The GlobSci project data

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1 Overview

The GlobSci survey was designed to provide consistent cross-country data on active researchers. It surveyed 47,304 researchers in the four scientific disciplines of biology, chemistry, earth and environmental sciences, and materials science working or studying in 16 countries during February-June 2011.

Researchers were randomly selected on the basis of being a corresponding author of an article published in 2009 in a journal related to one of the four fields (referred to here as the "focal article"). The social sciences and humanities were not sampled. Thus by design, the survey studies research active scientists, excluding early career scientists who have yet to publish and scientists who have, in all likelihood, ceased being research active The four fields were selected because of the high likelihood (95 percent or more) that published articles in these fields contained an email address for the corresponding author. Journal selection was stratified along four classes of Impact Factor (IF). As such, the sample reflects authors who contributed in each of the four ranks of journals. It does not necessarily reflect the relative distribution of the entire scientific population.

Countries included were Australia, Belgium, Brazil, Canada, Denmark, France, Germany, India, Italy, Japan, Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States. In the subsequent sections we refer to this set of countries as "core." Collectively, the 16 core countries produce about 70 percent of all articles published in these fields. Country of origin was determined by asking the respondents to report their country of residence at age 18. This allows us to neutralize the incidence of those foreign-born who came to a country during childhood, and whose migration decision depends on family choices, rather than on their own. International mobility was defined as migrating away from one's country of origin for purposes of study or work or for taking a postdoc or job position of at least 12 months.

Panelists were invited to participate by email. The invitation letter and survey was fielded in English. Both were available in six other languages, as well. The overall response rate is 40.6 percent. The response rate, conditional on completing the entire survey, is 35.6 percent. Response rate bias appears quite modest and is discussed in Supporting Information in Franzoni, Scellato and Stephan (2012). The sampling strategy and procedure is discussed in Franzoni, Scellato and Stephan (2012) as well. China was initially included in the survey. However, a low response rate of less than 5 percent for a test sample of Chinese addresses suggested that respondents were either not receiving the invitation or had problems responding to the invitation. We encountered somewhat similar problems in a later effort to survey scientists in South Korea. Based on these test samples we decided not to survey researchers residing in either China or South Korea.

2 Suggested citations and related publications

FRANZONI, C., SCELLATO, G., STEPHAN, P. (2012) "Foreign-born scientists: mobility patterns for 16 countries" **Nature Biotechnology**, 30 (12), pp. 1250-1253.

FRANZONI C., SCELLATO G., STEPHAN P. (2014) "The mover's advantage. The superior performance of migrant scientists", **Economics Letters**, 122 (1), pp. 89-93.

SCELLATO G., FRANZONI C., STEPHAN P. (2015) "Migrant scientists and international networks", **Research Policy**, 44(1), pp. 108-120.

STEPHAN P., SCELLATO G., FRANZONI C. (2015) "International Competition for PhDs and Postdoctoral Scholars: What Does (and Does Not) Matter", Edited by William R. Kerr, Josh Lerner and Scott Stern, Vol. 15. MIT Press.

FRANZONI, C., SCELLATO, G., STEPHAN, P. (2015) "International Mobility of Research Scientists: Lessons from GlobSci" in Global Mobility of Research Scientists: The Economics of who goes where and why, Edited by Aldo Geuna, Elsevier.

3 Rights of use

4 Description of the annexed files

4.1 Databases

The database is provided as two CSV files:

- *export_part_A.csv*:
  The field "*generalid*" is the primary key and represents the unique code identifying all the recipients of the survey. It includes information on questionnaire completion and response rate (section 0) and on the reference articles derived from external sources, thus not provided by the respondents (section 1);
- *export_part_B*:
  The field "*responseid*" is the primary key (it can be linked to the corresponding field in the previous file). It includes all the answers provided by the respondents (sections from 2 to 6).

The field delimiter in the CSV files is "," (comma).

Annex 1 reports the questionnaire with all the available questions and answer options as a support to improve the understanding of the data structure and of the conditional branching.

4.1.1   Caveats

The field "*rnif*" reports the rank normalized Impact Factor (IF) of the journal where the reference article was published. We could not directly provide the IF because such piece of information combined with the provided answers may raise issues on the identification of the respondents. In order to exclude the possibility of recognizing the authors, we computed the rank normalized IF[1].

It is worth noting that in a few cases there may be some marginal inconsistencies due to the possibility that respondents went back and edited their previous answers when answering the questionnaire. This may have affected some of the skip-logic questions.

The questions in Section 5 about respondent's coauthors are restricted to a maximum of five coauthors. Their names were suggested to each respondent according from the reference article. When considering papers with more than five coauthors, those suggested to the respondent were the first, last and a random selection of three names among the remaining coauthors.

4.2   Legend file

The variables included in the database are described in the XLSX file "*legend*" which includes two sheets: "*LEGEND*" and "*SUM_STATS*".

The first sheet shows all the questions and available answers in the same order as they appeared in the questionnaire. The green rows distinguish the six sections of the questionnaire. The code in column E (labeled "*Answer code (Variable name)*") corresponds to the field name available in the CSV files.

The other fields help to identify the questionnaire structure (which is also fully reported in a separate file described in the next paragraphs), the data type and the options available to the respondents.

Questions are described in column C and D: the former reports the numbering and the latter the question text. Similarly for answers: codes (column E), format (column F) and texts (column G); additionally, answer options are summarized in column H and separately listed in columns I to V.

Column B ("*Conditional branching*") lists the prior answers required for a respondent to read that specific question (e.g. the question q4_3 was available only to those who answered "1" – that is "Yes" – to both the items "q37rbachelor" and "q37rphd").

Column W provides an example of what can be found in the database in the corresponding variable fields.

The data sheet "*SUM_STATS*" reports summary statistics of all the variables (please note that for string-type data only the count of observations is available).

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[1] As a reference: Pudovkin A.I., Garfield E. (2004) "Rank-Normalized Impact Factor: A Way To Compare Journal Performance Across Subject Categories". Presented at the American Society for Information Science and Technology Annual Meeting. November 17, 2004. Accessed online in March 2015: http://garfield.library.upenn.edu/papers/asistranknormalization2004.pdf .

5 Survey administration and methodology

5.1 Panel construction

We surveyed active researchers in the four scientific disciplines of biology, chemistry, earth and environmental sciences, and materials science during the period February-June 2011. In order to construct the sample, we selected all journals classified by ISI as belonging to one of the four disciplinary fields and sorted them by Impact Factor for all subfields of the four disciplines. Impact Factor was taken from the latest available release of the Journal Citation Report of Thomson-Web of Science®. We then randomly picked a selection of four journals in each quartile of the Impact Factor distribution in each subfield of the four disciplines. In the aggregate, this selection corresponds to approximately 30% of all journals published in the four fields.

We downloaded full address information of all scientific articles published in the selected journals in 2009 and retrieved the email address of the corresponding author. In case of multiple corresponding authors, we picked the first name on the list. In the case of corresponding authors appearing repeatedly in the list, we randomly selected one record. The four fields were chosen in part because 95 percent or more of all articles in these disciplines contain an email address for the corresponding author. More specifically, in 2009 the estimated number of records that did not report email address for corresponding author was 0.9% in biology, 3.6% in chemistry, 2.9% in earth and environmental sciences and 4.5% in materials science.

We coded the records by country, based on the domain of the email address (e.g. ".au" for Australia; ".be" for Belgium, etc.). We identified U.S. authors by those having ".edu" in the address, thereby restricting the U.S. sample to academic researchers.

Surveyed countries are: Australia, Belgium, Brazil, Canada, Denmark, France, Germany, India, Italy, Japan, Netherlands, Spain, Sweden, Switzerland, United Kingdom, United States. China was initially included in the survey. However, a low response rate of less than 5 percent for a test sample of Chinese addresses suggested that respondents were either not receiving the invitation or had problems responding to the invitation. Somewhat similar problems were encountered in a later effort to survey scientists in South Korea. Based on these test samples we decided not to survey researchers residing in either China or South Korea.

The procedure produced a sample of unique article-corresponding author addresses of 47,304 scientists in 16 countries. The country panel sizes are highly variable. Table 1 provides summary statistics on the panel of invited respondents by country and scientific discipline.

Table 1 Sixteen country panels by scientific discipline

Country	Biology	Chemistry	Earth	Materials Science	Total
Australia	470	386	490	225	1571
Belgium	253	214	131	108	706
Brazil	626	473	161	277	1,537
Canada	825	685	621	324	2,455
Denmark	189	170	99	55	513
France	1,026	1,380	671	762	3,839
Germany	1,303	1,533	763	781	4,380
India	282	587	160	351	1,380
Italy	771	1,097	514	397	2,779
Japan	1,485	1,996	562	1,207	5,250
Netherlands	382	275	223	156	1,036
Spain	620	939	369	375	2,303
Sweden	326	251	181	124	882
Switzerland	285	265	256	113	919
UK	1,312	1,051	748	584	3,695
U.S.	5,135	4,247	2,667	2,010	14,059
Total	**15,290**	**15,549**	**8,616**	**7,849**	**47,304**

We track two characteristics of the articles from which the email of the corresponding author was extracted: the number of coauthors of the article and the total citations received by the article as of February 2010. The latter are retrieved from the Thomson-Web of Science® database. We also track the Impact Factor of the Journal.

Table 2 Characteristics of the panels: total citations and number of co-authors

Country	Total Citations*	Number of coauthors
Australia	0.95	4.61
Belgium	0.97	5.85
Brazil	0.39	5.27
Canada	0.85	4.33
Denmark	1.08	4.83
France	0.91	5.54
Germany	1.17	5.10
India	0.46	3.68
Italy	0.67	5.74
Japan	0.77	5.26
Netherlands	1.11	5.27
Spain	0.74	4.98
Sweden	1.01	4.88
Switzerland	1.55	5.14
UK	1.23	4.95
U.S.	1.31	4.64

* Cumulated as of February 2010.

The main language of the survey is English. However, the questionnaire and the invitation emails were available in six other languages: French, German, Italian, Japanese, Portuguese and Spanish. The questionnaire and the survey were also available in Chinese and Korean.

Each panel member was emailed at most three times during February-June 2011 and asked to complete the web-based questionnaire. The platform recorded partial answers, allowing respondents to follow-up in additional rounds.

5.2   Sample and response rates

Table 3 reports the number of answers received by country. Answers are further divided into complete answers and partial answers. The latter are answers from respondents who began the survey, but dropped-out before reaching the last question. The total dropout rate is 5 percent. The response rate is 40.6 percent if both complete and partial answers are counted; 35.6 percent if only complete answers are counted. Reported response rates do not take into account undelivered invitations due to such things as incorrect email address, retirement or death and consequently underestimate the response rate.

Table 3 Response rates by country

Country	Panels	Total Answers	Of which complete	Of which dropout	Total Response Rate	Complete Response Rate
Australia	1,571	676	610	66	43.0%	38.8%
Belgium	706	302	244	58	42.8%	34.6%
Brazil	1,537	762	692	70	49.6%	45.0%
Canada	2,455	1,020	897	123	41.5%	36.5%
Denmark	513	227	208	19	44.2%	40.5%
France	3,839	1,618	1,367	251	42.1%	35.6%
Germany	4,380	1,326	1,147	179	30.3%	26.2%
India	1,380	627	484	143	45.4%	35.1%
Italy	2,779	1,917	1,759	158	69.0%	63.3%
Japan	5,250	1,860	1,678	182	35.4%	32.0%
Netherlands	1,036	391	345	46	37.7%	33.3%
Spain	2,303	1,228	1,080	148	53.3%	46.9%
Sweden	882	353	301	52	40.0%	34.1%
Switzerland	919	356	320	36	38.7%	34.8%
UK	3,695	1,355	1,183	172	36.7%	32.0%
U.S.	14,059	5,165	4,512	653	36.7%	32.1%
Total	**47,304**	**19,183**	**16,827**	**2,356**	**40.6%**	**35.6%**

The first panel of the table in the text is based on the 17,182 responses from scientists studying or working in one of the sixteen core countries in 2011 for whom country of residence at 18 is also know. The second panel of the table in the text is based on the subset of 15,115 scientists who lived in a core country at age 18 and provided full and consistent information on international experience(s).

Response rates by scientific field are reported in Table 4. Participation was highest for scientists in earth and environmental sciences and lowest for scientists in biology. Differences in country and discipline participation likely reflect in part the degree to which similar populations of scientists have been surveyed in the recent past by other, unrelated studies.

Table 4 Response rates by scientific field

Discipline	Panels	Total Answers	Of which complete	Of which dropouts	Total Response Rate	Complete Response Rate
Biology	15,290	5,810	5,097	713	38.0%	33.3%
Chemistry	15,549	6,324	5,524	800	40.7%	35.5%
Earth & Environment	8,616	3,956	3,532	424	45.9%	41.0%
Materials Science	7,849	3,093	2,674	419	39.4%	34.1%
Total	47,304	19,183	16,827	2,356	40.6%	35.6%

6 Acknowledgements

7 ANNEX 1 The Questionnaire

The questionnaire reported below contains the codes for the questions and related answers that are present in the CSV files.

SECTION 1: Reference article data (from external sources, not provided by the respondents)

NOTE: Due to issues of confidentiality the title of the article and the related journal name cannot be disclosed.

The respondents are shown the details of the reference article that is the focus of the following questions. The respondents are invited to confirm the information about the article in particular:

> **Title**
>
> **Journal**
>
> **Year of publication**

SECTION 2: QUESTIONS ON FOCAL PAPER

q2_1	**This particular paper of yours is:** **(Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")**

q21r1 in a main area of research interest for me [___]

q21r2 in a new area of research interest for me [___]

q21r3 of a higher quality, with respect to my other papers [___]

q2_2	**With regard to the area of research, this paper is:** **(Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")**

q22r1 in an emerging (new) area of research [___]

q22r2 in an interdisciplinary area of research [___]

q22r3 in a highly creative area of research [___]

q22r4 in a high-risk (of failure), high-reward (if successful) area of research [___]

q2_3	**With regard to the subject of the paper, tell us the number of competing research teams**

	None	1	2-3	4-5	6-10	more than 10	N.A.
q23r1 worldwide	○	○	○	○	○	○	○
q23r2 in your country of main affiliation	○	○	○	○	○	○	○
q23r3 in the country of the research leader's affiliation (if different from yours)	○	○	○	○	○	○	○

SECTION 3: QUESTIONS ON AFFILIATIONS & INTERNATIONAL MOBILITY STATUS

q3_2 — What is your current job affiliation and position?

	1=university or medical school	2=government research agency	3=government, other	4=company or for-profit organization	5=non-profit organization, including charitable organization	6=self-employed	7=Other
q32r1 Affiliation type	○	○	○	○	○	○	○
q32r2 position	○	○	○	○	○	○	○

q33c1r1 — In what country is your current job located?

q33c1r1 Select from list of country names

q34 — Do you have secondary affiliations?

q34   ○ 1=No   ○ 2=Yes

q36r1 — In what country were you living when you were 18 years old?

q36r1 Select from list of country names

q3_7 — Relative to the country where you lived when you were 18 years old, did you..

		1=Yes	2=No
q37rbachelor	get your baccalaureate, master or laurea in a different country	○	○
q37rjob	have an employment or academic position in a different country (minimum 1 year)	○	○
q37rphd	get your PhD in a different country	○	○
q37rpostdoc	have a post-doc in a different country (minimum 1 year)	○	○
q37rvisiting	have been visiting scholar, for reasons of work (minimum 6 months)	○	○

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SECTON 4: QUESTIONS ON INTERNATIONAL BACKGROUND

q41r1	Tell us the country (different from the one where you lived when you were 18) where you got your baccalaureate or master
	Conditional branching: **q37rbachelor=1 AND q37rphd=2**

q41r1	Select from list of country names

q42r1	Tell us the country (different from the one where you lived when you were 18) where you got your Phd
	Conditional branching: **q37rbachelor=2 AND q37rphd=1**

q42r1	Select from list of country names

q4_3	Tell us the country (different from the one where you lived when you were 18) where you got your (question for people getting both of them abroad):
	Conditional branching: **q37rbachelor=1 AND q37rphd=1**

q43r1	baccalaureate or master	Select from list of country names
q43r2	PhD	Select from list of country names

q4_4	How important was each of the following factors in your decision to study in a country different from the one where you lived when you were 18. (Please provide a value between 1.0 and 5.0, where 1.0="Totally unimportant" and 5.0="Extremely important")	
		Conditional branching: q37rbachelor=1 OR q37rphd=1

q44rprestige	prestige/ research excellence of the institution	[____]
q44rhostfellow	fellowship that I obtained from the host country / institution	[____]
q44rhomefellow	fellowship that I obtained from the country where I lived when I was 18	[____]
q44rexchange	availability of an exchange or joint programs between institutions	[____]
q44rcareer	opportunity to improve my future career prospects	[____]
q44rhomecareer	opportunity to improve my future career prospects in the country where I lived when I was 18	[____]
q44rcontact	contact with somebody (a professor, colleague, friend..) in the host country	[____]
q44rnophd	few if any good PhD programs in the country where I lived when I was 18	[____]
q44rlifestyle	appeal of the life style or international experience	[____]
q44rfamily	family or personal reasons	[____]
q44rother	other	[____]

q4_5	Tell us the country (different from the one where you lived when you were 18) where you had a post-doc, employment, or academic position
	Conditional branching: q37rpostdoc=1 OR q37rjob=1

q45r1	First country	Select from list of country names
q45r2	Second country	Select from list of country names
q45r3	Third country	Select from list of country names
q45r4	Fourth country	Select from list of country names
q45r5	Fifth country	Select from list of country names

q4_6	How important was each of the following factors behind your choice to take a post-doc, employment or academic job in a country different from the one where you lived when you were 18: (Please provide a value between 1.0 and 5.0, where 1.0="Totally unimportant" and 5.0="Extremely important")	
		Conditional branching: **q37rpostdoc=1 OR q37rjob=1**
q46r1	excellence/ prestige of the foreign institution in my area of research	[___]
q46r2	outstanding faculty, colleagues or research team	[___]
q46r3	better research infrastructures and facilities	[___]
q46r4	greater availability of research funds	[___]
q46r5	better wage / monetary compensation	[___]
q46r6	better fringe benefits (parental leaves, pension, insurance, ..)	[___]
q46r7	better working conditions (vacations, hours of work, ..)	[___]
q46r8	few or poor job opportunities in the country where I lived when I was 18	[___]
q46r9	opportunity to extend my network of international relationships	[___]
q46r10	opportunity to improve my future career prospects	[___]
q46r11	opportunity to improve my future job prospects in the country where I lived when I was 18	[___]
q46r12	better quality of life	[___]
q46r13	appeal of the life style or international experience	[___]
q46r14	family or personal reasons	[___]
q46r15	other	[___]

q4_7	Tell us the country (different from the one where you lived when you were 18) where you have been a visiting scholar	
		Conditional branching: **q37rvisiting=1**
q47r1	First country	Select from list of country names
q47r2	Second country	Select from list of country names
q47r3	Third country	Select from list of country names
q47r4	Fourth country	Select from list of country names
q47r5	Fifth country	Select from list of country names

q4_8	How important was each of the following factors behind your decision to take a visiting period in a country different from the one where you lived when you were 18: (Please provide a value between 1.0 and 5.0, where 1.0="Totally unimportant" and 5.0="Extremely important")	
		Conditional branching: q37rvisiting=1
q48rexellence	excellence/ prestige of the foreign institution in my area of research	[____]
q48rfaculty	outstanding faculty, colleagues or research team	[____]
q48rinfrastructure	better research infrastructures and facilities	[____]
q48rgrants	greater availability of research funds	[____]
q48rwage	better wage/ monetary compensation	[____]
q48rfringe	better fringe benefits (parental leaves, pension, insurance, ..)	[____]
q48rworkcondition	better working conditions (vacations, hours of work, ..)	[____]
q48rnojob	few or poor job opportunities in the country where I lived when I was 18	[____]
q48rnetwork	opportunity to extend my network of international relationships	[____]
q48rcollaborate	opportunity to work with a specific group of scholars or colleagues	[____]
q48rcareer	opportunity to improve my future career prospects	[____]
q48rhomecareer	opportunity to improve my future job prospects in the country where I lived when I was 18	[____]
q48rlifequality	quality of life	[____]
q48rlifestyle	appeal of the life style or international experience	[____]
q48rfamily	family or personal reasons	[____]
q48rother	other	[____]

q4_9	Rate the perceived impact of your international experience (PhD, post-doc, employment, visiting) on the following outcomes (Please provide a value between 1.0 and 5.0, where 1.0="Totally unimportant" and 5.0="Extremely important")
	Conditional branching: q37rbachelor=1 OR q37rjob=1 OR q37rphd=1 OR q37rpostdoc=1 OR q37rvisiting=1

q49rnetwork	enlarging my research network	[___]
q49rcooperate	establishing a stable research cooperation with teams/scholars located abroad	[___]
q49rnewfield	entering into new fields of research	[___]
q49rlearning	learning new techniques/ theories	[___]
q49rpublish	improving my capability to publish in high-tiers journals	[___]
q49rwage	improving my wage and earning possibilities	[___]
q49rcareer	improving my career prospects	[___]
q49rindustry	establishing better contacts with industrial partners	[___]
q49rgrant	improving my ability to raise research funds	[___]
q49rother	other	[___]

q410	Have you ever returned to work and live in the country were you lived when you were 18 years old?
	Conditional branching: q37rbachelor=1 OR q37rjob=1 OR q37rphd=1 OR q37rpostdoc=1 OR q37rvisiting=1

	1=no	2=yes, permanently (I'm currently living there)	3=yes, once but later I moved away	4=yes, I have moved back and forth more than once
q410 Answer	○	○	○	○

q411	If yes (to Q4.10) when?
	Conditional branching: q410 NOT =1

	1=2010	2=2009	3=2008	4=2007	5=2006	6=2005	7=2004	8=2003	9=2002	10=2001	11=more than 10 yesra ago
q411 Answer	○	○	○	○	○	○	○	○	○	○	○

q412 — For how long have you stayed?

Conditional branching: q410=3

	less than 1 year	1-2 year	3-4 years	5-6 years	7-8 years	9-10 years	11-15 years	16-20 years	more than 20 years
q412 Answer	○	○	○	○	○	○	○	○	○

q4_13 — You stated that you have returned to work and live in the country where you lived when you were 18 several times. Please tell us in which year and for how many years (for up to four relocations).

Conditional branching: q410=4

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	more than 10 years ago
q413r1 First relocation year	○	○	○	○	○	○	○	○	○	○	○
q413r3 Second relocation year	○	○	○	○	○	○	○	○	○	○	○
q413r5 Third relocation year	○	○	○	○	○	○	○	○	○	○	○
q413r7 Fourth relocation year	○	○	○	○	○	○	○	○	○	○	○

	less than 1 year	1-2 years	3-4 years	5-6 years	7-8 years	9-10 years	11-12 years	13-14 years	15-16 years	17-18 years	19 years or more
q413r2 First relocation duration	○	○	○	○	○	○	○	○	○	○	○
q413r4 Second relocation duration	○	○	○	○	○	○	○	○	○	○	○
q413r6 Third relocation duration	○	○	○	○	○	○	○	○	○	○	○
q413r8 Fourth relocation duration	○	○	○	○	○	○	○	○	○	○	○

q4_14	How important was each of the following reasons behind your decision to return to the country where you lived when you were 18: (Please provide a value between 1.0 and 5.0, where 1.0="Totally unimportant" and 5.0="Extremely important")
	Conditional branching: q410 NOT =1

q414rprestige	excellence/ prestige of the institution in my area of research	[___]
q414rfaculty	outstanding faculty, colleagues or research team	[___]
q414rinfrastructure	better research infrastructures and facilities	[___]
q414rgrant	greater availability of research funds	[___]
q414rwage	better wage / monetary compensation	[___]
q414rfringe	better fringe benefits (parental leaves, pension, insurance, ..)	[___]
q414rworkcondition	better working conditions (vacations, hours of work, ..)	[___]
q414rcollaborate	opportunity to work with a specific group of scholars or colleagues	[___]
q414rcareer	better job opportunity or career prospects	[___]
q414rlifequality	better quality of life	[___]
q414rfamily	personal or family reasons	[___]
q414rvisa	visa or immigration reasons	[___]
q414rother	other	[___]

q415	Is it possible that you will return in the future in the country were you lived when you were 18?
	Conditional branching: q410 NOT =2 AND q410 NOT =4

	1=yes	2=no	3=perhaps towards the end of my career	4=perhaps as a part-time or secondary affiliation	5=only after retirement	6=other	7=depends on the job opportunities
q415 Answer	○	○	○	○	○	○	○

q416r0

How likely is it that you will return in the future?
(Please provide a value between 1.0 and 5.0, where 1.0="Virtually no probability" and 5.0="Extremely likely")

Conditional branching:
q410 NOT =2 AND q410 NOT =4

q416r0 Answer [____]

q417

In the last 2 years, did you collaborate with scholars or teams in countries different from the one where you are currently based? If so, in how many countries?

	No international collaborations	1 other country	2	3	4	5	6 to 10	11 or more other countries
q417 Answer	○	○	○	○	○	○	○	○

q4_18

In your current research, do you collaborate with researchers from the country where you lived when you were 18? (flag one or more options, as appropriate)

Conditional branching:
q410 NOT =2 AND q410 NOT =4

q418r1 no ❑

q418r2 yes, in my place of employment I work with at least one person who is from the country where I lived when I was 18 ❑

q418r3 yes, I collaborate with colleagues from the country where I lived when I was 18 who are currently based in other countries ❑

q418r4 yes, I collaborate with researchers who are based in the country where I lived when I was 18 ❑

q418r5 other ❑

q419r1

Rate the relevance of the findings and potential applications of your current research for the country where you lived when you were 18. E.g. "extremely relevant": malaria research for a country with a high incidence of malaria cases
(Please provide a value between 1.0 and 5.0, where 1.0="Almost no relevance", 3.0="Equally relevant to all countries" and 5.0="Extremely relevant")

q419r1 Answer [____]

q420r1	Rate the relevance of the findings and potential applications of your current research for the country where you are currently based. E.g. "extremely relevant": malaria research for a country with a high incidence of malaria cases (Please provide a value between 1.0 and 5.0, where 1.0="Almost no relevance", 3.0="Equally relevant to all countries" and 5.0="Extremely relevant")

q420r1 Answer   [____]

SECTION 5: QUESTIONS ON COLLABORATIONS / COAUTHORSHIPS

q5_7	You are the sole author of this paper. Indicate your level of agreement to each of the following statements. (Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")	Conditional branching: n_author=1
q57r1	In general, I prefer working alone or prefer the work to be organized only within my lab or group of close colleagues	[____]
q57r2	In general, working alone or only with people in the same lab is common in my area	[____]
q57r3	In general, collaboration across labs is required in my area of research	[____]
q57r4	I collaborate with other people / labs whenever it is needed or preferable. I work alone or within my team otherwise	[____]

q5_8	State your level of agreement to the following advantages of working solo? (Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")	Conditional branching: n_author=1
q58rradical	Doing more radical research	[____]
q58rrisk	Doing higher-risk research	[____]
q58rexploratory	Doing exploratory / preliminary research	[____]
q58rcreative	Doing more creative research	[____]
q58rflexible	Being more flexible and able to make changes during the course of the research	[____]
q58rtimewaste	Not loosing time coordinating with other people	[____]
q58rreputation	Enjoying all the reputation from the paper	[____]
q58rcontribution	Highlighting unequivocally my contribution	[____]
q58rflextiming	Having more flexibility regarding when research is done	[____]
q58rother	Other	[____]

q5_9	With regard to your coauthors, this paper involved cooperation with people:	Conditional branching: n_author>1
q59r1	in your same lab (or department, or unit)	❑
q59r2	in your same institution (but in a different lab/ department/ unit)	❑
q59r3	in other institutions, but in your same country of affiliation	❑
q59r4	in other institutions and different countries of affiliation	❑

q5_11	You stated that this work of yours was carried on within your lab or your group of close colleagues and did not involve external collaboration. Indicate your level of agreement to the following statements. (Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")	Conditional branching: q59r1=1 AND q59r2=2 AND q59r3=2 AND q59r4=2
q511r1	In general, I prefer when the work is organized only within my lab or within my group of close colleagues	[___]
q511r2	In general, working with a team or lab is common in my area of research	[___]
q511r3	In general, collaboration across teams/ labs is required in my area of research	[___]
q511r4	We collaborate with other teams or people whenever it is needed or preferable. We work within our team/ lab otherwise	[___]

q5_12	**State your level of agreement to the following advantages of working with no external collaborators** **(Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")**	
		Conditional branching: **q59r1=1 AND q59r2=2 AND q59r3=2 AND q59r4=2**
q512rradical	Doing more radical research	[____]
q512rrisk	Doing higher-risk research	[____]
q512rexploratory	Doing exploratory/ preliminary research	[____]
q512rcreative	Doing more creative research	[____]
q512rflexibile	Being more flexible and able to make changes during the course of the research	[____]
q512rtimewaste	Not loosing time coordinating with other people	[____]
q512rreputation	Enjoying all the reputation from the paper	[____]
q512rcontribution	Highlighting unequivocally my group's contribution	[____]
q512rflextiming	Having more flexibility regarding when research is done	[____]
q512rother	Other	[____]

q5_13 — Describe the team member's affiliation and country, if foreign. (Papers with 2 or more authors)

	this is me	works in my same lab/ department	works in my same institution, but different lab/ department	works in a different institution in the same country of affiliation	works in a different institution and country
q513c1r1m16 First Author - identification (at time the paper was written)	○	○	○	○	○
q513c1r2m16 Second Author - identification	○	○	○	○	○
q513c1r3m16 Third Author - identification	○	○	○	○	○
q513c1r4m16 Fourth Author - identification	○	○	○	○	○
q513c1r5m16 Fifth Author - identification	○	○	○	○	○

q513c2r1m16 First Author - Country (if foreign)	Select from list of country names
q513c2r2m16 Second Author - Country (if foreign)	Select from list of country names
q513c2r3m16 Third Author - Country (if foreign)	Select from list of country names
q513c2r4m16 Fourth Author - Country (if foreign)	Select from list of country names
q513c2r5m16 Fifth Author - Country (if foreign)	Select from list of country names

q5_17 — Describe the team member's position (at the time the paper was written). (Papers with 2 or more authors)

	1=professor (any level)	2=researcher, staff scientist or fellow	3=post-doc	4=PhD student	5=master or undergraduate student	6=research fellow	7=technician	8=other	9=don't know
q517c1r1m23 First author	○	○	○	○	○	○	○	○	○
q517c1r2m23 Second author	○	○	○	○	○	○	○	○	○
q517c1r3m23 Third author	○	○	○	○	○	○	○	○	○
q517c1r4m23 Fourth author	○	○	○	○	○	○	○	○	○
q517c1r5m23 Fifth author	○	○	○	○	○	○	○	○	○

q5_18 — Choose the statement that best describes the person's main role in the paper.(papers with 2 or more authors)
Options:
1=formulating the initial idea
2=contributing to the theory and background
3=framing and writing the article
4=doing the heavy lifting (having primary responsibility for conducting the research)
5=doing the data analysis
6=supervising the work of others
7=providing the funding
8=providing access to an instrument, facility or infrastructure
9=providing a methodological tool, component or solution
10=providing data already in the coauthor's possession
11=providing original material already in coauthor's possession
12=providing access to a network
13=other
14=not applicable/ don't know

Conditional branching: n_author>1

		1= initial idea	2= theory and backgr.	3= writing	4= heavy lifting	5= data analysis	6= superv.	7= funding	8= access to instrum.	9= methodo logical tool	10= data already in poss.	11= original material already in poss.	12= access to a network	13= oth.	14= n,a.
q518r1m24	First author	○	○	○	○	○	○	○	○	○	○	○	○	○	○
q518r2m24	Second author	○	○	○	○	○	○	○	○	○	○	○	○	○	○
q518r3m24	Third author	○	○	○	○	○	○	○	○	○	○	○	○	○	○
q518r4m24	Fourth author	○	○	○	○	○	○	○	○	○	○	○	○	○	○
q518r5m24	Fifth author	○	○	○	○	○	○	○	○	○	○	○	○	○	○

q5_25	You stated that this work of yours involved external cooperation. Indicate your level of agreement to the following statements. * External means not in your same lab/department (Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")	
		Conditional branching: q59r2=1 OR q59r3=1 OR q59r4=1
q525rmylab	In general, I prefer when the work is organized only within my lab or within my group of close colleagues	[___]
q525rteamcommon	In general, working with a team or lab is common in my area of research	[___]
q525rteamrequired	In general, collaboration across teams/ labs is required in my area of research	[___]
q525rwhenneeded	We collaborate with other teams or people whenever it is needed or preferable. We work within our team/ lab otherwise	[___]

q5_26	With regard to the coauthors not at your institution, please indicate the main channels of initial contact between yourself (or your group) and them. (flag one or more, as appropriate)	
		Conditional branching: q59r3=1 AND q59r4=1
q526rsupervisor	I was a former supervisor/ advisor	❑
q526rstudent	I was a former student or former post-doc	❑
q526rcolleague	I was a former colleague	❑
q526rfellow	We were fellow students in the same program (PhD, Master, ..)	❑
q526rintroduced	I was introduced by a colleague who was a a former supervisor, advisor, student, fellow student or colleague	❑
q526rgroup	We were introduced by other members of the group	❑
q526rnointermediary	We got in contact because of common research interests and with no intermediary	❑
q526rmeeting	We met at a conference or a scholarly meeting	❑
q526rfunding	We were part of a common funding initiative or research project	❑
q526rgrant	We got in contact because we both (or our respective groups) were applying for the same cooperative grant	❑
q526rfamily	We knew each other for personal or family reasons	❑
q526rnevermet	We never met	❑
q526rother	Other	❑

q5_27	With regard to your cooperations, state your level of agreement to the following advantages of collaborating. (Please provide a value between 1.0 and 5.0, where 1.0="Strongly disagree" and 5.0="Strongly agree")	
		Conditional branching: q59r2=1 AND q59r3=1 AND q59r4=1
q527rinstrument	gaining access to a critical instrument, facility or infrastructure	[____]
q527rcapability	complementing expertize and capabilities	[____]
q527rworkload	sharing the workload in complex projects	[____]
q527rcolleague	learning from colleagues	[____]
q527rfunding	gaining access to funding	[____]
q527rpublish	publishing in highly-ranked scientific journals	[____]
q527rdata	gaining access to data, material or components	[____]
q527rradical	doing more radical research	[____]
q527rrisk	doing higher-risk research	[____]
q527rexploratory	doing exploratory/ preliminary research	[____]
q527rcreative	doing more creative research	[____]
q527rIP	gaining access to data, materials or components protected by intellectual property	[____]
q527rothere	other	[____]

SECTION 6: QUESTIONS ON DEMOGRAPHICS

q6_1	What is your year and country of birth?	
q61c1r1	year of birth	Select year
q61c2r1	country of birth	Select from list of country names

q62	What is your gender?	
q62	○ 1=male	○ 2=woman

q6_3	In which years and country were you educated? *Leave blank if not achieved or indicate "under completion" if still in progress	
q63c1r1e	PhD, Doctorate or equivalent (year)	Select year
q63c2r1	PhD, Doctorate or equivalent (country)	Select from list of country names
q63c1r2e	Master or equivalent (year)	Select year
q63c2r2	Master or equivalent (country)	Select from list of country names
q63c1r3e	Laurea or equivalent (year)	Select year
q63c2r3	Laurea or equivalent (country)	Select from list of country names
q63c1r4e	Bachelor, Undergraduate or equivalent (year)	Select year
q63c2r4	Bachelor, Undergraduate or equivalent (country)	Select from list of country names

q64	Have your research interests changed significantly since you were a student?	
q64	○ 1=yes	○ 2=no

q65	Are you devoting more time to research than you thought you would when you were studying for your advanced degree?	
q65	○ 1=yes	○ 2=no