrul Ahsan, Texas Tech University Health Sciences Center, USA
- 2:55 – 3:15 PM:** **Coffee Break**
- 3:20 – 3:40 PM:** *Nanotechnology in Dry Powder Formulations*
Heidi Mansour, University of Kentucky, USA
- 3:45 – 4:05 PM:** *Engineered Nanoparticles for Medical Applications*
Ben Maynor, Liquidia Technologies Inc., USA
- 4:10 – 4:30 PM:** *Recent Advances in Therapy of Lung Diseases using Nanoparticles*
Raimar Loebenberg, University of Alberta, Canada
- 4:35 – 4:55 PM:** *Inhaled Nanoparticles to Treat Lung Infection*
David Cipolla, Aradigm Corp., USA
- 5:00 – 6:00 PM:** **Panel Discussion with attendees (opportunity for attendees to ask more in-depth questions and/or to discuss their own contributions to the field)**

Posters for Nanoparticle Toxicology and Medicine Pre-Congress Symposium

O-041 Bioengineering Of siRNA For Treatment Of Inflammatory Lung Disease

JM Ramsey¹, C Kelly², AB Yadav¹, NG McElvaney⁴, D Small³, C Taggart³, SA Cryan¹

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O-046 In Vivo Inhalation Exposures To Super-Paramagnetic Iron-Oxide Nano-Particles (SPIONP) Followed By Magnetic Particle Detection (MPD) And Accelerator Mass Spectrometry (AMS) Analysis

VB Mikheev¹, WC Forsythe¹, W Wang², PD Nallathamby², KR Minard³, JG Teegarden³, BD Thrall³, KM Waters³, N Karin³, H Enright⁴, M Malfatti⁴, K Turteltaub⁴

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⁴ *Lawrence Livermore National Laboratory, LIVERMORE, CA, United States of America*

O-051 Pharmacokinetics Of CPZEN-45, A Novel Anti-Tuberculosis Drug In Male Guinea Pigs

SNM Hanif¹, D Raghuvanshi¹; P Durham², AJ Hickey², L Garcia Contreras¹

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² *RTI International, Research Triangle Park, NC, United States of America*

P-003 Development Of An Hplc Method To Determine CPZEN-45 In Biological Matrices

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P-006 Clinical Patient Nasal Deposition Of Nonaqueous Beclomethasone Spray Versus Aqueous Nasal Sprays Of Fluticasone And Mometasone

R Chand¹, PJ Kuehl¹, JD McDonald¹ and C Leach¹

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P-008 Aerosol Generation And Deposition In The Human Lung

SH Hsu¹, SH Huang¹, CW Lin¹, HD Wu², CW Chen³, YM Kuo⁴, CC Chen¹

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³ *Institute of Occupational Safety and Health, NEW TAIPEI CITY, Taiwan*

⁴ *Chung Hwa University of Medical Technology, TAINAN, Taiwan*

P-014 Electrostatic Forces And Deposition Mechanisms Of Charged Aerosol Particles In Lung Airways: "Image" And Space-Charge Effects

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² *Department of Electrical Engineering, University of Southampton, Southampton SO17 1BJ, United Kingdom*

P-022 In Vitro Comparison Of Aerosol Deposition In Nasal Cavities

S Le Guellec^{1,2}, D Le Pennec², S Gatier³, L Leclerc^{4,5}, J Pourchez^{4,5}, P Diot^{2,6}, G Reychler⁷, L Pitance⁷, M Durand^{5,8}, F Jamar⁹ and L Vecellio^{1,2}

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P-030 Biodistribution And Trafficking Of Intranasally Administered Monodisperse Biodegradable Particles

TM Brenza, LK Petersen, Y Zhang, L Huntimer, AE Ramer-Tait, MJ Wannemuehler, B Narasimhan

Iowa State University, AMES, IA, United States of America

P-033 Modified Beta-Cyclodextrin-siRNA Nanoparticles Successfully Transfect Bronchial Epithelial Cells Following Nebulization

A Hibbitts¹, A O'Mahony², L Nolan¹, J Ogier³, S Desgrange³, R MacLoughlin⁴, R Darcy³, C O'Driscoll², SA Cryan¹

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P-036 Magnetic Core-Shell Nanoparticles For Drug Delivery By Nebulization

NK Verma^{1,2}, K Crosbie-Staunton^{1,2}, A Satti^{2,3}, S Gallagher^{2,3}, KB Ryan⁴, T Doody⁴, C McAtamney⁵, CS Burke⁵, P Galvin⁶, Y Volkov^{1,2}, YK Gun'ko^{2,3} and R MacLoughlin⁷

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P-044 Spatial Distribution Of Aerosols In Healthy Rat Lungs: Findings From Numerical And Experimental Models

JM Oakes¹, C Darquenne², Celine Grandmont⁴, Miriam Scadeng³, Ellen Breen², I Vignon-Clementel⁴, AL Marsden¹

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P-067 Development Of A New High Performance DPI

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P-070 Impact Of MMAD, Acoustic Airflow And Breathing Patterns On Intranasal Drug Deposition In A Realistic Nasal Cast

L Leclerc¹, J Pourchez¹, G Aubert¹, L Vecellio², M Durand^{1,3}

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P-082 Convergent Pegylated Nanoparticle-Nebulizer Platform For Respiratory Delivery Of siRNA

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P-121 Development Of A Human Lung Co-Culture Model System For Hazard Identification Of Aerosolized Particles

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