



2020 ANNUAL REPORT

Oncologie Onderzoekschool Amsterdam

- OOA -

Oncology Graduateschool Amsterdam





UNIVERSITEIT VAN AMSTERDAM



About the OOA

OOA is a large and successful joint graduate school of Amsterdam UMC (location AMC & VUmc) and NKI-AVL. The OOA, accredited by the KNAW since 1999 is dedicated to the training of more than 900 PhD students working in the field of Oncology in Amsterdam. Our mission is to support our PhD students in fulfilling the requirements for obtaining a PhD degree at one of the Dutch universities by offering them a high quality training and supervision plan. The key strength of the OOA is the fruitful collaboration between two state-of-the-art institutes, Amsterdam UMC and NKI-AVL, which provides PhD students the opportunity to learn and collaborate with internationally renowned scientists with in-depth expertise, excellent track records and high visibility in the international scientific community. With their help, we maintain a longstanding tradition of almost 30 years offering educational programs with high-quality courses covering a wide range of topics. 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 that will provide the students with the right skills and expertise to apply these methods in their own research. 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.

OOA is one of the 23 Dutch research schools in the discipline 'Life sciences and medicine'. It is the only accredited school specifically focusing on training in basic, translational and clinical cancer research. We work closely with the AMC Graduate School (Amsterdam UMC Doctoral School in the near future), AvL Academy, Medical Genetics Centre South-West Netherlands (Medisch Genetisch Centrum Zuid-West Nederland – MGC) and the Utrecht Graduate School of Life Sciences (Clinical & Translational Oncology – CTO). These collaborations complement our educational program, allowing a better match with individual interests and needs of PhD candidates and expanding the opportunities to cooperate and interact.

PhD students in 2020

Click [here](#) for more details

23% international

35% male, 65% female

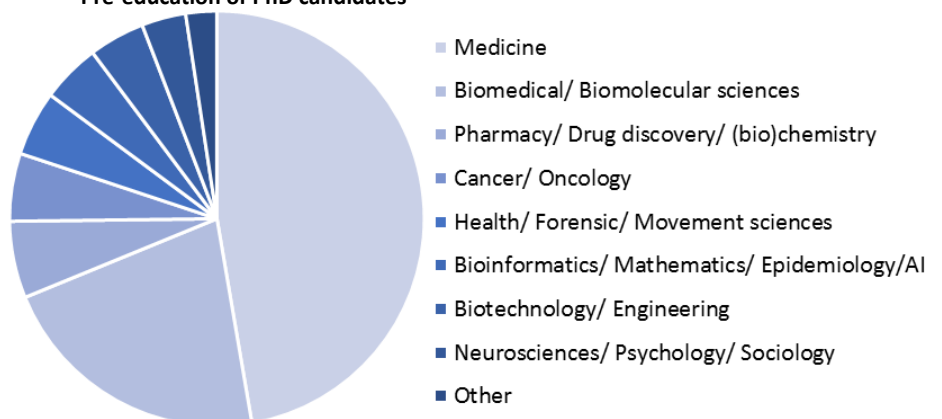
24% of projects funded by the participating institutes

16% by public funds

41% by research contracts

19% financed by other funds

Pre-education of PhD candidates



From the executive team

2020 was overshadowed by the covid-19 pandemic. This had the obvious impact on both the research, as well as the training and educational activities of the OOA. The most important consequence was that all courses had to be organized online. We are proud of the fact that we were able to organize an online version for a good amount of courses. Of course, we are greatly indebted to the course coordinators, that had to run that extra mile to make this happen.

An important event organized by the OOA is the yearly PhD-student retreat. Unfortunately, this activity had to be cancelled, which was probably the largest covid-19 sacrifice that had to be made by the OOA. This is due to the fact that the retreat is not only a forum for scientific exchange, but also a means for social contacts between PhD students and initiation of collaborations. As a replacement we organized the Holy Sh*t Show, which was highly appreciated by the OOA students.

An important achievement of the OOA was the final implementation of the training plan for all OOA students. This was an important issue, as for PhD-students from the different institutes, the requirements were not completely similar. Basis of this equalized training plan is the acquisition of 30 ECTS, which is now made mandatory for all PhD-students. Only the integrity course (2 ECTS) is a mandatory part of the training plan, while courses to the equivalent of 8 ECTS need to be in the subject area of the student. An attractive program was designed for the integrity course, in which a large part is provided online, while a live (zoom) discussion workshop and writing an essay on an

integrity issue, complement the course. Implementation is scheduled for the beginning of 2021.

Despite the harsh conditions that were put on us all by the pandemic, we think it is safe to say that we managed to provide sufficient training in 2020. As always, the OOA team will do its utmost to serve the growing number of PhD students.

On behalf of the OOA team,



Arjan Griffioen
OOA director
Chair

OOA TEAM

Executive team

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

Prof. dr. Hein te Riele
NKI-AVL

Dr. Marcel Spaargaren
Amsterdam UMC (AMC)

Coordination

Dr. Esther M. Ruhé
Amsterdam UMC

Staff

Evelien Bos
Karin van der Heijden
Elise Marseille

PhD student council

Lenka Boyd
Iris van 't Erve
Margarida Ferreira Martins
Bram Priem
Christiaan Widdershoven

Advisory board

Prof. dr. Eric Eldering
Prof. dr. Jan Paul Medema
Amsterdam UMC

Prof. dr. René H. Medema
Prof. dr. Titia K. Sixma
NKI-AVL

Prof. dr. Chris J.L.M. Meijer
Prof. dr. Tom Würdinger
Amsterdam UMC

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).



Educational Programme

We have a longstanding tradition of almost 30 years offering educational programs with high-quality courses covering a wide range of topics. The last four years, we have doubled our activities and will further expand the available courses in the near future in order to provide additional educational resources for all PhD students. All of our activities are accessible to our members, including our 'buitenpromovendi'. We are very proud that we have managed to maintain our course program during the COVID-19 pandemic by converting our courses to online editions, thanks to the flexibility of the course organizers, teachers, as well as the PhD candidates.

Prominent international scientists visit the OOA research institutes within the context of existing or new research collaborations in which PhD students are also involved. In 2020, a total number of 22 international visitors/speakers were welcomed (please [click here](#) for the full list).

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. In 2020, we adopted the 'Basic Oncology' course, which was initiated by Cancer Center Amsterdam. This course provide new PhD candidates with a solid foundation in the field of oncology. In the near future, we will also offer an expanded repertoire of courses on translational and clinical research.

A subset of our courses is aimed at improving the 'generals skills' of PhD candidates, which will not only help them to successfully complete their PhD project, but also better prepare them for a future job. Examples are courses in scientific writing, giving presentations and statistical analysis. 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 by, for example, organizing scientific events with a strong social connotation, like the annual PhD day and annual PhD retreat.

The educational program designed by the OOA team is dynamic: evaluations of former courses, new developments in cancer research, and educational needs expressed by members all influence our course content and range. Our recurrent course program is supplemented by courses on currently relevant topics in oncology with the participation of acclaimed (inter)national scientists. Candidates make a selection from these supplemental courses according to their interest and background. Courses can take several days or up to two weeks. Upon completion, all participants receive a course certificate which includes the corresponding ECTS. The OOA education program not only teaches substantive knowledge, but also promotes cooperation and provides support, advice and inspiration.

COURSE ORGANIZERS

Dr. Leyla Azarang
Dr. Jeroen Beliën
Dr. Maarten Bijlsma
Evelien Bos
Lenka Boyd
Dr. Lenny Brocks
Dr. Bram van den Broek
Prof. dr. Vincent Christoffels
Dr. Amalie Dick
Iris van 't Erve
Margarida Ferreira Martins
Dr. Juan Garcia-Vallejo
Dr. Nicole van Grieken
Prof. dr. Arjan Griffioen
Karin van der Heijden
dr. R. Hoebe
B. Hooibrink
dr. P. Krawczyk
Patty Lagerweij
Elise Marseille
Dr. Renee de Menezes
Dr. Marjolijn Mertz
Nicole Nijhuis
D. Picavet
Bram Priem
Prof. dr. Eric Reits
Prof. dr. Hein te Riele
Dr. Esther Ruhe
E. Scholl
Dr. Jurgen Seppen
Dr. Renaud Tissier
Dr. Rieneke van de Ven
Dr. Nicole van der Wel
Albert Wenisch
Christiaan Widdershoven

16 Educational activities organized throughout 2020

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

1.2 ECTS Average number of credits per course

580 Total number of course participants

142 Participants OOA PhD day 2020

Courses organized in 2020



Intervision Group

November 7 2019 - July 2020

Intervision 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 are to learn from the experience and ideas of colleague PhD candidates and to discuss problems without any hierarchical differences.



ImageJ/Fiji

January 31 & February 14

ImageJ is a public domain image processing and analysis program. The main objective of this course is 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.

PhD day

February 7

The OOA PhD day, organized by the OOA PhD candidate council, was primarily focussed on supporting all OOA PhD candidates to further develop their transferable skills. This day included a keynote lecture of Allyson Reneau and workshops on presentation skills, leadership & student supervision, how to stay happy in a PhD, data visualization, thesis cover design and career options outside academia, followed by drinks to further support active networking.



Indesign thesis printing

March 4

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

Mouse morphology, genetics & function

April 20 - 24 -> ONLINE

Animal experiments, especially using mice and rats, are an important part of many PhD projects. Course participants were introduced into various aspects of research with rodents. The aim was to increase awareness of the physiology and genetics of experimental animals, thereby enabling better planning and execution of animal research.



How to write research papers

May 11 - 18 -> ONLINE

This course was designed to help to develop effective academic writing skills. We reviewed the principles of effective writing, examples of good and bad writing and tips for making the writing process easier. PhD candidates worked on improving academic writing skills through studying theory, performing analysis of published texts, and working on exercises. Moreover, they worked on writing, or revising, their own text, while receiving peer feedback and expert coaching.



How to write research papers

May 25 – June 4 -> ONLINE

This course was designed to help to develop effective academic writing skills. We reviewed the principles of effective writing, examples of good and bad writing and tips for making the writing process easier. PhD candidates worked on

improving academic writing skills through studying theory, performing analysis of published texts, and working on exercises. Moreover, they worked on writing, or revising, their own text, while receiving peer feedback and expert coaching.



Introduction to R for data analysis

June 15, 16 & 18 -> ONLINE

R is an open-source, free environment for statistical computing and graphics. It provides a large repository of statistical analysis methods, both classic and new. However, R has a steep learning curve. This course aimed at helping researchers climb this curve, enabling them to perform basic data analysis and graphic displays at the end of the course, as well as giving a platform from which they can deepen their R knowledge later on if necessary. Participants will also learn how to make dynamic reports, making their analysis transparent and reproducible.



Basic Oncology

June 22 - 26 -> Onsite and online

This 5-day 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.



How to write research papers

September 17 - 24 -> ONLINE

This course was designed to help to develop effective academic writing skills. We reviewed the principles of effective writing, examples of good and bad writing and tips for making the writing process easier.

PhD candidates worked on improving academic writing skills through studying theory, performing analysis of published texts, and working on exercises. Moreover, they worked on writing, or revising, their own text, while receiving peer feedback and expert coaching.



Medical statistics with R
October 5 - 9 -> ONLINE

In this course an introduction to basic statistical methods useful for biomedical data analysis was given. Concepts were taught in an intuitive manner, alternating between short lectures and practicals. This allowed for plenty of interaction and illustration with examples of practical interest. Participants who aimed to use more complex methods could use the concepts and skills learned during the course as basis, as the vast majority of statistical methods are implemented in R.



Holy Sh*T Show
October 29

What will I do after my PhD? What if I don't want an academic career? What if I make the wrong career choice? How do I find a career that suits me? Whether you're at the start of your career or a seasoned professional, we all ask ourselves what we really, really want. In this age of technology and wealth, we are overwhelmed by choices and with the rapid changes due to innovation, planning a career and life ahead becomes difficult. On top, shifting our standards towards happiness and purpose makes it all the harder to find the ideal job.

To prevent PhD candidates from getting lost in life, 3310 - School for Millennials and Vitamine Z joined their forces with their "Holy Sh*t Show -". With practical tools, wit and mostly with love, PhD candidates were guided in your quest to your future by questioning your fears, tackling indecisiveness and embracing the unknown. After all, nobody wants to wake up one day feeling "Holy sh*t, where did my life go?!".

Ongoing
Amsterdam Advanced Cytometry
October 30th -> ONLINE

This comprehensive course covered the fundamentals of flow cytometry analysis and sorting, as well as mass cytometry in a lecture format supplemented by practical lab and data analysis sessions. The course was designed to gain in depth knowledge on general technical aspects of the different types of cytometers available and how the different components and their configuration influence data acquisition.



In the footsteps of Antoni van Leeuwenhoek – Basic Microscopy
November 2 - 6 -> ONLINE

This course covered the application of a range of imaging possibilities at Amsterdam UMC and NKI-AVL. They were presented in lectures, discussions and hands-on demonstrations. The individual research projects of the attending participants were discussed, allowing exchange of ideas with fellow participants and microscopy experts and operators. Topics covered included: basic principles, specimen preparation and staining methods, quantitative analysis, electron microscopy.



How to write research papers
November 10 - 17 -> ONLINE

This course was designed to help to develop effective academic writing skills. We reviewed the principles of effective writing, examples of good and bad writing and tips for making the writing process easier. PhD candidates worked on improving academic writing skills through studying theory, performing analysis of published texts, and working on exercises. Moreover, they worked on writing, or revising, their own text, while receiving peer feedback and expert coaching.

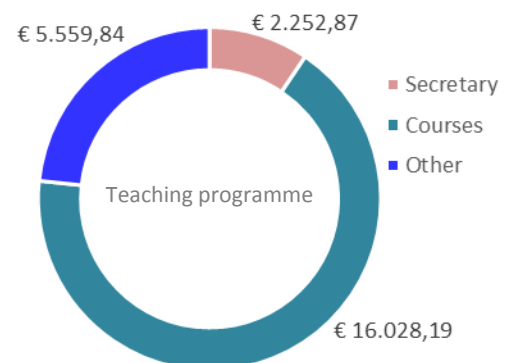


Indesign thesis printing
December 1 - 15 -> ONLINE

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

The annual costs of the teaching programme and administrative costs are financed by the participating institutes.

Administrative support:
NKI-AVL: 0.80FTE administration
VUmc: 1.05FTE coordination & administration



Publications

A total number of [104 theses](#) were defended throughout 2020 and over [1800 peer reviewed papers](#) on oncology were published by AmsterdamUMC en/or NKI-AVL researchers. Five selected papers published by the OOA PhD students:

Anja van der Hout et al. Role of eHealth application Oncokompas in supporting self-management of symptoms and health-related quality of life in cancer survivors: a randomised, controlled trial. *The Lancet Oncology*, 2020; 21(1):80-94.

Bente Benedict, Janne van Schie et al. WAPL-Dependent Repair of Damaged DNA Replication Forks Underlies Oncogene-Induced Loss of Sister Chromatid Cohesion. *Developmental Cell*, 2020;52:683-698.

Bram Priem et al. Trained Immunity-Promoting Nanobiologic Therapy Suppresses Tumor Growth and Potentiates Checkpoint Inhibition. *Cell*, 2020;183(3):786-801.

Charlotte Stroes et al. Phase II Feasibility and Biomarker Study of Neoadjuvant Trastuzumab and Pertuzumab With Chemoradiotherapy for Resectable Human Epidermal Growth Factor Receptor 2-Positive Esophageal Adenocarcinoma: TRAP Study. *Journal of clinical oncology*, 2020;38(5):462-471.

Myriam Chalabi, Lorenzo Fanchi, Krijn Dijkstra et al. Neoadjuvant immunotherapy leads to pathological responses in MMR-proficient and MMR-deficient early-stage colon cancers. *Nat Med* 2020;26:566-76.

Studie naar injectie met stukje DNA tegen terugkeer melanoom

Fijn Nieuws 14 juli 2020 18:36 | Geüpdatet 10 juli 2020 07:33



Plasma's van een melanoom is een rijk reservoir, dat kan in geïnjecteerd stukje DNA in das 2 submeer succesvolle aan de toekomst

Bas Koster: Immunotherapie succesvol bij huidkanker

DOOP Redactie MedicalFacts/ Janine Buijding 27 oktober 2020



Koster heeft onderzoek gedaan naar immunotherapie bij patiënten met huidkanker. Bij deze

OOA PhD students in the national media

Regularly, the media pays attention to research carried out by OOA-affiliated faculty, staff and PhD students. Articles and interviews appeared in newspapers like NRC, Het Parool, Trouw, AD, de Volkskrant and Leidsch Dagblad, online tools like NOS, Nu.nl, RTLnieuws, computable.nl or wetenschap.nu. Also radio and TV programs like NOS journaal, 5 uur live, DWDD, nieuwsuur and to pdokters payed attention to research findings. Highlighs of OOA PhD students in the media in 2020 included:

Jessica Notohardjo, Reformatorisch Dagblad, May

Bas Koster, MedicalFacts, October

Lotte Bruens, de Volkskrant, November

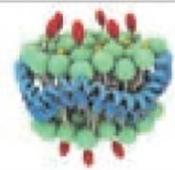
Willem Mulder/Bram Priem, NRC, November

INGICHT OP RIJEN FOUTE CELLEN Ingekleurde darmcellen geven inzicht in het ontstaan van kanker

Ellen de Visser 6 november 2020, 13:00



WET Wetenschap



Geprikkelde afweer tegen tumor

De afweer van het lichaam tegen kanker wordt vaak onderdrukt door de tumor. Dit kan worden tegengaat door de afweer te prikkelen. Dit is de bedoeling van de nieuwe therapieën die worden ontwikkeld.

Onderzoekschool Oncologie Amsterdam Annual Report 2020

Text and design

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