

Assessment committee report

Site visit 3 – 5 March 2024

20/05/2024

Review committee Amsterdam institute for Infection and Immunity

Stella Koppel PhD, Secretary.
Cornelis Melief MD, PhD, Chairman.

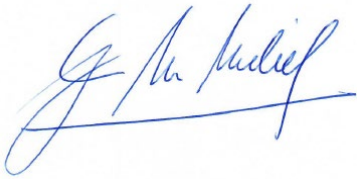
Table of contents

Introduction.....	3
Procedure	4
Scope of the review	4
Review committee members	5
Evaluation of the Amsterdam institute for Infection and Immunity	5
a) Brief description of the research unit's aims and strategy.....	5
b) Qualitative evaluation and recommendations.....	10
Additional questions	13
Specific recommendations for the next six years.....	14
Recommendations	14
Summary of the conclusions & recommendations.....	18
Compulsory appendices:	20
1. Site visit programme	20
2. Quantitative data on All's composition and funding, as described in Appendix 7	21

Introduction

On March 4 and 5 2024 we had the privilege as the external review committee to evaluate the past performance (2017-2023) and plans for the future of the Amsterdam Institute for Infection and Immunity (AII). The Institute at the end of 2023 underwent a transformation from an institute with three pillars (cancer immunology, infectious diseases and inflammatory diseases) to a new structure with two programs, immunology and infectious diseases. The new structure is expected to create much greater integration, visibility, sense of belonging and collaboration between these two major disciplines. The sheer size and quality of AII is formidable, and the volume of people engaging in high quality fundamental research, epidemiology, advanced medical care and clinical research as well as in education of PhD students and medical doctors specializing in these fields is awe-inspiring. In the future we expect the new structure to thrive, more specifically if forces are bundled into one or two larger projects in which AII has outstanding opportunities to gain further momentum and international excellence. We strongly encourage AII to make such strategic choices. Our additional recommendations are intended to further strengthen AII. We thank the AII leadership and members for two exciting days, in which your great hospitality and “Open Science” atmosphere facilitated inspiring and productive discussions. This report is the result of these mutual interactions. We wish the revamped AII Institute the tremendous success that it deserves in the coming years.

On behalf of the review committee



Em. Professor Cornelis JM Melief

Procedure

Scope of the review

The international assessment committee for the evaluation of the Amsterdam institute for Infection and Immunity was appointed by the executive board of the University of Amsterdam in 2023. On 19 January 2024 the international assessment committee received the self-evaluation document together with the program of the site visit.

The international assessment committee assesses the self-evaluation with the help of a preliminary findings form that was provided by the secretary of the committee. The international assessment committee visited the Amsterdam institute for Infection and Immunity on Monday March 4th and Tuesday March 5th at both locations of the Amsterdam UMC.

The assessment is executed in alignment with the Strategy Evaluation Protocol 2021-2027 (SEP). This protocol has been defined by the three main Dutch organizations responsible for publicly funded research – the Association of Universities in the Netherlands (UNL), the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Dutch Research Council (NWO).

The international review committee was asked to perform a research assessment of the Amsterdam institute for Infection and Immunity concerning the last six years as well as the future of the institute. Specifically, the committee was asked to evaluate the performance of the institute on the main assessment criteria and offer its written conclusions as well as recommendations based on considerations and arguments.

The main assessment criteria are:

- 1. Research quality**
- 2. Societal relevance**
- 3. Viability of the institute.**

During the evaluation of these criteria, the assessment committee was asked to include four specific aspects that are becoming increasingly important in the current scientific context and help to assess the past as well as future quality of the research unit.

These aspects are as follows:

- 1. Open Science: availability of research output, reuse of data, involvement of societal stakeholders;**
- 2. PhD Policy and Training: supervision and instruction of PhD candidates;**
- 3. Academic Culture: openness, (social) safety and inclusivity; and research integrity;**
- 4. Human Resources Policy: diversity and talent management.**

In addition to these criteria specified in the Strategy Evaluation Protocol, the board requested the committee to pay attention to the following additional questions as well as to offer its assessment and recommendations:

- The identity and visibility of the individual programs: Cancer Immunology, Infectious Diseases and Inflammatory Diseases.**
- The collaboration between the different programs - enhancing the science by cross-disciplinary collaborations.**

After the site visit, the secretary, together with the chair of the committee generated a draft report detailing its findings and its recommendations for the future and asked the other committee members to give input on the draft report, in general but also on their specific area of expertise.

Review committee members

The review committee consists of the following members:

- Prof. dr. C.J.M. Melief, ISA Therapeutics (Chair)
- Prof. dr. R.A.M. Fouchier, Erasmus University Medical Center
- Prof. dr. H. Hammad, University Gent
- Prof. dr. L. Zitvogel, University of Paris-Saclay, Gustave Roussy
- Prof. dr. S. Kobold, Ludwig-Maximilians-Universität München
- P. Pennings MSc. and P. Borsje MSc, National Association ReumaZorg Nederland
- A. Kastelein, PhD candidate, Leiden University Medical Center

The committee was supported by Dr. E.A. Koppel, who acted as secretary to the committee.

Evaluation of the Amsterdam institute for Infection and Immunity

a) Brief description of the research unit's aims and strategy

In 2017 the Amsterdam institute for Infection and Immunity was founded and organized into three research programs: Inflammatory Diseases, Infectious Diseases and Cancer Immunology.

The mission of the Amsterdam institute for Infection and Immunity was to develop knowledge and expertise for deciphering microbiological and immunological principles and develop innovative therapies to prevent, diagnose, and treat infectious diseases, inflammatory diseases and cancer.

The institute aimed at identification of common and novel immune correlates and pathways to design innovative treatment regimens. To achieve this mission, the Amsterdam institute for Infection and Immunity (All) stimulated high-level multidisciplinary basic and (pre)clinical research on infectious diseases, immunity during infection, auto-inflammation and cancer.

The institute brings together researchers from both locations of the Amsterdam UMC, but also unites researchers from strategic partners Sanquin (blood bank), the prominent rheumatology & rehabilitation outpatient clinic Reade and the Public Health Service of Amsterdam (GGD). With as common denominator the longstanding tradition of engaging in clinical, epidemiological, fundamental and translational research in the field of infection and immunity.

Original aims All 2017-2023:

- Identification and nurturing of junior high potentials by providing research talent funding and a mentoring program to support and mentor young talented researchers.
- An educational track for researchers (PhD candidates and postdocs)
 - o Develop innovative Infection & Immunity graduate tracks for Doctoral School

o Postdoctoral (clinical) fellow mentoring and training programs

- Integration of research initiatives by stimulating collaborations within different research groups, organizing symposia for the whole institute as well as for the three different programs, inviting internationally acclaimed speakers, organizing PhD student and postdoc retreats and social events.
- Support and improvement of the quality of core-facilities to enhance clinical and translational research (clinical support unit, biobanking and system bioinformatics facility, animal research facilities, imaging center, microscopy and flow cytometry facilities).
- Branding of the Amsterdam institute for Infection and Immunity as an internationally acclaimed institute by promoting groundbreaking research of its best fundamental and (pre-)clinical researchers, through providing financial support for travel to international conferences and research laboratories by talented young researchers as well as established researchers.
- Financial funding structure by forming a Foundation and involve patient groups, industrial partners and different funding agencies.

Original measurable and specific aims 2017-2023:

- Organize Annual Amsterdam institute for Infection and Immunity Symposia with invited (inter)national speakers.
- Organize meetings within each of the three research programs.
- Set-up the Research Talent Funding and Mentoring program.
- Organize a yearly PhD student retreat.
- Implement work visit grant for short-term (1-4 months) international research activities.
- Implement travel grant to stimulate participation of young researchers in international meetings.
- Implement postdoc stipend to support young postdoctoral talent at a crucial stage in their career.
- Set up training track for postdoctoral researchers.
- Develop specialized educational graduate tracks for PhD students within Doctoral School.
- Form the All PhD student network and the All postdoc network with annual retreat.

Original aims All 2017-2020:

- Focus on highly innovative research and interaction between the research groups within (chronic) inflammatory diseases, infectious diseases and cancer immunology.
- Attract and appoint excellent senior group leaders/professorships
- Explore new funding routes.

The institute aimed to unite scientists within the infection and immunity field to cover the full spectrum from fundamental to clinical research with a special emphasis on establishing new connections between the various diseases as the underlying cellular and molecular aspects of the diseases are often shared.

All's most important objective was to establish an inspiring institute on Infection and Immunity for their researchers, fostering talent and supporting and stimulating innovative research.

To this end, All created unique possibilities for research through collaborations, exchange of knowledge and techniques and the involvement of unique patient cohorts and stakeholders (both patients and physicians). To foster research to the highest academic standards, the institute stimulated collaborations transcending the different fields, empowered young talented researchers and supported state-of-the art facilities.

By developing novel educational programs for Medicine and Medical Sciences as well as PhD programs, the institute aimed to attract both national and international researchers and aimed to provide

a fertile environment for talented researchers to excel in the field of infection and immunity with competences to build bridges between fundamental, translational and clinical research.

All established specific committees responsible for institute-wide activities, such as the mentoring program, seminars, valorization, communication and grants. These committees involved program leaders, senior and junior researchers and policy officers, by which All ensured a broad institute-wide perspective. In addition, All has three committees representing the PhD candidates, postdocs and technicians, respectively.

In the wake of the COVID-19 pandemic, the institute realized that the three-program structure no longer aligned with the ambitions to invigorate innovative research in the field of Immunology and Infectious Diseases. In response and following extensive discussions with various stakeholders, the institute management decided to **change the organizational structure**. The institute is currently revised to have two core programs, namely “Infectious Diseases” and “Immunology”. The two programs will both have a matrix organization with overarching themes and more specific topics, providing opportunities for more engagement, visibility and synergy of the respective research communities. **The institute has been rebranded as the Amsterdam UMC Institute for Immunology & Infectious Diseases (AI&I).**

Additionally, a new business developer was appointed (Q3 2023) and with All represented in the Amsterdam Valorization Board, All will focus more on valorization and aims to generate additional All budget to eventually cover business development costs from fourth stream funds. This aligns with the policy of the Amsterdam UMC, which has prioritized business development as a primary task.

Moreover, two new strategic partners were added to the institute: Amsterdam Institute for Global Health and Development (AIGHD) and “Stichting HIV Monitoring” (SHM).

The transition from three to two programs, that will take place in 2024, signals the strategy of All to focus on both research programs individually, as well as embodies the focus on inclusiveness, while encouraging interdisciplinary collaboration, aiming to enhance involvement of their scientific communities and facilitate pioneering scientific research.

By emphasizing a positive and stimulating culture of interdisciplinary collaboration, innovation and academic excellence, these reforms aim to empower researchers, recognize the contributions of all institute members, create visibility of both the Immunology and the Infectious Diseases scientific communities and optimize the impact in the medical and scientific community. The proposed structure is designed to align with the needs of the scientific communities involved as well as global best practices, ensuring the institute remains at the forefront of healthcare research and education.

In addition, the new structure aims to foster a sense of belonging within the research community of Amsterdam UMC and the individual programs to provide focal points for collaboration with the aim to create a more inclusive scientific community. The strategy of the new structure is that involvement of clinicians to a greater extent will overall increase societal impact of the institute. In addition, promoting synergy between the Immunology and Infectious Diseases programs, and the strategic partners, will maximize the institute's potential and advance science in these domains.

The Amsterdam UMC Institute for Immunology & Infectious Diseases (All) is dedicated to unraveling the complexities of the immune system in disease as well as healthy states including infectious diseases.

Mission: the mission of the All is to foster groundbreaking research, stimulate innovation, and translate discoveries into tangible benefits for human health. The mission will be reached by empowering and leveraging the specific strengths of the two scientific programs, Immunology and Infectious Diseases, while also fostering synergy between these programs and connecting with the strategic partners and other institutes.

Vision: the vision of the All is a world where science transcends boundaries, where infectious diseases no longer pose insurmountable challenges, and where in-depth immunological insights in inflammatory processes, autoimmune diseases and cancer lead to new horizons through novel clinical interventions.

All aspires to be a globally recognized hub of pioneering research and innovation, driving science forward and enhancing human well-being and health.

Core values

Pioneering Research: drive groundbreaking research initiatives.

Passion & Creativity: approach the work with passion and creativity.

Trust, Integrity & Transparency: uphold the highest ethical and scientific standards.

Empower Young Scientists: support and nurture the next generation of researchers.

Diversity: value diversity and inclusion.

Collaboration: encourage interdisciplinary collaboration and teamwork.

Immunology program

The Immunology program delves deep into the intricacies of the immune system, thriving on an insatiable curiosity to understand immune responses and the immunological basis of health and disease. With the Immunology program, All strives to be pioneers in immunological research, driving innovation and fostering scientific excellence.

Aim: By connecting (pre)clinical researchers and clinicians the aim is to understand the intricate workings of the immune system, and leverage this knowledge to combat immune-mediated disorders, from cancer, allergies to autoimmune diseases.

At the core of the Immunology program are four main themes that define the focus of the Immunology program, namely I) Host Defense, II) Diagnostics, Imaging and Biomarkers, III) Innovative therapeutic interventions, and IV) Prevention. These themes are covered as a matrix structure in the seven topics, 1) Cancer Immunology, 2) Autoimmunity and Inflammatory Diseases, 3) Gastrointestinal Immunology, 4) Cardiovascular Immunology, 5) Neuro-Immunology, 6) Allergies, and 7) Immunodeficiencies.

The Immunology program aims to advance the understanding of the immune system's crucial role in health, its detrimental role during disease, and the potential to modulate the immune system to turn-around immune-mediated disorders and fight cancer.

Infectious Diseases program

The All Infectious Diseases program strives to be an inspiring research community that empowers scientists to integrate fundamental, clinical, and public health research in infectious diseases.

Aim: With a commitment to excellence in patient care, cutting-edge research, and policy influence, the aim is to significantly reduce the impact of infectious diseases on individual and population health, both locally and globally.

The four overarching themes and seven specific topics of the Infectious Diseases program are strategically integrated and designed to enhance research focus, leverage strengths, promote interdisciplinary collaboration and synergy, as well as increase internal and external visibility. The overarching themes are I) host-microbe interaction, II) Epidemiology, Public & Global Health, III) Novel diagnostics & Therapeutic Interventions, and IV) Innovative vaccines and other preventive strategies. Each of the themes link to seven distinct topics, which include 1) Sepsis & Complex Bacterial Infections, 2) Respiratory Infections, 3) Neurological Infections, 4) Vector-Borne & Tropical Infections, 5) HIV, Viral Hepatitis & STI's, 6) Antimicrobial Resistance, and finally 7) Post-Acute Infection Syndromes. This collaborative framework empowers the Infectious Diseases program to have a far-reaching impact and achieve its goals of reducing the burden of infectious diseases while fostering a dynamic research community.

With two distinct programs, All aims to provide a clear research focus and to encourage interdisciplinary collaboration. In addition, in the coming years, All envisions catalyzing research innovation and impact in multiple ways:

1. Increasing societal and scientific impact
2. Plug and play research
3. Stimulating private-public partnerships
4. Fostering research talent
5. Increasing Institute budget

To increase societal and scientific impact All will for example focus on controlled human infection and challenge models. PI's within All are already at the forefront of controlled human infection models (CHIM) and challenge models, encompassing a wide range of agents such as LPS, house dust mite, but also infectious agents such as the Lyme disease agent, HCV, malaria and rhinoviruses, among others. This expertise will be complemented by robust national and international collaborations with institutes and universities, known for their significant experience in these domains, including the recently awarded ZonMw-sponsored national InFECT-NL consortium, which will facilitate access to CHIM models for PI's within All. In addition, All envisions to also facilitate Infectious Diseases-specific research by supporting the establishment of a dedicated Infectious Diseases clinical trial unit. Finally, together with the Cancer Center Amsterdam (CCA) the Immuno Therapy Center (ITC) initiative was launched, a unit for immune monitoring, representing an initiative from the Immunology program.

The directors of the eight research institutes represent the research community in the Amsterdam UMC Research Board (ARB). This advisory body plays a pivotal role in providing research-related counsel to Amsterdam UMC's executive board. Each institute has an annual budget of € 554,000 to stimulate innovation. As substantial core funding is a key factor for successful research institutes, All has initiated discussions with the ARB to discuss the possibilities to increase the budget, also accounting for inflation, indexation of salaries and increasing financial burdens, as well as to make sure the budget matches the refueled far-reaching ambitions of one of the largest research institutes

within Amsterdam UMC. In parallel, the appointed Business Developer could generate additional budget.

b) Qualitative evaluation and recommendations

The qualitative evaluation and recommendations are performed based on the following criteria:

- Research quality;
- Societal relevance;
- Viability.

In its evaluation of these three criteria, the committee should take care to include the following specific aspects in addition to the usual criteria that the assessment committee may deem relevant, as described in the SEP protocol:

- Open Science;
- PhD Policy and Training;
- Academic Culture;
- Human Resources Policy.

The assessment committee evaluates the overall quality of the All institute as good to very good.

The decision by Amsterdam UMC to create All was very good and is not disputed. Based on the self-evaluation and the site visit, the committee is convinced that the institute has a tremendous intrinsic power to be successful. However, the institute does need to more clearly define the targets that it aims at and how it measures success. The committee noticed that the current position of the institute is not an easy one within the organization of the Amsterdam UMC. The institute has to deal with the power and independent responsibilities that departments, PI's and the doctorate school have in the organizational structure of the Amsterdam UMC, while the institute itself has a small annual budget and is dependent on departments and PI's and the Amsterdam UMC RvB for additional budget, information, commitment and support to reach their objectives. The committee is of the opinion that the institute should guide the departments and PIs involved in the use of common infrastructures such as the core facilities and the animal facility and that the institute should create **additional opportunities** such as **large inter-collaborative projects** and define **new and innovative themes** that are currently not covered.

In addition, the committee is positive about the recent strategic changes that have been announced to better include researchers on infectious diseases in the institute. The committee perceives this as proof that the leadership of the institute is committed to make the institute a continued success as they did not wait for this external review to change their strategy and structure. The committee recommends to internally **evaluate this major change in two-three years** to benchmark if indeed the infectious diseases community and clinicians are more involved and represented in the institute and correct if and where necessary. Also, for this evaluation it will be key to define targets and measures of success in advance.

The assessment committee evaluates the Research quality of the All institute as very good.

The committee was convinced by the output depicted in the self-evaluation and the site visit that the institute is a conglomerate of outstanding researchers and educators in the field of immunology and infectious diseases. This was exemplified by the success of the presented HCV project and the significant breakthrough in the treatment of RSV infections. However, the contributions and inclusion

and participation of individual researchers or research teams are not visible. Moreover, the committee is of the opinion that there is room for improvement regarding strategic choices and synergy. The added value of potential collaborative projects is currently not visible. However, excellence can be reached within the institute if more interactions within All, perhaps via the upcoming Immuno Therapy Center, are realized. The committee encourages the institute to foster the excellence present within the institute departments and PIs into visible, measurable and cohesive plans for the future.

The assessment committee evaluates the Societal relevance of the All institute as very good.

The committee was impressed by the conducted COVID-19 research across the different disciplines and the involvement of All researchers in the Outbreak Management Team and activities to inform the public. Overall, the institute has potential for substantial societal impact. All can also build on past exemplary work on the epidemiology of, and research on, HIV by the consortium of the GGD, Sanquin and the AMC virology department, which resulted in one of the best characterized HIV study cohorts worldwide. The committee recommends that the institute stands on the shoulders of these great accomplishments to continue to distinguish itself in the future. The committee is of the opinion that the long-covid and post infection fatigue syndromes are topics where the institute could excel in societal relevance. In addition, there is room for improvement with regards to the involvement of the patient perspective in new research initiatives. The committee recommends that best patient participation practices in research from the All rheumatology field with a very active patient organization are shared and implemented within the other topics of research of the All institute where possible, to increase societal relevance.

The assessment committee evaluates the Viability of the All institute as good.

As already stated, the committee is positive about the new strategy to strengthen the institute and better include the departments and researchers and clinicians working on infectious diseases. However, the committee concludes that the institute depends on the commitment of the departments, PI's and other stakeholders for this strategic change to be a success. Hence the committee is reluctant to assess this criterium at such an early time point and advises to evaluate the new strategy and viability of the All institute in three years.

The assessment committee was instructed by the evaluation protocol to take into account the following aspects:

1. Open Science: availability of research output, reuse of data, involvement of societal stakeholders;

The committee was informed that Open Science is regulated centrally at Amsterdam UMC. Therefore, the role of All is limited with regards to this theme. Nevertheless, the self-assessment clearly showed with open access papers, open data and some societal activities that Open Science was implemented well within the institute. However, the committee is of the opinion that the involvement of patient organizations in the All research cycle (from research application to dissemination and implementation of findings in practice) should be stimulated by the institute. Best practices of patient-participation in research from the All rheumatology field should be implemented with a very active patient organization to increase societal relevance.

2. PhD Policy and Training: supervision and instruction of PhD candidates;

Similar to Open Science, PhD policy and training is regulated centrally at Amsterdam UMC and is provided by the Doctorate School. The committee was informed that All is involved in the training within the field of infection and immunity. However, this entailed that high-level courses, such as the Advanced Immunology Course and the Infectious Diseases Course, organized by researchers within

the institute for many years, now need to be paid from the scarce budget of the institute, whereas previously they would be financed by the Doctoral School. **The committee urges the ARB to reconsider the decision that the Doctoral School only funds “generic” courses applicable to all PhD's of Amsterdam UMC.** In the opinion of the committee, immunology is of such broad relevance to life science that this course will benefit a large proportion of PhD candidates and should thus be regarded as a core course. This also goes for courses such as epidemiology, biostatistics and others, which the committee understood are not regarded as “generic” anymore.

The committee is of the opinion that training and courses should be provided to broaden the horizon of PhD candidates (and post-docs) and inform them about the plethora of career options outside academic research. The committee wants the institute to raise awareness among PhD candidates (and post-docs) about the options they have to make a positive choice. For example, by offering courses, inviting speakers from industry at All symposia and by arranging mentors from industry. The committee was informed that these types of courses are available and are provided by the Doctoral School and the post-doc network of the Amsterdam UMC. In addition, similar workshops are provided during the PhD retreat and the All post-doc committee also offers complementary workshops. While these workshops seem much appreciated by the attendees, they are not attended by the full community – PhD candidates from the clinic, the GGD and other more distant groups are often missing at these events. The committee applauds the mentoring program launched by All that was adopted by Amsterdam UMC and which is now implemented across all research institutions of the Amsterdam UMC. Here, PhD candidates (but also post-docs and PI) have the opportunity to be matched with a mentor. This is of particular utility should there be problems with the supervision of the PhD candidates or the relation between the PhD candidates and supervisor. The committee concludes that the activities of All regarding PhD training and supervision are highly supportive of the high research quality of the institute. There is, however, little information about how PhD candidates and postdocs are doing within the institute and after they leave All (alumni program, see below).

3. Academic Culture: openness, (social) safety and inclusivity; and research integrity;

Amsterdam UMC takes measures to ensure openness, (social) safety, inclusivity and research integrity. The office of the ombudsman is responsible for the social safety policy and the complaints procedure. This office aims to improve social safety and to combat unethical and/or undesirable behavior, to increase ownership and responsibility of employees and managers regarding safety signals and to promote an open reporting culture. Besides these central measures, All has committees representing PhD candidates and postdocs. These have been involved in the institute from the start but came to real fruition when overarching committees were started that included young scientists (PhD candidates and postdocs) in every committee. In addition, All's annual symposium is always organized by senior and junior researchers and recently All has included parallel sessions to also allow junior scientist to present and promote their research. However, the institute realized early on that the institute is more than PhD candidates and postdocs and decided to also include technicians in meetings and funding schemes.

The institute could have dedicated more time to the important topic of social safety during the site visit. The committee acknowledges that the mentoring program initiated by All is highly valuable to stimulate openness and to improve social safety. Overall, the committee recommends that All should increase its efforts to stimulate social safety, inclusiveness and research integrity. As the institute aims to increase commitment by the researchers involved and aims for a higher number of attendees to the meetings they organize, the committee suggests to also pay attention to the high stress-levels experienced by the PhD candidates as this is one of the factors involved that is limiting involvement and attendance by PhD candidates. In addition, the committee notes that including technicians, PhD candidates and postdocs in committees is a good first step. However, additional

measures are required to make sure these (young) participants also really have and get a voice in these committees as well as in decision making at an institute level.

4. Human Resources Policy: diversity and talent management.

This theme is also addressed centrally by the Amsterdam UMC which is developing an active diversity and inclusion policy. In addition, Amsterdam UMC has a Committee for Talent and Appointments (CTA) that has been assigned by the Executive Board to shape the talent policies of scientific staff and to provide advice to the Deans of the Medical Faculties of the VU and the UvA on the appointment of mid-career and top-level academics (i.e. Associate Professors and Professors). However, the fostering of research talent is also one of the most important objectives of All and the institute has put in place multiple stimulation grants and the aforementioned mentoring program to accomplish this. Overall, the committee sees a limited role for the institute with regards to human resources policy which is centrally arranged. Nevertheless, as also indicated in the recommendations below, the institute should improve the social position of technicians. The committee learned that most technicians in Amsterdam UMC and All are appointed on a temporary basis for a maximum of 4 years. This leads to a loss of talent that could be avoided by establishing more coordination in the appointment of excellent technicians. **All and Amsterdam UMC should consider to implement a system where these technicians could be offered a permanent position based on the knowledge that they always succeed in achieving a minimum number of outside-funded projects.** These technicians could then switch from one All project to the next, without losing their permanent position. In addition, for All to obtain broad talent fostering, the committee recommends to not emphasize an academic career as the most or only desirable outcome of PhD and postdoc appointments, but to offer courses for general employment preparedness, including speakers from industry. Moreover, the institute could play a more active role in the support for postdocs, both in terms of education as well as providing guidance towards next career steps, either within or outside academia. By fostering the careers of postdocs towards industry, All can obtain a strong network position with industry beneficial for both the institute and industry for example when arranging short internships for PhD's and by obtaining new contract research assignments.

Additional questions

In addition to these criteria and themes specified in the Strategy Evaluation Protocol, the board requested the committee to pay attention to the following additional questions as well as to offer its assessment and recommendations:

- **The identity and visibility of the individual programs: Cancer Immunology, Infectious Diseases and Inflammatory Diseases.**
- **The collaboration between the different programs - enhancing the science by cross-disciplinary collaborations.**

With regards to the identity and visibility of the individual programs, the committee is of the opinion that with the choice to focus on two instead of three programs the institute can add more focus and create better visibility for the two individual programs. Also, during the site-visit the low visibility of the Infectious Diseases program and the researchers involved was in stark contrast with the dominant Immunology program and related researchers. This committee understands that this has to do with the history of the institute with a focus on basic immunology. With the new structure and the appointment of an Infectious Diseases director, the institute is in the position to improve the visibility of

the Infectious Diseases program and to increase the sense of belonging of the researchers involved in this topic.

With regards to the collaboration between the different programs and cross-disciplinary collaborations, the committee notes that the institute should benefit from the added value of potential collaborative projects and should focus on the enhancement of synergy. Once the Infectious Diseases program becomes more visible with researchers with a sense of belonging, there can be equal and fruitful collaborations between the two programs. The committee is of the opinion that the institute needs to continuously promote this interaction and provide up to date information about all All researchers to find each other. This should not be left to the goodwill of PI's. The committee appreciates the efforts the institute has made to provide collaborative grants to stimulate new collaborations within All. The committee agrees with the directors that the combination of basic scientists and the high-quality cohort studies created and collected within All will provide excellent opportunities for collaboration. Also, clinical specialists (infectious diseases) can be linked to immunologists to capitalize on "from bed to bedside" research and to integrate the science of the infection with the immunology. In addition, research on vaccines within the infectious diseases program cannot do without the input from the immunology program. Overall, the committee sees ample research topics with potential for synergy between the two programs of All.

Specific recommendations for the next six years

The Amsterdam institute for Infection and Immunity (All) in 2023 has decided to transit from an institute with 3 programs (Cancer Immunology, Infectious diseases, Inflammatory diseases) to a structure with two programs (Immunology and Infectious Diseases). This new structure strives to attract more stakeholders from all areas of infectious disease and immunology activities ongoing at Amsterdam UMC and the strategic partners. This can have the advantage to create better ownership among members across the entire spectrum of infectious disease activities, including non-immunological aspects. In addition, it is an advantage that the new institute will cover the entire range of activities in immunology from fundamental to applied and clinical research.

The committee notes that, while it applauds the zest with which this change is advocated, the future will show whether the transition will be a success. The committee makes the following recommendations to help to maximize chances for success in the next 6 years:

Recommendations

1. Governance

- Try to create more cohesion and collaboration between the two major disciplines. All should aim at achieving a strong sense of identity and common purpose, eventually resulting in a sense of pride and belonging
- The committee advises to foster this by formulating maximally two to three interactive themes that create increased collaboration between the two programs and attract increased external and internal funding opportunities and result in enhanced national and international visibility. The institute should include the departments in the choice for these unique themes to foster (financial) commitment. A great example from the past is the high impact research involving the internationally recognized cohorts of HIV-infected persons in an efficient collaboration between AMC, Sanquin and GGD. All is still strong in this area. Other potential, but not necessarily optimal, topics in which All seems well suited to strengthen the cohesion and improve its excellence are:

- Prophylaxis and interceptive medicine against infection to restrain transition between inflammation and infectious disease (with vaccines as a major arm)
- Post-infection fatigue, including post-covid syndromes
- Prospective analysis of parameters of disease development, of successful disease clearance or of disease chronicity, disease progression and post-infection sequelae

The chosen topics should be of added value to Amsterdam UMC departments and provide the institute the unique position to promote these exciting topics for which interdepartmental collaboration is required. To this end, the SAB is happy to follow up and guide such priorities, once made by All, within the next 3 years and beyond.

- Create more sense of belonging of infectious disease departments. Create more mutual appreciation by immunologists and microbiologists of how the biology of the microbes interacts with the immune system and thereby affects disease initiation and mitigation. Concentrate on the infectious agents in which All expertise is most competitive
- Actively involve clinicians and epidemiologists, including those of the GGD; make sure there is a link with more basic researchers and create win/win situations such as access to unique samples for basic research and involvement of clinicians in the design of new research projects and by creating an “All analysis pipeline” for the cohort studies they execute.
- Promote teaming up with:
 - Internal medicine departments
 - Public health department and the Amsterdam Public Health institute
 - Netherlands Cancer Institute/ Antoni van Leeuwenhoek ziekenhuis with regard to cancer immunology and immunotherapy. The latter interaction also requires regular consultation with the Cancer Center Amsterdam (CCA) with which there has been significant collaboration since the establishment of this institute given the shared theme of Cancer Immunology.
- Create ownership of the main budget holders at Amsterdam UMC, namely the PI’s and department heads, in a project-driven manner, to increase the budget of All. The committee considers the current budget as too small for the ambition to make sufficient impact on the main goals of All. Make sure the existing budget from the board of Amsterdam UMC is not only corrected for inflation but also increased by investment of all stakeholders in a limited number of meaningful transversal projects, broadly supported by the entire Amsterdam UMC organization
- To this end organize regular meetings between the deans of Amsterdam UMC, the Amsterdam research board (ARB), department heads / PI’s and All leadership to formulate a limited number of common goals. Once a common theme has been chosen, ensure that the goals of all governing bodies are aligned as this can lead to increased and beneficial investments in infrastructure, personnel and consumables.
- To reach the common goals, shared by Amsterdam UMC leadership, department heads, PI’s and All leadership, a scheme of governance is needed outside but integrated with the department hierarchy
- The limited budget of All should be spent with more focus. The committee recommends to focus on collaborative research projects and the funding of promising new ideas that, through collaboration within All could bring new, externally funded projects. By funding the preparation of a new big interdisciplinary grant All can impose that the big grant application is submitted as a deliverable.
- PhD’s, postdocs and technicians should be formally involved in decision making by the institute. While they are involved in committees, they are not represented in decision making

2. *Management of personnel and education*

- Make a list of PI’s that are committed to All and with the help of HR create a clear overview of all technicians, PhD’s and postdocs working within All. The current definition of a postdoc is unclear and should be clarified. With this information, establish and maintain a “who is who” All database,

including a portrait gallery and as part of the initiation process as a new employee of Amsterdam UMC

- The institute needs to stimulate commitment, involvement and collaboration by facilitating researchers and departments with new, interdepartmental facilities with All signature (dedicated All business developer, high throughput omics, bio-informatics). To this end, All should establish several fact-sheets stating what the institute has to offer to different target audiences: PhD's, postdocs, technicians, PI's and department heads
- PI appointments by department heads in the field of All will need consultation not only with the ARB but also with All leadership for strategic alignment
- Trace the ultimate destination of PhD's and postdocs through an alumni program, both within Amsterdam UMC and with regard to outside destinations after employment at Amsterdam UMC. When people leave for industry, they should become All's link for new grants, projects, internships, lab visits and scientific exchange
- Improve the social position of technicians. The committee learned that most technicians in Amsterdam UMC and All are appointed on a temporary basis for a maximum of 4 years. This leads to a loss of talent that could be avoided by establishing more coordination in the appointment of excellent technicians. All and Amsterdam UMC should consider to offer these technicians a permanent position based on the knowledge that the institute and Amsterdam UMC always succeed in achieving a minimum number of outside-funded projects. These technicians can then switch from one All project to the next, without losing their permanent position while the institute secures their knowledge and skills.
- The committee applauds the appointment of a new director from Infectious Diseases as another means to foster coherence and ownership identity
- The appointment of a dedicated business developer as a separate means to increase budget is interesting but as this is taking a big part of the small All budget, while PI's and departments may harvest the benefits, this should be evaluated after 2-3 years
- Make sure the advanced immunology and microbiology courses foster collaboration between the two All pillars and that they are financially supported by the Doctoral School.
- Make sure PhD retreats are attended by greater numbers of PhD candidates. This needs to be stimulated by the PI's within All. The attendance of All events and meetings could be linked to the conditions to apply for- and obtain an All grant provided that the PI's within All enable their young researchers and clinicians to attend.
- Ad hoc symposia need to be aligned with the main collaborative projects and ambitions of All
- Persons from outside Amsterdam UMC could be charged for attendance of courses organized by All, to supplement budgets.
- Abolish tenure track inequalities caused by demands from external funding organizations. Offer tenure track possibilities also for people outside VENI-VIDI-VICI and ERC schemes if such persons are highly successful and strategically important.
- Do not emphasize an academic career as the most desirable outcome of PhD and postdoc appointments, but offer courses for general employment preparedness, including speakers from industry and complementary to the courses provided by the Amsterdam UMC postdoc network and Doctoral School. It needs to be acknowledged that most persons trained within All will not stay in academia and will likely be successful elsewhere. In this way All can achieve broad talent fostering, both in and outside of academia (see also the fourth bullet of this section).
- Create a postdoc career development program of your own with high quality courses and provide career perspective. Position All as a knowledge-hub for postdocs and provide opportunities to connect with biotech companies by small internships and lab visits.
- The well-being of All personnel at all levels should be monitored regularly in consultation with HR

- Organize additional “fun” social events besides the more serious scientific events to increase informal connections and create a sense of belonging within the All. Social coherence will stimulate scientific collaborations.

3. *Patient involvement*

- Involve patients and their needs in grant applications and grant execution and consider joint grants together with patient organizations. Patient representatives can be involved in the entire research cycle (from research application to dissemination and implementation of findings in practice). By doing so, research is not done “about patients” but “with patients”. This will increase the relevance of research but also increase successful implementation of research-findings in daily practice; from bench to bedside. The evaluation commission saw an excellent example of this patient collaboration in research during the presentation of All Rheumatology research. This type of patient driven collaborative research could be shared as a best practice to stimulate more patient-collaborative research in other All fields.
- Ensure dissemination of results of relevant All projects to patients through close contact with relevant patient organizations and/or (online) patient networks, for example with a layman video or a layman factsheet about the project and its main results and consequences for daily practice. It could be helpful to have a contact list of relevant patient organizations and/or (online) patient networks per All field. This way, relevant patient organizations and networks can be updated quite easily through a mailing or newsletter about the progress - or final results of a project.
- Centralize patient involvement at All to educate (young) researchers about who they are doing research for; the people with the disease and how they can involve patient-partners effectively throughout the entire research cycle (from research application to dissemination and implementation of findings in practice). PGO Support offers training on patient involvement in research for researchers: [Advies patiëntenparticipatie bij onderzoek | PGOsupport](#)

4. *Core facilities*

- Obtain full alignment of core facilities with All goals and objectives and position the core facilities as a binding factor of the themes of the institute
- Discourage departments and individual researchers to purchase expensive equipment and associated maintenance costs outside core facilities
- Amsterdam UMC should abolish financial inequalities compared to VU for animal costs not covered by project funding
- The committee stresses that for many research questions, a fully competent immune system, as only present in a living being, cannot be replaced by reductionist systems. It is thus of paramount importance to maintain animal experimentation capacities in significant quantity and with high standards within All. Make sure that the animal facilities remain internationally competitive with respect to the capacity to carry out crucial infectious disease and immunology animal experiments at different biosafety levels of containment for 1) contamination of the animals or, 2) in the case of dangerous pathogens for human beings, contamination of All or animal house personnel. The committee applauds the technology of organoid cultures as a means to address certain questions in the area of infectious diseases and immunology. However, experiments with live animals will remain essential in addressing mode of action, efficacy and safety questions in projects dealing with pathogenesis and different vaccination and immunotherapy approaches. For the institute to be (inter)nationally competitive, an affordable and high-quality animal facility is essential

5. *General*

The committee notes that the past performance review of the years 2017-2023 reads like a catalogue of activities with an impressive volume and outstanding accomplishments, but without making

clear strategic choices of a limited number of spearhead initiatives that were prioritized for coordinated development. The new structure of All with two programs promises to allow such choices. The committee strongly support this as noted above.

- The committee recommends All leadership to formulate very precise goals and delineate maximally 2-3 interactive themes or projects as soon as possible
- The committee urges the All leadership to clearly define the targets that are aimed for which can be assessed after two to three years, again after six years and beyond, in clear and measurable milestones of success.
- The committee recommends an interim evaluation after two-three years to establish whether the new structure in two programs is viable and has generated the desired improved collaboration and improved impact, guided by the pre-set targets and measures of success.
- The institute needs to further define its role within the Amsterdam UMC. Amsterdam UMC is responsible for the Doctoral School, HR, central communication, diversity, open access, core facilities etcetera. All should define how to relate to this and clearly define All's complementary activities. The number of All committees hence can be reduced and should be in balance with the level of responsibility of All. For example, synchronize the activities of the communication committee with activities performed at central Amsterdam UMC level and target the general public (in Dutch).

Summary of the conclusions & recommendations

The Amsterdam institute for Infection and Immunity (All) has recently transited to a structure with two programs (Immunology and Infectious Diseases) and was renamed the Amsterdam Institute for Immunology & Infectious Diseases. This new structure is meant to attract more stakeholders from all areas of infectious disease and immunology at Amsterdam UMC and partners. The committee applauds the zest with which this change is advocated. The committee makes the following recommendations:

1. Governance

- Create more cohesion and collaboration between the two major disciplines.
- Create more sense of belonging of researchers from both programs and in particular infectious disease departments and concentrate on the infectious agents in which All expertise is most competitive
- Actively involve clinicians and epidemiologists and make sure there is a link with more basic researchers
- Promote teaming up with Internal medicine departments, the Public Health department, the Amsterdam Public Health institute, The Netherlands Cancer Institute/ Antoni van Leeuwenhoek hospital with regard to cancer immunology and immunotherapy.
- Create ownership of the main budget holders at Amsterdam UMC. The committee considers the current budget as too small for the ambition to make sufficient impact on the main goals of All. The limited All budget should be spent with more focus.
- Organize regular meetings between the deans of Amsterdam UMC, the Amsterdam research board (ARB), department heads / PI's and All leadership to formulate a limited number of common goals.
- A scheme of governance is needed outside the department hierarchy. Such a scheme should clarify how All leadership interacts with its investigator members, how decisions are made and programs are implemented and how success is measured.

- PhD's, postdocs and technicians should be formally involved in decision making by the institute.

2. *Management of personnel and education*

- Create a clear overview of all PI's committed to All and all All technicians, PhD's and postdocs
- The institute needs to stimulate commitment, involvement and collaboration by facilitating researchers and departments with new, interdepartmental facilities with All signature
- PI appointments by department heads in the field of All will need consultation not only with the ARB but also with All leadership for strategic alignment
- Trace the ultimate destination of PhD's and postdocs for example through an alumni program,
- Improve the social position of technicians.
- Make sure the advanced immunology and microbiology courses foster collaboration between the two All pillars and explore whether these could be financially supported by the Doctoral School.
- Ensure PhD retreats, seminars and annual meetings are attended by greater numbers of PhD candidates.
- Ad hoc symposia need to be aligned with the main collaborative projects and ambitions of All
- Do not emphasize an academic career as the most desirable outcome of PhD and postdoc appointments,
- Create a postdoc career development program with high quality courses and provide career perspective.
- The well-being of All personnel at all levels should be monitored regularly in consultation with HR

3. *Patient involvement*

- Involve patients and their needs in grant applications and grant execution
- Ensure dissemination of results of relevant All projects to patients
- Centralize patient involvement at All to educate (young) researchers

4. *Core facilities*

- Obtain full alignment of core facilities with All goals and objectives and position the core facilities as a binding factor of the themes of the institute
- The committee stresses that for many research questions, a fully competent immune system, as only present in a living being, cannot be replaced by reductionist systems. It is thus of paramount importance to maintain animal experimentation capacities in significant quantity and with high standards within All.

5. *General*

- The committee recommends All leadership to formulate very precise goals and delineate maximally 2-3 interactive themes or projects to be assessed after two, three, six years
- The institute needs to define its role within the Amsterdam UMC. Amsterdam UMC is responsible for the Doctoral School, HR, central communication, diversity, open access, core facilities etcetera. All should define how to relate to this and clearly define All's complementary activities. The number of All committees could then be reduced and should be in balance with the level of responsibility of All.

Compulsory appendices:

1. Site visit programme

Program site visit Amsterdam institute for Immunology and Infectious Diseases

Sunday, March 3, 2024	
18:00	Arrival and check-in, committee members and secretary only
18.30	Departure to the restaurant, committee members and secretary only

Monday, March 4, 2024 Location AMC, Costerzaal	
08.30 – 09.30	Kick-off meeting <i>Committee members and secretary only</i>
09.30 – 10.30	Introduction to All and dialogue with directors <i>Short presentation followed by discussion</i>
10.30 – 10.45	Short break
10.45 – 12.15	Current All research programs Cancer Immunology, Inflammatory Diseases and Infectious Diseases <i>Short presentations of the program leaders followed by discussion</i>
12.15 – 13.15	Lunch break in The Box <i>Committee members and secretary only</i>
13.15 – 14.15	Perspectives of PhD students of All <i>Short presentations followed by discussion</i>
14.15 – 15.15	Perspectives of Postdocs of All <i>Short presentations followed by discussion</i>
15.15 – 15.45	Perspectives of technicians of All <i>Short presentations followed by discussion</i>
15.45 – 16.00	Short break
16.00 – 16.45	Core facilities / laboratory animal policy <i>Short presentations, followed by discussion</i>
16.45 – 17.15	Board of deans Amsterdam UMC Prof. Ivo Roos and Prof. Mat Daemen
17.15 – 18.00	Interim meeting committee <i>Committee members and secretary only</i>
19.00	Dinner

Tuesday, March 5, 2024 Location VUmc, room 01 W 08	
08.30 – 09.00	Interim meeting committee <i>Committee members en secretary only</i>
09.00 – 10.30	Chairs of 6 All committees <i>Per committee: Short presentations followed by discussion</i>
10.30 – 14.30	Committee meeting (writing time) & lunch at the Science Café, O2 building <i>Committee members en secretary only</i>
14.30 – 15.00	First findings and conclusions shared with directors
15.00 – 15.30	Plenary presentation conclusions and closure <i>Auditorium</i>
15.30 – 16.00	Drinks

2. Quantitative data on All's composition and funding, as described in Appendix 7

Appendix 7: Quantitative data

a. Research funding				
The subtotal and the final total per funding and per research program of newly acquired funding				
	2nd cash flow	3rd cash flow	4th cash flow	
	2017			total 2017
Cancer immunology	1.191.563	2.606.333	1.592.514	5.390.410
Infectious diseases	7.627.074	1.613.655	2.822.915	12.063.644
Inflammatory diseases	1.647.481	3.069.826	3.185.284	7.902.591
TOTAL	10.466.118	7.289.814	7.600.713	25.356.645
	2018			total 2018
Cancer immunology	249.400	1.729.768	1.005.345	2.984.513
Infectious diseases	8.862.947	3.804.435	1.694.446	14.361.828
Inflammatory diseases	3.706.573	4.198.000	4.440.039	12.344.612
TOTAL	12.818.920	9.732.203	7.139.830	29.690.953
	2019			total 2019
Cancer immunology	3.400.000	2.505.260	615.585	6.520.845
Infectious diseases	10.494.994	6.698.871	1.248.223	18.442.088
Inflammatory diseases	3.525.240	2.058.897	2.604.918	8.189.055
TOTAL	17.420.234	11.263.028	4.468.726	33.151.988
	2020			total 2020
Cancer immunology	1.977.648	3.669.298	321.203	5.968.149
Infectious diseases	14.006.515	3.549.988	2.477.409	20.033.912
Inflammatory diseases	7.456.532	5.656.094	3.643.343	16.755.969
TOTAL	23.440.695	12.875.380	6.441.955	42.758.030
	2021			total 2021
Cancer immunology	334.302	3.721.207	437.205	4.492.714
Infectious diseases	15.666.504	4.516.545	2.130.144	22.313.193
Inflammatory diseases	8.168.238	1.608.708	2.871.062	12.648.008
TOTAL	24.169.044	9.846.460	5.438.411	39.453.915
	2022			total 2022
Cancer immunology	280.000	1.212.905	699.363	2.192.268
Infectious diseases	4.154.887	1.737.409	2.891.594	8.783.890
Inflammatory diseases	3.164.544	19.244	1.224.211	4.407.999
TOTAL	7.599.431	2.969.558	4.815.168	15.384.157
	2017-2022			
Cancer immunology	27.548.899			
Infectious diseases	95.998.555			
Inflammatory diseases	62.248.234			
FINAL TOTAL	185.795.688			

b. Research output - per program and the entire institute						
	Cancer Immunology					
	2017	2018	2019	2020	2021	2022
Refereed articles	51	111	138	181	190	164
Non-refereed articles	8	5	10	5	9	58
Books, chapters	1	6	3	0	2	2
Professional publications ¹	0	2	4	3	2	1
Other research output ²	3	2	13	8	4	10
PhD theses	10	8	6	14	15	10
	Infectious Diseases					
	2017	2018	2019	2020	2021	2022
Refereed articles	499	554	549	526	627	654
Non-refereed articles	27	32	32	45	43	68
Books, chapters	8	5	1	4	4	7
Professional publications ¹	12	14	10	19	20	7
Other research output ²	1	9	3	1	0	3
PhD theses	33	51	43	26	56	32
	Inflammatory Diseases					
	2017	2018	2019	2020	2021	2022
Refereed articles	473	600	714	679	726	619
Non-refereed articles	27	32	41	44	56	81
Books, chapters	6	9	14	7	4	8
Professional publications ¹	12	20	19	24	19	7
Other research output ²	27	36	21	15	5	3
PhD theses	38	58	42	39	46	33
	Total					
	2017	2018	2019	2020	2021	2022
Refereed articles	1023	1265	1401	1386	1543	1437
Non-refereed articles	62	69	83	94	108	207
Books, chapters	15	20	18	11	10	17
Professional publications ¹	24	36	33	46	41	15
Other research output ²	31	47	47	24	9	16
PhD theses	81	117	91	79	117	75

Disclaimer: The data from the PURE research database (community module AMSCOO) had been checked to the best of our abilities, but there may be inconsistencies or flaws in the system

¹Publications about results of scientific research aimed at professionally interested people

²Contributions in non scientific journals and newspapers

c. Research input (# of persons)						
	2017	2018	2019	2020	2021	2022
Scientific core staff	389	334	316	318	308	328
Other scientific staff	190	184	174	190	232	262
PhD students	520	496	546	491	457	582
Total researchers	1099	1014	1036	999	997	1172
Scientific core staff: UD, UHD and full professors (including Pis)						
Other scientific staff: non tenured staff, postdocs						