

Project Number: 952914

Project Acronym: FindingPheno

Project Title: Unified computational solutions to disentangle biological interactions in multi-omics data

D1.2 Visual identity and project website

WP1 TRAINING, DISSEMINATION, AND OUTREACH

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DOCUMENT HISTORY

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1 Introduction

FindingPheno's major objective is to develop better computational solutions for the challenges posed by the vast amount of multi-omics data that is currently being produced. These solutions will be shared with the research sector via open source software packages and scientific publications, while also integrated into easy to implement and deploy software solutions widely used within the biotech industry. Our main communication aim is for these solutions to become widely known and applicable across relevant research areas and industries, with specific focus on the role of the microbiome in biological processes.

In order to support these aims and maximise project exposure, we have developed a visual identity for use across all communication materials along with a project website that we will use throughout the project duration in order to promote FindingPheno and communicate specific project news, achievements and results to all relevant audiences. We will continuously monitor the impacts and effectiveness of our internet presence to refine and improve our outreach strategy and website contents for the best results.

2 Logo and visual identity

To give the project a uniform visual identity, a FindingPheno logo was designed for use on communication materials such as the website, presentations, posters, documents, etc (Figure 1). This logo was commissioned via a 99designs.com design competition and incorporates themes of chaos vs order and network interconnectedness.



Figure 1: FindingPheno logo.

We are in the process of compiling a communication materials dossier for use by project partners to give a consistent style and format to all dissemination activities. This includes FindingPheno logo files as above, a brand colour and font scheme (Figure 2), draft presentation templates (Figure 3), and a customised partner map (Figure 4). These materials will continue being developed and shared between partners throughout the project.

	Hex	RGB
*	#ea5526	234,85,38
	#ee7752	238,119,82
	#8ae1e3	138,225,227
*	#15c6c8	21,198,200
	#53a6d0	83,166,208
*	#00517a	0,81,122
*	#72a500	114,165,0
	#c0609c	192,96,156
	#fdbb43	253,187,67
	#262626	38,38,38
	#4d4d4d	77,77,77

Level	Font	Colour	Largest	Middle	Smallest		
H1	Poppins Semi Bold	Black	56	56	40		
H2	Arial	Black	30	30	26		
НЗ	Arial	Black	26	26	22		
H4	Arial	Black	22	22			
Н5	Arial	Green	16	16	16		
P1	Tahoma	Black	22	22	19		
P2	Tahoma	Black	19	19	18		
Buttons	Poppins Semi Bold	Black / White	16	16	16		

Figure 2: FindingPheno brand colours and font scheme. * = main colour.



Figure 3: Draft PowerPoint templates.

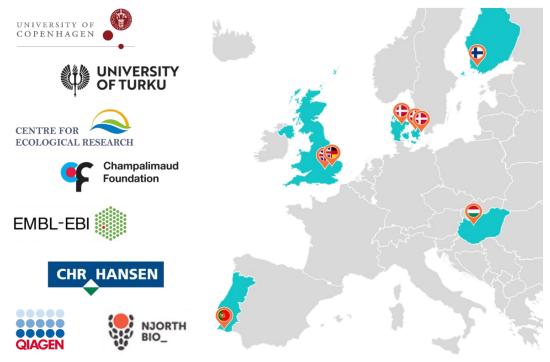


Figure 4: Customised map showing partner logos and locations.

3 Project Website

3.1 Communication objectives and target audiences

The project website (<u>www.findingpheno.eu</u>) is aimed to reach all audiences of the FindingPheno project, with the greater number of visits expected from those groups that are more technical and related to the subject matter of the project. The website is the focal point of passive dissemination and active online communication and has the following main communication objectives:

- To provide relevant and current information to a wide audience.
- To ensure information is provided in an accessible and usable manner.
- To help our solutions become widely known and applicable across relevant research areas and industries.
- To educate public, students, and farming practitioners about the importance of the microbiome to all life and to increase scientific understanding of the hologenomic framework within the academic sector.
- To be a public database of all the activities and deliverables carried out by FindingPheno and partners.
- To be a common base for all the partners containing all project documentation and deliverables.
- To provide a secure intranet for internal project communication and document sharing between partners.

The FindingPheno website will function as the outward-facing, online identity of the project providing all relevant information regarding the project and related issues for the general public, for industry and for researchers. We have conducted a stakeholder interest and influence analysis (Figure 5) to identify relevant channels and messaging for our key stakeholder audiences. This was used to identify the target audiences for each website section or uploaded material as part of our overall communication strategy (Table 1, also see <u>D1.1 PDER</u>). As no results will be available at the beginning of the project, during the first months the strategy will focus on raising awareness of the project among the different groups to create a wide audience base for future disseminative activities. Then, as results and deliverables become available for exploitation, the website content will become more technical and messages will then be developed with input from all partners and targeted to the different audiences and Key Opinion Leaders (KOLs) to support these objectives.

Table 1: Target audiences for each website area. See Figure 18 for update schedule for these areas.

	Up-stream partners	Down- stream partners	Industry early adopters	mid- to late-	Micro- biome projects	Research community	Students	Public	End-users	Policy makers	Funders and investors	Project partners
Website	x		x		x	x		x		х	х	
Intranet		X										x
Blog			x	x		x	x	x	x			
Social media	x	х	x	х	x	х	х	x	x		х	х
External newsletter	x		x		x			x	x	х		
Business cases & white papers		х	х	x								
Peer reviewed articles & conference posters	x	x	x	x	x	x	x					x
Videos			х		x		х					
Teaching materials			x	x		x	x	x				

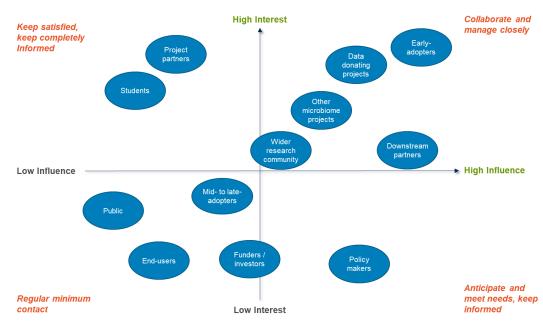


Figure 5: Stakeholder mapping.

3.2 Structure and content

The dedicated FindingPheno Horizon 2020 webpage was launched during May 2021 and can be found at http://www.findingpheno.eu. It is divided into two sections: a public website which is freely available and a private intranet only accessible to members of the consortium. The website is hosted on the Wix platform and has been developed using the Editor-X CMS following the structure outlined below.

3.2.1 Public Website

The public section of the FindingPheno website is currently divided into five main sections as described in more detail below. These sections a) describe the project (Figure 6, Figure 7), b) introduce the partners (Figure 8), c) provide a project blog (Figure 10), d) describe the events we have organised or participated in (Figure 11), and e) provide downloads for all deliverables (Figure 13). We plan to expand the website as the project progresses to add relevant project communications and outputs such as a list of publications derived from the project, papers presented at conferences, downloads of business cases and white papers, links to training resources developed in the project, links to databases where our data sets are stored, videos, and other relevant resources.

The homepage and about sections shown in Figure 6 and Figure 7 give an overview of the project's goals and objectives and will be expanded to include more technical details as the project grows.

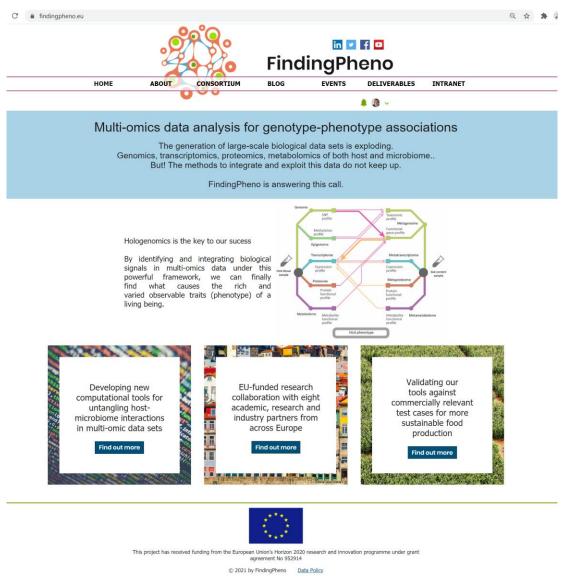
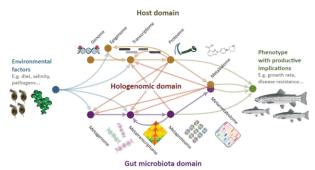


Figure 6: Screenshot of the findingpheno.eu home page.

4 3 ~

FindingPheno is creating an integrated computational framework for hologenomic big data, providing the tools to better understand how host-microbiome interactions can affect growth and other outcomes.



Understanding the hologenomic domain is a fiendishly difficult problem, with a complex tangle of interactions at many molecular levels both within and between organisms. FindingPheno aims to solve this problem, developing a statistical framework for the intelligent integration of multi-omic data from both host and microbiome to understand biological outcomes.

We apply state-of-the-art mathematical and machine learning approaches taken from evolutionary genomics, collective behaviour analysis, ecosystem dynamics, statistical modelling, and applied agricultural research to give us a **truly interdisciplinary approach towards solving this difficult problem**. Our project takes a unique two-pronged approach: combining biology-apnostic machine learning methods with biology-informed hierarchical modelling to increase the power and adaptability of our predictive tools.

The tools created in FindingPheno are expected to significantly improve how we understand and utilise the functions provided by microbiomes in combating human diseases as well as the way we produce sustainable food for future generations.

Go beyond pairwise associations towards causation

We develop methods that go beyond the current paradigm of "pairwise" associations studies by using machine learning, Bayesian statistics and causal models to determine the structure hidden in large multiomics data sets.

Account for biological heterogeneity

We account for the true dynamic nature of the host-microbiome system by modelling both temporal and spatial changes in the microbiome and their interaction with the host environment.

Include prior knowledge

We develop new hierarchical models to incorporate external information from existing databases and research studies, such as gene or pathway information, previous association studies, and the known evolutionary consequences of genomic and metagenomic changes.

We apply FindingPheno to real world case studies in sustainable food production.

FindingPheno utilises existing data sets to develop our models. We begin with integrated data, i.e. host and microbiome samples collected together under commercially relevant experimental conditions from chickens, salmon and maize. We then demonstrate the resulting tools against more heterogeneous public data collections for tomatoes and bees, refining our performance against real world applications.











The end goal of FindingPheno is to find the true drivers of phenotype in food production systems to unlock the full potential of microbiome interventions for health and sustainability.



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Figure 7: Screenshot of the findingpheno.eu about page.

The consortium section in Figure 8 provides an overview of the project consortium and partners with links to a detailed description for each partner (Figure 8). This uses a dynamic Content Collection managed within Editor-X making it easy to update any partner's information while retaining the uniform formatting across partners.



Figure 8: Screenshot of the findingpheno.eu partner overview page.



Figure 9: Screenshot of the individual partner page for EMBL-EBI.

The FindingPheno blog (Figure 10) will provide monthly articles discussing the project progress and activities in detail while placing FindingPheno into the wider context of using microbiomes and big data to help feed the world.

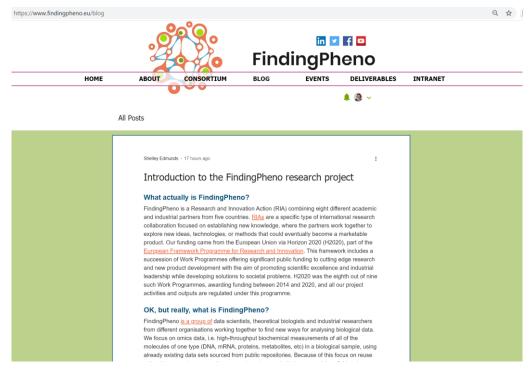


Figure 10: Screenshot of the FindingPheno blog.

The events section gives updates on any notable events either organised by or participated in by FindingPheno partners (Figure 11), with a short report for each event (Figure 12). This could include meetings, training courses, conference presentations, industry events, or public lectures and is built on a similar Content Collection as the partner section allowing fast and easy update by either the Outreach Manager or other nominated members.

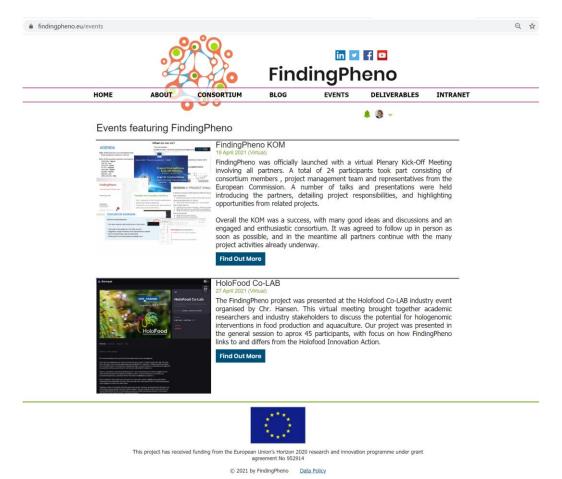


Figure 11: Screenshot of the findingpheno.eu events overview page.

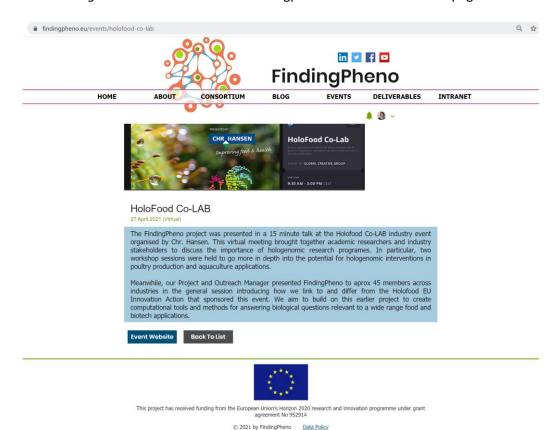


Figure 12: Screenshot of an example individual event report (HoloFoods Co-LAB).

The deliverables page gives direct links to download public deliverables submitted as part of our H2020 reporting (Figure 13). This section will be expanded to include downloads for other materials as they are developed, e.g. press releases, training materials, scientific publications, other articles or presentations.

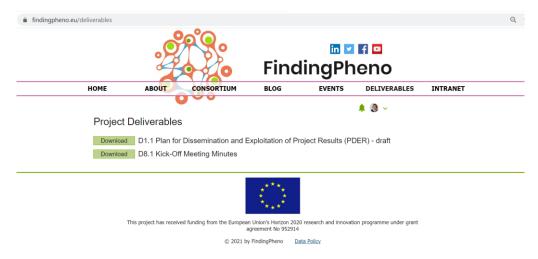


Figure 13: Screenshot of the findingpheno.eu deliverables download page.

3.2.2 Social Media

The FindingPheno website includes links to our social media profiles as part of each page header (Figure 14) and these profiles have the same branding as the main website to maintain our overall visual identity and project recognition (see Figure 15). The FindingPheno social media profiles are regularly updated by the Outreach Manager with input from other project partners to show FindingPheno as an active and interesting project, with a high level of cross-posting between social media and our main website. Our main focus has been on Twitter and LinkedIn as the most relevant to our outreach objectives and target audiences, but profiles for Facebook, YouTube and Instagram have also been claimed. We consider the social media accounts as an extension of the website, generating direct communication channels for audience interactions and driving traffic back to the website for more detailed information.



Figure 14: Webpage header with A) links to our social media profiles (see Figure 15) and B) a login bar for the private members area (see Section 3.2.3).

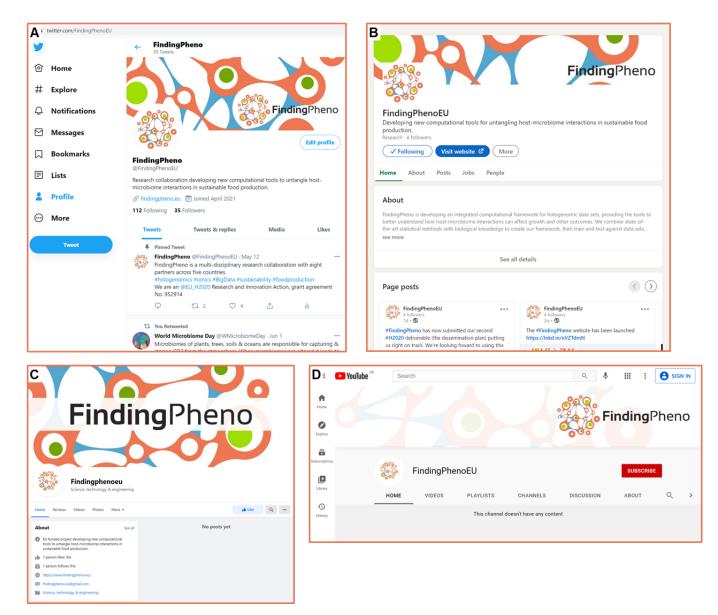


Figure 15: Screenshot of FindingPheno social media. A) Twitter, B) LinkedIn, C) Facebook, D) YouTube.

3.2.3 Intranet

The private intranet section of the FindingPheno website is run using the Wix Members Area app and these pages can only be accessed by someone logged in to a pre-approved members account for the FindingPheno website. The setup of each account is initiated by the user filling in a short form on the signup page and this application is then approved by a site admin, currently the Outreach Manager although other admins may be added at a later date if required. This is a fast and easy process from both sides (sign up and approval) and provides a high level of security and access control to the private areas of the website. Members can then login either by clicking on the intranet link in the main menu or using the login bar (see B in Figure 14 above), both of which will take them to their account page as shown in Figure 16 below.

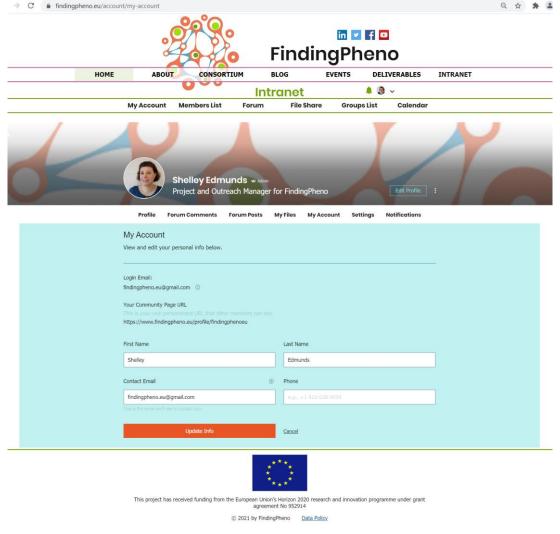


Figure 16: Screenshot of one example account users page within the FindingPheno intranet.

The FindingPheno intranet is currently divided into five main sections with the following functionality: a) members area with account details, personalised activity and notifications and a members list, b) forum for posting and commenting by all members, c) a file share repository where members can upload files, d) a groups section allowing closer collaboration between more focussed groups, and e) a google calendar for FindingPheno communication activities accompanied by details of the outreach strategy and dissemination register. The forum and groups section form the backbone of communication infrastructure promoting interaction between partners while the file repository allows sharing of internal documents pertaining to the project such as meeting minutes, internal newsletters, templates, possible updates to the description of work, agendas, reports, and schedule of both internal and external project meetings. The google calendar is linked to the findingpheno.eu gmail account allowing all members to place events in the calendar by sending a meeting request or calendar invite to this account. A findingpheno.eu google group has also been initiated to allow shared editing of docs such as the dissemination register without making the documents public.

3.2.4 Web accessibility

We believe that high accessibility and a good user experience are important goals for the website of a publicly-funded project such as FindingPheno and therefore work to fulfil The Web Content Accessibility Guidelines 2.1 (WCAG 2.1) as outlined in the EU Web Accessibility Directive (Directive (EU) 2016/2102) wherever possible. In particular we focus on the main expectations and responsibilities from these guidelines, as follows:

- Make the website content accessible to everyone
- Provide a public accessibility statement (see Figure 17)

Provide a feedback mechanism for users to report inaccessible content for enforcement



Figure 17: Screenshot of the FindingPheno Data Policy and Accessibility Statement. This is linked from the bottom of all pages in the FindingPheno website.

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In order to make the website as accessible as possible, we used the free online <u>Siteimprove Accessibility Checker</u> (version 127) to assess our website then discussed the outcomes from this tool with a Web Accessibility Specialist to identify areas for correction or improvement. Issues that have been fixed included updating/adding alt text on all figures, streamlining heading formatting, adjusting contrast between colours, and making the content responsive to changes in screen size. However, some issues were unable to be corrected due to limitations in the Wix Editor-X tools. In particular, we were unable to add individual titles to the links, especially when using link buttons or repeater content, meaning that multiple links on one page will look the same to a screen reader (e.g. "find out more"). We will request that this functionality is added to Editor-X and monitor their news feeds for updates in this area. This non-compliance is listed in our Public Accessibility Statement which is linked in the footer of every page along with the Data Statement and information about how to report accessibility issues with the website.

3.3 Updates and maintenance

The website is developed, managed and hosted by UCPH (WP1 leader) under the responsibility of the FindingPheno Outreach Manager. The Outreach Manager leads the content generation for both website and social media platforms with collaboration and input from other consortium members and ensures regular updates of the website, blog and social media profiles. An action plan for the website and associated content has been developed as shown in Figure 18 to ensuring timely, well planned, and regular updates to maintain external interest in the project. In addition, we will use the dissemination register where all partners report their communication activities or publications as a source of content for the website and social media. It is planned that the website will be maintained for at least 3 years after the project ends and thereafter as long as it remains relevant and useful.

	Yr	1 202	21						21	022		Yea	r 2						2023	3	Υe	ear 3							20	024		Ye	ar 4							2025
			may ju	ın ju	ıl au	sept	oct	nov d			mar	_	may jur	n jul	aud	sept	oct	nov		feb m		_		jul	aug	sept	oct	nov de			ma		_	_	jul	aug se	ept oc	t nov		jan feb
Website static content			Laur						yeaı																				Í				Г			Ĭ				
Website dynamic			Laur	nch C	Contir	nuous	upo	latin)																															
Blog posts			F	ost	1x/m	onth																										L								
Twitter		Τw	eet 1:	x/we	ek																																			
LinkedIn		Po	st 1x/	mon	th																																			
External newsletter																																								
Business cases and white																																								
Journal articles & conf posters										D;	3.1			D4	1.1					D3.2			D5	.2	D3	.3								D5.	3					
Videos												Aim	ed at	chile	dren																						Α	imed	at in	dustry
Teaching materials	Sh	are	as ne	ede	d																																			

Figure 18: FindingPheno communication action plan for the website and other online content.

Performance assessment 3.4

We will monitor and assess the performance of our website and social media activities to ensure high-quality execution of our communication strategy. This is a continuous process assessing the overall website activities and results and also evaluate each individual activity and its impact on the project as a whole. Each major event will be assessed qualitatively within one month of conclusion for immediate feedback, and the KPIs and other outcomes listed in Table 2 will be summarised and assessed at least twice per year to identify longer term trends. These assessments aim to ensure the communication action plan and stakeholder strategy is being followed, to identify any delays or other issues, and to track which activities have the biggest stakeholder impact (both in quantitative and qualitative terms). Any improvements or lessons learned will be used to continuously refine our activity planning and implementation.

Table 2: Website Key Performance Indicators (KPIs)

Indicator	Year 1 Feb 2022	Year 2 Feb 2023	Year 3 Feb 2024	Year 4 Feb 2025	Source & methodology
Accumulated number of Twitter followers					Twitter analytics
Accumulated number of followers on LinkedIn					LinkedIn registry
Accumulated number of views of the video					YouTube registry
Accumulated number of newsletter subscribers					Internal subscriber list
Accumulated number of newsletters sent					Dissemination activity registry

Accumulated findingpheno.eu webpage views			Google Analytics
Accumulated number of articles posted on the FindingPheno blog			Dissemination activity registry
Average blog post views			Wix Analytics
Qualitative engagement with blog posts, e.g. comments, reposts, mentions on other social media			Wix Analytics