

Following the success of our second scientific session at the 46th CRS Annual Meeting & Exposition, last July in Valencia, Spain, it is our great pleasure to bring you the latest edition of the Controlled Release Society Nanomedicine and Nanoscale Delivery Focus Group (CRS NND FG) newsletter. This third newsletter brings you the highlights of the NND FG session in Valencia, a message from the new Chair of the FG, the interviews with the winners of the CRS NND FG Awards, and much more. In addition, we are honored to introduce you our new Board Members. Do not forget to visit our [webpage](#) and to follow us on our social media! #seeyouinVegas2020

Highlights of the 46th Annual Meeting & Exposition



BRUNO SARMENTO, INEB/13S, University of Porto, Portugal
Past-Chair of the CRS NND FG

The last CRS Annual Meeting in Valencia, Spain, was one of the most rewarding professional and personal experiences I had the chance to experience! Claimed by all attendees as congregation of outstanding scientific sessions and discussions, it was also an exceptional social and personal week! This year, the NND FG was challenged to join an exceptional selection of speakers for its Scientific Session! From the academia, Kostas Kostarellos, Chair of Nanomedicine at the Faculty of Medical and Human Sciences of the University of Manchester; from the industry, Cristianne Rijken, CSO and founder and co-inventor, Cristal Therapeutics. Furthermore, three short oral presentations complemented the scientific session. We also selected, for the second year, the Young Investigator Award and the Trainee Award. Very well-deserved awards! In transition of the coordination of the NND FG, I had a bittersweet feeling from the past Chair to witness the strength and enthusiasm of the new team, headed by Hélder, a long-term friend and collaborator. I am more than confident that the Focus Group will grow and disseminate its influence on young scientists and senior researchers, in the defence of the nanomedicine. As a personal note, I will keep in my mind the humble, but enormous example of Prof Maeda, teaching science as no one had ever! ■



Kostas Kostarellos
*University of Manchester
United Kingdom*



Cristianne Rijken
*Cristal Therapeutics
The Netherlands*



Khuloud Al-Jamal
*King's College London
United Kingdom*



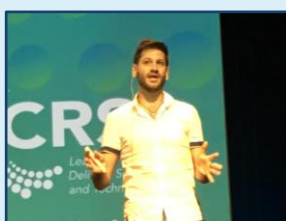
Tarun Ojha
*University of Utrecht
The Netherlands*



Ronit Satchi-Fainaro
*Sackler Faculty of Medicine
Israel*



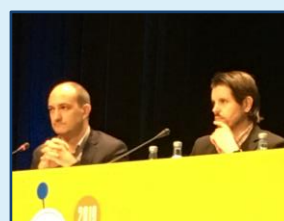
Gayong Shim
*Seoul National University
South Korea*



Nikolaos Tsakiris
*UCLouvain
Belgium*



Bruno Sarmento and Hélder A. Santos
Chairs



HÉLDER A. SANTOS
*University of Helsinki
Finland*

A MESSAGE FROM THE NEW CHAIR OF THE NND FG

Dear CRS community and members of the CRS NND FG,

I would like first to heartily thank the past Board Members, headed by Prof. Bruno Sarmento, for the superb work they did at all levels for our FG. It was a great honor to be appointed as the new Chair of the CRS NND FG during the last CRS meeting in Valencia. It is also my great pleasure to present you and welcome the new NND FG Board, which is composed of highly experienced, young and talented experts in the field of nanomedicine from different countries and continents (more details at the end of this newsletter). The field of nanomedicine has been under close scrutiny over the last year, but I strongly believe that we are moving in the right track, and that we are witnessing a solid and groundbreaking progress of the field. The CRS NND FG board mission, with the help of our members and followers, is to continue promoting the field of nanomedicine, and to build even more bridges between the different sectors of this field, including academicians, industry experts and stakeholders. Our aims for the next two years are clear and ambitious: (1) To continue actively promoting the nanomedicine field in social media and close to the general public; (2) To continue organizing webinars with experts in the field for our FG members; (3) To continue with the newsletter of our FG, at least 2-3 times a year; (4) To organize a high-level scientific session in the next CRS meeting in Las Vegas; (5) To upload short interviews (2-3 minutes) with experts on current topics of nanomedicine in our YouTube channel; (6) To promote internships in companies for the young members of our FG; and (7) To organize and/or support workshops in nanomedicine specially directed to the young members of our FG. Together, we can make an impact in the field of nanomedicine. If you want to be part of this fantastic and disruptive community, join us as a member of our FG, and do not forget to attend the next CRS meeting in Las Vegas! We are looking forward to welcome you in the NND FG! ■

Hélder A. Santos

Interviews with the winners of CRS NND FG Awards

During #CRS2019, the NND FG has recognized two scientists with special awards. Prof. Ronit Satchi-Fainaro, from Tel-Aviv University, won the *Translational Research Award*, with a poster presentation entitled “*Brain metastases: deciphering tumor-stroma interactions in three dimensions for the rational design of nanomedicines*”. Dr. Angel Tan, from Monash University, won the *Fundamental Research Award*, with a poster presentation entitled “*Nanoparticle delivery: a critical insight into differences between 2D conventional versus 3D dynamic vascular testing platforms*”. Additionally, Prof. Dr. Khuloud Al-Jamad, from King’s College London, was awarded with the *Young Investigator Award*, and Tarun Ojha, PhD candidate from the Institute for Pharmaceutical Sciences of Utrecht University, was recognized with the *Trainee Award*. Read below the Q&A with Prof. Ronit Satchi-Fainaro, Dr. Angel Tan, and Tarun Ojha!



RONIT SATCHI-FAINARO, PhD, Professor of Pharmacology in the Department of Physiology and Pharmacology of the Sackler Faculty of Medicine, Tel Aviv University. *Translational Research Awardee* of the CRS NND FG at the 46th CRS Annual Meeting & Exposition, held in Valencia, Spain, 2019.

**TRANSLATIONAL
RESEARCH
AWARD**

Q. What does it mean for you to receive this FG award?

A. As scientists, we do what we love and what we are passionate about, without thinking about the rewards. However, it is nice to stop from time to time and reflect back at what we have achieved as an individual and as a team, and enjoy the fruits of our hard labor.

Q. How important is this award for your career and future research?

A. It is important for anyone’s career as a sign of recognition by the community. For me personally, it is rewarding to get this award as a long-term member of the CRS since 1997, when I began my PhD studies.

Q. By being the recipient of this award, how will you influence others and how will this impact your career?

A. From an established investigator’s perspective, our main influence is to lead by example. I want my students to grow and thrive and do the best they can. Hopefully, better than me. This award has the potential to impact the whole nanomedicine field and not only individual careers.

Q. What do you expect from our focus group in Nanomedicine and Nanoscale Delivery in the future?

A. The Focus group in Nanomedicine and Nanoscale Delivery gives a sense of a community that is vital for collegiality and initiation of collaborative efforts leading to the establishment of a critical mass, which can promote the translation of current investigational nanomedicines to clinical products. The FG session in Valencia was a great success, showcasing young, established, basic and translational scientists coming together from diverse disciplines, with the goal of advancing the field from basic insights to rational design of precision nanomedicines tailored to patients’ needs.

Q. In your opinion, what is the greatest reward of being a researcher in Nanomedicine and Nanoscale Delivery?

A. I really hope to see the realization of the long proposed “*in vitro* clinical trials” getting adopted in the pharma and regulatory worlds. This award convinces the significance of this research direction. We live in an exciting era of technological advances, which allow the discovery of new targets by proteogenomics guiding the design of new multivalent nanomedicines interfering intricate networks in pathological sites. This is made possible thanks to the unique multidisciplinary nature of our field. Take my lab as an example - I have 30 scientists coming from diverse backgrounds such as biology, chemistry, medicine, engineering and even architecture. Dialogues induced by open minds in fruitful lab meetings lead to surprising adventurous solutions, which we cannot anticipate by thinking about challenging problems on our own.

Q. What would you tell young researchers to convince them to pursue research in this field?

A. I will never attempt convincing anyone to follow a certain field. It has to come from them. We should just be there to guide them to pursue their ideas and dreams while making sure they are up-to-date and thorough without re-inventing the wheel. We should provoke their critical thinking to explore new directions in this field and keep thinking about the impact of their work on the well-being of society.

Q. Can you tell us briefly about your most recent and exciting achievements in this area of research?

A. My lab is exploring the rational design of biomaterials to pursue different avenues of investigations, such as: (i) the development of selective multi-modality targeted polymeric nanomedicines bearing combinations of chemotherapies with anti-stromal agents; (ii) the development of a library of polymeric nanocarriers for the selective delivery of oligonucleotides to tumors; (iii) the identification of the molecular and cellular changes in tumor-associated host-stromal interactions that govern tumor dormancy; (iv) the development of diagnostic and theranostic nanomaterials for cancer and image-guided surgery; and (v) the rational design of novel nano-sized delivery systems for immunotherapies. Lately, we have focused on designing 3D-printed cancer models that mimic the clinical set up of the disease, allowing rapid, robust and reproducible evaluation of our nanomedicines. The insights and tumor-stroma-targeted nanomedicines we develop will hopefully pave the way for prediction of patient outcome, revolutionizing our perception of tumor modelling and consequently, the way we prevent and treat cancer.



ANGEL TAN, PhD, research fellow from Drug Delivery, Disposition and Dynamics group at Faculty of Pharmacy & Pharmaceutical Sciences of Monash University, Australia. *Fundamental Research Awardee* of the CRS NND FG at the 46th CRS Annual Meeting & Exposition, held in Valencia, Spain, 2019.

**FUNDAMENTAL
RESEARCH
AWARD**

Q. What does it mean for you to receive this award?

A. This *Fundamental Research Award* has certainly given an added impetus to my exploration in “*in vitro* bio-nano tools for probing nanoparticle delivery”, which is essential to support the mainstream drug delivery research topics within the CRS community.

Q. How do you expect this award to impact your research career?

A. Having received this award at such a large-scale, international scientific conference is important to distinguish my research quality and continuously enhance the track record of postdocs such as myself.

Q. What or who inspired you to pursue research in this field?

A. The lack of appropriate bio-predictive *in vitro* and *in vivo* methodologies in drug delivery research. This is a heavily debated issue in nanomedicine development, where we have seen extremely low rates of successful benchtop-to-bedside translations mainly due to the lack of mechanistic understanding within the complex bio-environments.

Q. What events/activities would you like to be offered by our FG to young researchers?

A. Perhaps a small project funding to young researchers or offering of a short-term collaborative opportunity with an industrial representative to possibly drive their projects to the next stage.

Q. What is your ultimate career goal as you see it today, and how do you think this award may contribute to it?

A. I really hope to see the realization of the long proposed “*in vitro* clinical trials” getting adopted in the pharma and regulatory worlds. This award convinces the significance of this research direction.

Q. What would be your advice to young researchers that are just starting their careers?

A. I always ask the juniors “how much time do we spend thinking before doing?” – I personally believe that one will achieve more with the “80% thinking/20% doing” research habit. Always remain optimistic with problems encountered in the lab as they are just the doors opening to many new research directions and inspirations.

Q. What can you tell us about you? What are your hobbies?

A. I am a frequently travelling postdoc with multi-geographical working experiences in Australia (Adelaide, Melbourne), Denmark (Copenhagen), Japan (Tokyo) and most recently in Switzerland (Fribourg). I like to see/eat new things and explore new environments for stimulating fresh perspectives.

Q. Any other free comment you would like to add here?

A. Eat well, sleep well, and we will do well – health is above all!



Assistant Professor Joy Wolfram, our Academic Representative, stopped by Barcelona, and took the opportunity to interview Prof. SIMÓ SCHWARTZ, the director of the CIBBIM-Nanomedicine for the CRS NND FG *Speed Interviews Series*. Click [here](#) to watch the exclusive speed interview. ■

**STARS COLLIDE
BIG vs. NANO PROGRESS**

Two of the Controlled Release’s biggest Stars have collided during the last CRS meeting, in Valencia. The debate revolved around the progress of nanotechnology: PATRICK COUVREUR defended the solid and groundbreaking achievements of nanomedicine, whereas KINAM PARK has shown a more pessimistic position, claiming the end of the hype around the field. This interactive session showed that the audience was standing behind Park during the first moments of the debate, but it culminated with a loud standing ovation to support the big progress of nanomedicine and its contribution to the current therapeutics and diagnostics landscape. ■



This publication reflects only the views of the CRS NND FG board. We welcome contributions from members of our focus group community. Copyright © 2019 CRS NND FG



TARUN OJHA, PhD candidate from the Institute for Pharmaceutical Sciences of Utrecht University. *Trainee Awardee* of the CRS NND FG in the 46th CRS Annual Meeting & Exposition, held in Valencia, Spain, 2019.

TRAINEE AWARD

Q. What does it mean for you to receive this award?

A. It feels great when your hard work is appreciated by the leaders in the field of nanomedicine! Also, it was very encouraging for me to get an opportunity to present our work in front of excellent scientists in CRS NND focus group session.

Q. How do you expect this award to impact your research career?

A. Recognition from the scientific community helps the early stage researcher like me in multiple ways. For instance, networking, collaboration, grants and appraisals.

Q. What or who inspired you to pursue research in this field?

A. The thought of helping patients suffering with severe diseases. Further, all the researchers who are working hard and doing great work in the nanomedicine field.

Q. What events/activities would you like to be offered by our FG to young researchers?

A. In addition to current activities, it would be great if we can have workshop/training seminars on nanomedicines and drug delivery.

Q. What is your ultimate career goal as you see it today, and how do you think this award may contribute to it?

A. I want to become an established scientist. The platform provided by CRS and CRS NND focus group would help me in networking and building collaborations, which are very essential for achieving my long-term goal.

Q. What would be your advice to young researchers that are just starting their careers?

A. Engage yourself in understanding the biological problems to drug delivery. Have a broad perspective and maintain the enthusiasm. Additionally, try to get yourself acquainted with the experts in your research area.

Q. What can you tell us about you? What are your hobbies?

A. In my spare time, I indulge myself in learning and practicing finance (investment, market analysis and trade). I find it very interesting and challenging as it involves multiple variables and mathematical analysis.

Upcoming Meetings

November 7-9, 2019

CRS Italy Chapter Annual Workshop

"Steering the Clinical Translation of Delivery Systems for Drugs and Health Products"

University of Catania
Italy

[MORE INFO](#)

November 18-19, 2019

Drug Delivery Australia 2019 Conference

"Emerging Materials for Drug Delivery, Diagnosis and Imaging"

School of Pharmacy
University of Queensland
Brisbane, Australia

[MORE INFO](#)

January 22-24, 2020

"XXV Anniversary" XIII Spanish-Portuguese Conference on Controlled Drug Delivery

School of Medicine
Santiago de Compostela
Spain

[MORE INFO](#)

DRUG DELIVERY and TRANSLATIONAL RESEARCH
An Official Journal of the Controlled Release Society
Leading Delivery Science and Technology

The new BOARD MEMBERS of the CRS NND FG

We are honored to introduce you our new *Board Members*. We are committed towards excellence, and driven by a solid will of making a difference in the field of nanomedicine! If there is anything you would like to address to us, or if there is anything we can do for you, please, do not hesitate in contacting us!

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June 27-July 1, 2020
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