



International Society
of Cancer Metabolism

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CANCER METABOLISM

ISCaM 2017

4th Annual Meeting of the International Society of
Cancer Metabolism



19-21 October 2017
Bertinoro, Italy

SCIENTIFIC PROGRAM

UNDER THE AUSPICES OF



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI
SCIENZE BIOMEDICHE E NEUROMOTORIE



SERVIZIO SANITARIO REGIONALE
EMILIA - ROMAGNA

Istituto Oncoepidemiologico Rizzoli di Bologna
Istituto di Ricovero e Cura a Carattere Scientifico



Rendiamo il cancro sempre più curabile.

Dear Colleagues,

It is our great pleasure to invite you to participate to ISCaM 2017. This conference is



intended as an interdisciplinary forum for students, postdocs, and group leaders to mingle, exchange ideas and techniques, and connect with their peers to discuss recent advances in cancer metabolic pathways, cancer microenvironment and cancer ion dynamics as major fields of investigation for clinical translation.

This 3-day event will cover several aspects of cancer metabolism including the interactions between cancer and reactive cells, microenvironmental changes such as local acidosis and hypoxia, and subcellular events, including autophagy, lysosome and mitochondrial deregulation, and lipid metabolism. Different experts and trainees in genomics, molecular biology, biochemistry, cell biology, in vitro and in vivo imaging, diagnostics, computational analysis, and nutrition will exchange their experiences and ideas to foster the development of effective treatments based on a comprehensive understanding of cancer.

We have intended this meeting as a forum for the presentation of state-of-the-art overviews on the most recent findings in cancer metabolism, as well as an opportunity to foster interdisciplinary and international collaboration. On purpose, we have selected a venue that ensures a non-stop interaction among participants at a medieval fortress in the beautiful countryside of the Romagna region, providing hospitality to attendees and representing an ideal location for side interactions.



Welcome to Bertinoro!

ISCaM2017 chairs

Sofia Avnet, PhD

Nicola Baldini, MD

BOARD MEMBERS & SCIENTIFIC COMMITTEE

Angela Otto (Germany)

Angelo De Milito (Sweden)

Antonio Moschetta (Italy)

Annamaria Porcelli (Italy)

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SCIENTIFIC SECRETARIAT

Francesca Schirru (Italy)

INVITED SPEAKERS



Ravid Straussman (*Weizmann Institute of Science, Rehovot, Israel*)

After completing his MD/PhD at the Hebrew University Medical School, and postdoctoral fellowships at Howard Cedar's lab at the same institution, Doctor Straussman investigated the epigenetics of normal and cancer tissues in a genome-wide scale. He then completed a second post doc training at Todd Golub's lab at the Broad Institute of Harvard and MIT to study the effects of the tumor microenvironment on chemoresistance. Since 2013 he is a PI at the Weizmann Institute of Science, Israel, and has been investigating on how bacterial presence in tumor microenvironment affects chemoresistance.



Dominique Heymann (*University of Nantes, Nantes, France*)

Professor of Histology and Embryology at the University of Nantes, France since 2009 he specialized in the study of bone cancer. Since 2015 he is also Professor of Bone Oncology at the Department of Oncology and Metabolism at the University of Sheffield (UK) leading a European Sarcoma Research Unit. He will focus on how tumour heterogeneity challenges current staging of cancer.



Antonio Moschetta (*University of Bari, Bari, Italy*)

A PhD in Hepatology and Gastroenterology at the University Medical Center of Utrecht, The Netherlands (2001). PhD training at Howard Hughes Medical Inst. Research Fellow at UT Southwestern (USA). Since 2005 he is a principal investigator at the Fondazione Mario Negri Sud investigating nuclear receptors in gastrointestinal biology and pathophysiology, and associate professor of Internal Medicine and Clinical Nutrition at the University of Bari. Since 2013 he is the Scientific Director of the National Cancer Institute "Giovanni Paolo II" of Bari. He will address how obesity, sedentary lifestyle, and nutritional habits affects cancer development.

MEETING VENUE

ISCaM2017 will be held at the University Residential Centre and Conference Centre of Bertinoro (<http://www.ceub.it>), in the restored building complex of Bishop's ancient fortress, the military outpost of the Rivellino, and the ex Monastery of Corpus Domini

TRANSPORTATION

Transfer from Bologna to Bertinoro (1 h and 20 min by bus) will be organized on October 19 from the airport and the railway station. Transfer from Bertinoro to Bologna will be organized at the end of the Meeting, soon after lunch time on October 21. Transfers are included in the registration fee.

If you prefer to reach Bertinoro by yourself, the conference site is 6 Km from SS9 (Via Emilia), immediately east of Forlimpopoli. The cost of a taxi from the airport or the railway station of Bologna is about 70 €.

ACCOMODATION

Board and lodging are included in the registration fee (2 nights). Accommodation will be managed through Ce.U.B organization. Rooms are located in the Fortress and in the Episcopal Seminary. Rooms are all equipped with bathroom, Wifi connection, telephone and TV set. Lunch and breakfast (7.30 - 8.30 am) will be served at the Episcopal Seminary. A limited number of single rooms are available. Additional accomodation at a walking distance is also available.

INTERNET ACCESS

Wireless internet access at Bertinoro Congress is available to all participants of ISCaM2017. Free Wi-Fi connection is present in all conference rooms, in the rooms and open spaces of the monumental area.

SOCIAL EVENTS

All the social events are included in the registration fee. On the 19th, an informal three-course dinner, open to all ISCaM2017 attendees will be held at Ca de bè in Bertinoro. Join us for a typical Romagna meal and seize the opportunity to network with your colleagues in a relaxing atmosphere. On the 20th, the social event will be held in Forlimpopoli, in the Artusian Restaurant. A tour to the Artusian museum before the dinner is also planned. The transfer from Bertinoro to Forlimpopoli for all the attendees will be set up by the conference organizers.

Pellegrino Artusi, writer and gourmet, is considered as the father of Italian cuisine. He was born in Forlimpopoli, on 4 August 1820 where he lived until 1851, dealing with family grocery trade. In 1891 he published at his own expense 'Science in the kitchen and the art of eating well', cooking manual and recipes collection, resulting from the sum of his knowledge that he had gained in many trips in the north and central Italy and from the experimentation of the recipes together with the chefs Francesco Ruffilli and Marietta Sabatini.

MEET THE EXPERT SESSION

During this one-hour session, an expert is on hand to stimulate discussion, answer questions, and offer advice on a specific topic. This format is intended to encourage a personal approach to learning. Each of the 6 sessions is limited to a maximum of 25 participants on a first come first served basis.

BE A CHAIRMAN AS A YOUNG INVESTIGATOR

Young Investigators that have marked their availability to moderate a session will be selected and will serve as session chairpersons.

TRAVEL GRANTS

Travel Grants supported by ISCaM2017 sponsors have been assigned to selected junior attendees (PhD students or PostDocs with less than 5 years after PhD) to fully cover the costs of registration. Candidates must be ISCaM members at the time of abstract submission.

The winners are:

Asuaje Agustín (Argentina)
Valentina Audrito (Italy)
Georgina Barnabas (Israel)
Lindsay Broadfield (Canada)
Alessandro Carrer (USA)
Giuseppe Ferrauto (Italy)
Zinger Lotem (Israel)
Felipe Muñoz Cordova (Chile)
Shmulevich Riva (Israel)
Shonag Russel (USA)

AWARDS

ISCaM Young Investigator Awards. One Best Poster Award and one Best Oral Award (350 €) will be assigned during the meeting. To apply, see the abstract submission instructions.

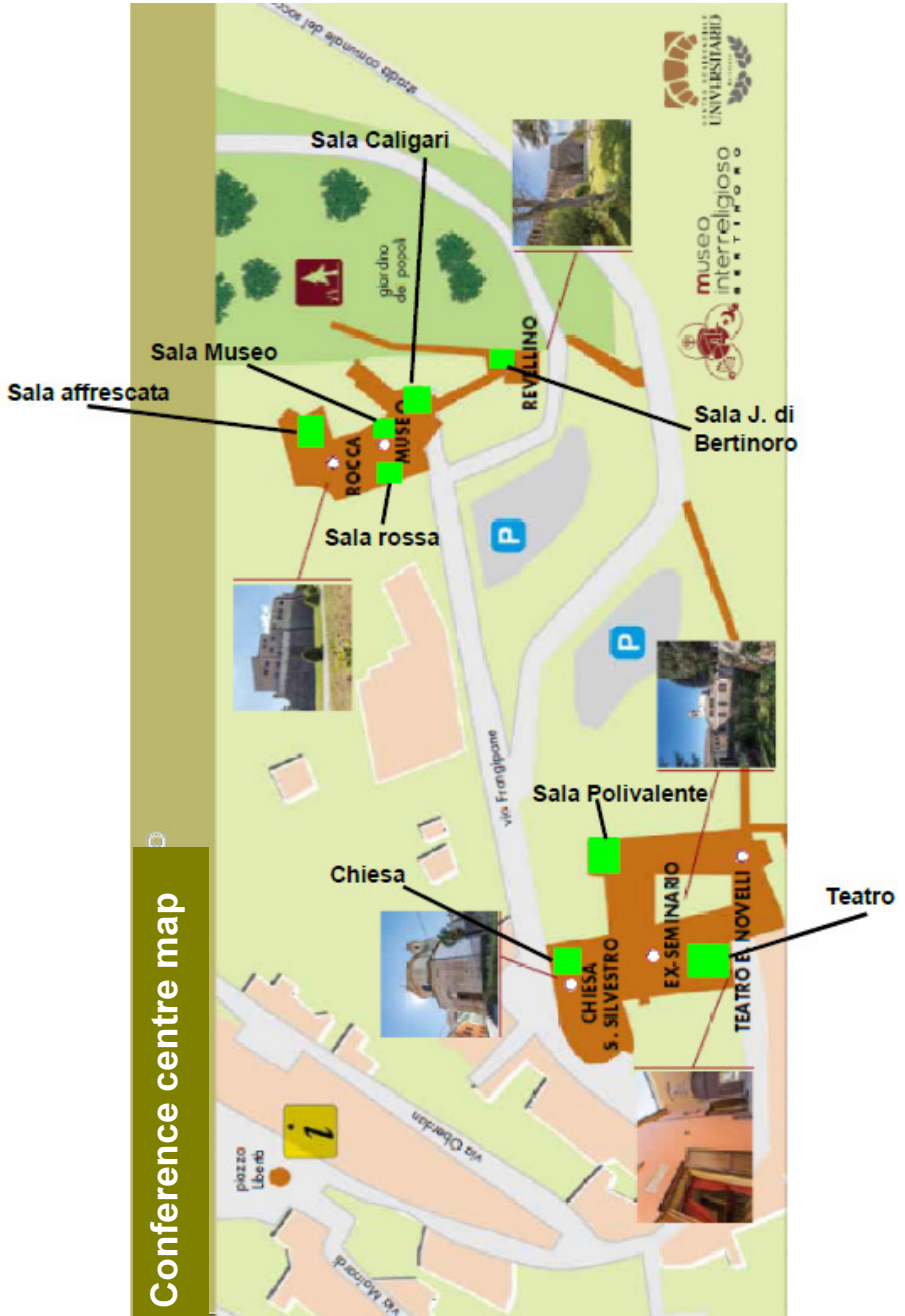
Eligibility criteria include:

- Junior attendees (PhD student or PostDoc <5 years after PhD – tutor statement mandatory);
- First author of an abstract at ISCaM2017;
- Registration to ISCaM2017;
- ISCaM membership.

EACR Best Poster Awards. Three awards (100 Euros) will be assigned during the meeting. To apply see the “abstract submission instructions”. Both senior and junior registered attendees are eligible.

All winners will be announced during the social event on October 20th.

CONFERENCE CENTRE



Registration and Lunch Buffet (Sala Polivalente)

CONFERENCE OPENINGSofia Avnet (*Bologna, Italy*)

14.00-14.15 Opening

14.15-14.45 **Opening lecture** – The tumor microbiome, an important component of the tumor microenvironment.**Ravid Straussman** (*Rehovot, Israel*)**SESSION 1. MICROENVIRONMENT AND CANCER METABOLISM**Holger Becker (*Hannover, Germany*)Silvia Lemma (*Bologna, Italy*)15.00-15.15 Stromal uptake and transmission of acid is a pathway for venting cancer cell. **O1** Hulikova A, Black N, Hsia LT, Wilding J, Bodmer WF, Swietach P (*Oxford, United Kingdom*)15.15-15.30 Lactate shuttling as a fuel for osteolytic activity in giant cell tumor of bone. **O2** Lemma S, Avnet S, Errani C, Donati DM, Baldini N (*Bologna, Italy*)15.30-15.45 Blockade of glutamine synthetase skews macrophages towards a M1-like phenotype and inhibits tumor metastasis. **O3** Castegna A, Menga A, Palmieri EM (*Bari, Italy*)15.45-16.00 High levels of lactate enhance pyruvate carboxylase-dependent anaplerosis in MCF-7 cells growing under precarious nutrient conditions. **O4** Gkiouli M, Biechl P, Hintermair J, Eisenreich W, Otto AM (*Garching, Germany*)16.00-16.15 Interactions via tunneling nanotubes and transfer of mitochondria between mesenchymal stem cells and target cancer cells effects on metabolism and biological function. **O5** Nakhle J, Gerbal-Chaloin S, Daujat-Chavanieu M, Hugnot JP, Charlot B, Vignais ML (*Montpellier, France*)16.15-16.30 Role of microenvironment on metabolism and migration of a SDHB silenced pheochromocytoma cell line on metabolism and biological function. **O6** Martinelli S, D'Antongiovanni V, Richter S, Canu L, Pacak K, Eisenhofer G, Mannelli M, Rapizzi E (*Florence, Italy*)16.30-16.45 Mitochondria as CAF-fuelled powerhouse in prostate carcinoma cells. **O7** Ippolito L, Morandi A, Comito G, Taddei ML, Iscaro A, Parri M, Masquelier J, Muccioli GG, Sonveaux P, Giannoni E, Chiarugi P (*Florence, Italy*)

16.45

Coffee Break (Sala Caligari)

Conference rooms
for DAY 1

- > 14.00 Opening:
Chiesa
- > 15.00 Session 1:
Sala Affrescata
- > 15.00 Session 2:
Sala J. Da Bertinoro
- > 17.15 Session 3:
Sala Affrescata
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Sala J. Da Bertinoro

SESSION 2. METABOLIC CONTROL OF CANCER STEMNESS**Stephan Reshkin** (*Bari, Italy*)**Alessandro Carrer** (*Philadelphia, USA*)

15.00-15.15 **O8** Role of ECM collagen I levels in regulating PDAC parenchymal cell (CPC) and cancer stem cell (CSC) metabolic plasticity-3. **Valente D, Greco MR, Baltazar F, Queirós O, Cannone S, Cardone RA, Reshkin SJ** (*Bari, Italy*)
EACR sponsored lecture

15.15-15.30 **O9** ATP-citrate lyase links metabolism and histone modification during pancreatic tumorigenesis. **Carrer A, Trefely S, Parris J, Sela Y, Norgard R, Garcia BA, Blair IA, Snyder NW, Stanger BZ, Wellen KE** (*Philadelphia, USA*)
Sprint Bioscience Travel grant

15.30-15.45 **O10** Prominent role of RAB39A-RXRB axis in cancer development and stemness. **Chano T, Kita H, Avnet S, Lemma S, Baldini N** (*Shiga, Japan*)

15.45-16.00 **O11** The metabolic profile of chronic myeloid leukaemia stem cell subsets as a target to suppress treatment-resistant minimal residual disease. **Poteti M, Cheloni G, Lulli M, Mazure NM, Rovida E, Dello Sbarba P** (*Florence, Italy*)

16.00-16.15 **O12** V-ATPase control of EVs signaling in glioma stem cells on metabolism and biological function. **Bertolini I, Terrasi A, Bosari S, Vaira V** (*Milan, Italy*)

16.15-16.30 **O13** 3D interactions between tumor cells and mesenchymal stroma are crucial for cancer stemness, invasiveness, and chemoresistance. **Cortini M, Avnet S, Baldini N** (*Bologna, Italy*)

16.30-16.45 **O14** Notch signalling in orofacial cancers. **Mitsiadis T** (*Zurich, Switzerland*)

16.45

Coffee Break (Sala Caligari)

SESSION 3. PH DYNAMICS AND CA-9 TARGETING**Silvia Pastorekova** (*Bratislava, Slovakia*)**Russell Shonagh** (*Tampa, USA*)

17.15-17.30 **O15** Ectodomain cleavage of carbonic anhydrase IX affects tumorigenic behavior of cancer cells. **Zatovicova M, Vidlickova I, Jelenska L, Kopacek J, Pastorekova S** (*Bratislava, Slovakia*)

17.30-17.45 **O16** Protons: The driving force in cancer metastasis? **Shonagh R, Xu L, Gillies RJ** (*Tampa, USA*)
Nikon Travel grant

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- 17.45-18.00 Voltage gated proton channels as essential structures in leukemic Jurkat
O17 T cell pH homeostasis and survival. **Asuaje A, Enrique N, Martin P, Orlowsky A, Aiello EA, Smaldini P, Docena G, Milesi V** (*La Plata, Argentina*)
Promega Travel grant
- 18.00-18.15 Extracellular acidosis triggers a senescence-like phenotype associated
O18 with reprogramming in human melanoma cells. **Boehme I, Bosserhoff AK** (*Erlangen, Germany*).
- 18.15-18.30 Functional relationships between ion channels and pH-regulating
O19 mechanisms in colorectal cancer. **Iorio J, D'Amico M, Arcangeli A** (*Florence, Italy*)
- 18.30-18.45 Extracellular carbonic anhydrase IX supports transport activity of MCT5
O20 by direct interaction. **Ames S, Jamali S, Becker HM** (*Hannover, Germany*)
- 18.45-19.0 Intratumoral acidosis supports cancer aggressiveness in bone metastasis.
O21 **Di Pompo G, Lemma S, Baldini N, Avnet S** (*Bologna, Italy*)
- 19.00-19.15 Clinical trial of radiotherapy after intravenous injection of acridine orange
O22 for cancer patients: First report. **Kusuzaki K, Yoshimura H, Kitano S, Takai S** (*Nara, Japan*)

20.30

Welcome Cocktail and Dinner

SESSION 4. AUTOPHAGY AND LYSOSOMES

Angelo De Milito (*Stockholm, Sweden*)

Mila Gugnoni (*Reggio Emilia, Italy*)

- 17.15-17.30 Cadherin-6 promotes EMT and cancer metastasis by restraining
O23 autophagy. **Gugnoni M, Sancisi V, Gandolfi G, Manzotti G, Ragazzi M, Giordano D, Tamagnini I, Tigano M, Frasoldati A, Piana S, Ciarrocchi A** (*Reggio Emilia, Italy*)
- 17.30-17.45 Autophagy and VPS34 as novel targets in anti-cancer therapy. **Yu Y,**
O24 **Dyczynski M, Parpal S, Braga T, Hägg-Olofsson M, Pokrovskaja Tamm K, De Milito A, Grandér D** (*Stockholm, Sweden*)
- 17.45-18.00 ROS levels and cell death are increased in T-all cells by mTORC
O25 inhibition. **Raimondi V, Micol Silic-Benussi M, Linseisen M, Urso L, Cavallari I, Minuzzo S, del Bianco P, Scattolin G, Rende F, Basso G, Indraccolo S, D'Agostino DM, Ciminale V** (*Padova, Italy*)
- 18.00-18.15 PIK3C2G loss promotes pancreatic cancer through mTOR regulation
O26 and metabolic rewiring. **Martini M, Ratto E, De Santis MC, Wyart E, Fan F, Cappello P, Porporato PE, Hirsch E** (*Turin, Italy*)

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SESSION 5. LIPID METABOLISMCyril Corbet (*Brussels, Belgium*)Karin Bartel (*Munich, Germany*)

- 18.15-18.30** The phospholipase DDHD1 is a new target for the development of antitumor therapies in colorectal cancer. **O27** Raimondo S, Cristaldi M, Fontana S, Saieva L, Monteleone F, Conigliaro A, Zito G, Alessandro R (*Palermo, Italy*)
- 18.30-18.45** Targeting lipid metabolism in cancer cells by inhibiting the V-ATPase. **O28** Bartel K, Winzi M, Ulrich M, Koeberle A, Menche D, Werz O, Müller R, Guck J, Vollmar AM, von Schwarzenberg K (*Munich, Germany*)
- 18.45-19.00** Investigation of lipidome perturbations caused by anti-VEGF treatment in ovarian cancer xenografts. **O29** Venturoli C, Ferrazza R, Verza M, Curtarello M, Grassi A, Guella G, Indraccolo S (*Padova, Italy*)

20.30

Welcome Cocktail and Dinner

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SESSION 6. MITOCHONDRIA IN CANCERAnna Maria Porcelli (*Bologna, Italy*)Ivana Kurelac (*Bologna, Italy*)

- 8.30-8.45 MYC induces the mTORC1 regulator TSC1 for mitochondrial homeostasis and tumour maintenance in Burkitt's lymphoma. **Hartleben G, Müller C, Krämer A, Schimmel H, Zidek LM, Dornblut C, Winkler R, Eichwald S, Kortman G, Kosan C, Kluiver J, Petersen I, Van den Berg A, Wang ZQ, Calkhoven CF** (*Neuherberg, Germany*)
- 8.45-9.00 Mitochondrial reactive oxygen species prime T-all cells to apoptosis by engaging the OMA1-OPA1 axis. **Scattolin G, Silic-Benussi M, Cavallari I, Minuzzo S, Francescato S, del Bianco P, Basso G, Indraccolo S, D'Agostino DM, Ciminale V** (*Padova, Italy*)
- 9.00-9.15 Utilising the re-purposed antidepressant clomipramine to elicit mitochondrial-mediated apoptosis in human glioblastoma cells. **Higgins SC, Alagbaoso A, Javid T, Polyzoidis S, Ashkan K, Fillmore HL, Pilkington GJ** (*Portsmouth, United Kingdom*)
- 9.15-9.30 Defective respiratory complex I triggers metabolic reprogramming in cancer cells. **Iommarini L, Kurelac I, Columbaro M, Dusi S, Leone G, Vatrinet R, Gasparre G, Porcelli AM** (*Bologna, Italy*)
- 9.30-9.45 Skeletal muscle mitochondrial energy metabolism in cancer cachexia: clinical and mechanistic approaches. **Dolly A, Cournet J, Dumas JF, Servais S** (*Tours, France*)
- 9.45-10.00 The heme exporter FLVCR1a modulates cellular redox status and mitochondrial metabolism: implication in colorectal cancer in Burkitt's lymphoma. **Fiorito V, Destefanis F, Marchi S, Medico E, Cancelliere C, Bardelli A, Silengo L, Altruda F, Pinton P, Tolosano E** (*Turin, Italy*)

10.00

Coffee Break (Sala Caligari)

SESSION 7. METABOLIC CONTROL OF CANCER BEHAVIOUR IPierre Sonveaux P (*Brussels, Belgium*)Georgina D Barnabas (*Tel Aviv, Israel*)

- 8.30-8.45 Limiting nutrient conditions reroute metabolic pathways in tumor cells. **Otto AM, Gkiouli M, Biechl P, Hintermair J, Eisenreich W** (*Garching, Germany*)
- 8.45-9.00 PHGDH and PSAT confer metabolic vulnerability to IDH2-driven reprogramming in breast cancer. **Barnabas G, Michal H, Joo SL, Yair P, Livnat JA, Saverio T, Eyal G, Eytan R, Tamar G** (*Tel Aviv, Israel*)

Sprint Bioscience Travel Grant

Conference rooms
for DAY 2

- > 8.30 Session 6:
Sala J. Da Bertinoro
- > 8.30 Session 7:
Sala Affrescata
- > 10.00 Poster session:
Sala Caligari
- > 14.30 ISCaM Assembly:
Sala J. Da Bertinoro
- > 16.15 Session 8:
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Sala Affrescata

9.00-9.15 Methyglyoxal, a glycolysis side-product, increases the metastatic potential of human breast cancer cells. **Nokin MJ, Durieux F, Bellier J, Gabriel M, Peulen O, Christine M, Charlotiaux B, Van Laere S, Roncarati P, Herfs M, Lambert C, Colige A, Caers J, Castronovo V, Bellahcène A** (*Liège, Belgium*)
O38

9.15-9.30 OXPPOS inhibition and PPP induction are early events priming preneoplastic lesions toward HCC development. **Kowalik MA, Gozzo G, Morandi M, Perra A, Menegon S, Giordano S, Gramantieri L, Chiarugi P, Rasola A, Columbano A** (*Cagliari, Italy*)
O39

9.30-9.45 Involvement of P2X7, a membrane receptor for ATP, in the invasive properties of mammary cancer cells. **Brisson L, Jelassi B, Chamouton J, Couillin I, Gombault A, Frank PG, Jiang L-H, Chevalier S, Besson P, Roger S** (*Tours, France*)
O40

9.45-10.00 The IKB kinase E links the innate immune response with serine and Warburg metabolism in breast cancer. **Xu R, Jones W, Wilcz-Villega E, Rajeeve V, Nagano A, De Costa S, Chelala C, Cutillas P, Frezza C, Bianchi K** (*London, United Kingdom*)
O41

10.00

Coffee Break (Sala Caligari)

10.00-11.30 POSTER SESSION**11.30-12.30 MEET THE EXPERT**

MTE SESSION 1- Thimios Mitsiadis (*Zurich, Switzerland*)
(Sala Affrescata) What to consider in developing organoids and tissue-on-a-chip

MTE SESSION 2- Pierre Sonveaux (*Brussels, Belgium*)
(Sala Rossa) Studying lactate as a major factor for cancer behaviour

MTE SESSION 3- Angelo De Milito (*Stockholm, Sweden*)
(Sala Museo) Tips and tricks to study autophagy in cancer

12.30-13.30 MEET THE EXPERT

MTE SESSION 4- Sofia Avnet (*Bologna, Italy*)
(Sala Affrescata) Mesenchymal stroma and cancer: Tips and tricks on studying this complex interaction

MTE SESSION 5- Barbara Kofler (*Salzburg, Austria*)
(Sala Rossa) Ketogenic diet and cancer metabolism: does it work?

MTE SESSION 6- Mojca Pavlin (*Ljubljana, Slovenia*)
(Sala Museo) Modulating cancer metabolism combined with nanotechnology for anti-cancer therapy

13.30

Lunch (Caffetteria)

ISCaM2017 - 4th Annual Meeting - Bertinoro, 19-21 October 2017

14.30-15.30 ISCAM ASSEMBLY**15.30-15.45 INDUSTRY SYMPOSIUM**

16.00 Coffee Break (Sala Caligari)

SESSION 8. TARGETING OF MITOCHONDRIA AND METABOLISM

Giuseppe Gasparre (*Bologna, Italy*)

Deborah Grasso (*Brussels, Belgium*)

16.15-16.30 Targeting respiratory complex I causes HIF1A destabilization in cancer cells and activates stroma-mediated angiogenesis. **Kurelac I, Vatrinet R, Iommarini L, Amato L, Vidone M, De Luise M, Leone G, Girolimetti G, Vidali S, Ragazzi M, Columbaro M, Gibellini L, Ombrato L, Cosarizza A, Kofler B, Malanchi I, Porcelli AM, Gasparre G** (*Bologna, Italy*)

O42

16.30-16.45 Effects of mitochondrial calcium uniporter modulators on cells growth and migration. **De Mario A, Tosatto A, Mammucari C, Rizzuto R** (*Padova, Italy*)

O43

16.45-17.00 Celecoxib inhibits mitochondrial O₂ consumption, promoting superoxide production and causing extensive apoptosis of metastatic cancer cells. **Pritchard R, Rodríguez-Enríquez S, Pacheco-Velázquez SC, Bortnik V, Moreno-Sánchez R, Ralph S** (*Gold Coast, Australia*)

O44

17.00-17.15 Inhibition of mitochondrial substrate-level phosphorylation kills glutaminolytic cancer cells. **Doczi J, Horvath G, Flores R, Brown A, Seyfried T, Tretter L, Adam-Vizi V, Chinopoulos C** (*Budapest, Hungary*)

O45

17.30-17.45 Mitochondrial and glycolytic inhibitors hamper cancer viability and enhance response to conventional chemotherapy. **Valente D, Granja S, Baltazar F, Queirós O** (*Braga, Portugal*)

O46

17.45-18.00 The oncogenic role of the mitochondrial chaperone TRAP1. **Rasola A** (*Padova, Italy*)

O47

19.30 Social Dinner

**Conference rooms
for DAY 2**

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- > 10.00 Poster session: Sala Caligari
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Sala Affrescata

SESSION 9. METABOLIC CONTROL OF CANCER BEHAVIOUR IIPaolo Porporato (*Turin, Italy*)Lindsay A Broadfield LA (*Hamilton, Canada*)

- 16.15-16.30 Liver PGC-1 β drives mitochondrial signatures that contributes to hepatocellular carcinoma development. **Piccinin E, Peres C, Bellafante E, Villani G, Moschetta A** (*Bari, Italy*)
O48
- 16.30-16.45 A novel ensemble approach to providing small molecule support for validation of cellular targets confirms that glycolysis inhibition is a viable antiproliferative strategy in leukemic cells. **Zweifach A** (*Storrs, USA*)
O49
- 16.45-17.00 Targeting breast cancer cell survival and migration through inhibition of hexosamine biosynthetic pathway. **Ricciardiello F, Votta G, Palorini R, Tinelli F, Raccagni I, Brunelli L, Pastorelli R, Moresco RM, Chiaradonna F** (*Milan, Italy*)
O50
- 17.00-17.15 Integrated control of metabolism by EGFR-PDK1 dependent signaling. **O51 Velpula KK, Guda MR, Asuthkar S, Tsung AJ** (*Peoria, USA*)
- 17.15-17.30 The tumor suppressor KLOTHO: a master regulator of metabolism in breast cancer. **O52 Shmulevich R, Tammi R, Tali S, Ido W, Tamar R** (*Tel Aviv, Israel*)
Sprint Bioscience Travel Grant
- 17.45-18.00 The gut microbiome as a mediator of metformin's anti-cancer effects. **O53 Broadfield LA, Tsakiridis T, Muti P, Schertzer JD, Steinberg GR** (*Hamilton, Canada*)
Agilent Travel Grant
- 18.00-18.15 Mitochondrial subtypes of luminal breast cancer have different carbon source preference. **O54 Bentham RB, Menegollo M, Esculier C, Agarwal S, Ren Z, Pignataro V, Bryson K, Stein R, Yuneva M, Szabadkai G** (*London, United Kingdom*)

19.30

Social Dinner

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- > 8.30 Keynote lecture: Teatro
- > 9.00 Session 10: Teatro
- > 11.00 Session 11: Teatro
- > 12.30 Closure: Teatro

8.30-9.00 **Keynote lecture.** Tumor heterogeneity: the key advantages of single-cell analysis.

Dominique Heymann (*Sheffield, United Kingdom*)

SESSION 10. IMAGING OF CANCER METABOLISM

Valery Khrantsov (*Morgantown, USA*)

Giuseppe Ferrauto (*Turin, Italy*)

- 9.00-9.15 Interstitial inorganic phosphate as a tumor microenvironment metabolic marker for tumor progression and aggressiveness. **Khrantsov VV, Bobko AA, Eubank TD, Evans J, Dikov MM** (*Morgantown, USA*)
O55
- 9.15-9.30 Multiparametric magnetic resonance imaging study of murine prostate cancer. **Ferrauto G, Di Gregorio E, Lanzardo S, Manuela I, Ciolli L, Aime S** (*Turin, Italy*) **Promega Travel Grant**
O56
- 9.30-9.45 Glioblastoma pH mapping by using Yb-HPDO3A CEST MRI probe. **Ferrauto G, Di Gregorio E, Gimenez U, Auboiroux V, Berger F, Aime S, Lahrech H** (*Turin, Italy*)
O57
- 9.45-10.00 Parahydrogen hyperpolarized pyruvate for metabolic studies on breast cancer cell. **Cavallari E, Carrera C, Aime S, Reineri F** (*Turin, Italy*)
O58
- 10.00-10.15 Combined in vivo imaging of hypoxia and pH reveals a lack of spatial correlation in a breast tumor murine model. **Anemone A, Consolino L, Bracesco M, Aime S, Longo D** (*Turin, Italy*)
O59
- 10.15-10.30 Multiparameter profiling of metabolic tumor microenvironment (tme) using paramagnetic probes for evaluation of TME stress, immunosuppressive and metastatic potential and approaches for TME modulation. **Evans J, Bobko A, Cole S, Tchekneva E, Chekneva I, Akhter A, Antonucci A, Carbone DP, Samouilov A, Castro J, Khrantsov V, Dikov M** (*Columbus, USA*)
O60

10.30

Coffee Break (Sala Polivalente)

SESSION 11. CANCER METABOLISM AND DRUG RESISTANCE

Monica Montopoli (*Padova, Italy*)

Luca Zampieri (*Padova, Italy*)

- 11.00-11.15 Dissecting the role of mitochondrial genetics and metabolism in cancer cells sensitivity to chemotherapeutic drugs. **Girolimetti G, Guerra F, Kurelac I, Iommarini L, Mastropasqua F, Amato LB, De Luise M, Leone G, Bucci C, Shoshan M, Porcelli AM, Gasparre G** (*Bologna, Italy*)
O61

- > 8.30 Keynote lecture: Teatro
- > 9.00 Session 10: Teatro
- > 11.00 Session 11: Teatro
- > 12.30 Closure: Teatro

- 11.15-11.30 O62** Estrogen receptor activating mutations confer an aggressive phenotype to endocrine resistance breast cancer cells through alteration of tumor metabolism. **Lotem Z, Keren ML, Tomer B, Metsada PC, Tamar R, Idow W** (*Tel Aviv, Israel*) Promega Travel Grant
- 11.30-11.45 O63** Cisplatin chemoresistance in ovarian cancer is associated to increased glutamine uptake. **Zampieri L, Grasso D, Montopoli M, Sonveaux P** (*Padova, Italy*)
- 11.45-12.00 O64** Nicotinamide phosphoribosyltransferase (nampt) is up-regulated by BRAF-inhibitor-resistant melanoma cells, becoming an actionable therapeutic target. **Audrito V, Managò A, La Vecchia S, Zamporlini F, Vitale N, Baroni G, Cignetto S, Serra S, Bologna C, Stingi A, Arruga F, Vaisitti T, Massi D, Mandalà M, Raffaelli N, Deaglio S** (*Turin, Italy*) Agilent Travel Grant
- 12.00-12.15 O65** Oxidative metabolism confers intrinsic radioresistance to SQD9 human head and neck cancer cells. **Grasso D, Danhier P, Bol V, Grégoire V, Sonveaux P** (*Brussels, Belgium*)
- 12.15-12.30 O66** Medium chain triglyceride supplemented ketogenic diet enhances anti-tumor and anti-angiogenic efficacy of chemotherapy on murine neuroblastoma xenografts. **Aminzadeh-Gohari S, Feichtinger RG, Vidali S, Locker F, Rutherford T, O'Donnel M, Stöger-Kleiber A, Mayr JM, Sperl W, Kofler B** (*Salzburg, Austria*)

CLOSURENicola Baldini (*Bologna, Italy*)

12.30-13.00 Closing lecture – Nutrients, genes and metabolism in cancer.
Antonio Moschetta (*Bari, Italy*)

13.00-13.30 Award ceremony and Closing

13.30 Lunch Buffet (Sala Polivalente)

Departure

POSTER COMMUNICATIONS

- P1 - Metabolic phenotype association with disease progression and drug response in patient-derived ovarian cancer xenografts. **Decio A, Ghilardi C, Verza M, Indraccolo S, Bani MR, Giavazzi R** (*Padova, Italy*)
- P2 - Imaging markers of response to combined targeted therapies in BRAF-mutated melanoma. **Acciardo S, Mignon L, Gallez B, Jordan BF** (*Brussels, Belgium*)
- P3 - Differential modulation of PDAC parenchymal (CPC) and cancer stem (CSC) cells by CAFs: role of ECM collagen I. **Cannone S, Greco M, Soriani O, Guizouarn H, Reshkin SJ, Cardone RA** (*Bari, Italy*)
- P4 - Identifying metabolic biomarkers of paediatric glioma cancer stem cells in tumour development. **Agliano A, Anjomani Virmouni S, Vinci M, Jones C, Kramer-Marek G, Poulogiannis G, Leach MO, Al-Saffar NMS** (*London, United Kingdom*)
- P5 - Metabolic biomarkers for the combination of mTOR pathway inhibitor TORIN2 with the ALK inhibitor crizotinib in ALK-mutated neuroblastoma. **Al-Saffar NMS, Jackson LE, Sidhu J, Chesler L, Leach MO** (*London, United Kingdom*)
- P6 - Hormetic potential of methylglyoxal in switching cancer cells from growth to death. **Bellier J, Nokin MJ, Durieux F, Peulen O, Uchida K, Spiegel DA, Cochrane JR, Hutton CA, Castronovo V, Bellahcène A** (*Liege, Belgium*)
- P7 - Extracellular matrix (ECM) collagen I levels differentially modulate pdac parenchymal cell (CPC) and cancer stem cell (CSC) acid-base regulation. **Cannone S, Greco MR, Valente D, Baltazar F, Queirós O, Piccapane F, Caroppo R, Reshkin SJ, Cardone RA** (*Bari, Italy*)
- P8 - OXPHOS metabolic profile in diffuse large b-cell lymphoma (DLBCL) is associated with increased sensitivity to redox homeostasis modulation. **Ciccarese F, Silic-Benussi M, Ciminale V** (*Padova, Italy*)
- P9 - Restoring aconitase 2 levels in breast cancer cells affects mitochondrial oxidative metabolism reducing cell proliferation. **Ciccarone F, Di Leo L, Vegliante R, Caiafa P, Ciriolo MR** (*Rome, Italy*)
- P10 - Imbalance of mitochondrial “shaping proteins” and cisplatin resistance. **Cocetta V, Vianello C, Catanzaro D, Ragazzi E, Scorrano L, Montopoli M** (*Padova, Italy*)
- P11 - Mitochondrially targeted hydroquinone D4, selectively inhibits triple negative breast cancer cell proliferation by affecting mitochondrial bioenergetics. **Muñoz F, Urra F, Araya-Maturana R, Cárdenas C** (*Santiago, Chile*)
- P12 - Endoplasmic reticulum to mitochondria CA^{2+} transfer interruption is a selective vulnerability of acute lymphoblastic leukemia cells. **Cruz P, Cárdenas C** (*Santiago, Chile*)
- P13 - Unravelling the molecular mechanisms underlying 3-bromopyruvate resistance in tumor cell lines. **Barbosa AM, Cunha A, Casal M, Queiros O** (*Paredes, Portugal*)

- P14** - Defining microRNA mediated regulation of metabolic pathways involved in colon cancer progression (BST1-microRNA interactions). **Damavandi MD, Vlachogiannis G, Cascione L, Hedayat S, Nyamundanda G, Lampis A, Fassan M, Hahne J, Sadanandam A, Parkes A, Braconi C, Sansom O, Valeri N** (*London, United Kingdom*)
- P15** - Multiple myeloma and metabolism: the quest for novel metabolic targets useful in therapy. **Ei Arfani C, De Veirman K, Maes K, De Bruyne E, Vanderkerken K, Menu E** (*Brussels, Belgium*)
- P16** - Microenvironmental control of immune modulation sustains carcinoma progression. **Iscaro A, Comito G, Giannoni E, Chiarugi P** (*Florence, Italy*)
- P17** - Analysis of MTORC1/2 and cellular metabolism related proteins in lymphangioliomyomatosis. **Krencz I, Sebestyen A, Papay J, Jeney A, Hujber Z, Burger CD, Keller CA, Khor A** (*Budapest, Italy*)
- P18** - Induction of pseudonormoxia as adjuvant therapeutic strategy for cancer. **Leone G, Iommarini L, Bucci C, Locatelli A, Graziadio A, De Luise M, Gasparre G, Porcelli AM** (*Bologna, Italy*)
- P19** - TRAP1 favor glycolytic metabolism and resistance to EGFR inhibitors in human colorectal carcinoma through regulation of PFK. **Maddalena F, Li Bergolis V, Condelli V, Sisinni L, Scrima R, Piscazzi A, Lettini G, Storto G, Capitanio N, Esposito F, Landriscina M** (*Foggia, Italy*)
- P20** - Mitochondrial GPATS in ovarian cancer. **Marchan R, Büttner B, Edlund K, Lambert J, Leonhardt G, Kaszta D, Anft M, Watzl C, Glaeser I, Blaszkewicz M, Hergenroeder R, Selinski S, Madjar K, Stewart JD, Cadenas C, Hengstler JG** (*Dortmund, Germany*)
- P21** - Extracellular acidosis promotes cancer cell survival via BIRC and TRAF pathways. **Massa A, Avnet S, Lemma S, Chano T, De Milito A, Baldini N** (*Bologna, Italy*)
- P22** - Searching for synergistic interactions of anti-angiogenic and anti-tumor compounds by a screening approach. **Garcia-Vilas JA, Quesada AR, Medina MA** (*Málaga, Spain*)
- P23** - Overexpression of the mitochondrial s-adenosylmethionine carrier in cervical cancer cells leads to rewiring of the methyl metabolism and sensitivity to cisplatin. **Menga A, Palmieri EM, Cianciulli A, Iacobazzi V, Castegna A** (*Bari, Italy*)
- P24** - Definition and validation of targets associated with resistance-associated metabolic reprogramming in hematological malignancies. **Contreras M, Cortés R, Kurrle N, Schnutgen F, Schwalbe H, Cascante M** (*Barcelona, Spain*)
- P25** - Aspects of melanoma cells adapted to a chronic acidosis relevant for therapy. **Peppicelli S, Ruzzolini J, Andreucci E, Bianchini F, Calorini L** (*Florence, Italy*)
- P26** - In vitro effects of carbonic anhydrase IX/XII inhibitors on osteosarcoma cells. **Perut F, Mai A, Massa AM, Rotili D, Supuran CT, Baldini N** (*Bologna, Italy*)

- P27** - Role of miRNAs in metabolic plasticity correlated with 5-fu resistance in colon cancer cell. **Pranzini E, Paoli P, Taddei ML, Chiarugi P** (*Florence, Italy*)
- P28** - V-ATPase modulation & metabolic processes in glioma stem cells. **Storaci AM, Bertolini I, Di Cristofori A, Caroli M, Ferrero S, Vaira V** (*Milan, Italy*)
- P29** - Study of metabolic heterogeneity of tumors at clonal level and its modulation by anti-angiogenic therapy. **Tognon M, Venturoli C, Verza M, Curtarello M, Pastò A, Navaglia F, Plebani M, Amadori A, Indraccolo S** (*Padova, Italy*)
- P30** - Development of a metabolic panel as a new tool to study heterogeneity of ovarian cancer xenografts. **Verza M, Pinazza M, Nardo G, Zulato E, Venturoli C, Esposito G, Indraccolo S** (*Padova, Italy*)
- P31** - Metabolic stratification of breast cancer. **Menegollo M, Bentham RB, Esculier C, Agarwal S, Ren Z, Pignataro V, Bryson K, Stein R, Yuneva M, Szabadkai G** (*Padova, Italy*)
- P32** - Depletion of CA IX impairs glutamine and glucose driven fueling of the TCA cycle. **Paniso E, Sedlakova O, Kery M, Porporato PE, Brisson L, Sboarina M, Lacinová P, Škultéty L, Kopáček J, Pastorekova S, Sonveaux P, Svastova E** (*Bratislava, Slovakia*)
- P33** - Role of mitCa²⁺ homeostasis in breast cancer. **Monticelli H, Mammucari C, Benna C, Nitti D** (*Padova, Italy*)

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PROGRAM AT-A-GLANCE

	Thursday, 19 October	Friday, 20 October	Saturday, 21 October
8.30		Session 6 Mitochondria and cancer	Keynote lecture
9.30			
10.30		Poster Session with Coffee Break	Coffee Break
11.30			
12.30	Lunch buffet	Meet the Expert Session 1-2-3	Session 11 Cancer metabolism and drug resistance
13.30			
14.30	Opening	Lunch	Closure and Award Ceremony
15.30	Session 1 Microenvironment and cancer metabolism		
16.30	Session 2 Metabolic control of cancer stemness	ISCaM General Assembly	Lunch buffet
17.30	Coffee Break		
	Session 3 pH dynamics and CA-9 targeting	Industry Symposium	Lunch buffet
	Session 4 Autophagy and lysosomes		
18.30	Session 5 Lipid metabolism	Coffee Break	Session 9 Metabolic control of cancer behaviour II
19.30			
20.30	Welcome cocktail	Transfer to Forlimpopoli Social dinner	