**Geoscience and Health Cohort Consortium (GECCO)**

**Guideline regarding the use of geo-data**

**Background information**

In the Netherlands, a great variety of geo-data is available, but these data are scattered and measured at varying spatial scales. The centralization of these geo-data and the linkage of these data to individual-level data from longitudinal cohort studies would stimulate large-scale epidemiologic research on the impact of the environment on health in the Netherlands.

In the Geoscience and Health Cohort Consortium (GECCO), a variety of existing geo-data have been brought together and databases of six large-scale, ongoing cohort studies in the Netherlands have been enriched with these geo-data. So far, the cohort studies that have been linked are: the Generations-study, the Longitudinal Aging Study Amsterdam (LASA), the Netherlands Longitudinal Study on Hearing (NL-SH), the Netherlands Study of Depression and Anxiety (NESDA), the Netherlands Twin Register (NTR) and the New Hoorn Study (NHS). For an overview of the centralized and available geo-data please click here.

GECCO started with financial support of the EMGO Institute for Health and Care Research, and is now embedded in the over-arching Amsterdam Public Health Institute (APH). GECCO stimulates the study on environmental determinants of health and wellbeing in the Netherlands, within APH and outside. This document outlines the policy regarding the use of geo-data by (1) APH-researchers, (2) other external researchers/cohorts, and (3) companies. The procedures regarding the use of GECCO data are described in more detail below. The various scenarios are summarized in Table 1.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Applicant</th>
<th>Geo-data request form to GECCO?</th>
<th>Geo-data are freely available?</th>
<th>GECCO in acknowledgement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>APH-researcher/APH-cohort</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Other researcher/other cohort</td>
<td>Yes (to be submitted by APH-researcher)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Company</td>
<td>Yes</td>
<td>No (case by case)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Scenario 1: Use of geo-data by APH-researchers

- All geo-data that were identified and gathered in GECCO are freely available for all researchers with an APH-affiliation.¹

- A co-authorship of a researcher with an APH-affiliation is always required in papers for which geo-data were provided by GECCO.

- A geo-data request form (Attachment 1) should be submitted to gecco@vumc.nl.

- In all resulting publications, the following acknowledgement should be included:

> The Geoscience and Health Cohort Consortium (GECCO) was financially supported by the EMGO Institute for Health and Care Research of Vrije Universiteit Amsterdam and VU University Medical Center in Amsterdam, the Netherlands.

- The reference to cite is:


- All resulting publications(s) should be sent to the GECCO coordinating team by e-mail (gecco@vumc.nl).

¹There are only additional requirements regarding the use of air pollution data from the Institute for Risk Assessment Sciences of the Utrecht University. These data are only freely available for researchers of the six cohort studies that were originally involved in GECCO. Other APH-researchers or external researchers/cohorts/companies have to contact Prof. dr. ir. B. (Bert) Brunekreef (b.brunekreef@uu.nl) about the use of air pollution data in advance. Regardless of affiliation, all resulting papers in which air pollution data are used have to be sent to Prof. dr. ir. B. (Bert) Brunekreef for an interpretation/quality check.
Scenario 2: Use of geo-data by external researchers/cohorts (no APH-affiliation)

- As scenario 1, but in resulting papers, a co-authorship of a researcher with an APH-affiliation is always required. The geo-data request form has to be submitted by a researcher with an APH-affiliation.

Scenario 3: Use of geo-data by companies

- The geo-data that were identified and gathered in GECCO are not freely available for companies. Companies will have to contribute financially for the geo-data. In collaboration with Innovation Exchange Amsterdam (IXA; www.ixa.nl), the amount will be decided upon a case-by-case basis. The amount will be deposited to a joint account and will be used to update/buy geo-data in the future.

- For any resulting publication of the company (if applicable), the GECCO coordinating team has to be contacted about co-authorships by e-mail (gecco@vumc.nl).

- Similar to scenario 1 and 2, in all resulting publications, the following acknowledgement should be included:

  *The Geoscience and Health Cohort Consortium (GECCO) was financially supported by the EMGO Institute for Health and Care Research of Vrije Universiteit Amsterdam and VU University Medical Center in Amsterdam, the Netherlands.*

- The reference to cite is:


b There are additional requirements regarding the use of air pollution data from the Institute for Risk Assessment Sciences of the Utrecht University. These data are only freely available for researchers of the six cohort studies that are originally involved in GECCO. Other APH-researchers or external researchers/cohorts/companies have to contact Prof. dr. ir. B. (Bert) Brunekreef (b.brunekreef@uu.nl) about the use of air pollution data in advance. Regardless of affiliation, all resulting papers in which air pollution data are used have to be sent to Prof. dr. ir. B. (Bert) Brunekreef for an interpretation/quality check.
What happens if I submit a geo-data request form to gecco@vumc.nl?

1. The submitted geo-data request form will be sent to all GECCO Principle Investigators (PI’s)/representatives of the six cohort studies that are originally involved in GECCO (Table 2).

2. The PI’s/representatives of the six cohort studies have to respond within 3 weeks on the geo-data request form.
   - The PI’s/representatives can indicate whether they want to collaborate with the applicants on the same topic using data from their own cohort study.
   - The PI’s/representatives can bring the applicants in contact with other researchers.
   - The PI’s/representatives could advise the applicants about the use of the geo-data.

   If there is no objection after 3 weeks, the APH-researcher (the contact person) will get access to the requested geo-data. This will be done in collaboration with a researcher from the GECCO coordinating team.

Table 2: The Principle Investigators/representatives of the six cohort studies in GECCO.

<table>
<thead>
<tr>
<th>Cohort study</th>
<th>Principle investigator/representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair of GECCO</td>
<td>Dr. J. Lakerveld</td>
</tr>
<tr>
<td>Generations²</td>
<td>Dr. M. Oosterman</td>
</tr>
<tr>
<td>Longitudinal Aging Study Amsterdam</td>
<td>Dr. M. Huisman</td>
</tr>
<tr>
<td>Netherlands Longitudinal Hearing Study</td>
<td>Prof. dr. S.E. Kramer</td>
</tr>
<tr>
<td>Netherlands Study of Depression and Anxiety</td>
<td>Prof. dr. B.W.J.H. Penninx</td>
</tr>
<tr>
<td>Netherlands Twin Register</td>
<td>Prof. dr. D.I. Boomsma</td>
</tr>
<tr>
<td>New Hoorn Study</td>
<td>Dr. J.W.J. Beulens</td>
</tr>
</tbody>
</table>
ATTACHMENT 1

Geoscience and Health Cohort Consortium (GECCO)

Geo-data request form & proposal for data-analysis

Date received:

Date of approval:

1. Working title of article:
2. Name and affiliation of principal investigator or first author:
3. Cohort or study to which the geo-data will be linked:
4. Foreseen co-authors:
5. E-mail address for correspondence:
6. Research question(s):
7. Hypotheses:
8. Requested geo-data (for an overview of available geo-data please click here):
9. Proposed statistical analyses:
10. Planned time schedule:
11. References

(1) For the requirements regarding the use of geo-data, co-authorships and acknowledgements, etcetera, see the scenarios described in the GECCO policy document.

(2) In all reports, the following Acknowledgement should be included:
“The Geoscience and Health Cohort Consortium (GECCO) was financially supported by the EMGO Institute for Health and Care Research of Vrije Universiteit Amsterdam and VU University Medical Center in Amsterdam, the Netherlands.”

(3) The reference to cite is: