Issue 29 - December 2021

Marie Curie Alumni Association

Newsletter

Rebuilding bridges

Guest-edited by
Oleksandra Ivashchenko
and Sugosh Prabhu

Meet the MCAA Editorial Board

How my MSCA project links our domestic space to nature

ISSN 2663-9483

Table of contents

Meet the MCAA Editorial Board

Research

Message from the Board

Photo by Fernanda Bajanca

Dear MCAA members,

Two years ago, in December 2019, researchers in China raised the alert for a potentially fast spreading epidemy of atypical respiratory infections. They were right. Three months later many European countries were in lockdown and most of the world followed soon after. Since then, we have been at times submerged, sometimes surfing the waves of a viral pandemic disease that dramatically changed the world as we knew it.

The present newsletter issue focuses on our hopes for the future, but also on the struggles our community endured during these difficult times. The following pages will tell you about the amazing perseverance, resilience, and creativity of MCAA members, allowing them to succeed under the harsh conditions we have been facing. Their stories made me smile and feel proud of belonging to this unique community. However, I can't avoid a bitter taste. During these long months the MCAA board has been contacted by many fellows whose projects, and careers, were severely hit by the pandemy. We have the moral obligation to incite the MCAA and the larger research community to recognise the overwhelming impact the pandemy had especially on particular cases: single and isolated parents in a foreign country without family support, research projects whose characteristics made it impossible to implement an acceptable contingency plan, serious lack of support from some host institutions and hierarchies, to mention the most striking ones. The research community must take into consideration the impact of such major forces on the projects and careers of the fellows and actively fight discrimination when evaluating their applications for jobs and grants.

During the upcoming 2022 MCAA Annual Conference (AC), we will have the opportunity to reflect together on these and other issues the community is facing. "Sustainability and the post-pandemic workplace" is the chosen theme for this flagship event of our association that will take place 26-27 March 2022 in Lisbon, Portugal. An MCAA General Assembly (GA), open only to members, will take place on 27 March, closing the event and, importantly, will host the election of a new board. The AC will be a hybrid event with a limited number of physical attendees while the GA will be fully online to allow for all members to express their vote. Check the MCAA website and keep an eye on your mailbox for more information on the 2022 AC & GA as well as for the MCAA Board election call for applications.

Like everyone else, the MCAA faced considerable challenges during these two years of pandemic. The activities from local Chapters and Working Groups were initially greatly affected, but have been gradually

adapting to a virtual world. The board team met face to face this November for the first time since the beginning of its mandate that coincided with the arrival of the pandemic disease in Europe. Despite this, continued efforts to stay visible in the policy arena have resulted, against all odds, in increased recognition of MCAA contributions in European research policy. The MCAA is now being invited on a regular basis to share insights into various policy activities relevant for our member base.

Policy WG Vice-Chair Renaud and Board member Sara joined the European Research Area (ERA) conference at the end of October and Board members Mostafa and Marina attended a workshop by the ERA Forum for Transition held in September 2021 at the Slovenian embassy in Brussels. Across these activities, they advocated for having an MCAA permanent representative in future ERA-related stakeholder consultations and a seat at the table for researchers in the governance of the ERA.

The call for researchers to be included as a stakeholder in the ERA Forum for Transition is one MCAA is making together with 15 other organisations. As the work on ERA progresses beyond its governance, several board and policy WG members also joined stakeholder consultations focusing on researchers' conditions in the New ERA.

Other policy events recently attended include the Initiative for Science in Europe (ISE) event addressing challenges for the future of European Research, attended by Mostafa and Renaud, as well as a Science Business panel plus a Global Research Council (GRC) regional meeting regarding the science and technology workforce for the future, both attended by Mostafa. Together with 24 organisations, we have also recently supported a statement to urge the European Commission and UK Governments to work towards a successful UK association to Horizon Europe.

Finally, this year's MSCA Conference marking the 25 years of MSCA is focusing on fostering balanced mobility flows in Europe. Several members took part in the policy panel at the conference. In addition, several MCAA Members shared their journey and how MSCA helped in their career.

Photo by Kowit Lanchu on Shutterstock

Together with the obvious changes implemented by all local Chapters to continue their networking activities, another major pillar of the MCAA, that we successfully adapted to the virtual world, is our career development offer. We have offered for a limited time hundreds of free LinkedIn Learning licences to our members. While this offer recently ended, I want to draw your attention to the free Coursera licences that are still available exclusively for active members, those of you around the world who give your time and skills for the benefit of the MCAA membership, and also unemployed members and researchers at risk, who are most at need for career boosting opportunities. Talk to your Chapter or WG chair if you are interested. A limited number of eCornell licences are also still available for Chapter and WG chairs. To provide such opportunities to every member is our dream goal for the future. With the present resources, the board decided to actively acknowledge and reward the extraordinary engagement of the hundreds of active members who contribute to the life of this association. It's only fair and it's not enough to express our appreciation as MCAA members.

Another big block of the career development support that the MCAA traditionally offers are our Micro Grants. Opened last September, the current call has received a record number of applications in the first month. While such a strong demand resulted in some delay in the announcement of results, it indicates the continuous interest of our members in this support scheme.

As communicated in the last newsletter, MCAA Board Member Esther Hegel will perform the Treasurer role until the next General Assembly in replacement of Francesco Sanna, for personal reasons unfortunately obliged to resign from his position at the MCAA board. According to article 9° of the MCAA Statutes, it is the responsibility of the board to nominate a substitute for a board vacancy. The extra tasks required as treasurer imply that Esther would not be able to continue her essential work in the internal management of Chapters and WGs. We are lucky that she has not been developing the management activities alone. Indeed, especially during Esther's recent maternity leave, Gledson Emidio, the chair of the Brazil Chapter, has assured the continuation of the WG's and Chapters management. He is therefore an indisputable natural choice, and he earned by merit the nomination of the board to assure the ordinary board vacancy until the coming end of this board's term. We thank Gledson for accepting this new challenge and welcome him to the Board Team.

I am proud to close this year's last board message with the announcement that the Marie Curie Alumni Association passed the barrier of 20 000 members! We take the opportunity to renew our promise to keep working towards strengthening the MCAA community and supporting their career development.

May the new season bring you joy with plenty of achievements and exciting opportunities.

Fernanda Bajanca
Vice-Chair of the MCAA
On behalf of the MCAA Board
fernanda.bajanca@mariecuriealumni.eu

Editorial

The Way Forward


Photo by Sugosh R. Prabhu

It is a daunting task to write an editorial that will echo the sentiments of a diverse audience such as that of the MCAA. Even more so, if the editorial is for a special issue focused on rebuilding bridges in a post-pandemic scenario. In the final stages of any crisis, global thinkers, policymakers, and researchers usually come up with opinion pieces that suggest a way forward. Numerous articles popped up in the beginning of March 2021 that almost signalled that the pandemic was over. Some articles even described how businesses and workplaces should look ahead to a post-pandemic world. Yet, in a few months, the situation collapsed again with a lethal second wave in Asia and South America.

The pandemic has not been a homogeneous experience throughout the world. The disparity is evident even with critical issues such as vaccine distribution. Researchers, too, weren't immune to the effects the crisis had at various levels. As a community we battled a multitude of problems such as cancelled contracts, delayed appointments, career breaks, media scrutiny, and, in some cases, even threats. Producing a special issue that focuses on rebuilding bridges after this crisis is therefore a challenge, especially for a community like the MCAA that has a global presence.

It is indeed difficult to look ahead in the midst of a crisis. However, approximately 20 months have passed since the first lockdowns and shutdowns started across the world. The considerable passage of time has allowed new stories to develop. Stories about how researchers managed to steer their projects, how they overcame numerous hurdles, what are their experiences that can inform future policymaking. When the lead guest-editor of this special issue, Oleksandra Ivashchenko, pitched the idea to the editorial team, it was immediately accepted as the central theme of the special issue.

This special issue is by no means a generalisation of the experiences of the research community, but I am sure that in every story shared by our incredible members there are some aspects and experiences that will resonate with a larger audience. This article turned out to be more of a disclaimer than a traditional editorial, but this is inadvertently one of the pressures of curating a newsletter that represents a wide spectrum of members. Here is the final disclaimer mixed with a bit of hope: this special issue does not offer a playbook to a post pandemic world, and I doubt there can ever be one. However, we need to set up an environment in which the research workforce can thrive and the stories in this special issue may contribute towards developing the very blueprint needed to create such an environment.

Sugosh R. Prabhu
Assistant Guest Editor
MCAA Editorial Team
sugoshprabhu@gmail.com

Editorial

From timber stack to the Menai Suspension Bridge: how to move forward

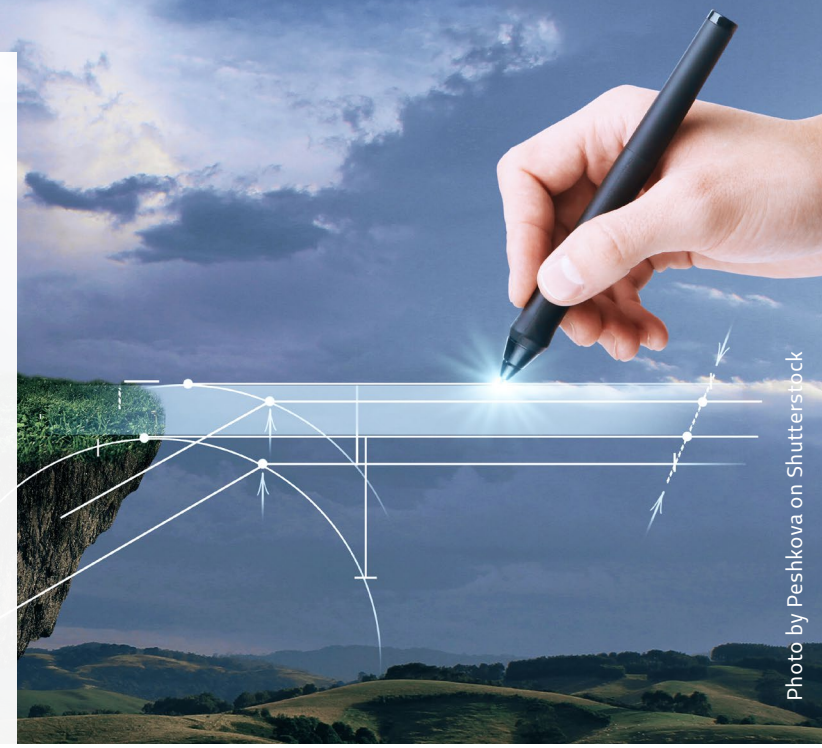


Photo by Peshkova on Shutterstock

The simple English word "bridge" can mean so many different things. We can build one to move forward and cross the river or establish a new relationship, new understanding. We can burn one to stop our enemies and allow us to move forward, help us not to fall back. The way we interact with them may differ, but they always represent our transition to the future.

What is a bridge?

A bridge is a structure built over a physical obstacle, such as a body of water, valley, or road, and its purpose is to provide a safe crossing over that obstacle. The first bridges appeared on their own in nature, probably when a tree fell over a stream, forming a nearby cliff. Therefore, when humans started building them, they first had simple forms and were formed out of cut wooden logs or planks, stones, with a simple support and crossbeam arrangement. During their long history, bridges managed to influence our culture and improve the way we travel, do business and forge policies. Symbolically, they represent the way we deal with obstacles.

What is a good example of a historically significant bridge?

The Menai Strait (Wales) was naturally created by glacier erosion and later flooded by the sea. The danger and risks of crossing it were hunting people for hundreds of years, until the Menai Bridge (1826) was built. It was the first iron suspension bridge of its kind and it established the potential of the bridge technology to achieve both long and large spans. Without a doubt, this was a ground-breaking development and a huge improvement in communication, especially for the locals. For the first time, they could cross to and from the mainland without fear of perishing in the fast-flowing, dangerous waters of the Menai Strait.

The digital bridge

In modern society, travel and long distance communication have become an important part of everyday life. Thanks to the Internet and the tremendous development of communication technology over the past 20-30 years, we have built a new type of bridge, the digital one. Therefore, we no longer share the same understanding of distance as generations before us. Nearly always, we can call, FaceTime, email and reach any person, office or information we need. Often it is no longer a question of whether we want to bridge an information gap with someone/something, it is a question of "whether we want to."

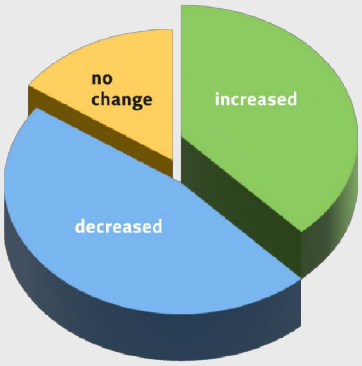
When the pandemic hit, another typically well-defined boundary of our reality blurred, seemingly indefinitely. Traditionally defined boundaries of home, work and social spaces disappeared. Our home became our office, our entertainment zone, our gym and our vacation destination. For many people, technology was the only way out of this 'flex space'. Phones and laptops were not susceptible to the virus and did not have to wait for a vaccine. Technology became our voice, our security blanket, became the bridge to the outside.

Although we always knew that predominantly digital communications and widespread use of virtual reality will take place in the distant future, it was always a far-fetched idea for a wider community. Frankly, all the technical developments had been there for several years, we just did not find the idea that appealing, it did not fit the "typical image" or the "comfort zone."

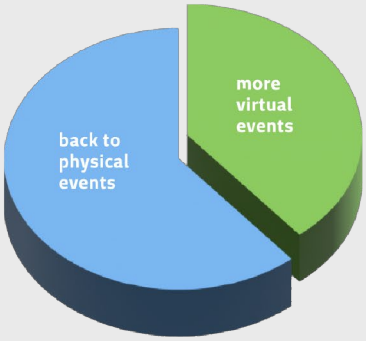
As humans, we build our lives around rules and habits, they are inevitably embedded in our society. Although adults, still like a child confronted with a new surface, we prefer to explore the new environment step by step.

Scientific communities in particular are used to tedious protocols. Like Marie Curie herself over 100 years ago, we still follow roughly the same

Productivity

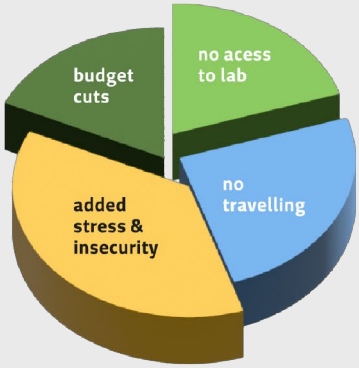


Events



Positive change

Main stress factors



Results of social media polls published on official LinkedIn and Twitter pages of the MCAA. A total of 4 042 people took part in the polls (positive change: 311, main stress factor: 1 163, events: 653 participants; productivity: 99 participants, respectively).

social protocol. Prior to the pandemic, physical conferences were our main way to network, when we heard of a meeting we thought of a large room full of people, etc. At once, these social protocols were changed, while the role of the digital bridge became ever more important. Therefore, we couldn't help but wonder what new opportunities or challenges this change has introduced to the life of the MCAA community. How have we adapted to the digital bridge? Can we continue like this?

Every experience differs

Between September and November 2021 four social media polls were shared with the MCAA community. Through these polls, we wanted to get a sense of how the pandemic has reshaped our productivity, our professional networking approach, the level of stress, or even the opportunities it enabled. The figure on page 30 provides a visual summary of the results.

To my personal surprise, more than 87% of participants indicated that they have experienced positive change, mainly related to better accessibility of events or more flexible time distributions. The lack of travel or physical encounters was not the main stressor, but poor communication and uncertainty was. Even in the event of budget cuts, effective use of the digital bridge and clear communication about the future strategy was reassuring for the community. It is impossible to understand how the pandemic and the new type of social interaction have changed us. We only hope that this data and articles from authors who contributed to the special issue speak for themselves and that each MCAA member who reads them draws their own conclusions.

Take home message

Two years forward from December 2019, the pandemic is still very much present in our lives, but is slowly getting under control. Eventually, and hopefully in the near future, we will return to our "normal" lives, but the question is whether we want to go back to the pre-pandemic situation. The past two years gave us a unique opportunity to experience the total turnaround of daily reality. Everyone had to adapt and jump ten steps forward, think outside the box to find the best solution for the situation. It was probably the only time in human history when everyone in the world had to be creative at the same time. And as you can see from our polls, experiences can vary. This situation certainly has caused a lot of stress and, unfortunately, far too many casualties. At the same time, my question remains: how will we use the new knowledge? How can we utilise this unique experience to design our own Menai Suspension bridge?

Oleksandra Ivashchenko
Lead guest-editor of this special issue
MCAA Editorial Team
oleksandra.ivashchenko@gmail.com

Rebuilding bridges

Once upon a time... in a world of virus, resilience and broadband connection

We used to live a real life. Then we lived in a virtual one. Now, we are going back to real life, but some changes will stay, like my online yoga lessons.

The pandemic affected our lives in many ways, we all know it, and we all know how we survived. I'm a biologist, so I won't even try to throw myself into sociological, economic or psychological analyses. I live in the academic world, with one foot in science and one in the humanities, and I witnessed great challenges and great changes in both of these domains.

Only two years ago congresses and scientific meetings were held solely in-person, training and lessons occurred in a classroom or in the

Photo by metamorworks on Shutterstock

field, and networking meant actually gathering with people in a place often far from home. Our state of mind was clear: we were at the meeting or we were at home. At least our bodies were.

We used to have Skype meetings, that's true, yet nearly felt discomfort when it happened, since it was an exception to the rule.

Then, a small bit of RNA enclosed in a few proteins came to change everything. As resilient creatures as we are, we adapted our social rules and routines to the new pandemic style- welcome to a world where almost everything was online.

It was time to equip ourselves with the essentials - masks, hand sanitiser gel, and a broadband internet connection. Living in the countryside didn't help me in these aspects. I had my first meetings inside the car with my computer, to take advantage of the wi-fi of the local rotisserie. Then I upgraded my 3 giga/month contract, and I could stay at home if I turned off the video to save some bytes. But it was only some months later, when the broadband arrived at my house, that I felt a real improvement in my existence. I was finally able to attend not only work meetings, but also online yoga classes with my sister who lives 2 400 km away.

So, even without social dinners and field trips, we managed to keep in contact with our colleagues. Actually, the development of platforms for online communication facilitated networking and dissemination activities, making them easier to organise, cheaper, environmentally friendly, and inclusive. Seminars or national events that would normally gather a few dozen "locals" could instead be attended by hundreds of people from all over the world, even from countries usually underrepresented at international events because of financial, political or administrative constraints. I organised two advanced training courses in 2020 and almost all the international experts I invited to teach there accepted the invitations: no travel, no costs, no waste of time involved. We just had to adjust the timetable to the time zone and choose the online platform. How great is this?

Admittedly, other aspects of the work required more inventiveness and sacrifice. Like a superhero, I have a double life: project manager of the ERC project RUTTER, in the field of History of Science, and researcher in the field of Lichenology and Environmental Science, where I also supervise the work of Lourdes Morillas, a Marie Skłodowska-Curie fellow. As expected, the problems that arose in the two research fields had the same origin but were quite different.

The RUTTER project mainly aims at studying original manuscripts from the 15–17th centuries, which are in libraries and archives. With the lockdown and the closure of these structures, we had a long period of forced rest ahead of us. Nevertheless, it is worth mentioning that since the beginning of the project in 2019, one of our activities has been buying books to build a library with hundreds of the most relevant and updated volumes about any aspect related to the project. From the point of view of our reading material, we were ready to face a pandemic, a zombie invasion or even an atomic war. However, we needed the manuscripts. Once again, technology came to help in the form of high-resolution digitisation processes. While asking for digitising new documents was hard, because libraries were closed or overwhelmed with requests, the good practice of digitising documents before the lockdown allowed us to work not at a full speed, but at least at a reasonable working pace. It is the right moment to highlight the importance of digitising and sharing historical documents and, moreover, to publicly thank all the libraries that invest their resources in making available the treasures they curate for the public benefit. The virtual RUTTER library is an example of what we have achieved in probably (and hopefully) the hardest time ever.

So, while managing a project in History of Science was possible and the team was on

the right path, what was happening on the lichen side? The laboratories were closed and lacking clear rules to access the facilities – any request to do anything in the faculty was simply rejected. We either had to abandon Lourdes' samples to their fate or move them. In the first case, we would have lost months of work without a chance to repeat the long-term manipulation experiments due to their duration. This time, living in the countryside was helpful since I could bring home tens of soil cores with different types of biocrust and place them in the open air but sheltered from direct sun irradiation and rain, as we needed. Not a greenhouse, but a good compromise. Meanwhile, Lourdes' house in Lisbon became a sort of laboratory, where she managed to accommodate and treat hundreds of lichen samples. Finally, when she moved to Spain for planned analyses, some samples moved with her. Of course, all this was possible because we work with lichens: when dehydrated they can tolerate the extreme conditions of outer space, so travelling from Portugal to Spain was like a stroll. The experiments continued, but the conditions changed and the new location on a balcony introduced new environmental variables. Once again, we adapted to the situation and the initial experimental design was modified: nitrogen was not the only driver of the lichen response anymore, but the synergistic effect of nitrogen and solar radiation was considered. A paper that was not planned was thus born (Morillas et al., 2021).

I must admit that other papers produced during the pandemic wouldn't exist otherwise. For example, stimulated by the proliferation of online events, I decided to compare the effectiveness of in presence vs. online events in the dissemination of lichenological knowledge. My case study was the Italian Lichen Society and the results showed that the online courses and seminars organised during the pandemic caused the largest increment in the number of members of the Society in the last 10 years (Munzi & Giovanetti, 2021).

Can we conclude that the pandemic has been good for us? No, definitely not!! Did we learn something from the experience? Sure, we did: buy a lot of books, live only where a good broadband connection is available and work with lichens.

Silvana Munzi
Interuniversity Centre on History of Sciences and Technology & Centre for Ecology, Evolution and Environmental Changes, University of Lisbon
ssmunzi@fc.ul.pt

References

Morillas, L., Roales, J., Cruz, C., & Munzi, S. (2021). Resilience of Epiphytic Lichens to Combined Effects of Increasing Nitrogen and Solar Radiation. Journal of Fungi, 7(5), 333. http://dx.doi.org/10.3390/jof7050333

Munzi, S., & Giovanetti, M. (2021). Wanted: virtual or live! How lichens are becoming part of mass internet culture. Symbiosis, 84(3), 285–293. https://doi.org/10.1007/s13199-021-00780-6

Rebuilding bridges

Holding on to our Gantt chart in times of lockdown

How we transformed our home into a laboratory and managed to keep our dissemination activities alive.

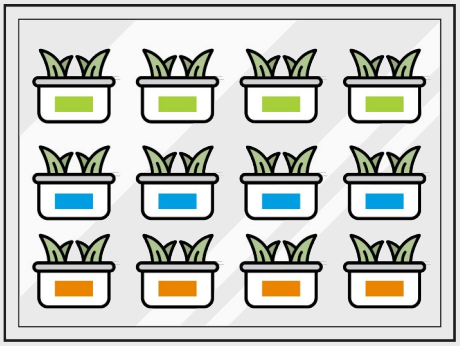
The lockdown measures in response to the COVID-19 pandemic was a challenging situation for all of us. But it entailed an extra effort in terms of adaptation for those of us who had to continue with experimental designs despite the inability to use the faculty's facilities.

Reacting to the pandemic

At the time of the outbreak, I lived in a small apartment in Lisbon, Portugal, with my husband (Javier) and my 3-year-old daughter. We had just returned from our sampling campaigns along a transect in the Mediterranean basin and a total of 546 samples belonging to three different experiments were waiting for their respective treatments at the faculty's greenhouse. Most of these samples (432) were intact soil cores of 5 cm diameter with biocrust cover, but there were also 60 samples of soil lichens and 54 samples of epiphytic lichens attached to sticks and pieces of branches. The fact that our samples were live biotic systems did not allow us to postpone our experiments indefinitely, not to mention the temporal restrictions imposed by the Gantt chart of our MSCA project Med-N-Change. At that time, the pandemic had disrupted everyday life for people in China and Italy. In Portugal, however, we still had time to react. We considered the huge uncertainty regarding our ability to access the samples daily if they were placed in the faculty's facilities. After assessing our options, we realised that we had no choice but to bring them home. Although it felt like some kind of mission impossible at the beginning, my husband and I managed to relocate all the three experiments into a 60 m^2 apartment. This is how we did it:

Experiment 1:

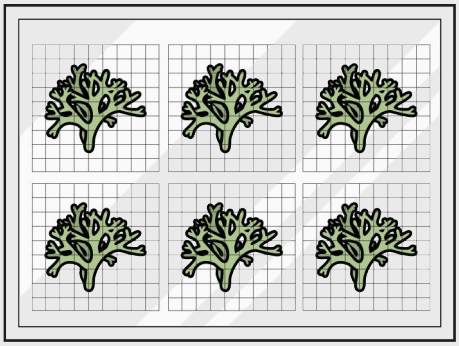
432 soil cores with biocrust cover.



Vertical installation on the window ledge, with a little **roof to keep light rain out. Labelling was essential** and colour tagging helped with the identification of the different treatments.

Experiment 2:

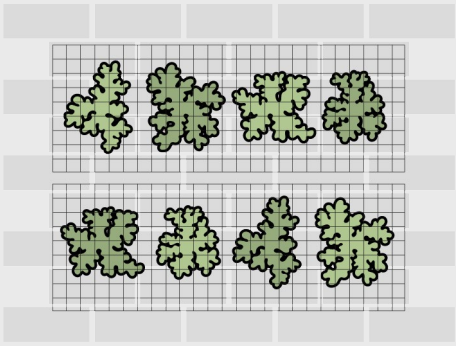
60 soil lichen samples.



Indoors, hanging **vertically** from the window. Samples were contained in **custom-built wire mesh cages.**

Experiment 3:

54 epiphytic lichen samples.



Indoors, in **custom-built wire mesh shelves** to allow drying and prevent rotting.

Home experiments: Tips and tricks

The high number of samples was an important challenge, but it was not the only one. Our samples were subjected to different watering treatments that involved a lot of moving and reordering of samples, which was quite challenging in such a small space. Just like every other living organism, both soils and lichens needed to be incubated in well ventilated, dry and sun-drenched places that provide homogeneous conditions to avoid differences among samples due to asymmetries during the incubation. As there were not plenty of spots like this in our apartment, we needed to be creative.

This is how we managed to overcome these constraints:

- **Think vertically:** Space was a limiting factor, so we took advantage of the vertical dimension. We created wooden shelves for sample housing which maximised the use of the few suitable spots to place our samples.
- **Follow the light:** Photosynthetic organisms need light, so we set up our experiments as close as possible to the windows (in the case of experiment 3) or even attached to them (in experiment 2) to optimise light reception.
- **Simulate outdoor conditions:** To provide our samples with a healthy living place while we applied the corresponding treatments, we controlled aeration, avoided direct sources of heat and maximised light exposure.
- **Order above all:** Labelling and colour tagging was essential to keep track of each sample as their position was randomised every few days to ensure homogeneous conditions.
- **Avoid precipitations:** As rain would interfere with our watering treatments, it was crucial to avoid any source of humidity as much

as possible. To do so, we installed a little roof to keep rain out and detachable transparent polycarbonate panels to cover them externally from rainy and windy conditions. Whenever rainfall was not expected, the polycarbonate panels were detached to allow natural aeration.

- **Fans to the rescue:** Four little fans on top of the soil lichen samples facilitated drying after watering treatments to avoid putrefaction due to excessive humidity.

- **Prevention is better than cure:** To prevent vertical contamination, samples watered with higher concentrations of nitrogen and/or increased watering frequencies were placed at the bottom of the structure. This strategic placing would avoid potential leaking and contamination between treatments that would be very hard to fix.

Public engagement without physical contact

As for any MSCA project, public engagement was a cornerstone of our project too. We outlined a meticulous plan of great dissemination activities to be implemented during the action. Suddenly, none of this would be possible. When Silvana Munzi (my supervisor) and I first tried to address the issue, we really did not think we could successfully replace face-to-face activities with those online. However, looking back we feel that this exceptional situation forced us to develop new strategies that in the end led us to reach a broader target audience. Indeed, Silvana recently published an article pointing out that online events encouraged by this pandemic generally required less effort to organise than face-to-face ones and engaged more people, especially when recorded and

made available online for a long time. Through the following activities, we did our best to avoid falling behind despite the adverse circumstances:

- We participated in **every call for online dissemination in outreach activities** that we were aware of, whether they were launched by the European Commission (European Researchers' Night, Science is Wonderful, International Day of Women and Girls in Science), by national associations (Ecology Day) or by our institution (Researchers Day).
- I have been collaborating with a local Radio for the last two years, promoted by the University Pablo de Olavide. The programme is called "Sustainable World" and my section is "Singular ecosystems." It is also available as a podcast.
- As frequently as possible, dissemination articles have been published: newsletter and website of the University of Lisbon and Naukas (a science-related website for the general public).
- We developed an educational video game that shows a simplified version of nature and that is meant to illustrate concepts such as biodiversity and ecosystem services. Players have to correctly match three columns to learn how the variables they represent are related.
- We also launched an interactive quiz with questions about climate change and lichens.
- The website of the project was created and has been regularly updated to disseminate information about the goal of the project, as well as news about our team of researchers and collaborators, and our public engagement activities.
- We made use of social media whenever possible, mainly Twitter, ResearchGate and Facebook. The latter offered me the opportunity of being the MSCA fellow of the week from 4-11 2021, and of keeping track of all kinds of activities promoted by the European Commission's Education and Culture Directorate-General.
- Within the scientific scope, we virtually attended every online workshop and congress we could.

We learned that a good way to increase the potential to reach different audiences is to make your activities available in as many languages as possible and to adapt the concepts and vocabulary to both adults and children. The extra effort of working on parallel versions of your activity will pay off as citizens will receive your message in the best possible conditions which will promote an effective learning.

Although we deeply hope this situation triggered by the COVID-19 pandemic should never occur again, we are pleased to share these tips to help other researchers fulfil their projects in potential future constraints.

Lourdes Morillas
Centre for Ecology, Evolution and Environmental Changes, Universidade de Lisboa Portugal
lmorillas@fc.ul.pt

Javier Roales
Department of Physical, Chemical and Natural Systems, University Pablo de Olavide, Seville, Spain
jroabat@upo.es

Silvana Munzi
Interuniversity Centre on History of Sciences and Technology & Centre for Ecology, Evolution and Environmental Changes, University of Lisbon
ssmunzi@fc.ul.pt

Rebuilding bridges

The Elephant in the Zoom: Digitalising an MSCA project during the pandemic

In this contribution, I discuss how the pandemic has changed my daily routine as a researcher and how it has challenged me to find a different way to work.

Photo by Nina C Lueck

Change of working patterns

When former Taoiseach, Leo Varadkar announced the closure of all schools, universities, and public places on the early evening of 12 March 2020, I was having crisps and a glass of wine in the office with another Marie Skłodowska-Curie Fellow after a long day at the university. We believed we would not be able to see each other for up to four weeks, maximum. My hypothesis was: when everyone stays at home for a month, the virus cannot spread, and it will disappear. In theory, this might have been correct, however in practice, as weeks went by, schools, crèches and universities remained closed, and infection rates and the death toll increased. It became clear that, at least in our household, we had to fundamentally restructure our daily routine.

Despite the praised flexibility of the Irish labour market, my husband had to work at home from 9-5 every day, by demand of his employer. This coincided with the non-availability of my research participants during the daytime as most of them live in direct provision, the Irish accommodation system for refugees and asylum seekers. Therefore, while my husband had to work during this core time, I worked early in the morning, after 5pm, and on weekends. We have been in this mode ever since the pandemic started, until very recently.

So, what have I learned from this modus operandi?

1. Plan and structure every day, in particular the nice bits. Whereas I still have not recovered from the lack of sleep during this time, I am thankful for the fact that I got to spend so much more time with my son. We played and we tried activities together such as counting snails, chatting to boat owners along the canal close by, painting the street with chalk, and teaching my son to cycle on the - then deserted - parking space of a gym in just two days. Certainly, during the strict lockdown phases when we were allowed to walk only within a 5 km radius from home, it was challenging but we always felt privileged that we did not have to go out as many others, in particular those working in the health or retail sector.

2. Eat healthy and move, move, move, even if it is within the permitted 5 km radius – your research will benefit from it.

3. Do not plan several months or a year ahead. What counts is the here and now. In the current phase of the pandemic, when most countries face or are in the middle of a severe fourth wave, it is impossible to plan for future conferences, travels or job changes.

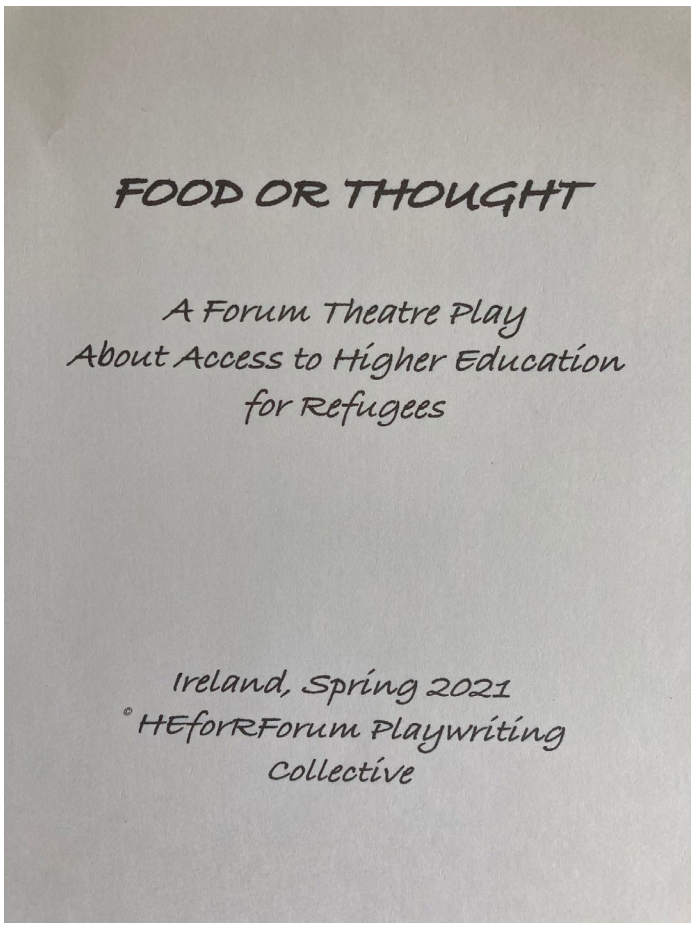
4. Look out for one another, not only in your family but also for elderly neighbours, and colleagues who live on their own, and make the most of the situation. I once found myself presenting an important talk to my 6-year-old son and my 80-year-old Irish neighbour (over the garden fence) as a mock run. I received very constructive comments, and half of a biscuit as a reward!

5. Most importantly, the digitalisation of our research projects should never lead to a 24/7 availability of ourselves or our research participants, collaboration partners, and colleagues. When we have to work at night or at 4 am, it is important to communicate to others that they are not expected to do the same! At my host university, it has become a policy to put a little note before or after your email signature that you might send or reply to emails outside the core working hours because of the pandemic but that you do not expect anyone to answer during these hours. This is something international offices of global universities have been doing for a long time due to the different time zones.

6. Surround yourselves with friends and colleagues who have an equally relaxed and sober view of the situation. In a pandemic (and we are still in the middle of it!), it is impossible to be as productive as before.
Be honest about what is achievable and about what isn't. Colleagues and friends will thank you for making a start!

Redesign of the research project

When it became obvious that working from home for all 'non-essential workers' would continue for much longer, my research project had to be redesigned considerably.



1. My secondment partner in Germany, the German Academic Exchange Service (DAAD), had closed its doors for the public during the first national lockdown in Germany, and most of its 1 000 employees were working from their homes. In addition, travelling from Ireland was virtually impossible, let alone travelling within Germany. I therefore had to digitalise my secondment, which took place as a combination of phone calls, zoom meetings and online workshops.

2. My research project consists of interviews with 51 refugee students, and an analysis of these interviews. The analysis formed the foundation for a theatre play. The draft screenplay was written by me and then students were supposed to join a collaborative playwriting process in workshops to give the play its final shape.

Needless to say, face-to-face interviews on campus were not possible anymore during Ireland's long and relatively strict national and regional lockdowns.

I therefore drafted and submitted an amended ethics application which would allow for remote interviews. This amendment had several repercussions, such as, for example, the interviewee's consent forms and signatures had to be digitalised too – a huge undertaking when your research participants live in direct provision where there is hardly stable Wi-Fi, let alone laptops, printers or scanners. Creativity and flexibility were needed at various levels.

Because of the schedule in direct provision and set mealtimes on the one hand, and no quiet or study room on the other hand, but room-sharing with 3-5 people for my interviewees, the only quiet times were very early in the morning and late at night. This meant that many interviews were conducted at 11 pm or later, or, on Sundays when participants had no (online) classes.

3. The theatre workshops and plays which are at the heart of my project could not happen yet, without a high vaccination rate and all

Photo by Tutatamafilm on Shutterstock

participants being doubly vaccinated. So, while some aspects of a research project can be digitalised easily, others cannot. Theatre, especially, needs physical presence in a room and physical interaction. The collaborative playwriting which had to be done remotely, has been a cumbersome online process.

Pandemic consequences for refugee students

My research participants/interviewees have been challenged by the pandemic in various ways.

1. Room-sharing with other people, and a late reaction by the Irish government to the impossibility of physical distancing in shared accommodation have caused anxiety amongst them.

2. When the government finally reacted to the room situation of refugees and asylum seekers, participants were moved to a different accommodation without transparency or any prior notification. Sometimes, they were transported from the East coast of Ireland to the West, with no indication of how long they would stay in the new place.

3. It was extremely difficult for the research participants to keep up with their studies. Most of my interviewees had not owned a laptop, but just a prepaid phone. To follow six let alone eight hours of lectures daily on a phone in a place where there is unstable Wi-Fi was nerve-wrecking and demotivating.

4. The (legal) status decision for some of my research participants has been considerably delayed by the pandemic. Family unification applications had almost come to a standstill in 2020. The backlog remains huge.

My research participants have managed their deteriorated living and studying situation with such great resilience and endurance, and often a good bit of humour, that I can only express my deepest admiration for them. They had organised themselves, written official letters about the unacceptable standards of hygienic measures in direct provision and the impossibility to practice social distancing with several people in a small room. Together with NGOs, several initiatives were set up to fundraise for laptops so that residents in direct provision could continue to study and/or write job applications, and so that children in direct provision are not left out of their primary or secondary education.

Lessons learned during this great reset

Certainly, the pandemic has challenged and reshaped my research project. For instance, 17 months of the project (which is 24 months in duration) was during the pandemic and several lockdowns.

What I learned, thanks to the resilience, flexibility, creativity and optimism shown by my research participants, colleagues, and my family, is that research is possible even during a pandemic. It requires some redesigning of your research, and your daily routine, and to be open and transparent about it.

As we start to rebuild bridges in the great reset, we must be vigilant that the digitalisation of our research and its communication does not result in a lesser work-life balance: not for our research participants, our external collaborators, our colleagues, and certainly not for ourselves and our families.

Nina C Lueck
Sutherland School of Law,
University College Dublin, Ireland
nina.c.lueck@gmail.com

Rebuilding bridges

An MSCA contingency plan: the lifeguard during the pandemic

How the contingency plan is serving as an international hub for the advancement of semiconductor scaling.

The MSCA framework

The Marie Skłodowska-Curie Action (MSCA) programme supports innovative and ground-breaking ideas that would potentially benefit society and the career of the applicants. These ideas are included in a meticulous proposal that defines the execution of the action. Work packages, objectives, milestones and potential results are carefully described. The project should include a contingency plan – this is the part which is usually not so extensive and could even go unnoticed. Probably, no one could have anticipated the global pandemic while writing the contingency plan of an MSCA two years ago (or at least, I couldn't have).

However, reality exceeds fiction, and here we are. Now, the contingency plan has become the project's lifeguard for some of us. Additionally, in my case, it has also resulted in a wider collaboration than initially planned.

The project and the COVID-19 pandemic

The MSCA project, Understanding The Role of the defects to Accomplish High Performance and Stable Two Dimensional Devices (TRAPS-2D), aims to fabricate semiconductor devices employing novel two-dimensional (2D) materials. These 2D materials are single-atom-thick layers whose electrical properties allow us to perform more scalable, reliable and powerful circuits and chips. MSCA Global fellowships require an outgoing phase and we have chosen Taiwan, the unmatched leader of the global semiconductor industry. However, the pandemic and the subsequent lockdown threatened the outgoing phase from the very beginning.

After the initial chaos of the pandemic and the end of the initial lockdown, things seemed to be improving with the incidence low enough to plan how to launch the action. Moreover, by these dates, the pandemic in Taiwan was under control, thanks to the prompt response of the local government. With all the parameters looking favourable, we started the action. The initial delay to get the visa was compensated by starting the project remotely, fabricating devices in the host institution laboratory, and holding online supervision meetings.

Delta variant and the Contingency Plan

Once the visa was obtained and the flights and the quarantine hotel stays were booked, and as I was almost getting ready to proceed with our outgoing phase part of the project, the Delta variant of COVID-19 suddenly surged and struck India and other nearby Asian countries. As a result, on the advice of the Taiwan Centers for Disease Control, Taiwan's Government suspended the entrance for foreign nationals who do not hold a valid resident certificate. These measures aimed to block the spread of the virus, but they blocked me too.

At that time, there were just two possibilities: one option was to ask for a break in the project until the situation would improve and, the second one was to activate the contingency plan. The first solution would have dismantled the previous work. The remote supervision was working perfectly with promising initial results, in both the sample fabrication and characterisation. Breaking the project and putting the action apart for an uncertain period of time would have weakened the novelty of the project and damaged the originality of the results. The second option was risky because the contingency plan did not initially cover the consequences of a global pandemic but, at least, it allowed us to keep the project goals in mind. It consists of fabrication of the samples in the host institution and then sending devices to be processed in Taiwan and in other state-of-the-art semiconductor centers in Europe to increase the chances of success. Our recent collaboration with Paul Hurley's group at Tyndall National Institute, Ireland, perfectly aligned with the contingency plan requirements. In order to fulfil the action objectives, I would initially receive the planned training in Ireland while some samples could be remotely processed in Taiwan. Despite the possible risks of this latter alternative, we decided to adapt the contingency plan to the pandemic with the support of our collaborators and the approval of the project officer.

Wider international collaboration and results

Fortunately, what seemed a dead-end has become a three-party international collaboration in the race for semiconductor scaling. While I am waiting to visit Taiwan after the COVID-19 incidence reduces, this incipient collaboration has brought impressive advances in our project. At the host institution, we have successfully synthesized the target samples using the chemical vapor deposition technique (Figure a). Then, we have carried out the structural characterisation (Figure b). At Tyndall National Institute these samples have been metallized to fabricate devices. The electrical characterisation of these devices

Photo by Carlos Marquez

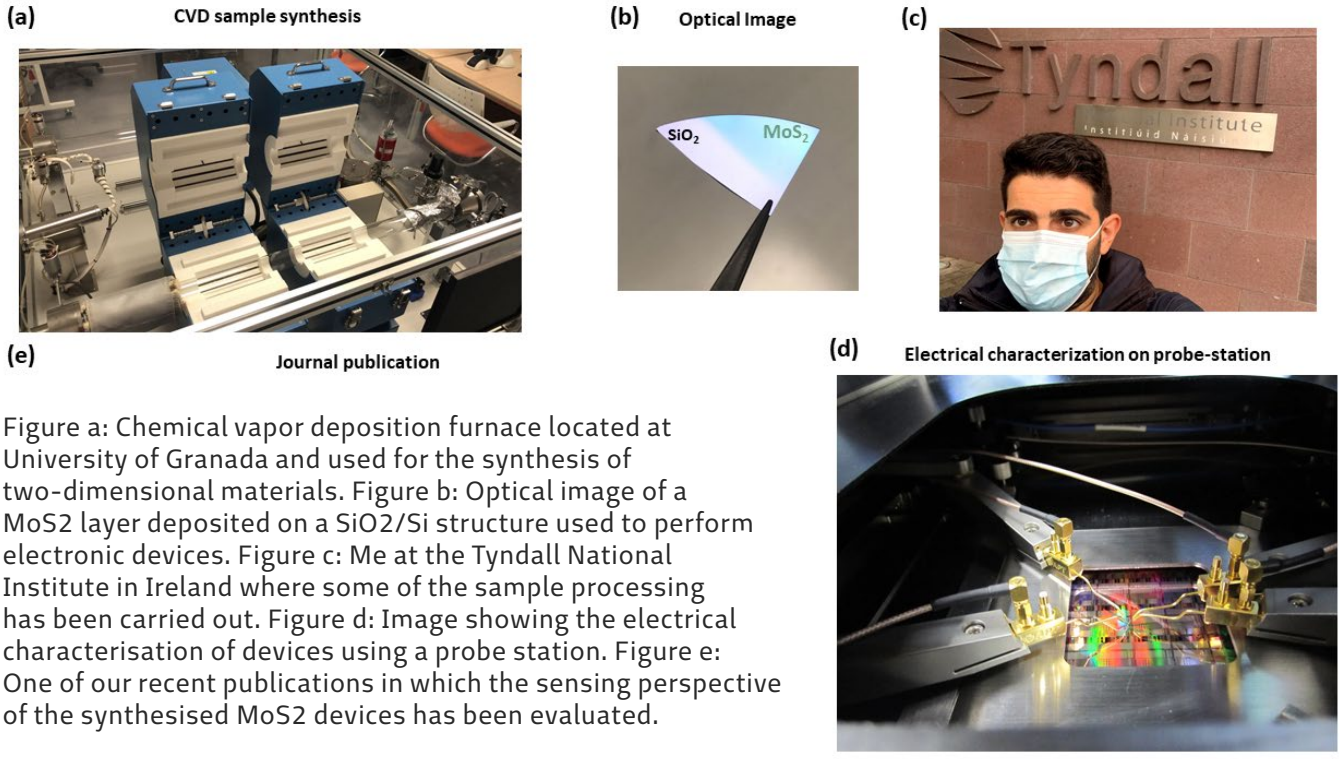


Figure a: Chemical vapor deposition furnace located at University of Granada and used for the synthesis of two-dimensional materials. Figure b: Optical image of a MoS2 layer deposited on a SiO2/Si structure used to perform electronic devices. Figure c: Me at the Tyndall National Institute in Ireland where some of the sample processing has been carried out. Figure d: Image showing the electrical characterisation of devices using a probe station. Figure e: One of our recent publications in which the sensing perspective of the synthesised MoS2 devices has been evaluated.

has demonstrated interesting capabilities for sensing applications (Figure d). For example, the operation of the devices has demonstrated a strong dependence on the ambient conditions. This dependence can be used to implement light or temperature sensors. Simultaneously, some samples are being processed employing alternative technologies in Taiwan.

With the continuous collaboration of the three groups, we recently published several manuscripts (Figure e depicts the one showing the light-sensing of MoS2 devices, see Marquez et al., 2021) and others are being written. In this framework, we have recently received an invitation to contribute to one of the most important conferences on this topic (IEEE, IRDS and International Nanodevices Conference).

Mobility put to the COVID-19 challenge

The COVID-19 pandemic has brought difficulties in all aspects of daily life, and research is not an exception. Many researchers are worried about the challenges that the mobility restrictions have brought in these international actions. However, the contingency plan that was put together with the support of our collaborators and the European Commission MSCA board, has helped us in dealing with the actual limitations and creating new opportunities from the adversity.

I hope that this personal experience will help other researchers facing similar challenges.

Acknowledgements

I wish to express my gratitude to all the members of the three research teams involved in the progress of this MSCA (895322): Paul Hurley's team at Tyndall National Institute, Ireland (special mention to Farzan Gity), Edward Chang's group at National Yang Ming Chiao Tung University, Taiwan and to my host group, Francisco Gamiz' team, at University of Granada, Spain. The European Commission and the Marie Curie officer board are thanked for their disposition to dynamically act against the issues that surged from the pandemic. This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the Marie Skłodowska-Curie grant agreement No 895322.

Carlos Marquez
Department of Electronics and CITIC-UGR, University of Granada, Spain
carlosmg@ugr.es

References

Marquez, C., Salazar, N., Gity, F., Galdon, J. C., Navarro, C., Sampedro, C., Hurley, P. K., Chang, E. Y., & Gamiz, F. (2021). Hysteresis in As-Synthesized MoS2 Transistors: Origin and Sensing Perspectives. Micromachines, 12(6), 646. https://doi.org/10.3390/mi12060646

Rebuilding bridges

Every experience has multiple sides

In 1974, Nobel laureate Daniel Kahneman and his long-time research associate Amos Tversky published one of the most revolutionary articles in social psychology.

Photo by StunningArt on Shutterstock

The work of the Nobel laureate Daniel Kahneman and research associate Amos Tversky has changed the way we view human interactions (Tversky & Kahneman, 1974). They clearly illustrated that the way each of us experiences the same situation is very different. It's subjective, not logical. It depends on our previous experiences, security level (e.g., life or work stability), and the list goes on.

When faced with a stressful and unpredictable situation, our brain sends a very fast signal, instructing us how to escape. And since it knows best how to control our body, it will use the most effective motives to stimulate us, which don't necessarily have a logical connection to the situation we find ourselves in. This is one of the main reasons why two people at the same place at the same time will experience the surrounding environment in very different ways.

When COVID-19 hit the world, each of us was placed in an unpredictable situation for an undefined amount of time. As time went on, we adapted and created our workarounds to the situation. We changed. Some of those changes were for the better, some not. As large as the MCAA community is, that's how many experiences there were. There are Early Stage Researchers working on their dissertation, others are trying to become independent researchers, and others may have already established an independent research line.

There are also many members who have left academia and moved to industry. While it is impossible to fully understand, we wanted to get an idea of how the "COVID experience" varied for people depending on their career stage and professional level of independence.

Therefore, in this interview, we asked the same set of nine questions to three people living in the Netherlands. The questions focus on professional communication and networking during the pandemic. Each of the interviewees has (originally) moved to the lowlands to conduct research or study, yet currently they are each on a very different career path. We hope that their experience and perspective of the past two years will resonate with a wide audience and provide an enlightening look at the individual perspective.

Our interviewees

Ander Zhylka (AZ): I'm from Minsk, Belarus. I am a PhD student in the Medical Image Analysis group at Eindhoven University of Technology, The Netherlands. I work on reconstruction of nerve fibers using Diffusion MRI, which is consequently used for brain-tumour surgery planning.

Irene Hernandez Giron (IHG): I'm a medical imaging researcher working on objective image quality assessment in radiology. I develop specific image quality metrics tailored to clinical diagnostic tasks, design and manufacture anthropomorphic objects, based on 3D printing as patient surrogates and evaluate the performance of AI-based tools. After two Postdocs, I was awarded a personal Veni grant (NWO Talent Programme) (2020-2023) to start my own independent research line. I was born in Madrid (Spain) and moved to the Netherlands just before finishing my PhD.

Anil Yalcin (AY): I'm a business professional with more than six years of experience at a Fortune 500 company. Prior to that, I carried out a PhD project at Delft University of Technology. I focussed on materials science and transmission electron microscopy. I'm originally from Turkey but have been living in the Netherlands for 12 years.

Ander Zhylka

What is your typical professional networking strategy and how has it evolved since the start of your career (after university)?

AZ: Before pursuing a PhD I started my career in industry. In this context, networking would primarily be limited to people from the same company or meeting people from similar domains at occasional conferences. In academia, however, I received much more freedom to initiate collaborations. Initially, I met my future collaborators either at conferences or summer/winter schools. However, later I contacted people directly after reading their papers if I thought there could be a potential common interest.

IHG: By the end of my PhD I had already established a small network of international collaborators, who were at similar career stages as myself. Then I started cooperating

Irene Hernandez Giron

on a small-scale with those groups on specific topics (like writing a common paper) or to exchange scientific information. Conferences were always an opportunity for networking, showcasing my research to gain visibility and impact and getting feedback from peers. Later, I became more involved in national and international societies of experts in medical physics. I also volunteered for working groups and committees to reach a wider expert audience and help in standardising methodologies.

AY: Having a customer-facing role (where my main customers are researchers), I network regularly at conferences and at sales meetings with my customers. Within the company, I have come to the realisation that visibility is of crucial importance. Therefore, I started to use my technical background (i.e., data mining, statistics) regularly to uncover business and/or commercial issues of my company, and this helped me to network with higher management as well as to improve my visibility

What communication techniques or types of professional events have proven to be the most effective in growing your professional network during your career (prior to 2020)? What about events/network actions that have had the greatest positive impact on your professional output (generated the best results)?

AZ: Without a doubt, in-person interaction at conferences and courses is the best and quickest way to grow the network, especially, as you may be introduced to already formed networks with your direct colleagues. Personally, I have met two of my collaborators at a conference and at a summer school. Interestingly, while visiting one of them I was able to get involved with another project led by a local group.

IHG: Firstly, conferences work best for me, especially face-to-face events. These help me to meet people and find out if they have common interests and similar approaches to science. Secondly, reaching out directly to other researchers who have published relevant papers with a potential overlap or complementary methods. Joining forces with people in working groups has helped me to find compatible collaborators having a real life taste of how we would work together.

AY: I realised that once being asked, most people are very much open to sharing their experience in their career path, including the ups and the downs. I try to be active on LinkedIn, which has evolved from a social networking site to a leading recruiting engine for companies (such as Sales Navigator). Furthermore, I decided to work on a part-time MBA, which has been instrumental in expanding my network (even prior to the COVID-19 lockdowns).

Looking back over the past two years, could you reflect on how the pandemic impacted your job performance (e.g., work output) and changed how you network? For example, did you adopt a more aggressive social media strategy to maintain the same level of professional networking? What about professional output?

AZ: Although after the start of the pandemic I began contacting people directly more often, I would not say it was a result of the absence of offline communication. Rather a natural personal growth. Nevertheless, I have experienced an impact of remote collaboration on the project where close back-and-forth interaction would have been very beneficial. Without an opportunity to drop by the office and exchange ideas, things slowed down at times.

Anil Yalcin

IHG: My output has gained in quality and long-term impact over the past two years, but has suffered in terms of quantity. It takes more time and energy to get things off the ground. I have strengthened my already established collaborations, finding more areas in common where we can learn from each other's expertise. Virtual conferences have not been useful for me to further increase my network mainly due to a lack of proper interaction. This is why I opted to be conservative and use my current reliable contacts to meet new potential collaborators. I have also increased my presence in international committees, starting initiatives to bring together experts on similar topics as mine to standardise methods and bring them to a wider practice, playing the long game and sacrificing a bit of novelty research.

AY: We used to travel to our customers as much as possible with the notion that face-to-face meetings cannot be replaced. Due to COVID-19, we started to conduct our customer engagements online. While it was different at first, we managed to adapt to the global restrictions and our customers have been very understanding throughout this change. Regarding networking with colleagues, I was totally home-office based, therefore, interactions were limited to online meetings. Throughout the pandemic, there have been several organisational changes in my company, and I have still not had the chance to meet some of new team members

What's a major positive change in your career that was made possible by the pandemic and that you would like to maintain in the post-pandemic times? Would this change have been possible before the pandemic (e.g., hybrid event)? If so, why didn't you start it sooner?

AZ: I would say that in some cases a chance to attend a conference online can be convenient, especially if one is interested in a specific part of the conference or just a couple of talks. Additionally, after the start of the pandemic, the European Society for Magnetic Resonance in Medicine and Biology (ESMRMB) Early

Career Research Committee came up with an initiative of "speed dating" events that would allow meeting new people. I believe having such meetings over the year in addition to conferences would be great.

IHG: Now I am convinced that it is feasible to collaborate with anyone anywhere, taking the advantage of our communication tools if there is a common commitment. Nearness does not guarantee a successful cooperation. I have more regular and effective contact moments with some of my distant collaborators. I hope hybrid events remain, as it would allow me not to have to select so strictly which to attend for monetary or time constraints. Wider scientific audiences will also be able to attend, which will enrich the scientific discussions. I am also involved on a platform to compile and store relevant recorded scientific and educational material in my field, which started during the pandemic. I aim to make an even bigger part of my research open and available for the community.

AY: Lockdowns brought an advantage that I can have multiple customer meetings on the same day irrespective of customer locations (which is not possible if I have to fly to each of them). This could have been also possible prior to pandemic, but we believed that face-to-face customer engagements cannot and should not be replaced.

What was one of the most troubling changes caused or exacerbated by the pandemic in your professional life? Was this ever an issue before the pandemic? How can we make sure that this and other negative situations will not become the 'new normal' in post-pandemic times?

AZ: I was fortunate not to experience any crucial changes. Of course, some projects were delayed, some collaborations did not go as planned, and at times it was psychologically tough to work alone at home in the same environment 24/7. However, in all cases, attempts were made to relieve that burden. Luckily, the current state of technology allowed us to maintain communication within the group as well as with remotely located colleagues.

IHG: I became an autonomous researcher just before the pandemic, so the changes I experienced are a combination of both circumstances. I tend to work too many hours, working from home without a clear improvement in my output, and I am trying to deal with it. Personally, I thrive scientifically when I cooperate with people and it also helps to keep me on track and to stay focused. Since my research funding does not allow me to hire personnel at this stage, I started supervising a small research group, selecting a PhD student and two MSc students who can develop some aspects of my main project. Job uncertainty at this career stage where you strongly depend on recruiting external funding has increased. Other personal circumstances now also have more weight on planning my next career stage.

AY: I started a part-time MBA in January 2020, and we had to follow all classes on Zoom. It was not ideal as the curriculum heavily depends on group work and learning from each other, and I did not have a chance to get together with some of my group members. Prior to the pandemic, all course content was face-to-face, therefore, I do not expect MBA courses on Zoom will ever become the new normal (unless it's an online MBA programme).

Regardless of the unpredictable rollercoaster we've been dealing with since 2020, how do you compare the last two years of your professional life with your original expectations? What have you learned from this experience?

AZ: Well, it was underwhelming with the conferences full of great people to meet online. As I have already mentioned, a visit to another group was also planned specifically in summer 2020. Due to unpredictable changes in travel and local regulations, it did not take place. However, I learnt to adapt to the situation. At times, one needs to be more proactive. In the


Photo by Johnstocker Production on Shutterstock

end, it is in my interest to do the job as well as possible. But I also learnt how nice and supportive the people around me are.

IHG: I have gained confidence in my capabilities and I have also become quite comfortable in carrying out my own research without having to follow someone else's lead. This is a double edge sword as you are fully responsible and need to make things happen on your own. If you stop, everything stops, especially when you don't have your own team. Until I got the personal grant, I did not plan my career too strategically, as long as I could keep on doing the science I wanted autonomously. Looking back, I should have become independent earlier. I have now found out the research lines I want to pursue in the coming years and fully realised that I want to pursue this path in the years to come.

AY: I think Covid showed that remote work is possible, and we are now seeing more and more companies looking for bright candidates who can work remotely. Regarding commercial activities, I think that a considerable part of customer meetings can be carried out online, which is advantageous (decrease in travel costs and carbon footprint). While remote work is possible, it is still important to keep team spirit alive with regular interactions with colleagues

Do you think that this experience would have been different if you were located in another country, or were in a different stage in your career? If so, why and how?

AZ: Well, I would not dare speculate about other countries in these regards. I could imagine that being at different career stages brings relief in certain aspects as well as additional concerns in others. For instance, being an accomplished group leader probably removes the concern of expanding the network even further. At the same time, challenges in group management might arise requiring support to maintain the good spirits in the group.

IHG: Being in my home country would have relieved me from the stress of being away from my family. If I were in a more junior stage of my career, I would have depended much more on the decisions of the project's Principal Investigator. Being independent allowed full control to change course when needed. As this is my first project as Principal Investigator, it took me time to react and figure out what I could and could not do. It was a learning curve.

AY: I have colleagues all over the world and with the continuous support of the company, I think all of us (as home-office based employees) managed the Covid period quite well. It could have been different if I had a job that required me to be at the company premises everyday (such as a role in manufacturing or in healthcare). For employees with such tasks, I think it was considerably more difficult as they had to travel to work and to expose themselves to risks with an increased level.

When you look back on the past two years of your professional career, what are you most proud of (achievement, skills and personal growth)?

AZ: Given that those two years are the biggest part of my Ph.D. time so far, I would say I have grown professionally and personally. I have learnt to design research projects and communicate remotely with collaborators. We have done a great clinical-evaluation project that involved some state-of-the-art developments in our field and brought together three institutions. I am very glad I managed to contribute to some projects as well.

IHG: I am very proud to have grown a trustworthy group of collaborators with a shared vision and drive, common research goals and complementary skills and expertise. One of my main aims is to increase awareness on how we can implement AI tools in Radiology in a safe and robust way. Research awards and recognition by my peers helps to boost my confidence and also reach more audience and exposure. Being invited to give talks, courses and develop educational materials for medical physics organisations is very rewarding. I see this as an opportunity to encourage other professionals to do their own research in my field and to eventually improve patient healthcare together.

AY: I am happy that I am about to finish my part-time MBA soon. As I started this journey in January 2020, it was totally impacted by Covid, but I endured and learnt a lot from professors as well as from other participants.

Is there anything that you would like to add?

AZ: I would like to thank you for this interview. And, in the end, I would just advise the readers to always look for opportunities, adapt in case of struggle, and be proactive. In the end, everything is good; if it is not good yet – it is not the end.

IHG: A scientist and an athlete have a lot in common. To be able to have a long career, you need to train, but also find a balance with your personal life and needs for this demanding job. Finding your 'own science,' your driving motivation, the right collaborators and the right place are stepping stones to becoming a successful and independent researcher. I am still working on this, and I believe it will never end, but that is part of the magic.

AY: Thank you for this interview. It got me thinking that maybe I should be more active on social media. I think I need to put some more work on my presence on LinkedIn.

Oleksandra Ivashchenko
Lead guest-editor of this special issue
MCAA Editorial Team
oleksandra.ivashchenko@gmail.com

References

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. Science, 185(4157), 1124–1131. https://doi.org/10.1126/science.185.4157.1124

News from the Chapters

Photo by Amani Alawamleh

Meet the Chair of the Middle East Chapter

It's not easy chairing a Chapter, particularly during a pandemic. But Amani Alawamleh makes it look easy.

Amani Alawamleh, in her own words

My doctoral degree is in Agriculture Technology and Biotechnology (Sustainable Plant Production and Protection). I have worked as an early-stage researcher in the Marie Skłodowska-Curie actions (MSCA) Innovative Training Networks (ITN) European Industrial Doctorates (EID) project INTERFUTURE (From microbial interactions to new-concept biopesticides and biofertilizers).

The research project was hosted by the University of Molise in Italy and Biobest Group in Belgium, between 2017 and 2021. The research activities focused on the selection of microorganisms to develop new tools for the management of the invasive pest Drosophila suzukii.

Currently, I am working as the Head of Studies and Socio-economic Surveys Division at the Ministry of Agriculture in Jordan. I am a member of several national and international societies such as Jordanian Society for Organic Farming (JSOF) and International Organisation for Biological Control – Working groups (IOBC – WPRS).

As a co-founder of the Middle East Chapter, and former vice-chair (2019-2021), Amani currently serves as the new chair. She is committed as ever to realising her vision for the Chapter. "The success of the Chapter depends on the involvement of the members with the will to create something beneficial altogether. I strongly believe that active participation in planning, budget management, and communication is the key to a successful Chapter," she explains.

But this past year has been lined with challenges, mainly due to the COVID-19 pandemic. "The main challenges faced were limitations in holding physical meetings, and having to make greater use of online communication tools that require a level of access," says Amani.

For instance, the lockdown measures to contain the spread of the coronavirus meant the Chapter had to cancel a number of planned events.

In view of these unprecedented challenges, Amani is proud to highlight that the Chapter's board worked hard to ensure its constant growth. It produced several publications that have been published via the MCAA Newsletter and promoted on social media (LinkedIn, Twitter and Facebook).

Photo by PRPicturesProduction on Shutterstock

The Chapter also took its activities online. "We organised an online event to help Chapter members know what tips and tricks can help them in having an edge in their MSCA Horizon Europe and proposals. On behalf of the board, I would like to thank all members for their valuable contribution and commitment during this challenging year," says Amani.

More meetings

Amani is already working on future activities. "We have various seminars planned for the coming year and we have started preparing presentations that we will be showcasing at diverse universities in the Middle Eastern region. We also plan to participate in the events organised by the different Chapters and working groups and to try and have a physical presence in the MSCA General Assembly where we can attract new members to our Chapter," she says.

The Middle East Chapter is a network hub which aims to focus on members' activities in countries of the region. "The Chapter encourages productive collaborations and networking between academia and industrial bodies, in the member countries and EU institutions," says Amani. "We will also be forming collaborations with universities so that we can establish long-term relationships."

Her agenda also includes providing assistance to Middle Eastern MSCA fellows to integrate into their hosting countries. Promoting membership is also a top priority. "Currently, we have 17 active members," she says. "Through the continuation of events that can benefit our members, we hope to not only retain current members, but also to grow and expand our Chapter's membership. We are targeting about 30 members in the first year of the serving period."

'Meet and greet'

In September, the Chapter organised a 'Meet and Greet' event. "Importantly, we were able to attract new board members and set the date of the board meeting to establish the internal organisation of the Chapter and handle responsibilities. The board agreed on the assignment of Vice Chair, Events Managers, Communication Manager, and Secretary positions," explains Amani.

"Being a member provides lifetime benefits in terms of professional development, expanding networking, and cooperation. Also, it supports members by offering access to training and e-learning platforms and optimising resumes. Last but not least, our members are spread across a wide geographic area and there is a chance that a new fellow can find one of our members in their host institutes that can help him or her integrate into the country and start the MSCA fellowship," she concludes.

Aurélia Chaise
MCAA Editorial Team

Meet the MCAA Editorial Board

Gian Maria Greco: Strengthenin the voice of o community

Photo by Rebecca Arnold

As the Coordinator of the MCAA Editorial Team and the Editor-in-Chief of MCAA's Newsletter and IRRADIUM Magazine, Gian Maria Greco is planning editorial activities and inviting members to share their stories and expertise.

As the Coordinator of the MCAA Editorial Team and the Editor-in-Chief of the MCAA Newsletter and IRRADIUM Magazine, Gian Maria has been working towards strengthening the voice of the MCAA, both internally and externally. "I wish to create a space where MCAA members can express their different voices and experiences as well as make sure their expertise and stories are valued and heard outside our association," he says. Gian Maria coordinates a team of MCAA members and professionals from an external company. He also works closely with the MCAA Board and Executive Committee to make sure the publications are in line with the vision of the association.

Gian Maria became involved in his current roles during the 2018 MCAA Annual Conference, after suggesting that MCAA publications

Gian Maria Greco, in his own words

Currently, I am a research fellow at the University of Warsaw (Poland). I have a PhD in Philosophy and a PhD in Translation Studies and my area of research is access and accessibility studies with a focus on human rights, the media and translation.

I am also a practitioner with extensive experience as an accessibility consultant and accessibility coordinator for public institutions and private organisations regarding policies, live events, museums, and cultural heritage.

become more inclusive and accessible as well as voicing some concerns by the Spain-Portugal Chapter about the need to improve their quality control. "A few days after the meeting, Valentina Ferro from the MCAA Board reached out and asked if I was willing to act as the interface between the association and the contractor," he recalls. Up to that moment, MCAA publications had been entirely produced by an external company. He tells us that "at first, I worked alone. My main task was to supervise the production of each MCAA publication. One of the very first things I did was to draft some guidelines about the use of inclusive language and accessible style for all the articles we publish. After a few months, we started to build a team, devise editorial policies, and plan activities in the short-, mid- and long-term."

There are many results he is particularly proud of. Under his tenure, the MCAA Newsletter and IRRADIUM have become officially registered publications. They both acquired an ISSN number, are indexed in the Royal Library of Belgium, and through this they are also indexed in the OPAC catalogue. "This was an important step to increase the formal value and visibility of the articles written by our members," he explains. "We also released the guidelines for authors and put in place a more formal and organised process for the submission and evaluation of articles. The aim is always to provide the best service to our members," he says. The result he is most proud of is the Editorial Team: "over time we were able to gather a group of MCAA members who are very motivated and engaged. They are all volunteers who devote a good portion of their free time as a service to our community."

In line with his research and professional expertise, inclusion and accessibility of the MCAA publication are central concerns for Gian Maria. Thanks to the collaboration with the MCAA working group on Genders, Equity, Diversity and Inclusion, the Editorial Team now includes a member whose task is to spot and correct discriminatory biases in language and images. More recently, adds Gian Maria "we redesigned the graphic layout of the Newsletter and IRRADIUM to comply with most accessibility and readability requirements. In addition, I personally take care of the technical revision of the file to make sure that the PDF version complies with the PDF/UA standard and is accessible through screen readers and magnifiers."

Gian Maria and the Editorial Team have many plans for the future of MCAA publications. The major achievement concerns book publishing. Under their lead, a few months ago the MCAA became a book publisher with ISBN numbers. "Soon we will start to publish books. We are currently in the process of drafting the procedures for submission of proposals and the management process," he tells us. Gian Maria believes that "our organisation is in a unique position. We gather highly trained experts with the most diverse areas of knowledge, from over 151 countries and at different career stages. As Sugosh said recently in one of our meetings, we are potentially a think tank able to provide top-level feedback on socially and scientifically relevant issues. Books can be a way to channel all this knowledge, increase the presence of the MCAA, and make the expertise of our members even more visible and valued."

MCAA Editorial Team

Meet the MCAA Editorial Board

Photo by Ruben Riosa

Ruben Riosa hopes members will keep sharing their stories

As the Chair of the MCAA Communication Working Group and the Managing Editor of the MCAA's Newsletter and IRRADIUM Magazine, Ruben Riosa is calling for members' stories.

Ruben Riosa, in his own words

My background defines me as an animal nutritionist, but over the last years I became passionate and specialised in Science Communication. Presently, I am finishing my European Joint Doctorate in Molecular Nutrition (MANNA), working on a project which focuses on dairy cows' nutrition and physiology, and presently I am an Associate Medical Communications Manager for an European Medical communications agency.

I also can't leave my house without my camera! I love photography. I love to hike and ski. Mountains are my second home!

As the Chair of the MCAA Communication working group and Managing Editor, Ruben focuses mainly on communicating with contributing authors to discuss the articles they have submitted for publication on the MCAA website and in publications. He makes sure to keep them informed as regards the review process of the article, publication dates, and general inquiries.

Ruben also works closely with MCAA Editor-in-Chief, Gian Maria Greco, supporting him in the overall communication within the team. Reaching out to the MCAA members is key. "Your support will always be important," he says. "We want to hear your stories, your experience within the MCAA, the secrets of

your research projects, and why not, your accomplishments. What we want to keep doing is telling the whole MCAA community (and beyond) how many great researchers are out there."

"Every new issue has interesting articles to read"

Ruben says he became interested in volunteering on the MCAA's editorial Board after browsing the newsletters and magazine. "Every new issue has interesting articles to read, and our work towards a more accessible publication is a big motivation," he explains.

For him, the team's work represents another motivation to develop the editorial activities of the MCAA. "Everyone is pushing very hard to find some free time to work for MCAA, and it's this dedication that creates a great and united team," he says.

The Editorial Board welcomes the continuous stream of articles proposed and submitted by MCAA members. For Ruben, this engagement from members shows a significant community spirit, which is paramount. "Without contributions, probably there won't be a newsletter, or at least, it won't be as diverse and inspiring as it is now," he notes.

In addition to promoting the diversity and variety of the editorial contributions received, Ruben is also keen to increase the inclusivity and accessibility of communication products. "It seems easy from the outside to modify a layout or a font, but in reality it took us a lot of time and discussions to take this step," he adds. "With the June issue of the newsletter, we developed a new layout that makes the user experience more accessible. Our final goal will certainly be to create a more inclusive research community."

Aurélia Chaise
MCAA Editorial Team

Photo by Rawpixel.com on Shutterstock

Meet the MCAA Editorial Board

Oleksandra (Sasha) Ivashchenko: Promoting our work is more important than ever

Photo by Sasha Ivashchenko

Sasha Ivashchenko is the lead guest-editor of this special newsletter edition related to a post-pandemic world. As a member of the MCAA Editorial Team, her priority is to involve as many MCAA members as possible and to ensure communications reach all members and beyond.

Sasha Ivashchenko, in her own words

I'm an imaging medical physicist, completing my Radiology and Nuclear Medicine residency at the Leiden University Medical Center and combining this with a part-time research position at the Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital.

I was born and raised in Ukraine. However, after obtaining my university degree in Applied Physics and gaining a few years of work experience, I moved to the Netherlands to work on a PhD project in Delft (TU Delft, 2013-2015, ITN TRACE 'n TREAT, FP7).

Sasha had the opportunity to work on her MSCA project through an Innovative Training Network (ITN). Looking back on this experience, she says: "Our personal development budget and the number of courses we could follow could not be compared with a standard PhD track," she explains.

Eager to continue her Marie Curie journey, she joined the MCAA and its Communication Working Group. One of her goals is to raise awareness about the association among the community of former MSCA fellows. "The amount of resources and the help that MCAA is providing to former fellows is unbelievable – there are MCAA micro-grants, workshops and communication platforms, for instance. Yet not everyone is aware of the organisation and its resources. Together with the Communication Working Group, we are trying to change this."

Photo by alphaspirit.it on Shutterstock

As a member of the Editorial Board, Sasha is involved in a variety of tasks involved in the production of both the newsletter and the magazine. "I contribute to discussion of issues like brainstorming and production of timelines, review of articles. I also write a few articles per year myself," explains Sasha. "Making a newsletter takes a lot of effort. There is a lot of communication between the authors, the editors and the production team involved, but it is a great team and we all jump in."

Sasha is particularly proud of the newsletter dedicated to diversity published last year. "It was co-edited by Gian Maria Greco and Valerie Bentivegna and was a huge success, especially because thematic issues resonate much more with our members, they speak to our hearts," she says.

Sasha is one of the two guest editors of this issue dedicated to a post-pandemic world. "The issue reflects on how the COVID-19 pandemic has changed our lives, changes that have been incorporated into researchers' everyday lives and are here to stay, the lessons we have learned and the ways we want and need to move forward. I am very proud of it. I'm proud of every newsletter we publish," she adds.

Aurélia Chaise
MCAA Editorial Team

Meet the MCAA Editorial Board

Sugosh Prabhu: It all started with a blog post

Sugosh Prabhu, who joined the editorial team in 2021, shares with us his enthusiasm to be part of activities which allow him to interact with individuals with diverse backgrounds.

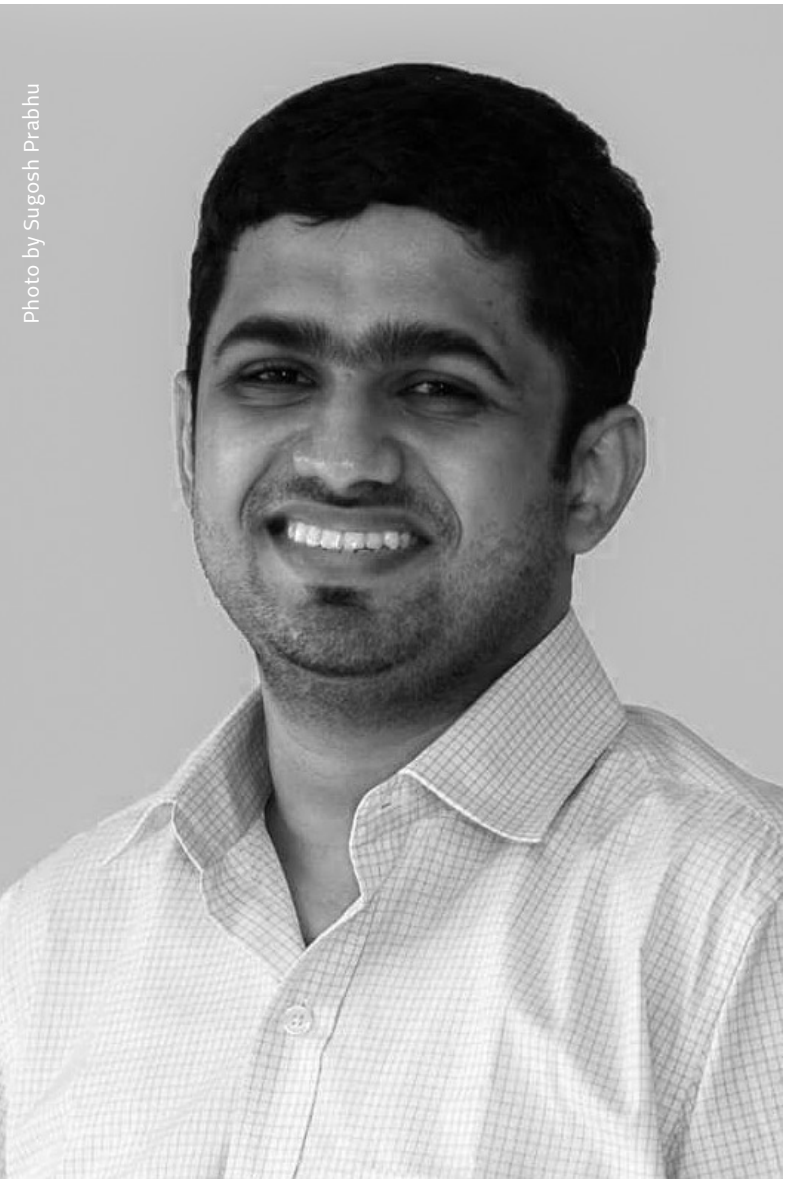


Photo by Sugosh Prabhu

Photo by Aon Khanisorn on Shutterstock

Sugosh Prabhu, in his own words

I am a researcher in Chemical Sciences. I completed my PhD from Bhabha Atomic Research Centre (BARC), India. My doctoral thesis revolved around understanding solute solvent interactions in complex fluids with the help of time resolved fluorescence techniques.

I did my postdoctoral research (Marie Curie postdoctoral fellowship) at KU Leuven (Belgium). My research focused on understanding Ionic Liquid – nucleic acid interactions by using a combination of spectroscopic and scanning probe techniques.

Apart from research, I am interested in policy, science communication and science diplomacy.

It all started with a blog post 'Postdocs matter: We have to rescue the boat!' that Sugosh submitted in February 2021. Encouraged by the great collaboration with the editorial team, he decided to join and bring his contribution to the editorial activities of the association.

"The MCAA editorial team consists of individuals who are committed towards fostering inclusivity and diversity," he says. "As a member of the editorial team I have a front row seat to read stories and articles that offer excellent insights into the research conducted by MSCA fellows. My role within the editorial team has pushed me to get out of my comfort zone to understand articles that are beyond my field of expertise."

What's more, this role offers him also an incredible opportunity to interact with individuals with diverse backgrounds.

Reading articles, guiding writers

As part of his tasks, Sugosh enjoys reading the articles submitted by the members and explains that his role is also to share good practices with them: "I work towards enhancing the quality of the submitted articles by suggesting changes in the language, structure and diction of the content. I nudge the authors to consider the corrections by providing appropriate justifications," he says.

More recently, Sugosh became involved in suggesting themes and topics for the upcoming issues of the newsletters and the magazine. He is quick to highlight the latest improvements in accessibility of the newsletters and magazines.

What's more, he welcomes the diversity of topics dealt with, like inclusivity, the EU Green Deal and the pandemic. "I am proud of the coordinated efforts that have allowed us to publish rich content even in 2020-2021 – a year that has changed our perceptions on so many aspects," he says.

"The MCAA is one of the few organisations that can boast of an incredible talent pool," he adds. "Many MCAA members are at the helm of pursuing ground-breaking research on some of the most pressing issues that affect society. The editorial team therefore has created a platform that not only highlights the research and achievements of the MCAA members but also allows space for opinions and viewpoints," he concludes.

Aurélia Chaise
MCAA Editorial Team

Meet the MCAA Editorial Board

Pradeep Eranti: It's important to communicate science to the public

Photo by Pradeep Eranti

One of the newest additions to the Editorial Team, Pradeep Eranti brings a fresh eye and motivation to make science accessible to the largest public.

Pradeep Eranti, in his own words

I'm a third-year PhD student at the Université de Paris (France) and an Early Stage Researcher of the Machine Learning Frontiers in Precision Medicine (MLFPM) Marie Skłodowska-Curie Actions Innovative Training Network (MSCA-ITN). MLFPM facilitates Early Stage Researchers (ESRs) to develop and apply machine learning and statistical methodologies to health data and discover new insights underlying the disease mechanisms and explore them in the context of precision medicine. I earned my Master's degree in Bioinformatics from Aalto University (Finland).

Besides Bioinformatics, I am also interested in Machine learning for Medicine, Open Science and Reproducibility.

Photo by PopTika on Shutterstock

Pradeep's commitment to the MCAA editorial activities grew out of the COVID-19 pandemic –during lockdowns imposed to contain the spread of the coronavirus. "This is when I realised the importance and need to communicate science to the public," he says.

To better explore science communication, he decided to reach out to the MCAA editorial team. "The team provides a unique opportunity for me, at an early career stage, to experience the processes involved in an editorial life cycle, including how to write clearly and concisely, to communicate scientific topics to an audience from diverse backgrounds," he adds.

Pradeep is proud to have been involved already in the release of 28th edition of the MCAA newsletter, in September 2021. He explains: "I wrote an article on the components to develop a better science communication strategy in this newsletter. Also, I reviewed the compilation of the articles to ensure the newsletter is of high-quality content and understandable to the newsletter's diverse audience."

For Pradeep, the best is yet to come with respect to the MCAA editorial production. "I would like to enrich the newsletter and the annual IRRADIUM magazine with my topics of interest and help communicate these essential topics to the readers."

Aurélia Chaise
MCAA Editorial Team

Meet the MCAA Editorial Board

Photo by Christina Makoundou

Christina Makoundou: ensure inclusivity and values in writing

For Christina Makoundou, MCAA editorial activities must ensure the quality of the production, but also promote values. We caught up with her to learn more.

Christina Makoundou,

in her own words

I graduated from Sorbonne University (France) in Material Chemistry. I am now finalising my doctoral project at the Department of Civil, Chemical, Environmental and Materials Engineering of the University of Bologna (Italy) through the ITN-MSCA project SAFERUP!

When I am not in the lab, I love to spend time discovering new countries and places through my volunteering activities in sport or cultural youth events. Music is also a huge part of my daily life!

Christina became involved in the editorial activities of the MCAA with a great motivation to promote diversity. In this scope, along with her tasks within the MCAA Editorial Board, Christina is also active in the Gender Equity Diversity and Inclusion (GEDI) working group of the MCAA.

One of her main concerns is to promote those values within the editorial activities. “My current role in the Editorial team is to help, while proofreading the articles, to address language and visual misuses or bias regarding the GEDI topics. The goal is to ensure inclusivity in writing and avoid misunderstandings caused by offensive words or images. To make the MCCA newsletter enjoyable for all the readers," she explains.

Inclusivity is very important for Christina. She says: “I have joined the team last year and I am particularly impressed by the efforts made by the editorial team to cover wider subjects and to allow more readers to identify themselves in the subjects discussed in the newsletter or the magazine.”

Reaching out to a larger public

Christina has big plans for the Editorial Board and hopes to increase the audience of the newsletter and magazine. For her, creativity is key to reach this objective. “In the past years, the focus was made on the accessibility or the GEDI issues for example, important steps so far. Day by day, new ideas and creative solutions are proposed to increase the interest while keeping a great article quality,” she concludes.

Aurélia Chaise
MCAA Editorial Team

Photo by Rawpixel.com on Shutterstock

Meet the MCAA Editorial Board

Yahaya Yabo: Communicating science for all

Photo by Yahaya Yabo

Yahaya Yabo's interest in science communication is what led him to join the MCAA production of the newsletter and magazine. We asked him about his plans for the Editorial Board.

Yahaya Yabo, in his own words

I'm a doctoral student at the Luxembourg Institute of Health and part of the Marie Skłodowska-Curie actions (MSCA) Innovative Training Networks ITN GLIOTRAIN.

GLIOTRAIN aims to identify novel therapeutic strategies for the treatment of brain tumours. I earned a Doctor of Veterinary Medicine degree from Usmanu Danfodiyo University Sokoto-Nigeria and a master's of science in Molecular biology from the Vrije Universiteit Brussels. I am currently finalising my PhD work, which is at the intersection between Neuro-Oncology, Bioinformatics, and Systems biology.


Photo by Michael Traitov on Shutterstock

During his PhD training, Yahaya developed an interest in science communication, as he realised the importance of communicating research to the public. This led him to the MCAA editorial board.

"The MCAA editorial team provides me the platform to experience and participate in the editorial process involved in communicating scientific work, science policy and activities to MCAA members with diverse backgrounds and the public. I have the opportunity to learn how to use concise and acceptable language in science communications and how to make written communications accessible to all," he explains.

A commitment dedicated to editorial quality

Yahaya's tasks aim mainly to ensure that all submissions conform to the guidelines of the newsletter. "When all the articles for an issue are compiled, I and other members of the editorial team review each article individually to ensure high quality of the written communication and ensure that they are factual, accessible and easy to understand by a diverse audience," says Yahaya.

Yahaya welcomes some key milestones accomplished by the editorial team, like the accessibility of the newsletter. For him, the November 2020 issue focus on diversity is also an accomplishment that the MCAA can be proud of.

Some changes are on the way, as Yahaya explains. "As a team, we have worked over the last few years towards the complete overhaul of the nature and content of the newsletter and the yearly magazine IRRADIUM. Our aim is to attract more audience as well as contributors to the MCAA publications." he concludes.

Aurélia Chaise
MCAA Editorial Team

Research

Photo by Carmen García Sánchez

My MSCA project links our interior domestic space to nature

"I conceive of a time when modern urban society has come to the realisation that only through sustaining a beneficial connection with nature can people achieve health and the potential for happiness"
(Kellert 2012, p. xv)

Due to the global increase in population (UNDESA, 2019), as people live more urbanised lifestyles, **there is a growing potential for losing regular 'contact with Nature**.' This circumstance diminishes access to human health and wellbeing benefits of daily interactions with the natural world and leads us to a sensorial deprived built environment (e.g. Ulrich 1984, Kaplan & Kaplan 1989, Maller 2006). Alienation from nature is not an inevitable consequence of modern life but rather failures in how we have deliberately chosen to design and develop our world. To maximise dwellers' connectivity to the natural environment in new and existing communities, new architectural design knowledge and useful creative strategies at all levels and scales of design are urgently needed (UN, 2017).

I carry out my individual research project Nature-In, focused on producing a catalogue of potential sustainable architectural devices, to increase our connection to nature through our interior domestic space experience, and thus, to mitigate this important problem.

After many countries around the world have been put into lockdown to control the spread of COVID-19, **we have realised how human health and well-being are inextricably linked to nature and how important the design of our interior domestic space is**. For these reasons, Nature-In is more relevant than ever.

As a crucial first step in my research, it is important **to define the concept of nature** and how the relationship between human beings and their natural surroundings should be. The term 'Anthropocene' was coined by 1995 Nobel Chemistry Laureate Paul Crutzen and it is now recognized as a new geological epoch in Earth's history that started around 1800. This term

Danish architect Halldor Gunnløgsson´s house (1959), Denmark

relates to humankind becoming the dominating force on Earth. The notion of Anthropocene calls for a change in our conception of nature, which is based on a cultural understanding:

- Humanity has **to adopt a different perspective** of the world and **to revise its position in the universe**, no longer above or in the centre, but within and with nature.

- **A new unitary concept of nature** and culture is necessary, to replace the traditional outdated and dualistic Western understanding. In this framework, nature's oversimplified meaning of something independent from humans, should no longer be used (Prominski, 2014).

Komyō -in Shinto temple (1391), Kyoto, Japan

- The relationship between architecture and nature must also be reconsidered. **Architects can play a relevant transformational role** creating new meaningful relationships between humans and the world as producers of our life scenarios, but also of new ideas for wellbeing and health (Manzini 2013), influencing communities and policymakers and changing their behaviour. **We have to find new ways of living together**, of inhabiting the world, linked to the understanding that **we also are nature**, that **everything is connected as a component of a whole**.

In this context, **Biophilic Design**, a little explored emerging approach that pursues sustainable design strategies to reconnect people with the natural environment (Kellert et al., 2008), **represents a design revolution**. This is not about greening our buildings or increasing their aesthetic appeal through integrating plants, but something more complex and ambitious. Biophilic Design is about establishing a mutual respect and enriching relations between humanity and nature (Browning & Ryan, 2020). It refers to an architecture experienced by all senses, sometimes without visual contact or a tangible link to the natural surroundings, and being aware of the passing of the time, Nature's changes along the day or the cycles along the year or seasons. It is a timely vision not just about sustainable design strategies but also about how we can fulfil modern society in harmony with Nature.

A fascinating study of Danish and Japanese architectural case-studies informs a contemporary sustainable design to increase our health and wellbeing.

I am conducting a fascinating study of exemplary post-war-Danish and traditional-Japanese buildings that contribute via rich multi-sensory stimulation to the connecting of their interior space with the surrounding nature, at the Royal Danish Academy in Copenhagen. I develop this through diverse

design disciplines, Architectural Interior, Landscape, and Biophilic Design approaches with a focus on linking architectural research to future practice.

Biophilic Design is an innovative design paradigm, but in many respects harks back to previous architectural practices and principles revealed in buildings throughout architectural history. The internationally renowned post-war Danish buildings built in the 50s and early 60s, left a leading European legacy that has greatly influenced the domestic sphere and has further created the developing framework of the Danish quality of life. On the other hand, it is remarkable that in Japan - a country that has always attracted Danish architects - life has traditionally been understood to be in communion with Nature. **Both architectural cultures are deeply inspired by the relationship between humans and nature mediated through architectural space**, and offer exemplary sensory experiences of the natural world by complex mechanisms (García Sánchez, 2015).

In my selected case studies there is a connection to the surrounding nature and the variations that take place with the passing of time or with the seasons, that **requires a reading in various landscape weather and seasonal conditions**. Nature changes are ever-present. Architecture harmonises with nature. There is a world of relationships between the interior and exterior space, prevailing human comfort and the thought that **everything is connected**. Their **interior space** -that is a mean of communication- opens itself up to nature in different ways: their surrounding **landscapes and gardens** accompany the architecture, establishing a dialogue in connection with nature changes; their **tectonic structure** and material character are visible and easily understood, enhancing the intimate link to natural surroundings; **the materials**, often locally available, manifest colour schemes and

Danish architects Karen and Ebbe Clemmensen´s study-house (1954), Denmark

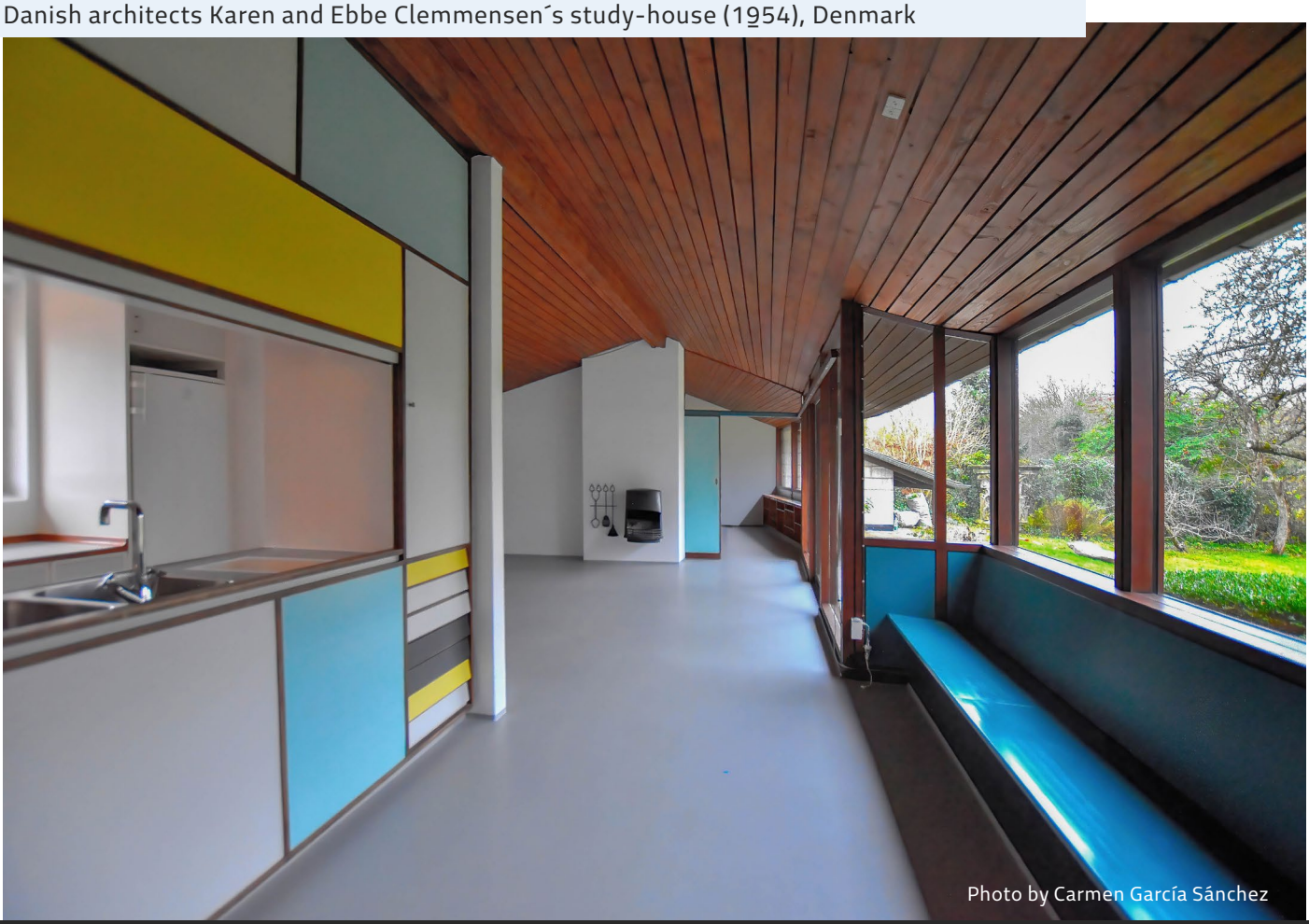


Photo by Carmen García Sánchez

textural effects found sometimes in the site; **daylight** manifests the distinctive character of the spaces. There are **transitory spaces full of sensitivities**: between light and shadow, transparency and opacity, the interior and exterior, the artificial elements and natural surroundings, between the artifact and the emptiness...

My study is still in progress, but it already reveals that **these case-studies provide unique biophilic experiences** which can contribute to enhancing the health and wellbeing of communities through daily interaction with nature in urban areas in the EU and beyond.

Acknowledgements: This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement number 896651.

Carmen García Sánchez
Institute of Architecture and Design,
Royal Danish Academy, Denmark
cgar@kglakademi.dk

References:

Browning, W. D., & Ryan, C. O. (2020). Nature Inside: A biophilic design guide. London, UK: RIBA Publishing.

García Sánchez, C. (2015). 1950 en torno al Museo Louisiana 1970 (Doctoral Thesis). Madrid, Spain: Architecture School, Universidad Politécnica of Madrid.

Kaplan, R.; S. Kaplan. (1989): The experience of nature: a psychological perspective. Cambridge University Press, Cambridge, UK.

Kellert, S.R., (2012): Birthright, People and nature in the modern world. Yale University Press.

Kellert, S. R., Heerwagen, J., & Mador, M. (Eds.). (2008). Biophilic design: The theory, science and practice of bringing buildings to life. Hoboken, NJ: Wiley.

Maller, C., et.al. (2006). "Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations." Health Promotion Intl., Vol.21, Issue 1, pp. 45-54.

Manzini, E., (2013). Public and Collaborative: Exploring the Intersection of Design, Social Innovation and Public Policy. Staszowski, E.(ed.) DESIS network.

Prominski, M. (2014). Andscapes: Concepts of nature and culture for landscape architecture in the 'Anthropocene.' Journal of Landscape Architecture, 9(1), 6–19. https://doi.org/10.1080/18626033.2014.898819

Ulrich, R. S. (1984). View through a window may influence recovery from surgery. Science, 224(4647), 420–421. https://doi.org/10.1126/science.6143402

UN (2017). New Urban Agenda. Quito: United Nations.

UNDESA (2019). World Urbanization Prospects: The 2018 Revision (ST/ESA/SER.A/420). New York, NY: United Nations.

Research

Bringing cultural heritage to the forefront of informal and non-formal e-learning

Photo by Anna Siri

Innovative approaches to support learning rapidly emerged during the COVID-19 pandemic. With a focus on informal and non-formal education, the Marie Skłodowska-Curie Research and Innovation Staff Exchange xFORMAL project will pursue a novel approach to learning about European cultural heritage while promoting science. Anna Siri tells us more.

The COVID-19 pandemic has disrupted educational systems around the world, affecting approximately 1.6 billion learners. As many formal learning settings were forced to close, educational providers were pushed to rethink the way students accessed their education. As a result, innovation accelerated in the education sector as well as the opportunities to reimagine how teaching could be delivered. The RISE Informal and Non-Formal E-Learning for Cultural Heritage (xFORMAL) project, led by Anna Siri, Marie Skłodowska-Curie Actions (MSCA) Fellow, aims to expand on these opportunities.

"In addition to the coordinator of xFORMAL, the University of Genoa, the project's partners consist of eleven valuable academic and non-academic institutions," recognises Anna. They are the Italian Alteritas - Interazioni tra i popoli (Simona Marchesini), NCLOUD Srl (Fabrizio Ponti and Federico Turchi) and MIBACT - Museo Nazionale Etrusco di Villa Giulia (Valentino Nizzo, Anna Tanzarella, Antonietta Simonelli), the Portuguese Instituto Politécnico de Bragança (Ana Pereira and Rui Pedro Lopes) and the Associação Ciência Viva Bragança (Ivone Fachada), the Spanish Universidad de Zaragoza (Francisco Beltrán

Lloris) and the Gobierno de Aragon-Museo de Zaragoza (Isidro Aguilera Aragon), the French Université Bordeaux Montaigne (Coline Ruiz Darasse), the Finnish Forskningscentrum för Europeisk Flerspråkighet (Vittorio Dell'Aquila), and then the Polish Uniwerytet im. Adama Mickiewicza w Poznaniu (Wojciech Sowa) and the Dante Alighieri Society of Wroclaw (Gianluca Olcese).

Up close with Anna Siri

Co-founding member of the UNESCO Chair in 'Anthropology of Health - Biosphere and Healing Systems' and an Adjunct Professor at the University of Genoa, Anna obtained her Master's degree with honours in Conservation of Cultural Heritage and a PhD at the School of Human Sciences at the University of Genoa. In 2021, she received the Seal of Excellence from the European Commission for another project proposal called "GENIE," submitted under the MSCA Individual Fellowships Programme. Anna engages in current debates regarding medical anthropology and public health through field research on everyday traditional health practices, with a particular interest in the representation of world, body and health among different cultures.

"I also have a great interest in art, which was passed on to me by my parents. As a result of my passion, I decided to work on scientific projects and fundraising for the Museo di Etnomedicina A. Scarpa at the University of Genoa. It is a museum entirely dedicated to the collection, preservation and enhancement of objects and testimonies related to the different medical traditions of the world," highlights Anna.

In addition to this, Anna collaborates on an ongoing basis with international research centres to valorise and promote material and immaterial cultural heritage linked to the traditional healing practices of people. "I have received some important awards in the valorisation of cultural heritage such as the prestigious research grant from the Accademia Ligure di Scienze e Lettere (Ligurian Academy of Sciences and Letters) and a grant from the Ministry for Cultural Heritage in the context of the 2018 European Year of Cultural Heritage."

Opening up a new way to learn

The xFORMAL project aims to develop a framework in which science and technology meet citizens of all ages in an informal intergenerational educational environment. It will be based on a multimedia platform and games devoted to a common European cultural heritage.

"The key ingredients of the project are: a) the history of ancient Europe, mainly taught in formal education, b) the landscape, which is typically a non-formal learning base, c) the heutagogical approach, d) virtual/augmented reality which is generally recognised as an informal-learning tool, and e) the sharing of knowledge and experiences between researchers in humanities and ICT in an intersectoral setting," explains Anna.

The project's work is expected to help build a more scientifically interested and literate society as well as raise awareness and interest in a common cultural heritage. It also expects

Photo by Triff on Shutterstock

to help increase the number of scientists. "We seek to provide citizens with an understanding on how a knowledge-building process takes place and give them the opportunity to do it first-hand through a game, providing them with the tools and data used by scientists. I am convinced this will promote awareness of scientific research and help increase the number of future scientists," says Anna.

A glimpse of what's to come

Through the framework users will be able to experience, in the form of a game-route, Europe's cultural heritage from the 8th Century BC to the 1st Century AD.

"During the landscape route, citizens of all ages will have to perform tasks involving technological and scientific content. This could include photogrammetry, georeferencing, geometry calculation of surfaces or altitude on the sea level etc," notes Anna. Some of the tasks may refer to monuments, and require users to interpret, classify, or read inscriptions. On the platform linked to the game, all the necessary tools to solve the tasks will be available in the form of small video-lessons, explanatory sheets, maps, and alphabets.

"In this adventure game, users will need to overcome obstacles by moving through a complex world, accumulating adequate tools, until the treasure or goal is finally achieved," highlights Anna. The focus will be on exploration and puzzle solving and feature long-term obstacles. The game will be based on key scenarios built by the scientific team and all the partners during secondments and online conferences.

Key innovative features of the project

The work of the project will increase awareness about the people settled in Europe before the rise of Rome – therefore promoting a common European heritage. "Additionally, xFORMAL will not only focus on science and technology but also on the scientific process per se. Both researchers and citizens will be led to reflect on how science is built," outlines Anna. What's more, informal and non-formal learning cases will be identified in the project, which will lead researchers to define borders and the way both types of learning may interface with formal learning – covering parts of knowledge that remain uncovered in the school curricula.

"The intersection of virtual reality/augmented reality with real life is a strong innovative feature of the framework, as the two modalities are usually exclusive," adds Anna. Furthermore, by involving disciplines from a wide range of sectors in a cooperative environment – not only in the form of short meetings and workshops – but in a deeper modality such as the secondments will lead to a deeper knowledge transfer.

"On a final note, the xFORMAL will also help assure the sustainability of the objectives of the European Year of Cultural Heritage," concludes Anna. Specifically, it will contribute to promoting the role of European cultural heritage as a pivotal component of cultural diversity and intercultural dialogue, promote solutions which make cultural heritage accessible to all and raise awareness of the importance of Europe's cultural heritage through education and lifelong learning as well as highlight the potential of cooperation in matters of cultural heritage.

Jennifer Wills
MCAA Editorial Team

Research

Pioneering tool to build molecules earns two MSCA supervisors the Nobel Prize in Chemistry 2021

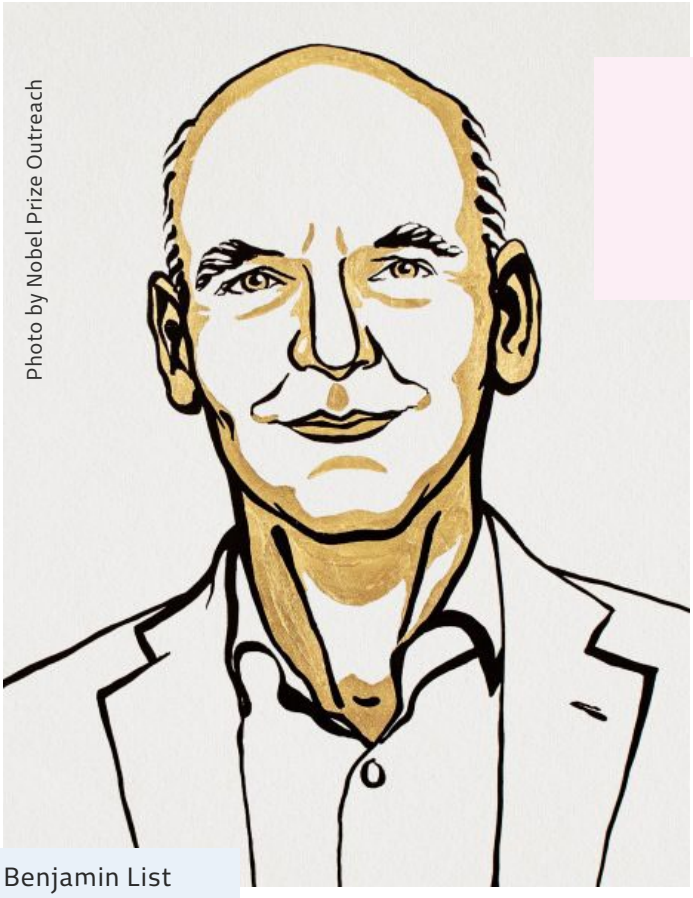


Photo by Nobel Prize Outreach

Benjamin List

Benjamin List and David MacMillan, both of whom have participated in MSCA Individual Fellowship projects, were awarded the Chemistry Nobel Prize for pioneering research into the construction of molecules.

Catalysts are substances that can speed up chemical reactions by lowering the amount of energy needed to get them going. They are key to many chemical processes. Scientists use them for a broad range of reasons, from constructing molecules and making plastics to storing energy in batteries and combating the spread of disease.

Until 2000, all catalysts discovered belonged to one of two groups: metals or enzymes. However, they have their issues. For example, some metal catalysts are very sensitive to oxygen and water, and not very environmentally friendly. In addition, they are problematic if they end up in pharmaceuticals.

Taking molecular construction to new heights

It was then that List and MacMillan came up with a totally new way of thinking for how to put together chemical molecules. Even though enzymes contain hundreds of amino acids or proteins, they were able to demonstrate that a single organic molecule can act as a catalyst. As a result, they developed asymmetric organocatalysis – a method that uses small organic molecules as catalysts instead of enzymes or metals.

What is fascinating is that the two laureates' findings were achieved independently of one

another. List didn't initially know that his colleague was working on the same subject.

In the 20th Century, there were some reports of organic molecules acting as asymmetric catalysts, but with varied degrees of success. These examples were isolated. Nobody considered developing a complete methodology or understanding of how they work.

Society already significantly benefiting

The innovative catalysis technique is an efficient, accurate, inexpensive, speedy and environmentally friendly way to develop new molecules. This ground-breaking method has greatly influenced pharmaceutical research and made chemical processes more eco-friendly and cost-efficient. The novel toolbox has also helped in developing plastic, perfume and flavoursome food. In fact, catalysis contributes 35% of the world's total GDP.

Over the past two decades, the new catalysts have been used in a variety of ways, including for creating new pharmaceuticals and making molecules that capture light in solar cells. What's more, List and MacMillan's work has helped develop a drug for high blood pressure and streamline the production of drugs such as paroxetine (Seroxat) that treats depression and oseltamivir (Tamiflu) used to treat respiratory infections.

The scientific community is wondering out loud about asymmetric organocatalysis, and why such a seemingly simple idea was overlooked for so long. "This concept for catalysis is as simple as it is ingenious, and the fact is that many people have wondered why we didn't think of it earlier," says Johan Åqvist, chair of the Nobel Committee for Chemistry, in a press release on the 'The Nobel Prize' website. "I'm an organic chemist, I'm working with small organic molecules every day, but I didn't think of it!" notes Peter Somfai, member of the Nobel Committee, in an interview. He referred to the tool as "a game changer."

Photo by Nobel Prize Outreach

David MacMillan

Mariya Gabriel - European Commissioner for Innovation, Research, Culture, Education and Youth - commented in a European Research Council press release: "Another happy day for European science! ... Another great mind, Benjamin List, wins the Nobel Prize in Chemistry ... Congratulations to both laureates on winning one of the highest accolades in the world of science."

Benjamin List, Director at Germany's Max Planck Institute of Coal Research, and David MacMillan, Professor of Chemistry at Princeton University, United States, are currently supervising the MSCA projects SusCat and PhotoChemBio, respectively.

Jerry Stamatelos
MCAA Editorial Team

Accessibility Statement

The MCAA believes in a society based on diversity. A society where diversity is the norm, not a deviation. A society where diversity is a strength, not a weakness. Access barriers are created by a society that does not acknowledge the value of diversity. Diversity and access are foundational elements of the flourishing of the research endeavour.

As a community of researchers, the MCAA is committed to increase the accessibility of its products, services, and events. Under the leadership of the Editorial Team of the Communication Working Group, with the support of other Working Groups and the MCAA Board, the MCAA has been promoting a series of actions aimed at increasing the inclusivity of its community and reducing access barriers.

Since the June 2021 issue, the MCAA Newsletter has a new layout. The new design should make the reading experience more accessible by reducing a number of barriers our readers may face.

The new layout complies with many requirements of major print and digital accessibility standards and guidelines. For example, background and foreground colours were selected and paired so as to fulfil the AAA level requirements for colour contrast devised by the Web Content Accessibility Guidelines (WCAG 2.1). Colour selection and pairing also complies with requirements for colour blindness. The text is not justified in order to keep the spacing between words consistent and regular in the entire text. Line spacing and font size were revised and increased too. Each macro-section is identified by a different colour so as to provide the reader with a map of content organisation. The layout adopts TestMe, a font inspired by the Design for All principles. Last but not least, the PDF file now complies with PDF accessibility requirements and can be used by screen readers.

Editorial information

About

The MCAA Newsletter is the main communication channel for and about the MCAA community. It is a publication venue for science communication and public outreach. Its main aim is the dissemination of information about past and current MSCA projects, as well as activities of MCAA Chapters and Working Groups, events, and members' achievements.

The MCAA Newsletter is a registered publication (ISSN 2663-9483) in the Royal Library of Belgium (KBR). It is published by the Marie Curie Alumni Association, Kunstlaan 24, 1000 Brussels, Belgium.

Instructions for submission

Authors interested in submitting an article should read the Editorial Guidelines and the Editorial Rules available on the MCAA Newsletter website. Articles should be submitted **exclusively** through the form available on the MCAA Newsletter website.

Editorial Board

Editorial Team

General requests should be sent to: news@mariecuriealumni.eu

Copyright notice