

Advanced Drug Delivery and Targeting Course

March 27 – March 31, 2023, Utrecht

A joint effort between the Groningen University Institute of Drug Exploration (GUIDE), the Utrecht Institute for Pharmaceutical Sciences (UIPS) and the Leiden Academic Centre for Drug Research (LACDR),

Course supervisors: Dr. C.F. (Rene) van Nostrum (C.F.vanNostrum@uu.nl) and dr. J.A.A.M. (Jan) Kamps (j.a.a.m.kamps@umcg.nl)

In the development of new therapeutics one of the main scientific challenges is to deliver the drug in a controlled way at the desired site of action. The formulation of these therapeutic agent therefore plays a key part in the biological efficacy, and is of great importance for current drug research.

The Advanced Drug Delivery and Targeting course will be given by experts in the fields of:

- *Nanoparticulate delivery systems*
- *Vaccine delivery and diseases*
- *Targeting drugs to the site of action*
- *Imaging and theranostics*
- *Translation from concept to product*

The course will provide an in depth overview of the newest strategies and achievements in the drug delivery and targeting field. Particular emphasis will be put on the targeted delivery of macromolecules, including vaccines and/or genetic material. In addition, the use of cell culture systems and *in vivo* models in the development of drug delivery systems will be discussed. The participants will actively work in groups on assignments in which they will address various issues relevant to the development of therapeutic strategies employing drug delivery and drug targeting technologies.

Who should attend: Researchers (PhD candidates, research trainees, postdoctoral fellows, research associates, research project managers) in Universities, Pharmaceutical Industry, Biotechnology Industry, and Federal Research Laboratories, whose research or research interests lie in the area of new technologies facilitating drug distribution, delivery, release, and effectiveness.

Course fee (including course materials, dinner on Monday and lunches; travel costs and housing are excluded)

- *GUIDE/UIPS/LACDR PhD students: € 100*
- *PhD-students and postdocs from other universities/hospitals: € 525*
- *Non-academic affiliates/Industry: € 1050*

The course is limited to 25 participants, who will be selected based on the order of application. If less than 15 participants register, the course will be cancelled.

Registration:

Please complete the following form: <https://forms.gle/wybXxqmWlZR7mEjeA>

Deadline for registration is March 13, 2023.

Program Advanced Drug Delivery and Targeting course

27-31 March, Utrecht University

Monday March 27: Introduction and nanomedicines

- 10:00 10:30 Registration + coffee
- 10:30 10:45 Welcome
- 10:45 11:45 Jan Kamps, "Introduction into Advanced Drug Delivery and Targeting"
- 11:45 12:45 Rene van Nostrum, "General principles of polymer based controlled drug delivery"
- 12:45 14:00 Lunch
- 14:00 15:00 Bram Slütter, "Immune modulation from a formulation perspective; tolerance and immunogenicity"
- 15:00 15:30 Introduction assignments
- 15:30 17:30 Group assignments
- 19:00 22:00 Dinner @ Humphreys, Stadhuisbrug 3, Utrecht

Tuesday March 28: Nanomedicines and therapy

- 09:00 10:00 Roy van der Meel, "Lipid nanoparticle technology enabling nucleic acid therapeutics"
- 10:00 11:00 Sabrina Oliveira, "Nanobodies in cancer imaging and therapy"
- 11:00 11:30 Break
- 11:30 12:30 Enrico Mastrobattista, "Gene therapy & editing"
- 12:30 14:00 Lunch
- 14:00 15:00 Ana Salvati, "Drug carrier interactions with biological fluids: the biomolecule corona and its effects on nanomedicine outcomes"
- 15:00 17:00 Group assignments

Wednesday March 29: Drug targeting

- 09:00 10:00 Jan Kamps, "Targeting the microvasculature in inflammation"
- 10:00 11:00 Ferry Ossendorp, "Targeting immune cells for specific immunotherapy of cancer"
- 11:00 11:30 Break
- 11:30 12:30 Olivier de Jong, "Extracellular Vesicles, biological nanoparticles for therapeutic delivery."
- 12:30 14:00 Lunch
- 14:00 15:00 Laís Ribovski, "Drug Delivery across Cellular Barriers"
- 15:00 17:00 Group assignments

Thursday March 30: From bench to bedside

09:00 10:00 Matthias Barz, "Characterization of Nanomedicines: From Methods to Limitations"
10:00 10:30 Coffee
10:30 11:30 Ingrid Molema, "*In vivo* pharmacology in a drug delivery perspective"
11:30 12:30 Twan Lammers, "Theranostics"
12:30 14:00 Lunch
14:00 15:00 Danielle Vugts, t.b.a. (topic : clinical translation)
15:00 17:00 Group assignments

Friday March 31: Assignments

09:00 10:00 Finalizing group assignments (if applicable)
10:00 12:30 Presentation group assignments (part I)
12:30 13:30 Lunch
13:30 16:00 Presentation group assignments (part II)
16:00 Closing and Drinks