

## Report from Young Scientist Fora (YSF) at LHC

---

**Ejiro Naomi Umaka**<sup>\*†</sup>

*Author affiliation: University of Houston*

*E-mail: [ejiro.naomi.umaka@cern.ch](mailto:ejiro.naomi.umaka@cern.ch)*

Young scientists are Early Career Scientists (ECSs) identified as researchers without a permanent contract or tenure. This report summarizes the activities of the young scientist fora created within the four major experiments at the LHC (ALICE, ATLAS, CMS, and LHCb). The fora consist of the Junior Community in ALICE, the Early Career Scientist Board in ATLAS, the CMS Young Scientist Committee, and the Early Career, Gender and Diversity Office in LHCb. Also found in this report is a summary of the approaches taken by each forum to meet the needs of ECSs.

*7th Annual Conference on Large Hadron Collider Physics - LHCP2019*

*20-25 May, 2019*

*Puebla, Mexico*

---

<sup>\*</sup>Speaker.

<sup>†</sup>Special thanks to the young scientist fora within ALICE, CMS, ATLAS, and LHCb for making this talk possible

## 1. Introduction

Early Career Scientists (ECSs) are scientists without a permanent contract and make up  $\approx 50\%$  of all authors in each experiment at the LHC. For example, out of 5,060 members in 2016 at ATLAS, there were 2,483 ECSs[1]. Cognizant of the large fraction of ECSs in each experiment at the LHC, committees were formed to address the needs of ECSs and to allow for ease of communication between ECSs and the rest of the collaboration. These committees are:

- the Junior Community in ALICE; formed in 2010
- the Young Scientist Committee in CMS; formed in 2013
- the Early Career, Gender and Diversity Office in LHCb; formed in 2014
- the Early Career Scientist Board in ATLAS; formed in 2017

The mandate of these committees is to represent the common interests of ECSs and to advise the respective collaboration and management boards on ECSs matters. Other action items are to act as a forum to discuss topics relevant to ECSs and to improve the recognition of work by ECSs. It is important to note that although the ways in which each committee carries out their mandate is similar; their structure is different.

### 1.1 Junior Community in ALICE

The responsibilities in the ALICE Junior Community are shared among the Junior Representatives, Junior Committee, and Junior Ambassadors. The Junior Representatives are the face of ECSs within ALICE and have the right to 3 out of 93 votes in the ALICE Collaboration Board. The Junior Representatives also participate in ALICE Management Board meetings. The Junior Committee, on the other hand, play a role behind the scenes. They organize events for the Juniors such as talks given by Juniors during ALICE week on Juniors' day; as well as run elections to replace Junior Representatives after the completion of the two-year mandate required of Junior Representatives. The Junior Ambassadors represents ECSs in their respective countries. They inform ECSs of activities within ALICE for ECSs and on how to participate in such activities. While the number of Junior Ambassadors is about as large as the number of countries represented within ALICE, the Junior Committee and Junior Representatives consists of only three members each.

The activities created by the Junior Community within ALICE are numerous. To mention just a few, they consist of:

- **Analysis tutorials** : to educate new ALICE members on how to write analysis tasks
- **Juniors' day**: to allow for recognition of work by ECSs
- **Underground tour**: to tour the ALICE detector
- **Diversity workshop**: to educate ECSs on diversity management concepts

In summary, the purpose of the activities created by the Junior Community is to follow their mandate. This involves meeting the needs of ECSs by allowing for their recognition within the collaboration, and in maintaining an atmosphere conducive for ECSs.

## 1.2 CMS Young Scientist Committee

The CMS Young Scientist Committee (YSC) consists of 30 members from 16 countries, of which, 13 of those members are based at CERN. The CMS YSC have an ex officio membership in the CMS Collaboration Board (CB). However, unlike the Junior Community in ALICE, they do not vote in the CB. The forum consists of a chair, deputy chair, secretary, and an advisory team. They hold monthly meetings and the mandate is fixed to 1+1 year. The activities organized by the CMS YSC is of a common goal, i.e. to improve interaction among the members of the forum, and also across the CMS Collaboration Board. Some of these activities were organized during the CMS Budapest week. They include:

- **Lunch with the Professor** : an informal lunch with management
- **Open Forum**: avenue to express opinions on ECSs issues that will be later brought up to CB
- **Closing dinner**: a casual dinner to socialize and close the events of the CMS week

Other activities include induction events to welcome new members, reflection group to revisit the CMS Spokesperson election procedure, and a CMS database to maintain the profiles of CMS members. The induction events are organized more than twice a year to introduce new members to the structure of the CMS Collaboration. The induction events include talks given by heads of management, detector, computing, physics board, data acquisition, and outreach. The importance of such events cannot be over emphasized, as they provide important information to make new members conversant with activities within the CMS Collaboration. This idea is also used in ATLAS by the Early Career Scientist Board.

## 1.3 Early Career Scientist Board in ATLAS

The Early Career Scientist Board in ATLAS consists of 7 active members with a two-year term. The forum does not have a permanent chair, rather they have a rotating system where the chair has a term of one month. The forum meets weekly and makes decisions on a consensus basis. Occasional meetings are also scheduled with the ATLAS Management and Spokesperson. Like the CMS Young Scientist Committee, the Early Career Scientist Board in ATLAS do not vote in Collaboration Board meetings. And like the other fora, they serve a similar purpose: decrease barrier between ECSs and more senior scientists, improve interaction among ECSs, and provide general enrichment activities for ECSs. This is accomplished through events like:

- **ATLAS induction day** : to familiarize new members with the structure of the collaboration
- **Town Hall meeting**: to voice out concerns among ECSs that can be resolved by management
- **Meet & Eat**: a lunch conversation between one more senior scientist and one ECS
- **Career Path Q&A**: an event to educate ECSs on career path decisions

The forum also organizes other events like the *Future Colliders for fresh Physicists*. This is a CERN wide event to educate ECSs on topics beyond their current work. Such topics include Physics at the FCC, ILC, CLIC, and machine challenges.

#### 1.4 Early Career, Gender and Diversity Office in LHCb

Unlike the other previously mentioned fora, the LHCb Early Career, Gender and Diversity Office is not solely composed of ECSs. Their mandate runs beyond the responsibility to meet the needs of Early Career Scientists. The forum is also in charge of issues relating to gender and diversity. It entails dealing with issues relating to any type of indirect or direct discrimination[2]. The forum officers are appointed for a two-year term by the LHCb management and endorsed by the LHCb Collaboration Board. They hold plenary meetings at every LHCb week and organize events in alliance with the other ECSs fora at the LHC such as:

- **LHC Career Networking event at CERN** : avenue to network with physicists outside CERN
- **LHC Ice Cream event at CERN**: an event for physics talks plus free ice cream
- **Analysis Starterkit**: an analysis tutorial event

The goal of the Career Networking and the Ice Cream events are to expose attendees to physics topics outside high energy physics. Apart from the aforementioned events, the forum also engages in talks involving discrimination given at CERN as well as in other talks about the forum during the LHCb week.

## 2. Summary and Outlook

The goal of all ECSs fora at the LHC is to represent the common interests of Early Career Scientists (ECSs) and to advise the respective Collaboration and Management Boards on ECSs matters. It is necessary to state that there is strong collaboration among the fora at the LHC to meet the needs of ECSs. However, as can be seen in the mandate of the Early Career, Gender and Diversity Office in LHCb, this can also include dealing with issues of gender and diversity[3]. The strong collaboration among all fora of the LHC can be seen in CERN wide events, such as: the "*Fresh Look at the Universe*" and the "*Career Networking Event*". The fora accomplishes its goal of meeting the needs of ECSs by organizing events. Such events serve a purpose that include:

- **Reducing junior & senior barrier** : via Meet and Eat (ATLAS), and the Lunch with the professor (CMS) events
- **Career Path Q&A**: via the Career Networking Event (all fora)
- **Recognition of young scientist work**: via ALICE Juniors' day
- **Analysis tutorial events** : via the Analysis Starterkit event (all fora)
- **Social events**: via the CMS Budapest week, ALICE Juniors' dinner, Future Colliders for fresh Physicists (ATLAS), and Ice Cream event (LHCb)

Positive feedback by both ECSs and Seniors have been received on such events in the respective collaborations. For example, of the 70 attendees at the ATLAS "*Meet & Eat*" event, 98% would want to meet again.

As the importance of the ECSs fora cannot be overstated, so also is the need for ECSs to participate in activities organized by the fora. ECSs involvement is an issue that is being tackled by the respective ECSs fora. To increase ECS involvement and to retain their interest several tentative solutions have been implemented. These include initiating dedicated mailing lists, organizing short gatherings at conferences for ECSs, hosting avenues for ECSs to indicate needs that have gone unnoticed, and so forth.

## References

- [1] ATLAS collaboration, Studies related to gender and geographic diversity in the ATLAS Collaboration, Tech. Rep. ATL-GEN-PUB-2016-001, CERN, Geneva, Jul, 2016.
- [2] [http://lhcb.web.cern.ch/lhcb/ECGD\\_Office/discrimination.html](http://lhcb.web.cern.ch/lhcb/ECGD_Office/discrimination.html)
- [3] [http://lhcb.web.cern.ch/lhcb/ECGD\\_Office/ECGD-intro.html](http://lhcb.web.cern.ch/lhcb/ECGD_Office/ECGD-intro.html)