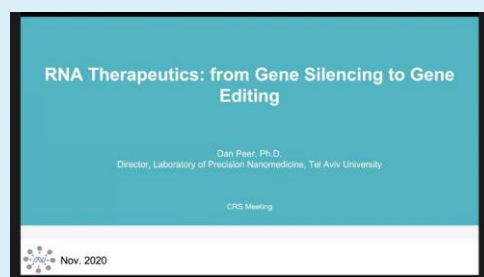
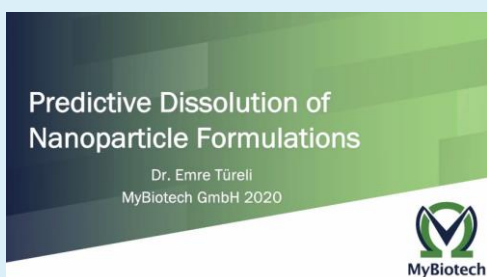


It is our great pleasure to bring you the latest edition of the newsletter of the Controlled Release Society Focus Group in Nanomedicine and Nanoscale Delivery (CRS FG NND). This seventh newsletter brings you the Board's views on the nanoparticle-based COVID-19 vaccines, the latest news about the 2021 CRS Virtual Annual Meeting, highlights of the activities developed over the past months and news about the activities that we are preparing for you, which will take place in the near future. Do not forget to visit our [webpage](#) and to follow us on social media!

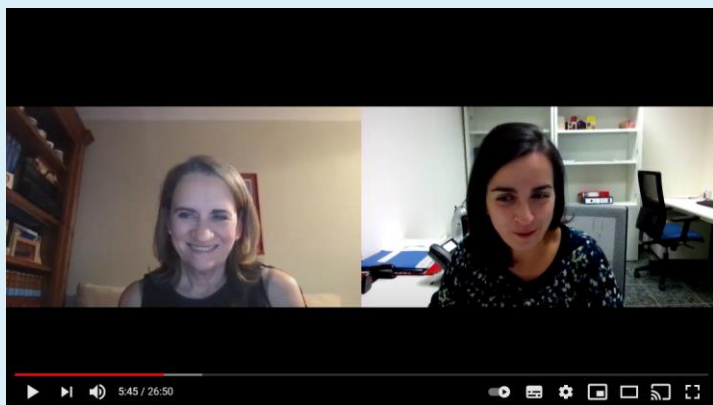
Highlights of the CRS FG NND Webinars



Our FG has organized three webinars during the fall of 2020. On October 7, during the first webinar of this series, Dr. Emre Türeli, from [MyBiotech GmbH](#), Germany, talked about “*Predictive dissolution of nanoparticle formulations*”. On November 4, Prof. Alexander Seifalian, from the Nanotechnology & Regenerative Medicine (Ltd) Commercialisation Centre, UK, gave a presentation with the aim of answering to the question “*Will nanomaterials and stem cells give hope to unmet clinical needs?*”. Later that month, Prof. Dan Peer, from the [Laboratory of Precision Nanomedicine](#), Tel Aviv University, Israel, spoke about “*RNA Therapeutics: from gene silencing to gene editing*”, a timely and interesting talk, as the world embraces an mRNA-based vaccine against the SARS-CoV-2 pandemic. These webinars proved, once again, to be a great opportunity for our members to listen and to interact with inspirational and renowned scientists in the field of nanomedicine, with outstanding career paths and a ton of good advice.

You can now watch Dr. Türeli's Webinar [here](#)! If you are a member of the CRS, you can also watch Prof. Seifalian's and Prof. Peer's webinars [here](#)! In this link, you will also find webinars organized by other Focus Groups. If you are not a member of the Controlled Release Society and its different Focus Groups yet, you may become one or purchase the access to each of these fantastic talks separately. ■

Interview with Prof. María José Alonso



Prof. María José Alonso ([University of Santiago de Compostela, CIMUS Research Institute](#), Spain) is a pioneer in discoveries in the fields of Nanopharmaceutical Technology and Nanomedicine. Prof. Alonso is also the Past President of the Controlled Release Society and, currently, the Editor-in-Chief of the [Drug Delivery and Translational Research](#) journal. Throughout her stellar career, Prof. Alonso has won numerous awards, becoming an advocate for Women in Science and an inspiration for all scientists around the world. Dr. María de la Fuente Freire, vice-chair of the CRS FG NND, has booked Zoom, the most popular meeting room of the moment, for a sincere and open-minded conversation. You can watch it [here](#)! ■





Board Advisor
Ruth Schmid
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Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, I have not yet received the vaccine, as I am not in the first priority group, but I hope to get it during the coming months and look forward to it.

What does the vaccine mean to you in terms of the pandemic?

The vaccine is very important to get society and our lives back to normal, securing jobs and protecting those that are most vulnerable. By getting vaccinated broadly in our community, we can reduce the number of infections step by step, as it hopefully not only protects ourselves, but also reduces transmission to others.

What does the vaccine mean to you in terms of nanotechnology?

The novel mRNA vaccines were only possible with a nanotechnology approach and really show the power of nanomedicine. The field of nanomedicine has gained a new boost, which will hopefully open up many new high-value flexible solutions for urgent clinical needs and technical solutions to tackle complex medical challenges.



Chair
Hélder Santos, D.Sc.
Professor - University of Helsinki
helder.santos@helsinki.fi

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

Not yet, but hopefully whenever there is an opportunity or my turn arrives, I will certainly take the vaccine - hopefully sooner than later.

What does the vaccine mean to you in terms of the pandemic?

The existence of such nanovaccines mean so many different things, such as: (1) protecting ourselves and others; (2) getting immunization against the virus; (3) recovering the full 'freedom' of living, which was prevented in so many ways for all of us in this current situation; and (4) enjoying life by being able to be around friends and family again without fear.

What does the vaccine mean to you in terms of nanotechnology?

These nanovaccines are the culmination of years of research in the field of nanomedicine, which now clearly demonstrate how important this field is to the whole society. Nanomedicines, so many times criticised and discredited by some, will now save the entire world from this pandemic. This landmark in human history opens tremendous avenues towards the acceptance of more gene-delivery nanomedicines for medical applications - it is just the beginning of a 'fantastic voyage' for gene-based nanomedicines. The pharmaceutical and medical fields will never be the same again, and such nanomedicines will definitely be more accepted by the medical community and become part of our lives.



Communication Chair and Student Representative
João Pedro Martins
University of Helsinki
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Did you receive the vaccine/Do you plan on getting vaccinated in the future?

I have not received the vaccine yet, but I surely will, as soon as it becomes available for the population that does not belong to risk/priority groups.

What does the vaccine mean to you in terms of the pandemic?

By offering effective protection against COVID-19, the vaccine opens a big window for a faster return to the so-called 'normal' life. I believe that the vaccine will reduce the number of severe cases, premature deaths and restore the normal functioning of the healthcare system.

What does the vaccine mean to you in terms of nanotechnology?

Having a nanoparticle-based vaccine brings the entire community working with nanotechnology into the spotlight. It strengthens the value proposition that nanomedicines already play in healthcare and reinforces their potential in further revolutionizing the treatment of many other diseases.



Trainee Representative
Flávia Sousa
Incoming Marie Curie Fellow - Istituto Italiano di Tecnologia

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, I have not yet received the vaccine since I am not the first priority group. However, I hope that it will be my turn in a few months. I'm really looking forward to being vaccinated.

What does the vaccine mean to you in terms of the pandemic?

The vaccine is the only way to stop this pandemic in a relatively short period of time, allowing it to save more lives. On the other hand, these vaccines will allow us to return to our 'normal' lives with safety and freedom. Indeed, the only way to shorten these difficult times is getting vaccinated!!!

What does the vaccine mean to you in terms of nanotechnology?

For the nanotechnology and nanomedicine world, the development of mRNA lipid-based nanoparticle vaccines (by BioNTech and Pfizer) was a great achievement. The high efficacy rate of these vaccines was only achieved thanks to the power of these nanodelivery systems. Indeed, nanomedicine is a powerful tool to treat diseases quickly and efficiently and the development of those vaccines were proof of that.



Vice-Chair
Maria de la Fuente
Scientific Researcher - FUNDACION IDIS-SERGAS

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

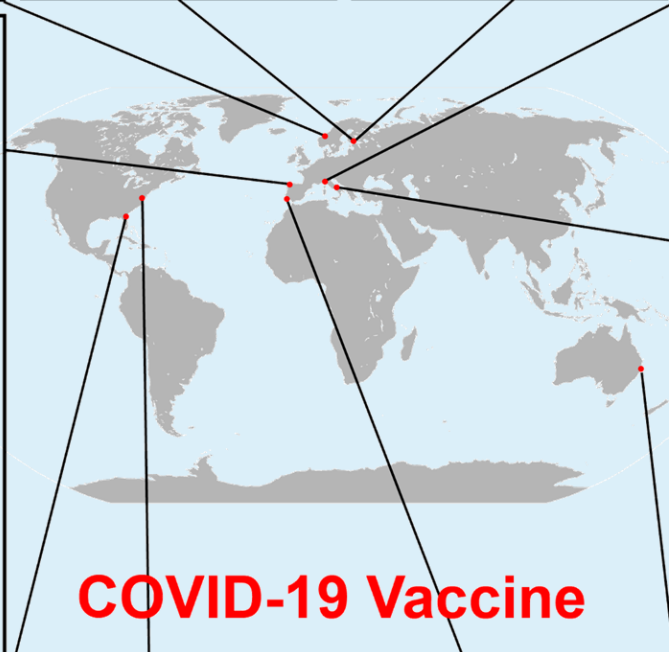
No, I have not been vaccinated yet, but I will receive the vaccine when it is available according to my profile and I am looking forward to it.

What does the vaccine mean to you in terms of the pandemic?

I strongly believe it is the only means to protect people and help us control the pandemic and the devastating effects in society. The development of these vaccines in such a short time is one of the biggest challenges of the past years and clearly demonstrates that coordinated efforts and science can deliver extraordinary results.

What does the vaccine mean to you in terms of nanotechnology?

A great milestone has been achieved. The value of nanomedicine has been definitively demonstrated and now everyone can be aware of all the potential that nanotechnology has to overcome social and medical challenges.



Academic Representative
Christian Celia
Associate Professor - University "G. d'Annunzio" of Chieti-Pescara
c.celia@unich.it

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, I have not yet received the vaccine, but I was included by the Association of Pharmacists on a vaccination volunteer list. I hope that I can get the vaccine next month.

What does the vaccine mean to you in terms of the pandemic?

The vaccine can significantly boost the restoration of normal life and protect the most vulnerable. COVID-19 vaccines can help reduce the spread of SARS-CoV-2 in our community and protect medical doctors, pharmacists and nurses, who are on the frontlines countering the virus.

What does the vaccine mean to you in terms of nanotechnology?

mRNA lipid-based nanoparticle vaccines (Pfizer-BioNTech and Moderna) are milestones in nanotechnology and nanomedicine, and represent a revolution for nucleic acid delivery. These vaccines are the best representation of the "end of the beginning of nanomedicine", and open new frontiers for quick clinical translation of nanoparticle platforms.



Academic Representative
Joy Wolfram
Assistant Professor - Mayo Clinic, USA

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

Yes, I was fortunate to receive the BioNTech/Pfizer vaccine as part of my employer's effort to vaccinate the health care community.

What does the vaccine mean to you in terms of the pandemic?

The vaccine is a huge relief as it dramatically reduces the chances of getting COVID-19 (promising data from three months post-vaccination). By getting vaccinated we can reduce the viral load that is circulating in our communities and help protect the most vulnerable.

What does the vaccine mean to you in terms of nanotechnology?

The 'N' in BioNTech stands for 'New' but could equally well represent 'Nanotechnology', a core component of the vaccine that enables RNA protection and intracellular delivery. A small lipid nanoparticle for (wo)man, is a giant leap for (wo)ankind!



Industry Representative
Luis Santos
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Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, I have not yet been inoculated with a COVID-19 vaccine. I plan to get vaccinated as soon as the vaccine becomes more widely available to all of us.

What does the vaccine mean to you in terms of the pandemic?

It is a light at the end of the tunnel and hopefully the beginning of the end of this terrible pandemic. It is also a sign that SCIENCE prevailed and that a coordinated and global effort is paramount to ensure we have enough vaccine supply to meet the demand.

What does the vaccine mean to you in terms of nanotechnology?

The emergency approval of two mRNA vaccines has demonstrated that nanotechnology can play a critical role in enabling medicines to be rapidly deployed to address dire situations such as the COVID-19 pandemic. It has also demonstrated the value of nanotechnology in gene delivery and more broadly has shown that medicines can be developed in much shorter timelines while still meeting the safety and regulatory standards enacted by the regulatory agencies.



Secretary Treasurer
Helena Florindo
Assistant Professor - University of Lisbon
hflorindo@ff.ul.pt

Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, but I am really looking forward to being vaccinated against SARS-CoV-2!

What does the vaccine mean to you in terms of the pandemic?

The vaccine is the only way out! It represents the hope we all have to get our lives back! Right now, we are living a particularly difficult moment, with the feeling that the virus is spreading out of control and we fear for all of us! But at the same time, people are getting dangerously tired of having their lives strongly limited, which makes this vaccination more urgent than ever!

What does the vaccine mean to you in terms of nanotechnology?

Finally, nanotechnology and the power of SCIENCE is being undoubtedly revealed to the world and hopefully will help us to convince the most sceptical ones about the tremendous potential of this technology to bring utmost answers to patients.



Academic Representative
Amiral Popat
University of Queensland
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Did you receive the vaccine/Do you plan on getting vaccinated in the future?

No, I haven't received the vaccine yet. Australia is planning to rollout vaccines in a month or so and I can't wait to be vaccinated irrespective of the choice of the vaccine by our government. However, I would like to say that we have been very fortunate here in Australia due to the world leading and extraordinary response to COVID-19 by our authorities.

What does the vaccine mean to you in terms of the pandemic?

This pandemic has tested many societies including the most vulnerable and the most powerful ones. The successful rollout of vaccines means surviving the war against these deadly viruses. Although our lives have permanently changed in some ways, the successful implementation of the vaccine is saving millions of lives as we speak. It also means that we must continue to invest in basic science especially in the biomedical sciences.

What does the vaccine mean to you in terms of nanotechnology?

Although it's early days, the data from both BioNTech/Pfizer and Moderna are the most promising so far showing > 90% efficacy in phase III trials amongst other vaccine candidates, e.g., AstraZeneca, which only showed close to 60% efficacy. This was only possible due to the power of nanomedicine effectively delivering those mRNA and successfully translating the technology in humans in record time (< 12 months). This will provide a much-needed impetus to the field of nanomedicine which has been rather criticised lately. More importantly, the technology will further improve and mature creating future nanovaccines with better shelf life and fewer or no allergic reactions. Lastly, this is only the tip of the iceberg, both mRNA-based therapeutics and nanomedicines are here to stay and will revolutionise treatment of many other deadly diseases in the time to come.

e-POSTER COMPETITION

SUBMIT A HIGH QUALITY e-POSTER WITH YOUR BEST RESEARCH IN NANOMEDICINE AND NANOSCALE DELIVERY AND WIN \$ 250 AND A CHANCE TO SPEAK AT THE 2021 CRS VIRTUAL ANNUAL MEETING

ELIGIBILITY

▶ Full-time students (graduates or post graduates) and registered members of the CRS and the Focus Group NND

SUBMISSIONS

▶ The e-posters must be submitted as a one page pdf file (conference style) to crs.fg.nano@gmail.com by March 12
A notification of acceptance will be sent by March 19

VIRTUAL REVIEW AND SELECTION

▶ All approved e-posters will be scored (1: lowest to 5: highest score)
▶ Top 10 finalists will be invited for a virtual presentation (3 min + 2 min Q&A) about the research work described in the e-posters

COMPETITION AND EVALUATION

▶ **Methodology:** Methods are appropriate and properly applied
▶ **Results:** Logical, clearly presented, and properly summarized
▶ **Conclusion:** Based on results presented; emphasizes significance and implications of study
▶ **Presentation:** Poster is well-prepared, well-organized, balanced in content, and logically sequenced
▶ **Importance/originality of research**

Submissions that do not meet these criteria will be disqualified.

AWARDS

1ST PLACE
\$ 250 and a chance to speak at CRS2021

2ND PLACE \$ 150 **3RD PLACE** \$ 100

IMPORTANT DATES

Submission deadline	March 12
Notification of acceptance	March 19
First round of review	April 2
Finalist virtual presentations	April 23
Announcement of the winners	April 30



CRS FG NANOMEDICINE AND NANOSCALE DELIVERY

Upcoming Meetings

March 23-24, 2021

CRS Pediatric Drug Development and Delivery 2021

[MORE INFO](#)

May 11-14, 2021

12th World Meeting on Pharmaceuticals, Biopharmaceuticals and Pharmaceutical Technology

[MORE INFO](#)

June 29-July 1, 2021

Nanomed Europe 21

[MORE INFO](#)

July 25-29, 2021

2021 CRS Virtual Annual Meeting

[MORE INFO](#)

September 5-9, 2021

31st Conference of the European Society for Biomaterials

[MORE INFO](#)

September 12-16, 2021

EUROMAT 2021 - European Congress and Exhibition on Advanced Materials and Processes

[MORE INFO](#)

MEMBER FEATURE ARTICLES

COMING UP
2ND EDITION



Join us by participating in the 2nd Edition of the Member Feature Articles and we will promote you and your research in nanomedicine on our social media. This is EXCLUSIVE for focus group members – further instructions sent via email. Meanwhile, take a look at the articles of the 1st Edition [here!](#) ■

DRUG DELIVERY and TRANSLATIONAL RESEARCH

An Official Journal of the Controlled Release Society
Leading Delivery Science and Technology

Join the best and brightest in drug delivery at the 2021 CRS Virtual Annual Meeting for Breakthrough Delivery Science! This year, the event will take place from July 25-29 – registration open [here!](#) Also, **submit** your abstract for consideration by **February 26** for a chance to present your research to colleagues & peers at the world's largest virtual meeting dedicated to delivery science. ■

REGISTRATION OPEN!

CRS 2021

VIRTUAL ANNUAL MEETING

2021.controlledreleasesociety.org

BREAKTHROUGH DELIVERY SCIENCE July 25-29, 2021

CALL FOR ABSTRACTS

CRS 2021

VIRTUAL ANNUAL MEETING

2021.controlledreleasesociety.org

BREAKTHROUGH DELIVERY SCIENCE July 25-29, 2021

The Board of the CRS FG NND is 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: crs.fg.nano@gmail.com. ■

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