MEMO^2: MEthane goes MObile – MEasurements and MOdelling

Two secondments

for each ESR completed

Lead author

Sylvia Walter

Utrecht University, Institute for Marine and Atmospheric Research Utrecht (IMAU)

Princetonplein 5
3584CC Utrecht
The Netherlands

Phone: +31 (0)30 253 3167
Email: s.walter@uu.nl

Deliverable D4.3			
Delivery month Annex I	30		
Actual delivery month	30		
Lead participant: UVSQ	Work package: 4	Nature: R	Dissemination level: PU
Version 1			

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 722479.

Annual update of the CDPs for each ESR

Table of contents

1. Executive summary

The MEMO² training program follows a holistic approach including disciplinary / interdisciplinary elements, individual / collective training, and theoretical / practical courses, all aiming to prepare the ESRs with key competences to tackle scientifically complex and societally relevant issues. Secondments are an important part of project as they include a research and a training dimension at the same time for the ESRs.

Targeted competences in MEMO² are the ability to: I) effectively and interactively use and develop tools such as innovative technologies, knowledge, and languages in an interdisciplinary way, II) act autonomously within the "big picture" of climate sciences, III) function and interact synergistically within a socially heterogeneous group, and IV) responsibly conduct and manage a challenging research project within 3 years. In MEMO², we will teach each ESR an ensemble of different knowledge, expertise, and life skills, both at individual and collective levels and the obligatory secondments tackle a wide variety of those skills.

The project management closely monitor the secondments, when and where ESRs do their secondments, and ensures reporting about them. The ESRs may choose if they would like to report by a given template or by writing a blog about their secondments. The blogs are public available on the website. This option is clearly encouraged as ESRs by this option not only reflect the work done as they would have been done by writing a report, but also enhance their writing skills towards a public audience and disseminate the project and its outcomes.

Secondment periods were planned in the proposal and described in the Grant Agreement. However, over the lifetime of projects secondments need some flexibility adapted to the project requirements. Thus, some of the initial MEMO² secondments have slightly been adjusted compared to the original plan due to e.g. a delay in recruitment, new collaborations developed over time, and scientific opportunities such as campaign participations. All shifts are scientifically verified and advantageous for the ESRs.

Two or more secondments have been executed by all ESRs except for one secondment of ESR11, which needed to be postponed due to Corona pandemic. As ESR11 has a 4 year-contract, her last secondment is scheduled as soon as possible.

2. Purpose of the deliverable

> *Secondments are periods of research training with another beneficiary or a partner organisation in order to further enrich the training experience of the researchers.*

The MEMO² training program follows a holistic approach including disciplinary / interdisciplinary elements, individual / collective training, and theoretical / practical courses, all aiming to prepare the ESRs with key competences to tackle scientifically complex and societally relevant issues (Fig. 1). Secondments are an important part of project as they include a research and a training dimension at the same time for the ESRs. They are crucial for the ESR training and for building up and maintaining their active professional network.

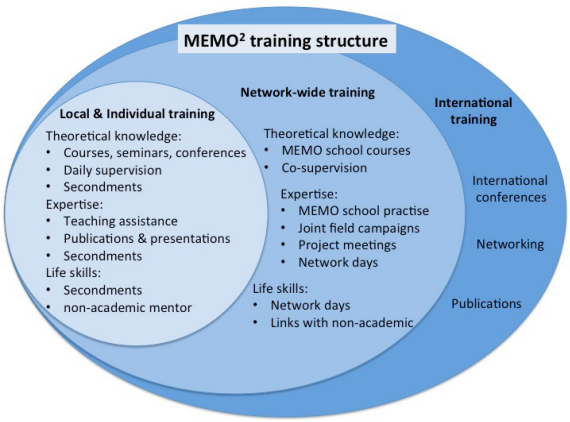

Fig. 1: Structure of the MEMO² training program with local & individual training, network-wide training and international training aspects

During secondments, ESRs will gain theoretical knowledge, practical expertise, and personal skills and competencies, and experience different research cultures.

Targeted competences MEMO² is aiming on are the ability to: I) effectively and interactively use and develop tools such as innovative technologies, knowledge, and languages in an interdisciplinary way, II) act autonomously within the "big picture" of climate sciences, III) function and interact synergistically within a socially heterogeneous group, and IV) responsibly conduct and manage a challenging research project within 3 years.

In MEMO², each ESR has taught an ensemble of different knowledge, expertise, and life skills, both at individual and collective levels and the obligatory secondments tackle a wide variety of those skills. These skills are the elements that are needed to develop the target competences, within or outside the project. For example, successfully organizing a field campaign requires individual theoretical knowledge (about the science of the measurements made), expertise (on the instruments deployed), and personal skills (organization, discipline, and autonomy), but also key collaborative skills (communication, language, reaching compromises, developing synergies). Competence-focused training in an interdisciplinary and intersectoral network forms a stimulating environment that is beneficial for the future career of the ESRs. The close contact with industrial and other nonacademic partners in MEMO² aimed to ignite an entrepreneurial mind-set and complement the academic parts of the training.

The implementation of secondments in the research program to both academic and non-academic partners created win-win situations at several levels: Europe will benefit from researchers educated at this level of scientific excellence, interdisciplinary broadness and collaborative competences. The consortium as a whole benefit from the secondments via intensive knowledge exchange, which is explicitly desired for the individual projects, providing opportunities for interactions within and outside the consortium, and general development and improvement of specific skills and competences. The ESRs benefit by being introduced to a highly interdisciplinary network, get acquainted with state-to-the-art techniques and methods, and learn about different cultures.

3. Secondment schedule

3.1 Initial schedule

The secondment schedule has been planned in advance and was based on the project requirements. It is described in the Grant Agreement (Table 1).

ESR	Beneficiary supervisor	Co-supervisor	Non–academic mentor	Secondment1	Secondment2	Secondment 3
ESR1	UHEI	UU	SHELL	UU, 1 month	UVSQ, 1 month	AGH, 1 month
ESR2	RUG	ECN	OO	ECN, 5 months	Empa, 1 month	WU/UU, 1 month
ESR3	AGH	UHEI	PGI	UHEI, 1 month	PGI, 4 months	UU, 2 weeks
ESR4	LU	EMPA	AS	Empa, 1 month	RHUL, 2 weeks	AS, 1 month
ESR5	UVSQ	RHUL	NPL	RHUL, 1 month	NPL, 1 month	
ESR6	EMPA	RUG	UBA	RUG, 1 month	LU, 1 month	
ESR7	RHUL	RUG	VIR	RUG, 1 month	VIR, 3 month	UU 2 weeks
ESR8	UU	RHUL	PIC	RHUL, 1 month	UVSQ, 1 month	AGH, 2 months
ESR9	RHUL	UU	ISOP	UU, 1 month	UVSQ, 1 month	ISOP 1 week
ESR10	UU	TNO	AD	TNO, 8 months	AGH, 1 month	UVSQ, 1 month
ESR11	WU	EMPA	WHIF	Empa, 1 month	TNO, 1 month	WHIF, 2 weeks
ESR12	EMPA	UVSQ	ECN	UVSQ, 1 month	TNO, 1 month	WU, 1 month
ESR13	UVSQ	WU	PIC	WU, 1 month	TNO, 1 month	Empa, 1 month

Table 1: Initial list of supervisors, co-supervisors, non-academic mentors and secondments for each ERS project (see Table 1.2.1b in the GA)

Each ESR was responsible for her / his specific research project, which was embedded in the scientific program of the consortium. This included the scientific planning of secondments. Complementary to her / his main scientific project, for each ESR at least two or even three mandatory secondments were scheduled. The duration depended on the research goals, the precise nature of the interaction and on the specific training needs. Short secondments were last 1-2 weeks and intensive secondments included

practical work up to several months. Depending on the objectives of the secondments and the schedules of research work it was also possible to split the planned duration given in Table 1 into several days if this was beneficial for the purpose of the secondment.

3.2 Actual schedule

Over the lifetime of projects secondments might need some flexibility to be adapted to the project requirements as these may change and differ from the initial plans. Thus, some of the initial MEMO² secondments have slightly been adjusted compared to the original plan due to e.g. a delay in recruitment, new collaborations developed over time, or scientific opportunities such as campaign participations. As most secondments also have a practical or field experimental part, also e.g. instrumental problems or even weather conditions can cause a need for adjusting a secondment and therefor have to be considered.

All ESRs have done two secondments except of ESR11, which needed to be postponed due to Corona pandemic. As ESR11 has a 4 year-contract, her last secondment is scheduled as soon as possible.

The delay in the execution of the secondments – it was envisaged to have two secondments for each ESR completed at project month 30 - is mostly due to the time shift in recruitment of about 4-6 months and the extraordinary activity of the ESRs which e.g. organized and participated in several additional measurement campaigns. The most important joint campaign to mention here is ROMEO (Romanian Methane Emissions from Oil & gas), which is organized as a MEMO² flagship campaign by UU in August and October 2019.

ROMEO has been selected by the United Nations Environment Programmme (UNEP), and involves 12 research institutes from 10 EU countries (including three Romanian research institutes; INCAS, INOE - optoelectronics and Babeș-Bolyai University in Cluj-Napoca) and one US American team. All ESRs had been participating in the campaign and its preparation, either locally (measurement teams) or remote (modelling teams).

Those activities were not foreseen in the proposal but are extraordinary beneficial for the ESRs due to I) the value of data, II) joint networking activities, and III) the opportunity to further develop a wide variety of skills and competencies. Several of them, such as methodological and instrumental skills, modeling or soft skills in general were initially part of the secondments as described in the proposal. The joint campaigns offer the opportunity to practically experience and improve them on-site. Thus, in agreement with the coordinator priority was given to the joint networking measurement activities. By participating in the joint activities, the training component of the MEMO² ESRs is ahead schedule although the secondments have not followed the initial scheme. Table 2 gives an overview of executed secondments.

Table 2: Overview of executed and further planned secondments

ESR	Secondments executed / ongoing with link to the respective blog about it	Secondments planned
ESR1: Piotr Korben (UHEI)	AGH (22.05.18 – 10.06.18, 31.10.18 – 9.11.18), https://h2020-memo2.eu/2018/08/16/1056/ LSCE (02.2019 – 03.2019), https://h2020-memo2.eu/2020/01/30/piotr-korben-is-paris-a-romantic-city-or-a-city-of-methane/	
ESR2: Katarina Vinkovic (RUG)	ECN (26.08. – 07.09. 2018, 29.10. 2018. – 25.01. 2019), https://h2020-memo2.eu/2019/06/19/katarina-vinkovic-are-the-cow-farts-real-threat/ Empa (14.02. – 16.03.2020)	
ESR3: Mila Stanisavljevic (AGH)	PGI (short preparation visit 18.10. - 20.10.2017) PGI (01.08.-01.10.2019) UHEI (13.01.-10.02.2018) UU (15.05.-01.06.2019), https://h2020-memo2.eu/2020/01/31/mila-stanisavljevic-the-isotopic-signature-of-methane-from-coal-mines-facilities/	
ESR4: Patryk Lakomiec (LU)	Afvall Sverige - Single preparation days Afvall Sverige (28.10.-15.11.2019), RHUL (19.11.-30.11.2018), https://h2020-memo2.eu/2018/12/06/patryk-	

	lakomiec-swedish-air-goes-britain/ ROMEO in collaboration with Empa (30.09.-13.10.2019)	
ESR5: Sara Defratyka (UVSQ)	RHUL (17.06.-13.07.2018), https://h2020-memo2.eu/2018/12/05/sara-defratyka-aircores/ NPL (03.09.-17.09.2019),	
ESR6: Badrudin Stanicki (EMPA)	No secondments due to resignation	
ESR6b: Jonas Ravelid (EMPA)	LU (26.08.-15.09.2019) ROMEO in collaboration with UHEI (30.09.-20.10.2019)	
ESR7: Semra Bakkaloglu (RHUL)	RUG (17.09.-26.10.2018), https://h2020-memo2.eu/2019/02/01/semra-bakkaloglu-what-an-adventurous-secondment/ UU (27.05.-07.06.2019), Viridor (07.05. – ongoing)	
ESR8: Malika Menoud (UU)	AGH (16.05.-30.05.2018, to be continued), https://h2020-memo2.eu/2018/09/21/installation-of-a-cf-irms-and-methane-extraction-system/ AGH (15.03.-27.03.2019) RHUL (18.06.-14.07.2018), https://h2020-memo2.eu/2019/02/09/malika-menoud-secondment-at-royal-holloway-university-of-london/ UVSQ (17.02.-13.03.2020)	
ESR9: Julianne Fernandez (RHUL)	UU (24.09.-21.10.2018), https://h2020-memo2.eu/2019/02/10/julianne-fernandez-the-isotopic-signature-of-urban-methane-emissions/ UVSQ (12.02.-23.03.2019) ELEMENTAR (23.09.27.09.2019, 14.10.-19.10.2019)	
ESR10: Hossein Maazallahi (UU)	TNO (01.2018 – ongoing), https://h2020-memo2.eu/2019/02/11/hossein-maazallahi-my-collaboration-with-tno/ AGH (05-06 2018, CoMet campaign)	
ESR11: Anja Raznjevic (WU)	Empa (26.03.-27.04.2018), https://h2020-memo2.eu/2018/11/07/anja-raznjevic-modeling-dispersion-of-methane/	TNO (a.s.a.p.) WHIFFLE (Fall 2020)
ESR12: Randulph Morales (EMPA)	UVSQ (29.10.-23.11.2018), https://h2020-memo2.eu/2020/02/05/randulph-morales-a-research-visit-with-an-unexpected-road-trip-secondment-at-lsce/ WU (10.11.-07.12.2019), https://h2020-memo2.eu/2020/02/05/randulph-morales-being-closer-to-the-environment-in-wageningen/	
ESR13: Barbara Szenasi (UVSQ)	WUR (19.02.2018–19.03.2018), https://h2020-memo2.eu/2018/09/05/ barbary-szenasi-my-research-visit-at-wageningen-university/ TNO (17.06.-12.07.2019), https://h2020-memo2.eu/2020/04/20/barbara-szenasi-secondment-in-the-exceptionally-sunny-netherlands/ UU (09.-20.12.2019), TNO (13.-24.01.2020)	

* ESR 6a reduced working time after a few months and finally resigned
** ESR 6b replaced ESR 6a and started 01.12.2018, employed until 30.11.2019

The secondments were executed as initially planned as much as possible, but were necessary with some adjustments based on changed requirements of the ESRs. This might be a change in

- host institution: the ESRs might need to further develop different or learn new skills, wihch could not be offered at the initially scheduled host institution
- execution dates: time slots for measurement / modelling / data evaluation activities have been shifted for e.g. environmental conditions or availability / instrumental reasons
- splitting the duration over more than one time slot: it might be advantageous to split the scheduled secondment time at the host institution and introduce extra time slots at the home institution for measurements or data evaluation to ensure efficiency of the secondment

4. Monitoring of secondments

The project management was in close contact with all beneficiaries and monitored the execution of the secondments regularly. All ESRs had to report in general on their secondments in the annual progress and periodic reports, and they had to individually report on the secondments by either using a report template (Annex I, attached) or writing a blog for the website.

The option of writing blogs was clearly encouraged as ESRs by this option not only reflect the work done as they would have been done by writing a report, but also enhance their writing skills towards a public audience and disseminate the project and its outcomes.

The blogs are public available on the project website (https://h2020-memo2.eu/category/blog/), the individual blog links are also given in Table 2. Most blogs were also announced via the social media channels of the project.

Annex I: Template Secondment Report

1. Executive Summary

Please provide an executive summary of the secondment, which can also be used for dissemination purposes. Just briefly in a few sentences,

What was done?
Why? Scope of the secondment?
How? Methods?
Main outcomes and conclusions?

2. Introduction

Please provide briefly the scientific background and scope of the secondment.

2.1 Background

2.2 Scope of the secondment

3. Content

Please provide a detailed description of methodology and work carried out. Include results and use figures and tables to illustrate where useful.

4. Impact on your project

Please describe briefly the impact of the secondment for your project, including problems