Imhotep's Legacy Academy Annual Report
June 19, 2013

Introduction

Imhotep's Legacy Academy (ILA) is a science enrichment program, affiliated with Dalhousie University, which aims to increase the representation of African Canadians in STEM (Science, Technology, Engineering, and Math) professions. ILA programming is offered to students at three levels of their education. The first is the Imhotep's Legacy After School Program (ILASP), which serves junior high students (grades 7-9) by offering educational science and math activities to youth after school. The second is Imhotep's Legacy Academy Virtual High School Program (ILAVSP), which offers high school students (grades 9-12) an opportunity to receive free tutoring in all of their science and math courses either face-to-face or online.

All mentors/tutors are University/College students who work closely with young learners throughout the school year providing them with both social and academic support. Finally, a third opportunity is offered to University students of African Descent who are interested in gaining research experience in a STEM field through Summer Research Studentship Awards.

Unique to ILA, our program offers a three tier learning system. One in which university/college professors mentor and guide our university/college students who, in turn, return the favour by mentoring African Nova Scotian youth (grades 7-12). This model of learning allows for ILA to potentially follow a child throughout their junior high, high school and university education and provide educational and emotional support the entire way through.

All programs are guided with the common objective to provide opportunities for young learners of African descent to engage in activities designed to strengthen their science and math aptitude, increase self-efficacy, and ultimately, encourage youth to pursue STEM fields in their post secondary endeavours.

Overview

The Imhotep Legacy After School Program (ILASP) was offered across Nova Scotia at the following five sites: Oxford School (HRM), Caledonia Junior High (HRM), Truro Junior High (Truro), Whitney Pier Memorial (Sydney), St. Andrews Junior School

(Antigonish) and Dr. John Hugh Gillis Regional High School (Antigonish). There were 62 registered students (grades 7-9) in programming this year, 13 mentors, 4 site coordinators and a Junior Program Officer (JPO) employed over the five sites. All mentors were graduate and undergraduate students majoring in Science, Engineering, Business or Agriculture from Dalhousie, St. Francis Xavier, and Cape Breton Universities. Overall, ILASP participation was strongest in HRM (Caledonia) and weakest in Sydney (Whitney Pier Memorial) registering an overall participation of 73% and 49%, respectively.

Programming

ILASP mentoring typically consisted of 2-hour science or math sessions once per week. The sessions alternated on a bi-weekly schedule. For example, mentors would conduct fun and engaging science experiments with the students one week and then the following week prepare an educational math game or activity. In addition to the science and math activities, homework help was also provided to the students.

All activities are designed to complement the school curriculum in order to reinforce concepts learned during regular school hours. In addition, students were introduced to African proverbs that were related to the science activities and geared towards enhancing learning, teamwork, cultural identity, and self-confidence. In addition to being introduced to an African proverb, when applicable, students were taught about a person of African descent who has made a contribution to the science concept being presented in that activity. For example, in activity 7.7: The Science of Hot Air Balloons, students are taught about Madame C.J. Walker, the African American inventor of the metal heating comb. Her understanding of heat transfer was crucial to her discovery and accomplishment of becoming the first self-made female millionaire.

The student-to-mentor ratio in all sites was typically 1:5, providing the opportunity for mentors to focus on the needs of the students as individuals and not just as a group. This small mentor to student ratio was ideal for the group of students ILA serves. This year, it was discovered that a large percentage of our students registered in ILASP struggle with math and some have even been placed on Individualized Program Plans (IPPs). Thus, the need for ILA, and its programs, has become even more apparent this year as our youth are falling further and further behind each year that they do not receive help.

Science Activities

There are currently a total of 28 science activities: nine grade 7, nine grade 8, and seven grade 9 activities. An additional three activities are done with all grades and include the crystal making, bridge building, and rocket launching activities. The crystal making and rocket launching activities were presented at the two sites in HRM this year, but due to

lack of interest in previous years, the bridge building activity was not a part of programming this year.

Each science lesson plan follows a similar template. Every activity begins with an African proverb and ends with some type of post-test activity. African proverbs are accompanied by either interesting facts about the country of which that proverb originates or a cultural relevance piece containing information about a person of African Descent who has made a substantial impact on the area of science being discussed in the lesson.

After the proverb and cultural relevance has been discussed, the mentor teaches the students the necessary background information required for students to understand the actual experiments being performed. Background information typically takes no more than 5-10 minutes and is more effective when taught in a way that is hands-on and interactive. The reasoning behind this teaching method is that students have been in school all day and, more likely than not, do not want to sit in another 2 hour science class. By making the activities hands-on and engaging, students show a stronger interest in the science being taught and are more likely to return for future ILA sessions.

Math Activities

In contrast to the delivery of the science activities, the mentor has a lot more freedom on how he or she wishes to present the math activities. Unlike the science activities, which have been previously developed, math activities are created as the year progresses and are based around the school curriculum and where the students are academically. Ways by which mentors received information regarding what math topics to cover was by speaking to the students directly or to the students' teachers. The most effective and enjoyable math activities, according to the students, were the ones that allowed students to participate in a competitive game either individually or as a team. Math games that awarded students with prizes for correct answers were also a big hit among the students.

The Employees

ILASP employed a total of 13 mentors, 4 site coordinators and 1 Junior Program Officer (JPO) this year. All employees of the after school program were either current or past Dalhousie University students pursuing or having completed degrees in STEM fields. Unfortunately, ILASP lost one of its mentors early in the year due to that mentor's second job commitment.

The JPO, although new to the position, was not a new employee to ILA. Having worked as a mentor and coordinator with ILA for 5 years, the transition to JPO felt like a smooth one. The JPO is a recent graduate from Dalhousie University with a biology and psychology degree. While the JPO did not visit the schools regularly, due to her strong connection with the students developed over the years that she worked as mentor and

coordinator, she continued to make periodic visits to the schools throughout the year. The JPO also accompanied HRM students on various field trips and conferences. Thus, it is important that the JPO not only have management skills to effectively run the after school program, but also have knowledge of STEM subjects to ensure that students are receiving as much educational support as possible.

Employee Training

Between the months of September 2012 and May 2013, all mentors of ILASP were assigned to one grade level (7, 8, or 9) and responsible to delivering programming, both math and science activities to a particular set of students. Mentors are encouraged to stay current with the junior high school science and math curriculum in Nova Scotia in order to ensure students are learning material suitable to their grade level.

All employees in ILASP take part in the professional development (PD) sessions held twice per year. At these sessions, employees learn about the black communities in Nova Scotia including their history. They get the opportunity to speak with Africa Nova Scotian Support Workers, teachers, and other black professionals in the community who play an integral role in the education and progress of black youth in Nova Scotia. These sessions are informal, yet informative allowing ILA employees who may not be from Nova Scotia or who have little experience working with African Nova Scotian youth to freely ask questions about anything they may be wondering or concerned about.

In addition, these training sessions also give ILA employees an opportunity to be mentored by Dalhousie Professors and other professional scientists of African descent (ILA supervisors). During these PD sessions, ILASP mentors are responsible for learning and preparing at least one science lesson plan to present to the ILA supervisors and fellow mentors. Generally, before any activity is presented to ILA students, the mentor must first have their presentation approved by one of the supervisors. Mentors prepare these lesson plans using the collection of science activities that have already been developed from previous ILA employees. It is the mentor's responsibility to make each activity his or her own and add their own personality in order to engage the students. PD sessions give each mentor the opportunity to be evaluated and receive feedback by their supervisors (STEM professional) as well as their peers. This year, ILASP participants from Oxford school and African Nova Scotian community workers were also invited to the PD session to provide feedback on the activities. These sessions allow ILA employees to be held accountable for their work and ensure that they possess the scientific knowledge required to do their job effectively. The PD sessions also help the tutor/mentor to better understand their students and, therefore, be in a better position to help them.

The PD sessions have been well received by all who participated and many individuals have described this year's PD session as the most successful. Cultural awareness and

understanding is a crucial skill that employees of ILA need to develop prior to working with African Nova Scotian youth. Thus, knowledge about African Nova Scotian communities is included in every PD session and should continue to be included in the future.

Participation

As mentioned previously, there were a total of 62 registered participants in ILASP this year distributed over the five sites. Participation, while greatly improved from previous years, could still use improvement. Caledonia Junior High School had the highest number of registered participants (17 students) while Antigonish & Sydney were tied with the least (9 students). Caledonia achieved the highest attendance record with an average attendance of 73%. The lowest attendance record was observed in Sydney with only 49%. Possible reasons for Sydney's low attendance will be discussed later. Refer to figure 1 for the attendance at all five sites.

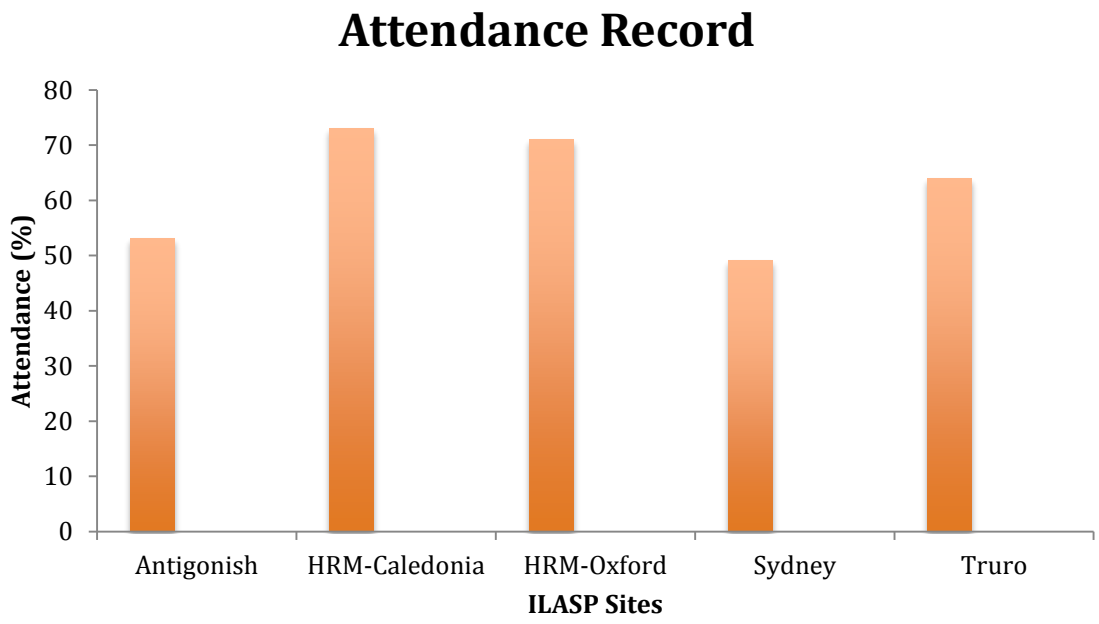

Figure 1: Bar graph depicting level of participation at all ILASP sites.

Antigonish

In Antigonish, the grade 7 and 8 students were separated from the grade 9 students who attend the high school. Thus, ILASP programming is offered at two different sites in Antigonish. The grade 7 and 8 students attend Saint Andrew Junior School while the grade 9 students attend John H Gillis High School.

ILA welcomed one new mentor to Antigonish this year (Chinakwu Odenigbo) as well as a new coordinator (Alma Zalo). Ikenna Oguejiofor, returned to ILA this year to resume him position as grade 9 mentor. Thus, Antigonish had the smallest team of ILA staff this year with only 3 employees. Ideally, each site aims to have three mentors at each site (one for each grade 7-9) and one site coordinator. However, due to the small number of students of African descent in STEM fields, it can be difficult to find university students to fill these positions. Thus, in Antigonish, one mentor mentored the students at St. Andrews Junior School (grade 7 and 8) while the second mentored students in grade 9 at John H Gillis High School.

Attendance

As mentioned previously, there were 9 students registered in ILASP from Antigonish. However, of those 9 students, only 3 students attended regularly at John H Gillish High School and 2 at St. Andrew. The average attendance in Antigonish was only 53%. According to the Antigonish coordinator, while there were 9 registered students, only 6 demonstrated a keen interest in ILA. Thus, strategies should be implemented in subsequent years to address this lack of interest and engage more youth in ILASP in Antigonish.

Regular programming in Antigonish began on November 20th, 2012. Antigonish managed to have 15 sessions from their start date to their end date on March 4, 2013. These 15 sessions included science and math activities as well as one field trip.

Saint Andrew Junior School

On October 30th, 2012, the executive director and Antigonish coordinator met with the principal at Prince Andrews Junior School and devised a plan to begin ILA programming at the school. They agreed on a date for an information session which was held on November 16, 2012 during the students' lunch hour. At the Information session, students received information about ILASP and watched a fun and exciting science show performed by the Antigonish mentors and coordinator. The science show in Antigonish included several visually pleasing activities such as the exploding pop can and invisible ink activity as well as hands-on interactive activities like the string telephone and making blood candy.

However, despite being lead to believe that approximately 20 African Nova Scotian students would attend the information session, only eight students were in attendance. Even so, eight students is still greater than the number of Antigonish students registered in ILASP last year so ILA was pleased to see an increase in participation at that particular site.

Figure 2: ILA employee, Chinakwu Odenigbo, mentoring at St. Andrew Junior School.

John H Gillis High School

Programming at John H Gillis started off later in the school year than it did at St. Andrews. This was largely due to the fact that, unknown to the executive director and JPO at the time, ILASP at John H Gillis was non-functional the previous year. Thus, it took longer for the executive director and Antigonish coordinator to get things organized at that site. The executive director organized meetings with the school principal early in the year. The majority of communication between school administrators and ILA staff was done via email. However, once the meeting took place, programming at the high school ran smoothly with few glitches. A classroom was assigned for the sessions and ILA staff received full support from the school and school administrators. The classroom environment at John H Gillis is illustrated in figure 3 below.

Figure 3: ILA employee, Ikenna Oguejiofor, mentoring at John H Gillis High School.

In addition, a meeting occurred with executive director, Antigonish program coordinator, and two principals at John H Gillis to discuss the possibility of having a parent meeting during the evening to inform parents about ILASP and potentially recruit parents in Antigonish to join ILA's parent association. Unfortunately, this event did not occur so it is advisable to make additional attempts in the future.

Fieldtrips

ILASP students in Antigonish were taken on one field trip this year. Their field trip was a social event in which the mentors awarded the students with bowling and a pizza party. The students especially enjoyed this fieldtrip, as it was a fun and relaxing way for students to unwind after a day of school and engage in some healthy competition with their peers.

Figure 4: Group of ILASP students and mentor, Ikenna Oguejiofor, at the Antigonish bowling nd pizza party.

Additional Comments

The most enjoyable aspects of the after-school program in Antigonish this year, according to the students was the field trip to the bowling alley and the youth engagement conference in Halifax at Mount Saint Vincent University. The Raise Your Voice, It's

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Your Choice: Youth Engagement Conference was a collaborative effort between the organizations, Leaders of Today (LOT), Heartwood, and Pheonix. The conference was held on March 25, 2013 with the goal of engaging black youth and encouraging them to raise their leadership voice and speak out about the issues that matter to them most. Topics discussed included government, employment, education, drug abuse, media, and relationships. The Junior Program Officer was active on the planning committee for the conference, mainly involved in student recruitment. The JPO also used the conference to promote Imhotep and its mission to encourage youth, not yet involved with ILA, to become informed and register in the program. A total of 26 Imhotep students attended this conference, 3 of which travelled from Antigonish. the Maritime Bus tickets for the Antigonish students to attend the conference as well as their hotel accommodations in Halifax. All three students enjoyed the conference and expressed their interest in travelling to Halifax again for future conferences and/or events.

The most enjoyed science activity, according to the students in Antigonish, was activity 9.1: Acids & bases. Antigonish students also enjoyed the dry ice activity presentation performed by their mentors. In fact, the students were so interested in the science behind dry ice that they chose to present a dry ice experiment to the audience at this year's closing ceremony. The least enjoyed activities amongst the students in Antigonish were activity 9.4: Making a Battery and the math activities.

The biggest issue in Antigonish was the low number of students of African descent in the schools. As a result, the number of ILASP students attending regularly was extremely low. Another problem that was encountered in Antigonish was not having convenient storage space for the activity bins. As mentors are responsible for preparing for their activities in advance, it is important that they have access to the bins whenever necessary in order to practice their presentation. In Antigonish, however, the bins are stored inside of a classroom in the school. Thus, mentors only have access to the bins during school hours. Since ILA mentors are also managing their busy university schedules, the majority of their activity preparation is done during the night or on the weekends. Having access to the bins only during the school hours can become quite challenging throughout the year. Thus, a new place of storage should be sought in order to better accommodate the mentors' schedules.

Figure 5: Additional photos depicting the nature of ILA programming in Antigonish including both the STEM activities and student-mentor relationship.

Sydney

ILASP is offered at Whitney Pier Memorial junior high school in Sydney, Cape Breton. Like Antigonish, there are only two mentors in Sydney (both female) and one site coordinator (Aaron Marsman). The Sydney team is made up of all ILA veterans as no new employees were added to the team in Sydney this year. However, previous ILASP mentor, Aaron Marsman, was promoted to program coordinator this year.

Attendance

As mentioned previously, there were 9 students registered in ILASP from Sydney. However, of those 9 students, only 4 students attended regularly. Regular programming in Sydney began on November 8th, 2012. Sydney only held 8 sessions with the students from their start date to their end date on March 3, 2013. The reason for the small number of sessions was due to the many snow days that happened to fall on the days that ILA was scheduled to come into the schools. These 8 sessions included science and math activities as well as two field trips.

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Fieldtrips

The first of the two fieldtrips was to the Cape Breton University science department. Students had the opportunity to conduct several hands-on experiments under the guidance and supervision of students and lab instructors at CBU. Students learned about chromatography and were even permitted to operate the machinery involved in chromatography. Students dissected sheep eyes, identified animal skulls, and were also divided into teams to see who could create the most aerodynamic spin top that could spin the longest. The CBU science department provided lunch for the students and mentors.

The second field trip was to the Optometrist. Students were taken to the practice of Dr. John Chafe and Dr. Jack Chaffe (father and son). The doctors explained to the students how the eye works, showed them how to use technology such as taking photos of the inside of the eye and cutting glass into lenses. Students enjoyed both field trips and they were a great way to raise incentive and increase attendance.

Additional Comments

Highlights of the year in Sydney were, of course the two field trips. Attendance was higher at the field trips than during any other session. Favourite activities, according to the students were 7.3: Gases & Volumes and a mix and match math game exploring exponents and decimals. Unique to programming in Sydney, after the completion of a session in the classroom, mentors often continued the mentorship outside with a game of soccer or basketball. This physical activity allowed mentors to build relationships with the students in a different environment. Both the students and mentors really enjoyed these competitive games and it would be a good idea to do something similar at the other sites.

The biggest issue in Sydney was the low attendance. The average attendance was lowest in Sydney at only 49%.

Another issue experienced in Sydney was the lack of communication between the site coordinator and JPO. It was difficult for the JPO to keep track of the events happening in Sydney because the coordinator did not provide regular reports like the other coordinators. Sydney is the furthest site from the base site in HRM so it is especially important that the bi-weekly reports are submitted on time. Reports give the JPO an idea of how programming is going at that particular site. It lets them know what is working, what is not, and informs about any issues the site may be facing that need attention. Due to the lack of communication this year, it was difficult to deal with situations in Sydney in a timely matter. In future years, the importance of communication, especially at the

Sydney site needs to be strictly enforced to ensure that coordinators are providing progress reports in a timely manner.

Truro

ILASP is offered at Truro Junior High School in Truro. Truro had a full team of employees this year with 3 mentors and one site coordinator (Emmanuel Anom). Two staff members were previous employees of ILA (Frederick Amon-Armah and Ernest Korankye). ILASP also welcomed two new employees: grade 8 mentor (Prabahar Ravichandran) as well as program coordinator (Emmanuel).

In addition to the new staff ILA welcomed this year, a new student support worker and ILASP supervisor also played an important role in ILA this year. Prior to activity sessions for the ASP, mentors practiced their presentations and activities in front of a supervisor. Mentors were not permitted to present any activity to a student until being approved by an appropriate supervisor. Dr. Chibuike Udenigwe critiqued all activity presentations by the mentors as well as provided mentors with suggestions for improvement on both delivery and content. All practice sessions were held at the Dalhousie Agricultural Campus in Truro where Dr. Udeniqwe works.

Attendance

There were 11 students registered in ILASP from Truro. However, of those 11 students, 9 students attended regularly. Regular programming in Truro began on November 8th, 2012. There was a total of 15 sessions held in Truro this year. These 15 sessions included science and math activities as well as two field trips.

ILA kicked off its year in Truro with a Magic Show held in early November at Truro Junior High School. Junior program officer (Cinera States) and Halifax mentor (Ellen Fesseha) also attended this event to help out. The event welcomed parents, students, school staff, and Truro community members to partake in the festivities. There was a great turnout with several students and parents in attendance. The most memorable part of the event was the students getting to make ice cream using liquid nitrogen. Site coordinator, Emmanuel Anom, brought in ice cream flavours from his other place of employment, Scotsburn, for the ILA students to enjoy. Pizza and light snacks and refreshments were also served at this event.

Figure 6: Photos from Truro's Magic Show featuring the making of ice cream.

Regular programming commenced on November 20th, 2012. Science activities took place on site at Truro Junior High in separate classrooms by grade levels. Mentor delivery as well as student participation was monitored through announced and unannounced visits by the site coordinator, JPO, and members of the board of executive directors.

Fieldtrips

Students in the after-school program had the opportunity to take part in two supervised fieldtrips this year. The first field trip was to the Discovery Center in Halifax and the second was to Ocean Sonics in Great Village, NS.

During their time at the Discovery Center, students and chaperones explored the different exhibits and participated in various science-based activities. The Discovery Center was a fun and exciting way to engage students in STEM activities and teach them about the many applications of science.

At Ocean Sonics, students and chaperones were introduced to the oceans, taught about the importance of oceans, and informed about the work that the Ocean Sonics Company does with oceans. Students were shown how to design, manufacture, assemble, and test hydrophones and were shown some of the tools used to help design and build their products. Students also got the opportunity to interact with the electronic engineers and computer science staff. The staff at Ocean Sonics delivered a presentation on what a

hydrophone does and how they are used. Students even got the opportunity to listen to some sounds of the aquatic wildlife that lives in the ocean including whales. Finally, in the most exciting part of the trip, students were taken to the Ocean Sonics test site on the Bay of Fundy. At low tide, students and staff installed a hydrophone on the ocean floor. The Ocean Sonics field trip was a fun and educational experience enjoyed by all those who attended. The field trip to Ocean Sonics is definitely something that the students at the other ILASP sites should get to see.

Additional Comments

Truro has had one of their most successful years to date in terms of student participation, mentor commitment, and school and parental support. Students in Truro enjoyed several science activities this year including 7.1: DNA Extraction, 7.4: Polymers & Plastics-Making Slime, and 8.5: Snake Charming & Electrolysis. Activities that were least enjoyed were 7.7: The Science of Hot Air Balloons and 8.3: Making a Periscope.

Only a few issues arose in Truro this year. Programming at the Truro site seemed to be running smoothly except for the fact that a few of the activity bins were missing in Truro. The JPO was not informed about the missing bins until very late in the year so it was difficult to get the materials to their site. In future years it is suggested that ILA's summer employee/employees visit each site during the summer months to ensure that all of the activity bins are complete and ready to be used at the start of the program in September.

Communication between the JPO and ILA staff in Truro was not as bad as it was in Sydney, but there is definitely room for improvement. In future years, communication between the JPO and coordinator should be more frequent and the requirement to send the JPO bi-weekly reports needs to be enforced. The difficulty of having ILASP sites all across the province makes it difficult to physically monitor each site but easier to lose contact between sites.

Emmanuel Anom, Truro's program coordinator, also pointed out some issues himself and the mentors faced this year in Truro with regards to programming. Due to the fact that students in Truro are often attending the after-school program until later in the evening, several parents complained about their children coming home hungry. As a result, the coordinator began ordering pizzas for the students to enjoy after the sessions. However, it is not in ILA's budget to provide students with Pizza every week and it is not fair to offer it to one site and not the others. Thus, the executive director and JPO met with the Emmanuel to discuss possible ways to address this hunger issue. At the sites in HRM, the principals agreed to provide ILASP students with healthy snacks each week. It is also possible for parents to send their children with a few extra snacks on those days that they know their child is staying after school for Imhotep. In addition, Truro is the only site where the students do not have transportation home after the sessions. As a result, the taxi

expenses in Truro are way higher than those at all of the other sites. Other modes of transportation were discussed this year, but none proved to work better than the current method. Thus, both the food and transportation issues should be addressed in future years.

HRM

ILASP is offered at in HRM at two separate schools: Caledonia Junior High in Dartmouth, Nova Scotia and Oxford School in Halifax. There were a total of 6 mentors in HRM this year. However, due to another job commitment, one mentor resigned from her duties as mentor at the end of September. As a result, only 2 mentors were at Caledonia for the remainder of the year while the Oxford had a full team of 3 mentors. There was one site coordinator managing both schools in HRM (Nicole Brown). The JPO (Cinera States) was site coordinator during the months of September and October. Nicole took over as HRM coordinator when Cinera transitioned into the JPO position.

Attendance

There were 15 and 17 students registered in ILASP from Oxford and Caledonia, respectively. Of those 32 students registered in HRM, 13 attended regularly at Oxford and 14 at Caledonia. The average attendance in HRM was high at both sites with 73% at Caledonia and 71% at Oxford. The mentors, program coordinator, and junior program officer did a great job this year of connecting with the students and making the sessions more than just an array of science experiments. Students enjoyed the after-school program not just for the scientific knowledge it offered, but for the social benefits as well.

Programming at both schools, Oxford and Caledonia started with a Magic Show with the goal of recruiting new students to the program. For several years now, the ILASP Magic Show has been put on by ILASP mentors and coordinators and presented to the prospective parents and students of the program. The goal of these science shows is to excite the students about science and show them that experiments do not have to be intimidating, but are actually very fun. It also gives the parents an opportunity to learn more about the program and be a part of what their child is doing in school, both during and after class.

Oxford's magic show took place first at the end of October and was held at the North Branch Library in the north end of Halifax. This year's magic show theme was Halloween so all of the science activities were based around that theme. Some of the experiments conducted during the magic show include the oozing pumpkin, flaming fireball, making soda pop, and making blood candy. Despite a minor complication with the fire alarm in the public library after performing the fireball demo, ILA managed to

recruit quite a few students that night. In addition to presenting the science activities, light snacks and refreshments were also served.

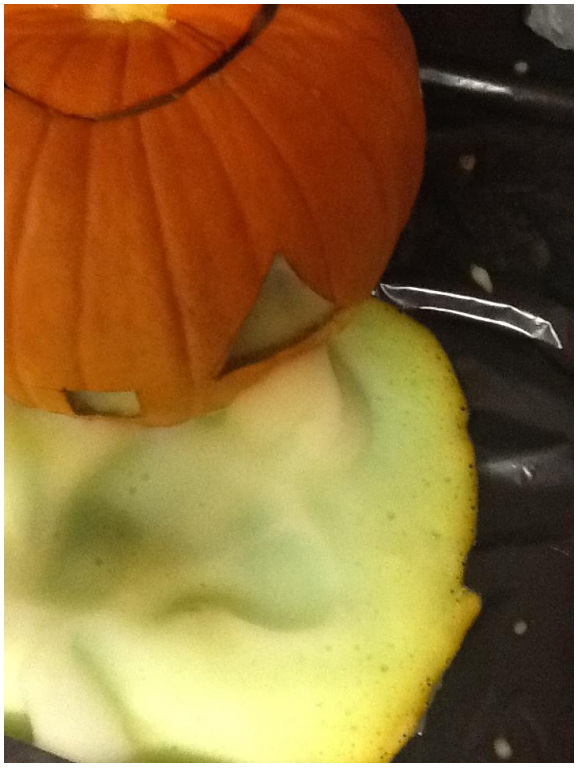

Figure 7: Oozing Pumpkin demonstration at Oxford Magic Show.

Figure 8: Photo of the making soda activity using Kool-aid and dry ice at Oxford's Magic Show.

Caledonia's magic show took place in November. The initial date for the magic show at Caledonia had to be postponed due to the low number of students that showed up to the first one. A second attempt for the magic show was made a week later and the number of students that showed up was way higher than the first. A total of 18 students attended the magic show at Caledonia this year. The activities presented at Caledonia's magic show were the exact same as those done at Oxford's. However, there were no parents present at Caledonia's magic show. In order to maximize student participation and attendance, the magic show was held during school hours as an incentive to get students out of class and engaged in ILA activities. Caledonia's principal, who was actively recruiting students for ILA, suggested the idea of letting students out of class 40 minutes early to attend the ILASP magic show. The idea worked, and several students attended the magic show, enjoyed it, and returned permission forms all within that same week. Moreover, the majority of the students who attended the magic show became regular attendees and continued to attend ILASP throughout the year.

Regular programming at Oxford commenced on November 8th, 2012 and at Caledonia on November 13th. Science activities took place on site at the schools in different classrooms separated by grade levels. Programming took place at Caledonia on Tuesdays and Oxford on Thursdays. This made it possible for the program coordinator to be present at each site every week.

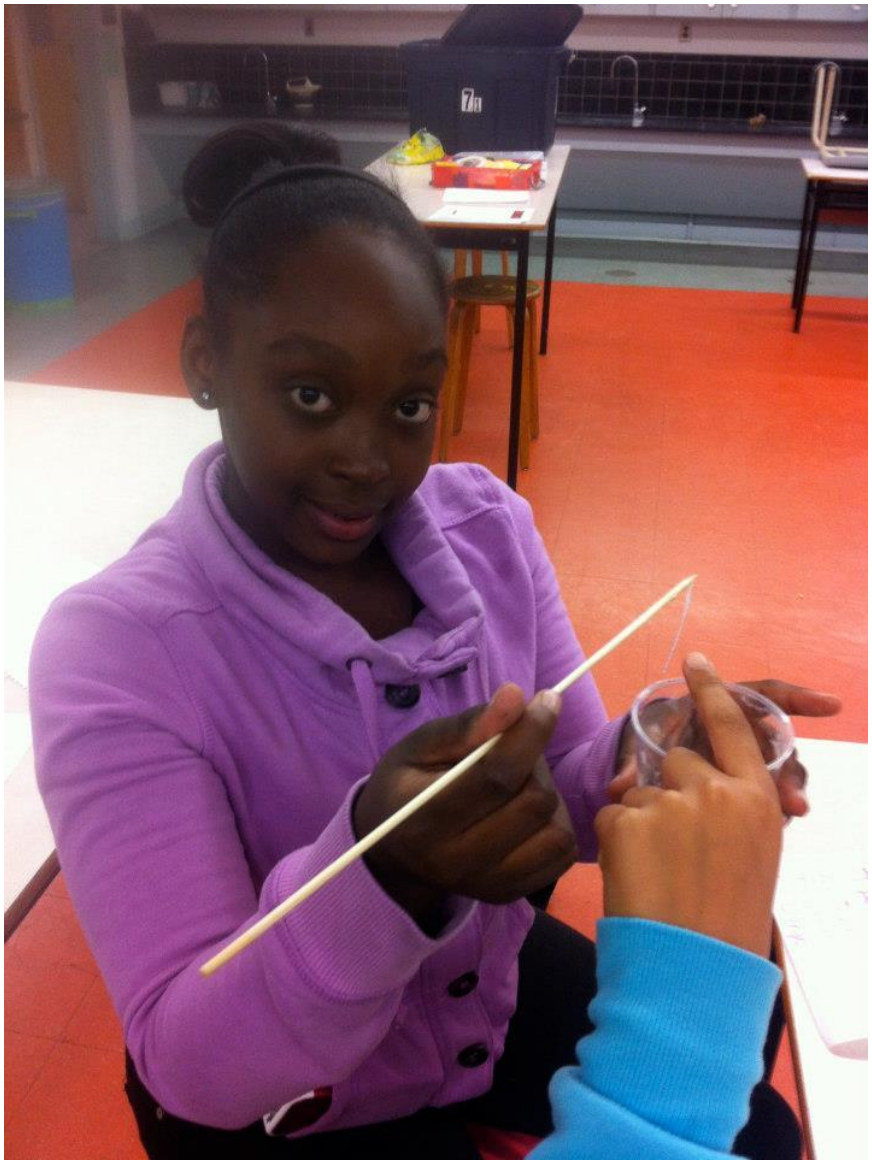

Figure 9: Caledonia student showing off the DNA she successfully extracted from a banana during one of the ILASP sessions.

Fieldtrips

The students in HRM had the most active year among the sites with regards to fieldtrips. Students at Oxford and Caledonia took part in a total of 4 fieldtrips.

The Field trips were as follows:

Discovery Centre:
Students got the opportunity to explore the different science exhibits and participated in a robotics workshop that involved them building and programming robots to complete a task in pairs.

Raise Your Voice; It's Your Choice Youth Engagement Conference:
This Conference was a collaborative effort between the organizations, Leaders of Today (LOT), Heartwood, and Pheonix. The conference was held at the Mount Saint Vincent University with the goal of engaging black youth and encouraging them to raise their voice and speak out about the issues that matter to them most. Topics discussed included government, school, media, and relationships. The Junior Program Officer was active on the planning committee for the conference, mainly involved in student recruitment. The JPO also used the conference to promote Imhotep and its mission to encourage youth, not yet involved with ILA, to become informed and register in the program. A total of 26 Imhotep students attended this conference, 16 of which were registered in ILASP. Despite the fact that some of the discussion topics were a bit mature for the grade 7 and 8 level, the students still had fun and came away from it having gained something.

Lawrence Hill Book Reading & Signing at Pier 21 & Skating on the Oval:
Lawrence Hill may not have been the best choice to take this set of ILA students to, but Mr. Hill's presentation was very interesting and informative, nonetheless. His content was aimed to an older crowd, which caused a lot of our students to lose interest very quickly. However, there was one student who really enjoyed listening to Lawrence Hill and she even brought a copy of his book, The Book of Negroes, for him to sign after the event. After the book signing, students were then treated to lunch at Wendy's and then skating on the Oval. The second part of the afternoon was a huge success, as the students did not want to come off of the ice at the end of the day. The only issue encountered during this trip was with one of Halifax's taxi companies, Casino Taxi. Kesa and Cinera dealt with this issue at a higher level and it can be happily reported that the issue has been resolved.

Science Days at Dal:
Discovery Science Days is an event put on each year by the students and faculty members of Dalhousie science departments, including the departments of physics, chemistry, mathematics, biology, and psychology. Discovery Days introduce students, grades 6-12, to fun and practical applications of science, which aim to

encourage youth to consider pursuing these fields in their post-secondary endeavours.
This year the ILASP students attended Discover Chemistry Days. Students from Caledonia and Oxford attended this event. A total of 19 students were in attendance. At this event, students took part in an exciting, hands-on science show in a first year chemistry classroom and also conducted two experiments in a first year chemistry laboratory.

The students enjoyed the field trip overall, however, it was clear that they enjoyed the "magic show" demonstrations more than the actual lab experiments. A lot of the "magic show" demonstrations the students were shown were things our students had already been shown by ILASP mentors so they were confident to raise their hands and answer questions which was nice to see.

In the lab, students experimented with acids and bases and also learned about copper plating. They were not as excited about the science activities however and I attribute their lack of enthusiasm mostly to the lab instructors' lack of engagement with our students.

However, despite the brief lack of direction in the lab, students really enjoyed the day out with their peers and mentors. They especially enjoyed their Subway lunch. Discover Days at Dalhousie University are an excellent way to give the students an idea of what university life entails while also opening their eyes to the many opportunities that knowledge of science can offer. This event makes for a great fieldtrip for our students and should continue to be offered to our students in the years to come.

Figure 9: ILASP students from HRM exploring the bubble exhibit at the Discovery Center in Halifax.

Additional Comments

ILASP at both Caledonia and Oxford has seen a substantial improvement this year. Student participation has increased immensely and, in contrast to last year, students are attending ILASP for more than just the food and fieldtrips. Students showed appreciation for the time the mentors were spending with them and made an honest effort to participate. Of course, there were times when the students were loud and would not pay attention, but that is expected from a group of junior high students after school. A major issue at Caledonia was the frequent use of cellular phones during the sessions. Despite attempts to set class rules at the beginning of the year, students just could not seem to part with their phones. Some days it would get so bad that several students would be gathered around one person's phone. The former president of the board of directors, Dr. Kevin Hewitt, made a suggestion to integrate the use of telephones into the weekly sessions. He proposed using student smartphones to teach various math lessons so that students could work on math problems on their phones, which could eliminate the need for them to find

other ways to entertain themselves with their phones. However, this suggestion was not implemented for the mere fact that not all students have smartphones and thus, some students would not benefit from the change.

At Oxford, the problem with cellular phones was less apparent. The main issues at Oxford were behaviour issues. The students at Oxford were more excitable than the Caledonia group, which could be both an advantage and disadvantage depending on how you look at it. On the day that the JPO made an announced visit to the Oxford site, the mentors showed up at the school a few minutes late. In past years, a late arrival meant all of the students would escape and go home before the mentor had a chance to remind them to come to Imhotep. However, on this particular day, the students were already downstairs in the assigned classroom just waiting for the mentors to arrive and begin the lesson. On the other hand, there are times when the Oxford students get so excited that they begin to stray off task. In those instances the mentor usually warns the student to calm down and get back to work. In some cases, other students will even warn a misbehaving student themselves. While this is greatly appreciated by the mentors, it causes students to become very defensive against each other. Specifically at Oxford, there were two students who consistently did not get along this year. These two students also created a small divide between the group because other students began to take sides. Despite the occasional disagreements among the students, participation at the Oxford site was one of the highest this year and several Oxford student made huge accomplishments in their education this year.

Overall, ILASP in HRM was the most successful this year in terms of attendance and participation. From a behaviour standpoint, HRM students could use some improvement, but the strides made this year are definitely ones to be proud of. Three standout students are worthy of mention this year for the remarkable accomplishments they have made with ILASP. Oxford students Asia Jones, Teanna Sparks, and Isaiah Reade have all matured significantly throughout their years in ILASP. All three students started in ILASP when they were in grade 7 at Oxford and are now entering High School in September. Both Teanna and Isaiah were shy and timid students when they first started the program in 2010. Both students were also very bright and showed an extraordinary interest and love for science. Now in 2013, Isaiah and Teeana have broken out of there shell and have made major improvements socially as well as academically. Isaiah was lead programmer two years in a row for ILA First Lego League Program. As head programmer, Isaiah's leadership as well as public speaking skills were greatly improved. Teanna, the only female member of this year's FLL team has also become more confident in herself and her abilities as a leader. She, along with executive director, Kesa Munroe-Anderson made an appearance on CBC news network this year where she spoke eloquently and confidently about her experience in the program. Lastly, Asia Jones was a student who

barely ever came to ILASP sessions when she first joined the program in 2010. Asia was one of the students who only came when there was a treat or field trip involved. However, this year, Asia made a complete turnaround with respect to her attitude towards ILASP. She began attending sessions regularly for the educational benefits rather than the social rewards. She also made a conscious decision to improve her math and science grades in order to get off of her IPP before she entered high school. Asia worked closely with HRM coordinator, Nicole Brown and JPO, Cinera States to help her improve her grades. Asia even asked to say a speech at this year's closing ceremony, which is something that we typically have to ask the students to do; they do not volunteer on there own. At the closing ceremony, Asia delivered a beautiful speech and made the announcement that she had achieved her goal and would no longer be on an IPP when she enters high school this September.

Figure 10: Caledonia and Oxford students skating on the oval with their mentors.

Closing Ceremony

In May of every year, ILA hosts their annual closing ceremony event where students and staff are acknowledged for their work and commitment throughout the year. Students, their families, school administrators, and friends are invited to share in the celebration of our youth. This year's closing ceremony also marked a milestone for ILA, its tenth year anniversary. Inspired by this year's theme for African Heritage Month, the theme of this year's closing ceremony was *Living The Legacy: Then and Now.*

The ceremony began with a reception, which included several student displays of their favourite activities done in ILA over the past year. This year the students, under the guidance of their mentors, designed poster presentations as well as hands-on demonstrations of their favourite science experiments to perform for the guests attending the ceremony. In addition to the presentations made during the reception, other students presented their activities during the closing ceremony itself (See appendix for closing ceremony program & itinerary). All of the activities and presentations were a huge success and it was great to see the students so excited to educate the audience about what they had learned throughout the year.

Two keynote speakers, Dr. Jim West and Dr. Nadya Mason, joined ILA during the celebration and addressed the audience. Dr. Jim West, an African American inventor, born in Virginia, 1931 offered words of wisdom and advice, inspiring students to be innovative and dream big. Dr. West holds 47 US patents along with over 200 foreign patents from his forty-year career at Bell Laboratories. Dr. Nadya Mason, also from the United States, obtained her Bachelor of Science degree in physics from Harvard University and a doctorate in physics from Stanford University. She spoke about her journey from being a young African-American female pursuing a degree in science to becoming the brave, intelligent, and highly respected scientist that she is today. She encouraged students to never give up and to not allow society to dictate what they can accomplish in their lives.

Figure 11: Dr. Nadya Mason addressing the audience at the 2013 Closing Ceremony.

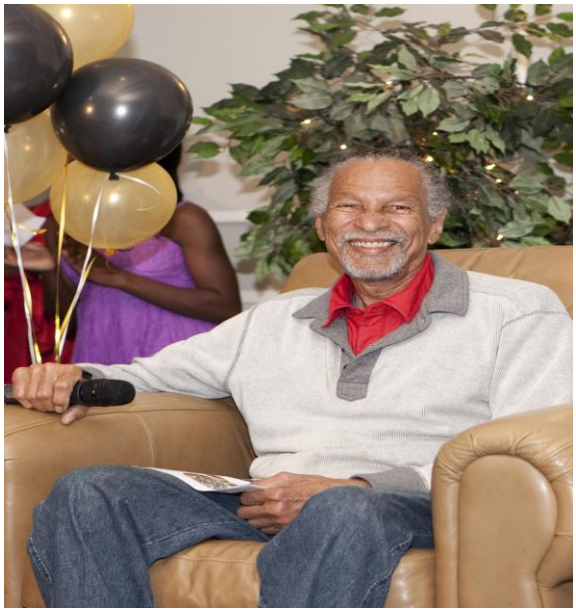

Figure 12: Dr. Jim West addressing the audience at 2013 Closing Ceremony.

The JPO, who has also been an ILA employee for the past five years, also addressed the students with a speech. Cinera States has been a mentor for ILASP since she began her undergraduate degree at Dalhousie University in 2008. Upon her graduation in 2012, Cinera continued working for ILA in the positions of ILASP program coordinator for HRM and then later became the Junior Program Officer. In March, 2013, Cinera was accepted to Dalhousie University Medical School. Her journey through her undergraduate degree, applying to medical school, and finally being accepted has been shared with all of her student whom she mentors. Thus, it was only fitting to have Cinera address the students at the closing ceremony. She spoke to the 'Now' of the 'Then and Now' theme and encouraged the students to pursue their dreams, reminded them of their potential, and demonstrated, by example, that they, too, can overcome the barriers to education and achieve anything they set their minds to.

In addition to the words of inspiration the youth received, they were also awarded for being inspirations of their own. Each year, 7 students are awarded student of the year awards. A student from each ILASP site: Halifax, Dartmouth, Truro, Antigonish, and Sydney, one student from ILAVSP, and one student from the First Lego League program are chosen to receive this honour. Student of the year recipients received a plaque as well as Samsung Galaxy Tablet this year. Students were not aware of the award they would be receiving this year until they were told to look in their gift bags at the closing ceremony. The looks on their faces when they pulled out the tablet were priceless. The winners of this year's student of the year awards can be seen in table 2 below.

Table 1: 2013 'Student of the Year' winners. ILASP = Imhotep's Legacy After-School Program, ILAVSP = Imhotep's Legacy Academy Virtual School Program, ILFLL = Imhotep's Legacy First Lego League.

Name	School/Site	ILA Program	Short Biography
Brianna Green	St. Andrew Junior High/Antigonish	ILASP	**Grade:** 7 (1st year in ILA) **Career Goal:** Registered Nurse (RN)
Asia Jones	Oxford School/ Halifax	ILASP	**Grade:** 9 (3rd year in ILA) **Career Goal:** Pediatrician
Eriana Willis-Smith	Caledonia Junior High/Dartmouth	ILASP	**Grade:** 7 (1st year in ILA) **Career Goal:** Singer
Haley Matthews	Truro Junior High/Truro	ILASP	**Grade:** 9 (3rd year in ILA) **Career Goal:** Medical Doctor
Kaycee Rodney	Whitney Pier Memorial Junior High/	ILASP	**Grade:** 8 (2nd year in ILA)

	Sydney		**Career Goal:** Registered Nurse or Teacher
Isaiah Reade	Oxford School/ Halifax	ILFLL	**Grade:** 9 (3rd year in ILA) **Career Goal:** Engineer
Tobi Otti	Fairview Junior High/ Halifax	ILAVSP	**Grade:** 9 (1st year in ILA) **Career Goal:** Architect

Also awarded at this year's closing ceremony were the recipients of the TD Bank Opportunity Scholarship. Two students, Isaiah Reade and Haley Matthews who received the 'student of the year' award, also received the TD Bank scholarship. A third student, Teanna Sparks, also received the scholarship. Teanna was a grade 9 student at Oxford School, member of ILASP and ILFLL. Like Isaiah, she was also part of the winning FLL team at Oxford who brought home the Mechanical Design Award. Teanna's future career goal is to attend Dalhousie University and become a pediatrician.

Figure 10: The three TD-Bank Opportunity Scholarship recipients (from the left: Haley Matthews, Isaiah Reade, and Teanna Sparks) receiving their award from TD Bank representative, Gayle Macdonald – Branch Manager, New Glasgow.

In addition to honouring ILA's junior high and high school participants, ILA also recognized four Dalhousie University students at the closing ceremony. ILA has partnered up with Dalhousie University Engineering and Medical Departments to offer summer research students to 4 African Canadian students interested in the STEM field.

Overall, ILA's 2013 closing ceremony was a huge success. The accomplishments of our students, both ILA participants and mentors, were outstanding this year. The closing ceremony is also a great way to expose the black community to the great things that ILA is doing and also bring awareness to these efforts. Moreover, the gathering of

distinguished black academics, scientists, engineers, and other STEM professionals is an excellent way to motivate and inspire the youth.

Future Directions

Although ILA made several improvements to the After School Program this year, there are still ways to grow and progress. This section will provide suggestions for ILA to pursue next year and in the future.

1. Although student attendance has improved at several sites including HRM and Truro, attendance in Sydney and Antigonish still needs improvement. There were not many African Canadian Students at the schools where ILASP is offered. Thus, it is important that programming in Antigonish begins as soon as possible in order to begin engaging students in STEM sooner rather than later. In Sydney, the students are there, but the interest is lacking. Thus, energy should be placed on making the activities more exciting and original for that group of students. At all sites incentives should be used in order to increase participation and attendance.

2. Each year, students are told about the "student of the year" awards that are presented at the closing ceremony at the end of the year. This award is presented to the student with the best attendance, attitude, and overall commitment to the program. However, it can be quite discouraging to the students to know that only one student will be acknowledged for the award and all other students, no matter how outstanding, will not be recognized. Thus, it is proposed that in future years, 'student of the month' awards be given out as well. This way all students can be recognized for their achievements and the incentive to participate will be less likely to diminish throughout the year.

3. New science activities are desperately needed for the after-school program. The current activities have been around for several years and are becoming repetitive. Adding new activities will help refresh the program and hopefully engage a new set of students. This summer's program developer, Ify Kammelu has been working hard to develop 5 new activities for the program. It is ILA's goal to incorporate these new activities into this coming year's programming and in future years to come.

4. In addition to needing new science activities, math activities are also needed. Currently, mentors are responsible for creating their own math lesson plans based on the Nova Scotia's mathematics curriculum for the grade level that they teach. The mentor speaks with the students as well as their teachers to figure out their students' areas of difficulty and develop lesson plans to address those difficulties. However, most of our students have a pre-disposed negative attitude towards

math subjects so they tend to lose interest and get frustrated very quickly during math sessions. In future years, more effort should be placed on developing math activities that are as fun and engaging as the science. Suggestions on math activities to be developed are math jeopardy and bingo. Math games could be developed based on popular game shows such as Family Feud and Wheel of Fortune as well with a math version called "Math Feud" and "Wheel of Multiplication" for example. Each week students look forward to the science activities, but this same enthusiasm is not expressed for math. Thus, ILASP mentors should work on making the math activities as fun and interactive as possible so the students' attitudes towards math can be gradually changed.

5. In previous years, students were given science workbooks that were completed as students went through the science activities throughout the year. The workbooks remained with the mentors until the end of the year when students were given their books as a take-home reminder of what they had done and learned throughout the year. More recently, these books have not been used. Workbooks are a pricey investment, but the benefit far outweighs the cost. Having a workbook could also help keep students on task and focus their learning. It is also a perfect way to show parents what their child has done during parent meetings and other ILA events.

6. Inventory is a dreaded task every single year at ILA. Completing inventory is very time consuming, especially when considering the fact that it needs to be done at all sites, including Sydney, Truro and Antigonish, not just HRM. Thus, it is important to have an accurate inventory list sent out to all coordinators at the beginning of the year. If it can be added to the coordinators requirements to keep up-to-date with inventory throughout the year then completing inventory upon year's end will not be such a daunting task. This summer, the program developer and JPO developed a new inventory list for all grades. This should be distributed to all coordinators at the start of the year to ensure that items do not get unorganized or misplaced. Furthermore, inventory cards could even be placed in each bin listing every item that should be inside and its quantity. This way, at the end of the year, the coordinators will simply have to go through each inventory card and report back to the JPO what needs to be replaced in a timely manner. A more efficient inventory system would make summer life at ILA so much more enjoyable.

7. Unfortunately, good communication between sites was lacking this year. It was difficult for the JPO to keep in touch with some sites, especially Sydney, and

responses to JPO e-mails were not as prompt as they should be. It is proposed that a communication platform be developed for ILASP staff to communicate with one another about what best and worst practices they have come to experience while mentoring with ILA. In the past, there was a Facebook page, so perhaps another page could be developed for this coming year. This page should be up and running by the time mentors attend their first PD session so that communication between the sites can begin as soon as possible.

8. Lastly, but not least, parent involvement has and always will be a work in progress. Although major accomplishments have been made to increase parent involvement with ILA this year, there is still a lot of work to do. The idea for an ILA Parent Association was proposed this year and there are already a few parents eager and willing to join. Parent advocated for ILA are crucial to the success of the program as well as our students. Additional efforts should be made to engage parents in ILASP with community meetings, phone calls, newsletters, and any other methods to ensure parents are made aware of ILA's mission.

Conclusion

Overall, Imhotep's Legacy Academy has had an extremely successful year. Sites such as Truro and HRM, specifically, have made the greatest improvement in terms of student attendance, mentor commitment, and parent involvement. This year, ILA has experienced success not only within its programs, but with its students as well. Of the 10 years providing science enrichment opportunities for youth, this year has definitely been one of the most productive. ILASP, especially, has benefitted significantly from the changes that have been made this year. Some of those changes include, but are not limited to, the new staff mentors who were hired to teach and inspire the students. Having new mentors brought a wealth of new knowledge and fresh ideas to the program that provided a level of enrichment to the program that had not been present before. In addition, parent involvement has increased and ILASP programming has even been expanded to include additional schools outside of those chosen for the 5 sites. For the first time in ILA history, students from junior high schools other than Caledonia and Oxford were also welcome to attend weekly sessions provided they completed a registration form. With the proper staff, resources and supports in place, ILA could be in a position to reach even more students in subsequent years. The ILA team looks forward to working more closely with the community, particularly other organizations serving African Nova Scotian youth across the province to continue offering STEM enrichment opportunities to students. Through strengthened partnerships in the communities where we currently exist – Antigonish, Sydney, Truro, and HRM, we are confident that we will also be able to expand these partnerships to include an even greater representation of the African Nova Scotian population across Nova Scotia.