Learn principles of carbohydrate ingredients and food structure design in the context of healthy and natural products. Develop a holistic approach based on the latest technological and nutritional insights.

COURSE DESCRIPTION
The development of high quality, healthy and sustainable food ingredients and consumer products is a major challenge the food industry is facing today. Strategies for designing healthy, natural food products require integral knowledge of molecular, physical, nutritional and processing aspects of food ingredients and food matrices. That is in order to meet consumer’s expectations of texture, taste and convenience.

During this two day course, attendees will gain insights in the latest knowledge and developments on designing healthy, health promoting and natural food ingredients and products.

On the first day, a comprehensive overview on carbohydrate ingredients will be provided. Experts from TNO, Whistler, food industry and academia will cover aspects related to structure-functionality relations, physical modification technologies and carbohydrate physiology (i.e. digestion and prebiotic functions). On the second day, an overview of most relevant physical properties of food ingredients and ingredient interactions will be provided, together with a theoretical understanding of food structure formation during processing. Case studies will be presented on how physical based approaches can be applied to the design of healthy, natural food products.
**FOR WHOM?**
The course is intended for anybody involved in ingredient and food product development, including R&D scientists, project leaders, research managers and technical sales.

**WHY COME TO THIS COURSE?**
- Gain new insights into approaches to design healthy, natural food ingredients and consumer products
- Learn a holistic approach to ingredient and food design based on latest technological and nutritional insights
- Get updated with the latest scientific and technological developments
- Expand your network among scientists and industry experts

**PROGRAM**

**TUESDAY, NOVEMBER 10TH 2015**

**Designing technologically and nutritionally functional carbohydrates**

09.00 Coffee and reception
09.30 Opening: Introduction to the course
  Dr. Stefano Renzetti, Prof. Bruce Hamaker
09.45 Carbohydrate structure and starch modification: chemical, physical and enzymatic
  Dr. Yuan Yao (Whistler Center)
11.15 Coffee/tea break
11.45 Novel physical modification technologies
  Dr. Jerome Diaz (TNO)
12.45 Lunch
13.45 Lactobacillus Polysaccharides: Synthesis and Degradation
  Prof. Lubbert Dijkhuizen
  (University of Groningen/Carbohydrate Competence Center)
14.25 Carbohydrate digestion and sustainable energy
  Prof. Bruce Hamaker (Whistler Center)
15.40 Coffee/tea break
16.00 Prebiotics: The Fall & Rise of Health Claims
  Dr. Elaine Vaughan (Sensus)
16.30 Prebiotic modulation of the human gut microbiota
  Dr. Frank Schuren (TNO)
19.00 Course dinner

**WEDNESDAY, NOVEMBER 11TH 2015**

**Designing healthy and natural consumer products**

08.30 Coffee and reception
09.00 Welcome and introduction day 2
  Dr. Stefano Renzetti, Prof. Bruce Hamaker
09.10 Physical and Rheological Properties of Biomaterials
  Prof. Osvaldo Campanella (Whistler Center)
10.40 Coffee/tea break
11.10 Biopolymers interactions
  Dr. Owen Jones (Whistler Center)
12.40 Lunch
13.30 Functionality of starch and starch derivatives in food
  Dr. Piet Buwalda (Avebe/University of Wageningen)
14.15 Food structure and texture design: towards healthy formulations (part 1)
  Albert Jurgens (TNO)
15.00 Coffee/tea break
15.15 Food structure and texture design: towards healthy formulations (part 2)
  Albert Jurgens (TNO)
15.45 Linking innovative food structure design with dietary guidelines, consumer’s views and sustainability
  Jan-Willem van der Kamp (TNO)
16.15 Closing remarks

**REGISTRATION AND INFORMATION**

Course fee: € 950 (excl. VAT; not applicable to US attendees). Price include meals, course dinner and refreshment listed in the program.

Members of Whistler Center, please contact course secretary for a discount fee.

Please note that the organizers reserved the right to alter the details of the program and/or speakers in case of unforeseen circumstances.

For more information about the course program contact:
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For registration and other questions contact the course secretary:
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**VENUE**

TNO, Zeist, The Netherlands

The course will be led by:
- **Dr. Stefano Renzetti**
  Senior Scientist at TNO
  Functional Ingredients
- **Prof. Bruce Hamaker**
  Director of Whistler Center at Purdue University
- **Joost Blankestijn**
  Business Development Manager