

National course on lung diseases and lung research for PhD students

Short description:

The target audience of the course is formed by PhD students with either a clinical, translational and / or basic science background. There are no further restrictions as to the admission. The aim of the course is to understand the larger field of pulmonary research better, and to get to know each other better by establishing a national professional network.

Teaching goals:

At the end of the course the student has knowledge about:

1. The structure and function of the lung.
2. The pathogenesis and pathophysiology of pulmonary diseases, including allergy, asthma, COPD, interstitial lung disease, lung infections, lung cancer and orphan lung diseases.
3. The impact of these lung diseases on healthcare and quality of life of the patient.
4. Environment, lifestyle and (epi) genetic factors that influence the risk of these lung diseases.
5. The pharmacological and non-pharmacological treatment of these lung diseases.
6. Career perspectives in science in the Netherlands and abroad.

Teaching methods:

Lectures (lectures), interactive workshops.

Teaching Load:

The course starts annually, and has two components. The first component is a basic course in lung diseases and research, of which the lectures are concentrated in three days with a total of 24 contact hours. Preparation for the lectures by means of going through relevant literature is estimated to take a total of 70 hours.

As for the second component, the candidates are expected to attend at least two one-day NRS Young Investigator Symposium (YIS) meetings here and to prepare their own presentation in the context of a master class. The teaching load for this component is estimated at 40 hours. Together, this provides a teaching load of 134 hours or 5 ECTS.

Course Structure:

The basic 3-day course is provided annually. The first day focuses on allergy and asthma. On the second day the focus will be on rare and interstitial lung diseases and respiratory infections, while day 3 will discuss COPD and lung cancer.

Day 1 asthma and allergy.

N.B.: students will need to read relevant literature on lung diseases and lung research in preparation for the lectures.

9.30 – 10.00 Arrival and registration

10.00 – 12.30 Lectures of 30 min each (chair: Hermelijn Smits, Leiden)

- Pathophysiology and immunology of allergy and asthma (Barbro Melgert, Groningen)
- Diagnosis of asthma: role of phenotypes and endotypes (Anneke ten Brinke, Leeuwarden)
- Pharmacological treatment of allergy and asthma (Reinoud Gosens, Groningen)
- Treatment of severe and steroid-resistant asthma (Els Wiersink, Amsterdam)

12.30 – 13.30 Lunch

13.30 – 15.30 Interactive workshops:

- Patient participation: patient's experience - researcher's advantage (Lung Foundation Netherlands)

15.30 – 17.30 Preparation in groups of two of discussion items that will be presented on day 2 and day 3. Supervision will be by the members of the organization committee (Mirjam Kool, Firdaus Mohamed Hoesein, Hermelijn Smits, Alex Remels, Reinoud Gosens).

18.30 Dinner incl. evening lecture: Taking charge of your scientific career!

Day 2 orphan lung diseases, interstitial lung diseases en (chronic) infectious diseases.

9.00 – 10.30 Lectures of 30 min each (chair: Mirjam Kool, Rotterdam)

- Acute lung injury /ARDS (Lieuwe Bos, Amsterdam)
- Tuberculosis (Tjip van der Werf, Groningen)
- Interstitial lung diseases (Jelle Miedema, Rotterdam).

10.30 – 11.00 Coffee and tea break

11.00 – 12.00

- Pulmonary arterial hypertension (Harm-Jan Bogaard, Amsterdam).

12.00 – 13.30 Lunch

13.30 – 14.30

- Sarcoidose (Mirjam Kool, Rotterdam)
- Bronchiectasis (Monique Reijers, Nijmegen)

14.30 – 17.30 Plenary discussions (incl. coffee and tea break)

PhD students have prepared a theme for this discussion in groups of 2. On day 2, focus of the discussions will be on ageing and the early origins of lung disease. On day 3, focus will be on cross-

fertilization in research and overarching mechanisms of lung disease. For each discussion theme, 30 min will be allocated. The following 5 themes will be discussed on day 2:

Chairs: Gerry Wagenaar (Leiden) en Robbert Rottier (Rotterdam).

- Premature birth and the development of BPD.
- RSV infections and the risk for asthma development.
- The atopic march.
- Early life exposure to environmental factors and infections and its relationship with disease susceptibility later in life.
- Transgenerational effects of lung diseases.

For each item, the idea is to set up the discussion with a 10-15 min presentation by the PhD students, followed by questions on this topic. The discussion will be facilitated by a senior researcher in this area.

18.30 -> Dinner incl. evening lecture: Microbiological exposure and the development of asthma and allergy (Hermelijn Smits, Leiden)

Dag 3 COPD and lung cancer.

9.00 – 10.30 Lectures of 30 min each (chair: Firdaus Mohamed Hoesein, Utrecht)

- Pathogenesis and pathophysiology of COPD (Pieter Hiemstra, Leiden).
- Pathogenesis and pathophysiology of lung cancer (Annemarie Dingemans, Maastricht).
- Mesothelioma (Sjaak Burgers, Amsterdam).

10.30 – 11.00 Coffee and tea break

11.00 – 13.00 Lectures of 30 min each (chair: Alex Remels, Maastricht)

- Treatment, pharmacological and non-pharmacological of COPD (including bronchoscopic interventions, rehabilitation and non-invasive ventilation) (Frits Franssen, Maastricht/Horn).
- Treatment, pharmacological and non-pharmacological of lung cancer (Anne-Marie Dingemans, Maastricht).
- The relationship between lung development and lung function later in life (Gerry Wagenaar, Leiden)
- Radiological assessment of COPD and lung cancer (Firdaus Mohamed Hoesein, Utrecht)

13.00 – 14.00 Lunch

14.00 – 17.00 Plenary discussions

Similar to day 2 but with focus on cross-fertilization in research and overarching mechanisms of lung disease. The following 5 themes will be discussed on day 3:

Chairs: Maarten van den Berge (Groningen) en Annemie Schols.

- Mechanistic overlap between chronic lung diseases and lung cancer (i.e. increased risk of lung cancer in COPD and IPF patients).
- Co-morbidities
- Overarching mechanisms of (defective) repair in chronic lung diseases
- Pulmonary vascular changes in chronic lung diseases
- Overlap with other diseases (i.e. other than lung disease)

17.00 – 18.00 Evaluation en drinks