RESEARCH COLLABORATION AGREEMENT IN THE CONTEXT OF AN INTERNATIONAL COURSE

This agreement (hereinafter referred to as "Agreement") is made and entered by and between:

Clinical Center having its principle office at PROVIDER XXX, represented by PROVIDER XX, hereinafter referred to as "PROVIDER XX" and or "Provider".

AND

Maastricht University, more specifically its Faculty of Health, Medicine and Life Sciences/ School for Oncology and Developmental Biology (GROW), having its principal office at Minderbroedersberg 4-6, 6211 LK Maastricht, the Netherlands, on behalf of the Executive Board legally represented by Prof. Dr. M. van Engeland, scientific director GROW, hereafter referred to as "UM" and / or "Recipient".

Hereinafter jointly referred to as "PARTIES" and individually as "PARTY".

Those data will be used for a course in Maastricht (www.bigdata4imaging.info).

UM is sponsor (in Dutch: verrichter/opdrachtgever) for the Research. UM will support the Research (as defined below) by providing funding. Provider, through the Provider's Scientist (as defined below), is responsible for providing the requested DATA for the Research, which is property of Provider. The Research will be conducted on the terms and conditions set out below:

WHEREAS

a) **Provider** is custodian of the data namely sequential imaging of xxxxx cancer patients under treatment ("Data") specified in Annex I to this Agreement;
b) **Recipient**, through dr. Lambin for The D-Lab, hereinafter referred to as "Recipient's Scientist", have requested PROVIDER, through xxxx , hereinafter referred to as "PROVIDER's Scientist", to provide Recipient with the DATA for use by Recipient's Scientist for the purpose of the Research Plan as specified in Annex II;
c) **PROVIDER** is willing, subject to the terms and conditions of this Agreement, to provide the DATA to Recipient.

I. Definitions

1. DATA: means the DATA being transferred under this Agreement as specified in Annex I to this Agreement.
2. RESEARCH PLAN: The research plan specified in Annex II to this Agreement for which the DATA will be used.
3. EFFECTIVE DATE: December 9th 2018
4. INVENTION: means any invention, discovery, improvement, material, signal, process, formula, know-how or other innovation related to or arising from the use of the Data and/or Confidential Information, whether patentable or not and obtained as a result of the performance of the Research Plan.
5. CONFIDENTIAL INFORMATION: all information, know-how, data and experience of PROVIDER regarding the Data, its characteristics, PROVIDER's research concerning the Data, whether of a scientific, technical, engineering, operational, or economic nature, supplied to or obtained by Recipient in written form, in the form of drawings or in the recording of oral conversation, or samples, which is reasonably required by Recipient for performance of Research.
6. RESULTS: all research activities, analyses, tests or studies performed using the Data.
7. END DATE: February 28th 2019

II. OBLIGATIONS OF THE PARTIES

1. PROVIDER will provide the DATA as defined in Annex 1.

2. PROVIDER will conduct the research as defined in the RESEARCH PLAN in Annex 2.

III. Terms and Conditions of this Agreement

1. The DATA and any CONFIDENTIAL INFORMATION provided hereunder is and remains under the custodianship of PROVIDER and is made available as a service to the RECIPIENT.

2. The Recipient and the Recipient's Scientist agree that the DATA: (a) is to be used only for the academic purposes as described in the RESEARCH PLAN; (b) will not be used for commercial purposes other than those described in the RESEARCH PLAN and (c) will not be transferred to any third party. Recipient shall not carry out the RESEARCH PLAN with any third party or entity without prior written approval of PROVIDER.

3. The DATA will be transferred with a code. Under no circumstances will the identity of the patient or any means to derive such identity be provided to Recipient. Recipient shall not carry out any procedures with the DATA (linking, comparison, processing) through which the identity of the patient could be derived. As the DATA is coded, this will be regarded as personal data and Recipient shall safeguard the DATA received with a degree of care which is no less than PROVIDER uses to protect such DATA, but always in compliance with the applicable data privacy laws and regulations. Any accidental or unauthorised access to the DATA or loss of DATA must be reported to PROVIDER immediately, and PARTIES agree that PROVIDER will be the party to contact the supervisory authority and the patients concerned in accordance with the applicable data privacy law and regulations.

4. The DATA is collected in accordance with the applicable rules and legislation including but not limited to protection of privacy aspects of the medical and personal data of the patients. Recipient acknowledges that the patients shall at all times have the right to request PROVIDER to destroy their data. In the event a patient files such a request with PROVIDER, Recipient shall – upon first request by PROVIDER - promptly destroy the DATA in an approved manner. Any RESULTS (defined in article 5) already obtained through the use of the DATA shall remain at the disposal of Recipient.

5. The Recipient, and Recipient Scientist shall keep PROVIDER's Scientist informed of the RESULTS arising from the RESEARCH PLAN and when requested shall provide an update of such RESULTS.

6. Recipient will report any INVENTIONS to PROVIDER and PROVIDER's Scientist. Recipient shall promptly provide PROVIDER with a detailed written description of the INVENTION and indicate the role, if any, of any of Recipient's employees in creating the Invention. Inventorship will be determined by applicable law. In the event the INVENTION is a joint Invention, both PARTIES shall make appropriate mutual arrangements concerning the protection and exploitation of such joint INVENTION.

7. Except as provided in this agreement, no express or implied licenses or other rights are provided to the Recipient under any Intellectual Property (IP) rights of PROVIDER.

8. DATA will be provided to the Recipient by PROVIDER's Scientist in a format to be agreed upon by the Recipient's Scientist and the PROVIDER's Scientist.

9. All DATA and CONFIDENTIAL INFORMATION are made available "as is" and PARTIES understand and agree that all DATA and CONFIDENTIAL INFORMATION are experimental in nature and are made available without any representation or warranty, express or implied, including any implied warranty of merchantability, satisfactory quality or fitness for any particular purpose or any warranty that the use

of the DATA and/or CONFIDENTIAL INFORMATION will not infringe or violate any patent or other proprietary rights of any third party. Recipient accepts all liability for any loss, claims and damages which may arise from the use, storage or disposal of the DATA, CONFIDENTIAL INFORMATION or the use of the RESULTS by Recipient. Recipient shall hold harmless, defend and indemnify PROVIDER and its employees, directors, agents and representatives against any and all loss, damage, liability, costs and expenses arising out of or in connection with third party claims relating to use, handling, storage or disposal of the DATA. CONFIDENTIAL INFORMATION and the RESULTS by Recipient, except to the extent that such loss or damage are attributable to any gross negligent or willful misconduct on the part of PROVIDER.

10. Recipient agrees in its use of the DATA to comply with all applicable international and national laws, statutes, regulations and guidelines.

11. Recipient shall treat all CONFIDENTIAL INFORMATION confidential for the duration of this Agreement including any extension thereof and thereafter for a period of three (3) months following termination or expiry of this Agreement. Excluded from this obligation of confidentiality shall be any CONFIDENTIAL INFORMATION of which the Recipient can reasonably demonstrate that it (a) was previously known to Recipient, or (b) is, and/or becomes, publicly available during said five (5) year period through no fault of Recipient, or (c) is independently and lawfully developed by the Recipient. This obligation of confidentiality shall not apply to any disclosure required by law, provided that Recipient shall notify PROVIDER of any disclosure required by law in sufficient time so that PROVIDER may contest such requirement, if PROVIDER so chooses.

12. Recipient will be free to publish and disclose the RESULTS but agrees to submit the proposed disclosure to PROVIDER for review at least thirty (30) days prior to the scheduled submission for publication or disclosure. If PROVIDER believes that the publication or disclosure contains CONFIDENTIAL INFORMATION of PROVIDER, PROVIDERhas the right to request to postpone the publication for up to sixty (60) days from the date of submission of the documents to PROVIDER. Any such CONFIDENTIAL INFORMATION will be removed from the publication or disclosure. PROVIDER also has the right to provide comments on the manuscript and both PARTIES shall discuss in good faith to incorporate such comments in the publication or disclosure.

    All scientific publications using the DATA must include at least two (2) co-authors of PROVIDER, to be named by PROVIDER’s Scientist at a later stage.

13. This Agreement will become effective on the EFFECTIVE DATE and will terminate one (1) year after the END DATE. PARTIES can terminate this Agreement by giving a one (1) month prior written notice. Any clauses that will be expected or intended by its nature to survive the termination or the expiration of this Agreement, shall survive the termination or the expiration of this Agreement. Upon expiration or termination of this Agreement, the right to use the DATA and CONFIDENTIAL INFORMATION will automatically end and Recipient will return or destroy all DATA received from PROVIDER. Upon request from PROVIDER, Recipient shall confirm in writing the complete deletion of such Data and Confidential Information.

14. This Agreement will be construed, governed, interpreted and enforced according to the laws of The Netherlands. All disputes arising out of or in relation to this agreement will be brought before the competent court in Maastricht, The Netherlands.

15. This Agreement will be binding upon and inure to the benefit of the respective successors and assignees of the parties hereto. However, Recipient may not assign this Agreement in whole or in part without the prior written consent of the PROVIDER.

16. This Agreement represents this entire Agreement among the Parties with respect to the subject matter hereof, and may only be altered or amended by an instrument in writing signed by all of the Parties.

17. If any portion of this Agreement is in violation of any applicable regulation, or is unenforceable or void for any reason whatsoever, such portion will be inoperative and the remainder of this Agreement will be binding upon the parties. Recipient represents that there are no agreements with any third party that might affect its ability to meet any of Recipient's obligations under this Agreement.

18. Both Parties acknowledge that the signatories to this Agreement are authorized representatives of each of the Parties and legally authorized to sign this Agreement.

19. If the lawful performance of any part of this Agreement by a Party is rendered impossible by or as a result of any cause beyond such Party's reasonable control, such Party will not be considered in breach hereof as a result of failing so to perform.

20. In case of disputes where this Agreement does not provide a decisive answer, the Parties will consult each other before taking legal action.

IN WITNESS WHEREOF, the PARTIES have executed this Agreement as of the Effective Date.

[name PROVIDER]	**Maastricht University**
Name: Title: Date:	Name: Title: Date:

ANNEX I

Description of the DATA

The dataset consists of baseline or sequential CT/MR images of patients with yyyyyyyy TYPE cancer

1) Images:
    a. Anonymized-coded CT/MR in DICOM format
    b. If possible : Delineation (RT struct) – Annotation - classification of the CT scan (e.g. energy…).
    c. If possible: JPEG image of the pathology

2) Clinical data: age, gender, histology (Gleason score, differentiation), survival, local control, PFS, treatment type
If possible, co-morbidity, medications, quality of life scoring, any potential useful information form the medical file, any potential useful information form blood analysis (e.g. PSA, LDH, CRP, Hemoglobin…).

Those data will be used for a course in Maastricht (www.bigdata4imaging.info).

ANNEX II
Description of the research

Radiomic features were proven to have prognostic value for conventional CT images in lung cancer patients. Radiomic features were proven to be able to quantify non invasively lung fibrosis in mice. The radiomic features derived from baseline or sequential images may have diagnostic information. The radiomic features derived from sequential medical images or the changes in the radiomic features ('delta-radiomics') over the course of treatment may have prognostic and predictive information.

The objective is to Develop and validate a Quantitative Imaging Biomarker for prostate cancer using radiomics and/or Deep Learning analysis.

This research project will start in the context of a international course (www.bigdata4imaging.info) with different external validation datasets.

The specific aims are:
1. Develop a tool to predict in a quantitative way Gleason score, prognosis and disease progression from baseline, in particular to identify patients that could benefit from adjuvant therapies.
2. Develop *predictive* or prognostic tools for treatment response and evolution from sequential images
3. Improve the existing multifactorial nomograms by combining radiomics features with non radiomics features
4. Develop an automated segmentation tool to segment the prostate.

References:
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