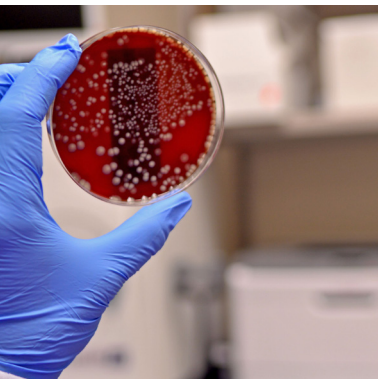
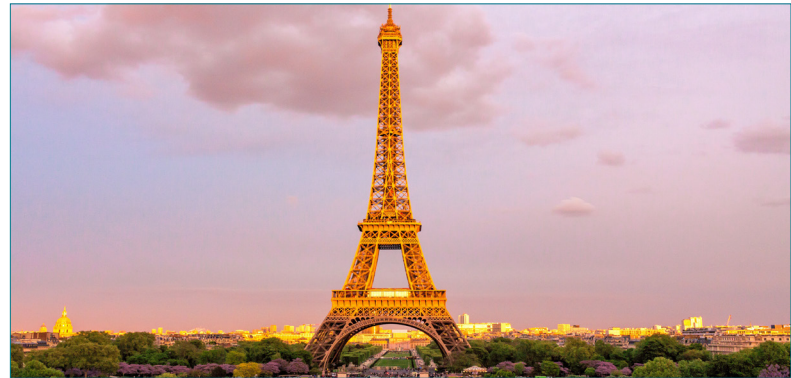

Keynote Forum
February 21, 2019

Wound Care 2019
Microbiology 2019



Joint Event on
2nd International Conference on
Wound Care, Tissue Repair and Regenerative Medicine
&
World Congress on
Microbiology & Applied Microbiology
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Eliaz Babaev

Arobella Medical LLC, USA

Future of ultrasound wound therapy: Technologies, devices, science and clinical outcomes

Nowadays, ultrasonic wound and skin treatments, especially those which aid in infection control, have been gaining the interest of hospitals, clinics, wound care centers and doctors' offices worldwide. The purpose of this presentation is to introduce upcoming advances in ultrasonic wound therapy, as well as to share, review and evaluate the expected efficacy of ultrasound therapies in treating all types of acute and chronic wounds. This includes battlefield wound treatment and the topical oxygenation of wounds and body parts with ultrasound. For wound treatment purposes, both low and high frequency ultrasound devices will be used in the near future. For example, Arobella Medical has designed:

1. (Patented and FDA approved) The Qoustic Panacea® AS -1000 is the next wound care product based on the use of ultrasonic energy to mix oxygen and saline in real-time. This allows for ultrasound delivery to the wound bed and topical oxygenation of various parts of the body. Slides and videos will be demonstrated during presentation.
2. Portable Wound Therapy System AF 1000 series to provide a portable ultrasound device for the treatment of wounds. This system is suitable for military use in the battlefield for immediate treatment of wounded soldiers. Additionally, the device's small size, portability, and low weight enable its use in field surgery, where equipment is often limited. The device cauterizes the wound, stops bleeding, greatly reduces pain, and prevents infection. The Portable Wound therapy system has several therapeutic effects and can remove bullets or shrapnel from a wound, making it useful in battlefields, terrorist attacks and other disaster areas, such as crashes, etc. This device can be used by a variety of emergency personnel whether in an ambulance or an antiterrorism operation. Slides and videos will be demonstrated during presentation.
3. BA-1000 Skin Care Device and Method: The BA-1000 is an ultrasound assisted, cryogenic ablation device that enables tissue to be frozen and ablated at zero degrees Celsius. Generally, tissue ablation is performed at negative fifty degrees Celsius. This device is going to be used for warts, skin disorders (scars), Human papillomavirus and later for tumor removal with reduced discoloration, less scarring, minimal regrowth, faster

healing and less pain in comparison with existing technologies such as a laser, cryo, etc. Ablating tissue at a warmer temperature, the exact freezing point of water, limits damage to surrounding tissue and provides a safer procedure.

4. Osteomyelitis Treatment: Osteomyelitis is an infection of bone marrow. Standard treatment involves surgically opening the bone and scraping away infected marrow. Arobella Medical has developed a technology that enables a significantly less invasive treatment of the disease. This device is protected by issued US patents.

5. Arobella Medical has developed ultrasound technology for use in combination with varying degrees of pressure and/or suction (Negative Pressure Wound Therapy + ultrasound and Positive Pressure Wound Therapy + ultrasound) as an all-in-one device for accelerating tissue healing in patients. The use of ultrasound by medical personnel for wound treatment provides benefits of improved efficiency, faster healing, selective debridement and less pain during and after the procedure.

6. Different companies including Arobella Medical are working on high frequency ultrasound devices for wound therapy.

7. Ultrasonic Infection Control: A patented hand washing or sterilization device for use before surgery in operating rooms. Other applications include kitchens, stores, toilets, and public areas.

During the presentation many other expected future ultrasound technologies and devices will be discussed.

Speaker Biography

Eliaz Babaev, co-founded Arobella Medical, LLC in 2006 and serves as its chief executive officer and President. He co-founded Celleration Inc. and served as its chief technical officer until July 2009. He worked as an ultrasound system design engineer and research scientist for DiaSorin, Inc., SpectRx, and AeroPag-USA, Inc. He served as the head of Biomedical Engineering Laboratory and a professor for State Technical University, Baku, USSR for 25 years. He has more than 40+ years expertise in non-Imaging medical ultrasound and particularly in ultrasound wound management, live tissue repair and in all the areas of advances in skin, wound care, nursing, tissue science, drug delivery systems, wound treatment technologies, tissue engineering, and body architectonics research and cancer research including apoptosis. 50 + US and 100 + worldwide patents are issued, numerous are pending, 50+ scientific articles, abstracts are published.

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Shannon Hinsa Leasure

Grinnell College, USA

The rise in antibiotic resistance; contributing factors and possible solutions

I would highlight my work on hog confinements, hospitals and the athletic center in a talk titled “The rise in antibiotic resistance; contributing factors and possible solutions”. The lecture would begin with an introduction to the current state of antibiotic resistance and its implications on human health and health care. I will explore reasons for the increased resistance, specifically the use of antibiotics in animal agriculture. I will discuss my recent work to monitor antibiotic resistance genes in hog manure, agriculture soils and sediments. The second half of the talk will examine possible ways to combat the spread of antibiotic resistance in hospitals and community centers. To reduce the risk of hospital-acquired infections, we need to limit the number of bacteria surrounding patients. I will share our recent studies in which we compared the bacterial loads on high touch surfaces made of either copper alloys or conventional materials such as stainless steel or porcelain. This study was conducted at Grinnell Regional Medial Center, a 49-bed rural hospital, primarily in medical-surgical suite rooms with a few items throughout the hospital. Surfaces were sampled in both occupied and unoccupied patient rooms. We found that copper alloy surfaces significantly reduced the bacterial loads by an average of 98% compared to control surfaces. We found no significant difference in bacterial loads between control occupied and unoccupied rooms; suggesting that although a room may look clean, it does not guarantee the surfaces are free of bacteria. This study demonstrated that patients entering

rooms with high touch copper alloy surfaces are exposed to substantially fewer bacteria than patients entering rooms with standard surfaces. It also highlighted the ability of copper alloy surfaces to maintain bacterial loads at or near cleanliness standards following terminal cleaning of the hospital room. We expanded this work to our athletic center, a community site in which antibiotic resistant bacteria are commonly shared. This is the first study of copper alloys in an athletic center setting and we found a 94% reduction in bacterial counts by these surfaces. We also identified the most common bacteria found on copper and control surfaces and tested their sensitivity to antibiotics. Both the hospital and athletic center studies were published in the American Journal of Infection Control. infections.

Speaker Biography

Shannon Hinsa Leasure is an associate professor of biology and an environmental microbiologist at Grinnell College in Iowa. Her research interests include microbial diversity, antibiotic resistance and genetic exchange, as well as bacterial adaptations to varied environments. Most recently she has investigated the ability of copper alloy materials to reduce bacterial loads in hospitals and fitness centers. Additionally, she is studying antibiotic resistance gene profiles on farms, in collaboration with researchers at Iowa State University and the Agricultural Research Service at the USA. Department of Agriculture. As time permits, she continues her study of microbial diversity and biofilm formation in Siberian permafrost. At Grinnell, she teaches courses in microbiology, environmental microbiology, cell biology and microbial pathogenesis. She also maintains an active laboratory with undergraduate students. She earned her B.S. in bacteriology at the University of Wisconsin-Madison and her Ph.D. from Dartmouth Medical School in molecular and cellular biology.

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Jasmina Begić

University Clinical Center Sarajevo, Bosnia and Herzegovina

Prevention of pressure ulcer: When, where, who and why start with prevention of pressure ulcer

Introduction: Seventeen percent of hospitalized patients have or will end up having a PU. In the worldwide geriatric population, 71% of patients \geq 70 years have PU. Pressure ulcers (PU) is skin breakdown and continuum of tissue damage localized injury to the skin. Intrinsic factors: Immobilization, cognitive deficit, chronic illness (eg, diabetes mellitus) poor nutrition, use of steroids, aging. Extrinsic factors (pressure, friction, humidity, shearforce).

Characteristics: Pain, infectious complications, prolonged and expensive hospitalizations, persistent open ulcers.

Treatments: Why? Increased risk of the death. Associated with the development of pressure ulcers. HOW? PREVENTIONS. WHERE? Intensive care unit (ICU). Postoperative care begins


immediately after surgery. Includes pain management and wound care!!!

My choice is: INTEGRATIVE HEALTH & MEDICINE Integrative Medicine is the Medicine of the Future (concludes of International Congress (ICIM) in Stuttgart, 2016).

Speaker Biography

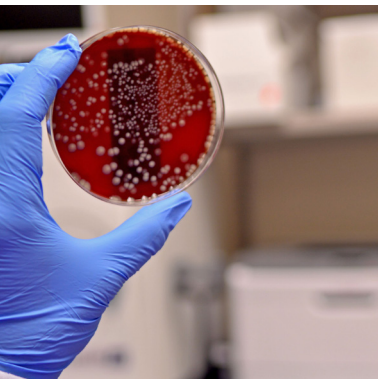
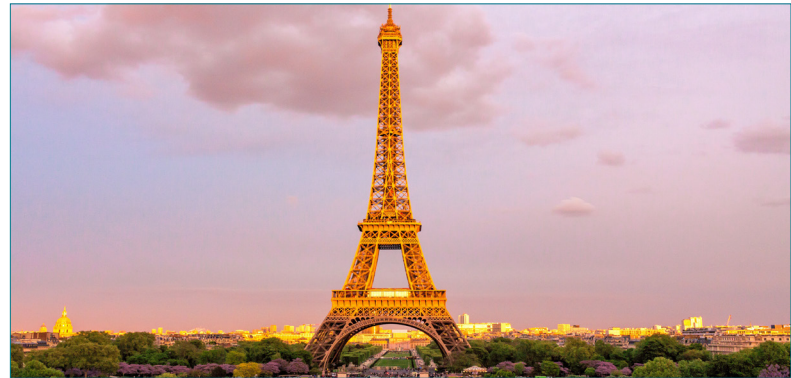
Jasmina Begic is a medical consultant for BIOPTRON, Zeptr International for Bosnia and Herzegovina, founder of Association for Wound Management in B&H, founder and author of Euro-Asian Forum, one of founder of BALWMA. She is currently working as a dermatovenerologist in Bioptron International team -Wound Healing. She finished her graduation and post-graduation studies at Medical School of University Sarajevo, Sarajevo, Bosnia and Herzegovina and completed her PhD in the field of tissue regeneration and wound healing from Indian Institute of Technology, Kharagpur. She is also active member in UEMS TF WH, EWMA, EADV.

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 Notes:

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Vladimir Elisashvili

Kachlishvili E, Asatiani M D, Khardziani T and Metreveli E

Agricultural University of Georgia, Georgia

Basidiomycetes as a multi-purpose cell factory: Current status and perspectives

Recently, extensive research on higher basidiomycetous fungi has markedly increased, mainly due to their potential use in a variety of biotechnological applications, particularly for the production of food, enzymes, dietary supplements, and pharmaceutical compounds. This presentation integrates recent literature and our own data on the physiology of bioactive compounds production, focusing on the common characteristics and unique properties of individual fungi as well as on several approaches providing enhanced yields of target products. Among basidiomycetes, so called medicinal mushrooms constitute a rich source of bioactive compounds exhibiting antitumor, antidiabetic, immunomodulating, antioxidant, antimicrobial and many other properties. However, the production of antioxidants, lectins and exo-polysaccharides is species- and even strain-dependent and some nutrient supplements regulate bioactive compounds synthesis although their effect is very specific depending on fungi physiological peculiarities.

An overview of available data underlines that the regulation of lignocellulose-deconstructing enzymes production appears to be subject to complex interplay of nutritional, environmental, and genetic factors. To correctly evaluate the fungi biosynthetic potential and to maximally express cellulase, laccase, lignin

and manganese peroxidase activities a fungus specific carbon source/lignocellulosic substrate, an appropriate enzyme synthesis inducer, other required factors should be elucidated. Data received indicate that lignocellulosic growth substrates, some of which contain significant concentrations of soluble carbohydrates and inducers, play a crucial role in enzyme production. Moreover, co-culture of compatible fungi may be an appropriate approach to enhance their biosynthetic activity and yield of target products.

Finally, a brief outline of efforts to exploit the whiterot fungi potential for the bioremediation of polluted areas and for sustainable processing of renewable biomass into spectrum of marketable products and energy is also presented.

Speaker Biography

Vladimir Elisashvili is a director of the Animal Husbandry and Feed Production Institute of the Agricultural University of Georgia. In 1974, he obtained his PhD in microbiology at the Saint Petersburg (Leningrad) State University. Then, he continued his work at the chair of microbiology as a scientist and assistant professor. In 1983, he joined the Durmishidze Institute of Biochemistry and Biotechnology, Tbilisi, Georgia and in 1993, he obtained the Doctor of biological sciences degree in biochemistry. In 1976/77, he obtained a postdoc position at the Institute of Molecular Biology, Paris VII, France. In 2001-2006, he worked at the Free University of Brussels and in two biotechnological companies in Israel. He has over 190 publications and supervised 21 PhD theses. He is serving as an editorial board member of three reputed Journals.

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Mallikarjun Gurappa Kerutagi **Pavithra A S and Manjunatha G**

University of Horticultural Sciences, India

Impact of Darakshak: A bioconsortium on quality, yield and income of pomegranate growers in Karnataka


Though pomegranate cultivation is a profitable venture but it was adversely affected due to incidence of bacterial blight disease. It has been not fully controlled with the use of presently available chemicals and other methods. Hence, University of Horticultural Sciences, Bagalkot (UHSB) involved in research to find a remedy for the disease as lot of farmers in the growing areas were having the trouble in controlling this disease. UHS, Bagalkot innovated a technology called "Darakshak" a Bioconsortium. Now it has been appreciated by many farmers and there is lot of demand for the product. Hence, a study was conducted to assess its impact on quality of fruits, yield and income. Sample of 30 producers each Darakshak users and non users of Darakshak were selected randomly for the study (2017-18) based on the Darakshak users list. The establishment cost of pomegranate orchard estimated at Rs.2,06,236 per acre in both the cases. The annual cost of cultivation of pomegranate of Darakshak users was Rs.1,10,347 per acre and in case of non users it was Rs.1,21,342 per acre. Output increased by 13.5 per cent to the users of Darakshak (67.50 quintal) compared to non-users of Darakshak (58.38 quintal). Gross returns received from an acre were Rs.2,71,350 at a price of Rs.4,020 per quintal for Darakshak users but it was less in non Darakshak users

(Rs.2,23,069 at a price of Rs.3,821 per quintal). Darakshak was not only increasing the crop yield but also there was improvement in the quality of fruits. Darakshak users received better price for their fruits compared to non users, though both of them sold in the same market. Pomegranate cultivation was more profitable in case of Darakshak users as indicated by B:C ratio of 2.62 which was less in case of non users (B:C ratio 1.83). Majority of the producers expressed that bacterial blight was the major production problem followed by irrigation, decreasing yield and fluctuation in prices. Pomegranate producers opined that Darakshak is more effective on blight disease, improved the crop health and quality of the fruit. This ultimately increased the yield and income of the producers and also there was reduction in the production cost. These were the main reasons for farmers using the Darakshak developed by UHS Bagalkot, Karnataka.

Speaker Biography

Mallikarjun Gurappa Kerutagi is currently working as a university head for the Department of social and allied sciences, UHS, Bagalkot, Karnataka. He was awarded with gold medals at university level from Sri Ramakrishna Mission. He is also a member in academies, have published 50+ articles and also working as a referee for journals. His focus of interest is seed production, horticulture, testing trials, dairy etc.

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