

Curriculum vitae

21/09/2023

PERSONAL INFORMATION

ALBERTO BISCONTIN

Date of birth: 06/06/1983

Nationality: Italian

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National Scientific Habilitation as Associate Professor in Genetics (ASN 05/11 II fascia -BIO/18) obtained in 2020.

PREVIOUS POSITIONS

- 2023-ongoing Research Fellow [Ric. T.D. (A)], Plant Genomics and Biotechnology group, Department of Agricultural, Food, Environmental and Animal Sciences, University of Udine, Italy
- 2020-2022 Postdoctoral Fellow, Sleep and Rhythms in Medicine group, Department of Medicine, University of Padova, Italy
- 2018-2020 Postdoctoral Fellow, Principal Investigator for the project PNRA16_00225 “Ontogenesis of the circadian clock in the Antarctic krill *Euphausia superba*”, Neurogenetics and Chronobiology group, Dept. of Biology, University of Padova, Italy
- 2014-2017 Postdoctoral Fellow, Institut für Medizinische Immunologie, Charité-Universitätsmedizin Berlin, Germany
- 2012-2014 Postdoctoral Fellow, Neurogenetics and Chronobiology group, Dept. of Biology, University of Padova, Italy

FELLOWSHIPS

- 2008 Research Fellowship, C.R.I.B.I. (Interdipartimental Center of Biotechnology Research and Innovation), University of Padova, Italy

EDUCATION

- 2009-2012 PhD in Biosciences and Biotechnology, *curriculum* Genetics and Molecular Biology of Development, Dept. of Biology, University of Padova, Italy
- 2007 Master in Industrial Biotechnology, Dept. of Biology, University of Padova, Italy

GRANTS AND AWARDS

PNRA16_00225 Programma Nazionale di Ricerche in Antartide
115.400 Euro
January 2018 - December 2020
“Ontogenesis of the circadian clock in the Antarctic krill *Euphausia superba*”.
Role in the Project: **Coordinator / Principal Investigator**

Real-Time PCR Grant 2019 by Promega Corporation (Wisconsin, USA)
10.000 \$
June 2019 - December 2019
The circadian clock of the Antarctic krill *Euphausia superba*.
Winner. One of the three winners out of more than 400 worldwide applications.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Member of the international Helmholtz Virtual Institute "PolarTime" (<http://www.polartime.org/>; <http://krilldb.bio.unipd.it/>; Antarctic research program "PolarTime" VH-VI-500: Biological timing in a changing marine environment – clocks and rhythms in polar pelagic organisms).

Member of the Italian Association for Genetics (Associazione Genetica Italiana; AGI).

Member of the European Biological Rhythms Society (EBRS).

INTERNATIONAL EXPERIENCE

In the framework of the international Antarctic research program "PolarTime", I was hosted at the prestigious Australian Antarctic Division (Hobart, Tasmania) in the Laboratory of Dr. So Kawaguchi for two months (February-March 2016). During my stay, I set up an in situ hybridization protocol to identify tissue localization of transcripts in adult krill samples. Furthermore, I had the opportunity to assist the technical staff in the daily activities of the krill facility and in the setting up of key behavioural experiments for the "PolarTime" project.

COMMISSIONS OF TRUST

Review Editor for Frontiers in Ecology and Evolution

Reviewer of articles in the field of Chronobiology for PubMed-indexed journals ("iScience", "BMC Genomics", "Insects", and "Molecular Ecology")

ORGANISATION OF SCIENTIFIC MEETINGS

Member of the organizing committee for the European Biological Rhythms Society (EBRS) trainee day in 2021 and 2022

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Co-supervisor for the theses of four master degree students in Molecular Biology/Biotechnology, Dept. of Biology, University of Padova.

Co-supervisor for the theses of nine degree students in Molecular Biology/Biotechnology, Dept. of Biology, University of Padova.

TEACHING ACTIVITIES

"Genetics 2" practicals for Molecular Biology students, University of Padova, (A.A. 2018/19, 2015/16).

"Introduction to OMICS" practicals for Biotechnology students, University of Padova (A.A. 2020/21, 2019/20, 2017/18, 2016/17, 2015/16, 2013/14, 2012/13, 2011/12).

"Genetics 1 and genetic engineering" practicals for Molecular Biology students, University of Padova (A.A. 2022/23, 2021/22, 2020/21, 2019/20, 2018/19, 2017/18).

"Neurobiology" practicals for Molecular Biology students, University of Padova (A.A. 2020/21).

"Functional Genomics" practicals for Industrial Biotechnology students, University of Padova (A.A. 2012/13).

"Genetic Engineering" practicals for Molecular Biology students, University of Padova (A.A. 2009/10).

**EARLY
ACHIEVEMENTS
TRACK-RECORD**

My main scientific contributions have been in the field of biological rhythms, which I have studied, from a molecular up to a behavioural level, in model and non-model organisms. In particular, I have focused on the characterization of the molecular clock of the Antarctic krill *Euphausia superba*, combining advanced molecular techniques with the most up to date bioinformatics approaches.

In 2013, one year after I completed my PhD, I contributed to the field with absolutely novel information on the genetic regulation of daily physiological changes in the Antarctic krill, with my data indicating the presence of an underlying molecular clock.

In 2014, I joined the international Antarctic research program “Polar-Time”, that brings together researchers from different scientific fields to elucidate the molecular bases of biological rhythms in high latitude regions. Over the following 4 years, under the supervision of Prof. Achim Kramer, I worked on the functional characterization of the molecular clock of krill, providing precious information on the evolution of the clock mechanism in mammals and insects. These findings still represent one of the very few examples of functional characterisation of a circadian clock in a marine organism.

As part of the “Polar-Time” network program, I have published six additional peer-reviewed papers (three of which I am the first author) that further explore the involvement of the circadian clock in the regulation of diel and seasonal cycles in krill. In 2017, I contributed to the creation and the publication of the first and most comprehensive krill transcriptome database (KrillDB), which remains the most useful available bioinformatics tool to study molecular processes in krill.

In the same year, I obtained a 3-year PNRA Grant (Programma Nazionale di Ricerca in Antartide, Italian National Programme for Research in the Antarctica) as principal investigator, to study the role of the circadian clock in krill ontogenesis.

I have also always been extremely interested in the technical aspects of research, and in setting up/upgrading useful molecular protocols. My first publication as first author dates back to 2010 when, during my first year as a PhD student, I developed an innovative labelling system of small RNA molecules to assess the expression profile of tens of miRNAs at the same time. This innovative approach has been subsequently utilised to validate the differential expression of three histotype-predictive miRNAs in seven human rhabdomyosarcoma cell lines.

In 2013, I set up a qRT-PCR-based protocol for mitochondrial DNA quantification in flies, which is now routinely used.

In 2016, I had the opportunity to spend 2 months at the Australian Antarctic Division in Tasmania, where I set up an in situ hybridization protocol on krill larvae and adults.

In 2017, I designed a genotyping assay to test two polymorphisms (a SNP and a VNTR) in the human clock gene *Per3*. I then contributed to a piece of human research documenting significant associations between *Per3* polymorphic variants and chronotype.

In 2019, I was awarded the “Real-Time PCR Grant 2019” by Promega Corporation, thanks to which I was able to upgrade some of the molecular assays in use in the laboratory (one-step RT-PCR, DNA/RNA quantification), leading to considerable savings in both time and money.

In 2022, I defined a SNP panel for the molecular assessment of human chronotype based on the S.P.E.T. (Single Primer Enrichment Technology) genotyping-by-sequencing approach. Validation is ongoing with a specifically developed PCR-based genotyping card to replace the high-throughput approach. The use for this can be envisaged in both public health initiatives and in precision medicine.

In 2023, I contributed to the assembly of the 48.01 Gb chromosome-level genome of the Antarctic krill, the largest animal assembly reported to date.

PUBLICATIONS (ISI)

I am author of 21 publications on peer-reviewed journals, including 1 paper as corresponding author and 7 as first author. H index = 12 (Scopus).

(°as corresponding author, *authors contributed equally to this work)

Astone M., Oberkersch R.E., Tosi G., **Biscontin A.**, Santoro M.M. The circadian protein BMAL1 supports endothelial cell cycle during angiogenesis. *Cardiovascular Research* 119(10). August 2023.

Lupi L., Bordin A., Sales G., Colaianni D., Vitiello A., **Biscontin A.**, *et al.* Persistent and transient olfactory deficits in COVID-19 are associated to inflammation and zinc homeostasis. *Frontiers in Immunology* 14. July 2023.

Shao C., Sun S., Liu K., Wang J., Li S., Liu Q., Deagle B.E., Seim I., **Biscontin A.**, *et al.* The enormous repetitive Antarctic krill genome reveals environmental adaptations and population insights. *Cell* 186. March 2023.

Urso I., **Biscontin A.**, Corso D., Bertolucci C., Romualdi C., De Pittà C., Meyer B., Sales G. A thorough annotation of the krill transcriptome offers new insights for the study of physiological processes. *Scientific Report* 12. July 2022.

Biscontin A., Zarantonello L., Russo A., Costa R., Montagnese S. Toward a Molecular Approach to Chronotype Assessment. *Journal of Biological Rhythms* 37. Jun 2022.

Montagnese S., Zarantonello L., Formentin C., Zancato C., Bonetto M.B., **Biscontin A.**, Cusumano P., Costa R. Sleep, circadian rhythmicity and response to chronotherapy in university students: Tips from chronobiology practicals. *Journal of Circadian Rhythms* 19. Jan 2021.

Piccolin F., Pitzschler L., **Biscontin A.**, Kawaguchi S., Meyer B. Circadian regulation of diel vertical migration (DVM) and metabolism in Antarctic krill *Euphausia superba*. *Scientific Reports* 10. Oct 2020.

Horing F.*, **Biscontin A.***, Harms L., Sales G., Reiss C.S., De Pitta C., Meyer B. Seasonal gene expression profiling of Antarctic krill in three different latitudinal regions. *Marine Genomics*. Aug 2020.

Biscontin A.°, Martini P., Costa R., Kramer A., Meyer B., Kawaguchi S., Teschke M., De Pittà C. Analysis of the circadian transcriptome of the Antarctic krill *Euphausia superba*. *Scientific Reports* 9. Sep 2019.

Piotto C., **Biscontin A.**, Millino C., Mognato M. Functional validation of miRNAs targeting genes of DNA double-strand break repair to radiosensitize non-small lung cancer cells. *Biochimica et Biophysica Acta (BBA) - Gene Regulatory Mechanisms* 1861. Dec 2018.

Piccolin F., Meyer B., **Biscontin A.**, De Pittà C., Kawaguchi S., Teschke M. Photoperiodic modulation of circadian functions in Antarctic krill *Euphausia superba* Dana, 1850 (Euphausiacea). *Journal of Crustacean Biology* 38. Sep 2018.

Cusumano P., **Biscontin A.**, Sandrelli F., Mazzotta G.M., Tregnago C., De Pittà C., Costa R. Modulation of miR-210 alters phasing of circadian locomotor activity and impairs projections of PDF clock neurons in *Drosophila melanogaster*. *Plos Genetics*, epub. Jul 2018.

Biscontin A., Wallach T., Sales G., Grudziecki A., Janke L., Sartori E., Bertolucci C., Mazzotta G.M., De Pittà C., Meyer B., Kramer A., Costa R. Functional characterization of the circadian clock in the Antarctic krill, *Euphausia superba*. *Scientific Reports* 7. Dec 2017.

Turco M., **Biscontin A.**, Corrias M.G., Caccin L., Bano M., Chiaromanni F., Salamanca M., Mattei D., Salvoro C., Mazzotta G.M., De Pittà C., Middleton B.,

Skene D.J., Montagnese S., Costa R. Diurnal preference, mood and the response to morning light in relation to polymorphisms in the human clock gene PER3. *Scientific Reports* 7. Jul 2017.

Sales G., Deagle B.E., Calura E., Martini P., **Biscontin A.**, De Pittà C., Kawaguchi S., Romualdi C., Meyer B., Costa R., Jarman S. KrillDB: A de novo transcriptome database for the Antarctic krill (*Euphausia superba*). *PlosONE*, e-pub. Feb 2017.

Biscontin A., Frigato E., Sales G., Mazzotta G.M., Teschke M., De Pittà C., Jarman S., Meyer B., Costa R., Bertolucci C. The opsin repertoire of the Antarctic krill *Euphausia superba*. *Marine Genomics* 29. May 2016.

Meyer B.*, Martini P.*, **Biscontin A.**, De Pittà C., Romualdi C., Teschke M., Frickenhaus S., Harms L., Freier U., Jarman S., Kawaguchi S. Pyrosequencing and de novo assembly of Antarctic krill (*Euphausia superba*) transcriptome to study the adaptability of krill to climate-induced environmental changes. *Molecular Ecology Resources* 15. Apr 2015.

Da-Re C., von Stockum S., **Biscontin A.**, Millino C., Cisotto P., Zordan M.A., Zeviani M., Bernardi P., De Pitta C., Costa R. Leigh syndrome in *Drosophila melanogaster*: morphological and biochemical characterization of Surf1 post-transcriptional silencing. *Journal of Biological Chemistry* 289. Aug 2014.

Da-Re C., Franzolin E., **Biscontin A.**, Piazzesi A., Pacchioni B., Gagliani M.C., Mazzotta G., Tacchetti C., Zordan M.A., Zeviani M., Bernardi P., Bianchi V., De Pitta C., Costa R. Functional characterization of drim2, the *Drosophila melanogaster* homolog of the yeast mitochondrial deoxynucleotide transporter. *Journal of Biological Chemistry* 289. Jan 2014.

De Pittà C.*, **Biscontin A.***, Albiero A., Sales G., Millino C., Mazzotta G.M., Bertolucci C., Costa R. The Antarctic krill *Euphausia superba* shows diurnal cycles of transcription under natural conditions. *PLoS One*, e-pub. Jul 2013.

Biscontin A., Casara S., Cagnin S., Tombolan L., Rosolen A., Lanfranchi G., De Pittà C. New miRNA labeling method for bead-based quantification. *BMC Molecular Biology* 11. Jun 2010.

ORAL COMMUNICATIONS

Biscontin A.: "Defining the Antarctic krill's ontogenesis from a transcriptomic point of view" XXII Conference of the Italian Association of Developmental and Comparative Immunobiology. Padova, February 16, 2022.

Biscontin A.: "Functional characterization of the circadian clock in the Antarctic krill *Euphausia superba*." Fifth PolarTime Workshop. Padova, November 6-7, 2017.

Biscontin A.: "Functional characterization of the circadian clock machinery in the Antarctic krill *Euphausia superba*". Invited at the Second Scientific Retreat of the Department of Biology, Padova, February 13-14, 2017.

Biscontin A.: "Towards the molecular architecture of the circadian clockwork in Krill". Fourth PolarTime Workshop. Berlin, April 14-15, 2016.

Biscontin A.: "Towards the molecular architecture of the circadian clockwork in Krill". Third PolarTime Workshop. Schloß Machern, March 09-12, 2015.

Biscontin A.: "The Search for clock genes in Antarctic krill". Second PolarTime Workshop. Obergurgl, January 27-31, 2014.

Biscontin A.: "The dynamic changes of expression signatures in the larval development of *Mytilus galloprovincialis*". Workshop "Next Generation Sequencing" Third edition, Bari,

October 12-14, 2011.

Biscontin A.: “New miRNA labeling method for bead-based quantification”.Bio-Plex User Meeting, Florence, May 13, 2010.

CONFERENCE PROCEEDINGS

Patients with persistent or transient Covid19-related olfactory deficits show a different gene expression pattern in the olfactory mucosa. Lupi L., De Pittà C., Calistri A., **Biscontin A.**, Bordin A., Ottaviano G., Reale A., Antonini A., Parolin C., Mucignat C. ECRO XXXII August 31 - September 3, 2022, Berlin, Germany.

Designing a SNPs panel for molecular chronotype assessment. **Biscontin A.**, Zancato C., Montagnese S., Costa R. AGI 2021, Associazione Genetica Italiana. 22-24 September 2021, Cortona, Italy.

Shedding light on the molecular clock of the Antarctic krill *Euphausia superba*. **Biscontin A.**, Piccolin F., Urso I., Bertolucci C., Kramer A., Costa R., Kawaguochi S., Meyer B., Sales G., De Pitta' C. SCAR 2020 3-7 August 2020. Poster, virtual presentation.

Defining the circadian transcriptome of the Antarctic krill. **Biscontin A.**, Martini P., Costa R., Kramer A., Meyer B., Kawaguochi S., Teschke M., De Pitta' C. AGI 2019, Associazione Genetica Italiana. 26-28 September 2019, Cortona, Italy.

Functional characterization of the circadian clock in the Antarctic krill, *Euphausia superba*. **Biscontin A.**, Wallach T., Sales G., Grudziecki A., Janke L., Sartori E., Bertolucci C., Mazzotta G.M., De Pitta' C., Meyer B., Kramer A., Costa R. AGI 2017, Associazione Genetica Italiana. 7-9 September 2017, Cortona, Italy.

MiRNA-mediated modulation of DNA double-strand repair genes in γ -irradiated human cancer cells. Piotto C., **Biscontin A.**, Barbieri V., Mognato M. MICROS 2017- 17th International Symposium on Microdosimetry. 5-10 November 2017, Venezia, Italy. Oral communication by Mognato M.

Role of miRNAs targeting genes of DNA double-strand break repair in radioresistant non-small lung cancer cells. Piotto C., Petteuzzo, M., Barbieri V., **Biscontin A.**, Mognato M. EU-US Conference on Repair of Endogenous DNA Damage. 24-28 September 2017, Udine, Italy.

Catalase in Antarctic fish. Corrà F., Poloni E., Callegaro E., Bramuzzo S., Gerdol M., Buonocore F., Scapigliati G., **Biscontin A.**, De Pitta' C., Bakiu R., Santovito G. XVIIIth scientific meeting of the Italian Association of Developmental and Comparative Immunobiology (IADCI). 8-10 February 2017, Viterbo, Italy. Conference proceedings published on Invertebrate survival journal 14. 2017.

Sensitizing radio-resistant cancer cells to ionizing radiation through miRNA-based treatments. Piotto C., **Biscontin A.**, Mognato M. XVII Convegno SIRR, Società Italiana per le Ricerche sulle Radiazioni. 25-27 September 2016, Trento, Italy. Oral communication by Mognato M.

Diurnal preference, subjective sleepiness and the response to morning light in relation to polymorphisms in the human clock gene period3. Turco M., **Biscontin A.**, Corrias M., Caccin L., Bano M., Chiaromanni F., Salamanca M., Mazzotta M.G., De Pitta' C., Middleton B., Skene D. J., Costa R., Montagnese S. 3rd Congress of the European Sleep Research Society. 13-16 September 2016, Bologna, Italy.

Sensitization of human cancer cells to ionizing radiation through microRNAs targeting genes of DNA-double strand break repair. Piotto C., **Biscontin A.**, Mognato M. 42nd Conference of the European Radiation Research Society (ERRS). 4-8 September

2016, Amsterdam, Netherlands.

Biological timing in Antarctic krill: Endogenous clocks and physiological rhythms at the daily and annual scale. Teschke M., Piccolin F., Scholl A., De Pitta' C., Costa R., Kawagushi S., **Biscontin A.**, Kramer A., Meyer B., Time and Light: Novel concepts and Models in Sensory and Chronobiology symposium. 8-10 May 2016, Vienna, Austria. Oral communication by Teschke M.

454 pyrosequencing and de novo assembly of Antarctic krill (*Euphausia superba*) transcriptome. **Biscontin A.**, Martini P., De Pitta' C., Romualdi C., Teschke M., Frickenhaus S., Harms L., Freier U., Spahic S., Jarman S., Kawagouchi S., Costa R., Meyer B. XIII FISV Congress, Federazione Italiana Scienze della Vita. 24-27 September 2014, Pisa, Italy.

Double effect of a micro RNA over-expression on circadian clock components of *Drosophila melanogaster*. Cusumano P., **Biscontin A.**, Bee L., Cagnin S., Sandrelli F., De Pitta' C., Costa R. XIII Congress of the European Biological Rhythms Society. 18-22 August 2013, Munich, Germany.

Gene expression profiling around the clock in the antarctic krill (*Euphausia superba*) De Pitta' C., **Biscontin A.**, Albiero A., Mazzotta G.M., Bertolucci C., Sales G., Romualdi C., Lanfranchi G., Costa R. SRBR 2012, Society for Research on Biological Rhythms. 19-23 May 2012, Sandestin, Florida.

The dynamic changes of expression signatures in the larval development of *Mytilus galloprovincialis*. **Biscontin A.**, De Pitta' C., Albiero A., Sales G., Moro E., Romualdi C., Lanfranchi G. 3rd Next Generation Sequencing Workshop. 12-14 October 2012, Bari, Italy.

Gene expression profiling around the clock in the antarctic krill (*Euphausia superba*). De Pitta' C., **Biscontin A.**, Albiero A., Mazzotta G.M., Bertolucci C., Sales G., Romualdi C., Lanfranchi G., Costa R. Joint Meeting AGI-SIBV-SIGA, Associazione Genetica Italiana. 19-22 September 2011, Assisi, Italy.

LANGUAGE SKILLS

Mother tongue: Italian

Other languages:

	Understanding		Speaking		Writing
	Listening	Reading	Interaction	Production	
English	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user.
Common European Framework of Reference for Languages.

DIGITAL SKILLS

Good command of office suite

Good command of Corel Draw suite

Good command of several desktop and command line bioinformatic tools, including:

PLINK1.9/2.0 (Whole genome data analysis toolset);

localBLAST and DNASTAR suite (multiple sequence alignment);

MEGAN and MEGA5 (phylogenetic analysis);

Blast2GO and DAVID (gene ontology analysis);

Newbler (RNASeq analysis);
CircWave Batch and JTK_Cycle (detection of rhythms in time series);
MeV Multiexperiment Viewer (differential expression analysis);
GraphiteWeb and Cytoscape (pathway analysis);
Genom, Bestkeeper, and NormFinder (reference genes selection for qPCR).

Good command of R, including:

tools for Genome Wide Association Studies and Polygenic Risk Score calculation (Plink, PRSice, GWASTools, and VCFTools);
statistical hypothesis testing (ANOVA, Kruskal-Wallis test, Fisher test, and others);
TopGO package (gene ontology analysis);
Rain package (detection of rhythms in time series);
DeSeq2 and edgeR (differential expression analysis with RNASeq data).

TECHNICAL SKILLS AND COMPETENCIES

Strong skills in molecular cloning techniques:

gDNA, mtDNA, RNA, and protein extraction from tissues, cells, blood, and saliva;
nucleic acid quantity and quality assessment (NanoDrop, Qubit, Agilent Bioanalyzer);
full-length cloning (3'-RACE, 5'-RACE);
construction of normalized cDNA libraries;
development of custom microarray platforms (Agilent);
microarray synthesis using Combimatrix technology;
analysis of gene expression using Agilent microarray;
development of a set of spike-ins to normalize microarray and RNASeq experiments;
set up of a protocol for 3'-end (poly(A)-free) cDNA libraries for RNASeq (Illumina, Roche 454);
gene expression profiles validation using qRT-PCR;
design of a Custom TaqMan Array Cards (expression and genotyping);
set up of a multiplex (SNPs and VNTR) genotyping assay (dF-TARMS-PCR);
mitochondrial DNA quantification using qRT-PCR and ddPCR;
human and *Drosophila* cell culture and transfection;
luciferase assay;
site-directed mutagenesis;
western blot and co-immunoprecipitation;
in situ hybridization.

SPECIAL TRAINING AND COURSES

"Machine Learning for Computational Biology" organized by Alta formazione Isnubria 15-16 April 2021.

"Quarantine Approved Premises" (Classes 1 to 8) organized by Department of Agriculture and Water Resources, Australian Government, 27 February 2016. Licence 34393. Converted to "Approved Arrangement Accreditation" (Classes 1 to 8).

"Quarantine Awareness" organized by Department of Agriculture and Water Resources,

Australian Government, 26 February 2016. Licence 34393.

"Autoclave training" organized by Vacuum Service Srl and Federaghi Autoclavi Spa, at the Department of Biology, University of Padova, 13 November 2013.

"Statistical methods": introduction to the informatic tool "R" organized by the statistic PhD school, University of Padova, 1-16 June 2011.

"Understanding 454 output": introduction to newbler, ava software, and 454 output files; organized by BMR Genomics (Padova) 9 July 2010.

Safety Workers' Specific Training: High Risk "Formazione specifica dei lavoratori impiegati nelle attività scientifiche nei laboratori di didattica, ricerca ed analisi. Classe rischio: ALTO" organized by University of Padova; e-learning 2022.

Safety Workers' General Training "Formazione generale dei lavoratori per la salute e la sicurezza nei luoghi di lavoro" organized by University of Padova; e-learning 2022.