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Innovative Food Safety Training Systems

A.A.E.A. Pre-conference Workshop
Long Beach, CA, 22 July 2006

*Gary L. Fread
President & C.E.O.
Guelph Food Technology Centre
88 McGilvray Street
Guelph, Ontario*



Guelph Food Technology Centre

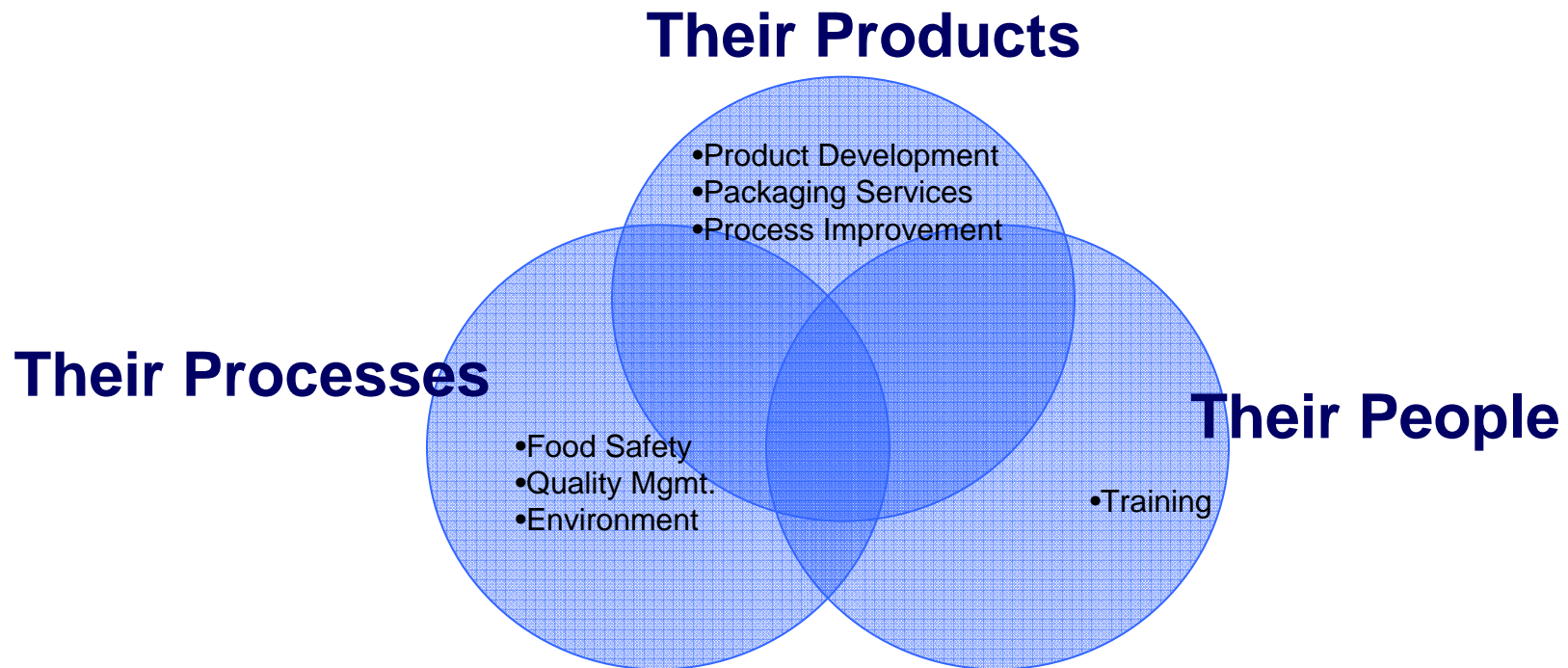
Canada's only independent, not-for-profit, self-sustaining food technology centre with broad-based services for the food industry.

- *More than ten years in business*
- *Independent not-for-profit corporation*
- *Industry led Board*
- *Non-subsidized, fee-for-service basis*
- *Membership Program*
- *Complete client confidentiality*

Our Mission

*We strive to create healthy,
safe, affordable food in an environmentally and
socially responsible manner that companies can
market profitably to their customers and
consumers.*

GFTC's focus is to improve our clients' performance in three fundamental areas





Their Products

Product Development Services

- Market Analysis
- Product Formulation, Cost Effectiveness
- Ingredient Selection and Supplier Development
- Sensory Testing, Nutritional Profile and Labelling, Shelf-life Analysis
- Plant Trials and Scale-up, Small-scale Interim Co-packing

Product Development Areas of Expertise

- Beverages, Sauces, Condiments
- Baking and Cereals Technologies
- Dairy, Eggs, Soy
- Functional Foods and Beverages

— *Special focus on Entrepreneurs and Start-ups*



Their Products

Technical Packaging Services

- Package Selection
- Supplier Development
- Product Protection Testing
 - Product Safety
 - Shelf-life and Nutrition
 - Integrity Testing
- Cost Effectiveness (including Supply Chain Costs)
- Environmental Soundness

Their Products

Process Consulting Services

- Process Development and Set-up
- Equipment Selection
- Processing Cost Effectiveness
- Process Efficacy (e.g. maintaining nutritional profile)
- Maintenance Programs
- Energy Management
- Environmental Management
- Pilot Plant Services

Their Processes

Management Systems Development

- Food Safety Management Systems
 - HACCP-based, AIB, SQF, FPA-Safe, ISO
- Quality Management Systems
 - Total Quality, SPC, Lean, Six Sigma
- Developing Areas
 - Food Traceability, Food Security (FDA), Animal Welfare, Environmental
- Farm-to-Fork
 - Ag. Inputs, On-farm, Processing, Retail, Foodservice

Their Processes

Major Clients – Voluntary Food Safety Programs

- Canadian Horticultural Council
- Canadian Produce Marketing Association
- Canadian Bottled Water Association
- Packaging Association of Canada
- Canadian Council of Grocery Distributors
- Canadian Federation of Independent Grocers
- Canadian Restaurant and Foodservice Association
- Brewers Association of Canada
- Canadian Vintners Alliance



Their Processes

Auditing Services

- More than 600 audits per year
 - Food Safety
 - Food Security
 - Animal Welfare
- Major Clients
 - Major Grocery Retailers
 - Major Restaurant Chains
 - Major Foodservice Distributors
 - Food Processors Association (FPA-Safe)
 - AIB Int'l.
 - ...and many others



Their People

Canada's Largest Trainer of Food Industry Employees

- Train 3,000 – 4,000 people per year
- Full range of technical training – over 100 courses
 - Business Basics and Management Skills
 - Product Development
 - Packaging
 - Processing Methods
 - Food Quality and Food Safety
 - Sanitation and Microbiology



Their People

Training Formats

- Public Seminars
- Customized In-house Courses
- New or developing this year:
 - Strategic Symposia
 - Web-based Courses

National and International Reach

- Alberta Food Processors Ass'n.
- TSL (Caribbean)
- ASQ, SQF(FMI), Royal Inst. of Public Health

Training: The Underwater Element



The Challenge: Design and deliver training courses that are practical and relevant, learner-centred and continually evolving to meet training needs consistent with continuous growth and the evolution of the food industry.

Adult Learning Theory

“Adults can be ordered into a classroom and prodded into seats, but they can’t be forced to learn” (Zemke and Zemke, 1995).

Considerations

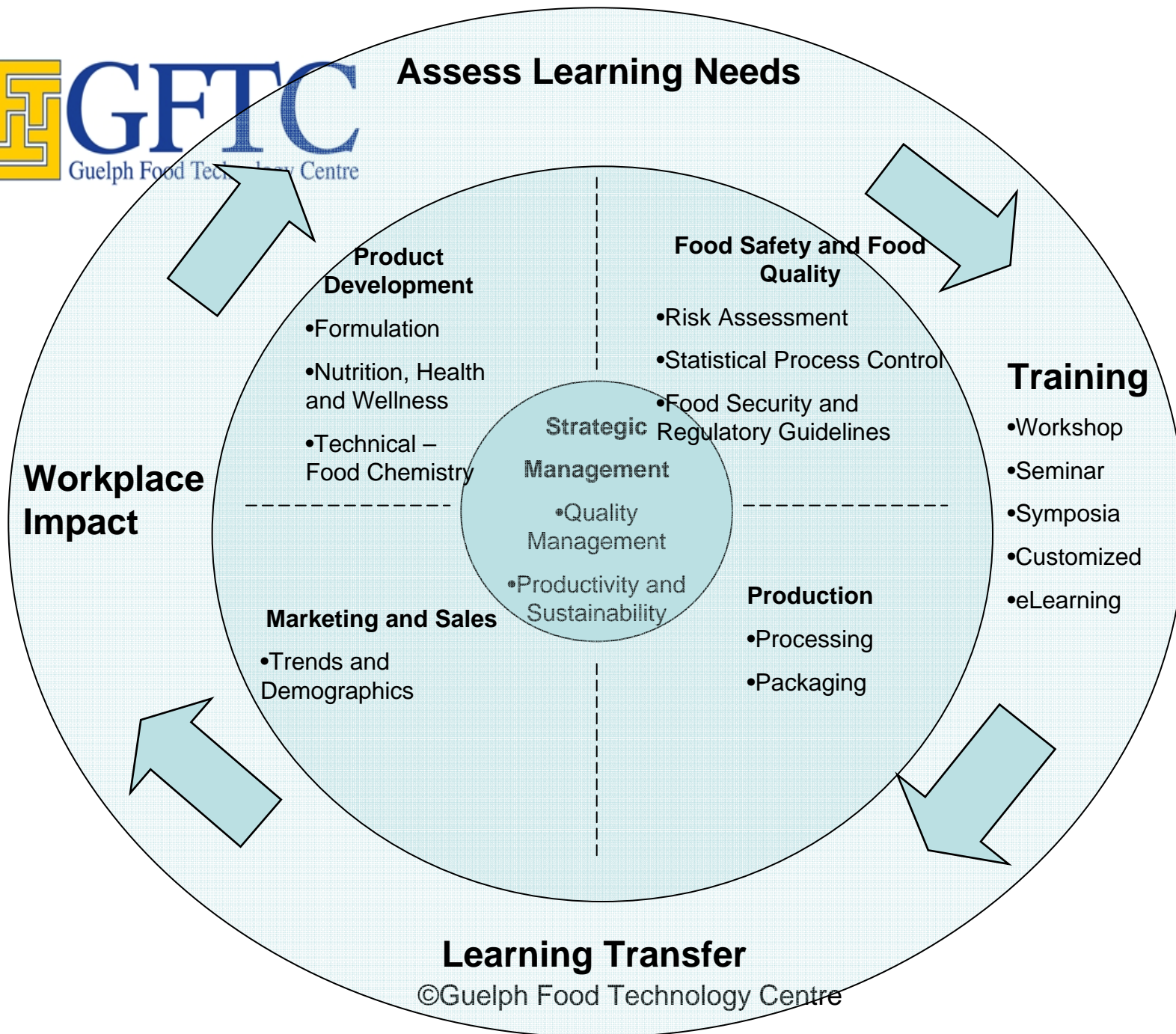
Motivation to Learn

Learning Styles

Information Integration

Low Risk Environment





Training Principles

1. Make it timely: Make sure we cover the basics but also offer topics needed now (e.g. Avian flu); continually update and improve
2. Use high quality instructors with industry experience
3. Keep it affordable (around \$300 per day)
4. Keep the size of the groups relatively small (15-20)
5. Make it interactive: Case Studies, Breakout groups, Discussion breaks
6. “Turbo Learning”: Back-to-back courses

Food Safety

The “CORE”

- Target Market: Newly formed HACCP teams, including Plant Operations, Quality Departments, HACCP team members, Supervisors and Managers who need an understanding of HACCP prerequisites and principles.

Plus:

- Staff in other departments such as Engineering and Maintenance, Sanitation, Product Development, Purchasing (and even Marketing and Sales)

Food Safety

The "CORE"

- HACCP 1: Documenting Your HACCP Prerequisites (2 days / 6X/year)
- HACCP 2: Developing Your HACCP Plan (3 days / 6X per year)
- HACCP 3: Train the Trainer (2 days / 2X per year)
- HACCP 4: Validation & Verification of Your HACCP Program (2 days / 3X per year)
- HACCP 5: Effective Auditing of Your HACCP Plan (2 days / 3X per year)

Plus:

- HACCP for On-Line Supervisors (1 day / 3X per year)
- HACCP: A Management Summary (1 day / 3X per year)
- Food Safety for Maintenance Personnel (1 day / 1X per year)
- Food Safety for External Contractors (2 days / 2X per year)

Food Safety

More Specialized:

- Foreign Materials I: Investigation & Detection (1 day / 2X per year)
- Foreign Materials II: In-house Evaluations Using the Light Microscope (1 day / 1X per year)
- Preventing Allergen Cross-Contamination in Your Plant & Products (2 days / 1X per year)

Plus:

- Certified HACCP Auditor (A.S.Q.) (2 days / 2X per year)
- ISO 22000: Food Safety Management Systems (1 day / 1X per year)



Microbiology & Sanitation

The “CORE”

Target Market:

- Sanitation Supervisors and Lead Hands, Maintenance Supervisors and Personnel, QA Supervisors and Personnel
- Deli and Bakery Managers, Foodservice Managers, Entrepreneurs, Consultants

Plus:

- Food plant engineers and designers, Equipment Manufacturers and Sales personnel

Microbiology & Sanitation

The “CORE”

- Microbiology I: Practical Food Micro. & Troubleshooting (3 days / 1X per year)
- Microbiology II: Sanitation (2 days / 1X per year)
- Microbiology III: Foodborne Pathogens (2 days / 1X per year)
- Microbiology IV: Sampling and Interpreting Results (2 days / 1X per year)
- Microbiology V: Listeria Control (1 day / 1X per year)
- Microbiology VI: Salmonella Control (1day / 1X per year)

Plus:

- Food Plant Sanitation (2 days / 1X per year)
- Sanitary Design for Equipment, Materials, and Establishments (2 days / 1X per year)

Our Training Strategy

1. Get senior management's (R&D, Operations, Mkt. & Sales, Supply Chain) interest: e.g. a Symposium on BioSecurity.
2. Get the Product Development, Production, Q.A., Engineering & Maintenance, Sanitation Managers up to speed: e.g. one day overview course
3. Get the supervisors and lead hands out to the core courses
4. Take it in-house with customized programs to all plant personnel
5. Keep them up-to-date with web-based update courses
6. Draw selected staff out to more specialized courses to continually improve their skills



Guelph Food Technology Centre

Come and visit us at:

88 McGilvray Street
Guelph, Ontario, Canada
Tel: 519.821.1246

Contact: Terri Dunlop-Dewar
Marketing & Sales Manager

Or visit our website:

www.gftc.ca



- **Gary L. Fread** is President & C.E.O. of the Guelph Food Technology Centre in Guelph, Ontario, Canada. G.F.T.C. is a not-for-profit corporation set up to carry out technology commercialization in the agri-food sector. It is also a leader in technical training, food safety programs, product development, and technical packaging services. Gary is a Fellow of the George Morris Centre in Guelph, ON, Canada's Agri-Food Think Tank. He is a member of the Canadian Advisory Committee, and International Working Groups for the development of the ISO 22000 food safety standard. Gary served as a Director of the Canadian Agri-Food Competitiveness Council from 1991-1994. He became a Director of the Canadian Food Exporters Association in 1998, Chair of the Board from 2001 to 2004, and continues as a Director and Past Chair.
- Previously, Gary was President of Fread & Associates Ltd., a consulting company founded in 1993 focused on strategic planning, organizational effectiveness, and supply chain management in the Agri-Food Sector of the economy. Gary began his career in 1972 with Procter & Gamble Inc., where he worked in both Sales and Distribution functions, becoming Division Manager, Transportation and Logistics Planning. In 1986, he joined the Campbell Soup Co. of Canada as Director – Logistics, later becoming Vice President and Chief Technical Officer. He left Campbell's in 1993 to start his consulting practice. From 1997 to 2001, Gary was Vice President and General Manager, Prepared Meals Division for Morrison Lamothe Inc., a frozen foods manufacturer, and he returned to consulting in January 2002.



***“New Food Safety Incentives & Regulatory,
Technological & Organizational Innovations”***

AAEA section cosponsors: FSN, AEM, FAMPS, INT
7/22/2006, Long Beach, CA

Industry perspectives on incentives for food safety innovation

Continuous food safety innovation as a management strategy

Dave Theno, Jack in the Box, US

Economic incentives for food safety in their supply chain

Susan Ajeska, Fresh Express, US

Innovative food safety training systems

Gary Fread, Guelph Food Technology Centre, Canada

Organizational and technological food safety innovations

Is co-regulation more efficient and effective in supplying safer food?

Marian Garcia, Dept. of Agricultural Sciences, Imperial College London

Andrew Fearne, Centre for Supply Chain Research, University of Kent, UK

Chain level dairy innovation and changes in expected recall costs

Annet Velthuis, Cyriel van Erve, Miranda Meuwissen, & Ruud Huirne

Business Economics & Institute for Risk Management in Agriculture,
Wageningen University, the Netherlands

“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations”

7/22/2006, Long Beach, CA (con't)

Regulatory food safety innovations

Prioritization of foodborne pathogens

Marie-Josée Mangen, J. Kemmeren, Y. van Duynhoven, A.H. and Havelaar,
National Institute for Public Health & Environment (RIVM), the Netherlands

Risk-based inspection: US Hazard Coefficients for meat and poultry

Don Anderson, Food Safety and Inspection Service, USDA

UK HAS scores and impact on economic incentives

Wenjing Shang and Neal H. Hooker, Department of Agricultural,
Environmental & Development Economics, Ohio State University

Private market mechanisms and food safety insurance

Sweden's decade of success with private insurance for *Salmonella* in broilers

Tanya Roberts, ERS, USDA and Hans Andersson, SLU, Sweden

Are product recalls insurable in the Netherlands dairy supply chain?

Miranda Meuwissen, Natasha Valeeva, Annet Velthuis & Ruud Huirne,
Institute for Risk Management in Agriculture; Business Economics & Animal
Sciences Group, Wageningen University, the Netherlands

Recapturing value from food safety certification: incentives and firm strategy

Suzanne Thornsby, Mollie Woods and Kellie Raper
Department of Agricultural Economics, Michigan State University



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Applications evaluating innovation and incentives for food safety

Impact of new US food safety standards on produce exporters in northern Mexico

Belem Avendaño, Department of Economics, Universidad Autónoma de Baja California, Mexico and Linda Calvin, ERS, USDA

EU food safety standards and impact on Kenyan exports of green beans and fish

Julius Okello, University of Nairobi, Kenya

Danish *Salmonella* control: benefits, costs, and distributional impacts

Lill Andersen, Food and Resource Economics Institute, and Tove Christensen, Royal Danish Veterinary and Agricultural University, Denmark

Wrap up panel discussion of conference

FSN section rep. – Tanya Roberts, ERS, USDA

AEM section rep. – Randy Westgren, University of Illinois

INT section rep. – Julie Caswell, University of Massachusetts

FAMPS section rep. – Jean Kinsey, University of Minnesota

Discussion of everyone attending conference

Note: speaker is either the 1st person named or the person underlined.

Thanks to RTI International for co-sponsoring the workshop.

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“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations”

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Workshop objectives

- Analyze how new public policies and private strategies are changing economic incentives for food safety,
- Showcase frontier research and the array of new analytical tools and methods that economists are applying to food safety research questions,
- Evaluate the economic impact of new food safety public policies and private strategies on the national and international marketplace,
- Demonstrate how new public policies and private strategies in one country can force technological change and influence markets and regulations in other countries, and
- Encourage cross-fertilization of ideas between the four sponsoring sections.

Workshop organizing committee

Tanya Roberts, ERS/USDA, Washington, DC - Chair
Julie Caswell, University of Massachusetts, MA
Helen Jensen, Iowa State University, IA
Drew Starbird, Santa Clara University, CA
Ruud Huirne, Wageningen University, the Netherlands
Andrew Fearn, University of Kent, UK
Mogens Lund, FOI, Denmark
Mary Muth, Research Triangle Institute Foundation, NC
Jayson Lusk, Oklahoma State University, OK
Randy Westgren, University of Illinois, IL
Darren Hudson, Mississippi State University, MI