

NJAES Office of Continuing Professional Education

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**INTRODUCTION TO FOOD SCIENCE
AUGUST 15-19, 2011
LF0201CA12**

Nonprofit Organization
US Postage
PAID
New Brunswick, NJ
Permit No. 153

Program Fee (before 8/1/11)
___ \$1,395 for entire program
___ \$1,195 for 4 days
___ \$995 for 3 days
___ \$795 for 2 days
___ \$395 for 1 day

Program Fee (after 8/1/11)
___ \$1,445 for entire program
___ \$1,245 for 4 days
___ \$1,045 for 3 days
___ \$845 for 2 days
___ \$445 for 1 day

I will attend:
___ Mon, 8/15
___ Tues, 8/16
___ Wed, 8/17
___ Thurs, 8/18
___ Fri, 8/19
___ Optional Tour

ADDITIONAL COURSES:

Course Code	Name	Date	Fee

Method of Payment

- Check, money order or Purchase Order
- Charge to my credit card Visa Mastercard AMEX

Cardholder's Name (printed) _____
 Signature of Cardholder _____
 Card # _____
 Exp. Date _____ Billing Zip _____

YES, I want to be informed about courses and related information through periodic messages from Rutgers via: (check all that apply) email fax

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RUTGERS
 New Jersey Agricultural
 Experiment Station

Introduction to Food Science

August 15 - 19, 2011

**** NEW Topic for 2011! ****

Food Processing and Engineering

Sensory Evaluation
September 14 - 15, 2011

**Making Sense of the Numbers:
 Statistics for Food Scientists**
September 16, 2011

See inside for additional training!

Office of Continuing Professional Education

Introduction to Food Science

August 15 - 19, 2011

Course Code: LF0201CA12

Rutgers University invites you to *transform, broaden* and *update* your food science skills with this highly focused, practical training. With or without a food science background, you will build your value by expanding your range and depth of skills with a quick infusion of targeted food science education. Working with the best instructors from industry and academia, move through key points of food science as well as the most valuable components of a Food Science degree – with your choice of individual one-day sessions, or through the complete five-day program!

"I really loved the class and wanted more....Thanks so much for a well put together class! I now have to put together a training for my whole program here summarizing the salient points of the course which is a challenge I am looking forward to." **Valerie Frances**, MPH Nutrition, Standards Division, USDA-AMS-National Organic Program

By attending our program, you will:

- Gain an appreciation of the scope and breadth of the field of FS
- Improve your understanding of the fundamental chemistry of foods and the major molecular components of foods including lipids, carbohydrates and proteins
- Improve your understanding of the science of food color, food flavor, nutrition, sensory evaluation and food microbiology
- Gain insight into the application of all these areas of food science to improve food safety and quality

Past participants have included: Food Technologists, R&D Engineers and Technicians, Flavor Technicians, Technical Sales Managers and Purchasing Agents, QA/QC Personnel, Regulatory Advisors, Product Development Technicians and Managers, Labeling Coordinators, and Process Control Technicians.

"The course was very beneficial to me since I work daily with Product Developers on new / existing products. It has provided the tools I need to understand the science behind our products." **Kim Smith**, TDC Process Engineer-Process R&D, Campbell Soup Company

www.cpe.rutgers.edu/food

FULL registration - \$1,395 before 8/1/11

\$1,195 - four days

\$995 - three days

\$795 - two days

\$395 - one day only

Day 1 - Monday, August 15, 2011

Introduction to Chemical Principles & Lipids

Explore the structures, properties and functions of food molecules, including polarity, acidity, reactivity (hydrolysis, oxidation, browning) and alkalinity. Learn about the chemical composition of oils and fats and their roles in product development and manufacturing. Discuss the refining of fats and oils, and evaluate the reactions and degradation of lipids.

Day 2 - Tuesday, August 16, 2011

Carbohydrates & Proteins

Learn theories and applications of carbohydrates in food production. Explore structures, nomenclature, chemical reactions and functions. Analyze the characteristics that proteins bring to foods and the raw materials needed for flavor reactions and nutrients.

Day 3 - Wednesday, August 17, 2011

Color Theory/Applied & Flavor/Sensory

Learn the scientific basis for the determination of coloration in food and review different types of natural and artificial food coloring. Through discussion of important flavor molecules and flavor perception (taste and aroma), develop techniques for flavor profiling and description.

Day 4 - Thursday, August 18, 2011

Nutrition Theory/Applied & Food Microbiology Theory/Applied

Explore principles of human nutrition, including essential macro nutrients, vitamins and minerals. Learn how nutrition plays an integral role in food science, including nutraceuticals. Microbes play a critical role in fermentation, spoilage and foodborne illnesses. Survey factors that influence microbial growth and learn how to implement good manufacturing processes and microbial sampling.

Day 5 - Friday, August 19, 2011

Food Processing & Engineering - NEW for 2011!

Learn the various operations and systems used to manufacture and process food, and food ingredients, to achieve desired quality and safety. Examples of current and technologies will be described.

*An optional tour of the Rutgers University's Department of Food Science and the Center for Advanced Food Technology facilities will be available at the conclusion of day five. **Pre-registration required.** See registration form.*

Office of Continuing Professional Education

Sensory Evaluation

September 14 - 15, 2011

\$795 before 8/31; \$845 after Course Code: LF0606CA12

Register with **STATISTICS FOR FOOD SCIENTISTS** and save \$100 off each individual course!

The sensory quality of a food product is the single most important factor influencing its success in the marketplace. You can increase the chances of a product's success in today's food and pharmaceutical markets if you understand and can measure the sensory quality of foods.

In this program, you will review the pros and cons of different sensory tests, examine testing procedures, and evaluate real products. You will develop the practical skills necessary to set up your own discrimination tests and create testing protocol, apply real test procedures and interpret what the results mean for your product.

Through hands-on demonstrations, you will also learn how to evaluate the sensory quality of food products using statistical descriptive analysis. A background in statistics is NOT required. Using easy-to-learn steps, you will be taught how to perform statistical tests and then progress to more complex assessment techniques.

Register for **Sensory Evaluation**, to receive "a greater understanding of the scientific side of tasting food" ... "the presenters [are] great and very knowledgeable in the subject matter." **Past Attendees**

Who Should Attend?

- Food/Beverage professionals involved in evaluation of products
- Food/beverage marketers or production employees
- Product researchers and developers
- Quality control and quality assurance specialists
- Conductors of consumer preference/acceptance tests
- Lab technicians and managers
- Marketing managers and research support staff

www.cpe.rutgers.edu/food

Making Sense of the Numbers: Statistics for Food Scientists

September 16, 2011

\$395 before 9/2; \$425 after Course Code: LF0607CA12

Register with **SENSORY EVALUATION** and save \$100 off each individual course!

Poorly conceived experiments produce bad data, which leads to wrong conclusions and market failure. All product developers -- from chemists to QA specialists -- should understand how insightful and intelligent data is produced. Refresh your knowledge of fundamental concepts and applications of statistics in food science with this case-based approach.

Taught by two statistical specialists from Kraft General Foods, this one-day intensive course will teach both beginners *and* experienced professionals the delicate art and science of mixing food and numbers. Through our case-based approach, Refresh your knowledge of fundamental concepts and gain a better understanding of common applications of statistics in food science.

Featured Topics include:

- Descriptive Statistics and Graphics
- Sampling
- Gage Repeatability and Reproducibility Studies
- Statistics Process Control (SPC)
- Analysis of Variance (ANOVA)
- Design of Experiments (DOE)
- Regression

"This course has helped me understand the numbers I look at and evaluate daily. All aspects of the program will be taken back and applied to my job. [The] excellent instruction would be beneficial to much more than just food scientists – quality control/assurance, production supervisors and managers would all benefit from what **Making Sense of the Numbers** provides!" **Mark Hayden**, Director, Global Quality Assurance, Heartland Sweeteners, LLC, Carmel, IN

Office of Continuing Professional Education

HACCP Plan Development for Food Processors

October 4 - 6, 2011

\$895 before 9/20; \$945 after Course Code: LF0403CA12

No company can afford to have a sub-standard Hazard Analysis Critical Control Point (**HACCP**) plan. This hands-on course teaches you how to write and implement an intelligent and effective **HACCP** plan. Because you learn **HACCP** planning best by doing it, you will actually write a plan in class.

Working in small groups, through hands-on exercises, you will complete, discuss and critique worksheets to:

- Conduct a hazard analysis
- Identify critical limits for each control point
- Describe monitoring procedures and corrective actions
- Define your methods for verifying that your system is working
- Create methods for validating that your product is safe
- Clarify the necessary components for a successful plan
- Develop implementation procedures for your plan

Under the guidance of **Donna Schaffner**, a gifted and seasoned **HACCP** plan developer, implementer, and instructor, you will learn how to gather and organize the information you need, **so you don't get overwhelmed by the process.**

Over the course of three days, you will learn these key insights:

- The difference between a control point and a *critical* control point
- How to conduct an insightful hazard analysis of your food process
- Proper flow charting of your process
- The importance of plan prerequisites
- Intelligent recordkeeping and documentation
- How to organize the information needed for your plan
- The key difference between verification and validation
- The importance of safe food production for consumption

HACCP Plan Development provided a "comprehensive overview of what HACCP is, and how to implement a HACCP plan" ... "it got me to rethink [our] process and look at things differently." **Past Attendees**

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NEW! Demystifying Kosher:

Using Kosher Food Production to Enhance Your Business

October 24, 2011

\$295 before 10/10; \$325 after Course Code: LF0401CB12

NEW for 2011! Capitalize on the exponentially expanding kosher market by understanding the opportunities **and** obligations of kosher food processing!

The kosher food market - from manufacture, to sale, to marketing - has grown 12-fold in the last 50 years. Currently, over 50% of all food products on the supermarket shelf are kosher, and sales are projected to exceed \$17 billion by 2013.

Whether you are considering becoming kosher, or *are* looking to optimize your kosher operation, this course will clearly explain the benefits of kosher, what being kosher means to your facility (and your bottom line!), and how it can drive your marketing objectives.

Featured Topics include:

- Why Kosher?
- The Kosher and Jewish Marketplace
- Implications of Becoming Kosher
 - Contractual Obligations
 - Financial Matters
- Kosher Certification
 - Inspection
 - Ingredients
 - Marketing Plans
 - Labeling/Packaging

Instructors

Rabbi Yaakov Horowitz is one of North America's foremost experts on the intricate art of kosher food production and a key part of Manischewitz, the continent's leading kosher brand. He serves as chief supervising rabbi of the Manischewitz group on behalf of the Orthodox Union, the largest kosher food supervisory organization in the world.

Jacob Rusanov is the former Category Manager for Wakefern/Shoprite, having created and managed their multi-million dollar kosher private label program. He served as New York Metro Sales Manger for Osem, one of the largest Israeli food companies in the U.S., and is currently promoting kosher health food products in the NY/NJ area.

Office of Continuing Professional Education

Better Process Control School

November 15 - 18, 2011

\$995 before 11/1; \$1,095 after Course Code: LF0703CA12

According to FDA regulations, each processor of low-acid and acidified low-acid canned foods, including pet foods, must operate with a trained supervisor on hand at all times. Similar USDA/FSIS regulations and training requirements are in place for thermally processed meat and poultry products. These regulations are designed to prevent public health problems in these types of food products.

Better Process Control School (BPCS) teaches the practical applications of the principles underlying these regulations, including:

- Aseptic processing and packaging systems
- Retort operations
- FDA Guidelines and regulation compliance
- Microbiology of thermally processed foods
- Principles of thermal processing
- Food plant sanitation
- Container closure evaluations

This program is specifically designed for supervisors, quality control technicians and line workers involved in thermal processing, acidification, retort operations, aseptic processing and packaging and container closure evaluation programs at facilities that produce or handle low-acid and acidified canned foods.

Better Process Control School "provides a solid foundation for any professional involved in thermal processing!" **Past Attendee**

Applicable FDA/USDA/FSIS regulations

Effective May 15, 1979

- 21 CFR 108 - Emergency Permit Control
- 21 CFR 113 - Thermally Processed Low-Acid Foods
Packaged in Hermetically Sealed Containers
- 21 CFR 114 - Acidified Foods

Effective June 19, 1987

- 9 CFR 318.300 - Entry into Official Establishments;
Reinspection and Preparation of Products
- 9 CFR 381.300 - Poultry Products Inspection Regulations

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Practical Food Microbiology

December 1 - 2, 2011

\$695 before 11/23; \$725 after Course Code: LF0401CA12

If you develop, process, distribute or sell food for a living, there is a bare minimum you need to know about **food micro**:

- WHICH pathogens are most likely to cause trouble in your food;
- WHEN and WHY do they threaten the safety of your product and customers; and,
- HOW to best manage and control the risks posed by these organisms.

If you have never taken a **food micro** class, **Dr. Donald Schaffner** and **Dr. Karl Matthews**, respected professors from the Rutgers University, Department of Food Science will teach you the most critical points for food safety applications. Even if you *have*, you will learn when and how to use powerful – but often abused and misunderstood -- tests, tools and models that were not on the market just five years ago.

Learn to make better choices by understanding the limits and applicability of data produced as well as the danger of starting with ill-considered assumptions!

Microbial Ecology: Food safety depends on understanding what conditions encourage microbial growth and what inhibits it.

Pathogens – Gram-negative: The FDA/USDA are hustling to better understand Shiga-toxin producing E. coli (STEC) and Salmonella.

Pathogens – Gram-positive: Listeria monocytogenes has plagued many food manufacturers; we focus on ecology and control.

Spoilage: Yeast and mold are major culprits in food spoilage. Learn how to detect and identify them in food processing facilities.

Current Food Safety Issues: Get the latest on the worst outbreaks to hit the news and consumers' GI tracts.

Testing: A good test done wrong can be more dangerous than no testing at all. Know the uses and abuses of microbial testing.

Predictive Models & Quantitative Risk Assessment: Tools of quantification are continually expanding in power and applicability.

Office of Continuing Professional Education

MEET OUR INSTRUCTORS

Today's food industry professionals need a good balance of skills and practical knowledge in order to remain competitive and communicate complex information to consumers.

Rutgers' short courses are not simple academic exercises — they are targeted, applied training opportunities, led by academic and professional experts, specifically designed to improve your technical, regulatory and creative problem solving skills.

INTRODUCTION TO FOOD SCIENCE

Dr. Donald Schaffner (Faculty Coordinator) -

Center for Advanced Food Technology, Rutgers University

Dolf DeRovira - Flavor Dynamics, Inc.

Dr. Mukund Karwe - Department of Food Science, Rutgers University

Kathleen Keller - New York Obesity Research Center

Dr. Alan King - Department of Food Science, Rutgers University

Dr. Rick Ludescher - Department of Food Science, Rutgers University

Penny Martin - Sensient Colors, Inc.

Dr. Karl Matthews - Department of Food Science, Rutgers University

Dr. Karen Schaich - Department of Food Science, Rutgers University

SENSORY EVALUATION

Doris Aldridge - Campbell Soup Company

Dolf DeRovira - Flavor Dynamics, Inc.

Annette Hottenstein - McCormick Sensory Science

Viktor Mirtchev - Kraft General Foods

Beverly Tepper - Department of Food Science, Rutgers University

MAKING SENSE OF THE NUMBERS: STATISTICS FOR FOOD SCIENTISTS

Viktor Mirtchev - Kraft General Foods

Frank Rossi - Kraft General Foods

HACCP PLAN DEVELOPMENT FOR FOOD PROCESSORS

Donna Schaffner - Food Innovation Center, Rutgers University

DEMYSTIFYING KOSHER: USING KOSHER FOOD PRODUCTION TO ENHANCE YOUR BUSINESS

Rabbi Yaakov Horowitz - Manischewitz Group

Jacob Rusanov - Independent Kosher Sales/Marketing Consultant

BETTER PROCESS CONTROL SCHOOL

Ray Carroll - Aseptic Technologist

Dr. Karl Matthews - Department of Food Science, Rutgers University

Dr. Donald Schaffner - Center for Advanced Food Technology,
Rutgers University

PRACTICAL FOOD MICROBIOLOGY

Dr. Karl Matthews - Department of Food Science, Rutgers University

Dr. Donald Schaffner - Center for Advanced Food Technology,
Rutgers University

- FOUR CONVENIENT WAYS TO REGISTER -



Phone: 732.932.9271, M-F 8AM - 4:30PM.

Please have your Visa, Mastercard or AMEX number ready.



Fax: 732.932.8726, 24 Hours. Please include credit card information or copy of your check, money order or purchase order with your fax.



Mail: Registration Desk, NJAES Office of Continuing Professional Education, Rutgers University, 102 Ryders Lane, New Brunswick, NJ 08901-8519. Please make check payable to: **Rutgers University**



Web: www.cpe.rutgers.edu

Payment Policy - All students must have prearranged for payment to be admitted to the class (purchase order, check, VISA, Mastercard, American Express or money order).

Refunds - You may withdraw from this course with a full refund (minus a processing fee) provided our office is notified at least three (3) full working days prior to the start of the course. Beyond that time, registrants may be responsible for the full registration fee.

Substitutions are welcomed.

NOTE - Unless otherwise specified, continental breakfast and lunch are included in your registration fee(s).