

FIELD REPORT

Marshall Plan Scholarship



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[Fellow]	Sandra M. Braumann
[Project Title]	MOUNTAIN GLACIER SENSITIVITY IN THE EASTERN ALPS Response of glacierized areas to climate change in the past and present and implications for the future
[Advisors]	<p>Univ.Prof. Dipl.Geolg. Dr.rer.nat. Markus Fiebig <i>Institute of Applied Geology, BOKU Vienna, Austria</i></p> <p>Univ.Prof. Dr. Joerg M. Schaefer <i>Lamont-Doherty Earth Observatory, Columbia University, NY, USA</i></p> <p>Ass.Prof. Dr. Summer Rupper <i>Geography Department, University of Utah, UT, USA</i></p> <p>Dr. Juergen M. Reitner <i>Geological Survey Vienna, Austria</i></p> <p>Dr. Stephanie Neuhuber <i>Institute of Applied Geology, BOKU Vienna, Austria</i></p> <p>Assoc.Prof. Dr. Christopher Luethgens <i>Institute of Applied Geology, BOKU Vienna, Austria</i></p>
[Home University]	University of Natural Resources and Life Sciences (BOKU), Vienna, Austria
[Doctoral Program]	H 796 764 431 Doctoral Program Transitions to Sustainability (T2S)
[Host Universities]	Columbia University, NY, USA University of Utah, UT, USA
[Approved funding period]	8 months October 2019 to May 2020
[Date of Submission]	August 13, 2020

1 | GENERAL IMPRESSION OF RESEARCH STAY ABROAD

For young researchers it is fundamental to explore academic environments beyond their home universities and to connect to scientists on an international level. Research stays in the USA funded by the Marshall Plan Foundation hold the opportunity to learn new skill sets, to strengthen one's international network and to get insights into research institutions in North America. I would like to express my gratitude to the **Marshall Plan Foundation** for supporting my research and for allowing me to make this unique experience, which paved the way for new opportunities in my academic career.

The stay at the **Lamont-Doherty Earth Observatory (LDEO) of Columbia University** allowed me to accomplish a core part of my Ph.D. project - the age dating of former ice margins in the Austrian Alps using cosmogenic nuclides - in a highly efficient way. I was able to generate high quality data, which are fundamental to the success of my dissertation. Data interpretation was realized with the help of my co-supervisor and host, Prof. Joerg M. Schaefer and Lamont's Glacier and Climate group. The immediate output of my Ph.D. is an article, which has recently been accepted for publication in a peer-reviewed journal (Quaternary Science Reviews), and which constitutes the research paper submitted along with this field report. The fact that I could spend several months at the LDEO clearly benefits the quality, and breadth and depth of my dissertation, and is a key element for the success of my Ph.D. project.

The second part of my research visit in the US, at the **Geography Department of the University of Utah (UU)**, was dedicated to modeling of paleoglaciers. I was hosted by Prof. Summer Rupper and her group and was able to generate first results during my visit in Salt Lake City, which unfortunately ended abruptly in mid-March due to the COVID-19 crisis. Even though the new circumstances in combination with shut-downs of campuses in the US and in Austria were challenging and required everyone to adapt and explore new, or rarely used tools of communication, both Prof. Rupper and Prof. Schaefer offered their students - including myself - plenty of options to work on their projects and to get assistance, if needed. This effort is documented in the table on page 2, which lists details on my communication with my supervisors at the LDEO and at the UU and their groups from April to May (equivalent to the end of the funding period).

2 | QUALITY OF HOST INSTITUTIONS

The **LDEO** is one of the leading research institutions in the field of climate and earth sciences. I have greatly benefited from the collaboration with the members of the Glacier and Climate group headed by Prof. Schaefer and could gain a broader perspective on related topics in the field of climate sciences such as oceanography, climate modeling, different types of climate proxies, etc. I experienced all the support I needed on the scientific as well as on the administrative level. The same is true regarding my visit at the **UU**. Even though the duration of my stay at the **UU** was reduced to one month (instead of 3.5 months), I could participate in meetings of Prof. Rupper's group as well as in student-organized courses. I was and I am still excited about the support and interest for my project, and the motivation among senior and junior members of both groups at the **LDEO** and at the **UU**, which made my visits at both institutions not only highly productive, but also very pleasant.

3 | CONTACTS WITHIN THE HOST INSTITUTIONS - INCLUSION IN ORGANIZATIONS

My contact with the **LDEO** and specifically with Prof. Schaefer was established in 2014, when I spent several months at the research institution in the course of my master's program. Since then, Prof. Schaefer supported my endeavour to enrol in a Ph.D. program and to return to the **LDEO** to broaden my skills in geochemistry and climate sciences. Therefore, it is not surprising, that I was rapidly integrated into his working group and lab team. I participated in weekly group meetings and met with Prof. Schaefer separately to talk about my project in more detail on a weekly basis. Prof. Schaefer and his group organize weekly video meetings since mid-March, which I am still participating in, even though my research visit at the LDEO is concluded for now. I am considered as a group member of Prof. Schaefer's group at the **LDEO**, which keeps me informed about the science projects realized by the group, and which allows me to get advice with respect to my own research project. I have also been well integrated in Prof. Summer's group at **UU's** Geography Department. I participated in group meetings and had several meetings with Prof. Rupper

to discuss the methodology and the goals of the modeling component of my Ph.D. project. Due to my early departure - a decision which was based on the shut-down of the **UU** paralleled by the recommendation of the Austrian ministry of foreign affairs to return to Austria - my contacts with Prof. Rupper and her group have been continued via e-mails and video conferences since mid-March.

Date	Supervisor or group	Type of communication	Duration
01.04.2020	IAG BOKU meeting - Instiute	Video conference	1.5 h
01.04.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h
03.04.2020	Joerg M. Schaefer	Video conference	1 h
07.04.2020	--> Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
10.04.2020	<-- Durban Keeler, Summer Rupper, Joerg Schaefer	E-Mail	-
10.04.2020	<-- Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
13.04.2020	--> Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
13.04.2020	<-- Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
14.04.2020	--> Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
15.04.2020	<-- Summer Rupper, Joerg Schaefer, Durban Keeler	E-Mail	-
08.04.2020	IAG BOKU meeting - Instiute	Video conference	1h
08.04.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1h
15.04.2020	IAG BOKU weekly meeting	Video conference	1h
15.04.2020	Joerg M. Schaefer, Summer Rupper LDEO Glacier and Climate group meeting	Video conference	1h
16.04.2020	IAG BOKU Quaternary group meeting	Video conference	1h
17.04.2020	Joerg M. Schaefer	Video conference	30 mins
22.04.2020	IAG BOKU meeting - Instiute	Video conference	1h
22.04.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1h
22.04.2020	Summer Rupper and Durban Keeler	Video conference	1h
28.04.2020	IAG BOKU Quaternary group meeting	Video conference	
29.04.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h 15 min
29.04.2020	Summer Rupper	Video conference	30 mins
01.05.2020	Joerg M. Schaefer	Video conference	30 mins
04.05.2020	Summer Rupper, Joerg M. Schaefer	E-Mail	
06.05.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h
11.05.2020	IAG BOKU Quaternary group meeting	Video conference	1 h
13.05.2020	Summer Rupper, Joerg M. Schaefer	Video conference	1 h
14.05.2020	IAG BOKU Quaternary group meeting	Video conference	45 min
20.05.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h
25.05.2020	IAG BOKU Quaternary group meeting	Video conference	1 h
26.05.2020	Summer Rupper	Video conference	1 h
27.05.2020	IAG BOKU meeting - Instiute	Video conference	1h
27.05.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h
03.06.2020	Joerg M. Schaefer LDEO Glacier and Climate group meeting	Video conference	1 h

RECOMMENDATIONS FOR FUTURE MARSHALL PLAN STUDENTS AND FELLOWS

- Try to start the planning of your reasearch stay abroad as soon as possible, if possible at the beginning of your master's or doctoral program. In that way, you will be able to optimize the timing. If anything goes wrong, you will have enough time to think about a workaround or to develop a new stratgey.
- When planning your research visit, make a budget including traveling costs, rent, health insurance, etc. This will help you to estimate the financial support you will need.
- Make sure that you have adequate health insurance in the US, and keep your insurance in Austria in case you have a transfer back to Austria and you need medical treatment in Austria.
- Try to get in touch with your host and his/her/their group before your departure, which will probably help you to get started in the new academic environment.
- Make sure that you know your contact person at the host university's International Office. The staff of the International Office helps you navigate through visa applications, paperwork upon your arrival, etc. Try to be efficient, when they are asking you for documents or formal tasks to complete as the timely and proper submission of documents and information will accelerate the whole process of getting enrolled at your selected US instistution.
- Be kind.