EXCELLENCE IN RESEARCH-DRIVEN EDUCATION

Leading faculty in Europe in international education programmes related to life sciences, biological, physical and chemical sciences, with more than 40 years of experience in international cooperation.

2,800 STUDENTS
- 1,000 Bioscience Engineering students
- 680 Engineering Technology students
- More than 400 international students

1,200 EMPLOYEES
- 150 professors
- 1,000 academics

4 CAMPUSES
- Campus Coupure (Gent, Belgium)
- Campus Schoonmeersen (Gent, Belgium)
- Campus Kortrijk (Kortrijk, Belgium)
- Ghent University Global Campus (Incheon, South Korea)

RANKING

- QS World University Rankings 2019:
  - Agriculture & Forestry: TOP 50
  - Biological Sciences: TOP 100
  - Engineering - Chemical: TOP 100
  - Environmental Sciences: TOP 100
8 DEPARTMENTS

- Environment
- Plants and crops
- Animal sciences and aquatic ecology
- Food technology, safety and health
- Green chemistry and technology
- Biotechnology
- Data analysis and mathematical modelling
- Agricultural economics

CONTACT

Dean’s office: administratiesecretaris.fbw@ugent.be

Education services: fsa.fbw@ugent.be

Research services: onderzoek.fbw@ugent.be

International services: itc@ugent.be

PR & communication services: communicatie.fbw@ugent.be

Logistics services: logistiek.fbw@ugent.be
EDUCATION

The offer of study programmes at our faculty is as diverse as our focal research topic: the living matter.

Academic programmes are organised according to the European academic system:
• 3-year Bachelor programmes
• 1- or 2-year Master programmes (optionally followed by 1-year advanced masters)
• PhD in Applied Biological sciences (including a PhD training programme in one of the Doctoral Schools).

<table>
<thead>
<tr>
<th>Campus Coupure (Gent)</th>
<th>Campus Schoonmeersen (Gent)</th>
<th>Campus Kortrijk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Bioscience Engineering:</td>
<td>Bachelor of Science in Bioscience Engineering Technology</td>
<td>Bachelor of Science in Bioindustrial Sciences</td>
</tr>
<tr>
<td>• Agricultural Sciences</td>
<td></td>
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<tr>
<td>• Cell and Gene Biotechnology</td>
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<tr>
<td>• Chemistry and Food Technology</td>
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<tr>
<td>• Environmental Technology</td>
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<tr>
<td>• Forest and Nature Management</td>
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<tr>
<td>• Land and Water Management</td>
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</tr>
</tbody>
</table>
MASTER

Campus Coupure (Gent)

Master of Science in Bioscience Engineering:
• Agricultural Sciences
• Cell and Gene Biotechnology
• Chemistry and Bioprocess Technology
• Environmental Technology
• Forest and Nature Management
• Food Science and Nutrition
• Land and Water Management

Master of Science in Bioinformatics:
• Bioscience Engineering

Campus Schoonmeersen (Gent)

Master of Science in Bioscience Engineering Technology:
• Agriculture and Horticulture
• Food Industry

Master of Science in Biochemical Engineering Technology

Campus Kortrijk

Master of Science in Bioindustrial Sciences:
• Circular bioprocess technology

International Master of Science (Erasmus Mundus):
• Environmental Technology and Engineering
• Rural Development
• Soils and Global Change
• Sustainable and Innovative Natural Resource Management

SHORT COURSES

• BePreP: preparatory course for new international master students at the faculty of Bioscience Engineering

• A variety of summer schools (e.g. ‘Sustainability in the Agro-Food Chain’)

GLOBAL CAMPUS

We are also involved in three Bachelor programmes at the Ghent University Global Campus in Incheon, South Korea.

Bachelor of Science in:
• Environmental Technology
• Food Technology
• Molecular Biotechnology
RESEARCH

Ghent University has been ranked in the top 50 of the QS World University Ranking for the subject Agriculture & Forestry, and in the top 100 for the subjects Biological Sciences, Environmental Sciences and Chemical Engineering.

- Collaborations with more than 300 organisations, 24 spin-offs
- Research expenditures per year: more than 30 million euros
- 1,000 researchers
- 850 A1 publications per year
- 100 PhDs per year

IMAGINE WHAT WE CAN DO TO TACKLE GLOBAL CHALLENGES

- Scan soils and forests to achieve food security and protect the environment.
- Brew beer from recycled water.
- Design food packaging sensors for healthy living and to reduce food waste.
- Transform waste energy with a chemical heat pump.
- Rethink and retool economic, social, and environmental policies to promote sustainable economic growth.
- Measure effects of microplastics in oceans and seafood to protect human health and conserve marine resources.
- Identify accurate biomarkers to develop diagnostics and targeted therapies in the field of oncology, HIV and ageing diseases.
- Find solutions to all data-related concerns.
8 DEPARTMENTS

- Environment
- Plants and crops
- Animal sciences and aquatic ecology
- Food technology, safety and health
- Green chemistry and technology
- Biotechnology
- Data analysis and mathematical modelling
- Agricultural economics

DEVELOPMENT COOPERATION

We rely on a long tradition of international cooperation with partners from all over the world.

Our researchers travel the world to support academic development.

WHAT WE CAN DO FOR YOU

- Solve complex research questions in a multidisciplinary manner
- Provide scientific advice
- Valorise data
- Organise training on demand in diverse disciplines

CONTACT

onderzoek.fbw@ugent.be
ugent.be/bw/en/research
INTERNATIONALISATION

• Guidance in application procedures
• Support of international PhD students before and upon arrival
• International alumni network
• International student recruitment
• Negotiation of institutional agreements
• Negotiation of funding agreements with funding agencies worldwide
• Building of international consortia

More than 160 cooperation partners for exchange programmes, research cooperation, staff mobility, PhD programmes, internships and master dissertations

PARTNERS

SUPPORT AND COOPERATION

• Guidance in application procedures
• Support of international PhD students before and upon arrival
• International alumni network
• International student recruitment
• Negotiation of institutional agreements
• Negotiation of funding agreements with funding agencies worldwide
• Building of international consortia

CONTACT

itc@ugent.be
+32 9 264 61 00
Knowledge transfer centres facilitate our researchers to connect to innovating communities, to collaborate and find out about new opportunities in key research and technology sectors.

- Our knowledge transfer centres **improve business performance** through innovation and new collaborations by driving the flow of people, knowledge and experience between business and the science-base;
- They drive **knowledge transfer between the supply and demand sides** through a high quality, easy to use servicepoint;
- They provide the opportunity to **meet and network** with individuals and organisations, nationally and internationally.

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**Agrolink Flanders**
Flemish agricultural research organisations
Contact: Pieter Spanoghe

**Aquaculture Ghent University**
Innovations for sustainable aquaculture production
Contact: Margriet Drouillon

**Biomarked**
Pre-clinical translational research applications and bio-IT in cancer and ageing
Contact: Daisy Flamez

**CAPTURE**
Research, training and knowledge transfer of resources in water, conversion of CO₂ to products and plastics to resources
Contact: Korneel Rabaei

**Cel begeleiding karkas identificatie**
Classification of bovine and pig carcasses in Flemish slaughterhouses
Contact: Stefaan De Smet

**Centre for Environmental science and technology**
Prevention of environmental pollution, remediation of environmental problems and waste management
Contact: Ingmar Nopens

**CleanChem**
Sustainable chemical technologies
Contact: Stijn Dekeukeleire

**Cropfit**
Biostimulants in plants, biopesticides
Contact: Maaike Perneel

**End-of-Waste**
Creating value out of organic waste and residues
Contact: Kamila Mascart

**Expertise and Service Centre for water technology**
Improvement of production, treatment and management of waste water
Contact: Stijn Van Hulle

**Flemish cluster in predictive microbiology in food**
Training, advisory and consultancy service in predictive microbiology
Contact: Frank Devlieghere

**Food2Know**
The production of safe and healthy food
Contact: Benedikt Sas

**Ghent University Stable Isotope Facility**
State of the art stable isotope analyses and consulting
Contact: Pascal Boeckx

**Green Chemistry Ghent**
Better and safer chemicals supporting green growth
Contact: Chris Stevens

**International Plant Biotechnology Outreach**
Capacity building in the South
Contact: Godelieve Gheysen

**Pack4Food**
Innovation in food packaging
Contact: An Vermeulen

**Resource Recovery Technology Consortium**
Business platform on resources from water within CAPTURE
Contact: Jan Arends

**Sensolab**
Consumer sensory research
Contact: Xavier Gellynck & Koen Dewettinck

**UGent marine science center of excellence**
Marine research and technological innovation
Contact: Colin Janssen

**VEG-i-TEC**
Innovating the processing of vegetables and potatoes and the use of its side streams
Contact: Imca Sampers

---

**CONTACT**

hilde.willekens@ugent.be

ugent.be/bw/en/research
DEPARTMENT OF ENVIRONMENT

Pioneering research to better understand, map, value, and manage the world's natural resources, combined with high-quality education programmes in natural resource management.

IMPACT

• Independent, critical voice through the Natural Capital Research Platform
• Generating awareness on the preservation and management of natural resources

TOPICS

• Impacts of global change on ecosystems
• Bioeconomy and ecosystem services
• Ecosystem resilience
• Multidisciplinary and interdisciplinary research

CONTACT

ugent.be/bw/environment
ACADEMIC STAFF

Geert Baert: Soil fertility, soil survey, tropical soils
Lander Baeten: Conservation and ecological restoration
Wim Cornelis: Soil physics, soil water management, soil quality, water and soil conservation
Pieter De Frenne: General and applied botany, climate change, global change, biodiversity, agroecology
Stefaan De Neve: Soil fertility, soil quality, organic agriculture
Robert De Wulf: Forest assessment and management planning, tropical forestry
Peter Finke: Modelling of soil formation under global change, geostatistical (soil) mapping, landscape reconstruction
Diego Miralles: Global hydrology, ecohydrology, land-atmosphere feedbacks, climate extremes
Jan Mertens: Ecological restoration, heavy metals in (forest) ecosystems, management of urban green spaces
Abdul Mouazen: Precision agriculture and environmental systems engineering
Steven Sleutel: Management of organic matter in agro-ecosystems, biogeochemistry of soil, soil greenhouse gas emissions
Joris Van Acker: Wood biology and technology: forestry-wood chain
Frieke Vancoillie: Remote sensing and GIS
Jan Van den Bulcke: Wood biology and technology: tree growth and wood formation
Marc Van Meirvenne: Soil spatial inventory techniques
Hans Verbeeck: Terrestrial ecosystem ecology, vegetation modelling, carbon and water cycling in (tropical) forests, vegetation dynamics and biogeochemistry of forests, global change ecology, impacts of climate and land-use change
Ann Verdoodt: Soil degradation, soil quality, land evaluation, land-use management, soil-information systems
Kris Verheyen: Forest ecology and management, biodiversity and ecosystem services, global change
Niko Verhoest: Hydrology and water management
DEPARTMENT OF PLANTS AND CROPS

We conduct research and provide academic teaching in the domains of plant breeding, ecophysiology and the production of healthy plants and crops in dynamic and socially accepted cropping systems.

TOPICS

- Integrated crop protection
- Eco-efficient and sustainable production systems, growth and prediction models
- (Eco)physiology and agroecology
- Sensor technology, technical and biotechnical innovations in breeding, propagation, multiplication and production of plants and crops in open field, in glasshouses and in vitro

IMPACT

- Sustainable production of plants and crops for a wide array of end uses
- Training science-based plant and crop specialists with open, critical minds and engineers' attitudes

CONTACT

ugent.be/bw/plants-and-crops
<table>
<thead>
<tr>
<th>Name</th>
<th>Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kris Audenaert</td>
<td>Plant pathology, mycology, mycotoxins, phytotoxins</td>
</tr>
<tr>
<td>Benny De Cauwer</td>
<td>Crop husbandry, weed science, integrated weed management</td>
</tr>
<tr>
<td>Patrick De Clercq</td>
<td>Entomology, acarology, biological and integrated control of crop pests</td>
</tr>
<tr>
<td>Danny Geelen</td>
<td>Plant research: in vitro biotechnology, breeding, propagation, sexual reproduction, space applications</td>
</tr>
<tr>
<td>Geert Haesaert</td>
<td>Crop production, plant breeding and crop protection, toxigenic fungi and mycotoxins</td>
</tr>
<tr>
<td>Monica Höfte</td>
<td>Plant pathology, molecular plant-pathogen interactions, biological and integrated control of plant diseases</td>
</tr>
<tr>
<td>Jan Pieters</td>
<td>Thermic processes, heat and mass transfer, energy, agricultural engineering</td>
</tr>
<tr>
<td>Dirk Reheul</td>
<td>Agronomy: crop husbandry, grassland and ley-able farming. Plant breeding: methods and techniques, variety development, plant breeders' rights. Plant physiology and sustainable systems.</td>
</tr>
<tr>
<td>Guy Smagghe</td>
<td>Entomology, crop protection, novel insecticide mechanisms, insect biotechnology, RNA interference, risk assessment of pesticides, pollinators and pollination</td>
</tr>
<tr>
<td>Pieter Spanoghe</td>
<td>Formulation, application and analysis of pesticides, (side) effects of pesticides, exposure assessment of man and environment</td>
</tr>
<tr>
<td>Kathy Steppe</td>
<td>Eco-physiology, plant-water relations, carbon metabolism and respiration, plant monitoring and stress detection with plant sensors, plant modelling, development of plant-based control strategies, effects of climate change on the physiology of plants, trees and ecosystems</td>
</tr>
<tr>
<td>Luc Tirry</td>
<td>Agrozoology, entomology, acarology, insecticide resistance, integrated pest control of animal-noxious agents</td>
</tr>
<tr>
<td>Patrick Van Damme</td>
<td>Tropical and subtropical agriculture and ethnobotany, domestication of medicinal plants, development cooperation and rural development, micro-financing systems, integrated and sustainable development, biodiversity and agroforestry</td>
</tr>
<tr>
<td>Marie-Christine Van Labeke</td>
<td>Crop physiology, abiotic stress, light quality (LED) and plant response, sustainable production</td>
</tr>
<tr>
<td>Thomas Van Leeuwen</td>
<td>Molecular acarology and genomics, insecticide resistance, molecular mite-plant interactions, new insecticide target-sites</td>
</tr>
<tr>
<td>Stefaan Werbrouck</td>
<td>Horticulture, in vitro culture of plants (especially trees), in vitro breeding of plants</td>
</tr>
<tr>
<td>Wim Wesemael</td>
<td>Nematology</td>
</tr>
</tbody>
</table>
DEPARTMENT OF ANIMAL SCIENCES AND AQUATIC ECOLOGY

Research, education, and services to society in relation to the various contributions of animals to human wellbeing (including the sustainable production of healthy food) and the evaluation of anthropogenic influence on the environment (in relation to its optimal and sustainable use).

IMPACT

• Qualitative, safe and sustainable use of animals with a minimal impact on climate and environment
• Ecological assessment of man’s impact on the environment, for sustainability policy purposes

TOPICS

• Animal production and biotechnology
• Feed and animal product quality
• Immunology and infection prevention in man and animal
• Aquaculture
• Aquatic ecology
• Environmental assessment
• Ecotoxicology

CONTACT

ugent.be/bw/asae
## ACADEMIC STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Bossier</td>
<td>Microbiological and genetical aspects of the aquatic larviculture</td>
</tr>
<tr>
<td>Frank Coopman</td>
<td>Applied animal genetics</td>
</tr>
<tr>
<td>Karel De Schamphelaere</td>
<td>Chemical stress ecology: combined effects of chemical substances, climate change and natural stress factors on populations and ecosystems, ecotoxicology, risk analysis of heavy metals in (aquatic) environment, ecological modelling of populations and ecosystems</td>
</tr>
<tr>
<td>Stefaan De Smet</td>
<td>Animal husbandry, meat science, quality of animal products, animal breeding</td>
</tr>
<tr>
<td>Veerle Fievez</td>
<td>Ruminant nutrition, microbial digestive processes, livestock feed, monitoring digestive disorders</td>
</tr>
<tr>
<td>Dirk Fremaut</td>
<td>Livestock breeding, livestock feed, feed for domestic animals, livestock management</td>
</tr>
<tr>
<td>Peter Goethals</td>
<td>Monitoring, assessment, modelling and management of water systems</td>
</tr>
<tr>
<td>Colin Janssen</td>
<td>Ecotoxicology and environmental risk analysis, effects of chemical substances on the environment, EU environmental policy</td>
</tr>
<tr>
<td>Joris Michiels</td>
<td>Nutrition of monogastrics, digestive physiology of pigs and poultry, weaning of piglets, gut microbiota, feed additives</td>
</tr>
<tr>
<td>Daisy Vanrompay</td>
<td>Immunology and animal biotechnology, biomedical research, vaccine design, novel antibiotics, bacterium-host cell interactions</td>
</tr>
<tr>
<td>Gilbert Van Stappen</td>
<td>Live food and larviculture aspects of aquaculture, aquaculture nutrition</td>
</tr>
</tbody>
</table>
DEPARTMENT OF FOOD TECHNOLOGY, SAFETY AND HEALTH

Top-notch innovative research with an international reputation in food technology, food chemistry, food microbiology and human nutrition. The department stands for applied and fundamental, multifaceted research of high social relevance and (inter)national cooperation with food industry, competent authorities, consumer organisations and all food-chain stakeholders.

IMPACT

- To provide the consumer with tasty, safe and nutritious food.
- Interaction with different stakeholders: agri-food business and scientific community, government and NGOs.

TOPICS

- Food technology
- Food chemistry
- Food microbiology
- Nutrition and health

CONTACT

foodscience@ugent.be
foodscience.ugent.be
<table>
<thead>
<tr>
<th>Name</th>
<th>Research Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanja Cirkovic Velickovic</td>
<td>Food allergens, protein digestion, protein-ligand interactions in food systems</td>
</tr>
<tr>
<td>Bruno De Meulenaer</td>
<td>Food chemistry, chemical analysis of food products, chemical aspects of food safety</td>
</tr>
<tr>
<td>Jan De Smet</td>
<td>General chemistry and biology, biochemistry and metabolic cell processes</td>
</tr>
<tr>
<td>Frank Devlieghere</td>
<td>Food microbiology and preservation</td>
</tr>
<tr>
<td>Koen Dewettinck</td>
<td>Food processing and microstructural analysis</td>
</tr>
<tr>
<td>Mia Eeckhout</td>
<td>Cereal food and feed technology</td>
</tr>
<tr>
<td>Sami Ghnimi</td>
<td>Camel milk proteins, food formulation, hyperspectral imaging, sustainable food production, life cycle sustainability assessment</td>
</tr>
<tr>
<td>Liesbeth Jacxsens</td>
<td>Quality assurance in agri-food chain, food safety management systems, HACCP, risk analysis, microbiological and chemical risk assessment</td>
</tr>
<tr>
<td>Patrick Kolsteren</td>
<td>Nutritional epidemiology, child nutrition</td>
</tr>
<tr>
<td>Carl Lachat</td>
<td>Nutritional epidemiology, nutrition and health, nutrition policy</td>
</tr>
<tr>
<td>Kathleen Raes</td>
<td>Fermentation processes, enzymatic conversions, valorisation of by-products, fermented food, bioactive components</td>
</tr>
<tr>
<td>Peter Ragaert</td>
<td>Food-packaging technology</td>
</tr>
<tr>
<td>Andreja Rajkovic</td>
<td>Food safety, food microbiology, microbial toxins, virulence</td>
</tr>
<tr>
<td>Imca Sampers</td>
<td>Chemical and microbiological quality of food, irrigation and process water, risk assessment</td>
</tr>
<tr>
<td>Benedikt Sas</td>
<td>Innovation management in the agro-food industry, intellectual property and valorisation, R&amp;D management, corporate management</td>
</tr>
<tr>
<td>Mieke Uyttendaele</td>
<td>Microbial analysis of food, food hygiene, microbial aspects of food safety, molecular techniques in food microbiology</td>
</tr>
<tr>
<td>Filip Van Bockstaele</td>
<td>Food microstructure and functionality - lipid science and technology</td>
</tr>
<tr>
<td>John Van Camp</td>
<td>Food science, human nutrition, nutrition and health</td>
</tr>
</tbody>
</table>
DEPARTMENT OF GREEN CHEMISTRY AND TECHNOLOGY

Internationally recognised research related to both fundamental and applied aspects of chemistry in the domain of bioscience engineering. Comprising advanced analysis, (bio)chemical as well as physicochemical conversion and treatment techniques, and sustainable process design.

**IMPACT**

- Sustainable (re)use of biological raw material and natural resources
- Technological solutions, fit-for-use in different (industrial) and international contexts (e.g. developing countries)
- Expertise and services for SMEs and non-profit organisations for their water treatment and re-use

**TOPICS**

- Advanced analytical chemistry and ultra-trace (high-resolution) mass spectrometry
- Applied ecochemistry with focus on trace elements, isotopes, and organic micropollutants
- Organic synthesis, use of renewable resources, bio-organic chemistry, microreactor technology
- Particle and interfacial technology
- Thermochemical biomass conversion
- Ecotechnology for air and water treatment and resource recovery
- Biosystems control
- Life cycle assessment and sustainable process design
- Catalysis

**CONTACT**

[ugent.be/bw/gct](http://ugent.be/bw/gct)
### ACADEMIC STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Research Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pascal Boeckx</td>
<td>Analyses and application of isotopes in bioscience, tropical terrestrial ecosystems, greenhouse gas emissions and sinks</td>
</tr>
<tr>
<td>Matthias D’hooghe</td>
<td>Organic and bioorganic chemistry, heterocyclic chemistry, synthesis of bioactive compounds</td>
</tr>
<tr>
<td>Norbert De Kimpe</td>
<td>Organic synthesis, heterocyclic chemistry, agricultural chemistry, natural products</td>
</tr>
<tr>
<td>Kristof Demeestere</td>
<td>(Ultra-)trace analysis of organic compounds in ecosystems, emerging organic micropollutants in the aquatic environment, advanced oxidation processes and water treatment</td>
</tr>
<tr>
<td>Steven De Meester</td>
<td>Sustainable design of process chains, separation processes, downstream processing</td>
</tr>
<tr>
<td>Jo Dewulf</td>
<td>Environmental and clean technology</td>
</tr>
<tr>
<td>Gijs Du Laing</td>
<td>Analysis, chemistry and technology of trace elements in food and environment</td>
</tr>
<tr>
<td>Ann Dumoulin</td>
<td>Chemical analysis: water, environment, materials</td>
</tr>
<tr>
<td>Philippe Heynderickx</td>
<td>Kinetics, heterogeneous catalysis, parameter estimation, environmental, mass spectrometric analysis, experiment-model-based analysis, organic chemistry, process engineering, environmental chemistry</td>
</tr>
<tr>
<td>Sven Mangelinckx</td>
<td>Chemistry of non-proteinogenic amino acids, aza-heterocycles and natural products, analysis, synthesis and modification of bioactive natural products</td>
</tr>
<tr>
<td>Erik Meers</td>
<td>Environmental chemistry and technology for resource recovery in the agro-food value chain</td>
</tr>
<tr>
<td>Wolter Prins</td>
<td>Thermochemical conversion of biomass, especially related to advanced processes of gasification and pyrolysis of biomass, research in relation to the production of bio-oil, biochar and torrified biomass</td>
</tr>
<tr>
<td>Frederik Ronsse</td>
<td>Thermochemical biomass conversion, biochar production, processing techniques</td>
</tr>
<tr>
<td>Diederik Rousseau</td>
<td>Natural water treatment systems (algae ponds, constructed wetlands, etc.), water quality</td>
</tr>
<tr>
<td>Christian Stevens</td>
<td>Heterocyclic chemistry, aminophosphonate chemistry, micro-reactor technology, chemical modification of renewable sources</td>
</tr>
<tr>
<td>Filip Tack</td>
<td>Biogeochemistry of trace elements, environmental impact of heavy metals, pollution of soil and sludge, chemical analysis</td>
</tr>
<tr>
<td>Paul Van Der Meeren</td>
<td>Particle and interfacial technology</td>
</tr>
<tr>
<td>Stijn Van Hulle</td>
<td>Application of industrial water treatment (advanced) oxidation processes, LED H2O</td>
</tr>
<tr>
<td>Arne Verliefde</td>
<td>Water treatment: drinking and industrial water, physicochemical treatment of waste water</td>
</tr>
<tr>
<td>Pieter Vermeir</td>
<td>Nanotechnology: detection and characterisation, chemical analysis</td>
</tr>
<tr>
<td>Eveline Volcke</td>
<td>Biosystems control and design, environmental engineering, bioconversion processes</td>
</tr>
<tr>
<td>Christophe Walgraeve</td>
<td>Trace organic compounds (TrOCs) in ecosystems, environmental chemistry and technology, air pollution, air quality, volatile organic compounds, particulate matter, interspecies interactions, odor interference</td>
</tr>
<tr>
<td>Serge Zhuiykov</td>
<td>Nanostructures, two-dimensional semiconductors for environmental (gas and water) sensors, energy conversion, solar cells and supercapacitors</td>
</tr>
</tbody>
</table>
DEPARTMENT OF BIOTECHNOLOGY

Innovation through molecular characterisation and optimisation of biological systems enabling agricultural, culinary, environmental and medical applications.

TOPICS

• Nanobiotechnology
• Microscopy
• Plant biotechnology
• Epigenetics
• Plant-pathogen interactions
• Protein engineering
• Metabolic engineering
• Synthetic biology

• Industrial biotechnology
• Microbial production and recovery of resources
• Brewery and fermentation technology
• Biological water treatment
• Microbe-host interactions
• Microbial ecology

IMPACT

Optimising biological systems for sustainable production and human health

CONTACT

ugent.be/bw/biotechnology
ACADEMIC STAFF

**Nico Boon**
Microbial community engineering, molecular and optical fingerprinting of microbial communities, drinking water microbiology, bioremediation

**Yves Briers**
Enzyme engineering, industrial biotechnology, medical biotechnology

**Jessika De Clippeleer**
Brewing technology, fermentation, raw materials, beer (flavour) quality and stability

**Tom Defoirdt**
Management of bacterial activity, abatement of bacterial diseases, antivirulence therapy, aquatic microbiology, blue biotechnology

**Leen De Gelder**
Environmental biotechnology, applied microbiology

**Bart De Gusseme**
Biological waste-water treatment, drinking water production and disinfection, microbial reuse technology

**Marjan De Mey**
Industrial biotechnology, metabolic engineering, synthetic biology

**Tom Desmet**
Biocatalysis and enzyme engineering

**Ramon Ganigué**
Anaerobic microbial technology, gas fermentation, bioproduction from wastes, waste-water treatment, sewer corrosion

**Godelieve Gheysen**
Plant biotechnology, molecular analysis of plant-pathogen interactions

**Tina Kyndt**
Molecular plant-nematode interactions, rice, plant defence, epigenetics

**Kathy Messens**
Agro and food biotechnology

**Korneel Rabaey**
Water treatment, bioproduction, renewable raw materials, (bio)electrochemical conversions

**André Skirtach**
Nanoparticles and nanoplasmonics, polymeric biomaterial coatings, drug delivery, mechanobiology, bioimaging and Raman scattering, microscopy

**Wim Soetaert**
Industrial biotechnology, biocatalysis, enzyme technology, fermentation technology

**Inge Van Bogaert**
Industrial biotechnology, biosurfactants, yeasts and fungi, cellular export over biological membranes, transporters

**Els Van Damme**
Biochemistry and glycobiology, plant lectins, protein-carbohydrate interactions and signal transduction in plants, and their importance for plant development

**Tom Van de Wiele**
Microbe-host interactions, gastrointestinal microbial technology, microbial metabolic potency, bioavailability processes

**Anita Van Landschoot**
Brewing technology, industrial microbiology, enzyme and glycotechnology

**Patrick Van Oostveldt**
Exobiology, ionizing radiation, cell biology, advanced microscopical techniques, cell and tissue visualisation and analysis, space exploration

**Willy Verstraete**
Nitrogen cycle, protein production, waste-water treatment, out-of-the-box thinking
DEPARTMENT OF DATA ANALYSIS AND MATHEMATICAL MODELLING

Developing multidisciplinary engineering approaches for the entire data-to-decision cycle of biosystems modelling for science, industry and society.

IMPACT

• Promoting and implementing high-quality data analysis and modelling solutions for scientific, industrial and societal problems.
• Biomath days: biowiskundedagen.ugent.be

TOPICS

• Data analysis for life sciences: biostatistics and bioinformatics
• Knowledge-based, predictive and spatially explicit modelling of biological and natural processes
• Model-based design and optimisation of processes in resource recovery and pharmaceutical manufacturing

CONTACT

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<table>
<thead>
<tr>
<th>Name</th>
<th>Research Interests</th>
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<tbody>
<tr>
<td>Jan Baetens</td>
<td>Spatially explicit modelling, dynamical systems, individual-based modelling, cellular automata</td>
</tr>
<tr>
<td>Johan D'heer</td>
<td>Physics for bachelor students</td>
</tr>
<tr>
<td>Bernard De Baets</td>
<td>Fuzzy set theory, computational intelligence, decision making, operations research, mathematical modelling</td>
</tr>
<tr>
<td>Tim De Meyer</td>
<td>Bioinformatics, (epi)genomics, transcriptomics, imprinting, ageing</td>
</tr>
<tr>
<td>Stijn Luca</td>
<td>Bios-statistics, statistical data analysis</td>
</tr>
<tr>
<td>Ingmar Nopens</td>
<td>Model-based process and system analysis and optimisation using mechanistic models</td>
</tr>
<tr>
<td>Shodhan Rao</td>
<td>Mathematical biology, systems biology, stability theory, model reduction, chemical reaction network theory</td>
</tr>
<tr>
<td>Wim Van Criekinge</td>
<td>Bioinformatics, computational genomics, epigenetics, translational medicine</td>
</tr>
<tr>
<td>Jan Verwaeren</td>
<td>Computational data analysis, digital image processing</td>
</tr>
<tr>
<td>Willem Waegeman</td>
<td>Machine learning, data science</td>
</tr>
</tbody>
</table>
The research in our department focuses on economic and sociopolitical analyses of agriculture and food ‘from farm to fork’, including urban, peri-urban and rural areas all over the globe. Our academic teaching reflects this broad scope and attracts an international audience. We offer related services to governmental and non-governmental organisations, as well as to corporations and civil society.

**IMPACT**

- Policy advice at local, national and international level
- Capacity building of partner institutes in the global South

**TOPICS**

- Agricultural economics
- Agricultural, food and environmental policy
- Agri-food marketing
- Chain and business management
- Consumer behaviour
- Natural resources management
- Rural (development) economics and sociology

**CONTACT**

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<table>
<thead>
<tr>
<th>Name</th>
<th>Area of Expertise</th>
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</thead>
<tbody>
<tr>
<td>Jeroen Buysse</td>
<td>Agricultural and environmental policy analysis</td>
</tr>
<tr>
<td>Joost Dessein</td>
<td>Sociology of agriculture, food and rural development</td>
</tr>
<tr>
<td>Marijke D’Haese</td>
<td>Rural development economics</td>
</tr>
<tr>
<td>Xavier Gellynck</td>
<td>Agro-food marketing and chain management</td>
</tr>
<tr>
<td>Ludwig Lauwers</td>
<td>Farm management, participatory modelling and efficiency analysis</td>
</tr>
<tr>
<td>Stijn Speelman</td>
<td>Natural resource management and economics</td>
</tr>
<tr>
<td>Guido Van Huylenbroeck</td>
<td>Agricultural and rural development policy, seconded to the University Central Office as Director of Internationalisation</td>
</tr>
<tr>
<td>Wim Verbeke</td>
<td>Agro-marketing and consumer behavior</td>
</tr>
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