

Veranstaltungsform und Titel

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| Fach | Medicine |
| Veranstaltung | Cardiovascular disease – medical background and biomedical insights |
| Dozierende | Anna Mavromanoli |
| Zielgruppe | PhD-students, potentially also Postdocs |
| Dauer | Seminars of 90 mins |

Lernziele

Kognitive Lernziele

The students can:

- describe the basic pathophysiological processes and clinical settings implicated in cardiovascular diseases.
- assign different symptoms to the right cardiovascular disease.
- explain what they have learned to their peer-students and get feedback.

Affektive Lernziele

The students:

- experience how important it is to learn the clinical setting being behind biomedical research.
- get excited on how to combine their research with a clinical perspective.
- acknowledge that clinical research is also important and may serve for better understanding of biomedical research.

Psychomotorische Lernziele

The students can:

- express themselves regarding clinical information with the use of medical terms.
- revise how to explain pathophysiological processes and clinical data to other participants.

Globale Lernziele

The students:

- understand the connection between basic and clinical research.
- are able to place biomedical research in a clinical context.

Kurzbeschreibung

Beschreibung:

Basic, translational, and clinical research are important for the acquisition of new knowledge, the discovery of pathophysiological mechanisms and the application of novel therapies to patients. Although basic and clinical researchers working in an interdisciplinary environment with a continuous exchange may profit from the holistic view on research projects, it is not rare that researchers work independently, without communication, further interaction and exchange between basic and clinical research. This is the reason why raising the importance of all research “types” and the benefits from a constructive interaction among basic and clinical researchers is crucial. On this basis, workshops can take place, where PhD/postdoc students with background in natural sciences can get insights on the pathophysiology and medical relevance of cardiovascular disease, familiarize themselves with the clinical history and presentation of patients with acute disease and understand how basic/translational research can be related to clinical research and methods used in everyday clinical practice.

Inhalte:

- Pathophysiology and medical relevance of cardiovascular disease
- Familiarization with the clinical history and presentation of patients with acute disease
- Understanding how basic/translational research can be related to clinical research and methods used in everyday clinical practice
- Incorporation of clinical knowledge in biomedical practice

Rahmenbedingungen:

The course takes place online, with the use of MS Teams. The course materials are prepared with the use of MS Office. The course is optional for students as it is not compulsory for the acquisition of a university degree. However, if students need a specific number of ECTs, they can use the points from this course to reach their ECTs goal. As the course targets international students, it is offered in English. In case needed, adapting the language to the target audience is also possible. Each seminar lasts 90 mins (including input and output).

Methoden:

It is important for this course to be interactive as this provides students with the chance to express their own opinions and gives them the feeling they can contribute to the success of the course. Motivating students to actively think and critically assess new information during the course are key elements.

Methods that can be used are:

- *Advance organiser:* The tutor visualises how the specific seminar is related to the general studies/research program, what previous knowledge will be needed for its attendance and how it will help with their further studies/research program. This can be done at the beginning of the seminar and can help raise the interest of the attendants.
- *Directed paraphrasing:* The attendants are asked to paraphrase something they have learned during the seminar, as if they are explaining it to a specific target group that is not familiar with the topic. This can help them better understand the topic themselves as well as think creatively regarding the word choice for explanation to a non-expert target group.
- *Think-pair-share:* The attendants are asked to do an exercise. First, they have some time to think about it themselves. Then, based on their initial thoughts, they work on the exercise in groups, exchange opinions and at the end share the results of their group work in the plenum.

This method can be applied at the end of each seminar, where attendants have already received input and are able to apply what they have learned in the form of an exercise, producing relevant output. Furthermore, this method enables social exchange between /among the participants.

- *Kriteriendiskussion*: The attendants receive a question and some potential alternatives for an answer. They then choose their answer and justify why they made that choice. This can, for example, take place at the beginning of the seminar, when revising the content of the previous seminar, and before starting with the new one.

Zeitplan für jedes Seminar:

- 5-10 min Introduction to the topic - Questions
- 40 min Input – Presentation
- 30 min Application - Discussion
- 10 min Feedback

Exemplarische Planung der Veranstaltung

| Phase und Dauer | Inhalt | Methode/Dozierenden- und Studierendenaktivität | Sozialform | Materialien und Medien | Ziele |
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| Introduction, Questions (5-10 min) | <p>The students are welcomed.</p> <p>The course starts with:</p> <ul style="list-style-type: none"> • revision of main points from previous seminar • students ask potential questions • small initial activities | <p>Students present themselves and their current research (if first seminar), get to know each other (which helps for the think-pair-share in the application part), ask potential questions and are asked to do some small activities (if previous seminars have taken place):</p> <p>-Kriteriendiskussion: The students receive a question and some potential alternatives for an answer (based on the content of the previous seminar). They must choose an answer and argument on why they have made that choice.</p> | Main online room, Plenum | Ppt-presentation, chat | <p>The participants can:</p> <ul style="list-style-type: none"> • acknowledge that both basic and clinical research are important and may serve for better understanding of biomedical research. • locate their own research in the interdisciplinary context of the course. |

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| | | -Directed Paraphrasing: The students are asked to explain something they have learned during the last seminar, as if addressing a non-expert target group. | | | |
| Input – Presentation (40 min) | <ul style="list-style-type: none"> • Definitions • Pathophysiology of disease • Medical management • Basic and translational research on the topic • Clinical research on the topic • Benefits and challenges • Future applications | Presentation is held. During it, questions are addressed to the students and interaction takes place. | Main online room, Plenum | Ppt-presentation, chat | <p>The participants can:</p> <ul style="list-style-type: none"> • see how important it is to learn the clinical setting behind the biomedical research. • understand the connection between basic and clinical research and are able to put biomedical research in a clinical context. • acknowledge that clinical research is important and may serve for the better understanding of biomedical research. |

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| <p>Application – Discussion (30 min)</p> | <p>Students apply their gained knowledge by using their own research as an example or by doing relevant activities assigned to them, having to think on a translational-research level and combining knowledge on basic and clinical research.</p> | <p>Think-pair-share: students think of their own ideas on a specific exercise, exchange with fellow students and try to communicate knowledge to the public by presenting their results in the main room.</p> | <p>Main online room, Plenum and group work in smaller breakout rooms</p> | | <p>The participants can:</p> <ul style="list-style-type: none"> • describe the basic pathophysiological processes and clinical settings implicated in cardiovascular diseases. • see how important it is to learn the clinical setting being behind the biomedical research. • understand the connection between basic and clinical research and are able to put biomedical research into a clinical context. • assign different symptoms to the right cardiovascular disease. • revise how to explain pathophysiological processes and clinical information to their peer-students. |
| <p>Feedback (10 min)</p> | <ul style="list-style-type: none"> • Students actively participate in the improvement of the | <ul style="list-style-type: none"> • Students comment on ideas and make the seminar better | <p>Main online room, Plenum</p> | | <p>The participants can:</p> <ul style="list-style-type: none"> • critically assess the content of the course and constructively |

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| | <p>course with their comments as well as take part in the anonymous online feedback after the course</p> <ul style="list-style-type: none">• Open to provide feedback to any potential ideas or questions | <ul style="list-style-type: none">• Teacher gives feedback to ideas and receives feedback from students. | | | <p>think about how they can implement what they have learned.</p> |
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Hinweise zur praktischen Umsetzung und Übertragbarkeit

Since participants are mostly PhD-students (and postdocs), they have already experience with research projects and it is therefore easier for them to follow the flow of the course. The variation of teaching methods also helps to keep the motivation high and enables students to experience a new learning environment. Group work in smaller teams fosters the application of gained knowledge and the improvement of own ideas, since it facilitates communication among students from various research fields, helping them to acknowledge the importance of interdisciplinarity and scientific exchange. It would be helpful for the course to designate a person to notify the group when there are new messages in the chat, so that no messages remain unseen.