Exploring new advancements for future dermatology

“We will see major advancement in therapy of inflammatory disorder such as atopic dermatitis, psoriasis, vitiligo and alopecia areata and more” said Dr. Calzavara Pinton, dermatologist and professor at Università degli Studi di Brescia. “We will see the results on the principal investigation of diagnosis techniques like confocal microscopy and optical tomography” added Calzavara.

The “Festa del Paradiso” closes the 24th World Congress of Dermatology

The event will take place this evening in the Cortile delle Armi of the Castello Sforzesco. “The show will be articulated between several moments that will have the goal of telling, through sounds, suggestions and atmospheres the genius of Vinci in its many artistic expressions” declares the artistic director Roberto Malfatto.

Mind the generation gap

“Baby Boomers, Generation X, Generation Y and Millennials, for the first time in history, all four generations can be found working together”, stated Dr. Paul Redmond. He is an author, keynote speaker, employment guru, and a leading expert on generations and the future of work. “Baby Boomers and Generation X are digital im-
Exploring new major advancements for future dermatology

What is also important is that the Italian Society of Dermatology (SIDeMaST) is in charge of the organisation of the 2019 WCD, and that they will display all of their major projects. These projects are delivered by the groups’ sub-specialties such as: dermatopathology, photobiology, pediatric dermatology, dermaoncology, etc. “At the meetings of the future projects of the Society we will organize registers for atopic dermatitis biosimilar, psoriasis and retinoids, to explore new major advancements for future dermatology” concluded Dr. Calzavara. Professor Piergiacomo Cazal- vara Pinton has participated in several Italian Ministerial projects and took part in the European Project V Framework Program for the Research and Technological Development of the European Union, entitled “Reflectance Confocal Microscopy”, and, he is from 2014 the Italian referee for the Ministry on the evolution of the research in Dermatology.

The Next-Gen techniques there is now a major advance as genomic basis in most birthmarks

Dr. Ilona Frieden is a pediatric dermatologist and a world-renowned specialist in children’s skin diseases. With more than 35 years of experience caring for children with skin conditions that range from eczema and diaper rash to rare genetic disorders and those occurring within complex disease syndromes. Dr. Frieden has also dedicated her life to children with birthmarks and has a special interest in those that arise from abnormal blood vessels, including haemangiomas and vascular malformations. For this reason, port-wine stains should not to be confused with CMTC, even though the two are similar, the outcomes and the causes are different, but the evolution also is different. With the Next-Gen techniques there is now a major advance as genomic basis in most birthmarks, including vascular stains, are now known of, but also small biopsies can yield to more cures and treatments. Another important that Dr. Frieden has emphasised is that even though port-wine stains can be found in the genetics, they do not depend from the family bloodline and cannot be transmitted. The possibilities of treatment are targeted approaches such as: lasers, camouflage, supportive care for associated venous disease, and sirolimus.

New inflammatory pathway of the skin

Dr. Michel Gilliet has focused on the understanding of the mechanisms that initiate and maintain inflammation in the skin. Several important discoveries have been made throughout the years such as: the identification of a new inflammatory pathway of the skin based on the dermal infiltration by plasmacytoid dendritic cells and their activation to produce type I IFNs. Also, it has been found that this pathway is over-activated in psoriasis and lupus, where it drives chronic inflammation and disease initiation. More recently, Dr. Gilliet and his colleagues found that his inflammatory pathway is also at the heart of a side-effect of anti-TNF treatment, called paradoxical psoriasis, which in contrast to psoriasis, is characterised by an exaggerated activation of skin pDC that does not lead to T cell autoimmunity. During his research, Dr. Gilliet has focused on the identification of triggers using psoriasis as a model of “sterile” skin inflammation mediated by autoimmune T cells. Identifying a unique innate immune pathway required for the activation autoimmune T cells. The findings also point out that danger-associated host-derived molecules can break a safety mechanism (key for dermatologists) and active pattern recognition molecules that are normally designed for microbial recognition.
**Mind the generation gap**

Migrant, whereas Generation Y and Millennials are digital natives”, added Dr. Redmond. An incredibly scary factor is that new generations will never have the luxury of being anonymous, they will always have access to their life a screen away. “Also, when you look at people on their phones it seems that reality is becoming less interesting than the story that will be posted later”, said Dr. Redmond. Technology has in fact empowered each one of us, make us feel “more special” in the eyes of others. “We have gone from being passive consumers to prosumers (proactive consumers)”, confirmed Dr. Redmond. What is most tragic is we miss the luxury of “now”.

**The wonders of laser**

Dr. Richard Rox Anderson is a Boston-based dermatologist, teaching at Harvard Medical School and is the Director of the Wellman Centre for Photomedicine at Massachusetts General Hospital. Dr. Anderson contributions include laser hair removal, photodynamic therapy (which is the use of light-activated localized drugs for cancer and macular degeneration), laser treatment of port-wine stains in children, and basic research into the free electron laser for the selective destruction of lipids for possible treatment of acne, cellulite and atherosclerosis, as well as various uses of photothermolysis using pulsed dye lasers. What is also particularly interesting to add is that Dr. Anderson and colleagues invented a crude device to noninvasively remove fat by freezing it, technique commonly called cryolipolysis. His researches have brought an important advance in the basic knowledge of human skin photobiology, drug photosensitization mechanisms, tissue optics, and laser-tissue interactions. Also, active researches include diagnostic tissue imaging and spectroscopy, photodynamic therapy, mechanisms of selective laser-tissue interactions, adipose tissue biology and novel therapy for skin disorders.

**The President’s dinner**

Our distinguished lecturer, and the elegant President’s Dinner at the Leonardo da Vinci National Museum of Science and Technology.

**Melanoma diagnosis: first data from artificial intelligence**

Susana Puig, Professor of the Hospital Clinic di Barcelona, introduces an innovative study published on Lancet Oncology.

Artificial intelligence is becoming more effective when it comes to melanoma diagnosis, more effective than single experts. This is the results of a study published on Lancet Oncology and introduced at the 24th World Congress of Dermatology by Professor Susana Puig, from Hospital Clinic of Barcelona.

The research project, at which have participated expert dermatoscopists from all around the world, has compared the experts’ diagnosis with the ones done by the computers. They have used some of artificial intelligence algorithms: the top three algorithms together work better than the elaborated diagnosis done by the single experts.

“This means that the algorithms of artificial intelligence have reached results as good as the ones by the experts – declares Prof. Puig – we have seen that when experts work together as a team, like the machines when they pull together algorithms, they reach even results”.

“This represents an enormous step forward because until now artificial intelligence was working well with its algorithms, but only as a test in the learning phases and on lesions already selected and diagnosed. But they were not accurate enough for the real diagnosis and for the patients – explains Prof. Puig - now we have been able, through algorithms, to take such artificial intelligence to real diagnosis and proper patient, with a diagnostic accuracy for melanoma and other cutaneous lesions, just like an expert dermatologist.”

The study published on Lancet Oncology is a great step forward for the diagnosis of cutaneous tumours and shows the importance of team work. Nonetheless, considering the that the everyday clinical activity only concerns a doctor alone during the diagnosis, and a team diagnosis only in rare occasions, artificial intelligence seems to have an important role in future dermatology. “The results of this study show the importance of human team work, but not always doable in everyday clinical practice”, concludes Susana Puig.
At the WCD2019 a relationship of Harald Kittler about Advanced Dermoscopy. “Skin cancer diagnosis has changed throughout time and has taken steps further, also thanks to dermoscopy, also digital dermoscopy”, declares Harald Kittler, professor and dermatologist in Vienna. His special clinical interests are in dermoscopy of pigmented skin lesions, but his main research interest is on digital dermoscopy and follow-up of pigmented skin lesions and computer assisted digital dermoscopy. “We can now detect the presence of a cancer even at a very early stage, and when the patient’s life is still not in danger”, says Prof. Kittler. When it comes to melanoma, age does not make a difference anymore as skin cancer could affect anyone, even though it happens to affect more younger patients.

Finally, Dr. Kittler expresses himself concerning the damage of sunrays: for example, even though there has been found a strict correlation between melanoma and sun, not all melanomas are caused by sunrays. “The sun is not evil, exposure must be kept under-control, but avoid the sun is not the right choice as our skin also needs it and needs its vitamin D”, says Prof. Kittler.

### One reason to visit Milan: Bosco Verticale

The first example of a ‘Vertical Forest’ (il Bosco Verticale) was inaugurated in October 2014 in Milan in the Porta Nuova Isola area, as part of a wider renovation project led by Hines Italia. Milan’s Vertical Forest, designed by Stefano Boeri, consists of two towers of 80 and 112 metres.

Features and curiosities of the “Vertical Forest”:

- The Vertical Forest hosts 480 large and medium trees, 300 small trees, 11,000 perennial and covering plants and 5,000 shrubs.
- The equivalent – over an urban surface of 1,500 m2 – of 20,000 m2 of forest and undergrowth.
- The Vertical Forest increases biodiversity. Being able to be inhabited by birds and insects, it constitutes a spontaneous factor for repopulating the city’s flora and fauna.
- The Vertical Forest helps to build a microclimate and to filter fine particles contained in the urban environment since the plants produce humidity, absorb CO2 and particles, produce oxygen.
- The vertical forest is a new symbol in a new Milan. Awards: “International Highrise Award” “Best Tall Building Worldwide for 2015”

### Big steps in dermatological surgery: people affected with melanoma can now live longer

“A first aspect to remark is that patients with melanoma can now live longer and better thanks to the new techniques and technologies available for dermatological surgery” said Dr. Gabriel Gontijo, dermatologist and professor at University of Minas Gerais in Brazil. “The future is promising, new drugs can treat effectively skin cancer, also forms of basal cell carcinoma”, added Dr. Gontijo. New techniques and new technologies can help detect skin cancer at an early stage, and removing without leaving marks, also using intralesional injection. “Brazil is very advanced in dermatological surgery because of the great amount of sun exposure our population gets, for this reason skin cancer patients are numerous in Brazil”, stated Dr. Gontijo. Help third world countries to get access to skin health care is also an important mission. “I volunteered in Brazil, to bring my expertise and help to those in need. We as dermatologists, have to go where people live, also because they are often far from hospitals, and when going there we have to go against the prejudice people can have about dermatology and skin health care in general”, said Dr. Gontijo. For this reason, dermatologists and specialists provide them with educational programs about health, technologies and different approaches.