

1 **ISCB Student Council Internship Program: Expanding computational biology capacity**
2 **worldwide**

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24 **Abstract**

25 Education and training are two essential ingredients for a successful career. On one hand,
26 universities provide students the curriculum for specializing in one's field of study, and on the
27 other, internships complement coursework, and provide invaluable training experience for a
28 fruitful career. Consequently, undergraduates and graduates are encouraged to undertake an
29 internship during the course of their degree. The opportunity to explore one's research interests
30 in the early-stages of their education is important for students, as it improves their skill set and
31 gives their career a boost. In the long term, this helps to close the gap between skills and
32 employability –among students across the globe, and balance the research capacity in the field
33 of computational biology. However, training opportunities are often scarce for computational
34 biology students, particularly for those who reside in less privileged regions. Aimed at helping
35 students develop research and academic skills in computational biology, and alleviating the
36 divide across countries, the Student Council of the International Society ~~for~~ Computational
37 Biology introduced its Internship Program in 2009. The Internship Program is committed to
38 provide access to computational biology training, especially for students from developing
39 regions, and improving competencies in the field. Here, we present how the Internship Program
40 works, and the impact of the internship opportunities so far long with the challenges associated
41 with this program.

42 **1. Introduction**

43 Academic training is an important aspect of career building. Students pursuing higher education
44 are particularly encouraged, from early-career stages, to explore opportunities that will assist in
45 both choosing a career path, as well as building their skill set. Few things boost a student's

46 career as much as hands-on experience in a field of interest. An internship provides such an
47 experience, and is an increasingly important route for students of STEM (Science, Technology,
48 Engineering, and Maths) to gain new skills, as well as allowing employers to find new talent.
49 While internships are commonplace in industry-[1], fewer opportunities exist in academia, and
50 yet, an internship is especially important for students interested in pursuing an academic career
51 [2]. For undergraduate and graduate students, spending several weeks in an established
52 research laboratory often strengthens technical competences and soft skills, offers exposure to
53 different perspectives, provides ample networking opportunities [3,4], and plays a crucial role in
54 gaining a competitive advantage as a computational biologist in academia [5].

55 Benefits of an internship are not limited to the participating student. The laboratories they work
56 at stand to benefit as well, with integration of good research practices from another research
57 environment into theirs. Bringing ideas together to unite research efforts promotes inclusive and
58 accessible scientific culture for all. Furthermore, talented and highly motivated students
59 constitute an invaluable potential for group leaders, who look for students to undertake projects
60 in their labs. On a global level, knowledge sharing across nations encourages scientific and
61 technological innovation, which in return impacts economic growth.

62 Securing an internship in an established lab can be challenging. As funding capacity and
63 opportunities are limited, internships in academia are typically scarce. While these challenges
64 are prevalent across the world, the barriers to maximizing career potential are exacerbated for
65 students based in developing nations [6]. This creates a gap in the capabilities, networking
66 opportunities and competences between young scientists in the developing and developed
67 world. As a result, students from developing nations tend to be less prepared for a career in
68 their field of interest. The need to build and promote the computational biology capacity in
69 developing nations prompted the International Society for Computational Biology (ISCB)

70 Student Council (referred to as the ISCB-SC or simply the SC) [7] to invest effort and resources
71 in creating the Internship Program [8]. With the goal of encouraging equal opportunity for
72 students and future scientists from developing nations, the SC formed the Education and
73 Internships Committee (EIC) to perform this task. The committee organized its first internship in
74 2009. Since then, the EIC has overseen the coordination of eight internships for students from
75 four developing countries at four research labs located across Europe and Australia (Fig 1).

76 **Fig 1. Geographical distribution of the Internship Program participants.** The countries
77 where the institutions of the interns and host research labs are located are shown on the map
78 for the participants of the Internship Program as of 2017. The color scale represents the number
79 of internship locations (blue) and home country of the interns (green) that participated in the
80 Internship Program. Luxembourg is highlighted in the inner map, indicated by the arrow. The
81 numbers on the top of the countries correspond to the number of times the country has been the
82 host or country of origin for the intern.

83 In this article, we describe the Internship Program and its operation and impact. The article also
84 discusses the associated challenges that need to be addressed and overcome in order to
85 further develop the initiative, and continue to build the next generation of computational biology
86 researchers.

87 **2. The Internship Program: The EIC's Initiative**

88 The Internship Program is aimed at improving accessibility to high-quality research for students
89 from developing regions. To this end, the EIC strives to manage the internships in an efficient
90 and transparent manner (Fig 2), providing ease of access for interested PIs. The SC utilizes its
91 vast network and its proximity to the members and leadership of the ISCB to contact PIs

92 interested in the program. Once the PI expresses her/his interest in hosting a student from a
93 developing nation through the Internship Program, s/he is required to provide some information
94 that the EIC can use to prepare an appropriate call for applications. This includes: a title and
95 description of the project, the intended duration, prerequisites, and transferable skills that
96 applicants should possess to be eligible to apply for the internship. Additional information on
97 financial support, such as a stipend, travel expenses, and accommodation (if available), is also
98 provided by the host lab; as those factors play major roles for students in determining if they can
99 participate in the program.

100 The EIC then decides on an operational timeline and opens a call for applications requesting
101 documents, such as a cover letter, recommendation letters, certificate of enrollment at an
102 academic institution, and a curriculum vitae (CV). The team mobilizes its principal source of
103 outreach, the Regional Student Groups (RSGs), to circulate the call to as many students as
104 possible [9]. In addition, the Outreach and Volunteers Committee and Web Committee of the SC
105 utilize several mailing lists, social media platforms, and online forums to disseminate the call to
106 computational biology and bioinformatics communities both inside and outside of the ISCB [10–
107 12].

108 Applications are received through a submission system tailored for the Internship Program by
109 the Web Committee. The applications received within the deadline are reviewed by a review
110 committee, formed by the SC members, based on the criteria provided by the PI and the overall
111 quality of application. Recommended applicants are forwarded to the PI, who then conducts
112 interviews to select a final candidate. On average, the committee receives over 40 applications
113 for each call, of which up to five are forwarded to the PI.

114 **Fig 2. Internship Program: How it Works.** Steps involved in the internship process. The tasks
115 carried out by the EIC, the PI and the interns (students) are represented as dark blue, light blue,
116 and green boxes, respectively. First, PIs provide the details of an internship opportunity. Once
117 confirmed, the EIC issues a call for interns and collects applications. Applications are then
118 reviewed, and the shortlisted (up to five) applications are sent to the PI, who makes the final
119 decision. The selected intern makes remaining arrangements with the assistance of the host
120 group. Upon completion of the internship, the student prepares a brief report on her/his research
121 activity and overall experience during the internship.

122 The overall process of recruitment takes around two months. While deciding the start date of the
123 internship PIs are advised to take into account the interview procedure and the visa application
124 process, which may take a substantial amount of time for students from developing countries.

125 **3. Impact of the Internship Program**

126 Since the beginning of the Internship Program, eight students from developing nations have
127 benefited from research stays in labs across Europe and Australia (Table 1). All of the
128 participants have since moved into outstanding positions within computational biology and
129 bioinformatics (Table 1).

130 While the main beneficiary of an internship is the participating student, the home and host labs
131 also tend to benefit from the student's internship experience. The student acquires valuable
132 research skills and builds new contacts, which could open new doors for their future success.
133 Many of those new skills could be transferred to peers at their home institution upon return from
134 the internship. In a similar fashion, the host laboratory not only gains new perspectives that
135 come with having a visitor in the lab, but possibly a new collaborator over time. In addition, living

136 abroad even for a short period of time provides insights into new cultures, which is useful when
 137 one is collaborating across nations and attending international conferences.

138 **Table 1.** List of internships organized by the EIC since the program's conception in 2009.

Host Lab*	Student's Home Country	Research Area	Internship Year	Student's Current Position
Schneider lab, LCSB, Luxembourg	India	Functional annotation of enzymes	2015	Researcher at the Indian Institute of Chemical Biology, India
Bateman lab, EBI, United Kingdom	India	Protein sequence analysis	2014	Research fellow at the University of Leeds, United Kingdom
Ong lab, NICTA, Australia	Brazil	Visualization of Genome-Wide Association Study	2012-2013	Master student at the Federal University of Rio de Janeiro,

		data		Brazil
Rost lab, TUM, Germany	Brazil	Protein sequence analysis	2012-2013	PhD student at the Federal University of Rio de Janeiro, Brazil
Rost lab, TUM, Germany	Brazil	Protein sequence analysis	2011	PhD Student at the Federal University of Minas Gerais, Brazil
Rost lab, TUM, Germany	Kenya	Protein sequence analysis	2010-2011	Bioinformatician at the International Livestock Research Institute, Kenya

Rost lab, TUM, Germany	India	Protein sequence analysis	2010-2011	Assistant Professor at the King Fahd Medical Research Center, Saudi Arabia
Schneider lab, EMBL-Heidelberg, Germany	Estonia	Text mining for bioinformatics	2010	Research fellow at the Wellcome Trust Sanger Institute, United Kingdom

139 * LCSB: Luxembourg Centre for Systems Biomedicine; EBI: European Bioinformatics Institute;
140 NICTA: National Information and Communications Technology Australia; TUM: Technical
141 University of Munich; EMBL: European Molecular Biology Laboratory

142 **3.1 Impact on the student**

143 The most obvious reward of participation in an internship is the opportunity to hone skills that a
144 smaller or less established lab cannot provide. Internships help students gain exposure to the
145 current research trends, as well as hands-on access to the latest equipment and facilities that
146 may be unavailable at the home institution of the student. For instance, Mohammed Rehan,

147 currently an assistant professor at the King Fahd Medical Research Center in Saudi Arabia,
148 attributes a brand new perspective on his graduate work to the internship in Professor Burkhard
149 Rost's Lab at the Technical University of Munich. Rehan, who spent three months of 2010 in
150 Munich, profited from the discussions at group meetings and guidance from colleagues, which
151 helped shape his project back in India. *"The acquired knowledge helped me in how to present*
152 *my work, asking new questions and designing new projects"*, he recollected.

153 The experience can also expose students to parts of our field they might not have had access to
154 otherwise. Rohit Thakur had the opportunity to work with Dr. Alex Bateman's group at the
155 European Bioinformatics Institute (EBI) while he was a student at the Vellore institute of
156 Technology in India. The internship led him to discover the breadth of research being carried out
157 in the field of computational biology at a premier research organization. Currently, a Marie
158 Sklodowska-Curie research fellow at the University of Leeds in the UK, Rohit praises his
159 experience as an opportunity that helped establish his research interests, and acquire the
160 interdisciplinary proficiency in computational biology and programming.

161 Rohit's experience also exemplifies another benefit of the program in that it expands career
162 opportunities by making connections that may not have been possible otherwise. Kaur Alasoo,
163 Dr. Reinhard Schneider's lab intern in 2010 at European Molecular Biology Laboratory
164 Heidelberg, gratefully mentioned his internship experience and emphasized the positive
165 outcome of the program that helped to shape his future opportunities. He added, *"The amazing*
166 *five months are now over, but I am sure that they will keep influencing my life for many years to*
167 *come. ... [I] probably will start my PhD in two years. ... [T]his internship has changed me a lot. It*
168 *has encouraged me to more eagerly look for opportunities and pursue my research interests."*

169 Besides the direct benefit of being involved in a cutting-edge research project, being at a well-
170 established research institution carries additional advantages. Academically, these secondary
171 benefits include events such as seminars, symposia, workshops, as well as the diverse
172 everyday interactions that are commonplace at major research institutions. Such events, along
173 with the quality of research itself, serve as great sources of motivation and inspiration for
174 students, particularly those from developing nations where there may be logistical constraints to
175 the organization of research-oriented events, such as limited funding for science. The
176 secondary benefits are also social; the experience of carrying out research at an institution
177 abroad helps students appreciate the cultural diversity in the country they visit which contributes
178 to their personal development.

179 **3.2 Impact on peers**

180 In concert with the benefits to the students, the Internship Program creates a unique opportunity
181 for the host laboratory, as the intern will contribute to the diversity of the research group. The
182 internship facilitates interaction between the intern and the graduate students in the host
183 organization, and creates an environment for mutual scientific and cultural interchange. The
184 peers have a first-hand and up-to-date perspective on the country of the intern, and discuss
185 about pressing scientific and socio-political issues. In fact, the impact of having an intern from
186 abroad is not only limited to the peers working at the host institution. The peers from other
187 research groups at the host institution also benefit from such inter-cultural interactions,
188 potentially igniting a reconsideration of stigmas that might be attached to certain countries.

189 Furthermore, upon completion of the internship, when students return to their home institution,
190 they will undoubtedly share some of the knowledge they have gained abroad. For example,
191 Dedan Githae, another past intern of the Rost lab who participated in the Internship Program

192 from Kenya, refers to his internship as a stimulating and inspiring research environment that
193 provided him transferable knowledge. In his words, participating students *“get to learn new and*
194 *effective skills from leading research groups in developed countries, leading to development*
195 *and improvement in quality of research back in their own countries. This is not only effective but*
196 *leads to establishing contacts for the future.”*

197 **3.3 Impact on the host PIs**

198 The scientific and cultural exchange between the intern and the host group could also bring
199 novel research questions to attention and initiate collaboration. As a result, it could help PIs to
200 extend their professional and personal network to otherwise less accessible places, to bridge
201 the scientific gap between developed and developing nations.

202 Dr. Alex Bateman, a host PI in 2014, expressed his appreciation of the program saying *“I was*
203 *delighted to take part in the ISCB-SC internship programme to help give a hand up to excellent*
204 *students from around the world.”* The participating PIs were also satisfied with the enthusiasm of
205 the students: *“The students who joined our group through this Internship Program were very*
206 *active and eager to learn new things”*, were the words of Dr. Reinhard Schneider, who hosted
207 two interns in 2010 and 2015.

208 Recently, the outreach activities and social impact of a research group have become
209 increasingly important during the evaluation of grant applications. To this end, involvement in
210 the Internship Program provides a valuable opportunity for PIs to reach out to students from
211 developing countries, and contribute to the training of the next generation of researchers in the
212 field of computational biology. As a result, this could strengthen the social impact of the
213 research group and center.

214 The main advantage of this program for a hosting lab, from a logistics perspective, is that the
215 EIC facilitates what is otherwise a time-consuming process of finding a motivated and talented
216 student. As outlined above, the EIC acts as an intermediary; advertising the position, evaluating
217 applicants, and providing a list of qualified candidates according to the requirements specified in
218 the offer. Furthermore, the vast reach of the SC network highly increases the probability of
219 finding a suitable candidate for the host lab. Dr. Bateman notes the effective role of the SC in
220 the Internship Program, *“The ISCB Student Council made the process very simple and*
221 *preselected the most able students for me to interview”*.

222 In the long run, the experience of students positively influences computational biology research
223 worldwide, and had already had social and scientific impact on their host and home institutions.
224 This includes the transfer of current computational techniques to their research environment, as
225 well as introducing good practices from the host to the home laboratory, such as task
226 management, resource allocation, and social interactions. Furthermore, participating students
227 pursuing their careers as researchers are likely to participate in initiatives of a collaborative
228 nature in the future, such as the Internship Program [13]. Additionally, many interns have gone
229 on to contribute to various SC activities, such as the creation of RSGs, volunteering at local
230 symposia, and providing similar opportunities to other students.

231 **4. Challenges and outlook**

232 The Internship Program has been a rewarding yet challenging initiative to sustain since its
233 inception. The EIC works to liaise between the students from developing nations and research
234 groups from developed nations, with the aim of improving equality of opportunities and
235 increasing diversity in the field of computational biology. The Internship Program relies on the

236 support of PIs and the members of SC for hosting and coordinating the internship opportunities
237 for students from developing countries, placing certain challenges on its sustainability.

238 **4.1 . Visibility of the Internship Program**

239 Increasing the visibility of the Internship Program among PIs has been one of the major
240 challenges since the establishment of the program. In an effort to publicize the program, the SC
241 posts information about the Internship Program on its website [14], and the program is
242 advertised extensively through the ISCB and SC networks, as well as on several external
243 platforms such as other professional societies, mailing lists of popular bioinformatics resource
244 portals and social media. RSGs are also encouraged to promote the Internship Program within
245 their networks and during their annual events.

246 Despite these efforts, the most effective form of publicity that the program has received so far
247 has been presentations during the annual Intelligent Systems for Molecular Biology (ISMB) [15]
248 meeting and the in-person interactions with PIs by the SC members. Owing to these advertising
249 efforts, the program has thus far received internship position offers from research group leaders
250 who are either ISCB members or whose students work with the SC.

251 The outreach of the Internship Program could be further increased by organizing workshops,
252 seminars, and career sessions for students across different countries in an effort to reach out to
253 non-ISCB affiliated potential PIs and interns. During these events, participants would be
254 encouraged to both look out for potential internship positions (if they are eligible) and inform the
255 group leaders they know about the program. To achieve this, the SC aims to leverage the
256 globally spread RSG networks, which typically organize local events and can promote the
257 program among both students and group leaders [9,16]. In addition, the SC will create further

258 publicity at its symposia held in Africa, Europe, USA, and Latin America via poster
259 presentations. Similar posters will be presented at the main ISCB affiliated conferences such as
260 ISMB and ECCB. Since many of the host PIs in the past have been affiliated with the ISCB, the
261 SC is discussing the possibility of including information on the Internship Program in the
262 membership registration and renewal process, to allow members to easily express interest in
263 the program and further publicize it.

264 **4.2 Varying turnout for offered internships**

265 While it is important for the SC to reach a broader community to increase the internship offers,
266 finding the most suitable candidates is also an essential component. Besides securing the best
267 candidate, the SC also strives to balance the participants based on their gender and country of
268 origin. However, the internship offers have seen varying demand from students across different
269 countries. This can be partly attributed to geographical barriers, such as the narrow reach of the
270 RSGs in certain continents like Africa [16], hindering exposure of the internship call to a broad
271 audience in these regions. On the other hand, lack of foreign language skills, in this case
272 English, can also pose a potential barrier for those who reside in countries where another
273 language (for instance, French) is the most widely spoken language. Accordingly, the SC aims
274 to increase the diversity of the participating countries by expanding its contacts in targeted
275 countries (e.g., finding potential hosts in Canada and France, or recruiting students in French-
276 speaking African countries that can translate and promote the internship calls in their country).

277 On the other hand, the timing of the internship offered also has a strong effect on the number of
278 students that apply for the position. Internships that span the break between academic years,
279 such as summer months, usually receive more applications than those taking place during the
280 rest of the year, as the students cannot accommodate an internship during the academic year.

281 Thus, the EIC tries to organize internships during summer to maximize the number of
282 applicants.

283 **4.3. Financial and bureaucratic burden of hosting internships**

284 Among all the challenges that the Internship Program experiences, the financial and
285 bureaucratic burdens of hosting internships are arguably the toughest. There are several
286 problems that endanger the success of the program. First of all, the program lacks financial
287 independence and depends entirely on the hosting institution's funding to support the internship
288 applicants. This may imply allocating budget for stipends for the duration of the internship, travel
289 expenses, and in many cases, expensive visa fees. Consequently, the scarcity of funds could
290 prevent some group leaders interested in participating in the Internship Program. Further,
291 having adequate funds for the aforementioned expenses does not warrant participation of a PI
292 in the program. Restrictions imposed by funding agencies on how funds can be used, or
293 stipulations in some national grants on supporting only students from the host country preclude
294 the participation in the program.

295 Another major challenge that the program faces is associated with tightened visa rules that
296 hamper the movement of people between countries, especially from developing countries.
297 These restrictive rules involve complicated entry requirements, unclear application procedures
298 and increased transaction costs, which introduce substantial hindrances for both students and
299 PIs, and more importantly discourage movement and cooperation [17]. Thus, the success of the
300 Internship Program requires the involvement of public and private institutions, from Universities,
301 research centres and funding agencies to companies, as well as policy makers to support
302 accessible and agile international exchange in research, especially migration from developing
303 countries as a strategy to make mobility an essential part of human development [17,18] .

304 **4.4. Direct challenges on the EIC members**

305 The EIC comprises volunteers of the SC, who are full-time students and early-career
306 researchers that oversee the coordination of the Internship Program in their spare time.
307 Consequently, during peak times of the Internship Program (e.g., three to four months summer)
308 when an internship is announced and the selection process takes place, the program-related
309 tasks tend to be demanding for the committee members. This creates a workload imbalance for
310 the volunteers, requiring more time commitment during certain months and less intensive
311 dedication for the rest of the year. To tackle this issue, the EIC usually establishes *ad hoc*
312 evaluators for each internship position, in which volunteers from other committees or RSGs
313 participate in assessing applications - determining the eligibility of the applicant, interpreting
314 official documents issued by the home institution (e.g., official certificate of registration in a
315 university, reference letter), quality check and skill evaluation. The EIC also tries to optimize its
316 communication workload from applicants by providing a clear definition of the requirements and
317 answers to potential (frequently asked) questions students might have.

318 In an attempt to provide more benefits to the community, as well as to motivate volunteers, the
319 EIC is working on introducing new initiatives, such as building a resource portal for
320 computational biology education. The portal will be an open source online knowledge base
321 dedicated to bioinformatics and computational biology researchers across the globe. The
322 resource is planned to contain various tutorials and exercises ranging from basic to advanced
323 bioinformatics topics and algorithms, latest journal articles, books, and will provide an interface
324 to submit personalized materials (e.g., articles, tutorials, videos) to assist researchers. The goal
325 of this portal is not to replicate the efforts of ISCB Education Committee [19] and the ISCB
326 CoBE COSI (Computational Biology Education Community of Special Interest) [20], but to
327 provide specialized resources tailored to students. Our hope is that in the future we will be able

328 to work together with these organizations to benefit all members of our community. We believe
329 this will empower the role of the committee in computational biology education and training, and
330 help to incorporate more volunteers that can assist during the peak times of the Internship
331 Program. Currently, there are four core members who are active all year round, and around ten
332 student volunteers, who form an ad hoc committee to evaluate applications when necessary.
333 The ISCB supports the concept and the activities of the EIC, providing feedback but also leeway
334 on how the internships are managed and reviewed.

335 **5. Future perspectives of the Internship Program**

336 The Internship Program plays a key role in bridging the gap in computational biology research
337 between the developing and developed countries. The program relies on the host labs to
338 sponsor students from developing nations, and the SC strives to minimize the effort and time
339 commitment from a PI for recruiting an intern by streamlining the entire pre-internship process,
340 from advertising the position and collecting applications to screening the applications. The
341 breadth of the SC and affiliated RSG network ensures that the calls for applications reach the
342 countries where these RSGs are located [21]. The extensive student network also makes it
343 easier to find volunteers that build and maintain application submission systems, as well as
344 getting reviewers for incoming applications. Encouraged by not only the support from numerous
345 SC volunteers but also the positive response from both students and PI alumni alike, the SC is
346 motivated to sustain the initiative and make a lasting positive impact on the computational
347 biology society.

348 To ensure the continuity and success of the Internship Program, the SC aspires to engage more
349 PIs and students to contribute to the program. Ideally, the EIC would like to increase the number
350 of positions per year steadily, but this depends on the resources, such as the availability of

351 funded positions, number of students interested in applying for them and volunteers dedicated
352 to their handling. Currently, the SC leverages various ISCB conferences [22], SC's symposia
353 and RSG activities to expand the breadth of the publicity and visibility of the program and
354 available internship offers.

355 The support of an influential professional body such as the ISCB, which plays a major role in
356 advancing the field of computational biology, becomes crucial in taking the Internship Program
357 initiative forward. The ISCB has helped establish the SC, and its leadership continues to provide
358 guidance, support, and financial aid, as well as to promote various SC activities. Gauging the
359 potential of the Internship Program, the ISCB has recently announced that it will provide funding
360 to support travel costs for internship positions offered by ISCB-affiliated PIs [23] through Anna
361 Tramontano fellowship fund. Established to honor the memory of Anna Tramontano, a
362 renowned computational biologist and long-time ISCB member, this fellowship fund accepts
363 donations. The SC expects that this dedicated fund for the Internship Program will attract PIs
364 who have the academic resources and are interested in participating in the program but lack the
365 financial capital to host interns. The SC welcomes other potential collaborations and input from
366 research institutions, professional societies and corporate organizations in continuing the
367 program and making it more sustainable.

368 The SC also seeks to increase the number and expand the diversity of students benefiting from
369 the program by trying to accommodate the needs of students across different countries.
370 Accordingly, the SC tries to offer internship opportunities during the largest interval in the
371 academic calendar, facilitating participation of students that are enrolled in courses during the
372 fall and spring semesters. To expand the reach of the program to countries where French,
373 rather than English, is the second language, the SC looks forward to reaching out to PIs from
374 French-speaking developed countries as potential hosts.

375 The Internship Program has a well-defined organizational structure that has seen success over
376 the past eight years, placing eight students from developing nations as interns in four research
377 labs across Europe and Australia. The internship positions, kindly offered by a number of PIs,
378 have created a monumental impact on the careers of the participating students, prompting the
379 SC to ensure the continuity of the Internship Program. However, various factors put its
380 sustainability in jeopardy: scarce funding, difficulties in advertising, limited participation, and
381 bureaucracies associated with international travel for the interns. Some of these roadblocks are
382 more easily addressed than others. To address the lack of participation, more host laboratories
383 are needed to step forward and contribute to initiatives like the Internship Program; and on the
384 other hand, students must realize the importance of exposure beyond classroom lectures, and
385 actively look for opportunities to broaden their skills. The SC is dedicated to launching the
386 careers of more students from developing countries, and together with the support and
387 encouragement from sponsors and international research organizations, the initiative holds a
388 great potential to shape the future of the field of computational biology.

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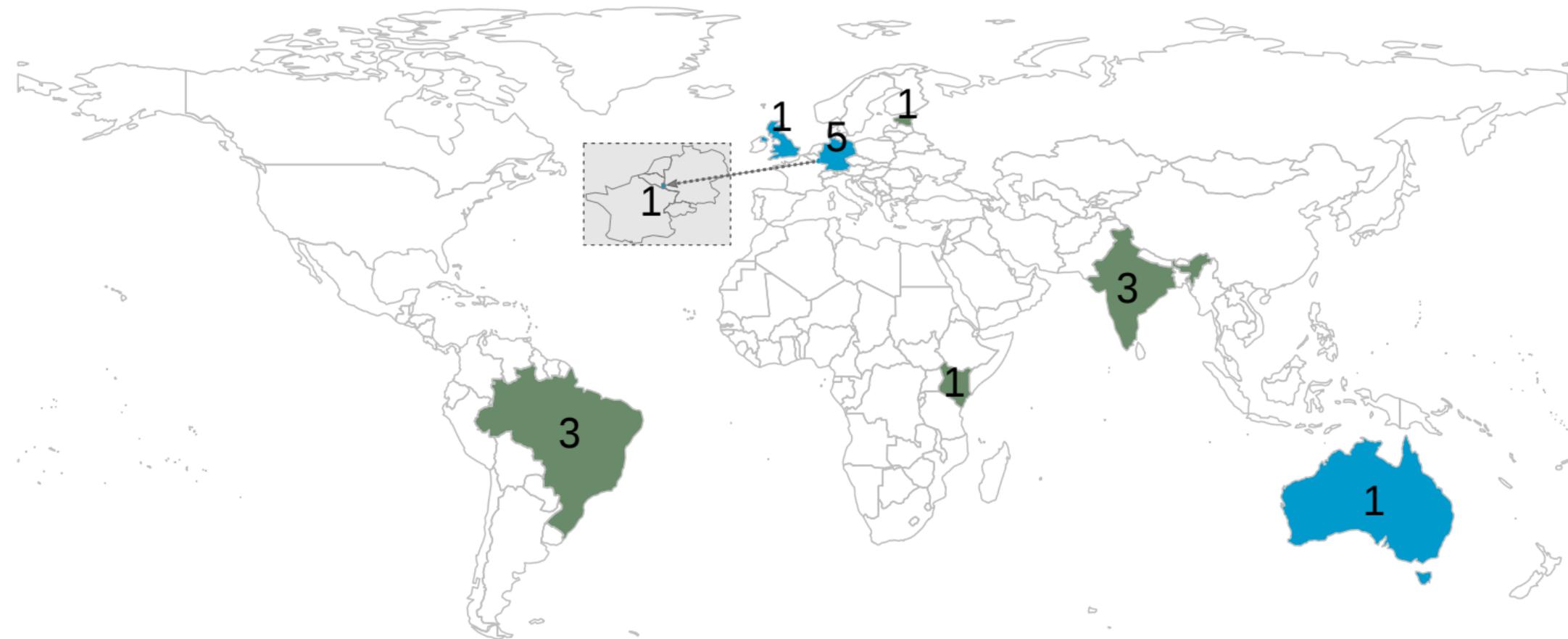
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ISCB SC Internships



Internship Program Workflow

EIC contacts prospective PIs



PI confirms:
- Eligibility
- Duration
- Funding
- Project scope



EIC disseminates a 'call for interns'



EIC sends shortlisted applications to the PI



EIC and volunteers from SC review applications



Students apply through submission system



PI conducts an online interview



The student coordinates logistics with the host lab

Internship

(After the internship)
The student submits a brief report to the PI and the EIC

