

SCIENCE BENEFITS IN THE GUT HEALTH AREA



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SCIENCE DEVELOPMENTS

LESSONS LEARNED

FUTURE NEEDS

SCIENCE PROGRESS

TECHNOLOGY & TOOL DEVELOPMENT

fish & chips --- databases --- spray drying

BASELINE STUDIES

gut diversity in EU & elderly

INTERVENTION TRIALS

human trials ongoing in 3 projects

SCIENCE OUTPUT



MEETINGS, WORKSHOPS & PPPs

SCIENCE BENEFITS



TECHNOLOGY TRANSFER

EU WIDE COMPETENCE & CRITICAL MASS

NETWORKS

Public-Private Platform in Place

LESSONS LEARNED



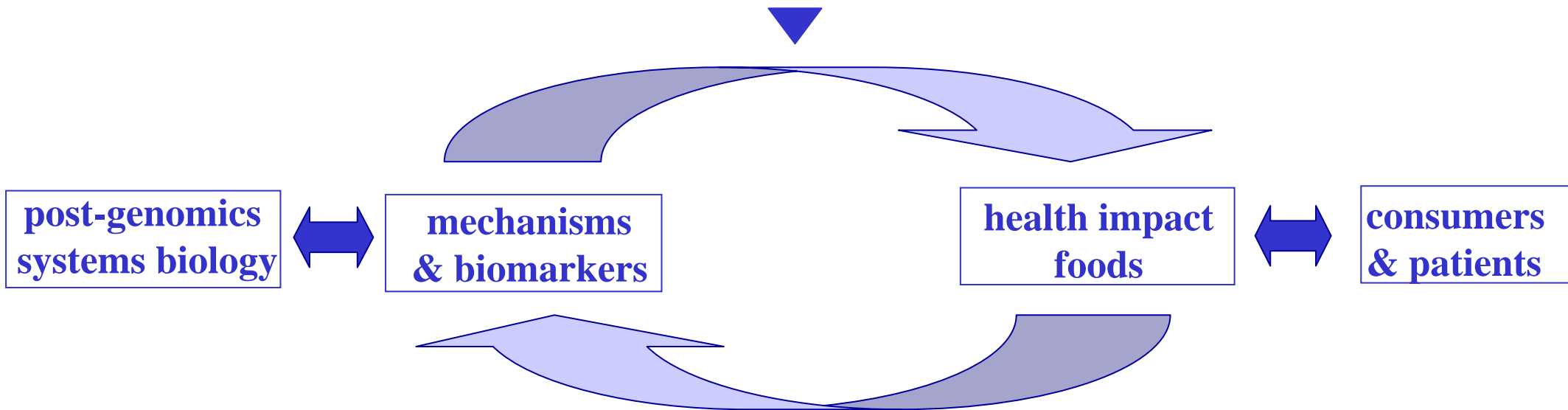
SCIENTIST ARE OPTIMISTS !

HUMAN TRIALS COST TIME, TIME & MONEY

CLUSTER STRUCTURE – LIMITED ALIGNMENT

FUTURE NEEDS

Nutrition, Functional and Health Claims Made on Foods

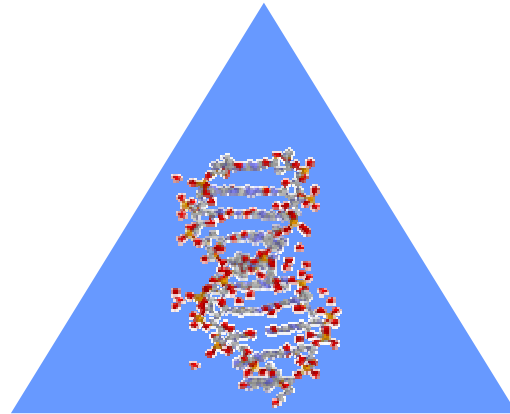


Drive the Gut Health Innovation Cycle

GUT HEALTH

DIET

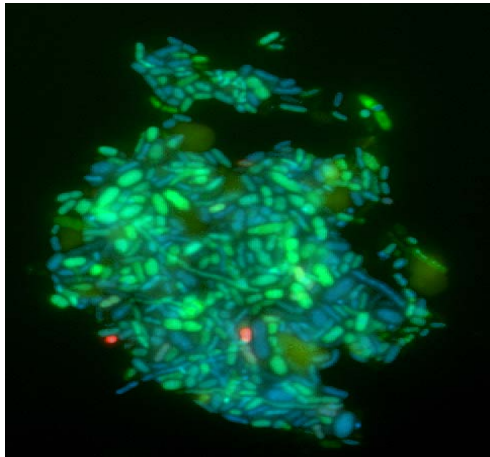
MICROBES



HOST

Microbe - Host Interactions at the Gut Interface

Microbial Metagenome



~ 3 Mb / genome

> 1000 species

high coding density



Human Genome



~ 3,000 Mb / genome

single species

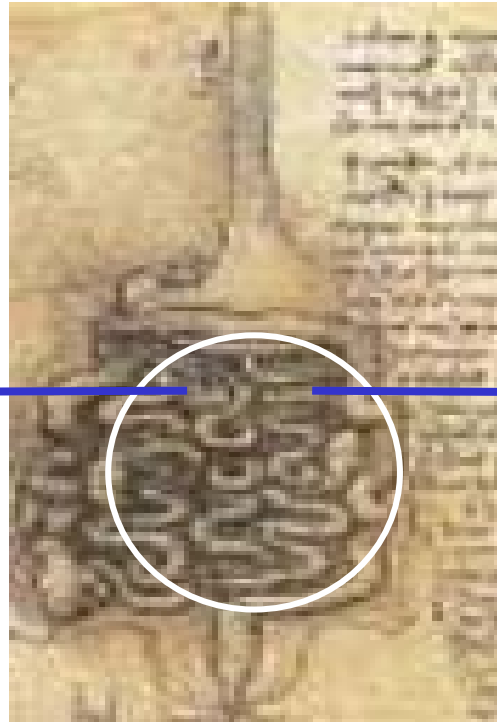
polymorphisms

GUT MICROBIOTA

Diversity
Analysis



New Microbes
e.g. Akkermansia
Subdoligranulum
2-5 % in gut

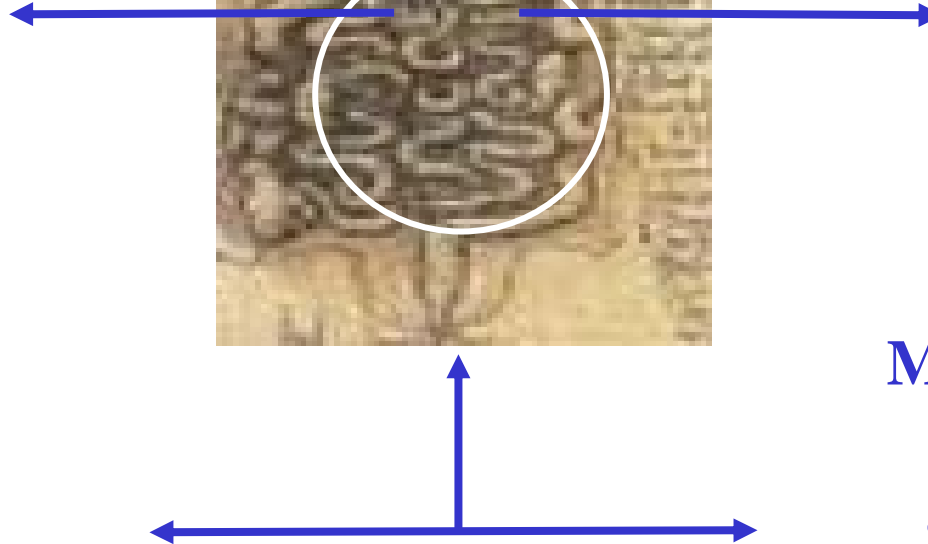


Meta & Post-Genomics
Analysis



Microbial Metagenome
sequence
& functional analysis
'microbiome'

host-microbe
cross-talk



SCIENCE NEEDS



MICROBIAL METAGENOMICS

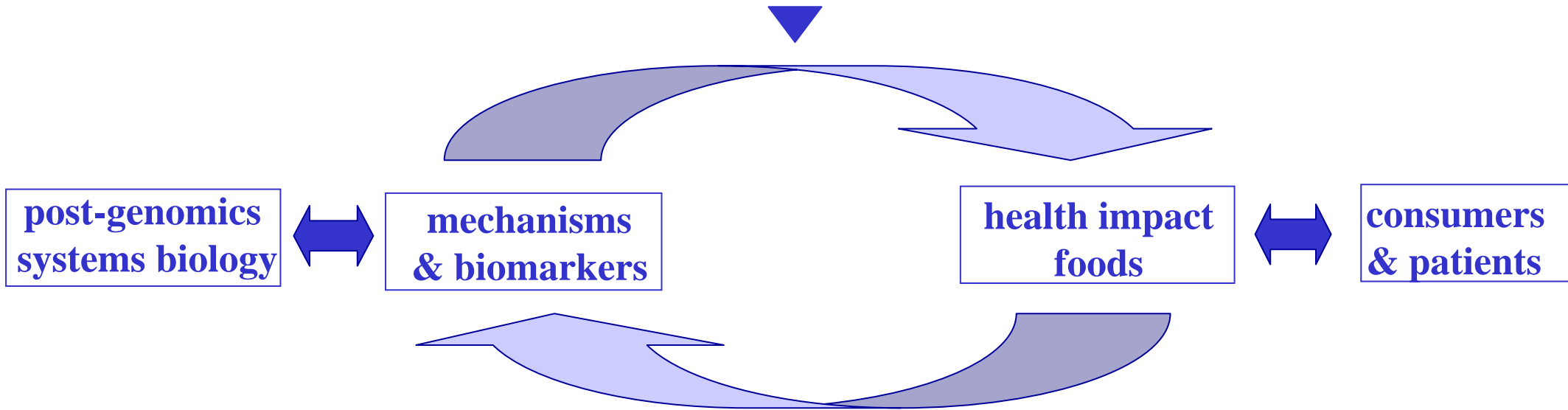
DIET-MICROBE-HOST INTERACTIONS

GUT SYSTEMS BIOLOGY

Technology & Control

Food Innovation Cycle

Nutrition, Functional and Health Claims Made on Foods



Evidence- Based Claims Should Allow Product Positioning & Profit

**Mechanisms Should Promote Understanding, New Product Development
& Quality Control**

POST-GENOMICS DELIVERS

Modulation Immune Properties by LTA Production

Granette, Hols & Mercenier (patent pending)



Modulation Cell Binding by Mannose Adhesin

Pretzer, Bron & Kleerebezem (patent pending)



Metagenomics Identified New Functionalities

INRA, APC & WCFS

probiotic strains selection, new generation probiotics & production control

FURTHER NEEDS IN EU

BUILD ON PUBLIC-PRIVATE PLATFORM

EMBRACE EXISTING EU PROJECTS

SSA GutHealth – candidate countries

MC trainings sites – Gut Site & LABhealth

SSA GutImpact – towards FP7 – TP

**PROVIDE REALISTIC FUNDING OPPORTUNITIES
TO DRIVE THE GUT HEALTH INNOVATION CYCLE**