

From new products, to food safety to public perception, cutting-edge research is making headway with the Advanced Foods & Materials Network (AFMNet), one of Canada's Networks of Centres of Excellence. Bringing together natural scientists, engineers, health researchers, social scientists and lawyers, our projects focus on innovative aspects of food & materials including developing new functional foods and evaluating the perceptions and impact of Natural Health Product Regulations.

Collaboration and networking are vital to the success of AFMNet. Over 100 researchers at 21 Canadian universities help identify gaps in existing research capacity and support the training of highly qualified individuals destined to become leaders in industry, academia and government. In April 2006, we took our networking goal even further and refocused our research program to include 20 larger, collaboration-rich projects. A listing of our 49 projects from fiscal year 2005 follows the 2006-2007 listing.

AFMNet Projects 2006-2007

THEME I: Structure-Dynamics-Function of Foods and Biomaterials (SDFF&B)

THEME LEADER: John Dutcher, University of Guelph

John Dutcher and Terry Beveridge, University of Guelph
Bacteria, Biofilms and Foods: Structure, Growth and Nanotechnology Applications

Tom Gill, Dalhousie University

David Pink, St. Francis Xavier University

Terry Beveridge, University of Guelph
Bacterial Porin Proteins: Their Importance in Uptake and Resistance to Cationic Antimicrobial Peptides

Dérick Rousseau, Ryerson Polytechnic University

Allan Paulson, Dalhousie University
Biopolymer-based platforms for controlled release applications in foods and biomaterials

Barbara Moffatt, University of Waterloo
Characterization of Plant-Derived Proteins and Carbohydrates and Their Use to Improve Frozen Food Quality

Robert Hancock, University of British Columbia
Engineering new antimicrobial agents for food safety

Nicholas Low, University of Saskatchewan

Michael Nickerson, University of Saskatchewan

Darren Korber, University of Saskatchewan
Production, Characterization and Functionality of Plant-extracted Oligosaccharides Towards Enhancing the Health-promoting Properties of Encapsulated Probiotics

Jacek Lipkowski, University of Guelph
Protein and Peptide Self-Assembly: Food-Derived Materials and Interactions with Nanostructured Surfaces

Adam Hitchcock, McMaster University
Resistance and control of biofilms on food and food processing surfaces

Rotimi Aluko, University of Manitoba
Structure-function properties of novel bioactive peptides

THEME II: Functional Foods and Nutraceuticals (FF&N)
THEME LEADER: Ahmed El-Sohehy, University of Toronto

Ahmed El-Sohehy, University of Toronto
Nutrigenomics and Biomarkers of Chronic Disease

James Friel, University of Manitoba
Bioactive Compounds in Human Milk

Peter Jones, McGill University
Conjugated Linoleic Acid as a Nutraceutical for Health Promotion in Humans

Martin Kalmokoff, Dalhousie University

Brent Selinger, University of Lethbridge
Manipulation of intestinal bacterial populations; an investigation on the impact of dietary fibre and prebiotics

Yoshinori Mine, University of Guelph
Nutrigenomic and proteomic approaches for the study of functional peptides and amino acids to improve gut health

André Marette, Laval University
The beneficial effects of fish nutrients on the obesity-linked metabolic syndrome and cardiovascular risk profile. An integrative genomic and metabolic phenotyping project

THEME III: Genetics, Ethics, Economics, Environment, Law & Society (GE²LS)

THEME LEADER: Conrad Brunk, University of Victoria

Conrad Brunk, University of Victoria
Sarah Hartley, University of British Columbia
Factors Accounting for Expert and Non-Expert Positions on the Ethical Issues in Animal Biotechnology and the Implications for Public Policy

Heather Boon, University of Toronto
Natural Health Product Regulations: Perceptions and Impact

David Castle, University of Ottawa

Tim Caulfield, University of Alberta
Social Issues in Nutritional Genomics: The Design of Appropriate Regulatory Systems and Issues of Public Representations and Understanding

Cecil Forsberg, University of Guelph
Omics for Novel Plant and Animal Food Product Assessment and Risk Identification

Spencer Henson, University of Guelph
Understanding Consumer Acceptance of Functional Foods and Nutraceuticals

AFMNet Projects 2004-2005

THEME I: Structure-Dynamics-Function of Foods and Biomaterials (SDFF&B)

THEME LEADER: John Dutcher, University of Guelph

John Dutcher, University of Guelph
Adsorption, Structure and Conformational Changes of Protein Molecules

Allan Paulson, Dalhousie University
Derick Rousseau, Ryerson Polytechnic University
Advanced Hydrogels, Films and Coatings

John Katsaras, University of Guelph
Bilayered Micelles and Spontaneous Formation of Monodisperse Unilamellar Vesicles

Barbara Moffatt, University of Waterloo
Characterization of Plant-Derived Proteins and Polysaccharides and Their Uses to Improve Frozen Food Quality

John Vederas, University of Alberta
Commercial production of rubber in sunflowers

Hermann Eberl, University of Guelph
Continuum Mechanistic Modelling of Spatio-Temporal Population Dynamics in Mixed-Culture Biofilms

Adam Hitchcock, McMaster University
Correlative Microscopic Studies of Structure-Function Relationships in Bacterial Biofilms

Patrick von Aderkas, University of Victoria
Development of Artificial Innate Defense Compounds for Use in Seed Encapsulation

David Pink, St. Francis Xavier University
Dynamics of hydrogels

John Vederas, University of Alberta
Engineering New Antimicrobial Agents for Food Safety

Robert Hancock, University of British Columbia

Santosh Misra, University of Victoria

Heidi Schraft, Lakehead University
Extracellular Polymeric Substances of Pulp and Paper Biofilms

Yoshinori Mine, University of Guelph
Food factors for the prevention of pathogenic bacterial adhesion to human mucosal cell surface: Mechanisms and consequences

Terry Beveridge, University of Guelph
Growth, Structure and Interfacial Effects of Biofilms of Opportunistic Bacterial Pathogens on Simulated and Natural Food Surfaces

John Page and Martin Scanlon, University of Manitoba
Harnessing cellularity for Canadian consumers

Benedict Newling, University of New Brunswick
Magnetic resonance imaging of the fluid migration for non-invasive studies of advanced foods

John Dutcher, University of Guelph
Mechanisms of Bacterial Adhesion on Artificial and Natural Surfaces

Gary Slater, University of Ottawa
Monte Carlo Simulation of Bacterial Colony Growth

Peter Ferguson, University of Toronto

Wankei Wan, University of Western Ontario
Novel biomaterials with defined mechanical and Diffusion Properties for use in the Development of Novel Bioactive Wound Dressings

John Bechhoefer, Simon Fraser University
Novel Biosensors For Food-Related Application

David Pink, St. Francis Xavier University
Physics of Biofilms

Don Smith, McGill University
Production of n-3 PUFA-containing oils from genetically enhanced organisms

Nicholas Low, University of Saskatchewan
Production of Prebiotic Oligosaccharides

James Forrest, University of Waterloo
Quantifying Cell Adhesion for Micro-Templated Growth Applications

Robert Prud'homme, University of Montreal
Self-assembled Nanostructures in Soft Materials and Bio-materials

Saul Goldman and Chris Gray, University of Guelph
Simulation Studies of Bacteriostatic Polypeptides on Bacterial

Gary Slater, University of Ottawa
Solute diffusion in hydrogels and porous media

Suresh Narine, University of Alberta
Structure and physical functionality of biodegradable polymers synthesized from vegetable oils

Rotimi Aluko, University of Manitoba
Structure-function properties of renin-binding peptides

Carl Adams, St. Francis Xavier University
Studying Nanoscale Bio-structure using Neutron Scattering; Applications to CAPs

Stephan Idziak, University of Waterloo

Alejandro Marangoni, University of Guelph
Thermo-Mechanical Structuring of Complex Food Systems: Using Shear and Temperature Rates to Define the Templates of Structure Formation in Commercial Products

Peter Poole, St. Francis Xavier University
Towards Materials by Design: Using Computer Simulations to Understand and Control the Transformation of Complex Liquids into Crystalline and Amorphous Solid Materials

THEME II: Functional Foods and Nutraceuticals (FF&N)
THEME LEADER: David Jenkins, University of Toronto

David Kitts, University of British Columbia
Determination of structure-activity factors governing bioactives properties of phytochemicals present in important agricultural commodities. Elucidation of Roles in Health Promotion and Disease Prevention

Ferel Temelli, University of Alberta
Extraction processing and evaluation of nutraceuticals

Nicolas Low, University of Saskatchewan

Feral Temelli, University of Alberta

Food Authenticity
Bruce Holub, University of Guelph
Functional foods containing omega-3 fatty acids: Forms, Bioavailability, and Health Effects

Lisbeth Truelstrup Hansen, Dalhousie University
Micro-encapsulation of bifidobacteria to enhance survival in delivery foods and during gastric passage

Ahmed El-Sohehy, University of Toronto
Nutrigenomics and Biomarkers of Chronic Disease

David Jenkins, University of Toronto
Reduction in CAD Risk Factors with Functional Foods Containing

Thomas Wolever, University of Toronto
The physico-chemical basis for health benefits of foods containing cereal beta-glucan and other soluble fibers

Peter Jones, McGill University
Use of conjugated linoleic acid as a nutraceutical for weight loss in humans

Peter Jones, McGill University
Very long chain fatty acids / alcohols and plant sterols as functional food ingredients for cholesterol-lowering in humans

THEME III: Genetics, Ethics, Economics, Environment, Law & Society (GE²LS)

THEME LEADER: Conrad Brunk, University of Victoria

Tim Caulfield, University of Alberta
Accuracy and Nature of Media Representation of Food Biotechnology

Richard Gold, McGill University
Comparative intellectual property issues in agricultural biotechnology

Conrad Brunk, University of Victoria
Factors Affecting Consumer Acceptance of GM Foods Containing transgenes from sources involving moral, religious and cultural dietary prohibitions

Cecil Forsberg, University of Guelph

Marc Fortin, McGill University
High throughput omics-based analytical tools for evaluating food safety

David Castle, University of Guelph
Labeling of Genetically Modified Foods: Balancing Interests in Ethically Defensible Policy

Heather Boon, University of Toronto
Natural health products regulations: Perceptions and Impact

Spencer Henson, University of Guelph
Understanding consumer acceptability of functional foods

Spencer Henson, University of Guelph
Understanding the impact of regulation on advanced food innovation