



## Introduction to RICHFIELDS & Case Study on The Fake Food Buffet (WP 10)

# 'BIG DATA' and Food and Consumer Behavior



Food Purchase



Food Preparation



Food Consumption

Generated by:

- **Consumers**, e.g. Consumer devices (apps, sensors, trackers)
- **Businesses**, including retail, e-commerce, insurance; e.g. sales
- **Research**, including EU and International; e.g. surveillance data, personalised nutrition

# RICHFIELDS

Designing a world-class infrastructure to facilitate research



# RICHFIELDS aim

**Design a consumer-data platform to:  
collect and connect, compare and  
share information about our food  
behaviours, to revolutionise research  
on every-day choices made across  
Europe**





# RICHFIELDS Facts

- **Call:** H2020-INFRADEV-1-2014-1
- **16** Partner Institutions across Europe
- **Coordinator:** LEI Wageningen UR (NL)
- **Dissemination lead:** European Food Information Council (EUFIC)
- **Start date:** 1 October 2015
- **Duration:** 3 years
- Project organised into 3 main phases (13 WPs)

# Phase 1: Mapping Consumer-Generated Data



Purchase

SP Food and Bioscience unit



Preparation

University of Surrey



Consumption

Wageningen UR (WUR)

# Phase 2: Connecting Business and Research-Generated Data



Business-Generated Data

Aalborg University (AAU)



Connecting with Related RIs  
(health & food) Data

Institute of Food Research (IFR)



Connecting Laboratories and  
Facilities

German Institute of Food Technologies (DIL)

# Phase 3: Designing the Research infrastructure Platform for Consumer Behaviour and Lifestyle



Data Integration & Data Management

Jožef Stefan Institute (JSI)



Business Model

Institute of Industrial Technologies and Automation - National Research Council of Italy (ITIA-CNR)



Governance, Ethics and Final Design

LEI Wageningen UR (LEI)



# WP 10: Connecting Research generated data

## Phase 2: Connecting Business and Research-Generated Data



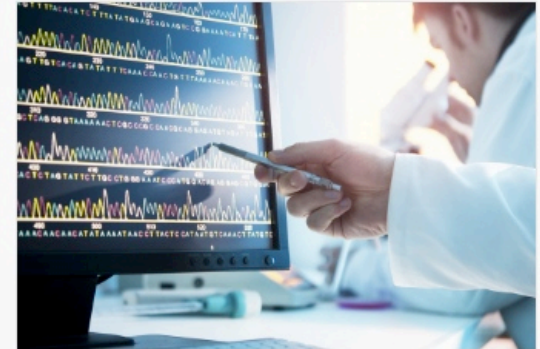
Business-Generated Data

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# Connecting laboratories and facilities

- 1) Trying to understand the **purpose, structure, technology/devices used** and **data storage** of various laboratories and facilities in Europe
- 2) Are there ways (and interest) to offer **data access, exchange and linkage** to external research infrastructures, like RICHFIELDS?
  - What would be the challenges and constraints?
- 3) What are potential **ethical issues** related to sharing consumer data (e.g., data privacy, ownership rights etc.)?
- 4) Is there a suitable **business model** to manage such a data exchange (e.g., user and access rights, fees, governance of data usage for different purposes)?

# Connecting laboratories and facilities

## Step 1

- Case studies on three facilities (Fake Food Buffet, FoodScape Lab, Restaurant of the Future)
- Food choice, purchase and consumption

## Step 2

- Mapping additional facilities across Europe (private and public)
- Expert interviews in selected facilities (Nestlé Research Centre, Paul Bocuse Institute)

## Step 3

- Stakeholder workshops to discuss these insights
- Synthesis of findings and recommendations for the design phase

# Connecting laboratories and facilities

## Case study 1



### **Fake Food Buffet**

ETH Zurich

University of Konstanz, DE  
University of Newcastle, AUS  
Queens University, Belfast, NIR  
University of Cologne, DE

*"food choice"*

## Case study 2



### **FoodScape Lab** Aalborg University

*"food choice,  
consumption"*

## Case study 3



### **Restaurant of the Future** Wageningen University

*"food choice, purchase &  
consumption"*



# Case Study about the Fake Food Buffet (ETHZ)

1. **Description of the facility – What is the FFB?**
2. **Data Structure**
3. **Potential links to RICHFIELDS**
4. **Ethics**

## Case study 1



### **Fake Food Buffet**

ETH Zurich

University of Konstanz, DE

University of Newcastle, AUS

Queens University, Belfast, NIR

University of Cologne, DE

*"food choice"*

# 1 What is the Fake Food Buffet



- Buffet with very authentic food replicates
- Validated against selection of real food

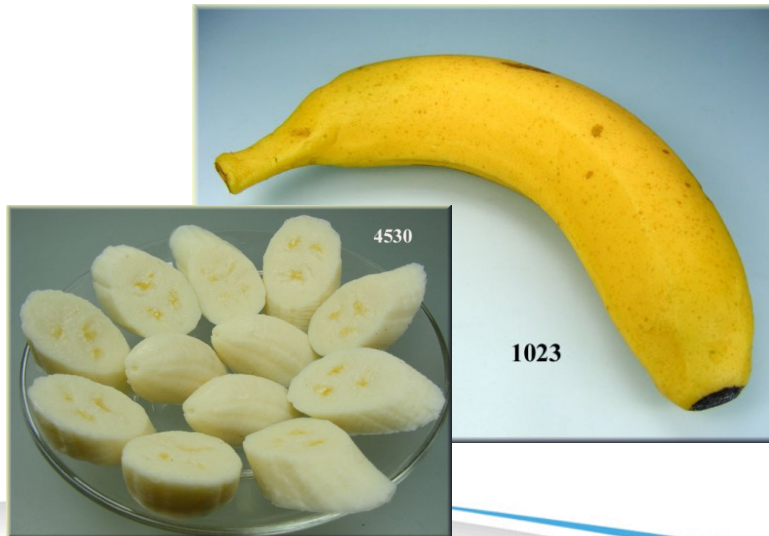


# What is the 'Fake Food Buffet'



# Fake Foods

- Döring GmbH ([www.attrappe.de](http://www.attrappe.de))
  - More than 2500 different fake food products
  - Production of new items on request
  - Reasonable prices
  - Cast from PVC, hand sprayed
  - Linked to food database





# Fake Food Buffets across the globe

- ETH Zurich (Switzerland) - Consumer Behavior
- The University of Konstanz (Germany) – Health Psychology
- The University of Newcastle (Australia) – Nutrition and Dietetics Research
- The University of Cologne (Germany) – Social Cognition Center
- The Queen’s University Belfast (NIR) – Behavior and Environmental Economics

# Various Research Questions

British Journal of Nutrition (2016), 116, 559–566  
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## Consumers' practical understanding of healthy food choices: a fake food experiment

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(Submitted 10/11/15)

Appetite 95 (2015) 408–414



Contents lists available at ScienceDirect

Appetite

journal homepage: [www.elsevier.com/locate/appet](http://www.elsevier.com/locate/appet)

**Abstract**  
Little is known about the present state of consumers' practical understanding of healthy food choices. The present study investigated whether consumers with normal cognitive abilities in the Swiss general population can identify healthy food choices in the context of a fake food experiment. In the control group they were asked to identify dietary fibre, conditions, products, and suggest that it has important implications for the energy balance.

What is healthy food? Objective nutrient profile scores and subjective lay evaluations in comparison

T. Bucher<sup>\*</sup>, B. Müller, M. Siegrist

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Article

### I Eat Healthier Than You: Differences in Healthy and Unhealthy Food Choices for Oneself and for Others

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\* Author to whom correspondence should be addressed. Tel.: +49-7531-88-2623; Fax: +49-7531-88-5000

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**Abstract:** The present study investigated the observation of three different eating life food choices within a well-controlled experiment with 77 different foods was employed. Six

British Journal of Nutrition, page 1 of 8  
© The Authors 2011

doi:10.1017/S000711451100465X

## The fake food buffet – a new method in nutrition behaviour research

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Research report

## The influence of plate size on meal composition. Literature review and experiment



Public Health Nutrition: 14(R), 1357–1363

doi:10.1017/S136898001100067X

## Improvement of meal composition by vegetable variety

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Health Promotion Journal of Australia  
<http://dx.doi.org/10.1071/HE16011>

Brief Report

## The influence of front-of-pack nutrition information on consumers' portion size perceptions

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# Case Study on the FFB in Zürich

## **1 Description of the facility and research**

## **2 Data structure**

2.1 Data collection

2.2 Nutrient composition data bases

2.3 Data sets and variables

2.4 Data storage and access

## **3 Potential links to Richfields**

3.1 Potential benefits and challenges

3.2 Incentives to share data with RICHFIELDS

## **4 Ethics – Data ownership**

## 2 Fake Food Data Structure

- Served portions (scales), food products counted – weight of food, counts
- Self-reported data from participants (surveys: paper pencil, tablets, computers) – e.g. hunger, preferences, mood, restraint eating, habits, food frequency
- Observational data (Behavior recorded by RA)
- Anthropometric data – weight and height records

Fake food records are linked to nutrient database (Swiss Nutrient Database)

Programs: Qualtrics, Excel, SPSS

Stored: Local and cloud servers (Polybox)

Access: Researcher and research group



## 3 Potential Link to Richfields

- Establishing and sharing best practice protocols for FFB studies
- Fake Food Database (use the same nutrients)
- Calculation and validation of conversion factors
- Replication of findings (Meta-analysis?)
- Cross-country comparisons
- Secondary data analysis

## 4 Ethics

- Data owned by ETHZ Consumer Behavior
- Participants sign consent forms that de-identified data can be used for research
- Details on consent forms for individual studies need to be assessed

Conclusion:

Integration of existing data might be problematic, but

Richfields can define data and ethics standards for the future

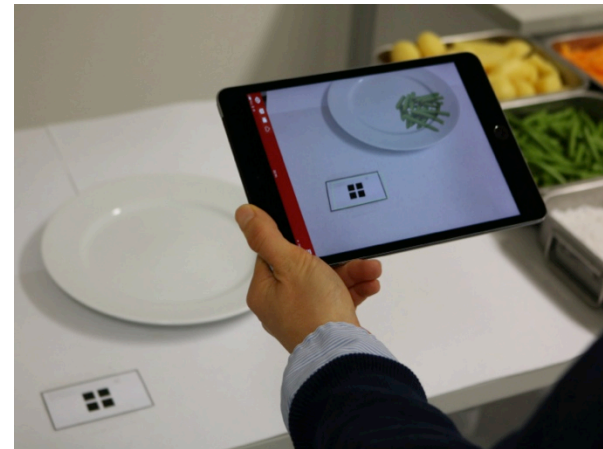
# Workshop on Fake Food Research

Pre-conference workshop at the ISBNPA Conference in Victoria (CA) – **June 7<sup>th</sup> 2017**

- Obtain resources to set up your Fake Food buffet and run experiments
- Connect with existing FFB labs
- New FFB study findings on health claims and portion size are presented
- Gain insights into the latest FFB research advances (linkage with ICT devices)

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[www.richfields.eu](http://www.richfields.eu)

#RICHFIELDS

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Partners:



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