



Torben Oliver Callesen

EDUCATION AND TRAINING

[01/11/2022 – Current]

PhD in Mountain Environment and Agriculture

Free University of Bolzano <https://www.unibz.it/>

Address: Piazzetta dell'Università, 1, 39031, Bolzano, Italy | **Field(s) of study:** Agriculture, forestry, fisheries and veterinary

[24/09/2019 – 10/02/2022]

International Master's degree in Horticultural Science (IMaHS)

University of Bologna / Free University of Bozen-Bolzano <https://corsi.unibo.it/2cycle/InternationalHorticulturalScience>

City: Bologna/Bolzano | **Country:** Italy | **Field(s) of study:** Agriculture, forestry, fisheries and veterinary: • *Inter-disciplinary programmes and qualifications involving agriculture, forestry, fisheries and veterinary* • *Horticulture* | **Final grade:** 110 cum laude | **Level in EQF:** EQF level 7 | **National classification:** LM-69 | **Type of credits:** ECTS | **Number of credits:** 120 | **Thesis:** "Seasonal CO2 Fluxes and C Allocation in a Mountain Vineyard"

Main competencies acquired:

- Holistic understanding of the agricultural industry, including various different aspects (economics, marketing, post-harvest management and more)
- Understanding of fundamentals of production, such as phytopathology, soil fertility and nutrient cycles, entomology, crop quality etc.
- Laboratory training in relevant methodologies such as analysing pathogen infectivity or plant nutrient deficiencies.
- The capacity to carry out autonomous research in an agricultural environment: planning field experiments, sample collection, collaboration with farmers as well as elaboration and presentation of data.
- Statistical methodologies and data analysis tools (primarily R, Excel and Matlab)

[19/09/2016 – 25/06/2019]

International Bachelor in Natural Science in Chemistry and Physics

Roskilde University <https://ruc.dk/en/international-bachelor-natural-sciences-int>

Address: Universitetsvej 1, 4000, Roskilde, Denmark | **Field(s) of study:** Natural sciences, mathematics and statistics: • *Chemistry* • *Physics* | **Final grade:** 12/12 | **Level in EQF:** EQF level 6 | **Type of credits:** ECTS | **Number of credits:** 180 | **Thesis:** "Chemical and Antimicrobial Analysis of Mucus from *Helix aspersa* and *Helix pomatia* Snail Species"

Main competencies acquired:

- Analytical chemistry techniques (HPLC, ESI-MS, NMR, spectroscopy and others)
- Collaborative group work
- Project planning and organisation
- Modelling of physical systems
- Principles of academic writing and research

[2012 – 2015]

High school

St. Paul's College <https://www.spcnam.org/>

Address: 9000, Windhoek, Namibia |

[2010 – 2012]

High school

Westerford High School | <https://www.westerford.co.za/>

City: Cape Town | **Country:** South Africa |

WORK EXPERIENCE

[04/05/2022 – 15/08/2022]

Research Assistant

Free University of Bolzano | <https://treeecophysiology.unibz.it/>

Address: Universitätsplatz 1 - piazza Università, 1, 39100, Bolzano, Italy | **Name of unit/department:** Tree Ecophysiology and Ecosystems Group, Free University of Bolzano | **Business/sector:** Agriculture, forestry and fishing

Responsible for collection and analysis of biometric and gaseous exchange data as part of the ASTER (modelling of atmospheric boundary layer) project at a university research vineyard in Bolzano, Italy. Tasks also included installation and maintenance of measurement equipment (eddy covariance tower, soil gas chambers, fluorescence meters, sap flow meters and more) and data analysis support.

[01/05/2022 – 15/07/2022]

Production Manager

MangioTrentino | <https://www.mangiotrentino.it/>

Address: Via Bosco di Noriglio, Rovereto, Italy | **Email:** info@mangiotrentino.it | **Business/sector:** Agriculture, forestry and fishing

MangioTrentino is a small, highly diversified agricultural enterprise specialized in production of organic fruit and vegetables and associated products. My responsibilities included assistance in organising of a small group of workers as well as most other aspects related to vegetable production (soil preparation, fertilization, harvest, pest management etc) as well as other business-related aspects.

[14/03/2021 – 30/10/2021]

Internship (viticulture)

Laimburg Research Centre

City: Vadena (BZ) | **Country:** Italy

Internship of four months in total (not continuous) at the department of viticulture in various work groups. Activities included assistance in carrying out various field trials in vineyards, data collection and management, grape harvesting and vinification in the institute's experimental winery as well as interaction with farmers during consultation events.

[07/2019 – 09/2019]

Grape Harvester (seasonal)

Azienda privata Galvagni

City: Rovereto | **Country:** Italy

[2017 – 2019]

Student Assistant

FabLab/BioFabLab RUC

City: Roskilde | **Country:** Denmark

My principle function was helping students to realise various projects at the Fablab prototyping department at Roskilde University. Areas of work included basic microbiology, 3D printing, laser cutting and basic electronics and programming (eg: Arduino). Maintenance and organisation of equipment also formed part of my responsibilities.

LANGUAGE SKILLS

Mother tongue(s): English

Other language(s):

Italian

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Danish






LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

DIGITAL SKILLS

Digital Skills - Test Results

 Information and data literacy	ADVANCED Level 6 / 6
 Communication and collaboration	ADVANCED Level 6 / 6
 Digital content creation	ADVANCED Level 6 / 6
 Safety	ADVANCED Level 6 / 6
 Problem solving	ADVANCED Level 6 / 6

Results from a [self-assessment](#) based on [The Digital Competence Framework 2.1](#)

My Digital Skills

Microsoft Office | R / R Studio | Matlab (basi) | Arduino (base) | Overleaf (LaTeX) | Padronanza del Pacchetto Office (Word Excel PowerPoint ecc) | Windows | Utilizzo del browser | Gmail | Whatsapp | Utilizzo piattaforme cloud online (google drive, icloud, onedrive, ...)

DRIVING LICENCE

Cars: B

RECOMMENDATIONS

Name: Damiano Zanotelli PhD supervisor

Researcher at the Free University of Bolzano

Phone number: (+39) 0471017121 | **E-mail:** damiano.zanotelli@unibz.it

Name: Massimo Tagliavini PhD co-supervisor

Professor at the Free University of Bolzano.

Phone number: (+39) 0471017120 | **E-mail:** massimo.tagliavini@unibz.it

Name: Leonardo Montagnani Master's thesis and research assistant supervisor

Researcher at the Free University of Bolzano.

Phone number: (+39) 0471017137 | **E-mail:** leonardo.montagnani@unibz.it

Name: Tommaso Manfrini

Co-founder of MangioTrentino.

Phone number: (+39) 0464076394 | **E-mail:** info@mangiotrentino.it

Name: Josef Terleth Internship supervisor

Head of work group "Viticultural varieties and propagation material" at Laimburg Research Centre, Bolzano, Italy.

Phone number: (+39) 0471969614 | **E-mail:** Josef.Terleth@laimburg.it

Name: Florian Haas Internship supervisor

Head of work group "Physiology and cultural management techniques" at Laimburg Research Centre, Bolzano, Italy.

Phone number: (+39) 0471969613 | **E-mail:** Florian.Haas@laimburg.it

Name: Mauro Galvagni Employer

Co-owner of agricultural enterprise "Galvagni".

Phone number: (+39) 314138115

Name: Malthe Martin Borch Supervisor

Coordinator at BioFabLab RUC.

Phone number: (+45) 46743055 | **E-mail:** mmborch@ruc.dk

Name: Søren Hvidt

Associate Professor, department of chemistry, Roskilde University.

Phone number: (+45) 46742477 | **E-mail:** hvidt@ruc.dk

Name: Tage Emil Christiansen

Associate Professor, department of physics, Roskilde University

Phone number: (+45) 46742350 | **E-mail:** tec@ruc.dk

Name: Danhostel Vandrehjem Roskilde Employer

Hostel reception

Phone number: (+45) 46352184

Name: Geoffrey Roeloffze Supervisor

Manager at beer brewery "Urban Brewing Co."

Phone number: (+27) 823389109 | **E-mail:** contact@urbanbrewing.co.za

CONFERENCES & SEMINARS

[13/08/2022 – 19/08/2022]

IHC 2022 Angers, France

Author of abstract presented at the IHC 2022 31st International Horticultural Congress, titled "Assessing carbon sequestration and its within-vine allocation in the vineyard".

Co-authors: Damiano Zanotelli (speaker), Leonardo Montagnani, Carina Veronica Gonzalez, Flavio Bastos Campos, Fadwa Benyahia, Carlo Andreotti, Massimo Tagliavini.

Link: <https://www.actahort.org/members/symposiaa?action=abstractforcoauthor&abstractforcoauthorlink=SeKMmzKXKoXMB-26620-BMvzKX>

[12/06/2022 – 14/06/2022]

CONAVI 2022 Conigliano (TV), Italy

First author of abstract presented at CONAVI 2022 IX National Viticulture Convention, titled "Dinamiche di sequestro e allocazione di carbonio in un vigneto di montagna inerbito" (Dynamics of sequestration and allocation of carbon in a grassed mountain vineyard).

Co-authors: Damiano Zanotelli (speaker), Leonardo Montagnani, Carina Veronica Gonzalez, Flavio Bastos Campos, Fadwa Benyahia, Carlo Andreotti, Massimo Tagliavini.

Link: <https://www.conavi2022.it/index.html>

[22/05/2022 – 26/05/2022] **EGU22** Vienna, Austria

Co-author of presentation titled "Disentangling the main sources of evapotranspiration in a vineyard" presented at the European Geosciences Union (EGU) pf 2022 by Flavio Bastos-Campos (first author).

Link: <https://meetingorganizer.copernicus.org/EGU22/EGU22-8231.html>

[16/06/2022] **Laimburg Research Centre** Laimburg, Vadena (BZ), Italy

Presentation of the research carried out the previous year in collaboration with the Laimburg department of viticulture. Topic: Fluxes and allocation of carbon in a mountain vineyard.

Link: <https://drive.google.com/file/d/1LJSKnv6NDkeHi194p8lsvmI9-VINuYef/view?usp=sharing>

PUBLICATIONS

[2023] **[Understanding carbon sequestration, allocation, and ecosystem storage in a grassed vineyard](#)**

Reference: Callesen, T, Gonzalez, C., Bastos Campos, F., Zanotelli, D., Tagliavini, M., Montagnani, L.

Understanding if and to what extent agricultural land types can sequester carbon is important for assessing their greenhouse gas mitigation potential. Grassed vineyards have recently been described as large carbon sinks relative to most cropland types, indicating the importance of understanding their carbon cycle in more detail. To this end, we conducted a detailed study along a growing season in a grassed mountain vineyard with two varieties (Chardonnay and Sauvignon blanc) to quantify the overall carbon stock of the system and to attribute the carbon fluxes to the specific components of the carbon cycle of the agroecosystem, including vines organs (shoots, fruits, roots), grasses (shoots and roots) and soil. We combined eddy covariance, soil respiration, biometric measurements, and soil analysis. Our findings determined the studied vineyard to be a moderate carbon sink. We found a gross primary production ($2409 \pm 35 \text{ g C m}^{-2}$) much larger than previous data for vineyards, but the net ecosystem production ($246 \pm 54 \text{ g C m}^{-2}$) of the growing season was on the lower end of previous reports. The grassed alleys comprised roughly 60% of net primary production, confirming that they contribute significantly to the C input of the system. The overall carbon stored in the vineyard ($152.1 \pm 7.1 \text{ t C ha}^{-1}$) was less than that of forests and some orchards primarily due to the lower amount of plant biomass. The soil represented by far the largest carbon storage in the vineyard, and changes in soil organic carbon and litter accounted for >75% of long-term carbon increase. Further studies are needed to unravel the relative contribution of the grapevines and grasses to overall gross primary productivity and soil carbon storage, especially in the context of different management decisions and the increasing frequency of drought events in similar mountain environments.

[2022] **"Gross and net primary productivity in a vineyard assessed by eddy covariance and biometric measurements"**

Journal: International Society for Horticultural Science - International Symposium on Innovative Perennial Crops Management

Status: accepted for publication

Authors:

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Massimo Tagliavini, Piazza Universita' 1, Bolzano, Italy; massimo.tagliavini@unibz.it (co-author)

[2022] **[Apfelbäume im Hitzetest \(Apple Trees during Heatwaves\)](#)**

Article describing productivity of apple trees under heatwave conditions. Written for local agricultural news publication "Südtiroler Landwirt" on behalf of the Free University of Bolzano.

Authors (in no specific order):

Damiano Zanotelli,

Torben Callesen

Massimo Tagliavini,

Carlo Andreotti,

Leonardo Montagnani