CURRICULUM VITAE



PERSONAL DETAILS

Surname, Name KOSTOULAS, POLYCHRONIS

Date of Birth 18th May 1976

Gender Male

Status Married, one kid.

Nationality Greek

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Current position Assistant Professor in Veterinary Epidemiology, Faculty of

Veterinary Medicine, University of Thessaly, Greece.

BRIEF OVERVIEW

Polychronis Kostoulas (PK) has a core expertise in Epidemiology and Preventive Veterinary Medicine. His primary research interest is in the development and application of Bayesian methods for the evaluation of diagnostic tests and the estimation of true disease prevalence and proof of disease fereedom. PK has over 90 publications, 41 of which are in peer-reviewed journals and has participated in 18 international research projects, leading four (4) and coordinating and leading (2) two (with a total of funds over 2,500,000€, which is enormous given the size of Greece). In recognition of his expertise in the field of Veterinary Epidemiology and Bayesian methods he has been recently appointed as one of the three Co-Editors-in-Chief for the Preventive Veterinary Medicine journal (12/2019 to present).

MAIN RECENT ACHIEVEMENTS (2018-2019)

- Honored to lead a group of international experts in issuing guidelines for the Bayesian evaluation of diagnostics (Kostoulas, P., Nielsen, S. S., Branscum, A. J., Johnson, W. O., Dendukuri, N., Dhand, N. K., ... & Gardner, I. A. (2017). STARD-BLCM: standards for the reporting of diagnostic accuracy studies that use Bayesian latent class models. Preventive veterinary medicine, 138, 37-47. https://www.equator-network.org/reporting-guidelines/stard-blcm/
- 2. Coordinate an **EFSA-funded project for the harmonization of disease rates by the use of Bayesian methods** (<u>www.thehotlineproject.org</u> HOTLINE: "Harmonisation Of TransmissibLe disease INterpretation in the EU").
- 3. Set off an initiative for the application of machine learning/artificial intelligence technologies to promote animal health and welfare (www.Pre2prO.com).
- 4. Participate in the **core team of the SOUND CONTROL** COST action (CA17110): Standardizing output-based surveillance to control non-regulated diseases of cattle in the EU- https://www.cost.eu/actions/CA17110/#tabs|Name:overview)

- 5. Create the **PriorGen R-package** that generates priors for the Bayesian estimation of disease prevalence and the diagnostic accuracy of tests (https://cran.r-project.org/package=PriorGen).
- 6. Coordinate an **COST-funded project for Novel tools for test evaluation and disease prevalence estimation** with the participation of 28 EU countries and Australia, Canada, India, New Zealand, Qatar, U.K. and U.S.A. (https://www.cost.eu/actions/CA18208/#tabs|Name:overview_www.harmony-net.eu).
- 7. Be one of the three **Co-Editors-in-Chief** for the **Preventive Veterinary Medicine** journal (01/2019 to present).

EDUCATION

09/1994-02/2000: **D.V.M.**

Faculty of Veterinary Medicine, University of Thessaly, Greece.

10/2002-04/2006: Ph.D. in Veterinary Epidemiology.

Faculty of Veterinary Medicine, University of Thessaly, Greece.

RECENT EMPLOYMENT

09/2011–09/2017: Visiting Ass. Professor in Veterinary Epidemiology.

Faculty of Veterinary Medicine, Aristotle University of Thessaloniki,

Greece.

01/2014 – present: **Assistant Professor in Veterinary Epidemiology**

Faculty of Veterinary Medicine, University of Thessaly, Greece.

RESEARCH GRANTS

- 1. 10/2001 Member of the scientific team of the project entitled "The role of wildlife in the epidemiology of Mycobacterium avium paratuberculosis infection of domestic ruminants in Europe" Funding body: EU (QLK2 − CT − 2001 − 00879), 194,890€.
- 2. 01/2002 **Member of the scientific team** of the project entitled "Isolation, until molecular characterization and epidemiological study of Greek strains of 12/2006 *Mycobacterium avium* subsp. *paratuberculosis* from sheep, goats and non-ruminant wildlife". Funding body: Hellenic Ministry of Education ("Heraclitus I") 40,000€.
- 3. 10/2009 **Member of the scientific team** of the research project entitled "A quantitative microbiological risk assessment of Campylobacter in the 04/2010 broiler meat chain". Funding body: European Food Safety Authority (CFT/EFSA/BIOHAZ/2009/01) 23,512€.
- 4. 07/2009 **Member of the scientific team** of the research project entitled "WILDTECH: Novel Technologies for Surveillance of Emerging and Re06/2013 emerging Infections of Wildlife" Funding body: FP7 (Food, Agriculture and Fisheries, and Biotechnology) 520,610€.
- 5. 11/2009 **Leader** of the research project entitled "Temporal correlation patterns until between milk and blood antibody-ELISA testing for paratuberculosis, in 11/2011 sheep and goats". Funding body: Research Committee, University of

Thessaly 5,000€.

- 6. 09/2010 Member of the scientific team of the research project entitled "Study on the factors affecting the spread of paratuberculosis in Greek small ruminant herds" Funding body: Education and Lifelong Learning Operational Program (NSRF 2007-2013) co-financed by the Hellenic Ministry of Education ("Heraclitus II") 45,000€.
- 7. 09/2011 Member of the scientific team of the research project entitled "RBHEALTH: Interdisciplinary Investigation and Identification of 09/2014 Rotaviruses, Bartonella henselae and Leishmania spp. from Children and Animal Hosts using Novel Technologies: Public Health "Funding body: Education and Lifelong Learning Operational Program (NSRF 2007-2013) co-financed by the Hellenic Ministry of Education ("Thales II") 540,000€.
- 8. 01/2012 Leader for the Faculty of Veterinary Medicine of the research project until entitled "Development of digital open courses at the University of Thessaly" Funding body: Education and Lifelong Learning Operational Program (NSRF 2007-2013) co-financed by the Hellenic Ministry of Education.
- 9. 10/2012 **Member of the scientific team** of the research project entitled "NEAT: Networking to enhance the use of economics in animal health education, research and policy making in Europe and beyond". Funding body: EU (527855-LLP-1-2012-1-UK-ERASMUS-ENW) 13,872€.
- 10. 01/2013 **Member of the scientific team** of the research project entitled "Claw lesions, longevity and welfare of group housed sows". Funding body: 06/2015 NSRF 2007-2013 (Cooperation 2011) 304,826€.
- 11. 01/2014 **Member of the scientific team** of the research project entitled until "Epidemiological evaluation of control options for paratuberculosis in o7/2015 small ruminants". Funding body: NSRF 2007-2013 (Excellence II) 160.000€.
- 12. 09/2016 **Leader** of the research project entitled "Paratuberculosis factsheet". until Funding body: European Food Safety Authority 12/2016 (NP/EFSA/ALPHA/2016/19) 4,000€.
- 13. 01/2018 Coordinator and Project leader of the of the research project entitled until "HOTLINE Harmonization of Transmissible Disease Interpretation in the 01/2019 EU". Funding body: European Food Safety Authority (GP/EFSA/AFSCO/2017/01 GA03) 130,480.90€.
- 14. 05/2018 **Member of the scientific team** of the research project entitled utnil "Application of innovative technologies for the investigation and characterization of broad spectrum beta-lactamases and carbapenemases in humans and animals" (ΕΠΑνΕΚ) 304.999,90€.
- 15. 05/2019 **Project leader of the** of the research project entitled "Harmonisation of transmissible disease interpretation in EU (HOTLINE) (National support 05/2020 fund 2018).
- 16. 08/2019 **Member of the scientific team** of the research project entitled until "Monitoring of circulation levels of the West Nile virus in the Peloponnese

- 11/2020 region" (Peloponnese prefecture) 403.880,40€.
- 17. 10/2018 **Member of the core team** of the SOUND-CONTROL COST action until (CA17110) Standardizing output-based surveillance to control non-regulated diseases of cattle in the EU ~450.000€.
- 18. 10/2019 Coordinator and Chair of the HARMONY COST action (CA 18208) until Novel tools for test evaluation and disease prevalence estimation ~
 10/2023 640.000€

TEACHING

For the Degree of Veterinary Medicine, at the University of Thessaly, the following classes:

- a. 1st year students
 - i. Biostatistics (03/2009 present).
 - ii. Informatics (09/2011 09/2016).
- b. 2nd year students: Animal Health Economics (03/2007 present).
- c. 3rd year students: Veterinary Epidemiology (09/2008 present).

For the Degree of Veterinary Medicine, at the Aristotle University of Thessaloniki, the following class:

d. 3rd year students: Veterinary Epidemiology (09/2011 – 09/2016 & 09/2019 – 02/2020).

EDITOR/REVIEWER ACTIVITIES

Co-Editor-in-Chief: Preventive Veterinary Medicine (12/2019 – present) Associate Editor: Preventive Veterinary Medicine (10/2014 – 12/2019) Member of Editorial Board: Preventive Veterinary Medicine (03/2011 – 10/2014)

Reviewer: Letters in Applied Microbiology, Journal of Clinical Medicine, Epidemiology and Infection, Applied Microbiology, PLOS ONE, PLOS Neglected Tropical Diseases, Vaccine, Journal of Veterinary Diagnostic Investigation, BMC Veterinary Research, Transboundary and Emerging Diseases, Veterinary Microbiology, Journal of Dairy Science, Preventive Veterinary Medicine, The Veterinary Journal, Stochastic Environmental Research and Risk Assessment, Research in Veterinary Science

CONTINUED TRAINING

- 1. Diagnostic methods for detection of Mycobacterium avium subsp. Paratuberculsosis. Instituto Zooprofilactico Sperimentale delle Regioni Lazio e Toscana, Rome Italy (November 2004).
- 2. Workshop on test evaluation and application to Paratuberculosis. Royal Veterinary and Agricultural University, Copenhagen Denmark (August 2005).
- 3. Visiting Fellow, School of Veterinary Sciences, University of Bristol, U.K. (07/2011 08/2011).
- 4. Have successfully completed the following courses that were provided through Coursera (www.coursera.org):

- a. "Probabilistic Graphical Models", by Stanford University (Grade: 80.8%, December 2012).
- b. "Introduction to Philosophy", by the University of Edinburgh (Grade: 56.0%, September 2013).
- c. "Inspiring and Motivating Individuals", by the University of Michigan (Grade: 98.1%, December 2015).
- d. "A Life of Happiness and Fulfillment", by the Indian School of Business (Grade: 84.7%, January 2016).
- e. "A Crash Course in Data Science", by Johns Hopkins University (Grade: 100%, September 2017).
- f. "Building a Data Science Team", by Johns Hopkins University (Grade: 92.8%, September 2017).
- g. "Managing Data Analysis", by Johns Hopkins University (Grade: 100%, September 2017).
- h. "Data Science in real Life", by Johns Hopkins University (Grade: 94%, September 2017).
- i. "Executive Data Science Capstone", by Johns Hopkins University (Grade: 100%, September 2017).
 - j. "Machine Learning", by Stanford University (Grade 96.1%, January 2018).
 - k. "Intro to TensorFlow", by Google (Grade: 97.0%, January 2019).
- 1. "Launching into Machine Learning", by Google (Grade: 100.0%, January 2019).
- m. "How Google does Machine Learning", by Google (Grade: 100.0%, February 2019).

PUBLICATIONS

Citations can be found through my <u>Google scholar profile</u> https://scholar.google.gr/citations?user=wsDK6zgAAAAJ&hl=en

i. Ph.D. Thesis

1. **Kostoulas, P.,** 2006. Paratuberculosis in Greek sheep and goats: estimation of the validity of diagnostic tests depending on the purpose and production stage. Ph.D. Thesis, University of Thessaly, April 2006, Karditsa, Greece.

ii. Editorship

2. Billinis, C., **Kostoulas**, **P.**, 2007. Proceedings of the 5th International Congress on Wild Fauna, 22-27 September 2007, Chalkidiki, Greece.

iii. Peer-reviewed publications (publications marked with an asterisk* can be regarded as methodological papers)

- 3. Amiridis, G.S., Leontides, L., Tassos, E., **Kostoulas, P.,** Fthenakis, G.C., 2001. Flunixin meglumine accelerates uterine involution and shortens the calving-to-first-oestrus interval in cows with puerperal metritis. J. Vet. Pharmacol. Ther. 24, 365-367.
- 4. Billinis, C., Leontides, L., Psychas, V., Spyrou, V., **Kostoulas, P.,** Koenen, F., Papadopoulos, O., 2004. Effect of challenge dose and age in experimental infection of pigs with encephalomyocarditis virus. Vet. Microbiol. 99, 187-195.

- 5. Billinis, C., Leontides, L., Amiridis, G.S., Spyrou, V., **Kostoulas, P.,** Sofia, M., 2005. Prevalence of BVDV infection in Greek dairy herds. Prev. Vet. Med. 72, 75-79.
- 6. **Kostoulas, P.,** Leontides, L., Billinis, C., Amiridis, G.S., Florou, M., 2006. The association of sub-clinical paratuberculosis with the fertility of Greek dairy ewes and goats varies with parity. Prev. Vet. Med. 74, 226-238.
- 7. **Kostoulas, P.,** Leontides, L., Enoe, C., Billinis, C., Florou, M., Sofia, M., 2006. Bayesian estimation of sensitivity and specificity of serum ELISA and faecal culture for diagnosis of paratuberculosis in Greek dairy sheep and goats. Prev. Vet. Med. 76, 56-73.
- 8. *Kostoulas, P., Leontides, L., Billinis, C., Florou, M., 2006. Application of a semi-dependent latent model in the Bayesian estimation of the sensitivity and specificity of two faecal culture methods for diagnosis of paratuberculosis in sub-clinically infected Greek dairy sheep and goats. Prev. Vet. Med. 76, 121-134.
- 9. Florou, M., Leontides, L., **Kostoulas, P.,** Billinis, C., Sofia, M., Kyriazakis, I., Lykotrafitis, F., 2008. Isolation of Mycobacterium avium subspecies paratuberculosis from non-ruminant wildlife living in the sheds and on the pastures of Greek sheep and goats. Epidemiol. Infect. 20, 1-9.
- 10. Mylonakis, M.E., Saridomichelakis, M.N., Lazaridis, V., Leontides, L.S., **Kostoulas, P.,** Koutinas, A.F., 2008. A retrospective study of 61 cases of spontaneous canine epistaxis (1998 to 2001). J. Small Anim Pract. 49, 191-196.
- 11. Florou, M., Leontides, L., **Kostoulas, P.,** Billinis, C., Sofia, M., 2009. Strain-specific sensitivity estimates of Mycobacterium avium subsp. paratuberculosis culture in Greek sheep and goats. Zoonoses Public Health 56, 49-52.
- Mylonakis, M.E., Leontides, L., Farmaki, R., Kostoulas, P., Koutinas, A.F., Christopher, M., 2008. Effect of anticoagulant and storage conditions on platelet size and clumping in healthy dogs. J. Vet. Diagn. Invest 20, 774-779.
- 13. *Kostoulas, P., Leontides, L., Browne, W.J., Gardner, I.A., 2009. Bayesian estimation of variance partition coefficients adjusted for imperfect test sensitivity and specificity. Prev. Vet. Med. 89, 155-162.
- 14. *Kostoulas, P., Nielsen, S.S., Browne, W.J., Leontides, L., 2010. A Bayesian Weibull survival model for time to infection data measured with delay. Prev. Vet. Med. 94, 191-201.
- 15. Skampardonis, V., Sotiraki, S., **Kostoulas, P.,** Leontides, L., 2010. Effect of toltrazuril treatment in nursing piglets naturally infected with Isospora suis. Vet. Parasitol. 172, 46-52.
- Liapi, M., Leontides L., Kostoulas, P., Botsaris, G., Iacovou, Y., Rees, C., Georgiou, K., Smith, G.C., Naseby, D.C., 2011. Bayesian estimation of the true prevalence of Mycobacterium avium subsp. paratuberculosis infection in Cypriot dairy sheep and goat flocks. Small Ruminant Res. 95, 174-178.
- 17. Mylonakis, M.E., Kazakos, G.M., Pardali, D., **Kostoulas, P.,** Kritsepi-Konstantinou, M., Petanides, T., Galatos, A.D., Koutinas, A.F., 2011. Bleeding time in healthy dogs sedated with morphine and medetomidine. Vet Rec. 169, 10.1136/vr.100265.

- 18. Gouletsou, P.G., Galatos, A.D., Sideri, A.I., **Kostoulas, P.,** 2012. Impact of fine needle aspiration (FNA) and of the number of punctures on the feline testis: Clinical, gross anatomy and histological assessment. Theriogenology 78, 172-181.
- 19. Skampardonis, V., Sotiraki, S., **Kostoulas, P.,** Leontides, L., 2012. Factors associated with the occurrence and level of Isospora suis oocyst excretion in nursing piglets of Greek farrow-to-finish herds. BMC Veterinary Research, 8:228.
- 20. Sharifi, H., **Kostoulas, P.,** Bahonar, A., Bokaie, S., Vodjgani, M., Haghdoost, A., Foroushani, A.R., Karamouzian, M., Leontides, L., 2013. Effect of health disorders on the risk of premature culling in Iranian dairy cows. Preventive Veterinary Medicine 109, 144-147...
- 21. *Kostoulas, P., Nielsen, S.S., Browne, W.J., Leontides, L., 2013. Sample size estimation to substantiate freedom of disease for clustered binary data with a specific risk profile. Epidemiology and Infection 141, 1318-1327.
- 22. *Kostoulas, P., Browne, W.J., Nielsen, S.S., Leontides, L., 2013 Bayesian mixture models for partially verified data: age- and stage-specific discriminatory power of an antibody ELISA for paratuberculosis. Prev Vet Med. 111, 200-205.
- 23. Angelidou, E., **Kostoulas, P.,** Leontides L., 2014. Bayesian validation of a serum and milk ELISA for antibodies against *Mycobacterium avium* subspecies *paratuberculosis* in Greek dairy goats across lactation. J Dairy Science 97, 819-828.
- 24. Alatzas, D.G., Mylonakis, M.E., Kazakos, G.M., **Kostoulas, P.,** Kritsepi-Konstantinou, M., Polizopoulou, Z.S., 2014. Reference values and repeatability of buccal mucosal bleeding time in healthy sedated cats. J Feline Med Surg 16, 144-148.
- 25. Angelidou, E., **Kostoulas, P.,** Leontides L., 2014. Flock-level factors associated with the risk of *Mycobacterium avium* subsp. *paratuberculosis* (MAP) infection in Greek dairy goat flocks. Preventive Veterinary Medicine, 117, 233-241.
- 26. Papastefanou, A. K., Galatos, A. D., Pappa, E., Lymperis, A. G., **Kostoulas, P.,** 2015. The effect of butorphanol on the incidence of dexmedetomidine-induced emesis in cats. Veterinary Anaesthesia and Analgesia, 42, 608-613.
- 27. Angelidou, E., **Kostoulas, P.,** Leontides, L., 2016. Bayesian estimation of sensitivity and specificity of a commercial serum/milk ELISA against the *Mycobacterium avium* subsp. *paratuberculosis* (MAP) antibody response for each lactation stage in Greek dairy sheep. Preventive Veterinary Medicine, 124, 102-105.
- 28. Nielsen, S. S., Hansen, K. F., Kvist, L., **Kostoulas, P.,** 2016. Dam's infection progress and within-herd prevalence as predictors of *Mycobacterium avium* subsp. *paratuberculosis* ELISA response in Danish Holstein cattle. Preventive Veterinary Medicine, 125, 54-58.
- 29. Malesios, C., Demiris, N., **Kostoulas, P.,** Dadousis, K., 2016. Spatio-temporal modelling of foot-and-mouth disease outbreaks. Epidemiology and infection, 1-9.
- 30. Roumpeas, E., **Kostoulas, P.,** Polizopoulou, Z., Koutinas, C. K., Mylonakis, M. E., 2016. D-dimer concentrations in dogs with kidney disease with or without protein-losing nephropathy. Comparative Clinical Pathology, 25, 1007-1011.

- 31. Malesios, C., **Kostoulas, P.,** Demiris, N., Dadousis, K., 2016. An early warning indicator for monitoring infectious animal diseases. Stochastic Environmental Research and Risk Assessment, 1-9.
- 32. *Kostoulas, P., Nielsen, S.S., Branscum. A.J., Johnson, W.O., Dendukuri, N., Dhand N., Toft, N., Gardner, I.A., 2017. STARD-BLCM: Standards for the Reporting of Diagnostic accuracy studies that use Bayesian Latent Class Models. Preventive Veterinary Medicine, 138, 37-47.
- 33. *Kostoulas, P., Nielsen, S.S., Branscum. A.J., Johnson, W.O., Dendukuri, N., Dhand N., Toft, N., Gardner, I.A., 2017b. Reporting guidelines for diagnostic accuracy studies that use Bayesian latent class models (STARD-BLCM). Statistics in medicine, 36(23), 3603-3604.
- 34. Tasioudi, K. E., Papatheodorou, D., Iliadou, P., **Kostoulas, P.**, Gianniou, M., Chondrokouki, E., ... & Mylonakis, M. E. (2018). Factors influencing the outcome of primary immunization against rabies in young dogs. Veterinary microbiology, 213, 1-4.
- 35. Polychronis Kostoulas (2018). PriorGen: Generates Prior Distributions for Proportions. R package version 1.1.2. https://CRAN.R-project.org/package=PriorGen
- 36. Singh, B. B., **Kostoulas, P.,** Gill, J. P., & Dhand, N. K. (2018). Cost-benefit analysis of intervention policies for prevention and control of brucellosis in India. PLoS neglected tropical diseases, 12(5), e0006488.
- 37. Rahman, A. K. M. A., Smit, S., Devleesschauwer, B., **Kostoulas, P.**, Abatih, E., Saegerman, C., ... & Ward, M. P. (2019). Bayesian evaluation of three serological tests for the diagnosis of bovine brucellosis in Bangladesh. Epidemiology & Infection, 147.
- 38. Abiri, Z., Khalili, M., **Kostoulas, P.,** Sharifi, H., Rad, M., & Babaei, H. (2019). Bayesian estimation of sensitivity and specificity of a PCR method to detect Coxiella burnetii in milk and vaginal secretions in sheep and goat samples. Journal of dairy science, 102(6), 4954-4959.
- 39. Buczinski, S., Arsenault, J., **Kostoulas, P.,** Corbière, F., Fecteau, G., & Dendukuri, N. (2019). Accuracy of paratuberculosis diagnostic tests in small ruminants: protocol for a systematic review and meta-analysis. Animal Health Research Reviews, 1-5.
- 40. **Kostoulas**, **P.**, Giovannini, A., Alba, A., Comin, A., Meletis, E., Iannetti, S., ... & Solomakos, N. (2019). Harmonisation Of Transmissible disease Interpretation in the EU (HOTLINE). EFSA Supporting Publications, 16(7).
- 41. Whittington, R., Donat, K., Weber, M. F., Kelton, D., Nielsen, S. S., Eisenberg, S., Arrigoni, N., Juste, R., Dhand, N., Santi, A., Michel. A., Barkema, H., Kralik, P., **Kostoulas, P.,** ... & Gil, A. (2019). Control of paratuberculosis: who, why and how. A review of 48 countries. BMC veterinary research, 15(1), 198.
- **42.** Malesios, C., Chatzipanagiotou, M., Demiris, N., Kantartzis, A., Chatzilazarou, G., Chatzinikolaou, S., **Kostoulas, P.,** 2020. A quantitative analysis of the spatial and temporal evolution patterns of the bluetongue virus outbreak in the island of Lesvos, Greece in 2014 (Transboundary and Emerging Diseases, accepted for publication).

iv. Articles in Books/Proceedings of international scientific meetings

- 43. Billinis, C., Spyrou, V., **Kostoulas, P.,** Psychas, V., Leontides, L., Loucaides, F., Koenen, F., Papadopoulos, O., 2003. The efficacy of an experimental oil-adjuvanted encephalomyocarditis (EMC) vaccine in pigs. 6th International Congress of Veterinary Virology, Saint-Malo, France, 24-27 August 2003, p.110.
- 44. **Kostoulas, P.,** Nielsen, S.S., Browne, W.J., Leontides, L., 2010. Assessment of the age at occurrence of MAP infection, adjusting for the latent infection period, in Danish dairy cattle. 10th International Colloquium on Paratuberculosis, Minneapolis, U.S.A., 9-14 August 2009, pp. 151-154.
- 45. Skampardonis, V., Sotiraki, S., **Kostoulas, P.,** Leontides, L., 2010. Factors associated with the occurrence and the level of Isospora suis infection in Greek pig herds. 21st International Pig Veterinary Society Congress, Vancouver, Canada, 18-21 July 2010, p. 92.
- 46. Skampardonis, V., Sotiraki, S., **Kostoulas, P.,** Leontides, L., 2010. Effect of toltrazuril in Isospora suis oocyst excretion from naturally infected nursing piglets. 21st International Pig Veterinary Society Congress, Vancouver, Canada, 18-21 July 2010, p. 288.
- 47. **Kostoulas, P.,** Nielsen, S.S., Browne, W.J., Leontides, L., 2011. Variance partition coefficients in sample size estimation. Annual Conference of the Society for Veterinary Epidemiology and Preventive Veterinary Medicine, Leipzig, Germany, 23-25 March 2011, pp. 77-87.
- 48. **Kostoulas**, **P.**, 2012. Bayesian tools in the Mycobacterium avium subsp. paratuberculosis epidemiology: what we should and what we shouldn't do. Invited keynote presentation of the epidemiology section at the 12th International Colloquium on Paratuberculosis, Sydney, Australia, 5-10 February 2012, p. 329.
- 49. **Kostoulas, P.,** Angelidou, E., & Leontides, L., 2015. A stochastic simulation model for the efficacy of vaccination against *Mycobacterium avium* subsp. *paratuberculosis* in dairy sheep and goats. Proceedings of the 7th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2015), 17-20 September 17-20, Kavala, Greece, pp. 69-73.
- 50. Dhand, N., Singh, J., Josan, S.H., Singh, B., Jaswal, N., **Kostoulas, P.,** Khatkar, M., Aulakh, R., Kaur, M., Gill, J.P.S., 2020. The feasibility and acceptability of various brucellosis control strategies in India. Annual Conference of the Society for Veterinary Epidemiology and Preventive Veterinary Medicine, Westport, Ireland.

ACKNOWLEDGEMENTS

- 1. Nielsen, S.S., 2009. Programmes on Paratuberculosis in Europe. Proceedings of the 10th International Colloquium on Paratuberculosis, Minneapolis U.S.A., 9-14 August 2009, 101-108.
- 2. Marcé, C., Guatteo, R., Bareille, N., Fourichon, C., 2010. Dairy calf housing systems across Europe and risk for calf infectious diseases. Animal, 4:9, 1588–1596.
- 3. Ioannidis, N.E., Cruz, J.A., Kotzabasis, K., Kramer, D.M., 2012. Evidence that putrescine modulates the higher plant photosynthetic proton circuit. PloS one 7, e29864.