



Impacts of the COVID-19 pandemic on mobility scholars who participate in international study exchange and research programs

Farid Dahdouh-Guebas^{1,2,3,4,*} Ina Vandebroek^{5,6,7,8,*}

ABSTRACT

In the wake of the COVID-19 pandemic, international exchange students and mobility researchers, including ethnobiologists, are an important neglected group within academia. We highlight their challenges within academia and society, and propose solutions towards more academic flexibility, enhanced mobility preparedness, and a better cultural immersion in host communities.

Keywords: COVID; Corona; International Students; Ethnobiology; Culture.

1 General Coordination Office of the Erasmus Mundus Joint Master Degree in Tropical Biodiversity and Ecosystems – TROPIMUNDO, Université libre de Bruxelles - Belgium, Vrije Universiteit Brussel - Belgium, Sorbonne Université - France, Muséum National d'Histoire Naturel - France, Università degli Studi di Firenze - Italy, Université de Guyane – France, Université des Antilles – France, Université de Dschang – Cameroon, Université d'Antananarivo – Madagascar, Université de la Réunion – France, University of Ruhuna – Sri Lanka, Universiti Malaysia Terengganu, Malaysia.

2 Systems Ecology and Resource Management Research Unit, Département de Biologie des Organismes, Université libre de Bruxelles - ULB, Av. F.D. Roosevelt 50, CPi 264/1, B-1050, Brussels, Belgium.

3 Ecology & Biodiversity, Laboratory of Plant Biology and Nature Management, Biology Department, Vrije Universiteit Brussel - VUB, Pleinlaan 2, VUB-APNA-WE, B-1050, Brussels, Belgium.

4 Laboratory of Aquaculture & Artemia Reference Center, Department of Animal Sciences and Aquatic Ecology, Campus Coupure, Coupure Links 653 - block F, B-9000 Gent, Belgium.

5 Institute of Economic Botany, The New York Botanical Garden, New York, USA.

6 The Forest School at the Yale School of the Environment, Connecticut, USA .

7 The Graduate Center of the City University of New York (CUNY), PhD Program in Biology, New York, USA.

8 Columbia University, Ecology, Evolution and Environmental Biology (E3B) Department, New York, USA.

*both authors contributed equally to the manuscript

* Corresponding author ✉. E-mail address: FDG (farid.dahdouh-guebas@ulb.ac.be)

SIGNIFICANCE STATEMENT

In academia, the COVID-19 pandemic has been characterized by a flurry of top-down decisions, but students need genuine listening to the problems they face. Mobility scholars who temporarily reside in a foreign country with a different culture are even more vulnerable, and their challenges are important to discuss, overcome, and prevent. Based on our long-term experience as mentors of mobility scholars, and in organizing and managing education and research mobility in the Americas, Europe, Africa and Asia, as well as our own participation in research mobility, we try to initiate this important discussion.

INTRODUCTION

In this paper, we highlight several ways in which the COVID-19 pandemic hinders the mobility of international students and scholars (hereafter “mobility scholars”), and the solutions we envision for the future. First, we briefly introduce the context of mobility, describe the challenges mobility scholars are facing during COVID-19, and reflect on solutions such as academic flexibility, better cultural immersion, and additional training in cultural competency to promote pro-social values and behavior. For ethnobiologists, attention to these issues during mobility in times of COVID-19 is paramount. In our concluding remarks, we emphasize the need to consult resources that embrace principles of interpersonal respect and behavioral kindness towards our neighbors and the environment, including those found in academic works within and outside our own disciplines, and in unwritten socio-cultural rules of indigenous and other traditional communities. Finally, we propose that increased online teaching and training, which are one of the positive outcomes of the COVID-19 pandemic and facilitate sharing STEM (Science, Technology, Engineering, and Mathematics) expertise and language immersion on a global scale, should continue after the pandemic.

Context: Economic incentives for mobility

In spite of the global financial recession of 2008 and the redistribution of global power within the new international political order, the past few decades have witnessed an exponential growth in the number of international students and researchers in various subdisciplines of the social sciences and STEM. These mobility scholars cross national borders to pursue higher education and research, participating in multi-lateral (South-South, North-South, and South-North) educational exchange programs funded by national, regional, and global scholarships. For example, for 2021-2027, the European Commission is investing 30 billion Euros in the Erasmus+ program that supports education, training, youths, and sports in Europe. This budget includes scholarships with the Erasmus Mundus educational excellence label aimed at increasing student and research staff mobility within and beyond the European Union’s (EU) borders (European Commission 2018). Over 75% of these scholarships are given to non-European students and researchers from the geographic South in Latin America, Africa and Asia, who spend part of their mobility in Europe, but may also be hosted by a non-European partner country on an entirely different continent than the one from which they originate (e.g. a scholar from

Colombia who spends two semesters in Belgium and Italy, and one in Sri Lanka). International mobility is also important for the United States, where on average more than one million foreign students and scholars arrive each year for education and/or to conduct research, with 52% pursuing STEM careers (Institute of International Education 2019). Thus, international exchange visits have practically become the norm in academia. In the field of ethnobiology, there also exists a particular mobility of students and scholars affiliated with degree-granting institutions who, regardless of their country of origin, engage in projects involving local communities in the geographic South, for instance to conduct research on Indigenous Knowledge Systems, or to reconcile nature, people, and policy in local ecosystem management and governance (Dahdouh-Guebas et al. 2021).

Current challenges of mobility scholars

Despite these promising economic incentives for mobility, the whirlwind spread of the COVID-19 pandemic and its aftermath have heavily impacted mobility scholars, compounding significant hurdles that these scholars tend to face, especially those with home countries in the geographic South. In academia, one of the main problems is that administrators often do not consider the significant efforts and time commitment required from foreign mobility scholars when moving to a new country, learning a new language, and living in a different culture. In the face of the COVID-19 global health crisis, many scholars find themselves struggling emotionally, socially, financially and legally more than usual (Bavas 2020; Van Lancker & Parolin 2020). For example, in 2020 the United States extended and expanded immigration restrictions, citing the need for protecting the country’s own workforce. Decisions such as these, and prolonged uncertainty about changing visa and green card rules and regulations significantly increased anxiety in students, postdoctoral fellows and faculty members from foreign countries (Subbaraman & Witze 2020). To make matters worse, there exist reports around the world of verbal backlash and online petitions against international students spending their mobility abroad, and in extreme cases there even have been physical assaults (Do 2020; Misérus 2020). It is quite ironic that mobility scholars, especially those pursuing a degree in ethnobiology, who tend to be acceptive of new cultural traditions and values, and predisposed to assimilate into new environments away from their families (Zumajo-Cardona 2021), would end up being targeted as carriers and spreaders of COVID-19. With the extent of this public health crisis now affecting the entire world, and consecutive outbreaks taking place in most countries, these negative experiences may only

increase in number and intensity, and ethnobiology along with other scientific disciplines are being called upon to reshape in the COVID-19 aftermath (Ladio 2020; Vandebroek et al. 2020).

We fear that the COVID-19 pandemic, in combination with an increased likelihood of racial stereotyping, harassment, and bullying of mobility scholars, may have long-lasting negative effects on the participation of foreign scholars in international exchange programs. This comes in addition to lockdowns and restrictions of on-site access to laboratories and universities, and the associated loss of essential learning and research opportunities (Baker et al. 2020), in which students are experiencing substitution of interactive face-to-face lectures with remote assignments, suspended laboratory training and hands-on field excursions, and loss of in-person interactions with peers (Dickerson 2020; Schüller & Colus 2020). Curiously, mobility internships that were considered of great importance and essential for capacity-building in the pre-COVID-19 era are now explicitly being labelled as non-essential to justify cancellation or replacement by literature studies and virtual assignments.

A diminished pool of international mobility scholars would leave us with the prospect of less experienced worldly individuals in global education, research, and on the job market. Specifically, within the environmental and social sciences in general and in ethnobiology in particular, hands-on training, teamwork, and field experience are all paramount. Paradoxically, some institutions have communicated a priori that we are all in this global health crisis together, and that therefore COVID-19 is not to be considered a case of force majeure in submitting research assignments such as graduate student dissertations. Even worse, some have obliged their students to add a default generic statement to their dissertation that the process of data collection, research methodology, and/or other scientific work could be affected by lockdowns and preventive measures to curb the spread of COVID-19, regardless of whether or not this was actually the case. In turn, this could contribute to unfair negative profiling by future employers, academic supervisors and mentors.

Solutions related to and beyond COVID-19 challenges

To cool down the heated mobility debate, we argue for the following solutions. The academic community can anticipate and mitigate possible negative experiences for mobility scholars by advocating for: (1) more flexibility from academic authorities and administrators towards solving challenges and barriers faced by these scholars, in close consultation with their in-

structors, mentors, and supervisors; (2) a better cultural on-boarding of mobility scholars before and after arrival, through cultural immersion and cultural competency training.

(1) *Flexibility.* Academic instructors, mentors, and supervisors at host institutions are intermediaries between mobility scholars and institutional authorities, and are therefore well-placed to understand the challenges that both groups face. Supervisors and mentors, who closely follow the work of mobility scholars, are in the best position to judge if any parts of the research have been extraordinarily affected by the COVID-19 pandemic, curfews and other social distancing measures. Ideally, generic statements in dissertations that some universities now require could be replaced by a case-specific concise assessment initiated by the mobility scholar's mentor and reviewed by the members of the dissertation committee. Where no impacts on research were encountered, this should be explicitly stated as such. Pending ethics review, an additional statement related to the COVID-19 pandemic printed on the degree may also help to contextualize the academic performance of students and scholars, providing a supportive explanation where weaker grades were obtained due to the pandemic, or to emphasize the remarkability of excellent grades despite the pandemic.

Finally, achievements should also be considered in light of challenges to mental health and well-being experienced by mobility scholars and other students, which in many cases have worsened since the pandemic and associated curfew periods (Son et al. 2020; Kumari et al. 2020). Particularly, those isolated in student housing and other guest accommodations, which is nearly always the case for mobility scholars, have reportedly experienced significantly compromised psychological well-being (Cruyt et al. 2020). Also, interactions and other social networks have deteriorated (Elmer et al. 2020). It is worth mentioning that these examples also extend beyond mobility scholars to other (international and domestic) workers in academia (Serralta et al. 2020). Thus, beyond flexibility, universities and other research institutions can spend more attention to teambuilding activities that help to address the mental well-being of all students, researchers, and staff in academia (Figure 1).

(2) *Cultural immersion and cultural competency training.* Exchange programs at universities and other institutions rarely prepare students and researchers to live and study abroad, and assume instead all too often that they are already self-prepared. However, preparation through voice-over-IP or video conferences before arrival, along with a plan for intentional cultural immersion after arrival, are invaluable (Ventura et al. 2017). This is even more relevant in the face of a long-lasting public health crisis and can be



Figure 1. TROPIMUNDO mobility scholars on Bidong Island in Terengganu (Malaysia) enjoying a break from studies with safely-distanced exercises at the beach. Program Managers and Coordinators have always encouraged such activities to mitigate social isolation and improve mental health. TROPIMUNDO stands for the Erasmus Mundus Joint Master Degree in Tropical Biodiversity and Ecosystems, composed of 12 full partners in Belgium, France (incl. French Guyana, Guadeloupe and La Réunion), Italy, Cameroon, Madagascar, Sri Lanka and Malaysia, in which students have an obligatory mobility of two semesters in different European countries and one semester in a tropical country, necessitating repeated language immersion and cultural on-boarding. Photograph courtesy of Jessica Micklem.

done sensitively, by engaging in a narrative inquiry with the scholar's own cultural beliefs, norms, and values. Cultural immersion is an experience that aims to promote pro-social and societal values, by increasing cultural awareness and understanding, tolerance, and integration of students, and is even more critical for those who engage in international mobility for field research in collaboration with local communities in the geographic South, e.g. for environmental, anthropological or other ethnosciences-oriented projects. Especially during such fieldwork, mobility scholars should be keenly aware of their responsibility to proactively assist in always keeping local communities safe, and of the right of self-determination of these communities. A special training course in cultural competency, incorporating required modules of cultural and medical anthropology, ethics, social justice and anti-racism, as well as tailored medical education modules on COVID-19 or general epidemiology, can build a missing skillset for mobility scholars who plan to work directly with Indigenous and traditional communities around the world. Cultural competency training was

developed in medical education to improve communication, understanding, and supportive interaction between healthcare providers and patients from diverse cultural backgrounds (Paasche-Orlow 2004), but can be extended to other disciplines in which students and scholars need to interact mindfully with individuals and communities whose values, beliefs, worldviews and behaviors may differ from their own. Such training will prepare ethnobiology mobility scholars better to take on the responsibility of community liaison during fieldwork, while receiving continued guidance from their mentors and supervisors. By setting up safe and socially-distanced, consensus-building community meetings, mobility scholars can facilitate an environment in which local communities feel safe to express their opinions, voice their concerns, and search for solutions together (Vandebroek 2017). Importantly, the academic community should encourage and recognize such activities as essential learning outcomes of training and fieldwork, and acknowledge researcher-community partnerships as indispensable academic accomplishments. Crucial to this is also

that mentors and supervisors of mobility scholars in host institutions prioritize developing long-term collaborative agreements with academic colleagues and community leaders in the countries and study areas where research takes place, maintain committed relationships, share the results of research, and publish together (cf. Dahdouh-Guebas et al. 2003).

Concluding remarks

Since COVID-19 is here to stay, international students, mobility researchers, their mentors and supervisors, local communities, and administrators in academia are at the forefront of finding new and better ways to relate to each other. We do not need to reinvent the wheel, and suggest that learning from cultural competency curricula and philosophy works, religious scriptures, history books, and unwritten socio-cultural rules is helpful in this context (UNEP 1999). Moreover, such an approach is applicable across the world, within our own culture and that of others. For example, global case studies have shown iconic examples of changes in community attitudes towards anthropogenic environmental degradation by engaging in a dialogue based on lessons from worldviews and from scriptures or unwritten local socio-cultural rules on biological conservation (Palmer & Finlay 2003). In a similar way, these resources might guide us as educators, administrators, and researchers to build bridges with mobility scholars and local communities as we strive to reconnect to ancestral principles of interpersonal respect and basic behavioral kindness towards our neighbors and the environment (Albuquerque & El-Hani 2020; Gonçalves-Souza et al. 2020; Ladio 2020).

From an organizational point of view, curfews and other social distancing measures have forced institutions to make a rapid transition to videoconferencing and online teaching tools, with generally fair student satisfaction (Dost 2020; Fatani 2020). Such transitions are extremely valuable to make education and research available to students and researchers who do not (yet) have the opportunity to become a “live” (physical) mobility scholar, although not all students have equal access to high-quality remote learning. During COVID-19, numerous initiatives of “internationalization-at-home” and remote research collaboration have come into existence, and we argue that these should not disappear in a post COVID-19 world. By default, mobility scholars participate in at least two, often uncoordinated, academic worlds by representing institutions in their home and host countries. During mobility, one of these academic institutions will always be farther away than the other. We can bridge this divide virtually, and should strive for recently promoted online tools and inter-

actions to be consolidated beyond the current pandemic, while proactively addressing important challenges for mobility scholars, including universal internet access, time zone differences, financial constraints, family obligations, language proficiency, and mental health. Finally, face-to-face lectures, hands-on laboratory training and field excursions, and in-person interactions with peers should be re-established as soon as it is safe again for the sake of mental well-being.

ACKNOWLEDGEMENT

The authors acknowledge valuable comments from Yasmin Dahdouh-Guebas, Jessica Tretina and Cecilia Zumajo to a previous version. We also thank the editors for their helpful suggestions to improve this paper. We stand in solidarity with students and staff members from research institutions and essential workers outside academia for their perseverance in these challenging times. TROPIMUNDO, the Erasmus Mundus Joint Master Degree in Tropical Biodiversity and Ecosystems, is financed by the European Commission (www.tropimundo.eu) under grants N° 2013-1939 and N° 2019-1451.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

REFERENCES

- Albuquerque UP, El-Hani CN (2020) **In a world in shadows and flames scientists and laypeople need better understanding of how science works.** *Ethnobiology and Conservation* 10:13. <https://doi.org/10.15451/ec2020-12-10.13-1-4>
- Baker DM, Bhatia S, Brown S, Cambridge W, Kamarajah SK, McLean KA, Brindl N, Lapolla P, Pérez-Ajates S, Raubenheimer K, Xu W, Representatives of the STARSurg Collaborative, EuroSurg Collaborative, and TASMAN Collaborative (2020) **Medical student involvement in the COVID-19 response.** *The Lancet* 395(10232): 1254
- Bavas J (2020) **Coronavirus pandemic leaves Australia's international students 'stranded', struggling to buy food.** *ABC News.* <https://www.abc.net.au/news/2020-04-03/international-students-financial-hardship-coronavirus/12116176> Accessed 18 February 2021
- Cruyt E, De Vriendt P, Van de Velde D (2020) **Betekenisvolle activiteiten tijdens de eerste COVID-19 lockdown. Resultaten van een web based survey in België: finaal rapport.** Universiteit Gent, Ghent, Belgium

- Dahdouh-Guebas F, Ahimbisibwe J, Van Moll R, Koedam N (2003) **Neo-colonial science by the most industrialised upon the least developed countries in peer-reviewed publishing.** *Scientometrics* 56(3): 329-343
- Dahdouh-Guebas F, Hugé J, Abuchahla GMO, Cannicci S, Jayatissa LP, Kairo JG, Kodikara Arachchilage S, Koedam N, Mafaziya Nijamdeen TWGF, Mukherjee N, Poti M, Prabakaran N, Ratsimbazafy HA, Satyanarayana B, Thavanayagam M, Vande Velde K, Wodehouse D (2021) **Reconciling nature, people and policy in the mangrove social-ecological system through the adaptive cycle heuristic.** *Estuarine, Coastal and Shelf Science* 248: 106942
- Dickerson C (2020) **‘My World Is Shattering’: Foreign Students Stranded by Coronavirus.** *The New York Times.* <https://www.nytimes.com/2020/04/25/us/coronavirus-international-foreign-students-universities.html> Accessed 18 February 2021
- Do A (2020) **‘You started the corona!’ As anti-Asian hate incidents explode, climbing past 800, activists push for aid.** *Los Angeles Times.* [<https://www.latimes.com/california/story/2020-07-05/anti-asian-hate-newsom-help>] Accessed 18 February 2021
- Dost S, Hossain A, Shehab M, Abdelwahed A, Al-Nusair L (2020) **Perceptions of medical students towards online teaching during the COVID-19 pandemic: a national cross-sectional survey of 2721 UK medical students.** *BMJ Open* 10(11): e042378
- Elmer T, Mephram K, Stadtfeld C (2020) **Students under lockdown: Comparisons of students’ social networks and mental health before and during the COVID-19 crisis in Switzerland.** *PLOS ONE* 15(7): e0236337
- European Commission (2018) **Commission adopts proposal for the next Erasmus programme 2021-2027.** <https://ec.europa.eu/programmes/> Accessed 18 February 2021
- Fatani TH (2020) **Student satisfaction with videoconferencing teaching quality during the COVID-19 pandemic.** *BMC Medical Education* 20(1): 396
- Gonçalves-Souza T, Diniz-Filho JAF, Albuquerque UP (2020) **Why scientific information does not necessarily impact the decisions by human society.** *Ethnobiology and Conservation* 9:11
- Institute of International Education (2019) **Number of International Students in the United States Hits All-Time High.** <https://www.iie.org/Why-IIE/Announcements/2019/11/Number-of-International-Students-in-the-United-States-Hits-All-Time-High> Accessed 18 February 2021
- Kumari P, Gupta P, Piyooosh AK, Tyagi B, Kumar P (2020) **COVID 19 : Impact on mental health of graduating and post graduating students.** —*Journal of Statistics & Management Systems* doi: 10.1080/09720510.2020.1833449
- Ladio AH (2020) **A new set of tools for ethnobiologist in the COVID-19 Pandemic.** *Ethnobiology and Conservation* 9:29 doi: 10.15451/ec2020-07-9.29-1-8
- Misérus M (2020) **Uitgescholden en bedreigd, want “alle Chinezen hebben corona”.** *de Volkskrant.* <https://www.volkskrant.nl/nieuws-achtergrond/uitgescholden-en-bedeigd-want-alle-chinezen-hebben-corona~b563944c/> Accessed 18 February 2021
- Paasche-Orlow M (2004) **Defining the ethics of cultural competence.** *Academic Medicine* 79: 347-350
- Palmer J, Finlay V (2003) **Faith in Conservation: New approaches to religions and the environment.** The International Bank for Reconstruction and Development / The World Bank, Washington D.C., USA
- Schüller JD, Colus FSO (2020) **How high-mobility Erasmus Mundus adapted to COVID-19.** *University World News.* <https://www.universityworldnews.com/post.php?story=20201209140657563> Accessed 18 February 2021
- Serralta FB, Zibetti MR, Evans C (2020) **Psychological distress of university workers during COVID-19 pandemic in Brazil.** *International Journal of Environmental Research and Public Health* 17(22): 8520
- Son C, Hegde S, Smith A, Wang X, Sasangohar F (2020) **Effects of COVID-19 on college students’ mental health in the United States: interview survey study.** *Journal of Medical Internet Research* 22(9): e21279
- Subbaraman N, Witze A (2020) **Trump to suspend new visas for foreign scholars.** *Nature* 583(7814): 19
- UNEP (1999) **Cultural and Spiritual Values of Biodiversity.** United National Environment Programme, Nairobi, Kenya
- Van Lancker W, Parolin Z (2020) **COVID-19, school closures, and child poverty: a social crisis in the making.** *The Lancet Public Health* 5(5):

E243-E244

Vandebroek I (2017) **Ethical aspects of working with local communities and their biological resources**. In: Badal S, Delgoda R (eds) *Pharmacognosy: Fundamentals, Applications and Strategy*. Academic Press, London, pp. 645-651

Vandebroek I, Pieroni A, Stepp JR, Hanazaki N, Ladio A, Nóbrega Alves RR, Picking D, Delgoda R, Maroyi A, van Andel T, Quave CL, Paniagua-Zambrana NY, Bussmann RW, Odonne G, Abbasi AM, Albuquerque UP, Baker J, Kutz S, Timsina S, Shigeta M, Pereira Ribeiro de Oliveira T, Hurrell JA, Arenas PM, Puentes JP, Hugé J, Yeşil Y, Jean Pierre L, Olango TM, Dahdouh-Guebas F (2020) **Reshaping the future of ethnobiology research after the Covid-19 pandemic**. *Nature Plants* 6: 723-730

Ventura CAA, Mill JE, Mendes IAC, de Brito ES, Johnson L (2017) **Cross-cultural experiences during a visiting scholar program: “...A start[ing] not a finishing point”**. *Quality Advancement in Nursing Education - Avancées en formation infirmière* 3(1): 8

Zumajo-Cardona C (2021) **My 2020 as an ‘alien’ PhD student in New York**. *Nature*. <https://www.nature.com/articles/d41586-021-00200-1>
Accessed 18 February 2021

Received: 03 February 2021
Accepted: 18 February 2021
Published: 25 February 2021