

IBBS World



Newsletter of the International Biodeterioration & Biodegradation Society

January 2019

The International
Biodeterioration & Biodegradation
Society presents the IBBS triennial symposium:

IBBS 18

**Montana State University (MSU),
Bozeman, Montana, USA**
8-10 September 2020

IBBS Member, **Dr. Joseph Sulfito**, University of
Oklahoma, is chair of the organizing committee.

The Symposium promises to be scientifically and
socially excellent, in the manner of all IBBS meetings.

More details soon on IBBS website:
<http://ibbsonline.org/meetings/>



5 very good reasons you should be
preparing for IBBS 18 on the next page...

Editor's Notes

Welcome to this first IBBS World issue of 2019. The IBBS is very active and is getting ready for the next IBBS triennial Symposium which, as you can read on the left, will be in Montana (USA). It will be a great event and there are many reasons to participate!

September last year saw the IBBS meeting on "New Trends in Cultural Heritage Biodeterioration" which took place in the beautiful city of Coimbra, in Portugal. Details of the meeting can be found in this issue of the newsletter. It was a meeting with a truly cutting-edge content.

What is clearly emerging is that massive sequencing techniques are giving an incredible impetus to the studies on bio-deterioration and biodegradation. We are witnessing a real scientific revolution that requires a lot of knowledge and critical skills, qualities that certainly belong to IBBS members.

In this issue of the newsletter you'll find also a page by Jo Verran, the IBBS delegate on FEMS Council, and an amazing text by Brenda Little, our President, on the use of the prefix "Bio".

You will also find a call for nominations for IBBS Vice-President - do you know someone who could be our next President?

Finally, a warm welcome to Nuno Mesquita who has just been co-opted to the IBBS Council.

Best wishes to all,

Flavia Pinzari

If you have any news, meetings you would like us to publicise, or a crossword on an appropriate topic, please contact us via our IBBS Hon. Secretary: secretary@ibbsonline.org



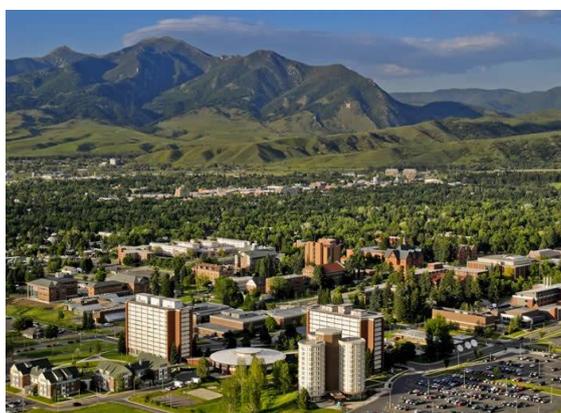
5 very good reasons you should be preparing for IBBS 18

Reason #1 Join friends and colleagues for the 3-day technical IBBS program that will feature world-class presenters and presentations on topics related to biodeterioration and biodegradation.

Reason #2 The Center for Biofilm Engineering (CBE) is an interdisciplinary research, education, and technology transfer institution located on the central campus of MSU. CBE has been a world leader in biofilm research for more than 25 years with an extraordinary record for advancing our understanding of biofilms. Photographs of researchers who have contributed to biofilm research at CBE are displayed in the halls of CBE. The display is a veritable, “Who’s Who” in biofilm research. Photographs of several IBBS members are included.



Geysir (Old Faithful)



MSU Campus

Reason #3 MSU is ranked in the top tier of U.S. research institutions by the Carnegie Foundation for the Advancement of Teaching. The school motto is “Mountains and Minds,” reflecting the intersection of intellectual and outdoor pursuits. The campus is located on 1,170 acres in downtown Bozeman with 16,700 students. IBBS member Dr. Recep Avci is the director of the Image and Chemical Analysis Laboratory (ICAL) at MSU, a facility that includes seven complimentary microanalytical systems. Current ICAL research projects include the following: nanoscale imaging, microbial adhesion, force spectroscopy, nano-elasticity, bioprobe development, surface functionalization and laser activated atom migration. IBBS members, Drs. Iwona Beech and Jan Sunner are currently working in ICAL.

Reason #4 The following superlatives have been used to describe Bozeman: “The Last Best Place,” Best town 2013, Outdoor Magazine, Best Place to Live,” Money Magazine 2017. Bozeman has a vibrant downtown area with shops, restaurants and pubs. The city has 60 miles of bike trails and lanes.

Reason #5 Yellowstone National Park, located 90 miles south from Bozeman, is America's first National Park. Yellowstone is known for amazing geysers, wildlife, waterfalls, mountains, alpine lakes and pristine rivers. Situated atop a high mountain plateau, it offers outdoor activities for wildlife watchers, geyser gazers, hiking enthusiasts, outdoor lovers, and photographers. Many IBBS members will recognize Yellowstone as the site for the pioneering work by Dr. Thomas D. Brock on thermophilic bacteria. Registrants for IBBS 2020 will be provided additional information about Yellowstone.

Could you host IBBS 2023?

We have a proud history of International Biodeterioration and Biodegradation Symposia going back to Southampton, UK in 1968, followed by Lunteren, Netherlands (1971), Rhode Island (1975), Berlin (1978), Aberdeen, Scotland (1981), Washington, DC (1984), Cambridge, UK (1987), Windsor, Ontario (1990), Leeds, UK (1993), Hamburg (1996), Crystal City, Virginia (1999), Prague (2002), Madrid (2005), Taormina, Sicily (2008), Vienna (2011), Lodz, Poland (2014), Manchester (2017), and now, in 2020, Montana!





News from the President

A typical IBBS Council meeting lasts 1 to 2 hours. The 3 December 2018 meeting lasted over 3 hours, reflecting the number of topics covered in the meeting and the enthusiastic discussions. Highlights of that meeting included co-option of Dr. Nuno Mesquita, University of Coimbra, Coimbra, Portugal. Nuno will train as Hon. Membership Secretary in May/June 2019 and take over that responsibility after completion of the training.

FEMS recently (17th September 2018) sponsored the 2018 International Microorganism Day (IMD) at facilities in Europe. Activities for the day focused on two subjects: "Microbes and the Fascination for the Invisible" and "Microorganisms, Bioeconomy and Sustainable Development." The stated aim of the day was to raise awareness among young people and society in general on the role of microorganisms in our lives.

Planning for IBBS 18 at Montana State University Bozeman, MT, USA, is underway with Dr. Joseph Sufliata, University of Oklahoma, USA, as Chair of the Organizing Committee. The tentative title for the conference is "Microbes, Man and the Environment: Societal challenges and the Role of Microorganisms in the Anthropocene." Meeting titles at IMD and for IBBS 18 reflect a growing interest in microorganisms and the far-reaching consequences of microbial processes. More focused topics and venues were discussed for IBBS-sponsored meetings in 2019-2021, as well as joint meetings with other societies. The Council is interested in new ideas. Please contact me or Hon. Secretary Dr. Christine Gaylarde with suggestions.



*Brenda Little,
IBBS President*

Report on the 9th International Bioerosion Workshop

Experts in the field of Bioerosion from 12 different countries attended the **9th International Bioerosion Workshop** held at the Istituto Superiore per la

Conservazione ed il Restauro (ISCR), Rome, Italy, on 23rd-27th October 2017. The purpose of the workshop was to bring together scientists from around the world to share information about different aspects of Bioerosion. The workshop explored the topics of Bioerosion of natural and artificial substrates (stone, wood, building materials, coral reefs), Bioerosion and Cultural Heritage (stone and wooden artefacts) and Bioerosion in Paleoecology, Palaeontology and Paleoichnology. This ninth edition of the Bioerosion workshop included the topic of bioerosion in Cultural Heritage for the first time, giving participants the chance to discuss biodeterioration in various underwater and subaerial environments. It was a successful, well-



organized, workshop, including interesting talks and posters, which sparked animated discussion about the main topics. An Intra-workshop field trip to Grotta di Tiberio (Sperlonga, Latina) was included and there was also the possibility to join a Post-workshop field trip to the Submerged archaeological Park of Baiae. Feedback from the participants indicated that the conference was very significant for sharing new research results and discussing ideas with international colleagues.

First announcement of BioRemid 2019

A congress on bioremediation processes that is going to be held in Portugal in October. It is supported by the Biodegradation, Bioremediation and Biodeterioration (BBB) group of the Spanish Society of Microbiology (SEM)

<http://conference.mercatura.pt/events/bioremid2019/>



*2nd International Meeting
on New Strategies in
Bioremediation Processes*



save the date
24-25th October 2019
PORTO, Portugal





Report on the IBBS 2018 Meeting in Coimbra: New Trends in Cultural Heritage

This meeting took place last September in Coimbra, Portugal.

The organizing committee would like to thank all the participants for visiting the beautiful city of Coimbra with its historic University, and for sharing a part of their scientific experience with their fellow scientists.

It all started with a cosy reception at the Machado de Castro National Museum with a Fado show by the Fado Hilário group, followed by a tour to the Cryptoporticus underneath the museum. The conference itself took place in the Department of Life Sciences, right next to the Botanical Garden of Coimbra, which was a nice place to have a walk during breaks. A total of 55 participants from 18 different countries contributed with 29 oral presentations, 18 posters, a good amount of scientific discussion, and surely new friendships and collaborations were established!

Finally, the conference dinner was held at the Quinta das Lágrimas, where all participants had the opportunity to enjoy the food and drinks, the music performance by Cithara, but most importantly, interaction with one another.

The IBBS and the organizing committee hope that all were happy and felt rewarded with their presence at this conference, and look forward to seeing you again in the next IBBS meeting!



Group picture at the 2018 IBBS Meeting in Coimbra. The location is the botanical garden of Coimbra University

IBBS Journal, Editor in Chief, Ji-Dong Gu

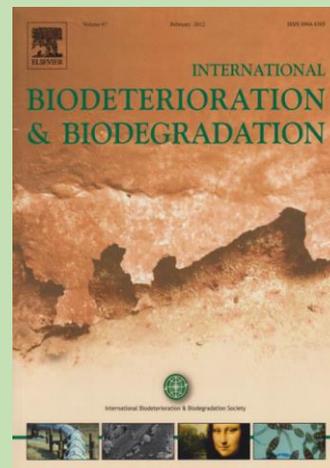
International Biodeterioration & Biodegradation, a scientific journal publishing 10 issues per year by Elsevier, is the official journal of the International Biodeterioration & Biodegradation Society.

The journal has an impact factor of 3.562 (2019).

IBBS wishes to thank outgoing IBB Editors, **Drs. Fred J. Passman and Raj Boopathy**, for their roles in ensuring the quality of articles published in the journal during their tenures. Both individuals required the highest standards for authors and reviewers.

Members are strongly encouraged to support the society journal by submitting manuscripts (research papers, review articles, new methods and short communications), and to act as reviewers, publicize and cite the Journal whenever possible.

Editor contact: jdgu.ibb@gmail.com





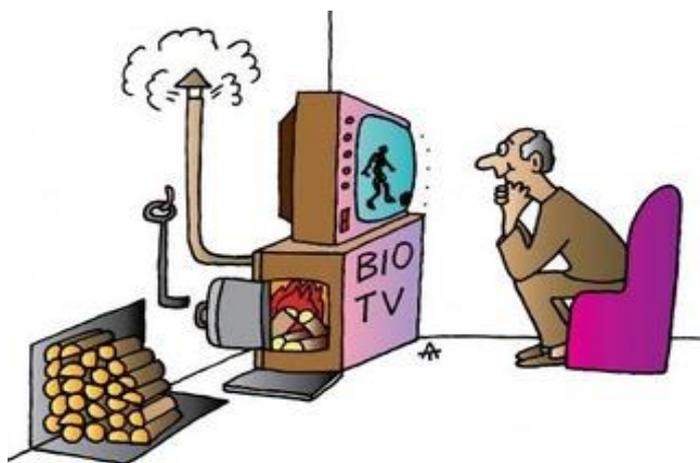
Bio” Confusion by Brenda Little

From the late 20th century to the present there has been a rapid proliferation of words beginning with the prefix “bio” from the Greek root word meaning “pertaining to life.” Wiktionary lists over 1,000 words “bio” words and many have become *de rigeur* in scientific literature.

Several authors have acknowledged the confusion inherent in “bio” prefixes in material science.^{1,2} For example, a biomaterial can refer to a substance produced by a biological entity or a substance used for making things relevant to life or living things, i.e., “bio” can refer to the origin of a material or its function. Biofuels, biolubricants, biopolymers refer to products that are derived from biological sources. Biometals are defined as essential metals present in small, but measurable amounts in living systems, e.g. copper, zinc, iron, and manganese. Biometals are not produced by living things, but humans require biometals. In most cases the intended meaning of the “bio” word can be deduced from the context in which it is used.

There is a problem with “bio” words that sound like they should be synonyms, but are not typically used as synonyms. Biosorption is not a synonym for bioaccumulation. Bioaccumulation is defined as accumulation of a substance, such as a toxic chemical, in tissues of a living organism. However, the meaning of biosorption is not so easily determined. The term sorption typically includes the prefixes “ad” and “ab” to distinguish adsorption and absorption processes. Adsorption is the adhesion of atoms, ions or molecules from a gas, liquid or dissolved solid to a surface. Absorption is a process in which a fluid is dissolved by or permeates a liquid or solid. Adsorption is a surface-based process, while absorption involves the volume of a material. The term biosorption is used for accumulation (e.g., metal ions) by live cells, dead cells and extracellular polymers (EPS). EPS, also known as biopolymers, secreted outside the cell, are made up of organic macromolecules, i.e., polysaccharides, proteins, and phospholipids. EPS contain anionic reactant groups that sequester cationic heavy metals by electrostatic interactions. Why is the prefix “bio” required for this chemical process? Is it because the polymers are biopolymers?

There is also the trend to use “bio” as a prefix for processes that are carried out by biological entities, e.g., biosynthesis, biofouling, biocatalysis, bioerosion and biocorrosion. However, bioengineering is not engineering by living things. Instead, it is the application of principles of biology and the tools of engineering to create products. Biocorrosion is not related to biometals. Biocorrosion is a synonym for microbiologically influenced corrosion and is also used to denote corrosion resulting from biotic and abiotic reactions of materials implanted in living systems. Again, context is important for deciphering the meaning of the term biocorrosion.



Conventions have been established over time and many “bio” words are now standard usage, not necessarily based on logic. As users and inventors of “bio” terms we must ensure that addition of the “bio” prefix provides clarity and not confusion.

¹Williams D (2014) Essential Biomaterial Science, Cambridge University Press, Cambridge UK p 18.

²Clark JH and Deswarte T (2014) Introduction to Chemical from Biomass In Chemical from Biomass 2nd edition Wiley Series in Renewable Resources Series CV Stevens (ed) John Wiley & Sons pp 94-95

As well as our own meetings, **IBBS also promotes meetings by other organisations that are relevant to our members’ interests.** This is primarily via the IBBS website at www.ibbsonline.org/meetings. If you, or another society that you are a member of, is holding a scientific meeting in the next two years please let us have details – conference title, date, venue, who to contact, ideally along with an image (society logo, conference logo, photo of the venue, etc.) and we will include them during the continual update of our website.

Send all details to webmaster@ibbsonline.org.





News from IBBS delegate on FEMS Council by Jo Verran

I am the IBBS delegate on FEMS Council. I am sure you know that 'FEMS' denotes the Federation of European Microbiology Societies, with approximately 54 member societies comprising over 30,000 individuals. Each year, societies apply to join FEMS, and their eligibility is carefully considered. Subscriptions to FEMS are paid according to the number of members, and there are many benefits to being a member society – not least the grants that are awarded to help support member meetings (particularly our triennials) and travel for younger members. However, it is also important to be part of the voice of a body that has great potential influence on microbiology across Europe, through its journals, meetings, Congresses and other initiatives such as education and communication.

So, FEMS Council meets every year, in September. We review activities and discuss activities for the coming years. We are open to new ideas – the FEMS website is well worth visiting, because it reveals many activities that members perhaps might be unaware of. For example, there is



great opportunity for younger scientists to do voluntary work with FEMS. In addition, FEMS posts a monthly newsletter, which IBBS distributes to its members. This is also worth looking at, because it includes information about forthcoming events, calls for funding applications, and invitations to participate in activities.

The main activity and showcase for FEMS is its Congress, now held every two years. The first was in 2003, and since then it had grown in popularity and quality, attracting well over 2000 delegates to the 2017 Congress in Valencia.

In **2019, it will be in Glasgow, Scotland, on 7–11 July**, delivered in partnership with the Society for Applied Microbiology. The Congress provides a wonderful opportunity for

delegates to meet colleagues, update on a wide range of topics, delivered in a variety of formats, and there are many opportunities for young scientists to present and participate.

SAVE THE DATE



7-11 July 2019

8th Congress of European Microbiologists
Glasgow, Scotland | www.fems2019.org

This time, there will be:

- 6 keynote speakers
- 32 symposia
- 23 workshops
- 1 hosting microbiology society
- speakers from 23 countries
- 11 main congress topics
- 8 parallel sessions from Monday to Thursday

<https://fems-microbiology.org/>

If you have any issues you would like to be raised at FEMS Council, do let me know. For example, perhaps you have a suggestion for a symposium or workshop for the next Congress. Or perhaps you are active in education and would like to be associated with the education working group. I would like to suggest the following:

- Look at the FEMS website to see the many activities
- Read the newsletter when it arrives
- See if any of your students are eligible for any grants
- Look at the meetings awards
- Come to the Congress!
- Get in touch with me if you have any comments or queries!

Jo Verran (j.verran@mmu.ac.uk)

The European Mycological Association and the Polish Mycological Society announces the **XVIII Congress of European Mycologists (XVIIIICEM)**, to be held from 16 to 21 September 2019, in Warsaw and Białowieża, Poland. The Congress will focus also on different **strategies for bioremediation and biocontrol**. Website: <https://xviiiicem.pl>



18th Congress of European Mycologists
WARSAW-BIAŁOWIEŻA, POLAND 16-21.09.2019



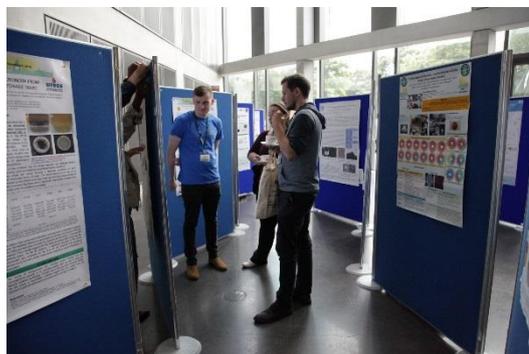
Membership Subscriptions Now Due!

Your IBBS annual fee is now due and, for the seventh year in a row, it is unchanged. So please help us and pay it straightaway:

Membership Rates:

Ordinary	£47.50
Student	£12.50
Retired	£12.50
*Online Journal	£35.00
*Hard Copy Journal	£60.00

*10 copies per year of International Biodeterioration & Biodegradation.



Simply go to www.ibbsonline.org/membership, log in using your email address and password and click on "renew membership". Or, if you have forgotten your password, click on the big green **JOIN IBBS** button (or use this link - www.ibbsonline.org/ibbsmember/signup). Payment is by credit/debit card or PayPal. If you have a problem, please email membership@ibbsonline.org.

IBBS is the only scientific society for scientists working in the fields of biodeterioration, biodegradation, bioremediation and associated disciplines.

We offer:

- Reduced registration rates at Society meetings and the joint meetings that we hold with other organisations and societies.
- Eligibility for awards, e.g. the small meetings and student bursaries and, as an affiliated society of FEMS (the [Federation of European Microbiological Societies](http://www.fems.org)), members can receive FEMS research grants and funding to attend conferences.
- An extensive and informative website (www.ibbsonline.org) with details of forthcoming meetings, the ability of members to publicise meetings and conferences that they are organising or involved with.
- Special rates for Society publications and resources.
- Regular member contact via our newsletter "[IBBS World](http://www.ibbsonline.org)", frequent updates through our website and our email network.
- Regular Society meetings and conferences
- Our triennial symposia such as IBBS 17 in Manchester (2017) and IBBS 18 in Bozeman, Montana, USA in 2020, are the three to four-day showcase events of the Society but we usually have at least one meeting each year, normally on a specific topic and lasting a maximum of two days.



Appointment of IBBS Vice-President

Our President, Brenda Little, will be completing her term of office next year and at this year's AGM in September we must appoint a vice-president who will take over from Brenda at the 2020 AGM in Bozeman. I am asking for nominations for the post. The Presidency lasts for a maximum of 3 years and is followed by 2 years as Immediate Past President. If you wish to nominate a V-P from among our members, please inform me on the email address below, giving the following information: your own name and work address, the same information for your nominee, plus their email, brief details of your nominee's career, explaining why you are nominating them, a statement that your nominee has been consulted and is willing to stand.

For your information, the last 6 Presidents before Brenda have been John Gillatt, Geoff Robson, Chris Gaylarde, Joanna Verran, Hans-Curt Flemming and Jimmy Walker.

Only fully paid-up members of the Society may vote. Please send any nominations by April 1st this year, in order to give Council time to consider them. Send nominations to: secretary@ibbsonline.org