DELIVERABLE 1.6 - COMMUNITY EVENT



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About this report

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Project Overview

The BioNT consortium is dedicated to providing a comprehensive training program and fostering a community for digital skills relevant to the biotechnology industry and biomedical sector. With a curriculum tailored for both beginners and advanced professionals, BioNT aims to equip individuals with the necessary expertise in handling, processing, and visualising biological data, as well as utilising computational biology tools. Leveraging the consortium's strong background in digital literacy training and extensive network of collaborations, BioNT is poised to professionalise life sciences data management, processing, and analysis skills.

BioNT Community Event & Carpentry Connect - Visual Summary





Introduction

Objectives of the Community Event and connection to BioNT's goals

At the core of the BioNT project is the goal of delivering high-quality, open and free training resources in digital skills. This goal is primarily achieved through the vast community-driven training materials available, which have been refined and tailored to fit the needs of BioNT's training audience: small and medium enterprise (SME) employees and job seekers. Therefore, the community event titled "BioNT Community Event & CarpentryConnect Heidelberg 2024" had the overarching theme "community-led training beyond academia" and was developed jointly with The Carpentries community.

The objectives of the community event were:

- 1. Foster knowledge exchange for the European trainer community
- 2. Promote collaborations across sectors, particularly between Academia and SMEs
- 3. Encourage sustainability and legacy of community-led training programs and projects
- 4. Strengthen synergies within European training programs

The community event was strategically designed to reflect BioNT's mission and goals and advance its core objectives. By fostering discussions on training gaps and showcasing practical tools and resources, the event reinforced the project's goal of enhancing the employability and competencies of trainers and trainees across academia and industry. The event webpage is available through this link.

Overview of the Event Structure

The community event took place on Tuesday-Thursday 12th-14th of November as a hybrid event, hosted by the EMBL in Heidelberg, Germany. This event was designed to foster collaboration, networking and knowledge exchange through a varied and engaging structure. The program was composed of:

- Three keynote speeches
- Parallel sessions: workshops, breakout discussions and mini hackathon/curriculum development sessions
- Two industry panel discussion
- Lightning talks
- Poster session
- Several networking opportunities: coffee breaks, lunches, dinner, online spaces, etc.

This structure provided a balance between technical discussions, practical skill-building and community engagement, making the event both impactful and amenable for the attendees.



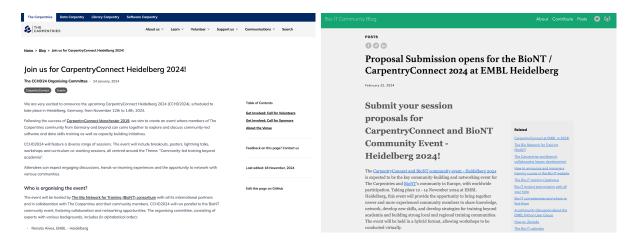
Audience and Participation

Engaging a Global and Diverse Community

The event attracted a diverse audience, including experienced trainers, individuals new to training, and professionals from academia, industry, and SMEs. This mix of participants fostered cross-sector collaboration and knowledge exchange, aligning with BioNT's mission to bridge the gap between academia and industry.

The valuable contributions of multiple training communities, such as <u>The Carpentries</u>, <u>CodeRefinery</u>, and the <u>Galaxy Training Network</u> were showcased. These communities enriched the event with their unique methodologies and innovative approaches to training, inspiring deeper discussions and practical takeaways. To reach this audience, organizers used professional networks, social media, and community mailing lists, leveraging communication channels across various training communities to maximize engagement. Specific visuals and targeted advertising messages have been generated for this purpose.

To increase the event's visibility and better convey its purpose, several blog posts were drafted and hosted primarily on The Carpentries' website. These posts were cross-posted on affiliated platforms, further expanding the event's reach. Two examples of blog posts are showcased in the figure below, from The Carpentries and the Bio-IT community at EMBL respectively.



The hybrid format played a crucial role in enabling participation from a global audience, with virtual workshops and sessions complementing the on-site activities. This approach not only broadened accessibility but also highlighted the event's commitment to inclusivity and community-building on an international scale.



Participation

The event brought together a diverse group of participants, with the following numbers showcasing its broad reach:

- Total Onsite Participants: 71 attendees joined the event in Heidelberg.
- Total Online Participants: 26 individuals registered for online participation.
- Diversity: Onsite attendees represented 17 different countries. Both onsite and online participants came from 63 unique institutions worldwide.

Inclusivity tickets

To promote accessibility, the event introduced Inclusivity Tickets, waiving registration fees for individuals with limited budgets. These tickets reduced costs to a nominal fee of €20, ensuring broader participation. While the tickets did not cover travel expenses, they made the event more accessible to diverse participants, reflecting the organisers' commitment to inclusivity and equitable access to training opportunities. Applications for the Inclusivity Tickets were open until mid-August, with three applications received and accepted.

Highlights of the Community Event

Keynotes: The relevance of Open Science in the current training landscape

The keynote sessions were a cornerstone of the community event, providing valuable insights and setting the tone for discussions throughout the three event days. Each speaker provided a unique perspective, aligning their expertise with the event's mission of fostering community-led training beyond academia.

Malvika Sharan - Carpentering Communities: Lessons from working in Open Science

Malvika Sharan was selected as a keynote speaker for her leadership in creating inclusive and impactful community spaces in open science. As the co-lead of *The Turing Way* and a co-founder of Open Life Science, Malvika has empowered diverse researchers to adopt open, ethical, and collaborative practices. Her roles within the <u>Bio-IT community at EMBL</u> and at The Alan Turing Institute fostered reproducible research and community-driven innovation. Her expertise in building global networks and mentoring the next generation of leaders aligned with the event's goals of promoting community-led education.

Malvika brought her experience as a leader in open science community builder, touching on societal and technical aspects. Her close involvement in <u>OLS</u> and The Alan Turing Institute's initiative "<u>The Turing Way</u>" were the foundation to discuss various components of Open Science and the importance of equity and inclusion.





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One of the most important elements in community building highlighted by Malvika was open leadership and mentorship, with one example showcased during her talk: Open Seeds. This was closely linked to self-advocacy and the importance of leading by example and empowering dialogues. To finish her kevnote. Malvika focused on the importance of honouring one's needs to engage sustainably: "Between stimulus and response, there is a space. In that space is our power to choose our response. In our response lies our growth and our freedom." -Viktor Frankl". Malvika's slides can be found in this link. These slides are licensed under CC-BY 4.0.

Radhika Khetani - Education is a community sport

Radhika Khetani has extensive experience in education within both academic and industry settings. As a Director of Data Science Learning at AstraZeneca, she has cultivated models of internal collaboration and communities of practice that enhance learning outcomes. Her ability to connect industry needs with open-source educational tools has enabled impactful cross-sector contributions. Her focus on fostering motivation and building scalable education systems made her an ideal speaker for discussing the interplay between communities, education, and professional development.

Radhika's keynote explored the parallels between education and sports, emphasising collaboration, adaptability, and shared goals in fostering learning communities. Drawing from her roles in academia and industry, she highlighted the diverse approaches required for effective training in both settings: In academia, training is driven by open, collaborative frameworks, such as The Carpentries philosophy, focusing on coding, data management, and analysis with a biomedical emphasis. The "Bicycle Principles" underline the importance of inclusivity and accessibility in short-format training, aimed at career-spanning growth for life sciences professionals. In contrast, industry training is tailored to dynamic demands, addressing a wide range of demographics from lab scientists to leaders. Here, self-paced learning, time constraints, and a practical focus on collaboration and efficiency are key challenges. Radhika contrasted these environments while underscoring shared themes: coding, data science methods, and fostering internal and external communities of practice.

This keynote concluded with actionable insights, advocating for greater contributions from industry to open science initiatives, rewarding community volunteers, and prioritising development time for learners. Essential skills for educators and community members include collaboration, adaptability, and valuing stakeholder input, all of which contribute to thriving, education-focused communities. Radhika's slides are available through this link. These slides are licensed under CC-BY 4.0.



Yanina Bellini Saibene - The stories behind your community numbers

Yanina Bellini Saibene brought unique insights into translating community efforts into measurable impact. As a leader in the R-Ladies community and a champion of open data practices, she has supported diverse initiatives that connect technical skills with real-world outcomes. Her ability to articulate the balance between personal growth and collective community benefits provided attendees with actionable frameworks for optimizing contributions and fostering sustainable community dynamics. Her keynote complemented the event's focus on leadership, collaboration, and achieving long-term community goals.

The presentation started by pointing out that community managers lead a set of interrelated activities to transform science through open data, software and reproducibility. For this, information to continuously learn about and to improve the community is gathered and measured. There are four items measured, listed on decreasing level of influence and control: activities, outputs, outcomes and impact. Metrics and indicators, i.e. numbers, are relevant to measure activities, but it is not all about numbers. It's about people.

Yanina touched on two different frameworks to analyse stories: impact level and participation model, and showed examples used in the <u>rOpenSci community</u>. These frameworks can be used for any story, to understand the related process and then learn, improve and replicate. The take-home message from this keynote was to have clear ideas about what the plan is, accompanied by a well-organised approach to capturing, documenting and disseminating: "Register the numbers and the stories because the stories made sense of those numbers". Yanina's slides are available through this link and are licensed under CC BY-SA 4.0.

Visual summaries shared through LinkedIn

One of the event participants, also a member of the industry panel, Dr. Heidi Seibold, created visual summaries of the three keynotes and <u>shared them through her LinkedIn profile</u>. These visual representations are a great complement to the summaries presented in this report and invite the reader to analyse the keynote contributions from a different perspective. The images are available through the link above, licensed under <u>CC-BY 4.0</u>.

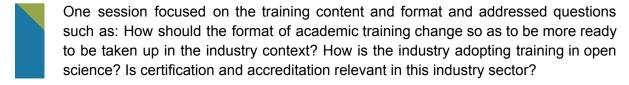
Panel discussion: Coding and data science skills training for industry

The BioNT consortium gathered experts in the area of training for digital skills in Life Sciences, and discussed the opportunities and challenges in delivering this training to the industry in the biomed/biotech sectors. The panellists invited were:

- Tom Schwarzl: EMBL alumni and trainer at the Bio-IT project, currently working as a clinical bioinformatician at Boehringer Ingelheim
- Toni Wagner: CEO and Founder of vAudience GmbH
- Heidi Seibold: Co-founder and trainer of <u>Digital Research Academy</u>
- Ming "Tommy" Tang: Director of Bioinformatics at AstraZeneca
- Radhika Khetani: Director of Data Science Learning at AstraZeneca



The panel discussion lasted 3 hours, split into two 90-minute sessions with different scopes:



The other session addressed how the skills gained as a trainer in the academic sector can be transferred to the industry to fulfil not only training roles per se but also other fields and scopes. Some questions addressed during the panel were: What are the differences between training researchers in industry versus researchers in academia? With regards to training: As academics, what is something we can learn from industry? Do your roles also involve working with the methods you teach? If not, how do you keep up to date?

The overarching objective of the panel discussion was to explore the challenges and opportunities in delivering computational skills training to the biotechnology and biomedical industries, identifying potential gaps and solutions. By engaging experts and participants in discussions, the panel achieved its objective of enhancing the understanding of industry expectations, training content relevance, certification importance, and the transferability of academic training expertise to industry roles.

Parallel sessions, lightning talks and a poster-networking session

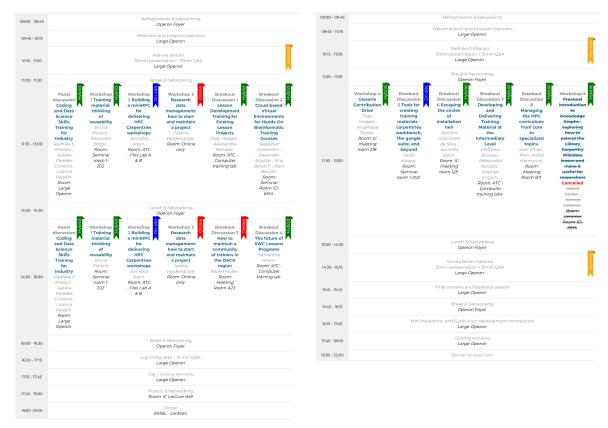
The first two days of the event featured three parallel sessions where a total of 12 sessions took place, in onsite, online and hybrid settings. The topics ranged from coding and data science skills training for industry to research data management and the development of reusable training materials. Participants engaged in hands-on workshops, breakout discussions, and panel talks, covering areas such as building miniHPC systems, cloud-based bioinformatics training, and maintaining communities of trainers.

There were 9 lightning talks in total: 7 from participants, 1 from a sponsor, and 1 from the EMBL Corporate Partner Programme. Each lightning talk lasted 3 minutes. Following all the talks, a Q&A session was held, providing an opportunity for attendees to engage with the speakers and explore the topics further.

After the lightning talks, a poster session was organised for the first evening. This provided a great opportunity for networking in a more informal setting and allowed for deeper discussions on the various topics participants brought to the event. The poster session complemented the lightning talks, offering attendees a chance to explore the themes in more detail and engage with the presenters one-on-one, fostering a lively exchange of ideas and further strengthening connections within the community.

To enhance networking opportunities, the event included various refreshing breaks and longer lunch breaks. Additionally, a dinner for all participants created a relaxed setting for further interactions and strengthening professional relationships.





The event program was packed with diverse activities, as reflected in the image above, showing the schedule of days 1 and 2. The schedule included multiple parallel sessions, with up to seven events running simultaneously across various EMBL Heidelberg locations, accommodating onsite, hybrid, and fully online formats. Different flag colours were used to distinguish the session formats, adding clarity for participants. For a detailed view of the program, please refer to the full schedule available on the BioNT website.

Keynotes and panel discussions now available in BioNT's video library

The Lhumos platform, provided by the EPFL, is a growing repository of domain-specific training material featuring video recordings of lectures, slide navigation, and access to support material. Within this platform, the BioNT video materials are being hosted. The most recent addition to the BioNT library now includes a community-event-dedicated section featuring the three keynotes and the two sessions of the industry panel discussion. The BioNT Lhumos space is publicly available through this link.



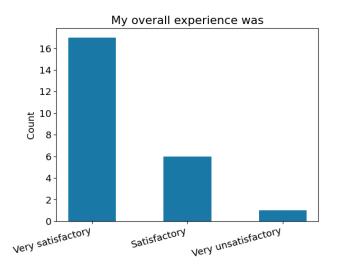
Participant Feedback and Engagement

Participant Feedback

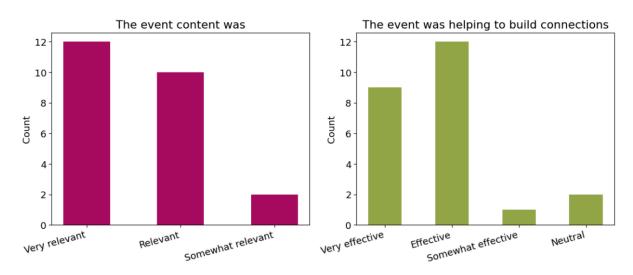
The post-event feedback form was made available at the end of each day for voluntary contributions. The questionnaire was designed with a focus on clear objectives and a balanced mix of question types, ensuring it remained concise and easy to complete. The

goal was to allow participants to finish the survey within 2–5 minutes. The questions were carefully selected to gather insights on attendee satisfaction and the effectiveness of the event, along with a few BioNT-specific questions.

Most of the 24 participants who filled the survey were currently employed in academia, 3 in an SME and one identified themselves as а student candidate. The event overall was positively perceived, matching the perception communicated the participants to the organising team during the event.



The event content was perceived very positively. The participants ranked the keynote talks, particularly the one from Yanina, as the most engaging and impactful. Additionally, the lightning talks and the poster session were a highlight for the participants. Among the participants, the favourite sessions were: "Developing and Delivering Training Material at the Intermediate Level" in the category of breakout discussion and "Training material: thinking of reusability" in the category of workshop.





The remarks from the participants regarding areas to improve were mainly from the organisational side. For example, streamlining the location of all the information provided for the event. Content-wise, some participants found the number of parallel sessions to be higher than expected and others enjoyed Slido for asking questions but still would like to have more direct interactions and the possibility to live to clarify the content of a question in person. Most of the participants enjoyed the event due to the possibility of meeting other people and networking with the different communities present. As this was the main purpose of the event, the feedback highlighted that the aims were met.

Engagement and interactions during the event

During the event, we saw strong engagement from both in-person and online participants. For the Q&A sessions following keynotes and lightning talks, we used the <u>Slido</u> application, where 59% of participants actively engaged in live discussions, asking questions and sharing thoughts. This high level of participation underscored the strong interest from attendees.

A word cloud created from the Q&A captured the keywords and recurring topics raised during the discussions, as shown in the figure.

To foster further collaboration. all parallel sessions used a dedicated HedgeDoc document to track notes and share links. **Presenters** were encouraged to capture key discussion points in this document, which also served as a starting point for blog post drafts.





Social Media Buzz and Highlights

The event sparked vibrant discussions and heartfelt reflections across social media, with participants sharing their experiences and insights.

Dr. Heidi Seibold captured the excitement of the keynotes, remarking,

"3 fantastic keynotes at the BioNT Community Event + European CarpentryConnect by Malvika Sharan, Radhika Khetani and Yanina Bellini Saibene . I am incredibly inspired by the keynotes and the event overall. Thanks so much to the organizers!"

Her enthusiasm echoed throughout the community, amplified by her thoughtful sketches.

The panel discussions "Coding and Data Science Skills Training for Industry", that Heidi joined as a panellist, were also a highlight for many. Radhika Khetani expressed her gratitude for the opportunity to engage in meaningful dialogues, stating,

"The funnest panel discussion ever! As Toni said, we could have talked for hours more if given the opportunity." and "What a joy and honor to be one of the keynote speakers with Malvika Sharan and Yanina Bellini Saibene, two strong and inspiring women who are changing the world for the better."

Thomas Schwarzl, another panelist, also highlighted the impact of the panel defining it a wonderful opportunity to share insights and learn from experts in the field. Similarly, Alexander Botzki featured the hands-on session on reproducibility where participants applied their learning to create FAIR materials.

For Samantha Wittke, representing CodeRefinery, the event was one of the most rewarding she had attended. She shared, reflecting on the enriching talks and discussions that fueled fresh ideas, that it was amazing to reconnect with familiar faces and meet so many new ones.

Finally, The Carpentries extended their appreciation to the organizing committee, celebrating their efforts to bring together a hybrid, inclusive event that engaged a global community. Their post recognized the key contributions of organizers and participants, stating,

"Thank you for dedicating your time and skills to put together such an important event for our communities in Europe and those who joined online from anywhere in the world!"

These testimonials and reflections illustrate the event's success in creating a collaborative and inspirational atmosphere, both onsite and online.



Testimonials from the feedback survey

After the event, participants shared enthusiastic feedback about the event's highlights, emphasizing its value for networking and knowledge exchange. One attendee described the blend of activities as especially enriching, noting,

"Networking, panel and talks"

stood out as the most valuable aspects. The keynote sessions also left a significant impression, with one participant reflecting,

Malvika's keynote was great! It's also wonderful to see how open science leadership is making an impact."

For many, the opportunity to connect with others in person was a defining feature of the event. One respondent shared,

"Getting to meet all the amazing people"

as a highlight, while another appreciated the chance to meet people in person. The sharing of community success stories also stood out, as one participant commented,

"Learning about community success stories and new approaches was incredibly insightful."

These testimonials reflect the event's success in fostering meaningful connections and delivering impactful content.



Outcomes and Impact

The BioNT Community Event & Carpentry Connect Heidelberg 2024 delivered significant outcomes, both immediate and long-term, highlighting its pivotal role in digital skills training for the life sciences. By fostering knowledge exchange, hands-on learning, and inclusive networking, the event created a platform for collaboration across academia, industry, and SMEs. Looking ahead, BioNT is committed to monitoring these achievements, particularly the long-term impacts, by continuing to measure outcomes such as sustained collaborations, skill development, and the effectiveness of training initiatives in addressing community needs.

Immediate Outcomes



Collaborative knowledge sharing: The event successfully facilitated cross-sector collaborations between academia, industry, and SME participants, aligning with BioNT's mission to bridge training gaps in digital skills.



Skill development: Participants gained hands-on experience through workshops, lightning talks, and poster sessions, enhancing their competencies in coding, data science, and bioinformatics tools.



Community Feedback: The post-event feedback survey revealed high satisfaction rates among participants, with keynote talks and networking opportunities ranked as key highlights.



Content dissemination: The keynotes and panel discussions were recorded and made accessible on the Lhumos platform, expanding the reach of event materials beyond the attendees.

Long-Term Potential Impact



Sustainable networks: The event strengthened training networks by fostering ongoing connections within the BioNT and Carpentries communities, with the potential to inspire future collaborative projects.



Industry-Academia synergy: Discussions during the panel and workshops provided actionable insights for aligning academic training with industry needs, improving employability for trainees and addressing workforce gaps in the life sciences sector.



Enhanced visibility of the initiatives: The event demonstrated BioNT's commitment to inclusivity and open science, attracting a global audience and establishing its reputation as a leader in digital skills training for the biotechnology and biomedical fields.



Additional Highlights

Lifelong Learning Resources

By hosting the event recordings and training materials on <u>Lhumos</u>, BioNT has ensured ongoing access to valuable educational content, supporting continuous learning and capacity-building within the community.

Sponsors and Supporters

The event was supported by organizations committed to advancing scientific research, open collaboration, and aligning with the project's values.









NFDI for Microbiota specializes in managing microbiome data across diverse research domains, while de.NBI provides bioinformatics services and training across Germany. ELIXIR, a European intergovernmental organization, connects life science resources to accelerate research and innovation. The Software Sustainability Institute, based in the UK, promotes sustainable software practices in scientific research. Together, these sponsors empowered the event's mission to enhance skills and foster community-driven learning.



In addition, the event received funding from the <u>ELIXIR</u> grant "Industry Engagement Day". This supported the panel discussion addressing the challenges and opportunities in training digital skills for the biotechnology and biomedical industries, hence enabling expert-led dialogues on topics such as training relevance, certification needs, and the transferability of academic expertise to industry roles. Outcomes include video recordings,

openly accessible materials, and a report summarizing key insights to foster ongoing knowledge exchange and strengthen connections between BioNT, ELIXIR and pan-European training communities like The Carpentries and CodeRefinery.