

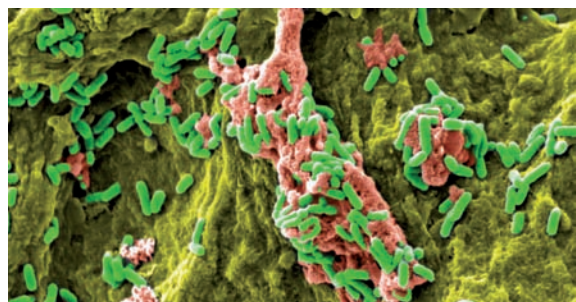
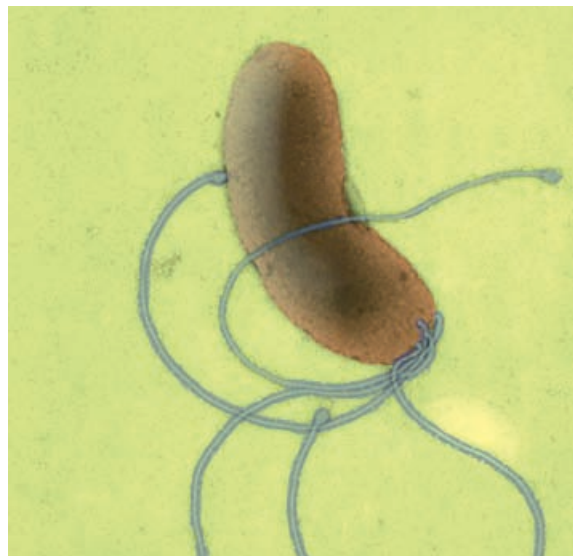
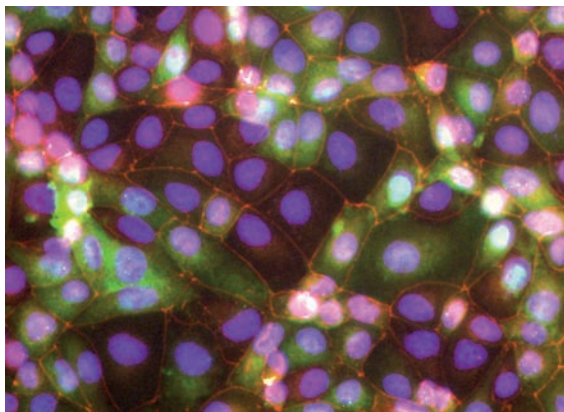
College of Science, Engineering and Food Science

MICROBIOLOGY



UCC

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh



MICROBIOLOGY



Mission

Our mission is to perform leading-edge research in the discipline of Microbiology and to train graduates for productive and rewarding scientific careers.



Front page main picture, clockwise from top right: *Helicobacter pylori*, causes gastric ulcers and cancer and currently infects half the global population; Bile-resistant bacteria colonising the gall bladder; The foodborne pathogen *Listeria monocytogenes* (red) under stress conditions; Monitoring infection in cell monolayer by rotavirus (green).

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EDUCATION

“ I came to Ireland to study as part of my BSc Microbiology at the University of Texas. The atmosphere in Microbiology at UCC is fantastic, I was impressed with the quality of the research environment and the priority they place on being internationally competitive. ”

Dr Heather McLaughlin, PhD Microbiology, UCC, 2011,
Post-Doctoral Researcher, UCC



Undergraduate Programmes

- BSc Microbiology
- BSc Genetics in association with Biochemistry and Biological, Earth and Environmental Science
- BSc Food Science (Food Microbiology)
- BSc Biomedical Science in collaboration with Cork Institute of Technology



Taught MSc Programmes

- MSc Bioinformatics with Systems Biology in association with Mathematical Science and Computer Science & Information Technology
- MSc Food Microbiology
- MSc Biotechnology in association with Biochemistry, Chemistry and Process Engineering, Pharmacy and Biological, Earth & Environmental Science
- MSc in Molecular Cell Biology with Bioinnovation - in association with Biochemistry, Neuroscience and Business Information Systems



Research Programmes

- We have very strong PhD and MSc training programmes with approx. 80 postgraduate students supporting and driving research across food, medical and environmental microbiology. Our PhD students are drawn from UCC, other Irish 3rd level institutions and includes a significant number of international students (approx. 20%).

For information on all programmes visit study@ucc.ie



Academic Staff

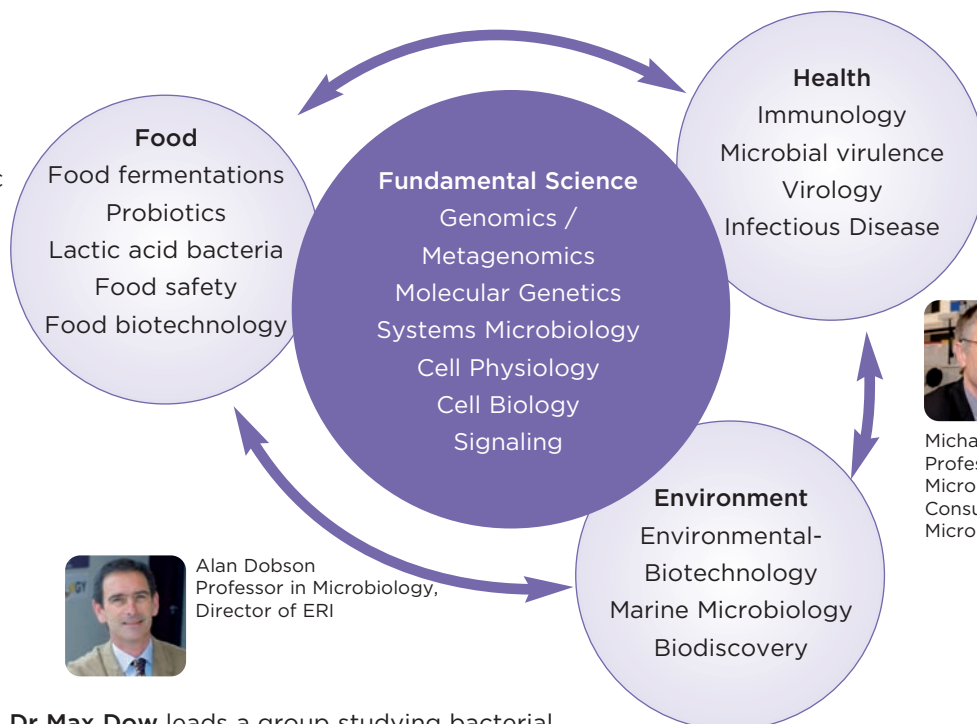
Professor Gerald Fitzgerald, *Head and Chair Food Microbiology*
Professor Mark Achtman, *Microbial Phylogeography*
Professor John Atkins, *(Jointly with Biochemistry), Genetics*
Dr Marcus Claesson, *Bioinformatics*
Dr David Clarke, *Bacteria-host Interactions*
Professor Alan Dobson, *Environmental & Marine Biotechnology*
Dr Max Dow, *Human/Plant Pathogens*
Dr Cormac Gahan, *Microbial Pathogens*
Professor Colin Hill, *Chair Microbial Food Safety*
Dr John Morgan, *Immunology, Virology*
Dr John Morrissey, *Biotechnology, Fungal Biology*
Professor Fergal O'Gara, *(Emeritus) Environment & Health Systems Microbiology*
Dr Niall O'Leary, *Environmental & Marine Biotechnology*
Dr Paul O'Toole, *Gut Microbiota*
Professor Mike Prentice, *(Affiliated from School of Medicine), Chair Medical Microbiology*
Dr Martina Scallan, *Virology*
Professor Douwe van Sinderen, *Molecular Microbiology*

Research Expertise

We perform internationally competitive research across the major sub-disciplines of Microbiology i.e. Health, Food and Environment. The scope, quality and impact of our research output places us at the forefront of microbiological research worldwide.



Colin Hill
Professor of
Microbial Food
Safety Principal
Investigator, APC



Michael Prentice
Professor of Medical
Microbiology,
Consultant
Microbiologist, CUH



Alan Dobson
Professor in Microbiology,
Director of ERI

Dr Max Dow leads a group studying bacterial pathogenesis of humans and plants, focussing on signaling pathways that are important for disease and novel therapeutic strategies. Key findings have been published recently in Proceedings of National Academic Sciences USA.

Dr Paul O'Toole leads the ELDERMET project (involving a number of staff from Microbiology, other UCC departments, Teagasc Moorepark and Cork Hospitals) that is examining links between diet, the intestinal bacteria and health in older persons. The interim outcomes of this project have recently been published in Proceedings of National Academic Sciences USA and in Nature.

Research Collaborations

Selected collaborations listed but there are many more.

- Food Innovation Alliance Ireland (UCC / Teagasc) www.teagasc.ie/research/food_strategic_alliance
- Alimentary Pharmabiotic Centre (APC) www.ucc.ie/apc
- BioSciences Institute (BSI) www.bsi.ucc.ie
- Cork Cancer Research Centre (CCRC) www.ccrcc.ie

- Environmental Research Centre (ERI) www.ucc.ie/en/eri
- Biomerit Research Centre www.ucc.ie/biomerit

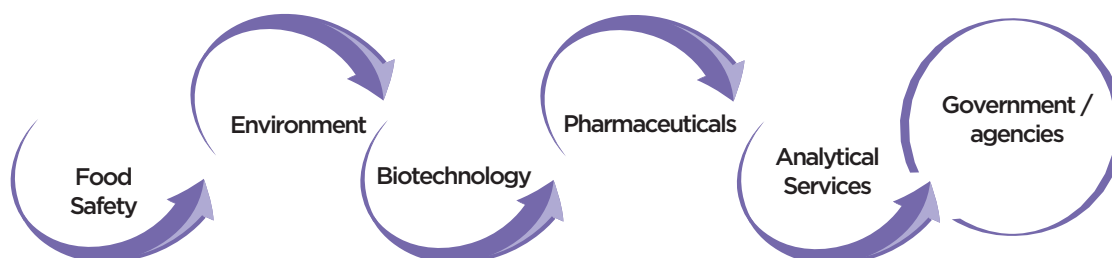


“ I enjoy the business side of science, working as a sales representative for Bio-Sciences Ltd. My degree in Microbiology gave me the science background required to understand and sell the products that I promote. ”
John Reidy, BSc Microbiology 2007

“ I obtained my PhD from UCC in 1997 and am currently working in the role of Chief Specialist in Food Science at the Food Safety Authority of Ireland. ”
Dr Lisa O'Connor, BSc Microbiology 1991, PhD 1997

Research Achievements

- No. of publications (5 years) : 637
- Average citations per publication: 24.12
- Research quality review : 4/5
- Research income (5 years) : €30m
- Ranked first in world in bacteriocins/ antimicrobials research (ISI)
- Ranked second in world in probiotic research (Thomson Reuters)
- International Dairy Federation, Elie Metchnikoff Prize 2010



INDUSTRY & INNOVATION



Industry Collaborations

- Alimentary Health Ltd.
- Food for Health Ireland (FHI) – funded by Enterprise Ireland and partnering with Kerry Group plc, Carbery Group, Glanbia plc, and Dairygold
- Collaborations with industry sectors: food/dairy, diagnostics, pharmaceutical, biotechnology, medical devices, therapeutics, environmental

Service to Industry

- Bespoke training courses in association with the Food Industry Training Unit (FITU)
- Collaborative and contract research
- Technology licencing
- Consultancy
- Industry are invited to contact our researcher to discuss how we can help you with your scientific/technological requirements.

Patents, Licences (2008-2011)

- 7 patents
- 8 technology licences
- Supported the development of Spin Out companies such as Alimentary Health Ltd, Atlantia Food CRO and Phageworks Ltd.

Facilities/ Equipment

- Access to food processing hall - dairy, meat, beverage, consumer foods
- Anaerobic growth chambers
- Analytical facilities- LCMS, GCMS
- Biofilm imaging platform
- Bioinformatics suite
- Category 3 containment lab
- Cell and tissue culture
- GMP manufacturing facility
- High-throughput Robotic screening platforms
- In vivo live animal imaging platform
- Microscopy (including confocal microscope)
- Pilot scale fermentation
- Zebrafish model system

Funding Agencies

- European Union (EU)
- Wellcome Trust
- Science Foundation Ireland (SFI)
- Health Research Board (HRB)
- Enterprise Ireland (EI)
- Irish Research Council for Science, Engineering & Technology (IRCSET)
- Programme for Research in Third-Level Institutions (PRTL)
- Higher Education Authority (HEA)
- Environmental Protection Agency (EPA)
- Department of Agriculture Food and the Marine (e.g. FIRM)
- Lauritzson Foundation
- Industry

Recent Employers of Microbiology Graduates

Abbott	Kerry Group
Adams Healthcare	Lancaster Labs
Advanced Micro Services	Master Foods
Alimentary Health	Medimix
Alpha Technologies	Mercy University Hospital
APC	Microchem Laboratories
Astellas	Millipore Ireland BV
Boston Scientific	National Space Biomedical Inst.
Bulmers Ltd	Novartis
Carbery	Oliver Carty Ltd
Consult Us Laboratories	PepsiCo
Corbett Micro	PepsiCo Ireland Cork
Dairygold	Pfizer
Danone	Pinewood Healthcare
Dawn Dairies	Sarstedt Ltd
Dawn Meats	Schering Plough
Department of Agriculture	Sydney University
Enfer Micro Labs	Teagasc
Enviro Labs	Thompson Scientific
GE Healthcare	TVAS Ireland Limited Clare
Genzyme	University College Dublin
Glanbia	Waterford Institute of Technology
GlaxoSmithKline	Wyeth Biopharma
Golden Cow Dairies	Wyeth Medica Ireland
Johnson & Johnson	

CONTACT DETAILS

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Manager

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www.ucc.ie/en/microbiology

UCC welcomes expression of interest from companies and entrepreneurs interested in identifying expertise and technology opportunities which can form the basis for future collaborative research, consultancy and /or licencing. All contacts will be treated in the strictest confidence.

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