



ANNUAL REPORT 2023

**Oncologie Onderzoekschool Amsterdam
- OOA -
Oncology Graduateschool Amsterdam**



OOA INSTITUTES



UNIVERSITEIT VAN AMSTERDAM



About the OOA

The training of Cancer Center Amsterdam UMC's and NKI-AVL's PhD candidates is embedded in the Oncology Graduate School Amsterdam (Onderzoekschool Oncologie Amsterdam – OOA). The OOA is a large and successful school, home to over 1,000 PhD candidates of many nationalities employed at two state-of-the-art institutes, Amsterdam UMC and NKI-AVL. Our mission is to provide a broad range of high-quality theoretical and practical courses in oncology, and to ensure proper supervision of PhD candidates. The fruitful collaboration between the two institutes provides PhD candidates the opportunity to learn from and collaborate with many internationally recognized scientists. Please watch our [video](#) and check our [website](#) for an impression of our school.

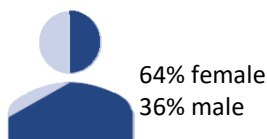


"The OOA is the glue for all oncology PhD students in Amsterdam and allows for meaningful scientific and social interactions through the provision of courses and events related to science and personal development." Chavelli Kensen, OOA PhD councilmember

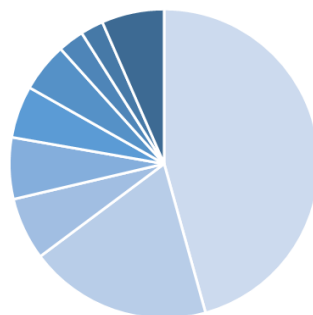
PhD candidates in 2023

Click [here](#) for more details

30% of projects funded by the participating institutes
11% by public funds
45% by research contracts
14% financed by other funds



71% Dutch
29% international



- Medicine
- Biomedical/Biomolecular Sciences
- Biotechnology/Technical Medicine/Engineering
- Pharmacy/Drug Discovery/(Bio)Chemistry
- Cancer/Oncology
- Bioinformatics/Mathematics/Epidemiology/AI
- Health/Forensic/Movement Sciences
- Neuroscience/Psychology/Sociology
- Other

From the executive team

2023 was a remarkable year for the OOA graduate school, marked by significant achievements and milestones. The culmination of our efforts was underscored by the highly positive evaluation received during the SEP (VSNU, KNAW, NWO) reaccreditation process. This validation proves the dedication and hard work of our entire team, affirming the quality and effectiveness of our educational programs and initiatives.

One of the highlights of the year was the successful organization of the annual PhD student retreat in Renesse. After navigating through the challenges posed by the pandemic, we were thrilled to host a full-scale event that saw an unprecedented number of registrants. This gathering not only fostered academic exchange and collaboration but also provided a much-needed opportunity for our community to reconnect and recharge.

Recognizing the importance of providing comprehensive support to our incoming PhD students, we introduced a tailored starter's package, aimed at facilitating a smooth transition into their research journey. This initiative equips them with essential resources and guidance, ensuring that they are well-prepared to embark on their PhD trajectory and meet the graduation requirements effectively.

Moreover, our commitment to student representation and engagement was strengthened through the continued efforts of the OOA PhD student council. The council played a pivotal role in advocating for student needs and enhancing the overall student experience. Their successful organization of the PhD day stands as a testament to their dedication and effectiveness in

amplifying student voices within OOA.

As we bid farewell to esteemed board member and NKI dean Prof. Hein te Riele, we extend our heartfelt gratitude for his invaluable contributions and leadership over the past decade. His legacy will undoubtedly inspire us as we welcome Dr. Heinz Jacobs as the new OOA dean. With his expertise and vision, we are confident to uphold the standards of excellence toward continued success.

Looking ahead, we remain committed to fostering an inclusive and supportive environment that empowers our students to thrive academically and professionally.

In conclusion, 2023 was undeniably a year of progress and achievement for the OOA Graduate School. As we embark on the journey ahead, we reaffirm our dedication to serving our growing community of PhD students and advancing excellence in research and education.

On behalf of the entire OOA team, we extend our warmest regards and gratitude for your continued support and partnership. Together, we are poised to shape the future of academia and make a lasting impact on the world.

On behalf of the OOA team,



Arjan Griffioen
OOA director
Chair

OOA TEAM

Executive team

Prof. dr. Arjan W. Griffioen
Chair, dean Amsterdam
UMC (VUmc)

Prof. dr. Hein te Riele
Dean NKI-AVL

Dr. Marcel Spaargaren
Dean Amsterdam UMC
(AMC)

Coordination

Dr. Esther M. Ruhé
Amsterdam UMC

Staff

Evelien Bos
Noëlle Commandeur
Theo Lamers

PhD student council

Barbara Barbosa, Eve
Ioannou, Maxime Kempers,
Chavelli Kensen, Merel
Lucassen, Ben Ooms,
Charlotte Smith,
Konstantina Strepí, Maud
Schoot Uiterkamp, Britt van
der Swaan

Faculty

OOA has over 200 faculty
members. [Click here](#) for a
list of all members.



Research themes

THEME 1. BASIC ONCOLOGY

The transformation of a normal cell into a malignant cancer cell requires multiple (epi)genetic alterations affecting genes that constitute pathways governing the proliferation and behaviour of cells. Studying the genes and proteins involved in these pathways results in better understanding of tumor development, progression and therapy resistance and may yield markers that can be used to detect cancer at an early stage and to predict its course and response to therapeutic interventions. Disease profiling is being improved using innovative research tools that include high-throughput methods for (epi)genetic, transcriptomic and proteomic analyses. At the cellular level, processes like cell-cell communication, differentiation, adhesion, migration, survival, proliferation and apoptosis are studied using e.g. advanced microscopy, which are complemented by molecular studies using e.g. structural biology. Advanced autochthonous mouse models and sophisticated xenotransplant models have been developed for the genetic dissection of cancer and testing of novel therapeutic strategies, including immunological interventions. Furthermore, the mechanisms of therapy resistance and metastasis are being investigated.

Viral oncogenesis projects focus on the role of human papilloma viruses and Epstein-Barr virus. Viral and host markers are being tested for their capability to assess the risk associated with the development of cancer.

THEME 2. CLINICAL RESEARCH

Improvements of clinical care are based on improved detection and development of innovative therapies and personalized treatment strategies. The emerging and rapidly growing fields of molecular imaging and genomics are providing new opportunities to study the biology of a malignancy in individual patients and thus allowing for the development of highly valuable indicators for diagnosis and prediction of disease outcome. Modern state-of-the-art techniques like MRI, SPECT, PET and PET/CT enable tumor imaging with high precision and unique molecular and biological information at the tissue level. Mouse models are being used to follow drug sensitivity in several types of cancer and for developing clinical strategies for imaging. Another important focus of research is optimizing the benefits of targeted cancer therapy. Research includes (pre)clinical evaluations of neoadjuvant treatment and the application of new molecular therapies and anti-angiogenic agents against novel targets in the tumor and its environment. The pharmacological optimization of cytotoxic drugs is an important line of research, as is the passage of drugs through the blood-brain barrier. Development of immunotherapies based on immune checkpoint blockades, adoptive transfer and vaccination strategies, as well as identification of predictor response to these therapies are at the forefront of research. Another important research focus is quality of life of long-term survivors of childhood and adult cancer.

The institutes provide state-of-the-art research facilities. New initiatives are being launched and innovative technologies are developed and implemented. This often occurs in the context of research programmes in which PhD students are actively involved. Please [click here](#) for an overview of all facilities.

OOA research has an excellent (inter)national status, as demonstrated by the large number of research projects granted in open (inter)national calls, including several of the prestigious new grants. The faculty is strongly represented in the Dutch science foundation (NWO) 'vernieuwingsimpuls', the Veni, Vidi and Vici grants for junior researchers and participated widely in numerous EU integrated projects and networks of excellence. Funding is also strongly supported by the Dutch cancer society (KWF).



PhD training and supervision

To prepare PhD candidates for a successful career inside or outside academia, we aim to provide them all the same solid foundation. All OOA PhD candidates have to complete a uniform and mandatory training and supervision plan (TSP). This plan contains a number of mandatory activities, supplemented by education and activities that can be tailored to each candidate's own interest, background and needs.

At the start of their PhD training, all PhD candidates must make an initial plan in consultation with their supervisor. During the course of the PhD trajectory, the TSP can be adjusted where necessary. We monitor this process and provide advice if needed. At the end of the PhD program, we review the TSP and award an educational certificate when all criteria are met.

This procedure, which is described on our website, is brought to the attention of all starting PhD candidates as soon as they are registered at the OOA. To guide and inform them even more (inter)actively, we are currently working on an onboarding starters package.

For on-the-job training, OOA PhD candidates receive support from their supervisor/project leader, post-docs and technicians. Their research is embedded within more than 200 established research groups led by [faculty members](#), many being prominent leaders in the scientific community with excellent track records in oncology research, as testified by their contributions to international scientific literature and conferences, memberships in scientific steering committees, and honorees of prestigious scientific grants and awards. These supervisors guarantee a superb environment for research and education in research. They are supported by the research skills, scientific knowledge and enthusiasm of staff members and promising junior investigators who help maintain high mentoring standards for our PhD candidates.

Adequate supervision is an extremely important topic of interest and attention for OOA. In general, when embarking on a PhD track, the PhD candidate and the supervisor (promotor) will agree on a research plan, the PhD curriculum. The promotor is responsible for providing the PhD candidates with supervision, guidance and feedback. In most cases, a daily supervisor is appointed to continuously assess the progress of the PhD project and performance of the PhD candidate. Within Amsterdam UMC and NKI-AvL, various training courses are offered for both junior and senior supervisors.

Training requirements



30 ECTS total (1 ECTS = 28 hours)



Mandatory 2 ECTS 'Ethics and Integrity in Science' course



≥ 8 ECTS professional knowledge and general skills courses



≥ 1 scientific conference



Additional courses and activities, writing articles, teaching, retreats, group meetings, etc.

Educational Programme

We have a tradition of almost 30 years offering educational programs with courses covering a wide range of topics. To provide a solid foundation in the many aspects of oncology, we offer the Basic Oncology course to all first-year PhD candidates. Once familiar with the basic principles, PhD candidates can subsequently choose courses focusing on more specific courses. Our professional knowledge courses focus on cutting-edge scientific topics and the core research activities at the associated institutes, covering specific tumor types and topics within oncology, as well as new groundbreaking technologies which will provide the students with the right skills and expertise to apply these methods in their own research. A subset of our courses is also aimed at the mental health of PhD candidates. Due to our focus on oncology and affiliation with cancer treatment centers, we highly value the translation of basic research findings into clinical applications, and vice versa. We therefore stimulate cooperation and integration of fundamental and clinical researchers. To promote this further, our three-day annual retreat - entirely focusing on the research conducted by the candidates - is a unique event that fosters collaboration and expands our candidates' awareness of cutting-edge oncology research outside their environment.

The course program is dynamic: new advances in cancer research and care, educational needs expressed by OOA candidates and evaluations of former courses all influence the course content. The OOA PhD council recently conducted a survey among all PhD candidates, enabling us to address the specific needs expressed by the individual PhD candidates. Candidates make a selection according to their interest and background. The OOA education program not only teaches substantive knowledge, but also promotes cooperation and provides support, advice and inspiration

Courses are typically organized by the OOA executive team and/or a team of principal investigators (PIs) invited by the executive team. Because more than 200 oncology PIs are affiliated with Amsterdam UMC or NKI-AVL, we have the opportunity to offer a very broad range of course topics. Quality assurance is carried out by applying the PDCA cycle (Plan, Do, Check, Act). All courses are evaluated by the participating candidates. Course organizers discuss these evaluations with the OOA executive team and take action accordingly. Amsterdam UMC offers several training programs for lecturers.

We closely collaborate with the Amsterdam UMC Doctoral School, which provides training in general/soft skills. Thanks to the co-existence of the OOA and the Doctoral School, Amsterdam UMC PhD candidates have the unique opportunity to follow a supplementary educational program that is focused on both professional and personal development. In addition to the local educational activities, PhD candidates are also encouraged to apply for externally organized courses, including those organized by our partner schools Medical Genetics Centre South-West Netherlands and the Utrecht Clinical and Translational PhD program. PhD candidates from these schools are also invited to attend OOA courses.

COURSE ORGANIZERS

Barbara Andrade Barbosa
Dr. Judy van Beijnum
Dr. Jeroen Belien
Dr. Maarten Bijlsma
Evelien Bos
Edith Bosch
Dr. Lenny Brocks
Dr. Bram van der Broek
Noëlle Commandeur
Suzanne Corsetto
Dr. Amalie Dick
Donner
Zuhir Erkagali
Prof. Dr. Nicole van Grieken
Prof. Dr. Arjan Griffioen
Dr. Rolf Harkes
Dr. Elsa Huijbers
Eve Ioannou
Maxime Kempers
Chavelli Kensen
Patty Lagerweij
Merel Lucassen
Dr. Marjolijn Mertz
Nicole Nijhuis
Ben Ooms
Prof. Dr. Eric Reits
Prof. Dr. Hein te Riele
Dr. Esther Ruhe
Prof. Dr. Marjanka Schmidt
Maud Schoot Uiterkamp
Martijn Smit
Charlotte Smith
Prof. Dr. Bas van Steensel
Konstantina Strep
Britt van der Swaan
Dr. Rieneke van der Ven
Dr. Nicole van der Wel

16 Educational activities organized throughout 2023

4.2 Average evaluation rate of our courses (1 – 5 point scale)

626 Total number of course participants

109 Course organizers and teachers

1.3 average credits per activity

Courses organized in 2023



Annual Retreat – 2.0 ECTS

October 18 - 20

This three-day retreat focused entirely on research conducted by the PhD candidates themselves. Students not only presented their work, they were also in charge of chairing sessions and discussions. The retreat trained important skills and also provided an overview of research conducted within OOA at an early stage of the student's career, contributing significantly to the interaction between the students. The retreat is considered stimulating both scientifically as well as socially.



2x Basic Microscopy - 1.5 ECTS

May 8 – 12, November 27 – December 1

This one-week course taught the application of a range of imaging possibilities. These were presented in lectures, discussions and hands-on demonstrations. The individual research projects of the attending participants were discussed in relation to the demonstrated techniques, allowing exchange of ideas with fellow participants and microscopy experts and operators.



Basic Oncology – 2.0 ECTS

May 22 - 26

This course provided a broad overview of oncology-related topics, with an emphasis on recent advances and issues that are relevant to the pathogenesis and treatment of cancer. The course was designed for all first/second year OOA PhD candidates, to provide them with a solid base in oncology already at an early stage of their PhD trajectory.



2x Being Able To Influence Yourself Positively – 0.3 ECTS

February 7, March 15

This workshop was organized for PhD candidates who experience stress or are in moments not happy and satisfied in doing their work. Participants were introduced in the I+/- theory which are the two ways you can live your life from. They were helped to look at things differently, from a broader perspective and with ownership. They looked into stress and how to make it work for instead of against them. They worked with their own challenges and difficult situations and use them as a chance to become more self-aware, to find out what they really want and how to make that happen.



BioBusiness – 3.0 ECTS

October 23 – November 3

During this two-week course, participants got familiar with the ideas and concepts behind the valorization of research ideas and technology. How to identify of research or research ideas that can be commercialized, and the factors that are crucial for success of entry into the market. Among these are intellectual property, patenting, indication selection, (pre)clinical testing, regulatory - and financial aspects. The course consisted of seminars, independent learning on the basis of exploring literature and business reports, discussion sessions, assignments and a business pitch for a new start-up company.

4x Ethics and Integrity – 2.0 ECTS

February 13, May 15, September 25, October 9

Each scientist sometimes faces dilemmas. While the extremes of the spectrum - falsifying and fabricating data and plagiarism - are clearly very serious scientific misconducts, a wide range of research practices are in the "grey zone". These issues were addressed during this course including an overview of all available resources and counselors. The course consisted of three separate parts: an interactive workshop, an online module and writing an essay & discussing this essay with the supervisor.



Histopathology of Human Tumors – 0.6 ECTS

February 2 - 3

The aim of this two-day course was to give an introduction in the histology of malignant tumors and their precursor lesions. Microscopical structures, growth patterns, grading and staging systems, and different cell types present in selected tumor types (based on preference of the participants) were explained and discussed by pathologists.



ImageJ/Fiji - 0.6 ECTS

March 21, 28 and April 4

ImageJ is a public domain image processing and analysis program. The main objective of this course was to give the microscopy user a global understanding of the huge potential of the program. We went through all functionalities of the basic package and present specific tools for use in (cell) biology. We also reviewed concepts and principles of image processing in general, in order to set a theoretical background.



Indesign thesis printing – 0.1 ECTS May 30

This workshop was organized for all PhD candidates interested in designing their thesis with Adobe Indesign.

InDesign is a desktop publishing software application for creating layouts. PhD students can use InDesign for creating their thesis. Nicole Nijhuis gave an introductory workshop to InDesign.

The workshop included hands-on practical workshop with a presentation & exercises



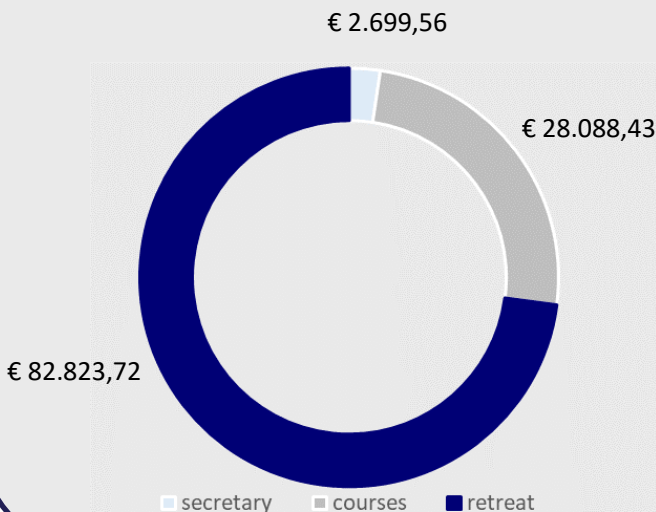
Intervention Group – 1.0 ECTS 2023-2024

Intervention groups are small groups of professionals working in similar fields, who meet on a regular basis to gain insight into the problems they encounter at work. The participants try not to come up with solutions, but by asking questions, encourage the case provider to gain insight into his own case and how to take action on this. Important elements were to learn from the experience and ideas of colleague PhD candidates and to discuss problems without any hierarchical differences.



PhD day June 22

The PhD day kicked off with an interactive keynote workshop about the "The art of presenting science". After this enthusiastic start, the PhD students could follow a variety of workshops, focusing on soft skills such as presenting and intercultural communication, data visualization and leadership. The scientific program ended on a high note with a keynote by science integrity consultant Elisabeth Bik. She took the audience on an interesting journey through examples of visually manipulated data. All PhD students then got a chance to further get to know each other and network during the closing drinks.



Finances

The annual costs of the educational program and administrative costs are financed by Amsterdam UMC and NKI-AvL. In addition, the participating institutes provide administrative support. Thanks to the contributions of the participating institutes, all OOA PhD candidates can join our activities and courses free of charge.

Administrative support:

NKI-AvL: 0.80FTE administration

Amsterdam UMC: 1.3FTE coordination & administration



Publications

A total number of [100 theses](#) were published and defended throughout 2023 and [2161 peer reviewed papers](#) on oncology were published by AmsterdamUMC and/or NKI-AVL researchers. Six selected top papers published by the OOA PhD students are:

Jelle Bousema *et al.* Endosonography With or Without Confirmatory Mediastinoscopy for Resectable Lung Cancer: A Randomized Clinical Trial. **Journal of Clinical Oncology**, 41: 3805-3815.

Cees Dekker *et al.* How do molecular motors fold the genome? **Science**, 382: 646-48.

Gian-Luca McLelland *et al.* Identification of an alternative triglyceride biosynthesis pathway. **Nature**, 621: 171-78.

Lok Lam Ngai *et al.* Prospective validation of the prognostic relevance of CD34+CD38– AML stem cell frequency in the HOVON-SAKK132 trial. **Blood**, 141:2657-2661

Natasja de Vries *et al.* $\gamma\delta$ T cells are effectors of immunotherapy in cancers with HLA class I defects. **Nature**, 613: 743-50.

Romy van Weelderen *et al.* Measurable Residual Disease and Fusion Partner Independently Predict Survival and Relapse Risk in Childhood KMT2A-Rearranged Acute Myeloid Leukemia: A Study by the International Berlin-Frankfurt-Münster Study Group. **Journal of clinical oncology**, 41:2963-2974.



Geslaagde kankerbehandeling bij kinderen kent keerzijde op termijn

Plaats een reactie

Dat de vijfjaarsoverleving van alle soorten kinderkanker tezamen nu rond de 80 procent bedraagt is uiteraard een groot goed. Maar dat succes heeft ook een keerzijde. Kinderen groeien en hebben daarom vele snel delende cellen, en juist die cellen ondervinden de consequenties van de diverse kankerbehandelingen. Gevolg: de meeste mensen die als kind zijn behandeld voor kanker, hebben op de lange termijn een aandoening onder de leden, waarvan 80 procent zelfs ernstig.

Neurowetenschapper ziet positief effect van beweging op bijwerkingen chemotherapie

Veel vrouwen hebben na chemotherapie voor borstkanker last van bijwerkingen, zoals vermoeidheid en problemen met het denkvermogen. Soms nog jaren na de behandeling. Neurowetenschapper Emmie Koevoets onderzocht of een intensief bewegingsprogramma kan helpen.

OOA PhD students in the national media

Regularly, the media pays attention to research carried out by OOA-affiliated faculty, staff and PhD students. Highlights of PhD candidates in the media are:

Nina Leefkerk, Medisch Contact, 24 mei

Emmie Koevoets, Het Parool, 29 juni

Simon Linder, de Volkskrant, 26 mei

ONVERWACHTE ONTDEKKINGEN
'Door een onschuldig eiwit wordt
prostaatkanker ongevoelig voor de
behandeling'



Onderzoekschool Oncologie Amsterdam Annual Report 2023

Text and design

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