Health PhD Committee (Health PhD Committee meeting)

11-12-2023 15:00 - 17:00

Jens Baggesens Vej 53, bld. 5220, room 014 (basement level - lunch room)

Indhold

Punkt 1: Meeting information

Participants
PhD students (observers): Shokouh Arjmand, Mojdeh Mansoori, Malene Kærslund Hansen, Mette Vestergård Pedersen, Fernando Valentim Bitencourt.

Academic staff: Stine Sofia Korreman, Loni Kraus Ledderer, Rikke Katrine Jentoft Olsen, Jeppe Prætorius, Lise-Lotte Kirkevang, Ole Ingemann Hansen.

Graduate School of Health: Helene Nørrelund (Head of Graduate School), Louise Nygaard (Special Consultant, Graduate School of Health).

Guests
Vibeke Broe, Career Consultant, AU Career PhD and Junior Researcher *(item 2)*
Ida Vogel, Clinical Professor at Dept. of Clinical Medicine and member of the Gender Equality Committee at Health *(item 3)*

Absence
Ditte Demontis, Tanja Charlotte Frederiksen.

Punkt 2: Career services at AU for Health PhD students (20 min)

It is recommended that
The PhD committee takes note of the briefing.

Case
In line with the PhD committee's discussions about career opportunities for PhD students, Vibeke Broe, Career Consultant at AU Career PhD and Junior Researchers, will put a Health-perspective on the AU PhD career services. She will give an overview of how many PhD students from Health are using the AU PhD career services, what kind of activities are preferred (workshops, career days, individual meetings etc.), and the range of career paths identified.

Responsible,
Stine Sofia Korreman and Vibeke Broe (guest)

Punkt 3: Status on the faculty's work with gender equality (30 min)

It is recommended that
The PhD committee takes note of the briefing regarding the Faculty of Health's work with gender equality.

Case
Member of the Gender Equality Committee at Health, Clinical Professor Ida Vogel, will give a status on the committee's work regarding diversity and gender equality, including wins/actions and 'wicked problems' identified at the Faculty of Health.

Responsible
Stine Sofia Korreman and Ida Vogel (guest)

Punkt 4: Well-being initiatives for PhD students at Health

It is recommended that
The PhD committee takes note of the briefing.

Case
Helene Nørrelund will give an update on the latest actions from the working group on PhD students' well-being and the graduate school's initiatives regarding well-being of PhD students at Health, as well as a status from the meeting in the PhD well-being committee held on 27 October 2023.

Responsible
Helene Nørrelund

Punkt 5: Briefing from the chair

It is recommended that
The PhD committee takes note of the briefing.

Case
Chair of the PhD Committee, Stine Sofia Korreman, will brief the PhD Committee on status of current tasks and initiatives.

Responsible
Stine Sofia Korreman

Punkt 6: Briefing from the PhD Association

It is recommended that
The PhD committee takes note of the briefings.

Case
The PhD Association gives a status on their work since the last meeting.

Responsible
PhD students from the PhD Association

Punkt 7: Briefing from the advisory committees

It is recommended that
The PhD committee takes note of the briefings.

Case

The advisory committees give a status on their work since the last meeting:

- Course Committee

- Committee for Credit Transfer and Dispensation

Responsible
Advisory committees

Suggested PhD course portfolio 2024

New	Lab course	Classroom course	Residen-tial course		No cancellations within the last 3 years	One cancellation within the last 3 years	Two or more cancellations within the last 3 years

No. of courses	Journal no.	Title	Head of course	Seats	ECTS	No of part. on the last course	Waiting-list	Learning outcomes	Comments	Comments from the Course Committee	Category
BIOMED											
1	B69	Flow cytometry	Charlotte Christie Petersen	16	3,5	18	10	1. Understanding the physics behind flow cytometry 2. Understanding the applications and limitations of flow cytometry 3. Practical knowledge and experience with flow cytometry experiment design 4. Understanding essential flow cytometry controls 5. Awareness of common (and not so common) pitfalls 6. Hands-on, practical experience with data analysis 7. Ability to critically evaluate flow cytometry results 8. Requirements for publication of flow cytometry experiments In contrast to most basic flow cytometry courses and online resources, this intensive training course teaches key concepts by derivation from "first principles". The course thus covers the progression from the basic physics of light and fluorescence, through fluorochrome chemistry, spectral overlap and compensation, and antibody panel design, experiment design, flow cytometry controls, and data analysis. On the instrumentation side, the course provides a detailed understanding of the core components in modern flow cytometers, thus covering light detection principles, fluidics, optics and signal processing. Data analysis and compensation is taught by a "hands-on" approach via practical computer exercises with FlowJo software and generic, raw flow cytometry data files (participants are encouraged to bring their own PC and data, if relevant). Advanced data analysis approaches (clustering, dimensionality reduction, tSNE and more) are presented in the last part of the course. In addition, guidelines for publishing flow cytometry data will be covered.	Course will be offered by Health every fall, and by Natural Sciences every spring.		
2	B100	Laboratory Animal Science	Thea Thougaard Johansen	25	5	30	0	The participants should obtain basic knowledge about the Laboratory animal science, which will make it possible for them to participate in research contributing to the humane use of laboratory animals ensuring high standards of animal welfare and quality in the performing, evaluating and reporting of laboratory animal experiments. • Insight into Danish legislation concerning animals used for scientific purposes, the ethical aspects working with laboratory animals as well as the principles of the 3 Rs • Basic insight into the biology of laboratory animal, including normal/abnormal behaviour, housing, breeding, welfare and feeding • Basic insight into occupational health and safety when working with laboratory animals • Practical experience with handling and euthanizing laboratory animals as well as minimally invasive injections and blood sampling techniques • Basic knowledge of anaesthesia for minor procedures in common laboratory animals			

1	B112	Clinical assessment of insulin resistance and other metabolic parameters	Niels Jessen	24	TBA	11	2	•Understanding for the use and limitations of state of the art methods in metabolism research •Insight into tissue specific mechanisms underlying dysmetabolic conditions •Understanding for the signaling mechanisms linking insulin receptor to glucose uptake • Introduction into animal models and in vitro models for dysmetabolic conditions • Introduction into novel methods to assess substrate metabolism in humans	Cancelled 4 times since 2019.		
1	B116	Advanced course in Laboratory Animal Science	Martin K. Thomsen	16	5	19		• Advanced insight into Danish and International legislation concerning animals used for scientific purposes, the ethical aspects of working with laboratory animals as well as the principles of the Three Rs. • Detailed knowledge of different aspects of ethics and the Three Rs in relation to both ethical and welfare issues raised by the use of animals in scientific procedures. • Knowledge of experimental design concepts, possible causes and elimination of bias, statistical analysis and information about where expertise can be found to assist with procedure, design, planning and the interpretation of results. • Insight into the use of animal models in biomedical research and their benefits and limitations. • Insight into the importance of standardization of environmental, microbiological factors and use of humane endpoints. • Knowledge about advanced experimental procedures such as microsurgery, anaesthesia, analgesia and euthanasia in rodent laboratory animals. • Write an application for a procedure to the Danish Ministry of Health.	Cancelled in 2021		
1	B178	53th Sandbjerg Summer Meeting on Membrane Transports	Jeppe Prætorius	30	2,2	14		1. Networking with national and international peers of your research area 2. Practice oral presentation skills and in depth discussion of scientific questions 3. Update your knowledge on new biological concepts 4. In depth discussion of technological/method approaches to study your scope of questions.	Cancelled in 2021. Participants at the latest course: 6 HE PhD students, 2 external PhD students, 6 Reaearch Year students, 20 seats available for scientific staff from the dept.		
1	B226	Molecular Immunology	Thomas Vorup-Jensen	35	2,5	25	4	The objective of this course is to provide you with an introduction to select topics in current immunology. This means that researchers from Aarhus University will update you on some of their preferred research interest. Far from giving a comprehensive introduction to immunology, the course aims to provide you with an idea about current methodologies, topics, and, not at least, principle investigators with research interests that could potentially help you on with your own project. The course will also include two talks by employees in companies with research interests in inflammation and immunology. This is a chance to follow how basic research findings are implemented in commercial products and strategies.			

1	B246	Graduate neuroscience course	Mai Marie Holm	30	5,4	20	0	Participants will get a thorough theoretical knowledge within all areas of neuroscience. The course is structured according to the esteemed advanced level textbook entitled “Neuroscience” by Purves et al. published by Sinauer Associates, Inc. and all sections will be dealt with. The book will form the fundamental basis of the course, however not all specific details will be discussed. Participants are expected to obtain the book and prepare the relevant chapters before the sessions. Emphasis will be put on most interesting areas, as evaluated by the lecturers and their research profile. Topics include; Electrical Signals of Nerve Cells, Synaptic Transmission and Plasticity, Animal Models in Neuroscience, The Sensory System, Pain, Motor Control, Brain Development, Novel Treatment Principles in Neurological and Psychiatric Diseases, Neural Circuits, Repair and Regeneration, Sleep, Speech and Language, Emotions, Neurogenetics and Memory. Additionally, lecturers will present selected data from their own research to provide the most up-to-date techniques and knowledge. Selected reviews and original papers will be used, where relevant, to complement the book.	Cancelled in 2018 + 2020		
1	B273	Advanced In-vivo Optical Imaging Techniques	Ina Maria Schiessl (Euginio Gutierrez)	16	TBA	13	0	The students should be able to understand the basis of different techniques, to learn their pitfalls, disadvantages and advantages, and to plan research projects that include these techniques			
1	B288	Host pathogen interactions – from basic microbiology and immunology to medicine	Trine Mogensen	20	2,4	20	10	Have achieved a theoretical background and ability to discuss current knowledge in some aspects of basic cell biology, immunology, and microbiology related to human host-pathogen interactions, have obtained some insight into the methodologies used to investigate these and how to interpret data, and finally have gained perspectives on how these basic mechanisms translate into the pathogenesis of infectious diseases and the medical implications hereof.	Cancelled in 2020		
1	B299	Advanced Flow Cytometry	Marianne Hokland	16	2,9	13	0	(i) how to design and optimize a flow cytometry experiment. (ii) how to select the optimal flow cytometry related methodology. (iii) which controls to include (e.g. data quality controls, negative/positive controls, compensation and FMO controls – and how to interpret the results. (iv) how to analyze flow cytometry data including critically evaluation of the experimental results. (v) how to include high-dimensional data analysis tools (e.g. tSNE) (vi) how to present flow cytometry data for publication.			
1	B320	Single Cell and Spatial OMICS – Basic Course	Lin Lin	30	TBA	30	17	•Articulate and demonstrate systematic knowledge of the single cell and spatial OMICS. •Interpret and communicate new results within the field. •Describe and critically evaluate data generated with single cell and spatial OMICS methodologies. •Independently and properly select the right single cell and spatial OMICS technologies for specific research questions. •Understand the basic pipelines and tools needed for single cell and spatial OMICS analysis. •Understand the individual steps of the analysis pipeline for single cell RNA sequencing data. •Critically read and evaluate studies within the field of single cell and spatial sequencing.	Held for the first time in 2023		
1	B321	Single Cell and Spatial OMICS – Advanced Course	Lin Lin eller Yonglun (Alun)		TBA			*TBA*			

1	B322	Principles of Neural Organization	Sadegh Nabavi	20	3		5	• Have a good grasp of the limitations and advantages of small and large nervous systems. • Know the constrains that nervous systems face and how they evolved within these constrains. • Perceive brain design and function as an information processing entity. • Describe the basic principles that the brain uses to achieve a superior computational power while keeping the energy consumption in check. • Identify some fundamental principles shared by all systems and circuits within the brain. • Analyze, review and constructively criticize papers in the relevant fields.	Held for the first time in 2023		
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PUBLIC HEALTH

1	P98	Epidemiology II	Christina Catherine Dahm	24	4,2	20	18	• Advanced insight into epidemiological study design • Advanced insight into design and evaluation of epidemiological studies • Insight into DAGs • Insight into strategies for analyzing epidemiological data • Practical experience with analyses of epidemiological data			
1	P126/ (4 dage + 2 ekstra dage = 1 kursus)	Analysis of variance and repeated measurements	Bo Martin Bibby	4 days 24 6 days 10	TBA	19	0	1. Document and process data for a statistical analysis of repeated measurements. 2. Choose a relevant statistical model for a given research question and evaluate the assumptions behind the ANOVA or repeated measurement analysis. 3. Perform ANOVA, variance component analysis or repeated measurement analysis based on the chosen model. 4. Describe the results of the statistical analysis, and discuss the results in relation to the scientific question. 5. Be aware of the limitations of the statistical methods presented in the course.	Not conducted since 2021		
1	P155	Epidemiology I - Basic Principles of Epidemiology	Bodil Hammer Bech	24	2,5	24	19	• Define epidemiologic measures of occurrence and explain the difference between prevalence and incidence • Define the following epidemiologic measures of association; relative risk, risk ratio, odds ratio, and rate ratio, risk difference and excess risk, including attributable risk and population attributable risk • Define and describe strengths, weaknesses, and main applications of the designs; ecological, cross-sectional, follow up, case-control and intervention studies • Define selection bias, information bias and confounding and be aware that evaluating the direction and strength of a possible bias or confounding is essential • Learn to think along the lines that, when faced with data from an analytic epidemiologic study showing an association (or no association), this might reflect; random error, bias (systematic error), including selection bias or information bias, or confounding, or, if all other possibilities seem unlikely, causality			

1	P169	Collecting qualitative research data	Sanne Angel	24	2,6	19	0	• The student will have knowledge of principles of more qualitative approaches and qualitative methods in general • The student will be able to judge the different methods' relevance to study designs • The student will have knowledge about the different form of data collection • The student will have collected data in form of field observation and interviews			
1	P231	Developing complex interventions in Public Health	Knud Ryom	20	2,1	20	6	• Insight into complex interventions based on the UK Medical Research Council Model • Skills for working with program theory and logic models • Insight in developing complex interventions addressing co-production, co-creation and PPI • Insight in contextual elements that can influence successful change • Overview of different complex intervention evaluation strategies.			
1	P237	Which covariates to adjust for: An introduction to causal directed acyclic graphs	Cathrine Carlsen Bach	24		24	18	• To understand the basic anatomy of directed acyclic graphs (DAGs) • To draw and apply DAGs for selection of covariates to account for confounding • To draw and apply DAGs to illustrate potential selection bias • To draw and apply DAGs to illustrate potential information bias • To draw and apply signed DAGs to estimate the potential direction of bias in a research projec			
7	PBC250	Responsible Conduct of Research	Grethe Elholm	30	1	27	0	Be familiar with the Danish Code of Conduct for Research Integrity as well as Aarhus University guidelines and Health standards of Responsible Conduct of Research • Be able to understand and discuss principles of research integrity and responsible conduct of research • Be able to identify, analyse and discuss cases of scientific misconduct and questionable research practices in the grey zone between misconduct and poor science • Know where to seek advice concerning responsible conduct of research			
1	P255	Introductory course in questionnaire technique and clinimetrics	Henrik Hein Lauridsen	25	2	23	2	• Have knowledge about conceptualisation and operationalisation • Know the most important concepts related to questionnaire research • Know the basics of how to design a questionnaire and write items • Have basic knowledge in how to develop a new measurement instrument • Have the skills to find and select the most appropriate outcome measure • Have the skills to translate an international questionnaire into Danish • Have basic knowledge of the COSMIN taxonomy • Have basic knowledge of the measurement properties of validity, reliability, responsiveness and interpretation • Know the requirements for a evaluating a questionnaire for risk of bias			

1	P256	Advanced course in questionnaire technique and clinimetrics	Henrik Hein Lauridsen	20	2	19	0	• Have the skills to complete the process of developing a new measurement instrument • Have basic knowledge about item reduction and factor analysis • Know how to perform a field test • Be able to define, determine and interpret the measurement properties of a) validity, b) reproducibility, c) responsiveness and d) interpretation • Have an overview of the benefits of modern psychometric methods such as IRT and Rasch analyses • Be able to explain the basics of Rasch analysis	AU Health runs the course every second year		
1	P265	Qualitative data analysis: Using NVivo	Annesofie Lunde Jensen	24	TBA	21	4	The students will learn how NVivo supports the qualitative study process from the beginning to the end. Having completed this course, the student will be able to use NVivo's most important functions: • Create projects. • Describe units of analysis relevant for the student's own project. • Critical identify element (sources and cases) as a foundation for making queries. • Create memos, annotations, and links. • Know how to use NVivo together with bibliographic software such as EndNote and RefWorks. • Code data in relation to different types of qualitative data analysis techniques. • Analyse data, visualise data analysis and make different kinds of queries. • Be able to explain and visualise the data analysis the students use in their own PhD-project. • Know how to build models and make different kinds of graphic presentations and diagrams.			
1	P272	GIS in Health Sciences	Jörg Schullehner	15	3	14	0	• Describe the basic concepts of GIS • Identify the different types of spatial data • Retrieve spatial data from open sources and own surveys and load them into a GIS program • Design and apply simple spatial analyses and evaluate their results • Present spatial data in appropriate maps			
1	P281	Causal Inference in Health Sciences	Cecilia Ramlau-Hansen	24	3,4	24	0	• Introduction to the potential outcome framework and counterfactuals • Assumptions for causal inference • Introduction to and practical experience with g-methods • Introduction to and practical experience with causal interaction analysis • Introduction to and practical experience with causal mediation analysis			
1	P284	Methods for synthesizing quantitative and qualitative evidence *(tidligere titel: "Conducting a systematic review – meta-analysis and a meta-synthesis")*	Merete Bjerrum, Vivi Schlünssen	20	3	20	0	Having completed this course, the participants will have the methodological tools to conduct a meta-analysis, a meta-synthesis and an integrative review. This includes: • Specify research topic using PICO and PICo • Search strategy • Assessing quantitative and qualitative studies using relevant tools • Extract and pool extracted data • Synthesize extracted data • Assess summarized data • Present a protocol for meta-analysis, meta-synthesis, and integrative review.			

1	P301	How to design and conduct your PhD study to be family-focused	Karin Piil	12	2,6	11		1. Understand the basic characteristics of a theory-driven family-focused research approach and dialogue based on the Calgary family assessment and intervention models. 2. Gained individual and collective experiences and reflections of how to transform the theory and models into excellence in healthcare. 3. Understand, discuss and argue for the central methodological considerations. 4. Identify appropriate family-focused qualitative and quantitative data sources for research. 5. Describe and argue for the choice of patient-reported outcome and caregiver-reported outcome. 6. Identify strengths and limitations of a family-focused approach 7. Understand and apply family-focused values across cultures and in vulnerable families 8. Present the family-focused PhD study in a concise and structured format with attention to an interprofessional excellence in clinical healthcare.			
1	P302	Evaluating complex interventions in Public Health	Helle Terkildsen Maindal	24	2,1	24	7	• Insight into evaluation of complex interventions based on the UK Medical Research Council Model • Overview of different complex intervention evaluation strategies • Insight into evaluating complex interventions using quantitative research designs • Insight into evaluating complex interventions using qualitative and mixed methods research designs			
1	P310	How to design and conduct a qualitative content analysis in a qualitative study or a systematic review	Cecilie Nørby Lyhne	20	3,3	15	0	• Knowledge on the background, theoretical foundation and the potential of content analysis. • Describe the main steps in conducting a qualitative content analysis. • Design a plan for using qualitative content analysis in your own study, including: formulate specific research questions, specify the plan of conduct including the analytical steps to be performed in your study, and discuss own and co-participants' choices and considerations focusing on the validity and reliability of the analysis. • Apply strategies to strengthen the quality of studies using qualitative content analysis, focusing on validity, reliability, transparency, and transferability in conducting and presenting a qualitative content analysis. • Discuss methodological issues in qualitative content analysis, including methodological reflections in relation to own project designs and plans for analyzing own data material.			
2	P1050	Basic Biostatistics - part 1	Erik Thorlund Parner	110	2,4	68	0	1. Document and handle data needed for a statistical analysis 2. Chose a relevant statistical model for a given research question and evaluate the assumptions of the statistical analysis 3. Perform a statistical analysis based on the chosen model 4. Describe the results of the statistical analysis, and discuss the results in relation to the scientific question 5. Make simple calculations of sample sizes for the planning of a comparative study	Courses in the fall 2023 will have 100-110 seats.		

2	P1050	Basic Biostatistics - part 2	Erik Thorlund Parner	110	3,9	51	1	1. Document and handle data needed for a statistical analysis 2. Chose a relevant statistical model for a given research question and evaluate the assumptions of the statistical analysis 3. Perform a statistical analysis based on the chosen model 4. Describe the results of the statistical analysis, and discuss the results in relation to the scientific question	Courses in the fall 2023 will have 100-110 seats.		
1	New	Advanced GIS in Health Sciences	Jibran Khan	18-25	5			See appendix			
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CLINFO

1	C47/26	Magnetic Resonance	Steffen Ringgaard	16	3,6	10	9	• General overview of the underlying principles in magnetic resonance imaging and spectroscopy with relevance for applications in biomedical research • Outline of magnetic resonance applied in research on organ functionality and diseases. • General overview of hyperpolarized magnetic resonance imaging and spectroscopy applied in cells, animals, and humans.			
1	C104	From Gene to Function – Molecular Analysis of Disease Genes	Peter Bross	16	TBA	14	0	•Assessment of effects of gene variations •Protein folding, trafficking, and biogenesis and their disturbances in diseases •Methods for experimental investigations of effects of gene variations •Design and interpretation of cellular and in vitro experiments •Design and interpretation of energy metabolism assays (Seahorse)			
1	C116	Advanced course in Laboratory Animal Science – Porcine models in biomedical research	Birgitte Saima Kousholt	12	5	12	4	The course will, in unison with the basic course in laboratory animal science, qualify participants to apply for and obtain licence to perform animal experiments in Denmark.	Cancelled twice in 2021		
6	C119	Principles of Research Datamanagement *(tidl. titel: "Datamanagement & Stata")*	Jakob Hjort	24	1,4	24	28	•Handle research data in a way that live up to legal- as well as basic scientific requirements •Relate to the basic principles of data documentation •Relate to Stata's user-interface and basic functionalities •Use Stata's build-in help system •Build well-structured command-files ("do-files") to enhance transparency and reproducibility	3 courses per semester. The course is mandatory to complete for PhD students who enroll in the Biostatistics course (as of 2022).		
1	C142	Proteomics and protein profiling	Johan Palmfeldt	12	TBA	13	17	•Understanding of the principles of proteomics methodologies, and how the different methods can be combined •Knowledge of the value of protein analysis in biomedical research, including advantages and limitations •Acquired practical experience in 1) lab work in protein analysis and 2) software tools used to analyze proteomics data with regard to MS spectra, protein modifications, pathway analysis etc. •To be able to interpret, discuss and critically assess proteomics data •To be able to design studies on protein analysis and proteomics (type of sample, procedures, instruments etc.)			
1	C151	Clinical Research	Morten Bøttcher	25	2,3	23	0	Enable to course participant to conduct clinical research	Cancelled in 2021.		

1	C155	Epidemiology I - Basic Principles of Epidemiology	Ulrik Schiøler Kesmodel	24	2,5	24	29	• Define epidemiologic measures of occurrence and explain the difference between prevalence and incidence • Define the following epidemiologic measures of association; relative risk, risk ratio, odds ratio, and rate ratio, risk difference and excess risk, including attributable risk and population attributable risk • Define and describe strengths, weaknesses, and main applications of the designs; ecological, cross-sectional, follow up, case-control and intervention studies • Define selection bias, information bias and confounding and be aware that evaluating the direction and strength of a possible bias or confounding is essential • Learn to think along the lines that, when faced with data from an analytic epidemiologic study showing an association (or no association), this might reflect; random error, bias (systematic error), including selection bias or information bias, or confounding, or, if all other possibilities seem unlikely, causality			
1	C160	Investigator-initiated Clinical Trials and GCP	Birgitte Olrik Schlemmer	28	2,9	29	0	•Explain and implement the legal, regulatory and good practice framework – The principles of GCP, national regulations, application to the authorities •Illustrate and relate to the organization of the study - sponsor, investigator, contracts and agreements, delegation of responsibilities, training, internal and external communication •Discuss and assess on what's important in the conduct of the study including ethical issues – informed consent, enrolment, essential documents in Trial Master File, biological samples, study monitoring, •End of trial issues •Explain and implement the process in safety monitoring and reporting •Explain and apply the data-management process from CRF preparation, data collection, data analysis, clinical study report and publication	Cancelled in 2020		
1	C171	Introduction MATLAB with examples from Health Science	Irene Klærke Mikkelsen	24	4,2	14	0	• The MATLAB program in general including editor, command window, and help • MATLAB data structures including matrices, cells and structs • Generic programming principles including loops, conditions, functions • MATLAB graphics for plotting and vitalization of data • MATLAB Debugging capability			
1	C177	Introduction to Clinical Epidemiology	Deirdre Cronin Fenton	40	3,7	37	1	The course includes lectures and exercises on the following: 1) Providing a broad knowledge and understanding of clinical epidemiology 2) Designing a clinical epidemiology study 3) Understanding measures of disease frequency, effect and association, and which are appropriate to each study design 4) Assessing study validity, including identifying various biases and sources of error in epidemiological studies 5) Interpreting clinical epidemiology research papers			
1	C190	Image diagnostic methods for evaluation of the musculosceletal system	Maiken Stilling	25	TBA	12	0	•Understand the most common radiologic methods •Understand the basic background for methods (physics, instruments) •Characterize risks of the methods •Understand the advantages and disadvantages/imitations of the methods •Obtain inspiration to new methods in research projects	To be conducted every second year		

1	C204	Basic and practical course in quantitative immunoassays	Mette Bjerre	16	2,2	14	0	The participants obtain theoretical knowledge and practical skills required for development, troubleshoot, and validation of ELISA and TRIFMA assays.			
2	C205	The Talented Researcher	Kamille Smidt Rasmussen	24	3	24	20	By the end of the course, you should have learned about and strengthened your awareness of own strengths and challenges to enhance leadership in both work and your everyday life. You should have strengthened your project management skills in order to better control and plan your project and PhD-education with respect to deliverables, milestones and schedules. As a specific outcome, all participants will have a plan with deliverables, milestones, and schedules for their PhD project.	One course per semester		
1	C214	Registries, databases and other electronic data sources in clinical research	Signe Sørup	30	2,7	22	0	• List the Danish registries and other secondary data sources most often utilized in clinical research • Identify relevant Danish registries and other secondary data sources based on the research question • Describe the data structure as well as some specific pitfalls of working with Danish registries and other secondary data sources • Compare the content of different Danish registers and other secondary data sources and evaluate their usefulness for clinical epidemiological research questions • Assess the strength and weaknesses of the use of Danish registries and other secondary data sources in clinical epidemiology • Design and execute a validation study of some of the content of a Danish Register or another secondary data source. • Design a clinical epidemiological study using Danish registers and/or other secondary data sources			
1	C229	Preparation and critical reading of meta-analysis	Inger Mechlenburg	24	1,6	22	0	• Carry out a meta-analysis based on the quantitative results of a systematic review, interpret the results and provide a clinical guideline based on the meta-analysis • Describe the statistical assumptions, the chosen methods and the results of the meta-analysis • Assess the quality of meta-analyses			
1	C243	How to get published	Søren Dinesen Østergaard	16	3	8	0	1. Have a basic knowledge of most aspects of the publication process in health research 2. Have improved their writing skills 3. Have learned how to perform peer-review			
1	C245	Cancer Epidemiology using the Danish Clinical Cancer Databases	Deirdre Cronin Fenton	24	5,2	14	0	The course includes lectures, exercises and computer labs on the following: 1. Identify and design a clinical epidemiologic research study using the Danish Clinical Cancer Databases – comparing and contrasting study designs in order to suitably address a research question 2. Identifying and ascertaining data from the Clinical Cancer Databases 3. Assessing study validity and implementing validity checks 4. Data analysis including data cleaning and implementing survival analysis using Stata 5. Evaluating study findings, interpreting and reporting study findings	Cancelled in 2020		
1	C254	An introduction to Good Manufacturing Practice (GMP)	Dirk Bender	24	2,1	24	0	• Be familiar with basic principles and terms of GMP and its impact in Danish legislation • Be able to understand specific challenges arising from GMP • Know where to seek advice concerning further development of GMP skills			

3	C262	Get ready to work with Biostatistics	Eva Greibe	24	0,8	24	44	•How to test for assumptions for basic statistical tests •How to perform basic statistical tests •How to present results in tables •How to perform a sample size calculation	3 courses per yer, one in the spring and two in the fall.		
1	C262	Get ready to work with Biostatistics (RY and Talent)	Eva Greibe	24	0,8	22	0	•How to test for assumptions for basic statistical tests •How to perform basic statistical tests •How to present results in tables •How to perform a sample size calculation			
1	C267	Introduction to Fluorescence Microscopy	Lene Niemann Nejsum	24	3,9	24	17	The students will obtain basic knowledge of different fluorescence microscopy techniques, sample preparation, image acquisition and image analysis. This should enable students to prepare samples for fluorescence microscopy, choose the appropriate microscope setup, acquire images, analyse images and generate publication figures. This will enable students to participate in research projects involving fluorescence microscopy.	Cancelled in 2021		
1	C283	Extracellular vesicles – an introduction	Peter Nejsum	20	4,9	10	0	After the course, you will be able to: Describe EVs, their origin and cargo Describe different EV isolation methods and their pros and cons Describe the most common characterization techniques for EVs Describe how to characterize EV composition Discuss what to consider during collection and isolation of EVs from various types of samples Discuss how to explore EV function Isolate and characterize EVs			
1	C285	Introduction to register-based research	Julie Werenberg Dreier	25	3,5	18	0	• Describe commonly used Danish health registers and how they can be used in research • Identify different epidemiological designs used to investigate register data • Discuss strengths and limitations of register data • Describe how other sources of data, such as genetic data, cohort data and survey data can complement data in the registers • Perform simple data management tasks using artificial register data • Plan their own research using registers or to critically read publications from register-based studies			
1	C307	Bacterial infections in implants and bone	Mats Bue og Nis Pedersen Jørgensen	20	2	13	0	Upon completion of this course, the students will be able to: - Describe the aetiology of implant and bone infections - Exemplify why bone infections are difficult to treat? - Identify relevant preclinical models - Describe basic pharmacokinetic/pharmacodynamic aspects of antibiotic treatment - Acquire knowledge regarding state of the art microbiological and histopathological analysis - Plan, develop and present future relevant studies on bacterial infections in implants and bone This course seeks to provide state of the art knowledge regarding bacterial infections in implants and bone and introduces the important research steps and challenges of bringing basic science ideas to clinical applications			

1	C308	Applied Machine Learning in health Sciences	Peter Mondrup Rasmussen	20	3,5	16	0	A student who has met the objectives of the course will be able to: • Describe main steps involved in typical machine learning analyses, including data preparation, data modeling, model evaluation, and result dissemination. • Describe the mathematical and statistical principles in supervised- and unsupervised machine learning. • Describe basic and advanced methods for predicting continuous- and discrete outcomes (regression and classification). • Describe procedures for model building, model selection and model evaluation. • Identify relevant machine learning techniques to solve research-based problems. • Design and implement a solution strategy to solve research-based problems. • Apply unsupervised- and supervised machine learning techniques to their own data. • Disseminate the analysis result and account for the solution strategy and analysis results as necessary for publication in scientific journals.			
1	C309	The science of stress and resilience	Karen Johanne Pallesen	30	TBA	9	0	After this course, participants should be able to: • Define stress and distinguish between stressors, stress and stress responses. • Describe the signaling pathways of the fight-flight/mobilization, freeze and calm-connect responses/states. • Describe the signaling pathways of well-being and resilience. • Place freeze, fight-flight and calm-connect states in the context of evolutionary biology. • Describe automatized processing modes in the nervous system that make fight-flight “first choice” even in the absence of threats or real danger. • Describe the signaling pathways of commonly experienced stress symptoms such as increased heart rate, sweaty palms and “the mind going blank”. • Explain individual variation in stress sensitivity and resilience. o How can childhood trauma predispose to life-long heightened stress sensitivity, and how can a safe childhood make you stress resilient? • Explain the link between long-term stress and o Cardiovascular diseases o Metabolic diseases: metabolic syndrome, diabetes o Anxiety and depression o Functional somatic syndromes o Autoimmune diseases • Explain the appearance of the stress epidemic o What are the particulars of modern societies and ways of living that produce excessive stress? Are adolescents especially exposed to stressors, - or sensitive to stress? • Present arguments why and how schools, work places and clinical practices could potentially benefit from insights into the science of stress and resilience.	Held one out of three times		
1	C316	Patient reported outcomes (PRO) in clinical research	Annette De Thurah	30	2,6	32	4	By the end of this course the students will • have received an overall introduction to the concept of PRO and the implication of using PRO data in clinical research • be able to select PRO instruments, and evaluate it’s quality • be able to design, analyse, report and interpret PROs in clinical research	Held for the first time in 2023		
2	C312	Retire statistical significance: a world beyond p<0.05	Morten Schmidt og Erik Parner	150	0,8	102	0	Skills to interpret and report effect estimates considering random error.			

1	C317	Introduction to Machine Learning for Health Research	Oleguer Plana-Ripoll	25	TBA	31	0	• Discuss the scenarios where machine learning can or cannot enhance epidemiologic research and practice • Assess ethical dilemmas that may arise when data-driven tools (i.e. derived from patterns in data without human direction) are used for public health • List and describe various learning algorithms and approaches to evaluate their performance • Evaluate the appropriateness of using machine learning for specific research questions, using current examples from the scientific literature • Demonstrate ability to utilize analytic tools that promote reproducibility • Analyze public health data by applying learning algorithms and evaluating the resulting models • Compare different machine learning approaches to address common challenges in epidemiologic research	Held for the first time in 2023		
1	C319	Introduction to neurodegenerative diseases and disease models	Nathalie Van Den Berge and Caroline Cristiano Real Gregório	50	8			(1) explain the pathophysiology of common neurodegenerative disorders (what cells and regions are affected and potential mechanisms of disease progression); (2) demonstrate a critical understanding of the methods of investigation and (differential) diagnosis; (3) critically evaluate the different in vivo and in vitro disease models available, be able to judge the advantages and disadvantages; (4) critically discuss the management options available for patients with neurodegenerative disorders, as well as potential future disease-modifying treatment options; (5) critically appraise the scientific literature on the clinical and research aspects of neurodegenerative diseases.	Held for the first time in 2023		
1	New	Mechanisms, Clinical Presentation, and Treatment of Neuropathic Pain (online)	Pall Karlsson	24	5			See appendix			
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OTHER (NOT OFFERED BY THE DEPARTMENTS)

3	A88	Systematic Literature Search (Research-year)	Janne Lytoft Simonsen	25	0,7	25	0	At the end of the course, the participants will be able to build a systematic search strategy and select relevant information sources and search terms. Furthermore, participants will be able to navigate common medical databases and be familiar with the concept of reference management software in general and EndNote in particular.	3 coursee per year, two in the spring and one in the fall. Cancelled in 2020.		
7	A103	Basic Course in Written English	Morten Pilegaard	25	2	26	36	• Knowledge about guidelines and conventions governing the structuring of clinical research papers. • Knowledge of principles of cohesion and thematic structure in research papers. • Knowledge of some of the main differences between English and Danish syntax and grammar. • Ability to describe typical structural and linguistic features of poster, abstract and paper. • Ability to trace errors of syntax and grammar in English-language texts.	7 courses per year - 4 in the spring and 3 in the fall.		
5	A125	Advanced Course in Written English	Morten Pilegaard	20	2	21	14	• Ability to use existing guidelines and conventions governing the structuring of clinical research papers. • Ability to analyse and describe typical structural and linguistic features of poster, abstract and paper. • Ability to apply principles of cohesion and thematic structuring in own texts. • Ability to analyse and produce select text types. • Ability to trace and correct errors of composition and grammar in English-language texts.	5 courses per year - 3 in the spring, 2 in the fall.		

1	A127	Linear regression models for continuous and binary data	Morten Frydenberg	24	3,6	19	0	• Confidently read and understand the output of a regression analysis • Understand and evaluate the assumptions behind the model • Work with regression models that include interaction/effect modification • Communicate the main results of a regression analysis and the assumptions			
2	A132	PhD Supervision (supervisors)	Mette Krogh Christensen	24	0	18	1	The quality of PhD students' education is partly dependent on the PhD supervisor's competencies as a supervisor. The aim of this course in PhD supervision is to expand the participants' repertoire of supervision strategies and methods to provide a flexible approach to supervision, strengthen their reflections on practices, roles, and relationships in the supervision process, and share experiences and new knowledge for advancing PhD supervisors' competencies.			
3	A137	Literature search in medical databases (Language English)	Annette Balle Sørensen	24	0,7	19	0	• To enable the participants to perform qualified searches, systematic as well as citation searches, in relevant medical databases. • To introduce the participants to methods of scientific quality measurements, thus enabling them to understand the basic principles of research evaluation. • To present an overview of different aspects related to research publication such as Open Access, ORCID, Forskerportalen.dk, Copyright etc. • To introduce the basic concept of reference management programs in general and – if requested – to make the participants familiar with the specific reference management program EndNote	3 courses per year - 2 in the spring, 1 in the fall.		
1	A148	Qualitative Research: Phenomenology	Sanne Angel	16		7	0	•Critically evaluate literature and practice in Phenomenological health qualitative analysis. •Write a plan for the analysis with reference to the literature. •Analyse your own data from a phenomenological perspective (e.g. which step do you follow?) •Discuss own and co-participants' choices and considerations. •Describe a plan for analysing their qualitative data/material. •Compare strength and weakness in an empirical phenomenological versus hermeneutical phenomenological analysis.	Cancelled in 2020 and 2023		
2	A227/28	Research presenter - Educational Informatics	Louise Maria Gamborg	24	3,8	24	55	• Apply skills in Rhetorics for preparing and delivering research presentations with a focus on producing and presenting effective talks and posters • Use reflective skills when in engaging in academic discussions and evaluating performance in academic presentations • Apply principles for giving and receiving feedback	One course per semester. Has previously been held three times a year, but since 2023 teaching ressources are only available for two courses per year.		
1	A253	Prepare yourself on the movement from a PhD in Health to a career in non-academia	Vibeke Broe	24	4,5	23	7	• Identify transferable skills achieved during doctoral training • Explain the value of these skills within as well as outside of academia • Reflect on their own possible career path • Apply the different aspects of the course when marketing their skills in different situations • Furthermore, the participants should gain an understanding of common career areas for researchers, and the requirements companies have when employing PhDs.			

2	A293	PhD-student as supervisor for undergraduate students – how and when?	Mette Krogh Christensen	28	3,8	28	15	• Discuss and reflect on requirements and responsibilities of the different supervisor and co-supervisor roles, • Provide feedback to undergraduate students' written or oral presentation in a way that facilitates the undergraduate students' learning process, and • Acquire knowledge about undergraduate students' expectations and interests to balance supervisor's control and undergraduate students' control of their projects.			
2	A294	The Reflective Teacher	Kamilla Pedersen	24	2,4	17	30	• Describe the characteristics of student-centred teaching and learning. • Describe the characteristics of reflective practice of teaching. • Identify, evaluate, and reflect on teaching elements in their own teaching in order to enhance student learning. • Provide peer-feedback in teaching. • Plan, conduct and evaluate a specified lesson including give reasons for learning outcomes, student activities and teacher role in the lesson. • Develop a first draft towards a teaching portfolio			
1	A297/05	Advanced R	Florian Privé	25	4	15	0	•Use RStudio with a better setup to be more efficient in their work •Version their code with Git to keep track of changes in their code •Understand more R as a programming language and write better, simpler code •Manipulate and visualize data with the tidyverse and R Markdown •Produce efficient R code •Develop an R package	Not held in 2023.		
2	A315	Introduction to managing Research Data, FAIR principles, and Open Access	Anne Vils Møller	24	0,3	11	9	• will understand the basic principles of RDM • will know the different aspects of the research data lifecycle • will know what constitutes a data management plan and be familiar with templates and specific tools for writing their own data management plan • will know about FAIR principles and how to make their own datasets as FAIR as possible • will know the different models of OA: gold, green, hybrid • will be aware of potential OA requirements of funders			
4	A1000	Health - Welcome to the PhD study	Mia Maychrzak	60		51	2	The Graduate School of Health wishes to welcome all newly enrolled PhD students to the PhD programme, and to give PhD students the opportunity to meet and interact with fellow PhD students and AU representatives from fields relevant during the PhD programme.	Held every 3 months		
4	A1001	Time and Project Management I: Using the IPTO to communicate with your supervisors and keep the overview in a dynamic PhD context (after 6 months) *(former title: "Do you manage your time well? Using project and time management to avoid stress (after 6 months)")*	Constance Kampf	25	1	5	0	At the end of the course, the participants will be able to revise their IPTO planning tool and integrate key decision points into it. In addition, they will have learned how to make connections between the high-level planning in the IPTO, and more detailed planning in their daily work. Finally, they will build a vocabulary for discussing progress with their advisor which allows for considering progress separately from content.			

4	A1002	Time and Project Management II: Considering Risk & Coordinating your daily work with the big picture (IPTO) (after 6 months) *(former title: "Reality check - can I really do that much? Time and Project Management after the midterm evaluation")*	Constance Kampf	25	1,4	6	0	At the end of the course, the participants will be able to reconsider their PhD completion plan, reflecting on how to use a two-level approach to planning and controlling progress. In addition, students will reflect on how to remove bottlenecks and risks in the second half of the PhD.			
2	A1003	From PhD to PostDoc	Constance Kampf	25	5,5	12		At the end of the course, the participants will be able to reconsider their PhD completion plan, reflecting on how to use a two-level approach to planning and controlling progress. In addition, students will reflect on how to remove bottlenecks and risks in the second half of the PhD.			
1	A1004	Getting the most out of your PhD – a career perspective	Vibeke Broe	50	0,3	0	4	Understand why and how to work with the professional development How to work with goal setting and how to achieve goals Understand how to incorporate career thinking in your PhD	Held for the first time in 2023		
1	A1005	Preparing for Career Transitions	Vibeke Broe	50	0,3	0	5	• Know how you can set direction for your future work life during your PhD • Know how to explore your options • Understand the factors that should influence your career decision process • Remember that you should take control of your own career planning and development	Held for the first time in 2023		
2	New	How to Communicate your PhD Research	Lise Wendel	25	0,8			• Insight into presentation techniques and communicative tools, to make complex knowledge understandable, interesting and relevant to the outside world. • Experience in communicating and conveying their own PhD research . • Knowledge of journalists' working methods and priorities as well as the researcher's own role and rights as an expert in a media context. • Knowledge of responsible research communication and insight into what can be communicated, to whom and when.			
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Total no of courses **131**

Punkt 8: Briefing from Head of Graduate School

It is recommended that
The PhD committee takes note of the briefing.

Case
The Head of Graduate School briefs the PhD committee on news from the graduate school.

Responsible
Helene Nørrelund

Punkt 9: Briefing: AU Elections 2023

It is recommended that
The PhD committee takes note of the briefing

Case
AU Elections 2023 was held on 13 - 16 November 2023. The following members have been elected for the PhD Committee as of 1 February 2024:
Scientific staff (three years), 7 mandates:

- Stephan Lange (BIO)
- Naiara Santana Codina (BIO)
- Stine Sofia Korremann (IKM)
- Rikke Katrine Jentoft Olsen (IKM)
- *Ole Graumann (IKM - suppleant)*
- Viola Bureau (PH)
- Kasper Hansen (PH)
- Rubens Spin-Neto (IOOS)

PhD students (one year), 6 mandates:

- Malene Kærslund Hansen (IKM)
- Akila Aiyar (IOOS)
- Leonardo Melo Rothmann (IKM)

The remaining seats for PhD students will be as "observers".

A constituent meeting will take place late January or early February 2024.
Thank you to the retiring members of the current PhD committee!

Responsible
Louise Nygaard

Punkt 10: Any other business