

**Historical Vignette**

**HV 2 (1-18)**

# About a Century of teaching Physiology at the Messina Veterinary Medicine Degree Course

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Since the foundation of the Veterinary Schools, dating back to the early 19<sup>th</sup> century, the teachings of Anatomy and Physiology were taught by a single lecturer and, by the end of the 19<sup>th</sup> century, only the Faculties of Milan and Naples had established the teaching of Veterinary Physiology as an autonomous discipline and field of research. Furthermore, the Law no. 1147 of July 25, 1922 also established that the teaching of Physiology to veterinary physicians should be taught by the Chair of Human Physiology of Medicine and Surgery (at least in those Universities where the two Medicines coexisted).

The university didactic system of the Degree Course in Veterinary Medicine has, however, undergone numerous modifications over the years (**Table 1**).

**Table 1**

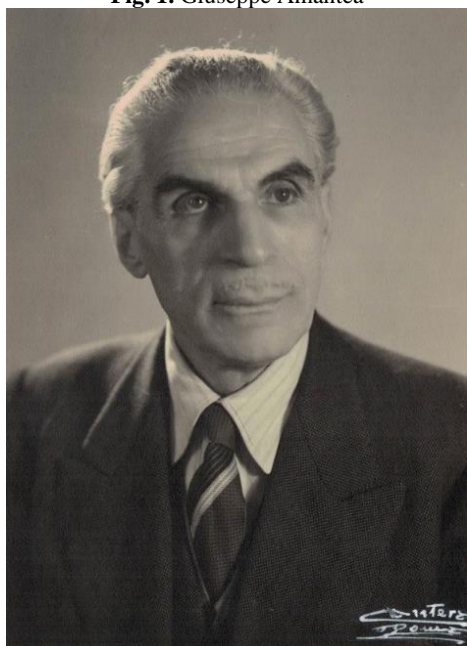
<b>Overview of the modifications of the teaching of discipline “Veterinary Physiology” in the Degree Course of Veterinary Medicine</b>	
<p><b>Law no.1147 July 25,1922, Table XXXIII (Royal Decree no. 1652, September 30, 1938): four-year course, annual teaching (1927-1970)</b>                      Physiology of Domestic Animals and Biological Chemistry (1927-1955)                      General and Special Physiology of Domestic Animals and Biological Chemistry (1956-1970)</p>	<p><b>Specialist Degree Course in Veterinary Medicine 47/S (M. D. 28/12/2000): five-year course, two-year teaching, 18 EC (2000-2007)</b>                      I.C. Veterinary Physiology I                      Teaching Modules:                      - Vegetative Physiology of Domestic Animals                      - Vegetative Physiology of Athletic Species                      I.C. Veterinary Physiology II                      Teaching Modules:                      - Integrative Physiology (Basic)                      - Applied Integrative Physiology (Specialist)                      - Endocrinology of Domestic Animals                      Veterinary Ethology and Animal Welfare</p>
<p><b>Table XXXIII modif. (Presidential Decree No. 987/69): five-year course, two-year teaching (1970-1992)</b>                      General and Special Veterinary Physiology I and Biophysics                      General and Special Veterinary Physiology II and Biophysics</p>	<p><b>Single-cycle Master Degree Course in Veterinary Medicine LM-42 (M. D. March 16, 2007): five-year course, two-year teaching,18 EC (2011-2021)</b>                      I.C. Veterinary Physiology I                      Teaching Modules:                      - Vegetative Physiology                      - Applied Vegetative Physiology                      - Animal Ethology and Animal Welfare                      I.C. Veterinary Physiology II                      Teaching Modules:                      - Integrative Physiology (Basic)                      - Applied Integrative Physiology (Specialist)                      - Veterinary Endocrinology</p>
<p><b>New Table XXXIII (D.M. 25.2. 1993): five-year course, two-year teaching (1993-1995)</b>                      Veterinary Physiology and Ethology of Domestic Animals (and Animal Protection) I                      Veterinary Physiology and Endocrinology of Domestic Animals II</p>	<p><b>2022- on</b>                      I.C. Veterinary Physiology I                      Teaching Modules:                      - Vegetative Physiology                      - Applied Vegetative Physiology                      - Veterinary Endocrinology                      I.C. Veterinary Physiology II                      Teaching Modules:                      - Integrative Physiology (Basic)                      - Applied Integrative Physiology (Specialist)                      - Veterinary Ethology and Animal Welfare</p>
<p><b>New Table XXXIII (D.P.R. 5.6.1995): five-year course, two-year teaching (1995-2000)</b>                      I.C. 5.1 Physiology and Ethology of Domestic Animals                      Teaching Modules:                      - Veterinary Physiology                      - Veterinary Ethology and Animal Welfare                      I.C. 5.2 Physiology and Endocrinology of Domestic Animals                      Teaching Modules:                      - Veterinary Physiology                      - Endocrinology of Domestic Animals</p>	<p><b>2022- on</b>                      I.C. Veterinary Physiology I                      Teaching Modules:                      - Vegetative Physiology                      - Applied Vegetative Physiology                      - Veterinary Endocrinology                      I.C. Veterinary Physiology II                      Teaching Modules:                      - Integrative Physiology (Basic)                      - Applied Integrative Physiology (Specialist)                      - Veterinary Ethology and Animal Welfare</p>

The teaching system of the Degree Course in Veterinary Medicine, a four-year study cycle, was initially ordered by Table XXXIII annexed to Royal Decree no. 1652 of September 30, 1938. The teaching of the contents of Veterinary Physiology was identified as “**Physiology of Domestic Animals and Biological Chemistry**”, and, even when the Higher Veterinary Schools became University Faculties, the teaching of Physiology also included the syllabus of Biological Chemistry. It was only in 1933 that a Chair of “**Veterinary Physiology**” was finally established in Bologna.

At the University of Messina, from 1927, when the Royal Institute of Veterinary Medicine was founded, later transformed into the Faculty of Veterinary Medicine in 1933, the teaching of “Physiology of Domestic Animals” was therefore initially covered by **Giuseppe Amantea (Fig.1)**, Professor of Human Physiology at the University's Faculty of Medicine and Surgery, and, later, by **Gaetano Martino (AY 1928/29- 1939/40) (Fig.2)**, and by **Giovanni Aragona (AY 1939/40-1941-42) (Fig.3)**, both Professors of Human Physiology and Amantea's scholars. From the AY 1928/29, Gaetano Martino also held the free course in 'Physiological Chemistry', actually named “Biochemistry”.

In those years, following in the scientific topics of the Roman Physiology School of Luigi Luciani, important studies in Neurophysiology, on experimental epilepsy, on conditioned reflexes and the excitability of nerve centres, and on the Physiology of Nutrition and Reproduction, with the conception of the artificial vagina for semen collection, were developed on animal models. Moreover, significant studies were carried out on phosphocreatine and muscular biochemistry, giving rise to the studies on the Physiology of exercise later largely afforded by the Veterinary Physiology School.

**Fig. 1.** Giuseppe Amantea



**Fig. 2.** Gaetano Martino



Successively, in 1943, **Ada Barbaro (Fig.4)**, first assistant lecturer at the Institute of Human Physiology and then tenured at the Chair of Biological Chemistry in the Faculty of Medicine and

Surgery, was appointed to teach “**General and Special Physiology of Domestic Animals and Biological Chemistry**”.

**Fig. 3.** Concetta Zannelli, Gaetano Livrea, Ada Barbaro and Giovanni Aragona (from the left), at the Institute of Human Physiology of Messina



But it was only in 1955 that the **Chair of General and Special Physiology of Domestic Animals and Biological Chemistry** was established also in Messina. The Chair was held, from November 1, 1956, by Ada Barbaro (**Fig.5**), winner of the relative national competition.

The Chair of General and Special Physiology of Domestic Animals and Biological Chemistry was initially housed at the Institute of Human Physiology of the University's Faculty of Medicine and Surgery (January 1956 - March 1958), directed at the time by Gaetano Livrea. In the meantime, in October 1957, the Chair was upgraded (Presidential Decree No. 939 of September 2, 1957) to the **Institute of General and Special Physiology of Domestic Animals and Biological Chemistry**, which was to be housed in its own premises in the historical site of Strada S. Giacomo.

**Fig. 4.** Ada Barbaro



**Fig. 5.** Ada Barbaro and Members of Veterinary Faculty of Messina in 1955



**Ada Barbaro** thus gave rise to an autonomous discipline and a well-established and highly regarded School of Veterinary Physiology in the Faculty of Veterinary Medicine in Messina, having also greatly contributed to its rebirth after World War II.

After an initial period spent as a voluntary assistant at the Institute of Human Physiology, **Concetta Zannelli (Fig. 6)** also joined the Institute and, for some years together with Franca Zimbaro thereafter early retired, assisted Ada Barbaro in her studies on the Physiology of Nutrition, on the Reproductive Physiology and growth processes and on the expression of General Adaptation Syndrome in livestock.

**Fig. 6.** Concetta Zannelli



In the meantime, the authority acquired by Ada Barbaro, both locally, for having contributed to the further development of the Faculty of Veterinary Medicine of Messina (**Fig.7**), and nationally, for having been the first woman university professor in this field, has in fact enabled her to establish significant academic and scientific relationships with eminent

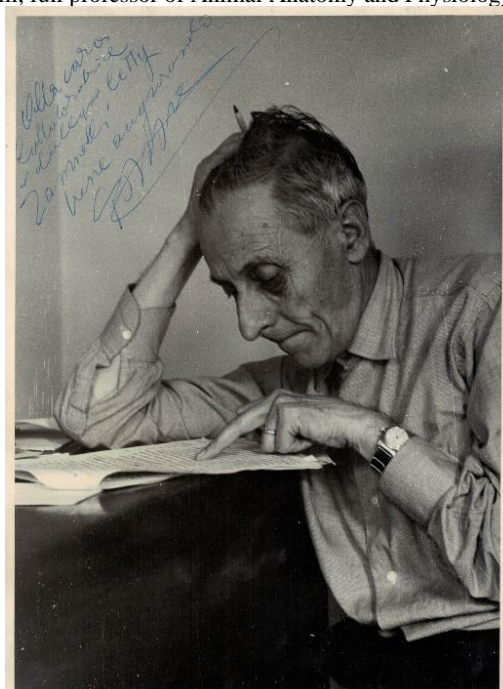
Professors of Medicine and Surgery and Veterinary Medicine Faculties from the Universities of Milan and Bologna, so expanding the field of research also into a more purely veterinary field (**Fig. 8, Fig.9**).

**Fig. 7.** Ada Barbaro, Concetta Zannelli and Nobel Prize Renato Dulbecco in Messina, 1976



The progress of scientific research and the extent of knowledge applicable to professional practice, in the field both of Physiology and of Biological Chemistry, meanwhile made it necessary to separate the teachings of the two disciplines. In fact, from November 1, 1968, Concetta Zannelli held the Chair and became the Head of the Institute of Biochemistry in the Faculty of Veterinary Medicine, housed in the Institute of General and Special Physiology of Domestic Animals and Biological Chemistry, devoting herself to studies related to protein and lipid metabolisms in different animal species during pregnancy, lactation and growth, with particular attention to the amino acid profile.

**Fig. 8.** Filippo Uselli, full professor of Animal Anatomy and Physiology at the Milan University



**Fig. 9.** Ada Barbaro, Concetta Zannelli and Giulio Pupilli, human physiologist at the Bologna University



In 1971, in agreement with the Presidential Decree No. 987/69, the University started a new teaching organisation, with a modified Table XXXIII. On the basis of Law No. 312 of April 11, 1953, the Degree Course in Veterinary Medicine was thus organised in a five-year study cycle, divided into a propaedeutic period and a period devoted to specific veterinary teaching. The discipline of Veterinary Physiology became a two-year teaching with the names **“General and Special Veterinary Physiology I and Biophysics”** and **“General and Special Veterinary Physiology II and Biophysics”**. “Biological Chemistry”, so become an independent teaching, also changed its name to “Biochemistry”.

Since the start of the new didactic organisation, in 1971 and in the following years, **Ada Barbaro** has therefore been teaching **“General and Special Veterinary Physiology II and Biophysics”**.

Moreover, since 1971, the Institute of Physiology has been enriched with new university research staff, active in the Physiology teachings of Veterinary Medicine Degree Course. In particular, from 1974, **Giovanni Caola** held the teaching of **“General and Special Veterinary Physiology I and Biophysics”** and **Adriana Ferlazzo** the teaching of **“Endocrinology of Domestic Animals”**. In addition, **Albina Omero** held the free teaching of **“Physiology of Nutrition of Domestic Animals”** for a number of years. Later, in 1982, they all became established professors.

After Barbaro's untimely death on April 7, 1978, and from November 1, 1979, **Concetta Zannelli**, yet included in the national competition for the Chair of General and Special Physiology of Domestic Animals and Biological Chemistry at the University of Perugia, took over the teaching of **“General and Special Veterinary Physiology II and Biophysics”** and became Head of the Institute of General and Special Physiology of Domestic Animals and Biological Chemistry until her death on April 19, 1990.

Meanwhile, following national competitions to be full professors, a Chair of “**General and Special Veterinary Physiology I and Biophysics**” was established, held, since November 1, 1980, by **Giovanni Caola**; and a Chair of “**Endocrinology of Domestic Animals**” was also established, held, since November 1, 1986, by **Adriana Ferlazzo** (Fig. 10).

Fig. 10. Concetta Zannelli with Giovanni Caola and Adriana Ferlazzo in 1990



During those years, new scientific topics were thus introduced, with special emphasis for studies concerning innovative researches in the fields of the Endocrinology of Domestic Species, Chronophysiology, Physiology of pregnancy and perinatal behaviour of Equines, Physiology of animal communication and animal welfare. In the meantime, the Presidential Decree No. 382/80 provided for the abolition of the single-chair Institutes and established in Italy too, alongside the University Faculties, the Departments as structures for organisational and teaching experimentation. Therefore, the Institute of Biochemistry merged with the Institute of General and Special Physiology of Domestic Animals and Biological Chemistry. In 1990, following the death of Concetta Zannelli, the Head of the Institute of Domestic Animal Physiology and Biological Chemistry became Giovanni Caola, and from November 1, 1990, Adriana Ferlazzo took over the teaching of “General and Special Veterinary Physiology II and Biophysics”. Moreover, Alida Ferlazzo, first university researcher in Biochemistry since 1980 and then Associate Professor of Organic Chemistry in 1985, took over the teaching of “Biochemistry”, constantly maintained thereafter until 2022, allowing her to win, in 1994, the national competition to become Full Professor of Biochemistry in the Faculty of Veterinary Medicine. Moreover, **Michele Panzera**, who had already been university researcher since 1983 and had become Associate

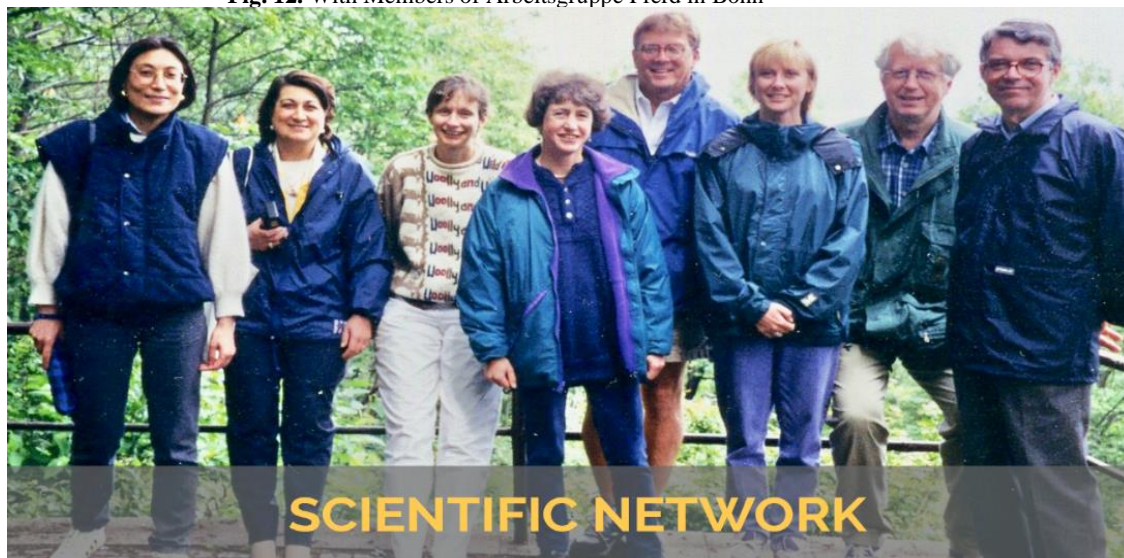
Professor in the scientific Area of Veterinary Physiology, took over the teaching of "Veterinary Ethology and Animal Welfare", which he maintained thereafter when he became Full Professor in 1999. In 1992, a new recruitment also enabled the Institute's teaching staff to be expanded by hiring new young university researchers, **Esterina Fazio** and **Giuseppe Piccione** (Fig.11).

Fig. 11. Concetta Zannelli, with (from the left) Michele Panzera, Esterina Fazio, Giuseppe Piccione and Alida Ferlazzo.



During these years, new significant relationships were established with foreign Institutions based on common research interests in the fields of Sports Physiology and Chrome performance in horses and in the significant field of Transport Stress of large and small animals, all scientific and applied topics that were extensively analysed and internationally discussed (Fig. 12, Fig. 13).

Fig. 12. With Members of Arbeitsgruppe Pferd in Bonn



**Fig. 13.** In Messina, Adriana Ferlazzo and the staff of Veterinary Physiology with Professors Bailey and Wickler from USA



In order to co-ordinate, it with the guidelines agreed upon in the E.E.C. (E.E.C. Directive no. 78/1027 of December 18, 1978), the didactic system of Veterinary Medicine was once again modified by the Presidential Decree no. 947/86 (old system). It was envisaged that the Degree Course in Veterinary Medicine would be carried out by means of a five-year study cycle. The names of the disciplines also underwent changes linked to the development of their contents reported in the new declarations of the scientific-disciplinary Areas. The “Veterinary Physiology” discipline then became a two-years teaching with the following titles: “**Veterinary Physiology and Ethology of Domestic Animals (and Animal Protection) I**” and “**Veterinary Physiology and Endocrinology of Domestic Animals II**”. Therefore, **Giovanni Caola** took over the teaching of “**Physiology and Ethology of Domestic Animals (and Animal Protection) I**” and **Adriana Ferlazzo** that one of “**Veterinary Physiology and Endocrinology of Domestic Animals II**”.

In Italy, the teaching autonomy of Universities took its first significant steps with Law no. 341 of 19 November 1990, which also entailed a further reform of university didactic regulations. Afterwards, with Presidential Decree 5/6/1995 and in compliance with Law no. 341/90, the didactic system of the Degree Course in Veterinary Medicine as per Table XXXIII, annexed to the Ministerial Decree of February 25, 1993, was abolished and replaced by the one established by the new Table XXXIII, which introduced the Integrated Courses (I.C.), with new teachings’ denominations, and the didactic and professionalising Modules. The Presidential Decree provided that the Degree Course in Veterinary Medicine was to be carried out by means of a five-year study cycle. The “Veterinary Physiology” discipline was again a two-years teaching with the following designations: **I. C. 5.1 “Physiology and Ethology of Domestic Animals”**, with within it two Teaching Modules, respectively “Veterinary Physiology” and “Veterinary Ethology and Animal

Welfare”; **I. C. 5.2 “Physiology and Endocrinology of Domestic Animals”**, with within it two Teaching Modules, respectively “Veterinary Physiology” and “Endocrinology of Domestic Animals”.

**Giovanni Caola**, Coordinator of I. C. 5.1 “Physiology and Ethology of Domestic Animals”, therefore took over the teaching of "**Veterinary Physiology**", and **Michele Panzera** that one of "**Veterinary Ethology and Animal Welfare**"; **Adriana Ferlazzo**, Coordinator of I. C. 5.2 “Physiology and Endocrinology of Domestic Animals”, took over the teachings of "**Veterinary Physiology**" and "**Endocrinology of Domestic Animals**". In 1995, **Esterina Fazio**, already university researcher since 1992 in Veterinary Physiology scientific Area, took over the teaching of "**Endocrinology of Domestic Animals**" in the I. C. 5.2 "Veterinary Physiology and Endocrinology of Domestic Animals", which she also maintained when, in 1999, she became Associate Professor in the Veterinary Physiology scientific Area.

In the meantime, the Ministerial Decree 509/99 established the new Degree Classes, later confirmed by the Ministerial Decree 270/2004. Thus, the Ministerial Decree of 28/11/2000, which introduced the **Specialist Degree Course Class 47/S**, further modified the study plan of the Degree Course in Veterinary Medicine, also providing for the attainment of educational credits (CFU) by students. The teaching Area “Veterinary Physiology” had a two-year duration, for a total of 18 CFU, with two I.C. having the following names: “**Veterinary Physiology I**”, with two teaching modules, respectively “Vegetative Physiology of Domestic Animals” and “Vegetative Physiology of Athletic Species”; “**Veterinary Physiology II**”, with four teaching modules, respectively “Integrative Physiology (Basic)”, “Applied Integrative Physiology (Specialist)”, “Endocrinology of Domestic Animals” and “Veterinary Ethology and Animal Welfare”.

Therefore, in 2000, in the 47/S Degree Course in Veterinary Medicine, **Giovanni Caola**, Coordinator of the I. C. "Veterinary Physiology I", took over the teachings of "**Vegetative Physiology of Domestic Animals**" and "**Vegetative Physiology of Athletic Species**". **Adriana Ferlazzo**, Coordinator of the I. C. "Veterinary Physiology II", took over the teachings of "**Integrative Physiology (Basic)**" and "**Applied Integrative Physiology (Specialist)**"; **Michele Panzera** maintained the teaching of "**Veterinary Ethology and Animal Welfare**".

The School of Human Physiology had a long tradition of institutional commitment and responsibility: Gaetano Martino and Gaetano Livrea, both human physiologists, had been Chancellors of the University in Messina; Gaetano Martino later also of “La Sapienza” University in Rome. Ada Barbaro and Concetta Zannelli were also always intensely involved in the institutional activity, actively participating in the development of the Physiology and the School of Veterinary Medicine, in both the Messina University and Italy.

Therefore, during these years, following these examples of commitment and institutional responsibility, the School of Veterinary Physiology assumed a prominent position in scientific and academic circles. First Giovanni Caola, from 1996 to 2004, and later Adriana Ferlazzo, from 2004 to 2012, were elected Vice Presidents of the Italian Society of Veterinary Physiology. Adriana Ferlazzo was also elected, from 2013 to 2015, President of the Scientific Committee of the Italian Society of Veterinary Sciences. Moreover, Giovanni Caola was appointed Vice Dean of the Faculty of Veterinary Medicine from 1998 to 2004, and Adriana Ferlazzo was Deputy Chancellor of the University of Messina from 1998 to 2004 (**Fig.14**). She was also a candidate to be Chancellor of Messina University in 2007 and 2013 (**Fig.15**). Thereafter, she was also Dean of the Messina University for some years until retirement.

**Fig. 14.** Adriana Ferlazzo, Deputy Chancellor at the Messina University in 1998



**Fig. 15.** Adriana Ferlazzo, Candidate for Chancellor at the Messina University in 2003



In 2000, the Institute of Veterinary Physiology merged with the Department of Morphology, Biochemistry, Physiology and Animal Production (MO.BI.FI.P.A.). Giovanni Caola was its Head and Adriana Ferlazzo was the Head of the Veterinary Physiology Unit.

In 2001, **Giuseppe Piccione**, who had already been university researcher since 1992 and had been in charge of various Physiology teachings in the professional modules of the Veterinary Medicine Degree Course and in the three-year Degree Courses since 1995, became Associate Professor in the scientific Area of Veterinary Physiology, and in 2002 took on the teaching of "**Physiology of the vegetative life of athletic species**" in the 47/S Degree Course. Later, since 2003, he has been teaching '**Physiology of**

**the vegetative life of domestic animals'**, also in the 47/S Veterinary Medicine Degree Course. The Ministerial Decree no. 270 of October 22, 2004, "Modifications to the regulation containing norms concerning the teaching autonomy of universities, approved by the Ministerial Decree no. 509/99", subsequently provided for the introduction of a further new didactic system, with the 3+2 formula, three-year plus specialisation, and introduced the Degree Classes, which by the Ministerial Decree of March 16, 2007 regulated the three-year and specialist Master's Degree Classes. In addition to the single-cycle Master Degree Course in Veterinary Medicine, the Faculty of Veterinary Medicine of Messina activated a number of three-year Degree Classes that provided for the inclusion of many disciplines from the scientific disciplinary Area of Veterinary Physiology. Currently, the Degree Course in Veterinary Medicine has only one active didactic system (**LM-42**), regulated by the Law 240/2010 (new order). This system has been activated progressively from year to year since AY 2011/12 with the simultaneous deactivation of the 270/2004 system (old system). "Veterinary Physiology" is a two-year discipline and there are two I.C.: "**Veterinary Physiology I**" - with 3 teaching Modules within it – respectively, "Vegetative Physiology", "Applied Vegetative Physiology", "Veterinary Ethology and Animal Welfare"- and "**Veterinary Physiology II**", with three teaching Modules within it – respectively, "Integrative Physiology (Basic)", "Applied Integrative Physiology (Specialist)", "Veterinary Endocrinology".

**Fig. 16.** Adriana Ferlazzo with Esterina Fazio, Pietro Medica and Cristina Cravana



Thus, in the Degree Course in Veterinary Medicine (**Class LM-42**) **Giovanni Caola**, Coordinator of the I.C. "Veterinary Physiology I", took over the teaching of "**Vegetative Physiology**" and "**Applied Vegetative Physiology**", and **Michele Panzera** took over the teaching of "**Veterinary Ethology and Animal Welfare**"; whereas **Adriana Ferlazzo**, Coordinator of the I. C. "Veterinary Physiology II", took over the teaching of "**Integrative Physiology (Basic)**" and "**Applied Integrative Physiology (Specialist)**", while **Esterina Fazio** took over the teaching of "**Veterinary Endocrinology**". During

these years, the Veterinary Physiology Unit has been enriched with new university researchers: since 2000 **Anna Assenza**; since 2002 **Pietro Medica**; since 2006 **Francesco Fazio**; and since 2011 **Cristina Cravana (Fig. 16)**; since 2012 **Daniela Alberghina** also obtained the transfer from the scientific Area of Biochemistry into the scientific Area of Veterinary Physiology.

Since the AY 2008/2009, **Pietro Medica (Fig.17)**, already university researcher since 2002, has been teaching "**Veterinary Endocrinology**", first in the I.C. 5.2 "Veterinary Physiology and Endocrinology of Domestic Animals" of the Specialist Degree Course (47/S) and later in the I. C. "Veterinary Physiology II" of the Master Degree Course in Veterinary Medicine (Class LM-42), maintained until today when he became Associate Professor in the scientific Area of Veterinary Physiology in 2020.

**Fig. 17.** Pietro Medica



In the meanwhile, since A.Y. 2009/2010, **Esterina Fazio** has been teaching "**Integrative Physiology (Basic)**" in the I.C. "Veterinary Physiology II" in the Master Degree Course in Veterinary Medicine (Class LM/42), which, when she became Full Professor in 2019, she maintained uninterruptedly until today (**Fig. 18**).

**Fig. 18.** Esterina Fazio, Coordinator of the Physiology Unit in MO.BI.FI.P.A. Department, with a student



From 2008 to 2012, Adriana Ferlazzo was the Head of the Department of Morphology, Biochemistry, Physiology and Animal Production (MO.BI.FI.P.A.) and Esterina Fazio was

the Coordinator of the Veterinary Physiology Unit (**Fig.19**). In 2012, following in the new rules of the Messina University Statute, the Department of Veterinary Sciences was finally established, conceived as an ideal extension of the Faculty of Veterinary Medicine; it brought together the four Departments of the former Faculty and included representatives from all the veterinary scientific Areas.

In 2016, following the retirement of Giovanni Caola, **Francesco Fazio**, who had already been university researcher since 2006, became Associate Professor in the scientific Area of Veterinary Physiology, taking up the teaching of "**Applied Vegetative Physiology**" of the I.C. "Veterinary Physiology I", coordinated by Giuseppe Piccione, in the Master Degree Course in Veterinary Medicine (Class LM-42), which he maintained continuously thereafter when, in 2022, he became Full Professor. In the AY 2016/2017, **Daniela Alberghina** held the teaching of "**Veterinary Ethology and Animal Welfare**" in the I.C. "Veterinary Physiology I", coordinated by Giuseppe Piccione, in the Master Degree Course in Veterinary Medicine (Class LM-42). Daniela Alberghina was subsequently called upon, in 2022, as Associate Professor in the scientific Area of Veterinary Physiology.

**Fig. 19.** Adriana Ferlazzo, Head of Department MO.BI.FI.P.A. in 2008



Alongside their teaching activities, the commitment to institutional responsibility of many lecturers in veterinary physiology continued: Michele Panzera was appointed Vice Dean of the Faculty of Veterinary Medicine from 2004 to 2007; Esterina Fazio was elected in the Executive Board of the Italian Society of Veterinary Physiology from 2013 until today; Giuseppe Piccione was the Head of the Department of Veterinary Science from 2018 to 2021 (**Fig. 20**).

**Fig. 20.** Giuseppe Piccione, Head of the Department of Veterinary Sciences, in 2018



In 2019, following the retirement of Adriana Ferlazzo, **Michele Panzera** took over the teaching of "**Applied Integrative Physiology (Specialist)**" in the I. C. "Veterinary Physiology II" in the Master Degree Course in Veterinary Medicine (Class LM-42).

Later, in 2021, **Cristina Cravana**, already university researcher since 2011, became Associate Professor in the scientific Area of Veterinary Physiology, and from the AY 2022/23 she took over the teaching of "**Applied Integrative Physiology (Specialist)**" in the I.C. "Veterinary Physiology II" in the Master Degree Course in Veterinary Medicine (Class LM-42).

In 2023, the Degree Course in Veterinary Medicine LM-42 obtained the European Certification by the European Association of Establishments for Veterinary Education (E.A.E.V.E.), which establishes the gold standards for the harmonisation of a research-based veterinary education in Europe. Actually, from AY 2022/23, a reorganization was made and "Veterinary Physiology I", coordinated by Giuseppe Piccione, comprises three teaching modules - respectively, "Vegetative Physiology", "Applied Vegetative Physiology" and "Veterinary Endocrinology" -; "Veterinary Physiology II", coordinated by Michele Panzera, comprises three teaching modules - respectively, "Integrative Physiology (Basic)", "Applied Integrative Physiology (Specialist)" and "Veterinary Ethology and Animal Welfare". In addition to the contents of Veterinary Physiology of the Master Degree Course in Veterinary Medicine, which, as already mentioned, has taken on different names over time and has seen the involvement of all the lecturers already mentioned, numerous other specialised Physiological Disciplines have been developed, necessary for reviewing and analysing the topics of Physiology in a way that is aimed at veterinary knowledge and professional practice (Endocrinology of Domestic Animals, Physiology of Animal Nutrition, Physiology of Animal Reproduction, Physiology of the Adaptation of Domestic Animals, Physiology of Small Animals, Physiology of Large Animals, Avian Physiology, Physiology of Wild Fauna, Physiology of Fishes, etc.). These disciplines are included in the syllabuses of numerous Degree Classes activated not

only in the Faculty/Department of Veterinary Medicine/Veterinary Sciences, but also at other university sites and structures, pertaining to other fields of university study (Medicine and Surgery, Biotechnology, Agriculture, Science, Pharmacy, Educational Sciences), where the teaching of peculiar aspects of Veterinary Physiology is required, as a basic or specialist course, as identified by the national Declarations of scientific-disciplinary Area which have been revised and extended from time to time. The teaching of these disciplines has been entrusted annually to lecturers in the scientific Area and to other lecturers recruited at different times (Anna Assenza, university researcher since 2000 and associate professor since 2022; Claudia Giannetto, fixed-term university researcher from 2020 and associate professor from 2022; Francesca Arfuso, fixed-term university researcher from 2022).

During these years, besides the didactic activity, many lines of physiological research have been continuously developed, relating to the Physiology and Endocrinology of exercise, Equine sport physiology and equestrian rehabilitation, to animal-assisted interventions, to Chronophysiology and Chronoperformance, to Transport stress and to the neuroendocrine modulation of different types of stress in small and large animals, to studies on the main neuroendocrine functions (thyroid, adrenal, hypothalamo-pituitary, opioid and serotonergic systems) in different domestic species and under different physiological conditions (pregnancy, peripartum, lactation, growth, weaning), to the evaluation of welfare indicators in domestic Species and to the Physiology of Fishes.

Lastly, specialist lectures on Veterinary Physiology have been held in the Ph.D. courses of “**Equine Physiology**”, “**Equine Physiology (Experimental and Applied)**”, “**Veterinary Sciences**” and “**Veterina Biotechnological and Agricultural Sciences**”, and in numerous Postgraduate and Master's Schc established at the Faculty of Veterinary Medicine and of the Department of Veterinary Sciences (**Fig. 21**).

**Fig. 21.** Adriana Ferlazzo, Esterina Fazio with President of SISVET, A. Ianieri, President of SOFIVET, G. Gabai, and Pro-rector A. Germanà 2023



Following in these significant academic and scientific qualifications, a new generation of physiologist researchers is emerging, and a renewed cohort of academic physiology staff is growing up and is ready to take over from the previous masters.

Thus, the teaching and the School of Veterinary Physiology in the University of Messina are approaching their century of life (**Table 2**); and they are still maintaining their validity in the education of veterinary physicians and their value in the international scientific panorama.

**Table 2 Synoptic overview of the Lecturers of “Veterinary Physiology” in the Degree Course of Veterinary Medicine**

<p><b>Law no.1147 July 25,1922, Table XXXIII (Royal Decree no. 1652, September 30, 1938): four-year course, annual teaching (1927-1970)</b>  <b>Physiology of Domestic Animals and Biological Chemistry</b>                  Giuseppe Amantea 1927                  Gaetano Martino 1928-1940                  Giovanni Aragona 1939-1942                  Ada Barbaro 1943-1955</p> <p><b>General and Special Physiology of Domestic Animals and Biological Chemistry</b>                  Ada Barbaro 1956-1970</p>	<p><b>Single-cycle Master Degree Course in Veterinary Medicine LM-42 (M. I. March 16, 2007):</b>  <b>five-year course, two-year teaching (2011-2021)</b>                  I.C. Veterinary Physiology I - Coordinator: <b>Giovanni Caola</b>: 2011-2016;  <b>Giuseppe Piccione</b>: 2016-2021                  Teaching Modules:                  Vegetative Physiology: G. Piccione; G. Caola                  Applied Vegetative Physiology: G. Piccione 2010-2012; G. Caola 2013-2016                  F. Fazio 2016-2021                  Animal Ethology and Animal Welfare: M. Panzera 2010-2015; D. Alberghini 2016-2020                  I.C. Veterinary Physiology II - Coordinator: <b>Adriana Ferlazzo</b> 2010-2019;  <b>Michele Panzera</b> 2019-2021                  Teaching Modules                  Integrative Physiology (Basic): E. Fazio                  Applied Integrative Physiology (Specialist): A. Ferlazzo 2010-2019;                  M. Panzera 2019-2021                  Veterinary Endocrinology: P. Medica</p>
<p><b>Table XXXIII modif. (Presidential Decree No. 987/69): five-year course, two-year teaching (1970-1992)</b>                  General and Special Veterinary Physiology I and Biophysics                  Giovanni Caola 1974- 1992                  General and Special Veterinary Physiology II and Biophysics                  Ada Barbaro 1970-1978                  Concetta Zannelli 1979-1990                  Adriana Ferlazzo 1990- 1992</p>	<p><b>2022- on</b>                  I. C. Veterinary Physiology I - Coordinator: <b>Giuseppe Piccione</b>                  Teaching Modules:                  Vegetative Physiology: G. Piccione                  Applied Vegetative Physiology: F. Fazio                  Veterinary Endocrinology: P. Medica                  I. C. Veterinary Physiology II - Coordinator: Michele Panzera                  Teaching Modules:                  Integrative Physiology (Basic): E. Fazio                  Applied Integrative Physiology (Specialist): C. Cravana                  Veterinary Ethology and Animal Welfare: M. Panzera</p>
<p><b>New Table XXXIII (D.M. 25.2. 1993): five-year course, two-year teaching (1993-1995)</b>                  Veterinary Physiology and Ethology of Domestic Animals (and Animal Protection) I                  Giovanni Caola 1993-1995                  Veterinary Physiology and Endocrinology of Domestic Animals II                  Adriana Ferlazzo 1993-1995</p>	
<p><b>Specialist Degree Course in Veterinary Medicine 47/S (M. D. 28/12/2000): five-year course, two-year teaching (2000-2007)</b>                  I.C. Veterinary Physiology I - Coordinator: <b>Giovanni Caola</b>                  Teaching Modules:                  Vegetative Physiology of Domestic Animals: G. Caola 2000-2002; G. Piccione 2003-2012                  Vegetative Physiology of Athletic Species: G. Caola 2003- 2012; G. Piccione 2002                  I.C. Veterinary Physiology II - Coordinator: <b>Adriana Ferlazzo</b>                  Teaching Modules:                  Integrative Physiology (Basic): A. Ferlazzo 2000-2009; E. Fazio 2009                  Applied Integrative Physiology (Specialist): A. Ferlazzo 2000-2011                  Endocrinology of Domestic Animals: E. Fazio 2000-2005; P. Medica 2005-2011                  Veterinary Ethology and Animal Welfare: M. Panzera</p>	

This has been possible with the contribution of all those in this field, including at the University of Messina, who have been able to look to the future with a vision that is open to new and ongoing educational and scientific challenges, while not losing sight of the values and teachings passed on by the Masters who preceded them, of which they all are proud.

**Conflicts of Interest.** The Author declares no conflict of interest



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