

sDiv working group meeting report

"sIBTEDS"

Working group meeting report

Currently, synthesis research is performed primarily by researchers from the Global North. This is also true, but unexpected, for microbial ecology, where costs of synthesis research are low compared to the costs of biodiversity surveys, which rely exclusively on expensive sequencing techniques. The sIBTEDS project aims to increase the proportion of microbial synthesis research performed by Latin American researchers, and was designed to leverage the change in work culture that resulted from the COVID-19 pandemic and facilitated global research through virtual collaborations. In this sense, the structure of sIBTEDs is unprecedented for sDiv.

The sIBTEDs project began in the aftermath of the 2023 Datathon, a 3-day virtual event that gathered over 100 microbial ecologists from Latin America to highlight the potential of synthesis research and data archives, train participants in sequence data archiving, and organize subgroups focused on reanalyzing the data compiled during the event to answer different ecological questions.

By the end of the Datathon, many groups had been formed, 5 of which remained active long-term, each with a different focus. Over the following 18 months, as Dr. Arboleda Baena (the Postdoc associated to sIBTEDs) and Mr. Castillo Rivadeneira (the student helper associated with the project) curated, processed, and benchmarked the data compiled during the event together with the [MiCoDa](#) V2 dataset, the subgroups inspected the associated metadata, explored its coverage, refined their scientific questions, attended virtual statistics courses organized by the sIBTEDs project, and began the preliminary analysis of their respective datasets. Given their international compositions, groups met regularly online. Unlike conventional sDiv working groups, sIBTEDs subgroups pre-selected and pre-inspected their data prior to meeting in-person greatly accelerating the pace of discussion when they finally met in person.

In September 2025, representatives from four groups focusing on a) the aquatic microbiota of the Latin America, b) the global distribution of animal microbiota, c) the global distribution of plant-associated microbiota, and d) the global distribution of soil microbiota participated in the sIBTEDs iDiv workshop. Participants included microbial ecologists from Uruguay, Argentina, Mexico, Colombia, Brazil, and Germany, and iDiv ecologists (Dr. Rosenbaum, Dr. Thompson, Dr. Blowes) with extensive expertise in the statistical synthesis of complex ecological data.

During the workshop, participants worked in their subgroups, often rotating (participants were often involved in multiple groups), to discuss their research questions in light of the available data and statistical tools, finalize the necessary metadata and data structures needed to answer the questions, and design the general story of the first manuscript for

each of the groups. Further manuscripts for each group were also briefly discussed, but saved for a later date. On the fourth day of the workshop participants took a break from their subgroups to hold a hybrid discussion on the accessibility to computational resources as a major barrier to synthesis research in microbial ecology. All members agreed that this idea was worth further pursuing, and planned to create a survey for Datathon participants in order to assess the extent to which computational resources are a bottleneck for other microbial ecologists.

At the end of each day, all groups came together to update each other on the decisions and discussions that had taken place during the day, with the aim of cross-pollinating ideas across ideas. Then, all participants went out for a joint walk and dinner.

By the end of the meeting, participants had made plans for future in-person and virtual meetings and, importantly, set a 12-month plan for the completion of their respective manuscripts (one for each of the four subgroups). Participants also agreed to hold regular sIBTEDs-wide meetings over the next 12 months every two months to continue fostering cross-pollination between groups and ensure progress.

In informal conversations, participants highlighted that the opportunity to meet collaborators after working together for a year and a half was very exciting, that the meeting led to new collaborative networks that are valuable and important to maintain, and that, in particular, the exchange between microbial ecologists and synthesis ecologists was a formative experience. Participants also praised the organization and facilities at sDiv and iDiv, respectively.