



Riccardo Brunetta

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Work: Via Saragat, 1, 44122 Ferrara (Italy)

EDUCATION AND TRAINING

PhD IUSS Ferrara 1391 in Earth and Marine Sciences (EMAS) (Double title with the University of Cadiz, Spain)

University of Ferrara [01/10/2018 – 30/06/2022]

Address: Via Saragat, 1, 44100 Ferrara (Italy)

Website: [https:// www.unife.it/studenti/dottorato/it/corsi/riforma/terra](https://www.unife.it/studenti/dottorato/it/corsi/riforma/terra)

Field(s) of study: GEO/04

Final grade: cum laude – Level in EQF: EQF level 8

Thesis: Evolution of restoration projects of coastal wetlands: from tidal flat to salt marsh

PhD cycle: 34°

Supervisor: Prof. Paolo Ciavola

Age of PhD achievement: 28 | Official period of the PhD: 3 years

Final title: double title PhD from the Università degli Studi di Ferrara and Universidad de Cadiz (Spain).

Date of the defence: 30/06/2022

Main topics:

- Geomorphology and sedimentology;
- Study of coastal wetlands (tidal flats, salt marshes, lagoons).

Skills:

- ArcGIS and Qgis user;
- DEM and Orthophoto data process, validation and interpretation;
- Sediment deposition;
- Vertical changes and sediment budget estimation (Geomorphic Change Detection, Dem of Difference);
- Sediment sampling and processing in lab;
- Building-with-Nature approach;
- Moving in muddy environments.

Tools used on-field:

- Trimble GPS-RTK;
- UAV user (DJI Phantom 3+);
- Metashape (Structure from Motion);
- Laser Scanner user (Leica P30);
- Tide gauge user (DLN70);
- Surface cores and sediment traps;
- Wet sieving and granulometric analyses (Coulter Counter);
- Sampler Depth Integrating (DH-76);
- Bedload sampler (Helley-Smith);
- Marine drone with Echosounder single beam (CK-14 + Sonarmite);
- ADCP.

Master degree in Geological, Georesources, and Territorial Sciences

University of Ferrara [2015 – 2018]

Address: Via Saragat, 1, 44100 Ferrara (Italy)

Field(s) of study: LM-74 - Master degree in Geological, Georesources, and Territorial Sciences

Final grade: 110/110 cum laude – Level in EQF: EQF level 7

Thesis: Salt marsh formation and sediment dynamics in the Perkpolder tidal basin, SW Netherlands (NL)

Subject: Coastal Risks

Supervisor: Prof. Paolo Ciavola

Key words: Sedimentology, Salt Marsh, Tidal Flat, The Netherlands

Date of the defence: 20/07/2018

Bachelor degree in Geological Sciences

University of Ferrara [2011 – 2015]

Address: Via Saragat, 1, 44100 Ferrara (Italy)

Field(s) of study: L-34 - Bachelor in Geological Sciences

Final grade: 109/110 – **Level in EQF:** EQF level 6

Thesis: Architettura di facies delle Calcareniti di Porto Badisco (Oligocene superiore) nell'area di Torre S. Emiliano (Salento Puglia)

Subject: Laboratory of Stratigraphy

Supervisor: Prof. Michele Morsilli

Key words: Calcareniti Porto Badisco, Oligocene, Salento

Date of the defence: 22/12/2015

WORK EXPERIENCE

Post-doc position COSTUF Team

University of Ferrara - Department of Physic and Earth Sciences [01/01/2023 – Current]

City: Ferrara

Scientific field: GEO 0/4

Research subject: "Study of geomorphological impact of coastal storms on transitional environments (dunes and lagoons) through remote sensing dataset"

Research supervisor: Prof. Paolo Ciavola, from the Department of Physics and Earth Sciences of the University of Ferrara.

Occasional employment

Consorzio Futuro in Ricerca (CFR) [06/10/2022 – 31/10/2022]

City: Ferrara

Country: Italy

Calibration and testing of the marine drone CK-14 for bathimetric surveys for the project "Surveying and updating the coastal morphological chart, in particular for the coastal dune systems" - CIG ZAC2F5B255;

Scientific Supervisor: Prof. Paolo Ciavola, from the Department of Physics and Earth Sciences of the University of Ferrara.

Study grant

University of Ferrara [01/04/2022 – 31/07/2022]

City: Ferrara

Country: Italy

Winner of the study grant of the University of Ferrara: "Evaluation of river and coastal floods impact in the Po Delta system".

Supervisor: Prof. Paolo Ciavola.

Certification UAS A1/A3

ENAC (Ente Nazionale per l'Aviazione Civile)

Driving licence for aerial drones A1/A3.

Study period and collaboration with the Saint Mary's University (Halifax, Canada)

Saint Mary's University (Halifax, CA) [05/07/2021 – 09/10/2021]

City: Halifax

Country: Canada

Study period and a collaboration of 3 months (06/07/2021-10/10/2021) with the research team of the Department of Geography and Environmental Sciences of the Saint Mary's University (Halifax, Canada).

Supervisor: Prof. Danika van Proosdji.

Main objectives:

- Fieldwork: sediment traps, RTK-GPS, UAV surveys, hydrodynamic measurements.
- Data processing: sediment deposition calculation, Coulter Multisizer, Gradistat, Drawers.

Erasmus+ (European Union Program)

HD University of Applied Sciences [02/2017 – 07/2017]

City: Vlissingen

Country: Netherlands

Internship and research of 5 months in the HZ University of Applied Sciences (Vlissingen, The Netherlands) for the thesis of the master degree in "Geological, Georesources, and Territorial Sciences" of the University of Ferrara (academic years 2017/2018).

Supervisor: Dott. Joao Salvador De Paiva.

Study period in the University of Cadiz (Cadiz, Spain)

Universidad de Cadiz (Cadiz, ES) [07/10/2019 – 07/11/2019]

City: Cadiz

Country: Spain

Study period of 1 month in the Universidad de Cadiz (UCA) for the improvement of the knowledge regarding salt marshes and PhD research.

Supervisor: Prof. Gloria Peralta

IV International Summer School on Dynamics of Estuarine and Nearshore Systems (Granada, Spain)

Workshop [11/06/2019 – 21/06/2019]

City: Granada

Country: Spain

Website: gdfa.ugr.es/summerschool19/

Summer School organized in Granada (Spain) on Dynamics of Estuarine and Nearshore Systems focused on the comprehension of fundamental concepts and advanced applications of modern knowledge regarding these systems.

Supervisors: Huib E. de Swart & Manuel Dièz-Minguito

TEACHING EXPERIENCE

Contract for "Fluvial Dynamics", Master Degree course LM-74 (6 CFU) GEO/04

[27/02/2023 – Current]

University of Ferrara, Italy - Department of Physic and Earth Sciences

Yearly teaching contract for the course of "Fluvial Dynamics" of the master degree LM-74 in "Geological, Georesources, and Territorial Sciences" of the academic year 2022/2023 (48 hours).

Thesis Co-Supervisor

[2022 – 2023]

Student: Samantha Cavalieri D'oro

Bachelor degree: Geological Sciences

Academic year: 2022/2023

Thesis: Valutazione dell'impatto da mareggiata e ingressione marina: evento del 22 novembre 2022 a Lido delle Nazioni (FE)

Supervisor: Prof. Paolo Ciavola

Co-supervisor: Dr. Stefano Fabbri

Co-supervisor: Dr. Riccardo Brunetta

Thesis Co-Supervisor

[2022 – 2023]

Student: Manuel Tavellin

Bachelor degree: Civil and Environmental Engineering

Academic year: 2022/2023

Thesis: Test sulla performance di un fishfinder commerciale per lo svolgimento di rilievo batimetrici

Supervisor: Prof. Paolo Ciavola

Co-supervisor: Dr. Juan Montes Perez

Co-supervisor: Dr. Riccardo Brunetta

Teaching support

[2020 – 2022]

University of Ferrara, Italy - Department of Physic and Earth Sciences

Teaching support for the course of "Application of GIS and remote sensing for the territorial cartography" of the master degree in "Geological, Georesources, and Territorial Sciences" of the University of Ferrara (academic years 2021/2022).

Supervisor: Prof. Paolo Ciavola.

Hours of services: 20

Tutoring

[2019 – 2021]

University of Ferrara - Department of Physic and Earth Sciences

Lessons and training of cartography for the course of "Physical Geography and Geomorphology" of the bachelor degree in "Geological Sciences" of the University of Ferrara (academic years 2020/2021).

Supervisor: Prof. Paolo Ciavola.

Hours of service: 12

Teaching support

[2019 – 2021]

University of Ferrara - Department of Physic and Earth Sciences

Teaching support for the course of "Application of GIS and remote sensing for the territorial cartography" of the master degree in "Geological, Georesources, and Territorial Sciences" of the University of Ferrara (academic years 2020/2021).

Supervisor: Prof. Paolo Ciavola.

Hours of services: 20

Tutoring

[2019 – 2021]

University of Ferrara - Department of Physic and Earth Sciences

Laboratory of Rock Identification for the course "Elements of Geomorphogy" of the bachelor degree in "Civil and Environmental Engineering" of the University of Ferrara (academic years 2020/2021).

Supervisor: Prof. Paolo Ciavola.

Hours of service: 20

Tutoring

[2018 – 2020]

University of Ferrara - Department of Physic and Earth Sciences

Assistence to lessons and excursions for the course of "Physical Geography and Geomorphology" of the bachelor degree in "Geological Sciences" of the University of Ferrara (academic years 2019/2020).

Supervisor: Prof. Paolo Ciavola.

Hours of service: 25

Teaching support

[2018 – 2020]

University of Ferrara - Department of Physic and Earth Sciences

Teaching support for the course of "Application of GIS and remote sensing for the territorial cartography" of the master degree in "Geological, Georesources, and Territorial Sciences" of the University of Ferrara (academic years 2019/2020).

Supervisor: Prof. Paolo Ciavola.

Hours of services: 20

Thesis Co-Supervisor

[2019 – 2020]

Student: Francesco Miricola

Master degree: Civil and Environmental Engineering

Academic year: 2019/2020

Thesis: Evoluzione morfologica della piana tidale a nord del delta del po: analisi dei prodotti UAV

Supervisor: Prof. Paolo Ciavola

Co-supervisor: Dr. Riccardo Brunetta

Thesis Co-Supervisor

[2018 – 2019]

Student: Enrico Ferrari

Bachelor degree: Geological Sciences

Academic year: 2018/2019

Thesis: Dinamica sedimentaria della piana tidale a nord del Po della Pila

Supervisor: Prof. Paolo Ciavola

Co-supervisor: Dr. Riccardo Brunetta

Tutoring

[2018 – 2020]

University of Ferrara - Department of Physic and Earth Sciences

Laboratory of Rock Identification for the course "Elements of Geomorphogy" of the bachelor degree in "Civil and Environmental Engineering" of the University of Ferrara (academic years 2019/2020).

Supervisor: Prof. Paolo Ciavola.

Hours of service: 30

Tutoring

[2016 – 2018]

University of Ferrara - Department of Physic and Earth Sciences

Laboratory of Rock Identification for the course of "Geology 1" of the bachelor degree in "Geological Sciences" of the University of Ferrara (academic years 2017/2018).

Supervisor: Prof. Michele Morsilli.

Hours of service: 12

PUBLICATIONS

Evaluating Short-Term Tidal Flat Evolution Through UAV Surveys: A Case Study in the Po Delta (Italy)

[2021]

Remote Sensing

Riccardo Brunetta, Enrico Duo, Paolo Ciavola. Brunetta, R.; Duo, E.; Ciavola, P. (2021). Evaluating Short-Term Tidal Flat Evolution Through UAV Surveys: A Case Study in the Po Delta (Italy). Remote Sens., 13, 2322. <https://doi.org/10.3390/rs13122322>.

Morphological Evolution of an Intertidal Area Following a Set-Back Scheme: A Case Study From the Perkpolder Basin

[2019]

Frontiers in Earth Sciences

Riccardo Brunetta, João Salvador de Paiva, Paolo Ciavola

Brunetta, R., de Paiva, J. S., and Ciavola, P. (2019). Morphological Evolution of an Intertidal Area Following a Set-Back Scheme: A Case Study From the Perkpolder Basin (Netherlands). Front. Earth Sci. 7, 228. doi:10.3389/feart.2019.00228.

CONFERENCES AND SEMINARS

Coastal flood pathways driven by extreme storm surge and dike failure in the Northern Adriatic

[Wien, Austria, 04/2023]

Annual event of the EGU General Assembly

Organized by: Copernicus.org

Role: Co-Author of: "Coastal flood pathways driven by extreme storm surge and dike failure in the Northern Adriatic"

DOI: 10.5194/egusphere-egu23-806

Accademia delle Scienze di Ferrara: Evoluzione del sapere sulla geomorfologia del territorio del Delta del Po: 50 anni di conoscenze

[Ferrara, 16/03/2023]

National Italian Congress (Ferrara, Italy) focused on the Po Delta, its history and evolution from its first appearance to nowadays. A tribute to Marco Bondesan.

Organized by: Accademia delle Scienze di Ferrara

Speakers: Prof. Paolo Ciavola, Dr. Riccardo Brunetta.

La sostenibilità delle isole minori e del turismo nelle aree costiere italiane

[Capri (Italy), 23/06/2022 – 24/06/2022]

International conference in Capri (Italy) focused on the sustainability of the minor islands and tourism of the Italian coastal areas.

Organized by: Legambiente, Osservatorio Paesaggi Costieri Italiani, Isole Sostenibili.

Role: Oral presentation: " Evoluzione morfologica di piane tidali artificiali nell'ottica di un supporto alla ricostruzione delle zone umide ".

Link: <https://www.paesaggicostieri.org/>

XVI Workshop Annuale GNRAC

[Lecce (Italy), 28/04/2022 – 29/04/2022]

Annual workshop of the GNRAC focused on the impacts of anthropic activities on coastal territories.

Organized by: Gruppo Nazionale per la Ricerca sull'Ambiente Costiero (GNRAC).

Role: Oral presentation of the PhD thesis: " Evolution of restoration projects of coastal wetlands: from tidal flat to salt marsh".

Link: <http://www.gnrac.it/>

90° Congresso della Società Geologica Italiana “Geology without borders”

[Virtual due to Covid19, 13/09/2021]

International congress on Earth Science (virtual due to Covid19).

Organized by: Società Geologica Italiana (SGI).

Role: Poster presentation about the PhD results: “Sedimentary evolution of a young tidal flat in the Northern Part of the Po Delta (Italy): A Strategy for Future Building with Nature Management”.

Link: www.geoscienze.org/trieste2021/

9th World Conference on Ecological Restoration (SER2021)

[Virtual due to Covid19, 28/06/2021]

SER2021 is the leading global conference on ecological restoration.

Organized by: Society for Ecological Restoration (SER).

Role: Oral presentation about the PhD results: “Evolution of Tidal Flats in the Northern Part of The Po Delta (Italy): a Strategy for Future Building-with-Nature Management”.

Link: www.ser2021.org/

European Geoscience Union (vEGU) 2021

[Virtual due to Covid19, 27/04/2021]

Annual event of the EGU General Assembly that brings together geoscientists from all over the world into one meeting covering all disciplines of the Earth, planetary and space sciences (Online due to Covid19).

Organized by: Copernicus.org

Role: Oral presentation (PICO): “Evolution of Tidal Flats in the Northern Part of the Po Delta (Italy): A Strategy for Future Buiding-with-Nature Management”.

Link: <https://www.egu21.eu/www.egu21.eu/>

Convegno nazionale di studi costieri XI

[Virtual due to Covid19, 27/01/2021]

National Italian congress focused on: sediment management from basins to coasts, ecology and biology, climate changes, environmental marine dynamics and monitoring, littoral management, dynamics and defence, experimental modelling, port facilities, marine state property, and normative aspects.

Organized by: Gruppo Nazionale per la Ricerca sull'Ambiente Costiero (GNRAC); president Lorenzo Cappiotti (University of Firenze).

Role: Oral presentation of the PhD results: "Evoluzione delle piane tidali a nord del delta del Po: una futura gestione Building-With-Nature".

Link: www.gnrac.it/G3/G3.htm

Eurolag 2020

[Venice (Italy), 22/01/2020]

International conference Eurolag9 organized in Venice focused on coastal lagoons and wetland environments.

Organized by: ISMAR, CORILA, University of Venezia

Role: Oral presentation of the PhD results "Evolution of tidal flats in the Northern part of the Po Delta".

Link: www.eurolag9.it/

European Geoscience Union (EGU) 2019 (Wien, Austria)

[Wien (Austria), 06/04/2019]

The EGU General Assembly is a prominent annual event that brings together geoscientists from all over the world into one meeting covering all disciplines of the Earth, planetary and space sciences.

Organized by: Copernicus.org

Role: Poster presentation of the published paper: "Morphological Evolution of an Intertidal Area Following a Set-Back Scheme".

Link: www.egu2019.eu/

HONOURS AND AWARDS

Eurolag9 (2020) - Eurolag9 Murray Foundation Grant

[22/01/2020]

Grant for the participation to the Eurolag9 congress (Venice).

EGU2019 - EGU Early Career Scientist's Travel Support

EGU (European Geosciences Union) [06/04/2019]

Travel grant for the EGU 2019 General Assembly (Wien).

Diploma Ferrara School of Earth Sciences

University of Ferrara [06/2018]

Certification that is given to the students who achieve the master degree following an excellent academic path with a strong international connotation and that master at least one foreign language at high level.

Master degree in Geological, georesources, and territorial Sciences:

- Bachelor degree higher than 100/110;
- Average grade of the exams higher than 27/30;
- 30 credits obtained through exams in English or international mobility;
- knowledge of the English language or another foreign language at least B2, or equivalent;
- master thesis in english or another foreign language about international temathics with evaluation and revision of a foreign supervisor;
- degree obtained within one year after the end of the master courses.

LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

Spanish

LISTENING B1 READING B1 WRITING A2

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

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