

ASSESSMENT OF RESEARCH QUALITY

Dental Research 2007-2013

ACTA

Academisch Centrum Tandheelkunde Amsterdam
(Academic Centre for Dentistry Amsterdam)

December 2014

ACTA



UNIVERSITY OF AMSTERDAM

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INTRODUCTION

This report reflects the evaluation of the research conducted at ACTA, carried out in accordance with the Standard Evaluation Protocol (SEP) 2015-2021.

ACTA is the combined Faculty of Dentistry of the University of Amsterdam and the VU University Amsterdam. The Standard Evaluation Protocol 2015-2021 was drafted and adopted by the Association of Universities in the Netherlands, the Netherlands Organisation for Scientific Research and the Royal Netherlands Academy of Arts and Sciences.

All publicly funded research in the Netherlands is evaluated once every six years. For practical reasons, exceptionally the period for the present evaluation was extended to seven years. The evaluation system aims at three objectives with regard to research and research management:

- Improvement of the quality of research through an assessment carried out according to international standards of quality and relevance;
- Improvement of research management and leadership;
- Accountability to higher levels of the research organisations and funding organisations, government and society at large.

In more detail, the principal objective of this assessment is to examine the quality and the relevance of ACTA's research to society and, when appropriate, to suggest improvements of the programme where necessary. The first target group that is served by this assessment includes ACTA's researchers and leaders of research groups at ACTA. It is important that they recognise the quality of their research, its relevance to society and how these elements may be enhanced. The second target group consists of the advisory and governing board of the university that supports ACTA, who may wish to track the impact of ACTA's research and their research policy. As government funding is important for the ongoing continuation of ACTA's research, the Netherlands government would like to know the outcomes of assessments, particularly as related to ACTA's accountability for expenditure and its own efforts to support an outstanding research system. Finally, society and the private sector are interested in assessments because they would like to solve a variety of problems using the advanced knowledge that research from ACTA can deliver.

Members of the assessment committee

Also on behalf of the Board of the VU University Amsterdam, the Board of the University of Amsterdam has appointed as members of the assessment committee:

Hans Maarten den Boer (Cavex Holland B.V.)
Christopher McCulloch (University of Toronto)
Jukka Meurman, *chair* (University of Helsinki)
Mutlu Özcan (University of Zürich)
William Wade (Queen Mary University of London)

Jan Heijn (BetaText, Bergen NH) served as secretary of the assessment committee.

Short CVs of the members of the assessment committee are given in Appendix 1.

Procedures followed

The assessment performed by the committee focused on the research that ACTA conducted over the last seven years (2007-2013) and the research strategy that the unit intends to pursue in the future. The committee made the assessment on the basis of the information from documents (self-assessment, annual reports), and from the interviews during the site visit. The following principles and approaches were practised.

Focus

The committee considered the strategic choices and future prospects of ACTA.

Assessment criteria

The committee assessed ACTA based on three assessment criteria. The committee went to great lengths to ensure that the qualitative assessment (text) and the quantitative assessment (assigned category 1–4) were in agreement and that the assessment criteria were applied to ACTA's strategic targets. The three criteria are:

1. *Research quality.* The committee assessed the quality of the unit's research and the contribution that ACTA's research makes to the body of scientific knowledge. The committee assessed the scale of ACTA's scientific publications, instruments and infrastructure.

2. *Relevance to society.* The committee assessed the quality, scale and relevance of contributions targeting specific groups, particularly the dental profession, the general public and government policy making.

3. *Viability.* The committee assessed the strategy that ACTA intends to pursue in the future and the extent to which ACTA can meet its targets in research and society during this period. The committee also considered the governance and leadership skills of the ACTA management unit.

Assessment categories

Qualitative assessments were supplemented by assigning numerical scores for ACTA based on discrete categories (1–4) for each of the criteria.

PhD programmes

The committee met with and interviewed seven current PhD students at ACTA and considered their supervision, instruction and the progress monitoring arrangements for their studies. The following issues were considered and examined: institutional context, selection and admission procedures, programme content and structure, supervision and the effectiveness of the programme plans and supervision plans, quality assurance, guidance of PhD candidates to the job market, duration, success rate, exit numbers, and career prospects.

Research integrity

The committee considered ACTA's policies on research integrity and strategies for ethics and prevention of research misconduct. The committee was interested in how ACTA dealt with research data, data management and integrity, and the extent to which an independent and critical pursuit of science occurs at ACTA. The assessment committee based its assessment on interviews and on questions in the self-assessment.

Research unit under assessment

ACTA is the combined Faculty of Dentistry of the University of Amsterdam and VU University Amsterdam. ACTA holds a unique position in the Netherlands as it has been a combined faculty of two universities since 1984. The boards of both the University of Amsterdam and the VU University Amsterdam share the responsibility for the research at ACTA. Research at ACTA is organised and conducted in the ACTA Dental Research Institute. The research unit at ACTA focuses on the physiology and pathology of the tissues in and around the oral cavity. In addition to infectious diseases such as caries and periodontitis, attention is paid to topics including endodontic infections; the protective functions of saliva; the development, function and repair of hard tissues; oral implants; dental materials; function and dysfunction of the jaw system; diseases of the oral mucosa and salivary glands; premalignant oral lesions; social dentistry; dental fear and pain.

The research enterprise at ACTA has been re-organised and focused over the last seven years into two larger themes denoted 'Oral Infections and Inflammation' (OII) and 'Oral Regenerative Medicine' (ORM). Collectively, ACTA's research unit employs a total staff of about 280 individuals (1/3 tenured staff, 1/4 non-tenured and 5/12 PhD students). However, many of these research staff are part-time; when the personnel are analysed as full-time equivalents, the number of full-time equivalents has ranged between 58 and 68 over the last seven years. Most of the research activities of these individuals are conducted in very modern and well-equipped facilities located in the new ACTA building in Amsterdam.

QUALITATIVE AND QUANTITATIVE ASSESSMENT OF THE RESEARCH UNIT

Description of the research unit's strategy and targets

Dental research at ACTA focuses on the study of health and diseases of essentially all tissues of the oral cavity, the masticatory system and of oral fluids. Their general aim is to improve strategies for diagnosis, treatment indications and treatment planning, as well as the prevention of oral diseases. They also intend to develop approaches that could produce functional repair of the affected tissues in and around the oral cavity, and to evaluate therapies that have been developed to treat patients.

To fulfil this relatively broad series of goals, the ACTA researchers hope to integrate the clinical sciences with fundamental disciplines, to educate and advance academic training of post-graduate and PhD students, and to advance knowledge transfer and thereby improve the quality of the research at ACTA. The research staff has a special interest in the translation of their research into applications for clinical dentistry. Further, they are interested in interacting with professional dental organisations and industries to enable translation of their research into the general population and thereby impacting society at large.

In the context of strategy and the impact of ACTA's research on society, the committee learned that ACTA has established guidelines on sharing of data with the international community and with professional organisations (organised dentistry). Indeed, part of ACTA's budget includes support for publication in professional journals and for knowledge transfer on television and radio programmes. ACTA's research has impacted insurance guidelines for national health coverage for implants and for treatment of caries in children. ACTA has enhanced its collaborations with the biomedical faculties of the parent universities, and with industry and has reduced time to get products to market. Since many companies are reducing their own research staff, ACTA has assumed greater responsibilities for product development and design of studies. Collectively, these findings indicate that ACTA is strongly committed to ensuring that its research has impact on society.

ACTA's twelve previous research programmes have been reorganised into two major research programmes: Oral Infections and Inflammation (OII) and Oral Regenerative Medicine (ORM). This reorganisation was brought about as a result of a re-focusing and re-structuring process that was started in 2009 after the previous assessment (conducted in 2007) recommended a reorganisation of ACTA's research organisational structure.

Evaluation 'Oral infections and inflammation' programme

Quality of research

There is strong research currently being conducted in oral ecology in human health and disease. For example, ACTA scientists are analysing the oral microbiome in health by pyrosequencing and are elucidating the interactions between periodontitis and systemic health and disease. Many

strong publications from the OII group have had a considerable impact in the field of dental research and have influenced opinion development on these topics in the broader scientific community. The quality of research in this programme was considered excellent.

Relevance to Society

New patents have been filed by this programme and there is also good evidence of the application of this group's research findings to society through, for example, new guidelines on the importance of maintenance of periodontal health on diabetic care. The programme's members have identified the need to integrate the research interests of the younger scientists with the research of the more senior staff; together they will more effectively relate their research to society in stronger terms and clarify how their research might impact human health. The relevance of the group's research to society was considered to be very good.

Viability

While there has been very good progress on the development and growing sophistication of the new OII programme and the formulation of its objectives, there is a need to integrate the newer members of the programme more fully into the whole cadre of scientists and thereby ensure a bright future for the programme. While the governance and leadership skills of the OII programme managers are manifest, there appears to be a need for them to play a more active role in the assessment of research projects and staff, particularly in terms of transparent funding allocations and encouraging and directing the research activities of those staff who are newer to ACTA. To ensure a positive outlook, there is also a need to ensure that the research output has clinical relevance, where appropriate, and that connections with other researchers in the ACTA unit and in the other faculties are further developed. Finally, there is a clear need for developing a plan for faculty renewal in this programme. Collectively the future of the programme was considered to be very good.

Evaluation 'Oral regenerative medicine' programme

Research Quality

There has been improved integration of the research of the cell biology sub-group into the prosthodontics/implantology sub-group over the last several years. This integration reflects a very positive development of the research goals of the prosthodontics/implantology sub-group, which has embraced increased integration of cell biology principles and practices into the conduct of its research. The cell biology sub-group is excellent in terms of originality of thought, experimental approaches and quality and quantity of research output. The prosthodontics/ implantology group is very good and has a history of a very strong research programme. Compared with the previous seven years, this research performance has now started to show renewal as a result of new staff, new research questions and the focus on cell biological aspects of their research field. Because of the future trajectory and promise provided in particular by the increased integration of cell biology approaches into scaffold development and prosthodontics/ implantology research, the research quality of the ORM programme was considered to be excellent.

Relevance to Society

The application of the ORM's research in terms of benefit to society and improved patient outcomes is not clearly seen for all the research that is conducted in this programme. However, they have developed products to enable exciting use of stem cells and related scaffold products in oral surgical procedures; these scaffolds will be further developed for clinical use. Indeed, the researchers in the ORM programme indicated that they soon hope to bring these scaffolds to dental industry for further evaluation and development. Researchers in the ORM programme have also developed a bruxism management tool for practicing dentists and this is providing improvements for patient care in clinical dentistry. The ORM programme's research on the side-effects of dental materials, including allergies, and their ability to bring this to the attention of the dental industry and practicing dentists, has had a considerable impact on improved dental health in the general public. The ORM programme's impact on society is considered to be very good.

Viability

The decision to move ahead with the Horizon 2020 programme, the programme's embrace of the new bipartite organisational research structure, and their evident interest in PhD student mentoring, development and training, indicate that the ORM programme is well-positioned to move ACTA's research enterprise ahead for a very positive future. The governance and leadership skills of the programme's management appear to be very strong currently, but the unit should pay particular attention to staff renewal in the future to ensure strong leadership of the programme. This relates to the imminent retirement of key senior staff in this programme. While there are some structural organisational issues that need to be resolved to ensure further integration, research success and ongoing productivity, the group's viability is considered to be very good.

Summary in numerical scores

Programme	Research quality	Relevance to society	Viability
Oral infections and inflammation	1	2	2
Oral regenerative medicine	1	2	2

The meaning of these scores is explained in Appendix 4.

PhD PROGRAMMES and RESEARCH INTEGRITY

Quality and organisation of PhD programmes

The committee met with seven PhD students who are currently working at ACTA. The committee assumed that these individuals provided opinions on the PhD programme that are representative of the group at large.

There are currently about 120 PhD students at ACTA. They have regular meetings with other PhD students bi-monthly and three student presentations are given at each meeting. There is no regular annual research day because other universities in the Netherlands that had indicated interest have subsequently declined to participate. There is a council for student affairs that facilitates student-staff interactions and that helps with networking and mentoring. Around half of the PhD students are clinically-qualified. The opportunity to pursue part-time PhD studies helps these trainees to maintain their clinical practice skills.

The supervisory approach for PhD students has been revised since the last assessment (2007) and now includes the incorporation of two supervisors, one who is a 'day-to-day' supervisor and the other who is often a more senior supervisor with whom students meet every two weeks or so. There was also the indication that in the future, there would be increased emphasis on one supervisor being clinically trained and the other with more fundamental interests.

There were some questions on how progress was monitored and clear responses were provided by the students which include the provision of progress reports every year to the programme heads and with the supervisory committee. The development of inter-group meetings to foster communication between projects and groups and the encouragement of PhD students to take courses on grant writing were viewed as a real strength.

Following queries about the infrastructure and core facilities, there was strong and unanimous agreement on the effectiveness of the ACTA programme to provide excellent PhD training. The students indicated that their programmes were well-organised and were well-supported to enable fulfilment of their research goals.

The students indicated that there were consistently high levels of collegiality and approachability with all staff, which facilitates research and interactions. The faculty is certainly not intimidating. There were many positive interactions with supervisors and discussions about research at weekly meetings. These discussions included considerations of experimental design, career development and data interpretation. There was some concern expressed at the proposed move to a three-year PhD programme. It was thought that three years might be insufficient but that this could be compensated for by the adoption of a research-focused Master of Science degree to be undertaken prior to PhD studies.

The committee also met with the senior leadership of ACTA and discussed the PhD programme. These individuals indicated that the training was very good; that the facilities and infrastructure and the opportunities to travel abroad for conferences and extracurricular training were excellent; and that there was a structure in place to enable cross-project discussions to encourage ideas and

approaches from other backgrounds. These individuals also considered that changes to an existing oral biology course and the institution of a new evaluation system had advanced the PhD programme. Further, they indicated that the current monitoring processes are helpful and are readily workable. They think that the yearly monitoring with each student is effective since students are guaranteed of anonymity in the context of their comments on supervisors. With this background these leadership staff indicated that the students are reasonably open and honest with them during their yearly interview and that the meetings are helpful for completion of the programme, in part by clarification of students' goals.

Research Integrity Policy

The committee asked research staff about the formal exposition and teaching of research integrity and the management of research misconduct at ACTA. The staff reported that for all issues related to scientific misconduct, the guidelines of the University of Amsterdam are carefully followed. In the context of plagiarism issues, the student's PhD examination committee is directly involved and that university policies are applied in these situations as well. The senior staff who participated in these discussions indicated that the frequency of offenses was very low. All Bachelor and Master theses and, starting 2014, also all PhD theses were tested for plagiarism using appropriate software but forensic programs to check for manipulation of images were not yet used. The senior research staff noted that there is now open discussion on scientific integrity and ethics with staff and students and that this approach will be followed up with a required university course on research integrity that will be taken by all PhD students.

RECOMMENDATIONS

Quality of the Research Unit

1) The committee noted that the organisational re-structuring process has been successful to date and has been a positive start for ongoing renewal at ACTA. The committee wondered where does this process lead to next? The committee encourages ACTA to address this question by formulating a strategy for clear next steps to enable reorganisation and structure that can be enacted over the next six years. These steps should include plans to assimilate as many research staff as possible into productive and integrated research projects that effectively synergise with one another. Hopefully, this can lead to high impact research and the generation of applied research with considerable influence on society.

2) The committee wondered whether the re-structuring process that engineered the conversion of twelve to two programmes might have been too large a jump. The committee learned that in the beginning, there was considerable resistance to change from some staff at ACTA. The research staff who were interviewed felt that the extreme change was justified because it enabled discussions and interactions that had previously not occurred. The committee recommends that the ACTA faculty re-visit the structure in three years and critically evaluate the reorganisation in terms of real progress to date, future challenges to staff integration and future growth. If it was decided to continue to focus the research into two programmes, thought should be given as to how the research of those individuals whose research was not an obvious fit for the programmes would be recognised and promoted externally.

3) The committee considered the balance between fundamental research and translational research at ACTA and its likely societal impact. In particular, can one institution of relatively small size, like ACTA, be able to do all things in the broader research enterprise, including achieving a balance between innovation and translational approaches? To achieve ACTA's broader research goals, the committee strongly encourages ACTA scientists to pursue outside collaborations with both local Amsterdam scientists in other faculties and with other European scientists, and to enhance their interactions with industry. This will enable ACTA to act synergistically with other scientists to conduct research with strong scientific and societal impacts.

4) The committee noted that there is no overall ACTA policy for achieving a balance between innovation and product development. Perhaps ACTA should develop more concrete ideas on how the market for their research ideas may influence the attitudes and choices of individual scientists and help them to respond rationally to the need to achieve a positive balance between innovation and societal impact.

5) Does ACTA have an approach to assessing the success of its various research lines that extend beyond numbers of papers published and citation analyses? Are overall 5 or 10-year goals set that would address issues of research that may impact society at large? What is the ultimate target and what is the time-line on this possible approach? ACTA is encouraged to set research targets more concretely that include broader measures of research impact. In the related concept of Key Performance Indicators (KPIs), the committee wondered how research projects are evaluated on an individual basis. Are there up-front research measures for each investigator, time frames for

PhD students and the output of PhD students? Is there individual project planning conducted by research staff and students? These questions were not clearly addressed by the ACTA staff but the committee felt that more concrete, *a priori* planning using KPIs might go a long way towards more efficient use of resources and the generation of high impact research.

6) In view of possible reductions of funding in the future and the indicated need for generating high impact research, how might ACTA scientists engage in large-scale, randomised controlled trials that would allow them to bring their more fundamental ideas to the clinic? If ACTA were to more closely engage industrial sponsors with an interest in product development and testing, they may be able to fulfil their goals of translational research in part through industry funding.

7) The committee was impressed by the open discussions and healthy debate on the balance between fundamental and applied research. Some researchers indicated that all research should emerge from a clinical problem while others felt that there was great value of curiosity-driven research. The committee encourages ACTA researchers to more intensively consider this question and to develop institutional approaches that could bridge this conceptual gap and possibly lead to more productive research interactions.

8) ACTA does not appear to have a well-articulated complement plan for faculty renewal. ACTA should qualitatively and quantitatively evaluate unfilled niches in terms of faculty that need to be recruited and outside collaborations that need to be developed. This approach would be particularly helpful for ongoing faculty renewal.

PhD Programmes

1) The committee was left with the impression that currently most centrally funded PhD projects are supervised by a combination of a clinician and a basic scientist. This is clearly beneficial in ensuring clinical relevance and integrating the staff of ACTA. It might, however, not always be appropriate. For example, 'blue-sky' innovation PhD projects would benefit from a supervisory team consisting of two basic scientists, perhaps one from ACTA and one from a basic science department elsewhere in one of the two parent universities.

2) In consideration of the proposed three years available for PhD projects, there were diverse opinions and it seems that this approach might be helpful for the Dental Materials group and prosthodontics and implantology groups, but not so much for the conduct of clinical trials and for cell biology research. In view of the increased time pressure that will be brought to bear on PhD students with this change, the committee felt that even more efforts will need to be devoted to optimised mentoring and support programmes for students.

Research Integrity

1) The ACTA research staff should more clearly address and incorporate into their policies, existing UvA and VU documents on research integrity, including preventive approaches for avoidance. This enhanced emphasis should also be proactive in the inclusion of students in these considerations.

2) PhD students should start taking courses as soon as possible on ethics and research integrity and ACTA should consider having outside speakers in to address students and staff on this very important issue.

3) The staff are encouraged to invest in forensic software and extend the use of tools that evaluate plagiarism, and then to apply these to theses and to all papers that are submitted.

Appendix 1 Short CVs of the members of the assessment committee

Jukka H. Meurman (chairman)

Professor of oral infectious diseases, Faculty of Medicine, University of Helsinki, Finland. M.D., Ph.D., Dr. Odont., Honorary doctorates: Université Louis Pasteur 2004, Karolinska institutet 2007, Medical University of Plovdiv 2009. Dean of the Faculty of Dentistry, University of Kuopio, Vice-Dean of the Faculty of Medicine, University of Helsinki. Vice-president International Association for Dental Research (IADR). He has published more than 319 scientific articles and has an H-index of 36 (according to Web of Science).

Hans Maarten den Boer

Managing Director of Cavex Holland BV, Haarlem, the Netherlands. Managing Director of Heraeus Kulzer Benelux BV, Haarlem, the Netherlands. Management Committee Member of Heraeus Kulzer GmbH, Hanau, Germany. Former functions and projects include the general management of the Heraeus Dental organisation in Paris, France and the operation of an alginate production plant in Beijing, China. Former president of Indent (Dutch Dental Manufacturer's Association). He was educated as a technician in analytical chemistry. In companies practical experience of research and development, driven by market needs and product optimisation. He is responsible for production and for global marketing and sales of dental products. Entrepreneurial spirit to develop new dental products and to bring them successful to the market. Experienced in global dental environment with a special interest in the science of behavioural economy. Representing Cavex as lecturer and trainer on dental sales and marketing topics.

Christopher A. McCulloch

Professor and director of the Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Canada. BSc, DDS, PhD. Specialist in periodontology. Canada Research Chair in Matrix Dynamics. Research focus on the role of cell adhesions in remodelling of the extracellular matrix in cardiovascular diseases and periodontal diseases. He has published more than 268 scientific articles and has an H-index of 60 (according to Web of Science).

Mutlu Özcan

Professor and head of the Dental Materials Unit, Clinic for Fixed and Removable Prosthodontics and Dental Materials Science, University of Zurich. DDS, Dr Med Dent. She did her PhD at the UMCG in Groningen, the Netherlands, and worked thereafter as professor and research associate at the Clinical Dental Biomaterials at the UMCG. She is a frequent lecturer at scientific meetings, has received several international awards and has held numerous continuing education courses in Europe. She serves also for the editorial boards of several scientific journals. She published more than 200 scientific articles and has an H-index of 26 (according to Web of Science).

William G. Wade

Professor of Oral Microbiology at Barts and the London School of Medicine and Dentistry, Queen Mary University of London, and Honorary Senior Research Investigator at the Forsyth Institute, Cambridge, USA. BSc, PhD. Member of MRC College of Experts. Member of the editorial board of three international journals. His current interests include the molecular characterisation of the oral microbiome in health and disease and the development and evaluation

of antimicrobials and probiotics for the prevention and treatment of oral diseases. He published more than 100 scientific articles and has an H-index of 27 (according to Web of Science).

Jan Heijn assisted the committee as an external independent secretary. He is a self-employed physicist and director of BetaText, a small publishing house and consultancy firm in the field of science and technology. He has acted as secretary of several international research evaluation committees.

Appendix 2 Site visit programme

Sunday 16 November 2014

19.30 – 22.00 Dinner / Committee meeting:
procedures, tasks of the members, evaluation of written materials

Monday 17 November 2014

09.00 – 09.45 Meeting with the dean of ACTA, the research director, research coordinator and with the head of department of Oral Health Sciences
Prof. A.J. Feilzer, Prof. V. Everts, Dr T.J.M. van Steenbergen, Prof. F. Lobbezoo

09.45 – 10.45 Visit of the research facilities at ACTA

10.45 – 12.45 Interview with representatives of the programme 'Oral Infections and Inflammation'
*Prof. B.G. Loos, Prof. W. Crielaard, Prof. E.C.I. Veerman,
Prof. G.J.M.G. van der Heijden, Prof. F.R. Rozema*

12.45 – 14.30 Lunch / Committee meeting about the interviews during the morning

14.30 – 16.30 Interview with representatives of the programme 'Oral Regenerative Medicine'
*Prof. V. Everts, Prof. D. Wismeijer, Prof. F. Lobbezoo, Dr C.J. Kleverlaan,
Prof. T. Forouzanfar, Prof. J. Klein Nulend, Prof. S. Gibbs*

16.30 – 18.00 Committee meeting about the interviews during the afternoon

19.00 – 21.00 Dinner

Tuesday 18 November 2014

9.00 – 9.45 Interview with post-docs and other junior scientists from both research programmes
*Dr A.D. Bakker, Dr F.J. Bikker, Dr B.P. Krom, Dr Y. Liu, Dr C.M. Visscher,
Dr T.J. de Vries, Dr A.J. van Wijk, Dr. E. Zaura*

9.45 – 10.30 Interview with PhD students
*N.W. Alharbi, B.J.Q. de Bruin, S.T.G. Gunput, M.M. Janus, A. Prodan,
C.M.C. Volgenant, M.M. van der Zande*

10.45 – 11.15 Interview about the PhD programme at ACTA
Prof. V. Everts, Dr T.J.M. van Steenbergen

11.15 – 12.00 Interview about the research policy at ACTA, valorisation and societal impact
Prof. A.J. Feilzer, Prof. V. Everts, Dr T.J.M. van Steenbergen, Prof. J.M. ten Cate

12.00 – 13.30 Lunch / Committee meeting and writing of the draft report

13.30 – 14.00 Optional: final meeting with the dean, director, and coordinator of research

14.30 – 15.30 Committee meeting and writing of the draft report; if necessary additional interviews

15.30 – 15.45 Presentation of preliminary findings by the chairman of the committee for all ACTA scientists

15.45 – 16.30 Informal meeting (with drinks and snacks) for all participants of the site visit (senior) scientists, and the committee

Appendix 3 Quantitative data on the research unit's composition and financing

ACTA Research staffing

2011		2012		2013	
N	fte	N	fte	N	fte

Oral Infections and Inflammation						
Tenured staff	48	16.3	50	16.8	51	15.8
Non-tenured	8	0.3	8	1.2	10	1.8
PhD students	43	14.6	70	15.2	62	17.3
total	99	31.2	128	33.2	123	34.9

Oral Regenerative Medicine						
Tenured staff	46	13.4	48	13.7	46	13.5
Non-tenured staff	24	3.6	46	4.4	58	5.0
PhD students	39	12.2	60	14.7	59	14.2
total	109	29.1	154	32.7	162	32.7

Total ACTA research staff	208	60.3	282	65.9	285	67.6
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ACTA Finances

2011		2012		2013	
k€	%	k€	%	k€	%

University budget	5,422	68	5,220	63	5,037	63
Research grants	735	9	1,357	16	440	5
Contract research	1,765	22	1,771	22	2,548	32

Total ACTA budget	7,922	100	8,348	100	8,025	100
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Appendix 4 Explanation of the categories utilised

Category	Meaning	Research quality	Relevance to society	Viability
1	World leading/ excellent	The research unit has been shown to be one of the few most influential research groups in the world in its particular field.	The research unit makes an outstanding contribution to society.	The research unit is excellently equipped for the future.
2	Very good	The research unit conducts very good, internationally recognised research.	The research unit makes a very good contribution to society.	The research unit is very well equipped for the future.
3	Good	The research unit conducts good research.	The research unit makes a good contribution to society.	The research unit makes responsible strategic decisions and is therefore well equipped for the future.
4	Unsatisfactory	The research unit does not achieve satisfactory results in its field.	The research unit does not make a satisfactory contribution to society.	The research unit is not adequately equipped for the future.