

Report of the 3rd Meeting of Bergey's International Society for Microbial Systematics in Pune, India September 2016

Kamlesh Jangid

BISMIS 2016 was held in the city of Pune, the cultural capital of the state of Maharashtra, India at the Microbial Culture Collection (MCC) during the region's most revered festival, the 10-day Ganeshotsav. With the theme of 'Microbial Systematics and Metagenomics', the meeting was focused on the use of genomic/enviro-genomic data for the description of novel taxa. It was attended by 86 registered participants from 15 different countries. Since this was the first ever meeting of the Bergey's Trust or its Society, in this country, the meeting generated a huge interest among researchers in India, which formed the largest contingent of participants (Figure 1). The report below highlights the key events and sessions that took place during the three and half day long meeting.

Opening Ceremony

The meeting began with a traditional Hindu welcome of all the participants to MCC (now known as the National Centre for Microbial Resource, NCMR). This was followed by a formal welcome of all participants by the BISMIS president, Brian Austin, followed by an overview of things to follow by the Convener of the meeting, Kamlesh Jangid (Figure 2). A brief presentation on the status of microbial systematics in India was then delivered by Yogesh Shouche, the Co-Chair of the Organizing committee.

Due to the very specific nature of the meeting, student participation was limited. With the objective of reaching out to these young researchers in this field, a collection of chapters was put forth leading to the genesis of "BISMIS 2016 - a Souvenir." These were written by the expert speakers specifically for the students and faculty in academia, on topics that they would benefit most from, and those that would generate the curiosity in these young minds

Contact details

National Centre for Microbial Resource & Cell Science
SP Pune University, Pune - 411007, Maharashtra, India
+91-20-25329036
jangidk@nccs.res.in; jangidk@gmail.com

and motivate them to learn more about the subject. The Souvenir was released by Brian Austin, Peter Kämpfer and Yogesh Shouche. The Souvenir will act as a ready reference of the current status in this field for students and faculty alike who could not attend the meeting.

This was followed by the Opening Address on "Taxonomy of Prokaryotes - New Challenges in a Global World" by Peter Kämpfer. The discussion following the opening address set the stage for a very successful meeting over the next three days. The opening address was followed by the Welcome mixer for all participants, sponsors and volunteers at the Melange, a rooftop lounge at the Hotel where nearly all BISMIS participants were staying (Figure 3). At the mixer, all delegates were greeted with drinks, bollywood music and a live cricket telecast on the big screen in the background along with a range of delicious Indian cuisine.

Scientific Sessions

A total of six scientific sessions were held during the three full days of the meeting. With two sessions held on each day, a total of eight invited keynote talks and 22 oral presentations were delivered (Figure 4). A brief outline of each session is given below.

Session 1 - Genomic/Metagenomic Description of Novel Taxa

- Keynote 1 - Use of Genome Sequence Data in Bacterial Taxonomy: Perspectives from Large Scale Analysis by Jong Sik Chun
- Keynote 2 - Cultivation-Independent Genomics Approaches and Their Relevance to Microbial Taxonomy by Brian Hedlund

In addition to the two keynotes, there were seven oral presentations by David Arahal, Marike Palmer, Martha Trujillo, Maria Figueras, Jeffrey Newman, Boris Vinatzer and Kamlesh Jangid. These talks focused on genomic approaches to resolve the

taxonomy of difficult taxa, proposal of a single phylogenomic metric for species identification, development of a prototype for genome-based description of taxa and the development of new algorithms for the comparison of microbial communities.

Session 2 - Cultures and Culturing of As-Yet-Uncultivated Microbes

- Keynote 3 - Community Wide Insights into Stressed Niches Using Metagenomic Approach by Rup Lal

The keynote talk was followed by two oral presentations by Monali Rahalkar and Om Prakash who discussed the isolation of methanotrophs from rice fields and the preservation of 'uncultured' in omics era, respectively.

Session 3 - The Role of Cultures in the Twenty First Century

- Keynote 4 - The Value of Cultures to Modern Microbiology by Brian Austin
- Keynote 5 - Megaculturomics of Microbial Biodiversity from Diverse Ecological Niches in India by Yogesh Shouche

The session also included four oral presentations by Svetlana Dedysh, Syed Dastager, S Krishnamurthy and Kumari Richa that were focussed on the taxonomic and biotechnological implications of the characterized diversity of various taxa.

Session 4 - Modern Approaches to Identification/Diagnosis

- Keynote 6 - Novel Insights into Microbial Systematics Based on Molecular Ecology and Comparative Genomics Approaches by Joerg Overman

Following the keynote, five oral presentations by Paul Lawson, Iain Sutcliffe, Pelin Yilmaz, Wen-Jun Li and Ch. Sasikala were delivered in this session. The topics included a focus on chemotaxonomy, attempts to unite the classification of Bacteria and Archaea, environmental adaptability of *Nocardia* and metabolomics for taxonomy.

Session 5 - Minimum Standards for the Description of New Taxa

- Keynote 7 - Modest Proposals for Unification of the Nomenclature of Cultured and Uncultured Prokaryotes by William Whitman

Two oral presentations by Stephanus Venter on 'Genealogical Concordance and Other Lines of Evidence for the Recognition and Description of Bacterial Species' and Paras Yadav on 'SMRT sequencing in bacterial genomics' followed the keynote address in this session.

Session 6 - Cyanobacterial Taxonomy

- Keynote 8 - The Current Status of Cyanobacterial Nomenclature Under the "Prokaryotic" and the "Botanical" Code by Aharon Oren

This last session also included talks by Stefano Ventura and Prashant Singh who keenly discussed a unified approach for the taxonomy of Cyanobacteria.

Poster Sessions

A total of 31 posters were displayed throughout the meeting. A team of experts, Chaired by Aharon Oren evaluated the posters for the International Journal for Systematic and Evolutionary Microbiology 'Best Taxonomic Student Poster Prize' that was sponsored by the Microbiology Society.

Cultural Evening

A cultural program showcasing the mesmerising classical music and diverse dance forms of India was held on the evening of the first full day at the National Centre for Cell Science (NCCS) campus (Figure 5). The event was followed by dinner and interactions between participants and NCCS faculty. The following evening was marked by an adventurous industry sponsored visit on the outskirts of Pune.

BISMiS Business Meeting

The BISMiS members meeting was held at 12:20 pm on 15 September 2016 in Raman Hall, at MCC, Pune. The meeting was open to all registered participants as well as BISMiS members. The proceedings began with the BISMiS president, Brian Austin thanking the

organizers and all volunteers at MCC for hosting the meeting. This was followed by a discussions on increasing the member participation and to have regional contacts for increasing the memberships to the Society. The Treasurer, William 'Barney' Whitman presented his annual report on the financial status of the society and expenditure incurred during various events throughout the year. also updated the members about the elections for the two officer positions in BISMIS (see below). A proposal to hold the next meeting in 2018 in South Africa was put forth by Stephanus Venter that was welcomed by the attendees. The members meeting was adjourned after a thank you vote by the new President of BISMIS, Martha Trujillo.

Closing Ceremony

The proceedings of the closing ceremony were initiated by the Convener of the meeting, Kamlesh Jangid who presented a summary of the happenings over the past three days. He began by thanking all who attended the meeting, the Bergey's Manual Trust and other industrial sponsors, and a special thanks to all the volunteers for a very successful BISMIS 2016. Kamlesh also briefed the participants about the different proposals that were presented by various speakers to advance and improve microbial systematics. At the end, he reported that many ideas and the work presented at BISMIS 2016 would be released as a Special Issue of *Antonie van Leeuwenhoek* as confirmed by Iain Sutcliffe, the Editor-in-Chief of the journal.

Following this, Aharon Oren awarded the IJSEM 'Best Taxonomic Student Poster Prize' to Jacob R Miller for his poster on 'Two Novel *Flavobacteriaceae* Related To *Flavobacterium hydatidis* and *Flavobacterium hibernum* Isolated From A Freshwater Creek' (Figure 6).

William Whitman then announced the names of the travel award recipients. The two International Travel Awards were given to Nisha Patel and Marike Palmer, while the Local Travel Award was given to Anukool Vaishnav (Figure 7). The awards covered the travel, registration and hotel for the meeting days for each of the recipients.

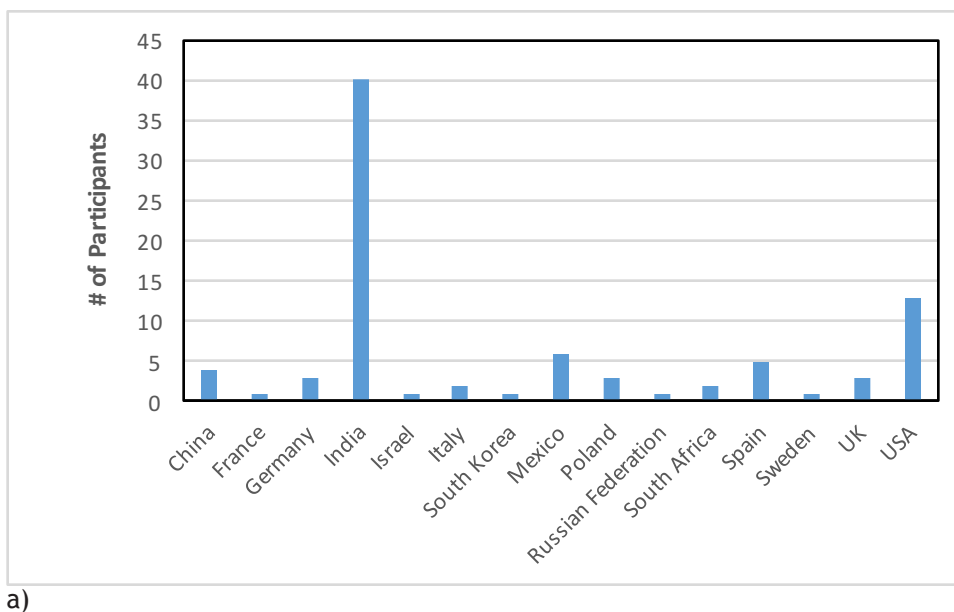
William Whitman, as the Treasurer and Kamlesh Jangid, as the Secretary of BISMIS, conducted the election of officers for the positions of President-Elect and Secretary of BISMIS. These were held online prior to the meeting. William Whitman reported the results of the vote: Iain Sutcliffe, new President-Elect, and Kamlesh Jangid, Secretary.

On behalf of the Bergey's Trust, William Whitman appreciated the hardwork and effort taken by the organizers. He presented the Bergey's T-shirt to Yogesh Shouche and Kamlesh Jangid for a very successful BISMIS 2016 (Figure 8).

Brian Austin was awarded the Bergey's Medal for his tremendous contribution to bacterial systematics and to the Society. The award was given by Svetlana Dedysh (Figure 9).

On behalf of the entire Society, the new President of BISMIS, Martha Trujillo thanked the outgoing President, Brian Austin for his services to the Society. She handed over a copy of the Engraved Stone Plaque to Brian in recognition of his hard work over the past two years (Figure 10).

The award ceremony was followed by closing remarks from the Co-chairs of BISMIS 2016, Yogesh Shouche and Brian Austin, followed by a formal vote of thanks by Kamlesh Jangid, as the convener of BISMIS 2016 and he welcomed everyone to South Africa for BISMIS 2018.



a)



b)

Figure 1. BISMis 2016, a) Geographic affiliation of participants, and b) Group photo of attendees



a)



b)



c)



d)

Figure 2. Opening ceremony at BISMis 2016. a) Registration of participants (Tapan Chakrabarti, Svetlana Dedys, Pelin Yilmaz, Peter Kämpfer, Joërg Overmann); b) Traditional Hindu welcome of Brian Hedlund by Sunil Dhar; c) Yogesh Shouche, Peter Kämpfer and Brian Austin releasing the Souvenir; and d) Opening address on “Taxonomy of Prokaryotes - New Challenges in a Global World” by Peter Kämpfer.



Figure 4. Moments captured during the scientific and poster sessions at BISMis 2016.

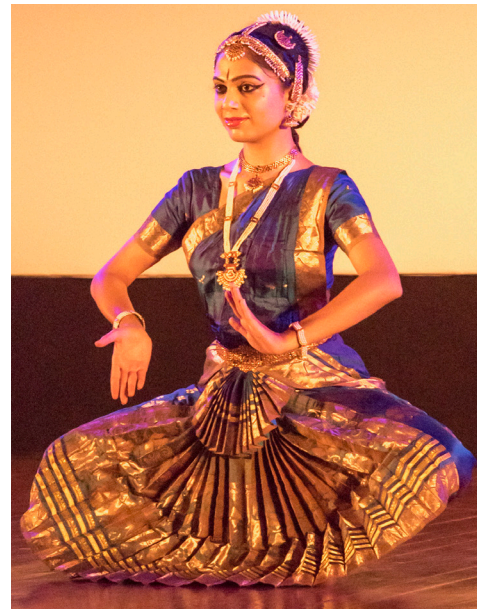


Figure 5. Moments from the cultural evening and other fun events during BISMIS 2016.



Figure 6. Jacob Miller Receiving the IJSEM 'Best Taxonomic Student Poster Prize' from Aharon Oren.



a)



b)



c)

Figure 7. William Whitman Presenting the Student Travel Awards to a) Nisha Patel, b) Marike Palmer, and c) Anukool Vaishnav.



Figure 8. William Whitman Presenting the Bergey's T-shirt to Yogesh Shouche and Kamlesh Jangid for a very successful BISMis 2016.



Figure 9. Brian Austin receiving the Bergey's Medal from Svetlana Dedysh on behalf of the Bergey's Trust.

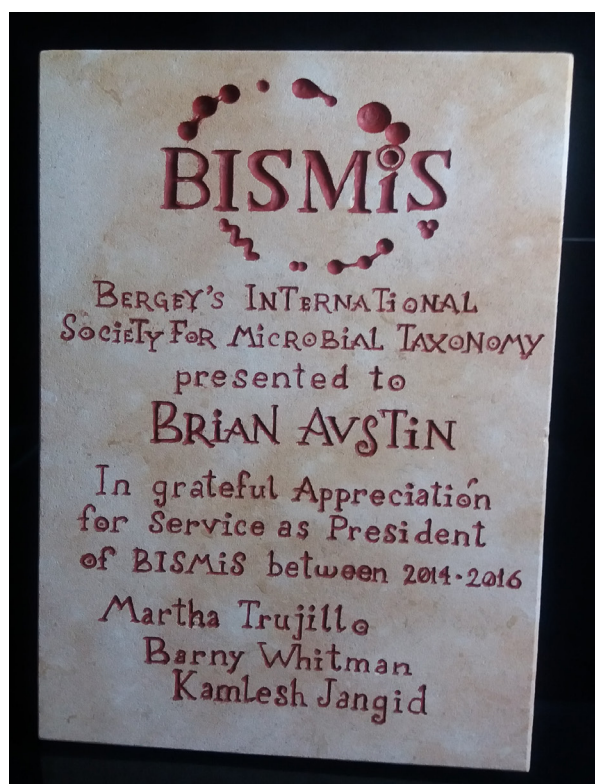


Figure 10. Brian Austin, the outgoing President of BISMIS receiving the Engraved Stone Plaque from Martha Trujillo, the new President of BISMIS.