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| **PERSONAL INFORMATION** | Mauro Spanghero |
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| *Sex* Male | *Date of birth* 09/02/1958 | *Nationality* Italy  |

[Select you current working level]

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| **Enterprise** | **University** | **EPR** |
| [ ]  Management Level | [x]  Full professor | [ ]  Research Director and 1st level Technologist / First Researcher and 2nd level Technologist |
| [ ]  Mid-Management Level | [ ]  Associate Professor | [ ]  Level III Researcher and Technologist |
| [ ]  Employee / worker level | [ ]  Researcher and Technologist of IV, V, VI and VII level / Technical collaborator | [ ]  Researcher and Technologist of IV, V, VI and VII level / Technical collaborator |

**EDUCATION AND TRAINING**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

from 1977 – to 1982 Agricultural Science degree, Padua University, graduated with honours (110/110 laude)

from 1984 – to 1987 PhD in Animal Production Science, Padua University

**WORK EXPERIENCE** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

from 1987 – to 1989 Professor of Animal Science in the high school (Istituto Tecnico Agrario “Brignoli”, Gradisca d’isonzo, GO)

 from 1989 – to 2000 Researcher at Udine University (SSD: AGR/18)

from 2000 – to 2006 Associate Professor at Udine University (SSD: AGR/18)

from 2006 – to current Full Professor at Udine University (SSD: AGR/18)

**Institutional positions at the University of Udine.**

Vice Director of the Animal Science Department at the University of Udine (from 2007 to 2010).

Coordinator of the Research Doctoral course in “Agricultural and Biotechnological Science” at the Udine University (from 2008 to 2016).

Responsible of the experimental animal unit at the Udine University Farm “Antonio Servadei” (Decree N.133/2009 of the Health Ministry, from 2008 to 2017).

Coordinator of the Magistral Degree in “Animal Breeding and Welfare” (from 2010 to 2016).

Delegate to the Third Mission from the Department of Agriculture, Food, Environment and Animal Science of the University of Udine (from January 2020).

**Other assignments and activities**

He is member (since 1990) of the Italian Scientific Association for Animal Science and Production (ASPA).

Member of the Order of Agronomists and Foresters of the Udine Province since 1985.

**Teaching activities**

Prof. Mauro Spanghero taught several module and courses within the disciplinary sector "Animal Nutrition and Feeding"(AGR18) at the University of Udine.

In the last 5 accademic years (aa 2017-2018; aa 2018-2019; aa 2019-2020; aa 2020-2021; aa 2021-2022) he taught :

* **Companion and sportive animals** (5 CFU), teaching module of the integrated course of **Dietetics, diet formulation and feed safety** for the LM inAnimal Breeding and Welfare;
* **Animal Nutrition and Feeding** (6 CFU), teaching module of the integrated course of **Companion animals**, for the LT in Animal Breeding and Health;
* **Animal Production** (6 CFU),teaching module of the integrated course of **Animal Productions** for the LT inFood Science and Technology (up to aa 2019-2020);
* **Animal nutrition and Feeding** (6 CFU), teaching course for the LT in Animal Breeding and Health;
* **Laboratory of chemical analysis** (3 CFU), teaching course for the LT in Animal Breeding and Health (from aa 2020-2021).

**Coordination of research groups and/or international, national or regional projects and projects from private companies/organizations.**

International projects

In 2005-2007 he was scientific coordinator of an international scientific cooperation project, called Integrated Action and financed by the MiUR, in the sector of Agricultural and Veterinary Sciences between Italy and Spain (University of Barcelona, prof. S. Calsamiglia) entitled *"In vitro fermentation of feeds by using a rumen inoculum from growing beef or from lactating dairy cattle".*

National projects

1. Research Projects of Relevant National Interest (PRIN) funded by the Ministry of University and Research

He was the National Principal Investigator of the following PRIN projects:

* 2007-2009 he coordinated the research groups of the Universities of UD, PD, MI, PC and TO in a project entitled “*Innovative methods for the nutritive evaluation of forages*” (project 2007P8JMWJ);
* 2017-2019 he coordinated the research groups of the Universities of UD, PD, MI and PC in a project entitled “*Innovative methods to study the rumen fermentation without using experimental animals*” (project 2015FP39B9).

He was local coordinator of a research unit in the following PRIN projects:

* 1999-2000, “*Optimization of energy-protein balance in ruminant rations: productive responses and environmental impacts*“ (project 9807573747);
* 2001-2002, “*Characterization of feeds by the kinetics of in situ degradation of carbohydrates and proteins*“ (project MM07107247);
* 2003-2005 “*Innovative use of gas test for the evaluation of feed fermentation kinetics and ruminant diets*“ (project 20033070897).
1. Other national projects

2019-2021 he was the National Principal Investigator of the research project financed by the Ministry of Agricultural, Food and Forestry policies (Mipaaf) and entitled “*Nutritional factors to reduce the AFM1 in the cow milk”*.

2012-2014 was the local responsible of research units in the AGER national projects (Agroalimentare in Rete – Fondazioni in rete per la ricerca agroalimentare) entitled “*Environmental impact and animal welfare in the pig supply chain to improve profitability and ensure sustainability* *– The green pig supply chain* “.

1. Regional projects

He was the local responsible of research units in projects financed by the Friuli Venezia Giulia Region:

* 2003-2005, (L.R. n. 11/2003), “*Innovation and optimization in the typical ham supply chain*”;
* 2005-2007 (L.R. n. 26/2005, art. 23), “*Innovation and optimization in the typical ham supply chain*”;
* 2007-2009 (L.R. n. 26/2005, ex art.17,), “*Efficiency of use of nitrogen of organic origin in vulnerable areas of Friuli Venezia Giulia: physiological, agronomic and environmental aspects*”.

In the period 2013-2016 he was head of Research Units within the CRITA regional project (Center for Research and Technological Innovation in Agriculture) entitled: “*Improvement of the meat supply chain of only Pezzata Rossa Italiana in Friuli Venezia Giulia* “.

1. Projects from private companies/organizations

He was the scientific leader of several research projects stipulated by the Department of Agriculture, Food, Environment and Animal Science (Udine University) with organizations, which operate in animal production, in feed companies, in seed companies and other companies:

**PERSONAL SKILLS** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mother tongue(s) Italian

Other language(s) English

Digital skills word processor; excel spreadsheet; statistical package SAS

**ADDITIONAL INFORMATION** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Recent publications (last 5 years)

Spanghero, M, Braidot, M, Sarnataro, C, Fabro, C, Piani, B, Gallo, A, 2023. In vitro aflatoxins recovery after changing buffer or protozoa concentrations in the rumen fermentation fluid. Journal of Animal Physiology and Animal Nutrition, DOI: 10.1111/jpn.13818

Romanzin, A, Florit, E., Degano, L., Spanghero, M, 2022. Feeding efficiency and behaviour of growing bulls from the main Italian dual-purpose breeds. Italian Journal of Animal Sciences, vol. 21, 1, 1611-1621.

Spanghero, M, Braidot, M, Fabro, C, Romanzin, A, 2022. A meta-analysis on the relationship between rumen fermentation parameters and protozoa counts in in vitro batch experiments. Animal Feed Science and Technology, 293, 115471.

Gallo A., Fancello F., Ghilardelli F., Zara S., Spanghero M., 2022. Effects of several commercial or pure lactic acid bacteria inoculants on fermentation and mycotoxin levels in high-moisture corn silage. Animal Feed Science and Technology, 286, art. no. 115256,

Braidot M., Sarnataro C., Romanzin A., Spanghero M., 2022. A new equipment for continuous measurement of methane production in a batch in vitro rumen system. Journal of Animal Physiology and Animal Nutrition, DOI: 10.1111/jpn.13780

Gallo, A., Fancello, F., Ghilardelli, F., Froldi, F., Spanghero, M., 2021. Effects of several lactic acid bacteria inoculants on fermentation and mycotoxins in corn silage. Animal Feed Science and Technology, 277, 114962

Romanzin, A., Degano, L., Vicario, D., Spanghero, M., 2021. Feeding efficiency and behavior of young Simmental bulls selected for high growth capacity: Comparison of bulls with high vs. low residual feed intake. Livestock Science, 249, 104525.

Spanghero, M., Kowalski, Z.M., 2021. Updating analysis of nitrogen balance experiments in dairy cows. Journal of Dairy Science,104(7), 7725-7737.

Colombini, S., Rota Graziosi, A., Parma, P., Sarnataro, C., Spanghero, M., 2021. Evaluation of dietary addition of 2 essential oils from Achillea moschata, or their components (bornyl acetate, camphor, and eucalyptol) on in vitro ruminal fermentation and microbial community composition. Animal Nutrition, 7(1), 224-231.

Sarnataro, C., Spanghero, M., Lavrenčič, A., 2020. Supplementation of diets with tannins from Chestnut wood or an extract from Stevia rebaudiana Bertoni and effects on in vitro rumen fermentation, protozoa count and methane production. J Anim Physiol Anim Nutr., 104(5), 1310-1316.

Fabro, C., Sarnataro, C., Spanghero, M., 2020. Impacts of rumen fluid, refrigerated or reconstituted from a refrigerated pellet, on gas production measured at 24h of fermentation. Animal Feed Science and Technology, 268, 114585.

Sarnataro, C., Spanghero, M., 2020.In vitro rumen fermentation of feed substrates added with chestnut tannins or an extract from Stevia rebaudiana Bertoni. Animal Nutrition, 6 (1), pp. 54-60.

Spanghero, M., Chiaravalli, M., Colombini, S., Fabro, C., Froldi, F., Mason, F., Moschini, M., Sarnataro, C., Schiavon, S., Tagliapietra, F., 2019. Rumen inoculum collected from cows at slaughter or from a continuous fermenter and preserved in warm, refrigerated, chilled or freeze-dried environments for in vitro tests. Animals, 9 (10)

Sarnataro, C., Petri, R.M., Spanghero, M., Zebeli, Q., Klevenhusen, F., 2019. A nutritional and rumen ecological evaluation of the biorefinery by-product alfalfa silage cake supplemented with Scrophularia striata extract using the rumen simulation technique. Journal of the Science of Food and Agriculture, 99 (9), 4414-4422.

Galassi, G., Mason, F., Rapetti, L., Crovetto, G.M., Spanghero, M., 2019. Digestibility and metabolic utilisation of diets containing chestnut tannins and their effects on growth and slaughter traits of heavy pigs. Italian Journal of Animal Science, 18 (1), 746-753.

Volpatti, D., Gulisano, E., Spanghero, M., 2019. Short note: Infliximab recovery in a simulated intestinal fluid of the upper intestine tract. Human Antibodies, 27 (4), 241-246.

Saccà, E., Corazzin, M., Giannico, F., Fabro, C., Mason, F., Spanghero, M., 2018. Effect of dietary nitrogen level and source on mRNA expression of urea transporters in the rumen epithelium of fattening bulls. Archives of Animal Nutrition, 72 (5), 341-350.

Spanghero, M., Nikulina, A., Mason, F., 2018. Use of an in vitro gas production procedure to evaluate rumen slow-release urea products. Animal Feed Science and Technology, 237, 19-26.

Nikulina, A., Sarnataro, C., Fabro, C., Mason, F., Spanghero, M., 2018. In vitro ammonia release of urea-treated high moisture barley and maize grain. Journal of Animal and Feed Sciences, 27 (2), 173-178.

Udine, 09 April 2023