



**MANNA**  
European Joint Doctorate in Molecular Animal Nutrition

# Common Core Training Course

**1 -10 October 2018**



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# Overview and aims

## Overview

Aim of the Common Core Course is to provide a Network-wide training at the beginning of MANNA PhD in Molecular Animal Nutrition, to bridge the knowledge gaps between individual Early Stage Researchers, providing each of them with the basic background in animal science related disciplines and introduction to OMICS.

The course is also opened to PhD students from the PhD Programme of University Partners not involved in MANNA but for the first 5 days only (1-5th October).

## Audience

This course is aimed at PhD students from biological, immunological and animal nutrition related disciplines.





# Programme DAY 1 – 2

DAY	DATE	SLOT	ACTIVITY: WELCOME AND INTRODUCTION	PARTICIPANTS
<b>1</b>	<b>01/10/2018</b> <b>Monday</b>	10.00-12.00	Arrival and Registration	Mark McLaughlin & David Eckersall (Glasgow)
		13.00-15.00	Arrival and registration	Mark McLaughlin & David Eckersall (Glasgow)
		16.00-16.30	House keeping/fire drill	SCENE manager
		16.30-17.00	Welcome to MANNA	Mark McLaughlin & David Eckersall (Glasgow)
		18.00-20.00	Training Course outline and ESR introductions	Mark McLaughlin (Glasgow)
DAY	DATE	SLOT	ACTIVITY: BASIC ANATOMY OF DIGESTIVE SYSTEM, PATHOLOGY AND IMMUNOLOGY	PARTICIPANTS
<b>2</b>	<b>02/10/2018</b> <b>Tuesday</b>	9.00-9.30	MANNA overview	David Eckersall (Glasgow)
		9.30-10.00	MANNA Administration: Questions & Answers	Dave Iglesias & David Eckersall (Glasgow)
		10.30-11.30	Basic avian anatomy	Emily O'Reilly (Glasgow)
		13.00-14.30	Avian intestinal health- a case study	Emily O'Reilly (Glasgow)
		14.30-15.30	General anatomy: dog, cattle and pigs	Mark McLaughlin (Glasgow)
		16.00-17.30	Biomarker validation-a case study	Mark McLaughlin (Glasgow)
		18.30-21.00	ESR network development	all



# Programme DAY 3 – 4

DAY	DATE	SLOT	ACTIVITY: FARM ANIMAL NUTRITION AND ESR INTERACTION	PARTICIPANTS
<b>3</b>	<b>03/10/2018</b>	9.00-10.00	Intestinal immune system	Fabrizio Ceciliani (Milan)
	<b>Wednesday</b>	10.00-11.00	Intestinal immune system	Fabrizio Ceciliani (Milan)
		11.30-12.30	Farm Animal Nutrition-the challenges	Nicholas Jonsson (Glasgow)
		13.30-14.30	Farm Animal Genomics	Nicholas Jonsson (Glasgow)
		14.30-15.30	Ethics in animal welfare and in science	Dorothy McKeegan (Glasgow)
		15.30-17.30	ESR group meeting to appoint representative on Scientific Supervisory Board, social media coordinator and Scientific copywriter	ESRs
		18.30-21.00	ESR 1-4 present on previous research (eg Masters Thesis/Dissertation)	all

DAY	DATE	SLOT	ACTIVITY: INTRODUCTION TO OMICS TECHNOLOGY	PARTICIPANTS
<b>4</b>	<b>04/10/2018</b>	10.00-11.00	'OMICS' from gene to protein	Richard Burchmore (Glasgow)
	<b>Thursday</b>	11.30-12.30	Omics and One health	Katarina Oravcova (Glasgow)
		13.30-14.30	Proteomics and mass spectrometry	Anita Horvatic (Zagreb)
		16.00-17.00	Proteomics: biomarkers & pathway analysis	Anita Horvatic (Zagreb)
		18.30-21.00	ESR 5-8 present on previous research (eg Masters Thesis/Dissertation)	All



# Programme

## DAY 5

DAY	DATE	SLOT	ACTIVITY: OMICS DATA AND INTERPRETATION	PARTICIPANTS
<b>5</b>	<b>05/10/2018</b>	10.00-11.00	Insight into metabolomics	Karl Burgess (Glasgow)
	<b>Friday</b>	11.00-12.00	Insight into metabolomics	Karl Burgess (Glasgow)
		13.00-14.00	Bioinformatics & data analysis	Manikhandan Mudaliar (Cambridge)
		14.00-15.00	Bioinformatics & data analysis	Manikhandan Mudaliar (Cambridge)
		16.00-17.00	Farm animal 'OMICS' to date	David Eckersall (Glasgow)
		18.30-21.00	ESR 9-11 present on previous research (eg Masters Thesis/Dissertation)	all



# Programme\*

DAY 6 - 7

6	SATURDAY 06/10/2018	9.00-10.00	FREE DAY
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DAY	SUNDAY	SLOT	ACTIVITY: PROJECT SPECIFIC OMICS	PARTICIPANTS
<b>7</b>	<b>07/10/2018</b>	10.00-11.00	Protein metabolism	Helga Sauerwein (Bonn)
		11.00-12.00	Lipid metabolism	Harald Hammon, (Leibniz Institute Dummerstorf)
		13.30-15.00	Introduction to PhDs as European Joint Doctorates	Supervisors from Glasgow, Milan, Bonn, Barcelona, Zagreb, Kosice
		15.00-15.30	Literature review	Mark McLaughlin
		15.30-17.00	Networking	
		18.30-21.00	Meal and ESR/supervisor discussions	Supervisors from Glasgow, Milan, Bonn, Barcelona, Zagreb, Kosice

\* Limited to MANNA PhD students



# Programme\* DAY 8

DAY	DATE	SLOT	ACTIVITY: MANNA SUPERVISOR PRESENTATION & DISCUSSION	PARTICIPANTS
<b>8</b>	<b>08/10/2018</b>	9.00-9.30	Supervisor presentation ESR 1	Giovanni Savoini (Milan)
		9.30-10.00	Supervisor presentation ESR 2	Fabrizio Ceciliani (Milan)
		10.00-10.30	Supervisor presentation ESR 3	Maureen Bain (Glasgow)
		11.00-11.30	Supervisor presentation ESR 4	Tom Preston (Glasgow)
		11.30-12.00	Supervisor presentation ESR 5	Helga Sauerwein (Bonn)
		12.00-12.30	Supervisor presentation ESR 6	Vladimir Mrljak (Zagreb)
		13.30-14.00	Supervisor presentation ESR 7	Armand Sanchez (Barcelona)
		14.00-14.30	Supervisor presentation ESR 8	Armand Sanchez (Barcelona)
		14.30-15.00	Supervisor presentation ESR 9	Antonella Baldi (Milan)
		15.30-16.00	Supervisor presentation ESR 10	Helga Sauerwein (Bonn)
		16.00-16.30	Supervisor presentation ESR 11	Mangesh Bhide (Kosice)
18.30-21.00	Meal and supervisor discussions			

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# Programme\* DAY 9

DAY	DATE	SLOT	ACTIVITY: MANNA MANAGEMENT AND SUPERVISOR/ESR DISCUSSION	PARTICIPANTS
9	09/10/2018	9.00-10.00	MANNA management meeting	Academic and non-academic partners in MANNA
		10.00-11.00	Industry: livestock/dairy/poultry	Mike Salter (AB Agri)
		11.30-12.30	Industry: chicken and nutrition challenges	Geert Bruggeman (Nutrition Science)
		13.30-15.30	ESR discussion with supervisors/project design	ESRs and supervisors
		16.00-17.00	ESR discussion with supervisors/project design	ESRs and supervisors
		18.30-21.00	Meal and core course review	
		10	10/10/2018	9.00-10.00

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# MANNA Participants



LEIBNIZ INSTITUTE  
FOR FARM ANIMAL BIOLOGY

