The First International Workshop on Exotic Flow Cytometry will focus on FC applications other than bio-medical, with the aim to highlight the different fields where flow cytometry is giving a significant contribution, in terms of new components revealed and/or development of new methods of analysis.

A wide overview of the use of FC in food and environment microbiology, plant and animal biotech, green biotechnology and genomics will be offered, as also related to the complex quality control systems of the agri-food supply chain, in the frame-work of the European METROFOOD-Research Infrastructure.

A demonstrative and practical hands-on day for about 30 persons will conclude the Workshop, during which a selected number of participants will also get a chance to analyze their samples.

The potential of flow cytometry (FC) is still largely unexpressed in areas different than the clinical and biomedical applications, for which is widely applied since the '60s of the last century. High processivity, multiparametric and analytical precision are typical features for FC, all well suited to dfferent and unconven-tional (exotic) applications.

During last years, there has been a significant technological progress in FC and a number of new instruments have been, and are going to be, released to the market or developed as prototypes. New fields of application such as winemaking, diary production, brewery, fish and animal farming, plant breeding and genomics, inner and outer water quality control, are now available to FC characterization and manipulation, and more and more are fast developing.

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ENEA is the National Agency for New Technologies, Energy and Sustainable Economic Development, a public body founded in 1956, and it's made of four Departments. ENEA's Department for Sustainability (SSPT) develops, im-plements and promotes eco-innovation in production and consumption sy-stems. SSPT is organized in one Administrative Unit and six Divisions. This Workshop has been organized by SSPT, BIOAG Division, Biotecnology Lab.

The Italian Society of Cytometry GIC has been created in 1982. The Society operates for the Innovation, the Exchange of Knowledge and the Scientific Scholarship in Cell Sciences and in an extended field of aplications.

The Istituto Superiore di Sanita' has been founded in 1934 and conducts scientific research in a wide variety of fields, from cutting-edge molecular and genetic research to population-based studies of risk factors for disease and disability. Research priorities are based on those set forth in the National Health Plan.

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ExoFlowMetry 2019

The First International Workshop on Exotic Flow CytoMetry

Checking small things... better!

13th - 15th NOVEMBER 2019 Rome - Italy

ENEA - Casaccia Research Centre 13th-14th
ISS - Istituto Superiore di Sanità 15th

Preliminary Program
DRAFT

www.italymeeting.it

Workshop Fees (early birds till September 30th 2019)

• Conference only: 250€ (early 200€) plus VAT 22% •
• Conference + hands-on day: 350€ (early 250€) plus VAT 22% •

Wednesday, November 13th, 2019 - Casaccia

9.00 – 9.15 Registration

9.15 – 9.45 Opening and wellcomes

ENVIRONMENTAL MICROBIOLOGY AND FOOD QUALITY

9.45 – 13.30 **SESSION 1 - Environmental Microbiology**

Chairman: **Raffaella Casotti** (SNZ, Naples) **Stefano Amalfitano** (CNR, Rome)

Key Lecture

Boon Nico "*Flow cytometry fingerprinting as microbial community indicators in aquatic systems"* - Ghent University (Belgium)

Müller Susann *"The ecology in the dynamics of microbial communities"* – UFZ, Leipzig (Germany)

Invited Speakers

Besmer Michael "*High-resolution microbiological process monitoring in real-time with fully automated on-line flow cytometry"* – EAWAG/onCyt, Zurich (Switzerland)

Casotti Raffaella *"High frequency flow cytometry for the monitoring of marine microbes"* – SNZ, Neaples (Italy)

Amalfitano Stefano "*Flow cytometry and water quality: new insights from the space research"* – Water Research Institute, IRSA-CNR, Rome (Italy)

SELECTED CONTRIBUTION FROM ABSTRACTS (15min)

Discussion

13.30 -15.00 **Lunch – Coffee & Poster session**

15.00 – 18.30 **SESSION 2 - Food Microbiology**

Chairman: **Annamaria Bevivino** (ENEA, Rome) **Diego Mora** (Univ. Milan, Milan)

Key Lecture

Ferrini Anna Maria and **Bolzoni Giuseppe** *"Application of flow cytometry in the routine control of milk for the total bacterial count"* – ISS, Rome (Italy); IZLER, Brescia (Italy)

Invited Speakers

Arioli Stefania "*Flow cytometry applications in food microbiology"* – UniMi, Milan (Italy)

Guzzon Raffaele "Flow cytometry application in winemaking... " *(tentative title)* – Fondazione Mach, Trento (Italy)

Orlandini Silvia *"Flow cytometry in the dairy sector: the role of ISO/IDF standardisation"* AEOS - ICAR and IBF (Italy)

SELECTED CONTRIBUTION FROM ABSTRACTS (15min)

17.30 -18.00 **Innovative methodologies and practical applications *(short communications)***

Chairman: **Massimo Sanchez** (ISS, Rome) and **Diego Mora** (Univ. Milan, Milan)

Suarez Celia. (Unisensor) *"Multi-class and multi-residue screening of antibiotics by Flow Cytometry Immunoassay "*

Moro Monica, (Sacco System) **"***Flow Cytometry to monitor and improve industrial production of starter cultures and probiotics"*

18.00 – 18.30 Discussion

Departure to Rome

Thursday, November 14th, 2019 – Casaccia

PLANT AND ANIMAL CYTOMETRY AND BIOTECH

09.30- 13.30 **SESSION 3 - Plant Biotech**

Chairman: **Jaroslav Doležel** (IEB, Olomouc), **Sergio Lucretti** (ENEA, Rome)

Key Lecture

Jaroslav Doležel – *"Chromosome sorting helps to clone genes, Sequence genomes and understand their spatial organization"*– IEB, Olomouc (CZ)

Galbraith David – *"Future Flow: where will cytometry take us?"* ISAC and University of Arizona, Tucson AZ (USA)

Invited Speakers

Giorgi Debora *"FISHIS in FLOW: advances in plant flow molecular cytogenetics "* – ENEA, Rome (Italy)

Barcaccia Gianni (UNIPD) *"Flow Cytometry Applied to Plant Reproductive Biology"* – Univ. of Padua, Padua (Italy)

Lucretti Sergio *"Early in vitro screening of plant mutants by flow cytometry: looking at plants like microrganisms"* – ENEA, Rome (Italy)

SELECTED CONTRIBUTION FROM ABSTRACTS (15min)

Discussion

13.30 -15.00 **Lunch – Coffee & Poster session**

15.00 – 18.00 **SESSION 4 – Animal Cytometry**

Chairman: **Enrique O'Connor** (Univ. of Valencia, Spain), **Claudia Zoani** (ENEA, Rome)

Key Lecture

O'Connor Enrique *"Applying flow cytometry to evaluate oxidative stress: new perspectives"*
– Univ. of Valencia, Valencia (Spain)

Invited Speakers

Riondato Fulvio *"Man's best friends and flow cytometry: dogs in the FCM lab"* – Univ. of Turin, Turin (Italy)

Martin Flajshans *"The Use of flow cytometry for study of polyploidy in freshwater fish"* – University of South Bohemia, Ceske Budejovice (Ceck Republic)

SELECTED CONTRIBUTION FROM ABSTRACTS (15min)

16.30 -17.30 ***New instruments, new possibilities...***
(short communications)

Chairman: **David Galbraith** (ISAC and University of Arizona) and **Enrique O'Connor** (Univ. of Valencia, Spain)

Formaro Jorge (Beckman Coulter Italia) *Title to be defined*

Böhner Steffen (Sony Biotechnology) *"Sony's new ways in Flow Cytometry"*

Di Berardino Marco (Amphasys) *"Impedance Flow Cytometry: a versatile label-free and reliable alternative to determine viability at the single cell level (e.g. pollen and yeast)"*

17.30 – 18.00 Discussion

Departure to Rome

21.00 Social event

Friday, November 15th, 2019 – ISS, Rome

EXOTICases: DEMONSTRATIVE AND PRACTICAL COURSE

09..30 – 16.30 **ISS Labs**
(preliminary)

Analisys & sorting of nanoparticles
Demonstrators: Massimo Sanchez, Valentina Tirelli, Luca Pasquini.....

FISHIS- labelling, confocal analysis and flow sorting of Plant Chromosome and nuclei
Demonstrators: ENEA,ISS, ...

Monitoring water quality in tap water
Demonstrators: Amalfitano, Casotti,...

Evaluation of cell viability in food supplement marketed as probiotic
Demonstrators: Mora, Arioli....

Evaluation of marine water quality...
Demonstrators: Balestra, Casotti.....

others.....

11.00 -11.30 Coffee break

13.00 -14.00 Lunch

14.00 -16.00 **Practicals** (continue)

16.00-16.30 ***Get together and final remarks***