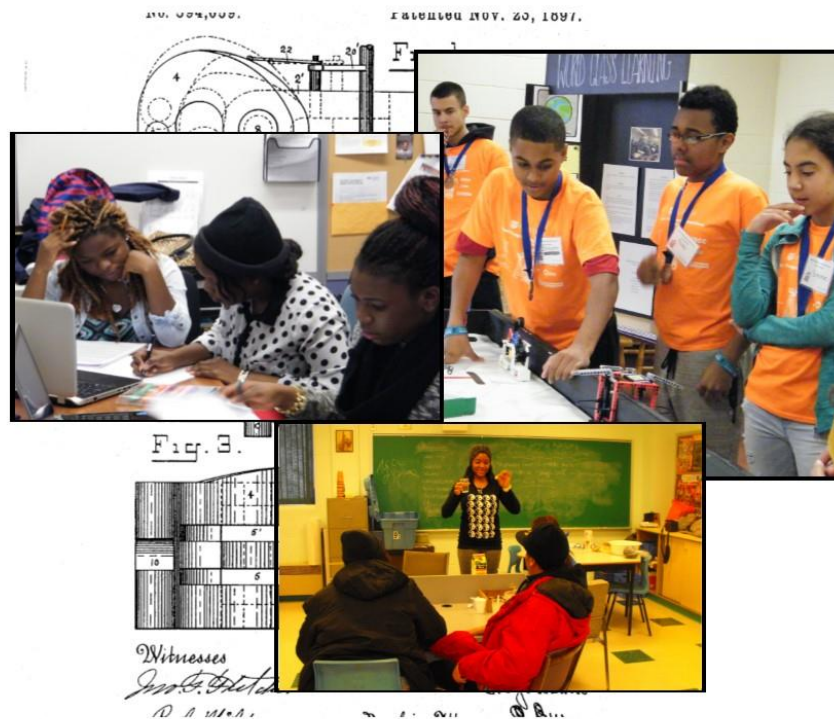


IMH TEP'S LEGACY ACADEMY



ANNUAL REPORT

Sep 1, 2014—Aug 31, 2015

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Executive Summary

Imhotep's Legacy Academy (ILA) is an effective and successful non-profit, provincial, STEM-outreach organization established in 2003. Based at Dalhousie University, ILA is built on a strong university-community partnership. It aims to redress the under-representation of African Canadians in post-secondary STEM (science, technology, engineering, mathematics) studies.

ILA offers programming to students at three levels of their education--junior high, high school, and university:

Level 1 - The After School Program (ASP) is structured to sustain contact with the learners over three years (grades 7, 8, 9 and in some regions grade 6) during a crucial phase in their academic careers. University science and engineering students, acting as mentors, travel to the junior high schools to deliver on-site STEM-enrichment activities including on-site experiments and field trips. Mentors also provide curriculum tutoring in math and science.

In 2014-15, the ILA After School Program was the subject of a Masters of Education research paper of a former ILA ASP Mentor entitled "Students' Perceptions of the Imhotep's Legacy Academy After-School Program."

The FIRST Lego League (FLL) program has been a cornerstone of the ILA suite of services since 2011. The FIRST Lego League (FLL) is a robotic competition that targets young students between the ages of 9-14. Each year, teams of young people design, build, and program robots using only Lego components to perform specific tasks based on a given theme. The 2014-15 theme was *World Class Learning Unleashed*. Teams have the opportunity to compete in regional and provincial competitions each year. Students gain unique experience by being exposed to engineering and computer programming concepts. They also learn how to solve specific problems in different ways.

During the 2014-2015 program year, ILA launched two new STEM initiatives – the STEM Project Challenge and the Science Quest Quiz Tournament, offering junior high school students an opportunity to expand on and demonstrate their knowledge of the STEM-related achievements of members of the African diaspora. The new initiatives were implemented not only to provide knowledge, but also to enable the students to see themselves through the accomplishments of other persons of African descent, thus instilling in them the various possibilities for their own academic journeys.

Level 2 - The Virtual School Program (VSP) is tailored to provide tutoring in science and math to high school students (grades 10, 11, 12). The VSP is designed to mitigate the geographic and economic constraints that hinder African Nova Scotian learners' access to science-learning opportunities. Mentors interact with participants virtually through the ILA-Skype online classroom or in person at the ILA Office, after school hours.

Secondary students participating in any of ILA's secondary school programs can earn an ILA-TD Opportunity Scholarship to study in STEM-related fields at Dalhousie University upon graduation from high school. This is a renewable scholarship valued at (up to) \$5,000/yr. The

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ILA-TD Opportunity Scholarship has been awarded to ILA participants since the 2011-12 program year and is possible as a result of a \$1,000,000 endowment from TD Bank, setup at Dalhousie University exclusively for this purpose. The first disbursement of this scholarship was given to former ASP/VSP participants in the fall of 2014 and the second disbursement will be given to former ASP/VSP participants in the fall of 2015.

Level 3 - Summer Student Research Scholarships (SSRS) offer university students of African descent the opportunity to conduct summer research in their chosen field under the guidance of a Dalhousie faculty member. Scholarships are open to African Canadians enrolled in an undergraduate degree in science, engineering, or health professions, at any post-secondary university in Nova Scotia. ILA has partnered with Dalhousie University's Faculty of Science, Faculty of Engineering, and Faculty of Health Professions to create scholarships, valued at \$6,500 each, which are tenable at Dalhousie University and are paid-out over the summer months (May – August) to support university students as they conduct specialized research in their chosen field.

ILA has also partnered with the Faculty of Medicine to create Summer Research Studentships valued at \$5,000. The Summer Student Research Program for Non-Medicine Students was created to increase the number of African Nova Scotians in medicine by providing medical research experience. Students gain valuable experience in the design, execution, and evaluation of experiments.

Additionally, ILA provides post-secondary students (including co-op) with work during the summer months, to enhance and develop ILA programs. From July 2015 to August 2015, four university students were hired (two were funded in part through the Canada Summer Jobs program) to research and further develop the following new STEM initiatives:

- *research and development of a STEM Achievers Exhibit* – students researched information on the scientific achievements of persons of African descent throughout the diaspora and presented it in a form for public exhibit
- *editing, organizing, and expanding the Science Quest Quiz Study Guide* – the students added new information on fundamental concepts, principles, and terms; biographies of important STEM scientists and inventors; and created at least 10 quiz games suitable for grade 7-9 participants
- *development of Grade 6 Science Activities* – the students researched and developed instruction modules and experiment demonstrations for the grade 6 level. These new activities were developed in anticipation of the addition of grade 6 to some junior high schools across the province and to engage the growing interest from the grade 6 populations at three of ILA's school sites (Truro Jr High School, Truro; Saint Andrew Junior School, Antigonish; and Whitney Pier Memorial Jr High, Sydney)
- *expansion of the Project Challenge project list* – the students researched and recommended inventions and technological innovations pioneered by persons of African descent that (1) can be built and/or storyboarded by students at the grade 7-9 level, and (2) can be explained by students at the grade 7-9 level.

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To expand and strengthen its university-community partnerships, ILA also engages in annual and adhoc activities to promote STEM within the broader African Nova Scotian community and to introduce more people to Imhotep's Legacy Academy's programs. Community outreach in 2014-2015 included:

- Partnering with the African Child Enrichment Program (ACEP)
- Partnering with the ACSD's BrainPower/Summerslide Program
- Assisting the Cape Breton Regional Library's Fun Science Summer Program.

The ILA Closing Ceremony is an annual event which celebrates the accomplishments of the exceptional junior high and high school students who participated in ILA's programs, lauds the dedication and excellence of ILA's university-student Mentors, and acknowledges the support of ILA's funding partners.

Imhotep's Legacy Academy's programs and operations would not be possible without the generous financial support of various funders. Over the years, ILA has maintained positive relationships with university, federal, and provincial government departments; community organizations who serve the African Nova Scotian community; private companies; and individuals. Contributors for the past two years are as follows:

2014-2015

- African Canadian Services Division
- Canada Summer Jobs
- Dalhousie University - President's Office
- Dalhousie University - Faculty of Engineering
- Dalhousie University – Faculty of Health Professions
- Dalhousie University - Faculty of Science
- Department of Economic and Rural Development and Tourism
- Michelin Support Fund
- Strategic Cooperative Education Incentive

2013-2014

- African Canadian Services Division
- African Nova Scotian Affairs
- Black Business Initiative
- Dalhousie University - President's Office
- Dalhousie University - Faculty of Engineering
- Dalhousie University – Faculty of Health Professions
- Dalhousie University - Faculty of Science
- Delmore "Buddy" Daye Africentric Learning Institute
- Department of Economic and Rural Development and Tourism
- Michelin Support Fund
- Promoscience – Natural Sciences and Engineering Research Council of Canada
- Strategic Cooperative Education Incentive

The United Nations declared 2015-2024 to be "The International Decade for Persons of African Descent", and as Halifax prepares to host STEMfest in 2018, Imhotep's Legacy Academy is excited about the future role it will play in inspiring and supporting the next group of industry leaders as more persons of African descent become more educated in the fields of Science, Technology, Engineering, and Math.

After School Program

The Imhotep's Legacy Academy After School Program (ASP) was offered across Nova Scotia at the following five sites: Oxford School (HRM), Caledonia Junior High (HRM), Truro Junior High (Truro), and Whitney Pier Memorial (Sydney). Due to challenges in finding a Coordinator and Mentor for the Antigonish site, the After School Program at the Saint Andrew Junior School and the Dr. John H. Gillis High School (gr.9) did not run for the full 2014-2015 program year.

ASP mentoring typically consists of a 2-hour science session or math session once per week. For the 2014-15 program year, the ASP sessions focused on the science activities.

Preparation

An inventory of bin contents is conducted at each ASP on an annual basis. At the end of the ASP program year, Coordinators, in partnership with the JPO, checked every activity bin to determine what chemicals, supplies, and equipment had to be reordered for the next year of activities. Supplies were also purchased throughout the year, when required.

Science Activities

There are currently a total of 28 science activities: nine grade 7, nine grade 8, and seven grade 9 activities.

All activities are designed to complement the school curriculum in order to reinforce concepts learned during regular school hours. Each activity is prefaced by an African proverb relating to the activity. African proverbs are accompanied by either interesting facts about the country from which that proverb originates or by information about a person of African descent who has made a contribution to the science concept being presented in that activity. The information is presented to enhance learning, cultural identity, and self-confidence. 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.

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. Hands-on activities help the students to "learn by doing", with the goal to enhance their retention of information and to make learning more fun.

ILA's philosophy is that every participant should have something to take home in relation to each ASP session. The hope is that these take-home items become points of discussion between parent/guardian and the ASP participants, enabling both the parent/guardian and student to continue their learning.

Math Activities

Currently there are existing grade 8 and 9 math activities the mentors can use as resources. Mentors must note where the students are in the math curriculum and then research/create a game on the subject.

Snacks

Agreements were reached with some Principals to have their school provide snacks for the students who attended the After School Program. Before any activity began, the students had a 15 minute snack break which helped to alleviate any existing hunger.

The Employees

ASP employed a total of 13 mentors, 5 site coordinators and 1 Junior Program Officer (JPO) this year. All employees of the after school program were students in a science degree enrolled at a Nova Scotian University. During the second semester, new Mentors were hired for the ASP program at Caledonia Junior High School and at Oxford Junior High School to alleviate scheduling conflicts. As well, throughout the year the JPO also assisted with activity delivery as he had previous experience working as an ILA Mentor.

Employee Training

Each Mentor was responsible for preparing and delivering an after school session once a week to their group of junior high school students. The Coordinators planned sessions, planned field trips, were responsible for ensuring the Mentors prepared and practiced their activities, and recorded information on all sessions.

All Mentors of the After School Program were required to attend the Professional Development (PD) weekend, which occurred on November 21-23, 2014 at the Faculty of Engineering's Morroy Building on Dalhousie University's Sexton campus. This training session gave ILA Mentors and Coordinators an opportunity to be mentored by Dalhousie STEM Professors and other professional scientists of African descent (Supervising Professor/Evaluator). ASP staff were responsible for learning and preparing at least one science activity to present to a Supervising Professor and fellow Mentors, who gauged their knowledge of and quality of demonstration of the scientific concept, and provided beneficial feedback. In general, before any activity is presented to ASP participants, the Mentor must first have their presentation approved by a Supervising Professor, who is located at the university in their region. 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. The PD session also provided program staff with the cultural background necessary to understand the students with whom they would be interacting.

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There were 6 new mentors this year working with the After School Program. The opportunity for them to see how a lesson is conducted efficiently was a great benefit. This feedback was expressed at the end of the session.

Employees were encouraged to participate in a social gathering after the PD session concluded. It was a good bonding opportunity for all the employees who attended.

Performance evaluations were also conducted in May. These evaluations entailed the JPO visiting the ASP sites to observe and evaluate a lesson. After the lesson was finished, the Mentors and Coordinator were asked to leave the room. The JPO had the students fill out an anonymous evaluation form, then have an open discussion on the topic of their experience so far with ILA. Written performance evaluations and recommendations for the Coordinators were issued by the JPO. Evaluations of Mentors were written by the Site Coordinators.

In addition to the PD weekend and evaluations, the JPO had opportunity throughout the first semester to coach the Oxford Junior High School and Caledonia Junior High School Mentors. The JPO periodically helped these teams by attending the after school sessions, which created opportunities to observe how the Mentors conducted their lessons. The JPO was then able to regularly offer feedback on ways to improve their lessons. Based on feedback from the Mentors, this was beneficial.

Field Trips

The ASP teams participated in 5 field trips during the 2014-2015 year. Listed below:

Oxford Jr High School: Dalhousie Biology Department

Truro Jr High School: Scotsburn Dairy

Truro Jr High School: Discovery Center

Whitney Pier Memorial Junior High School, Sydney: Marco Hearing Health Center

Whitney Pier Memorial Junior High School, Sydney: Protocase Incorporated

All field trips received positive feedback to the mentors and coordinators. The field trips were sometimes followed by a small pizza party or trip to Cherry Berry (frozen yogurt). Adding this component to the field trip offered additional opportunity for bonding between Mentors and ASP participants.



Figure 1: ASP (Truro) participant, Tristan Rollins, and chaperone/FLL Coach, Haley Matthews, learn about electricity at the Discovery Center in Halifax.



Figure 2: ASP (Sydney) participant, Nicholas MacLean using the technology at the Marco Hearing Health Center in Sydney, Nova Scotia.

Events

- Homecoming: Celebrating Science Outreach event, ILA promotion. October 2014
- African Heritage Month – Dr. Wanda Robson. February 2015
- Science Quest Quiz Tournament. May 2015
- STEM Project Challenge. May 2015
- M.Ed. Thesis Research: *Students' Perceptions of the Imhotep's Legacy Academy After School Program*

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ILA attended the Faculty of Science's open house event entitled "Homecoming: Celebrating Science Outreach". The JPO and an ASP student from Oxford Junior High School demonstrated the grade 9 activity "Making an Electric Motor" and talked with individuals about the ILA's programs.



Figure 3: JPO, Aaron Marsman, and ASP Oxford Jr High School student, Kennedy Prest, during the "Homecoming: Celebrating Science Outreach" event.

During African Heritage Month, two presentations were arranged by ILA for Oxford Junior High School and Caledonia Junior High School. Dr. Wanda Robson was the guest speaker and spoke about her late sister and civil rights activist, Ms. Viola Desmond, at each respective school assembly.



Figure 4: Dr. Wanda Robson discussing aspects of the life and legacy of her sister Viola Desmond with students of Oxford Junior High School.



Figure 5: ASP participants at Caledonia Junior High School pose for a photo with Dr. Wanda Robson and her spouse, Mr. Joe Robson.

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The 2014-2015 program year marked the inaugural Science Quest Quiz Tournament and STEM Project Challenge.

The Science Quest Quiz Tournament is a knowledge quiz on STEM subjects, including inventions and innovations pioneered by scientists of African descent, for example, African Nova Scotian inventors such as Michael Duck (Sackville, NS), inventor of Sure Shot- the cream, milk and sugar dispensers used at Tim Horton's and MacDonald's Restaurants and Dr. Abdullah Kirumira (Windsor, NS) who developed a rapid test for the detection of HIV in patients (1993). Teams had to answer knowledge questions posed by a quizmaster by activating a buzzer before their opponent.

The STEM Project Challenge had students work as teams within their schools. They were tasked to research an invention or innovation created by a Black inventor or scientist, build a replica or working model, prepare bristol board presentations, present their work, and answer questions from panel of professors (Dr. Wilber Menéndez Sánchez and Dr. Sophia Stone) who judged each project.



Figure 6: Caledonia Junior High School ASP participants, Shea-Lynn Johnson and Carmahn McCalla competing during the inaugural Science Quest Quiz Tournament.



Figure 7: Truro Junior High School ASP participants, Tyree Desmond and Nathan Morris posing with their STEM Project Challenge display for the Illusion Transmitter.

Both competitions took place on May 30, 2015 at the Black Cultural Center of Nova Scotia (BCCNS). Oxford Junior High School won both competitions and were presented a trophy for each win.



Figure 8: Competition champions: ASP Oxford Jr. High School participants, Simone Reade and KaiLun Grant

2015 Science Quest Quiz Results:

1st place:

Oxford Jr. High School Tech Geniuses

Team: Simone Reade Gr. 8, KaiLun Grant Gr. 8

2nd place:

Caledonia Jr. High School Science Explorers

Team: Shea-Lynn Johnson Gr. 8, Carmahn McCalla Gr. 8

2015 STEM Project Challenge Results:

1st place:

Oxford Jr. High School Tech Geniuses

Team: KaiLun Grant Gr. 8, Simone Reade Gr. 8, Coach: Tiffany Richards, Yewonde Taiwo

Presentation: Lunar Spectrograph/Spectrometer (1972)

Inventor: George R. Carruthers (b. 1939- Cincinnati)- physicist, space scientist

2nd place:

Truro Jr. High School Young Innovators

Team: Tyree Desmond Gr. 8, Tristan Rollins Gr. 8, Nathan Morris Gr. 9,

Coach: Ernest Korankye

Presentation: Illusion Transmitter (1980)

Inventor: Valerie Thomas (b. 1943- Maryland) - scientist

3rd place:

Caledonia Jr. High School Science Explorers

Team: Shea-Lynn Johnson Gr. 8, Carmahn McCalla Gr. 8,

Coach: Wamorena Chite, Shathani Manako

Presentation: Supersoaker Water Gun (1982)

Inventor Lonnie Johnson (b. Mobile, Alabama)- engineer

Adjunct Research

M.Ed. Thesis: *Students' Perceptions of the Imhotep's Legacy Academy After School Program*

During the 2014-15 program year, a former ASP Mentor (Antigonish) was so impacted by her experiences with ILA that she returned to school from the workforce to obtain an M.Ed. in Social Justice Education with a focus on urban youth. She decided to study the ILA After School Program as part of her research thesis. She analyzed data obtained from a sampling of participants from ILA's After School sites and her research methods were both quantitative (Surveys) and qualitative (interviews). Questions were prepared and provided in a feedback sheet to students, of which 91% of the students surveyed agreed with the following statements:

- "The hands-on activities offered by the ILA-ASP helped me to enjoy STEM"
- "The ILA-ASP influenced me to think students should learn about STEM in high school."

Some of the student comments also indicated that ILA should continue to "make STEM fun" and work on "giving students more hands-on activities."

The feedback received should enable new lessons and best practices to be incorporated into program delivery for the 2015-16 year.

FIRST Lego League Program

The Imhotep's Legacy Academy First Lego League (FLL) Program was offered at two sites:

- Oxford School Junior High School, Halifax
- Truro Junior High School, Truro

There were 12 students registered (gr.6-9) in the program between these two sites, three employed coaches throughout the year, and one volunteer coach. Due to lack of appropriate applicants, the JPO acted as coach for the Oxford team for the beginning of the year. Reynaldo Dames, the Coordinator for FLL of previous years, including the year of its inception, returned to coach the Oxford team as they prepared for the provincial competition.

Preparation

To prepare for the FLL season, the JPO registered both teams online through the FLL website, which entailed paying the registration fee for each team and receiving confirmation of background checks. Field Kits containing the Lego parts, thematic map, and instruction were then ordered for each team through Spectrum Education.

Competitions

The Oxford Junior High School team placed 10th out of 27 teams at the regionals held at the NSCC Institute of Technology campus on Leeds Street, Halifax on November 29, 2014, and they also were awarded the *Enthusiasm and Spirit Award*. Their regionals standing qualified them for the provincial championship at Acadia University in Wolfville, NS on February 14, 2015. The Truro team placed 6th in their regional qualifier on November 22, 2014 and were invited to attend the provincial competition as volunteers.

During the competitions, teams are judged on a challenge that has three parts:

1. Project - teams identify a problem that needs solving, research it, develop an innovative solution, and share their findings
2. Robot Game - teams design and build a robot using the LEGO MINDSTORM robot set. Teams program the robot to perform specific tasks on a thematic playing surface.
3. Core Values - teams demonstrate the eight FLL Core Values throughout the competition: *Team spirit, Respect, Find Solutions, Learn Together, Sportsmanship, Shared Experience, Gracious Professionalism, Fun*

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Figure 9: The Truro Junior High School “Top Robots” team with Coach Ernest Korankye and Volunteer Coach Haley Matthews.



Figure 10: The Oxford Junior High School “Tech Geniuses” team: .Branden Thompson, Keyan Clayton, Simone Reade, Kennedy Prest, and Riley Paris at provincials on Feb. 14, 2015.



Figure 11: Tyree Desmond and Nathan Morris of the Truro Junior High School “Top Robots” team receiving evaluation at the regional qualifier at NSCC in Truro.



Figure 12: Branden Thompson and Simone Reade of the Oxford Junior High School “Tech Geniuses” team prepare their robot at the provincial competition at Acadia University.



Figure 13: Truro Junior High School “Top Robots” team members Tyree Desmond, Nathan Morris and Tristan Rollins share a moment of fun during the regional qualifier at NSCC in Truro.

Employees

The JPO Aaron Marsman coached the Oxford team due to lack of appropriate applicants for the position. Drawing on experience with the ASP program, the FLL practices were beneficial, progress was made and the team enjoyed their time learning about programming and building their robot. Ernest Korankye was assigned FLL Coordinator. Based in Truro, Ernest was available to help via phone and email. In preparation for the provincial championships, Ernest and the Truro "Top Robots" team visited the Oxford "Tech Geniuses" team to share their knowledge.

Isaiah Reade began to volunteer as assistant during the FLL qualifier at the NSCC Institute of Technology, Halifax in November. Isaiah was a grade 11 student who competed on the Oxford Junior High School team when he attended the school. Isaiah is extremely competent regarding programming and building with the FLL.

As the Acadia University FLL Robotics provincial tournament approached, Reynaldo Dames agreed to take over the coaching of the Oxford "Tech Geniuses" team. Reynaldo Dames is a very experienced FLL coach and the team benefited greatly from his contribution.

The Truro "Top Robots" team was coached by Ernest Korankye and Haley Matthews volunteered as Assistant Coach. Like Isaiah, Haley was a grade 11 student who competed on the Truro Junior High School FLL team when she attended the school. Ernest Korankye has a wealth of experience and is an excellent coaching resource.

It should also be noted that both Haley and Isaiah were past awardees of the *ILA-TD Opportunity Scholarship* during their junior high studies (2012-2013). Both students have remained committed to ILA's programs.

Following is a recent letter received from Haley Matthews which demonstrates the quality and commitment of some students in the ILA program.

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From: A M < >
Sent: Friday, September 25, 2015 19:29
To: ILA ASP
Subject: Regarding Robotics Assistant Coach Position

Dear Ify,

My name is Haley Matthews. I've been both a mentor and a pupil within' Imhotep's Legacy Academy for several years. In my small town, Truro, I attended Truro junior high school where I was tutored in math and science and I participated in First Leggo League robotics team for over 3 years.

At the time, I transitioned into high school I was quite disappointed that I couldn't participate in the FLL team for robotics since ILA didn't offer it to high school students. However, I started to attend virtual school offered by ILA for high school students that exact same year. I felt like there was more needed to be done within' my community. That's when I had the idea to volunteer as an assistant robotics coach at my junior high school. I wanted to help encourage and inspire younger students coming from the same background as me, to be innovative and to pursue careers related to the sciences around us. I realized the number of students deduced over time. Some left for explicit reasons which I couldn't know about and that's when I became tentative of my duties to ensure that the students still there would continue on. Later, I became more incorporated into the after school ILA science and math program as well by doing task by helping with lectures. I got involved in volunteer work in the community like shared reading with people who suffer from disabilities, fundraising for the homeless shelters, even anti-bullying committee and student council at my school which offered mediation to students and help fundraise for youth clubs etc. Above all, I was selected to attend a leadership camp all the way in Mexico as a representative for my school board.

I am currently attending my grade 12 year at Cobequid Educational center and I am still inspired to continue working with the juniors at my junior high even though the year is quite business for me. Personally, I don't want to let go of ILA. I want to be apart of this organization in the future throughout my post-secondary career and even with work placement. Once I heard that you were going to offer a pay related to having a position as an robotics assistant coach, I was grateful and illuminated. I found that this would not only enable me to give back into my community but, help me with funding for my further education in post-secondary school. And, this boost motivated me to look at how I can improve the way I've been assisting with the programs offered by ILA and how I can improve my duties throughout my volunteer works.

Now, I've realized that there is much I've learnt about myself throughout my experiences with helping the juniors out and those within' my community. As I've done before when working with the ILA participants, I'll go the extra mile to ensure that my duties are being fulfilled beyond fulfillment. I know exactly how it feels to struggle on your own and I've seen at first hand the terrible things people go through here, in my small town. Though not many students show up, even the smallest numbers still count when making a difference. I hope you consider me for the robotics assistant coach position of 2015-2016 and I'm looking forward to another successful academic year of Imhotep Legacy Academy.

Sincerely,
Haley Matthews

Imhotep's Legacy Academy FLL Program - Awards Timeline:

2012-13:

ILA's "Legos 'R Us" FLL Team (Oxford Jr. High School) wins:

- *Judges Choice Award* – Regional Qualifier competition
- *Technical Design Award* – Provincial Championships
- *Mechanical Design Award* – Provincial Championships

ILA's "Top Robots" FLL Team (Truro Jr. High School) wins:

- *Presentation Award* – Regional Qualifier competition

ILA's FLL Team in Sydney (Memorial Jr. High School) wins:

- *Core Values Award* – Regional Qualifier competition

Three FLL participants awarded *2013 ILA-TD Bank Opportunity Scholarships*:

- Isaiah Reade, "Legos 'R Us, Lead Programmer
- Teanna Sparks, "Legos 'R Us"
- Haley Matthews, "Truro Top Robots", Lead Programmer

Two FLL participants receive ILA's *Student-of-the-Year* honors:

- Isaiah Reade, FLL Student-of-the-Year
- Haley Matthews, ASP Truro, Student-of-the-Year

2013-14:

ILA's "Top Robots" FLL Team (Truro Jr. High School) wins:

- *Mechanical Design Award* – Provincial Championships
- *Judges Award for Mentorship* (Haley Matthews, Assistant Coach) – Provincial Championships

One FLL participant awarded a *2014 ILA-TD Bank Opportunity Scholarship*:

- Nathan Morris, "Truro Top Robots"

One FLL participant receives ILA's *Student-of-the-Year* honors:

- Nathan Morris, FLL Student-of-the-Year

2014-15:

ILA's "Tech Genius" FLL Team (Oxford Jr. High School) wins:

- *Enthusiasm and Spirit Award* – Regional Qualifier competition
- 2015 Provincial Championship – 10th place out of 27 teams

ILA's "Top Robots" FLL Team (Truro Jr. High School):

- 6th place – Regional Qualifiers
- 2015 Provincial Championship - volunteers

Two FLL participants receive ILA's *Student-of-the-Year* honors:

- Tristan Rollins, FLL Student-of-the-Year
- Nathan Morris, ASP Truro, Student-of-the-Year

FLL Rubric & Guidelines



Core Values

Team Number
Judging Room

Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an 'X' in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. *When you have completed the evaluation, please circle the awards for which you would like this team to be considered.*

	Beginning	Developing	Accomplished	Exemplary	
Inspiration	Discovery Balanced emphasis on all three aspects (Robot, Project, Core Values) of FLL; it's not just about winning awards				
	N D	emphasis on only one aspect; others neglected	emphasis on two aspects; one aspect neglected	emphasis on all three aspects	balanced emphasis on all three aspects
	Team Spirit Enthusiastic and fun expression of the team identity				
	N D	minimal enthusiasm AND minimal identity	minimal enthusiasm OR minimal identity	team is enthusiastic and fun; clear identity	team engages others in their enthusiasm & fun; clear identity
Integration	Application of FLL values and skills outside FLL (ability to describe current and potential examples from daily life)				
	N D	team does not apply FLL values and skills outside FLL	team able to describe at least one example	team able to describe multiple examples	team able to describe multiple examples, incl. individual stories

Comments:

Teamwork	Effectiveness Problem solving and decision making processes help team achieve their goals				
	N D	team goals AND team processes unclear	team goals OR team processes unclear	clear team goals and processes	clear processes enable team to accomplish well defined goals
	Efficiency Resources used relative to what the team accomplishes (time management, distribution of roles and responsibilities)				
	N D	limited time management AND unclear roles	limited time management OR unclear roles	excellent time management and role definition allows team to accomplish most goals	excellent time management and role definition allows teams to accomplish all goals
Kids Do the Work	Appropriate balance between team responsibility and coach guidance				
	N D	limited team responsibility AND excessive coach guidance	limited team responsibility OR excessive coach guidance	Good balance between team responsibility and coach guidance	team independence with minimal coach guidance

Comments:

Gracious Professionalism®	Inclusion Consideration and appreciation for the contributions (ideas and skills) of all team members, with balanced involvement				
	N D	unbalanced team involvement AND lack of appreciation for contributions	unbalanced team involvement OR lack of appreciation for contributions	balanced team involvement AND appreciation for contributions of most team members	balanced team involvement AND appreciation for contributions of all team members
	Respect Team members act and speak with integrity so others feel valued-- especially when solving problems or resolving conflicts				
Cooperation®	N D	not evident with majority of team members	evident with majority of team members	almost always evident with all team members	always evident, even in the most difficult situations
	Team competes in the spirit of friendly competition and cooperates with others				
Cooperation®	N D	not evident with majority of team members	evident with majority of team members	almost always evident with all team members	always evident, even in difficult situations--and team actively helps other teams

Comments:

Strengths:	Inspiration	Teamwork	Gracious Professionalism®
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Project

Team Number
Judging Room

Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an 'X' in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. *When you have completed the evaluation, please circle the awards for which you would like this team to be considered.*

		Beginning	Developing	Accomplished	Exemplary
Research	Problem Identification*	Clear definition of the problem being studied			
	N	unclear; few details	partially clear; details missing	mostly clear; detailed	clear; very detailed
	D				
	Sources of Information	Types (e.g. books, magazines, websites, reports and other resources) and number of quality sources cited, including professionals in the field			
	N	one type of information cited; minimal sources	two types of information cited; several sources	three types of information cited; many sources, including professionals	four(+) types of information cited; extensive sources, incl. professionals
	D				
Research	Problem Analysis	Depth to which the problem was studied and analyzed by the team			
	N	minimal study; no team analysis	minimal study; some team analysis	sufficient study and analysis by team	extensive study and analysis by team
	D				
	Review Existing Solutions	Extent to which existing solutions were analyzed by the team, including an effort to verify the originality of the team's solution			
N	minimal review; no team analysis	minimal review; some team analysis	sufficient review and analysis by team	extensive review and analysis by team	
D					
<i>Comments:</i>					
Innovative Solution	Team Solution*	Clear explanation of the proposed solution			
	N	difficult to understand	some parts confusing	understandable	easy to understand by all
	D				
	Innovation	Degree to which the team's solution makes life better by improving existing options, developing a new application of existing ideas, or solving the problem in a completely new way			
N	existing solution/application	solution/application contains some original element(s)	original solution/application	original solution/application with the potential to add significant value	
D					
Innovative Solution	Implementation	Consideration of factors for implementation (cost, ease of manufacturing, etc.)			
	N	minimal factors considered	some factors considered	factors well considered; some question about proposed solution	factors well considered and feasible solution proposed
	D				
<i>Comments:</i>					
Presentation	Sharing*	Degree to which the team shared their Project before the tournament with others who might benefit from the team's efforts			
	N	shared with one individual	shared with one group	shared with one individual or group who may benefit	shared with multiple individuals or groups who may benefit
	D				
	Creativity	Imagination used to develop and deliver the presentation			
N	minimally engaging OR unimaginative	engaging OR imaginative	engaging AND imaginative	very engaging AND exceptionally imaginative	
D					
Presentation	Presentation Effectiveness	Message delivery and organization of the presentation			
	N	unclear OR disorganized	partially clear; minimal organization	mostly clear; mostly organized	clear AND well organized
D					
<i>Comments:</i>					
Strengths:		Research	Innovative Solution	Presentation	

*Required for Award Consideration

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Robot Design

Team Number

Judging Room

Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an 'X' in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. *When you have completed the evaluation, please circle the awards for which you would like this team to be considered.*

		Beginning	Developing	Accomplished	Exemplary
Mechanical Design	Durability	Evidence of structural integrity; ability to withstand rigors of competition			
	N	quite fragile; breaks a lot	frequent or significant faults/repairs	rare faults/repairs	sound construction; no repairs
	D				
	Mechanical Efficiency	Economic use of parts and time; easy to repair and modify			
	N	excessive parts or time to repair/modify	inefficient parts or time to repair/modify	appropriate use of parts and time to repair/modify	streamlined use of parts and time to repair/modify
D					
Mechanization	Ability of robot mechanisms to move or act with appropriate speed, strength and accuracy for intended tasks (propulsion and execution)				
N	imbalance of speed, strength and accuracy on most tasks	imbalance of speed, strength and accuracy on some tasks	appropriate balance of speed, strength and accuracy on most tasks	appropriate balance of speed, strength and accuracy on every task	
D					
<i>Comments:</i>					
Programming	Programming Quality	Programs are appropriate for the intended purpose and would achieve consistent results, assuming no mechanical faults			
	N	would not achieve purpose AND would be inconsistent	would not achieve purpose OR would be inconsistent	should achieve purpose repeatedly	should achieve purpose every time
	D				
	Programming Efficiency	Programs are modular, streamlined, and understandable			
	N	excessive code and difficult to understand	inefficient code and challenge to understand	appropriate code and easy to understand	streamlined code and easy for anyone to understand
D					
Automation/Navigation	Ability of the robot to move or act as intended using mechanical and/or sensor feedback (with minimal reliance on driver intervention and/or program timing)				
N	frequent driver intervention to aim AND retrieve robot	frequent driver intervention to aim OR retrieve robot	robot moves/acts as intended repeatedly w/ occasional driver intervention	robot moves/acts as intended every time with no driver intervention	
D					
<i>Comments:</i>					
Strategy & Innovation	Design Process	Ability to develop and explain improvement cycles where alternatives are considered and narrowed, selections tested, designs improved (applies to programming as well as mechanical design)			
	N	organization AND explanation need improvement	organization OR explanation need improvement	systematic and well-explained	systematic, well-explained and well-documented
	D				
	Mission Strategy	Ability to clearly define and describe the team's game strategy			
	N	no clear goals AND no clear strategy	no clear goals OR no clear strategy	clear strategy to accomplish the team's well defined goals	clear strategy to accomplish most/all game missions
D					
Innovation	Creation of new, unique, or unexpected feature(s) (e.g. designs, programs, strategies or applications) that are beneficial in performing the specified tasks				
N	original feature(s) with no added value or potential	original feature(s) with some added value or potential	original feature(s) with the potential to add significant	original feature(s) that add significant value	
D					
<i>Comments:</i>					
Strengths:		Mechanical Design	Programming	Strategy & Innovation	

Robot Design Executive Summary (RDES)

To help the Robot Design judges quickly and consistently learn about your robot and the design process used, we are requiring a short presentation. An “executive summary” is often used by engineers to briefly outline the key elements of a product or project. In other words, the purpose of the RDES is to give the Robot Design judges an outline of your robot and all that it can do. The RDES is intended to help your team consider in advance the most important information to share with the judges. What you chose to share will enable the judges to effectively evaluate your team and provide more helpful feedback.

Your team is free to determine how much time you invest, but realistically it should only take a few hours to develop and practice the RDES. The RDES is NOT intended to be as extensive or time consuming as your Project.

Your team will present your RDES at the beginning of your Robot Design judging session. The entire presentation, including the trial run, should not take any longer than **four (4) minutes**. Following your Robot Design presentation the judges will pose questions for your team to answer. You are not required to provide a written version of the RDES to leave with the judges.

Basic Outline: The RDES should include the following elements: *Robot Facts*, *Design Details*, and a short *Trial Run*.

Robot Facts: Share with the judges a little bit about your robot, such as the number and type of sensors, drivetrain details, number of parts, and the number of attachments. The judges would also like to know what programming language you used, the number of programs and the amount of memory used by each program, and your most consistently completed mission.

Design Details:

1. **Fun:** Describe the most fun or interesting part of robot design as well as the most challenging parts. If your robot has a name, who chose the name and why. If your team has a fun story about your robot please feel free to share.
2. **Strategy:** Explain your team’s strategy and reasoning for choosing and accomplishing missions. Talk a little bit about how successful your robot was in completing the missions that you chose. Judges may like to hear about your favorite mission and why it is your favorite.
3. **Design Process:** Describe how your team designed your robot and what process you used to make improvements to your design over time. Briefly share how different team members contributed to the design and how you incorporated all the ideas.
4. **Mechanical Design:** Explain to the judges your robot’s basic structure, how you make sure your robot is durable and how you made it easy to repair or add/remove attachments. Explain to the judges how the robot moves (drivetrain), and what attachments and mechanisms it uses to operate or complete missions.
5. **Programming:** Describe how you programmed your robot to ensure consistent results. Explain how you organized and documented your programs, as well as, mention if your programs use sensors to know (and ensure) the location of the robot on the field.
6. **Innovation:** Describe any features of your robot design that you feel are special, different or especially clever.

Trial Run: Demonstrate the operation of your robot for the judges performing the mission(s) of your choice. Please do not do an entire robot round; time will be needed for judges to ask questions of your team.

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Virtual School Program

The Imhotep's Legacy Academy Virtual School Program (VSP) is a free tutoring service offered to all African Nova Scotian students primarily attending high school. Students could log-in to Skype via computer or a mobile device to connect with an ILA tutor for online assistance in a STEM subject. Alternatively, in house tutoring was available at the ILA Office, room G40M in the Killam Memorial Library on Dalhousie University's Studley campus. Tutors were available 7 days a week ("Upon Request" on Fridays and Sundays) to assist students with biology, chemistry, physics, and math subjects. On average two Tutors worked two-hour shifts each day, usually starting at 4:00pm to ensure there was tutoring support in the office when the high school students arrived after school. Each tutor worked 4-6 hours per week. Students also had the option to contact a specific Tutor to reserve specific tutoring time. Students were encouraged to complete a VSP registration form to use the service; however, all students who came in-house received tutoring assistance regardless of their registration status. Depending on the demand on a given day for a particular subject, the tutee to tutor ratio ranged from 1:1 to 1:5.

There were 37 students registered for VSP during the 2014-2015 program year. They used the services of the VSP for a total of 333 individual sessions. Seven Tutors were employed for the VSP and one JPO.

Registration

Students registered by submitting a completed VSP Registration form to the ILA Office (forms were available for download from the ILA website and copies were also distributed to students during VSP promotions at high schools). In addition to high school students, there were also some junior high school and first-year university students registered for the VSP. For some junior high school registrants, the parent/guardian was asked to provide a copy of the students' course syllabus for Tutors to use as a guide in preparation for the session. In most cases, junior high school students were assigned a specific tutor. The first year university students were also VSP participants during their previous year in high school. Registrants were mailed a formal letter of registration that included a VSP tutoring schedule, the *ILA-Skype Guide for Students*, information about the *Student of the Year Award* and the *ILA-TD Opportunity Scholarship*, a VSP rack card, a VSP registration form (to share with a friend), and an ILA business card.

Process

This was only the second year of the ILA-Skype implementation for online tutoring. ILA transitioned from use of Dalhousie University's Blackboard Learn system to the Skype interface to provide students with better accessibility (the Skype application is part of the Windows operating system and can be downloaded for free) and ease of use (students can use their own Skype accounts). (The ILA-Skype system was conceived and developed by Dalhousie engineering co-op student Alexander Harding.) ILA tutors used one of two Samsung laptops designated for the VSP and the JPOs laptop was also available for use. At the start of their tutoring session, Tutors logged-in to their assigned ILA-Skype accounts (setup by the JPO using


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Skype Manager) and remained logged-in for the duration of their session, periodically checking for connection requests from students. Tutors were expected to manage their time between on-line students and in-house students requiring tutoring.

For online sessions, students called a Tutor via Skype to receive help via a video call. Intuos drawing tablets were used in connection with SmoothDraw software, which allowed Tutors to write on the computer screen and use Skype's screen share feature to share what was written with the student. Students were also able to share files with the Tutors via Skype.

For in-house tutoring sessions, students were free to drop-in to the ILA Office. On nights where more than five students arrived for tutoring, additional study rooms were booked, when available, in the library's Learning Commons. Students were also permitted to use the VSP laptops for research or to print documents and both they and the Tutors had free access to the ILA's library of high school text books for reference.

Tutors captured statistical information about each session, i.e, Tutor name, student(s) and subject(s) tutored, tutoring location (online or inhouse), in the VSP Logbook for future reference.

 MAR 2015 TUTORING SCHEDULE		MENTOR	SUBJECTS TUTORED	Skype ID	EMAIL
		Bintou	Math & Chemistry	ba.bintou	bsp.imhotep@vsp.ac
		Dolapo	Math	ba.dolapo	bsp.imhotep@vsp.ac
		Franklin	Math & Physics	ba.franklin	vsp.imhotep@vsp.ac
		Philippa	Math & Chemistry	ba.philippe	bsp.imhotep@vsp.ac
		Potso	Math & Physics	ba.potso	vsp.imhotep@vsp.ac
		Shanni	Math	ba.shanni	vsp.imhotep@vsp.ac
		Tiffany	Math	ba.tiffany	vsp.imhotep@vsp.ac

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 FRANKLIN Upon Request	2 BINTOU 4:30pm - 6:30pm DOLAPO 6:00pm - 8:00pm	3 SHANNI 4:30pm - 6:30pm POTSO 6:15pm - 7:15pm PHILIPPA 8:00pm - 9:00pm	4 POTSO 4:15pm - 6:15pm BINTOU 6:00pm - 8:00pm TIFFANY Upon Request	5 SHANNI 4:00pm - 6:00pm FRANKLIN 6:00pm - 8:00pm	6 Mentors available upon request via email	7 PHILIPPA 4:00 - 6:00pm FRANKLIN 5:00pm - 8:00pm
8 FRANKLIN Upon Request	9 BINTOU 4:30pm - 6:30pm DOLAPO 6:00pm - 8:00pm	10 SHANNI 4:30pm - 6:30pm POTSO 5:15pm - 7:15pm	11 POTSO 4:15pm - 6:15pm BINTOU 6:00pm - 8:00pm TIFFANY Upon Request	12 FRANKLIN 5:00pm - 7:00pm	13 Mentors available upon request via email	14 DOLAPO 4:00pm - 6:00pm FRANKLIN 5:00pm - 8:00pm
M A R C H B R E A K						
20 FRANKLIN Upon Request	23 BINTOU 4:30pm - 6:30pm DOLAPO 6:00pm - 8:00pm	24 SHANNI 4:30pm - 6:30pm POTSO 5:15pm - 7:15pm PHILIPPA 8:00pm - 9:00pm	25 POTSO 4:15pm - 6:15pm BINTOU 6:00pm - 8:00pm TIFFANY Upon Request	26 SHANNI 4:00pm - 6:00pm FRANKLIN 6:00pm - 8:00pm	27 Mentors available Upon Request via email	28 DOLAPO 4:00pm - 6:00pm FRANKLIN 5:00pm - 8:00pm
29 FRANKLIN Upon Request	30 BINTOU 4:30pm - 6:30pm DOLAPO 6:00pm - 8:00pm	31 SHANNI 4:30pm - 6:30pm POTSO 5:15pm - 7:15pm PHILIPPA 8:00pm - 9:00pm	N.B. "Upon Request" - Please contact the Mentor to arrange a specific time for tutoring on these days.			

Figure 14: The March 2015 VSP



Figure 15: Potso Robert tutors junior high school student Ayélé Atiwoto in the ILA Office, Killam Memorial Library, Dalhousie University.

Employee Training

The employees consisted of two returning Tutors and five new Tutors. During the first couple of months the new Tutors were scheduled to work concurrently with an experienced Tutor to offer insight. Also, the JPO was often present during tutoring sessions to offer feedback.

All VSP Tutors attended the Professional Development (PD) Session from November 21-23, 2014, held in the Faculty of Engineering's Morroy Building on Dalhousie University's Sexton campus. This annual training session gives ILA employees an opportunity to be mentored by Dalhousie Professors and other scientists of African descent. During the PD weekend, the VSP mentors participated in a workshop to increase their comfort level using ILA-Skype. They also took part in general assemblies to discuss the goals of ILA and areas for improvement.

The VSP Tutors also participated in an Orientation session on Friday, October 17, 2015 at the Killam Memorial Library, Dalhousie University. The session was facilitated by senior Tutors Philippa Keri Ovonji-Odida and Franklin Che Mbende. New Tutors were coached on how to interact with students, how to maximize their time during sessions, and were exposed to the ILA-Skype environment.



Figure 16: Philippa Keri Ovonji-Odida leading orientation of new Tutors: Dolapo Ajagbe, Bai Bintou Kaira, and Shanni Cvrus

Events

From April 27, 2015 to May 1, 2015 the VSP Mentors and JPO travelled to four high schools: Cole Harbour High School, Auburn High School, and Prince Andrew High School in Dartmouth, NS and Citadel High School in Halifax, NS, to promote the VSP.

Before the Christmas holiday, VSP students were invited to a party on the Dalhousie campus to mark the end of the semester.



Figure 17: VSP students: Kevin Khisa, Leah Khisa, Akili Cyrus, Haja Nabay, Benedicta Koumako, and ILA Tutor Shanni Cyrus on their way to a VSP holiday farewell party.

Testimonies



Figure 18: Haja Nabay

"What I like about Imhotep is the tutors, they help me a lot with my school work. The reason why I like coming every day is because it helps me to feel confident and proud to know that someone will be there who I can rely on to help me. I like that we are like family." Haja Nabay, March 2015

"The Virtual School Program is a great opportunity for students who are in need of after school tutoring. The tutors are very kind, and there is comfortable and friendly environment. You feel right at home!" Karin Jafer, March 2015

*Haja Nabay and Karin Jafer graduated from Citadel High School in Halifax and began their first year at Dalhousie University in the Fall 2015 semester. Haja was an **ILA-TD Opportunity Scholar** in 2014-2015.*



Figure 19: Karin Jafer

Success Stories

- VSP participant, Haja Nabay, awarded a \$2,000 ILA-TD Opportunity Scholarship to study in Dalhousie University's Bachelor of Science (Nursing) program in Fall 2015.
- VSP participant, Rafeeda Khashmelmous, awarded a \$2,000 ILA-TD Opportunity Scholarship to study in Dalhousie University's Bachelor of Medical Sciences program in Fall 2015.
- VSP Tutor (Biology), Tiffany Richards, nominated for The L. McDonald Memorial Award at Mount Saint Vincent University. This award was awarded to a returning student who has shown outstanding achievement in chemistry courses and who was enrolled in a program of studies requiring at least a minor in chemistry. Tiffany studies Nutrition and Dietetics at Mount Saint Vincent University and will graduate in 2016.
- VSP Tutor (Biology), Tiffany Richards, awarded the \$6,500 Summer Student Research Scholarship in Health Professions to develop and evaluate an applied human nutrition activity for use among African Nova Scotian youth, in partnership with Imhotep's Legacy Academy
- VSP Tutor (Math & Chemistry), Bintou Kaira, awarded the \$6,500 Summer Student Research Scholarship in Engineering to investigate the optimization of a membrane system for CO₂ removal in anesthesia circuits.

Feedback

JPO and Mentor feedback:

- Provide snacks for students each session
- Host/organize social events throughout the year (bowling, cinema, skiing, pizza night, etc.)
- Secure more space in which to tutor

Student feedback:

- Provide snacks
- Interested in going on field trips
- Larger study space

ILA Outreach Activities

African Child Enrichment Program

In Spring 2015, ILA was approached by the African Child Enrichment Program (ACEP). The program offers day camps to young children of African immigrants and operates out of Mount Saint Vincent University. The organization was interested in science programming, and ILA assisted by using our current suite of ASP science activities to demonstrate concepts. The JPO attended several sessions conducting hands-on science activities with the 20 students who attended each session on average.



Figure 20: JPO Aaron Marsman conducting a demonstration for students of the African Child Enrichment Program

BrainPower/Summerslide

For one month during the summer, ILA partners with the Department of Nova Scotia's African Canadian Services Division as part of their BrainPower/Summerslide Program. This program aims to expose African Nova Scotian students to science. For the past three summers, ILA has conducted rocket-building activities with the North Preston Summerslide day camp. In summer 2015, ILA extended these rocket-building activities to the Beechville Summerslide daycamp as well.

After ILA purchased model rockets in July, the JPOs and summer staff built and tested rockets in preparation for sessions in each community. ILA staff split into two groups, which included a high school student volunteer and the ILA Board President—one group travelling to North Preston and the other to Beechville. ILA spent an afternoon with the two groups of summer camp students introducing them to physics concepts required to understand the function of rockets. During this first session, the students broke up into groups of 5 and constructed their own rockets under ILA staff guidance and supervision. ILA returned for a second session to launch the rockets. A light-hearted, informal competition (in which prizes were awarded) was organized to see whose rocket was the most aerodynamic. There were a total of 40 students from both camps. The activity was well received and the students had fun.



Figure 21: Group photo of the BrainPower/Summerslide students in North Preston



Figure 22: North Preston participants watch intently as ILA President, Dr. Pemberton Cyrus, instructs on the use of the ignition switch to launch the rockets



Figure 23: Ifunanya Kammelu, JPO, and Ugochukwu Douglas Chukwu, Summer Researcher, help a Beechville BrainPower/Summerslide student ready her rocket for launch, while Black Jackson, Student Support Worker, looks on.



Figure 24: Lift-off at the Beechville BrainPower/Summerslide day camp!

Cape Breton Regional Library's Fun Science Summer Program

The McConnell Library in Sydney, Nova Scotia reached out to ILA regarding the use of the ASP Sydney activity bin supplies. The library hired a summer student under Young Canada Works to develop the Fun Science Program for children ages 5+. The goal of the program was to teach the children science and spark an interest in further learning. An agreement was reached to allow the instructor of the Fun Science Program to use items from ILA's Sydney activity bins. ILA's JPO attended one of the sessions, helped to perform a science activity, and spoke about ILA with the students.



Figure 25: Students participate in an activity demonstrating buoyancy at the McConnell Library Fun Science Program summer camp.



Figure 26: Students pose holding various take home items and a robot controller at the McConnell library. Center back: Ericka Thomas, Fun Science Program Developer.

ILA Closing Ceremony

The Closing Ceremony gala is organized to exhibit projects and activities from each program site and celebrate participants' achievements through the awarding of trophies, medals, and certificates. The 2014/15 gala was held in the KTS Room, King's College, on June 6, 2015.

Gift bags and Certificates of Participation were prepared for student participants of all programs, including ILA Mentors and Coordinators. Gift bag items were generously donated by:

Organization	Item donated
DAL Registrar	- clipboards ; t-shirts
DAL Bookstore	- Dalhousie bags
W.I.S.E. Atlantic (MSVU)	- pens
Encana	- ear bud organizer ; newsletter ; screen wipes
SMU, Dean of Science	- promotional calendars
ACSD, Dept. of Education	- 4 books (set)
DAL, Dept. of Engineering	- earphones headset ; slinkys
Halifax Good Neighbour Initiative	- t-shirts

In addition, award recipients were given specific acknowledgments:

Students of the Year each received a clear acrylic trophy and a Kindle e-reader, *ILA-TD Opportunity Scholarship* awardees received promise letters and a Certificate of Award, *Summer Student Research Scholars* received an award letter and Certificate of Award, *STEM Project Challenge* participants received medals for 1st, 2nd, and 3rd place standing. *Science Quest Quiz Tournament* participants received medals for 1st, and 2nd place standing. *ILA Points Medals* were awarded to participating school teams.

The guest speaker for this 2015 Closing Ceremony was Ms. Kimberly Bryant, founder and Executive Director of Black Girls CODE, a non-profit organization focused on introducing girls of color (ages 7-17) to the field of technology and computer programming. Black Girls CODE, based in the Bay Area, has grown to an international non-profit organization with chapters in seven U.S. cities and Johannesburg, South Africa serving over 2000 African/African-American, Latina, and Native American girls.

ILA partnered with the Department of Engineering and the "African Canadian Women in the Public Service" to bring Ms. Bryant to Halifax and accommodate her.



Figure 27: Kimberly Bryant (front centre) with ILA student participants at the 2015 Closing Ceremony.

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Award recipients during the 2014-15 Closing Ceremony were:

Student of the Year

Student of the Year Awarded to a student who combines strong academic performance with exceptional participation in ILA program activities (After School Program, Virtual School Program, First Lego League Robotics, African Heritage Month Project, STEM Quiz Tournament, Project Challenge Tournament)

Student	School	Grade	ILA Program
Shea-Lynn Johnson	Caledonia Jr High School, Dartmouth	8	ASP
KaiLun Grant	Oxford Jr High School, Halifax	8	ASP
Simone Reade	Oxford Jr High School, Halifax	8	ASP
Nathan Morris	Truro Jr High School	9	ASP
Travis Collier	Whitney Pier Memorial Jr High School	9	ASP
Tristan Rollins	Truro Jr High School	8	FLL
Branden Thompson	Oxford Jr High School, Halifax	8	FLL
Hajay Nabay	Citadel High School, Halifax	12	VSP



Figure 28: Student of the Year, Shea-Lynn Johnson of Caledonia Jr High School poses with ILA Board Member Adrienne Glasgow-Slawter.

ILA-TD Opportunity Scholarship

ILA-TD Bank Opportunity Scholarship

A four-year renewable scholarship for ILA Program graduates entering a STEM-related program of study at Dalhousie University, Halifax. The award value is a graduated amount that can be earned for each year of participation in ILA programs beginning in Gr. 7 and ending in Gr. 12. A maximum \$5,000/yr scholarship over four years of full-time university study can be earned.

Earnable amounts:

Grades 7-10: \$500 per grade (\$2,000 cumulative)

Grade 11: \$1,000

Grade 12: \$2,000

Student	School	Awarded in Grade	Amount	Career Interests
KaiLun Grant	Oxford Jr High School	8	\$500	Palaeontologist, Wildlife Veterinarian, Archeology
Simone Reade	Oxford Jr High School	8	\$500	Physical Therapist, Pediatrician, Architect
Haja Nabay	Citadel High School	12	\$2,000	Nurse
Rafeeda Khashmelmous	Halifax West High School	12	\$2,000	Obstetrician/Gynecologist



Figure 29:
ILA-TD Opportunity Scholar, KaiLun Grant of Oxford Jr High School receives her Award Letter and Certificate from Associate Professor, Dr. Kevin Hewitt



Figure 30:
ILA-TD Opportunity Scholar, Simone Reade of Oxford Jr High School receives her Award Letter and Certificate from Associate Professor, Dr. Kevin Hewitt



Figure 31:
ILA-TD Opportunity Scholar Haja Nabay of Citadel High School receives her Award Letter and Certificate from Associate Professor, Dr. Kevin Hewitt

Summer Student Research Scholarships

Summer Student Research Scholarships

ILA has partnered with the Faculty of Engineering (FoE), the Faculty of Health Professions (FoHP), and the Faculty of Science (FoS) at Dalhousie University to create these scholarships for African Canadian students enrolled in an undergraduate engineering, health professions, or science program at a post-secondary institution in Nova Scotia. Scholarships are valued at \$6,500 each. ILA has also partnered with the Faculty of Medicine (FoM) at Dalhousie University to create \$5,000 Summer Student Research Studentships via the Summer Student Research Program for Non-Medicine Students. The goal of this program is to increase the number of African Nova Scotians in medicine by providing medically-related research experience.

Student	Yr /Field of Study/ School	SSRS	Amount	Area of Research
Bai Bintou Kaira	2 nd yr, Chemical Engineering, Dalhousie University	Engineering	\$6,500	Optimization of a membrane system for CO ₂ removal in anesthesia circuits. Supervisor: Dr. Jan Haelssig.
Tiffany Richards	3 rd yr, Applied Nutrition (Honors), MSVU	Health Professions	\$6,500	Develop and evaluate an applied human nutrition activity for use among African Nova Scotian youth, in partnership with Imhotep’s Legacy Academy. Supervisor: Dr. Sara Kirk and Shannon Grant, PhD (c)
Dario Brooks	4 th yr, Mathematics and Physics (Honors), Dalhousie University	Science	\$6,500	Mathematical physics Supervisor: Prof. Alan Coley
Prudence Bull Emmanuel	3 rd yr, Biology and Psychology, Saint Mary’s University	Medicine	\$5,000	Use of dexrazoxane in pediatric oncology. Supervisors: Dr. Ketan Kulkarni and Dr. Tamara MacDonald of the IWK Health Centre



Figure 32: Summer Student Research Scholar (Engineering), Bai Bintou Kaira, receives her Award Letter and Certificate from ILA Board Member, Dr. Wilber Menéndez Sánchez.

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ILA Points Medals

ILA Points Medals

Medals were awarded to the school team earning the most points for participation in designated ILA program activities over the course of the ILA calendar year of activities

(African Heritage Month Project, STEM Quiz Tournament, Project Challenge, First Lego League Robotics, Field trips, Guest speakers)

Team Name	School	Points
Tech Geniuses	Oxford Jr High School	300
Young Innovators	Truro Jr High School	255
Science Explorers	Caledonia Jr High School, Dartmouth	135
Young Science Wolfpack	Whitney Pier Memorial Jr High School	120
STEM Achievers	Saint Andrew Jr High School	100

N.B. All groups automatically received 100pts for signing-up for the ILA School Group Point Competition

Appendices

[Calendar of Events](#)

[Closing Ceremony Program](#)

[Media Coverage](#)

2014-15 Calendar of Events

CALENDAR OF EVENTS (for ILA Programs) 2014-2015

Following is an overview of the program-related sequence of events that occurred during the 2014-2015 program year.

Date	Event
<i>September 2014</i>	<ul style="list-style-type: none"> • Recruitment & Hiring of Program Staff (Sep/Oct) • ILA-TD Opportunity Scholarship payments
<i>October 2014</i>	<ul style="list-style-type: none"> • Meeting with Principals re ILA Programs by Executive Director • Orientation sessions at schools
<i>November 2014</i>	<ul style="list-style-type: none"> • PD Session (see attached schedule) • ILA Programs start • FLL Qualifier competition at NSCC
<i>December 2015</i>	<ul style="list-style-type: none"> • ASP Truro – field trip (Discovery Centre) • Christmas Break (Dec 19/14) to Jan 5/15 – ILA programs hiatus
<i>January 2015</i>	
<i>February 2015</i>	<ul style="list-style-type: none"> • African Heritage Month - ILA events at schools • FLL Championships at Acadia University
<i>March 2015</i>	<ul style="list-style-type: none"> • March Break (16th to 20th) – ILA programs hiatus • Summer Student Research Scholarship (SSRS) applications posted • End of FLL program
<i>April 2015</i>	<ul style="list-style-type: none"> • Student of the Year nominations • ILA-TD Opportunity Scholarship nominations • ASP Oxford field trip (Dalhousie Biology Department) • ASP Sydney field trip (Protocase Incorporated) • ASP Truro field trip (Scotsburn Dairy) • VSP promotion to high schools • Site visits and evaluations by JPO
<i>May 2015</i>	<ul style="list-style-type: none"> • STEM Project Challenge Championship (inaugural) • SCIENCE QUEST Quiz Tournament (inaugural) • SSRS 4-month research begins • End of ASP program
<i>June 2015</i>	<ul style="list-style-type: none"> • End of VSP program • Annual ILA Closing Ceremony • Award nights and graduations at secondary schools • Summer 2015 students hired • Activity bin inventory (all sites) begins for following program year
<i>July 2015</i>	<ul style="list-style-type: none"> • ILA's Summer Outreach Activities – (rocketbuilding) BrainPower Summerslide • Deadline for Mentors to apply for Co-curricular Record recognition
<i>August 2015</i>	End of 2014-15 program year

2014-15 Closing Ceremony Program

IMHOTEP'S LEGACY ACADEMY

Taking A Bold, New Path

The 2015 ILA Closing Ceremony

*We desire to bequeath two things to our children –
the first one is roots, the second is wings wings*
- Sudanese proverb



Kimberly Bryant, Black Girls Code



Dr. Wanda Robson visits
Caledonia Jr. Group, Feb 2015



Tech Geniuses, Oxford Jr.
wins Spirit Award at Halifax FLL Qualifiers
qualifies for Provincial Finals Nov. 2014



Young Innovators (Truro Jr)
with their project The Illusion Transmitter -
Project Challenge Competition May 2015

Saturday June 6, 2015 3–5 pm

KTS Hall, Academic Building, University of King's College
6350 Coburg Rd., Halifax

Taking A Bold, New Path

2015 ILA Closing Ceremony and Student Awards

ILA was organized in 2003 by African Nova Scotian educators Barbara Hamilton - Assistant Professor, School of Health and Human Performance, Dalhousie University; Wayn Hamilton- Executive Director, African Nova Scotian Affairs, and Dr. Kevin Hewitt- Physics Professor, Dalhousie University.

The organization seeks to provide educational programs and learning experiences that foster improved academic performance in STEM subjects (Sciences, Technology, Engineering and Mathematics) among African Canadian students and increased participation in STEM professions.



Program

Host: David Woods - ILA Executive Director

Opening Prayer

Rev. Gary Boyd, Former Pastor Good Shepherd Church, Lawrencetown

Welcome | Greetings | Acknowledgements

National Anthems:

Oh Canada - Canadian National Anthem

Lift Every Voice - Black National Anthem

Performed by Boyd Family Singers

ILA History

Dr. Kevin Hewitt Organization co-founder

2014-15 ILA Programs

After School Program (ASP)

Virtual School Program (VSP)

FIRST Lego League Robotics (FLL)

ILA-TD Opportunity Scholarships

ILA Summer Research Awards

New Stem Activities- initiated in 2014-15

African Nova Scotian Science and STEM

Achievers exhibition

ILA Speakers' Bureau

Project Challenge Championships

Science Quiz Tournament

Science Quest

Marketing of ILA STEM programs, activities

Introduction of 2014-15 ILA Family

After School Program Groups

- ILA Caledonia Jr. High, Dartmouth
- ILA Oxford Jr. High, Halifax
- ILA Truro Jr. High, Truro
- ILA St. Andrews Jr. High, Antigonish
- ILA Memorial Jr. High, Sydney

First Lego League Robotics Teams

- ILA Oxford Jr. High
- Truro Jr. High

Project Challenge Competition Teams

- Science Explorers, Caledonia Jr. High
- Tech Geniuses, Oxford Jr. High
- Young Innovators, Truro Jr. High

Science Quiz Tournament Teams

- Science Explorers, Caledonia Jr. High
- Tech Geniuses, Oxford Jr. High
- Young Innovators, Truro Jr. High

ILA PROGRAM MENTORS

Virtual School Program Mentors

Dolapo Ajagbe

Franklin Che Mbende

Shanni Cyrus

Bintou Kaira

Philippa Ovonji-Odida

Tiffany Richards

Potso Robert

After School Program Mentors

Caledonia Jr. High, Dartmouth

Wamorena Chite- Coordinator

Demilade Onifade

Regina "Oré" Taiwo

Yewanda Taiwo

Oxford Jr. High School, Halifax

Tiffany Richards Coordinator

Unity Cooper

Lolu Egbewunmi

Massan Kamara

Yewanda Taiwo

Truro Jr. High

Ernest Korankye

St. Andrews Jr. High

N. Dennis Mwafulirwa

Michael Skinner

Whitney Pier Memorial Jr. High

Bomi Phuti

Louisa Esangbedo

First Lego League Robotics (FLL) Mentors

Renaldo Dames

Ernest Korankye

Aaron Marsman

Isaiah Reade

ILA Board

Dr. Pemberton Cyrus

Adrienne Glasgow-Slawter

Barb Hamilton-Hinch

Lorna Little

Kevin Reade

Dr. Wilber Menendez Sanchez

Oluronke Taiwo

Dr. Keith Taylor

ILA Staff

David Woods

Aaron Marsman

Wanda Colley-Administrator

Introduction of Keynote Speaker

Taking A Bold, New Path: Technological Dreams for students of African Descent

Keynote address by Kimberly Bryant, Founder and Executive Director Black Girls Code

Thanks to keynote and gift presentation

Barbara Hamilton- ILA Board

Musical Performance

Boyd Family Singers

STEM Experiment Presentations

1. ILA Caledonia Jr. High - ***Making a battery***

2. Oxford Jr. High - ***The Physics of Sound***

STEM Knowledge Quiz 'Fun' Game

Teams

1. Science Explorers, Caledonia Jr. High

2. Young Innovators, Truro Jr.

3. Tech Geniuses, Oxford Jr. High

4. Young Science Wolfpack, Memorial Jr. High

The importance of ILA - Student Testimonials

Simone Reade Gr. 9, Oxford Jr. High- ASP student

Haja Nabay Gr. 12, Citadel Jr High- VSP student

2014–15 Participation Awards Presentations

- ASP Participation Certificates
- VSP Participation Certificates
- FLL Robotics Participation Certificates
- FLL Robotics Special Award- Tech Geniuses, Oxford Jr.
- Inaugural ILA Science Quest
- Inaugural STEM Quiz Tournament
- Inaugural Project Challenge Tournament
- Summer Research Awards
- ILA-TD Opportunity University Entrance Scholarships
- ILA Student of The Year Awards

Closing Remarks

Dr. Pemberton Cyrus, ILA Board Chair

Join us for a reception for guest speaker Kimberly Bryant in the Peter Wilson Room across from KTS Hall immediately after the Closing Ceremony

2014–15 ILA PROGRAMS

After School Program (ASP)

A year long program of afterschool science-related activities for African Nova Scotian junior high students (Gr. 7-9) in which University mentors lead students in the study and exploration of STEM subjects through activities such as experiment presentations, field trips, guest speakers etc. Mentors also provide curriculum tutoring in mathematics and science. This year ILA added several new activities to ASP including Project Challenge Science Quiz and African Heritage Month School Presentation Projects. School groups also selected their own names designed their own T-shirts and could earn points for participating in various activities over the course of the year.

FIRST Lego League Robotics (FLL) PROGRAM

ILA university mentors lead student teams in the building and programming of Lego Robots for competition. Teams take part in regional and provincial qualifying contests vying for a spot in the annual FLL Robotics Provincial Championships at Acadia University each February.

ILA-TD Opportunity University Entrance STEM Scholarships

Students participating in ILA programs can earn up to a \$5,000 scholarship award to study a STEM field at Dalhousie University upon graduation from High School. Scholarships can be earned in graduated amounts based on academic performance and participation in ILA programs beginning in Gr. 7.

ILA Summer Research Awards

African Canadian 'STEM' university students can earn a \$6,500 summer research study award to conduct specialized research in STEM field of study. Four awards are granted annually in fields of Health Professions, Medicine, Engineering and Sciences.

African Nova Scotian STEM Achievers Display

A mobile and on-line display featuring African Nova Scotian scientists and STEM achievers (e.g. Haligonian Michael Duck inventor designer of Sure Shot Dispenser used by MacDonald's Tim Horton's and Pizza Hut Restaurants). ILA uses this display to promote interest in STEM study and professions and to show local STEM achievements to younger students.

STEM Project Challenge Competition

ILA ASP teams re-create of an invention or technological innovation pioneered by a person of African descent. Teams compete in Science Fest- a juried one-day provincial annual competition in Halifax to determine the top project presentations. In future years ILA plans to open this competition to any interested school or community team.

STEM Quiz Competition

A science knowledge quiz competition for ASP teams with questions based on science and technology subjects as well as on scientists and STEM achievements by persons of African descent. Teams compete in regional round robin tournament vying for a spot in the one-day provincial finals in Halifax.

Science Quest

An annual science event featuring science and technology displays, career counselling, guest speakers, and the provincial finals of ILA's Project Challenge and Science Quiz competitions.

Group Points Championships

ILA ASP groups have the opportunity to earn points for participating in ILA and other community STEM related activities over the course of the school year. Teams accumulate group points as well as compete for individual team awards including Group Point Champions, Best Group Science Project, Top African Heritage Month School Presentation etc.

(Please note that ILA is looking for sponsorship to maintain its wide array of programs and activities. Financial and in kind donations in support of the above outlined programs and activities are welcomed)

PRESENTERS AND AWARDEES

Short Bios

PRESENTERS

MC - David Woods

David Woods has been the Executive Director of ILA since September 2013. He is an author educator visual artist playwright and cultural researcher who has contributed research and writings to numerous projects exploring African Canadian history and culture over the past four decades including academic texts film documentaries music recordings and historical exhibitions. Woods was the founder and first Director of the Cultural Awareness Youth Group (1983-1992)- a pioneering Africentric youth education development agency that was awarded a Commonwealth Youth Fellowship Prize in 1985 recognizing it as one of the most innovative in the Commonwealth. He was also the organizing founder of the Black Artists Network of Nova Scotia, Black History Month Association, Voices Black Theatre Ensemble, and the Preston Cultural Festival. This year Woods developed and implemented several new ILA activities including Project Challenge the ILA Science Quiz Tournament the African Nova Scotian STEM Achievers Display and Science Quest.

Guest Speaker: Kimberly Bryant

Kimberly Bryant is the Founder and Executive Director of Black Girls CODE a non-profit organization dedicated to "changing the face of technology" by introducing underrepresented girls to the field of technology and computer science. Before founding Black Girls CODE Bryant enjoyed a successful 25+ year professional career in the pharmaceutical and biotech industries as an Engineering Manager in a series of technical leadership roles at several Fortune 100 companies such as Genentech Merck and Pfizer. Since 2011 Black Girls CODE has grown from a local grassroots organization serving only the Bay Area to an international non-profit with chapters across the U.S. and in Johannesburg South Africa. Black Girls CODE

has currently reached over 3000 students and continues to grow and thrive. Bryant serves on the boards of many national organizations such as the National Champions Board for the National Girls Collaborative Project and the National Board of the NCWIT K-12 Alliance. Bryant has received numerous awards and recognition for her work as a social innovator focused on increasing opportunities for women and girls in the technology industry. Bryant was given the prestigious Jefferson Award for Community Service and honoured by Business Insider on its list of "The 25 Most Influential African-Americans in Technology" and named to The Root 100 and the Ebony Power 100 lists. In 2013 Bryant was recognized as a White House Champion of Change for her work in tech inclusion and for her focus on bridging the digital divide for girls of color. In 2014 Bryant received a Smithsonian American Ingenuity Award in Social Progress and was given the inaugural Women Who Rule Award in Technology via Politico. She has been identified as a thought leader in the area of tech inclusion women and leadership and education and continues to speak on these topics at events such as the Personal Democracy Forum TedX Kansas City Platform Summit Big Ideas Festival SXSW and many others.

Performers: Boyd Family Singers

The Boyd Family Singers is a contemporary gospel vocal ensemble that has been performing for over 23 years. The group consists of Rev. Gary Boyd his wife Louise and children Tracey, Melissa and Trevor. The family began singing at Good Shepherd Church, Lawrencetown which was pastored by Rev. Boyd until his retirement in 2014. Their rich harmonies and energy soon drew the attention of other church congregations and the group found itself in demand for performances at churches across Halifax. In addition to church performances, the group has also performed at the Freedom Festival- an annual African community Nova Scotian cultural festival held at the Black Cultural Centre and the Inglewood Black Community Reunion.

Presenters

Dr. Pemberton Cyrus B.Sc.(Eng) (UWI) M.A.Sc. Ph.D. (TUNS) P.Eng. F.E.C., ILA Board Chairperson

Dr. Pemberton Cyrus is the Associate Dean of Engineering at Dalhousie University responsible for Undergraduate Studies and for coordination with the six Associated Universities that feed students undergraduate engineering programs at Dalhousie. He is a Fellow of Engineers Canada and has taught industrial engineering for over 30 years.

Barb Hamilton-Hinch B.ScR. M.A. B.Ed., ILA co-founder and current Board member

Barb Hamilton-Hinch is an Assistant Professor in the Department of Recreation and Leisure Studies in the School of Health and Human Performance Dalhousie University. She has held positions as Black Student Advisor Dalhousie University; Recreation Coordinator, Halifax Regional Municipality; and General Manager of the Community YMCA in Halifax. She is currently completing her PhD in Health Sciences.

Dr. Kevin Hewitt BSc, Phd Physics, Co-founder ILA, ILA Board Chair 2009-2013

Dr. Kevin Hewitt is an Associate Professor of Physics & Atmospheric Science at Dalhousie University.

STUDENT OF THE YEAR AWARDS

Awarded to students who combine strong academics a career interest in STEM and exemplary participation in an individual ILA program.

AFTER SCHOOL PROGRAM (ASP) AWARDEES

SheaLyn Johnson Gr. 8 Caledonia Jr. High Dartmouth This year SheaLyn was elected president of the ILA Caledonia Jr group. She was also a member of the group's Project Challenge and Science Quiz Teams that competed in Science Quest and finished in second place overall.

KaiLun Grant Gr. 8 Oxford Jr. High Halifax

Kailun has a strong interest in science and plans to become an archaeologist or palaeontologist. She is in her 2nd year participating in ASP and also joined Oxford's championship winning Project Challenge and Science teams this year. Next year Kailun also plans to join the group's Robotics Team.

Simone Reade Gr. 8 Oxford Jr. High Halifax

Simone is an avid student with a strong interest in science who maintains a 94% grade average. This is her second year participating in ILA's ASP. She also participated in the FLL Robotics Team, Project Challenge and Science Quiz Teams. Besides her involvement in ILA Simone is also an avid painter, creative writer, and contemporary dancer. Simone plans to be a paediatrician.

Nathan Morris Gr. 9 Truro Jr. High Truro

Nathan has been involved in ILA's ASP and FLL program for the past three years. He was part of the Truro Jr. "Top Robots" FLL Team that won Best Mechanical Design Award at the 2014 Acadia University FLL Provincial Championships. In addition to FLL, this year he also joined the Project Challenge and Science Quiz teams. He really enjoyed working on the Project Challenge project building an Illusion Mirror - an application of the Illusion Transmitter invention by African American scientist Valerie Thomas.

The project finished in second place at Science Quest.

Travis Collier Gr. 9 Memorial Jr. High Sydney

Travis has been involved with ILA's ASP for three years. He enjoys gym math and science in school and video games and skateboarding in his leisure time. He plans to attend NSCC for pipefitting.

FIRST LEGO LEAGUE ROBOTICS AWARDEES

Tristan Rollins Gr. 8 Truro Jr. High School

Tristan has been a member of Truro's "Top Robots" FLL Robotics Team for two years. This year he also participated in the group's Project Challenge and Science Quiz teams. He would like to be a medical doctor in the Canadian military and is currently a member of the Cadets' League in Truro.

Branden Thompson Gr. 8 Oxford Jr. High

Halifax This is Branden's first year on Tech Geniuses ILA's Oxford's FLL Robotics team which finished in the top ten at the Acadia University provincials. Branden is the team's main programmer and competes with team member Simone Reade on the Robot Board Games section of the FLL competition. He is also an avid football player and was selected to Nova Scotia's provincial juvenile team. He plans to become a medical doctor.

FLL SPECIAL AWARD COMMENDATION

Tech Geniuses of Oxford Jr. High School competed in the Halifax Regionals on Nov. 29 2014 where the team won the Enthusiasm and Spirit Award and qualified for the 2015 FLL Provincial Championships at Acadia University. The team competed with 25 other school teams at Acadia Championships and finished in tenth place in the Robot Board Games competition one of the highest ever placements for an ILA FLL team. Team members were Keyan Clayton, Storme McNeil, Riley Paris, Kennedy Prest, Simone Reade and Branden Thompson Coaches: Reynaldo Dames, Aaron Marsman and Isaiah Reade.

VIRTUAL SCHOOL PROGRAM (VSP) AWARDEE

Haja Nabay Gr. 12 Citadel High School Halifax

Haja migrated from Sierra Leone, West Africa to Canada in 2008 at age 10. She lived in London Ontario before moving to Halifax in 2011 where she attended Oxford Jr High School. It was at Oxford where she first joined the ILA's ASP and she credits that experience with building her confidence in science and math subjects as well as introducing her to local students. Haja currently attends Citadel High School and has been a participant in VSP for the past three years. She will be attending Dalhousie University next year for the Bachelor of Science Program.

ILA-TD OPPORTUNITY (UNIVERSITY ENTRANCE) SCHOLARSHIPS AWARDEES

Awarded to ILA participants who combine strong academics exemplary participation in ILA and plan to attend Dalhousie University to study a STEM related field.

KaiLun Grant Gr. 8 Oxford Jr. High Halifax is a grade 8 student at Oxford School.

(See previous ASP Awardees bio)

Simone Reade Gr. 8 Oxford Jr. High Halifax

(See previous ASP Awardees bio)

Haja Nabay Gr. 12 Citadel High School Hfx

(See previous FLL Awardees bio)

Rafeeda Khashmelmous Gr. 12 Halifax West

High Rafeeda was first involved with ILA2013 when she took part in a special ILA-SuperNOVA Summer Science camp and volunteered with her sister Gaidah (an ILA mentor) helping out with the FLL Robotics Program. Since then she has been a VSP student for the past three years. She feels that ILA has helped her gain confidence as a student and has solidified her interest in pursuing a career obstetrics and gynecology.

ILA-TD Scholarship Renewals for previous awardees

Current holders of ILA-TD Scholarships are renewed with the maintenance of a GPA of 2.7 or above and continued involvement in ILA

UNIVERSITY AWARDEES (\$3,500 PROMISE FOR FALL OF 2015)

Latisha Reynolds - 1st yr Dalhousie University

HIGH SCHOOL AWARDEES (\$2,500 PROMISE FOR 2016)

Tamara Phee Gr 11 - John Hugh Gillis High, Antigonish

Haley Matthews Gr 11- Cobequid Educational Centre, Truro

Isaiah Reade Gr11- Citadel High, Halifax

Teanna Sparks Gr. 11- Citadel High, Halifax

JUNIOR HIGH SCHOOL AWARDEES (\$1,000 PROMISE FOR 2019)

SheaLynn Johnson Gr. 8- Caledonia Jr Dartmouth

Nathan Morris Gr. 9- Truro Jr

ILA-DALHOUSIE UNIVERSITY SUMMER RESEARCH AWARDEES

Faculty of Medicine Award

Prudence Bull Emmanuel 3rd yr Science, St. Mary's University Prudence is originally from Nigeria and is completing her Bachelor of Science degree with a Major in Biology and Psychology at Saint Mary's University (SMU). Prudence is an avid volunteer and a member of the SMU Medical Society the SMU Psychology Society and the SMU Children's Wish Foundation Society. Prudence is committed to a career in pediatrics or gynaecology.

Prudence will participate in a clinical study to examine the use of dexrazoxane in pediatric oncology. Her research will be under the guidance of Dr. Ketan Kulkarni and Dr. Tamara MacDonald of the IWK Health Centre.

Faculty of Science Award

Dario Brooks 3rd yr Mathematics Dalhousie University Dario is from Dartmouth, Nova Scotia with family roots in East Preston. He is completing his Bachelor of Science degree with honors in Mathematics and Physics at Dalhousie University. Dario has published papers on his work in mathematics and also presented at local and national conferences. He has also tutored junior and high school students in math and science as part of the Youth Advocate Program and the Black Educators Association Cultural Enrichment Program. Dario served as President of the Dalhousie University Undergraduate Mathematics and Statistics Society from 2012–2014.

Dario will conduct research in the area of mathematical physics under the guidance of Professor Alan Coley, Mathematics and Statistics Department, Dalhousie University.

Faculty of Engineering Award

Bai Bintou Kaira 2nd yr Engineering Dalhousie University Bintou is from Gambia West Africa and is a second-year Chemical Engineering student at Dalhousie University. In September 2014 she was awarded a \$25000 renewable Slight Family Foundation Scholarship. Bintou is a very active volunteer who serves as Treasurer of the Dalhousie African Student Society, Education Coordinator of AIESEC at Dalhousie University, and a member of the Dalhousie Medical Response Team. Bintou also works as a mentor with ILA's VSP.

Bintou will research the optimization of a membrane system for CO2 removal in anesthesia circuits under the guidance of Dr. Jan Haelssig- Assoc. Prof. Dept. of Chemical Engineering, Dalhousie University.

Faculty of Health Research Award

Tiffany Richards 2nd yr Mt. St Vincent University Tiffany hails from Truro Nova Scotia. She has earned an Honors Bachelor of Science in Psychology from York University and is currently completing her Honors BSc in Applied Nutrition at Mount Saint Vincent University (MSVU).

Tiffany has a long history of involvement in mentorship within the African Canadian community. In the past she has served as a mentor in after school homework programs in her home community of Truro and in inner city Toronto. Tiffany has travelled to Haiti as a volunteer with relief efforts following that nation's devastating 2010 earthquake. She is the founder and coordinator of the Discovery Day Program at MSVU, a program provides African Nova Scotian students from outside of the HRM with the opportunity to experience post-secondary education for the day and co-committee chair for the MSVU Chapter of the World University Service of Canada-an organization which helps refugees obtain post-secondary education in Canada. Tiffany began working as ASP Coordinator at Oxford Junior High School and as a Mentor with VSP in September 2014.

Tiffany will develop and evaluate an applied human nutrition activity for use among African

Nova Scotian youth in partnership with Imhotep's Legacy Academy under the supervision of Dr. Sara Kirk- School of Health and Human Performance, Dalhousie University and Shannon Grant- Faculty of Applied Human Nutrition, Mount Saint Vincent University.

2014-2015 ILA PARTICIPANTS

ILA BOARD MEMBERS

Dr. Pemberton Cyrus- Chair
Adrienne Glasgow- Slawter
Barb Hamilton-Hinch
Lorna Little
Dr. Wilber Menendez Sanchez
Kevin Reade
Oluronke Taiwo
Dr. Keith Taylor

ILA Staff

David Woods- Executive Director
Aaron Marsman- Junior Program Officer
Wanda Colley- Administrator

After School Program Coordinators

Wamorena Chite- Caledonia Jr.
Michael Fisher- St. Andrews Jr.
Ernest Korankye- Truro Jr.
Bomi Phuti- Memorial Jr
Tiffany Richards- Oxford Jr.

ASP Mentors

Unity Cooper
Obalolu Egbewunmi
Louisa Esangbedo
Massan Kamara
Shathani Manako
Demilade Onifade
Regina Taiwo
Yewande Taiwo

VSP Mentors

Dolapo Ajagbe
Franklin Che Mbende
Shanni Cyrus
Philippa Keri Ovonji Odida
Tiffany Richards

FII Robotics Coordinators/Mentors

Renaldo Dames
Ernest Korankye
Isaiah Reade

ASP Participants

Caledonia Jr High

Jane Courtney Gr. 7
Sara Courtney Gr. 9
Eriana Downey Gr. 9
SheaLynn Johnson Gr. 8
Carmahn McCalla Gr. 8
Hannah Kennedy Gr. 8
Madison McLellan Gr. 8
Damian Moreno Alba Gr. 7
Jessica Thomas Gr. 9

Oxford Jr. High

Keyan Clayton Gr. 9
Neisha Deleon Gr. 9
KaiLun Grant Gr. 8
Storme McNeil Gr. 7
Riley Paris Gr. 8
Kennedy Prest Gr. 9
Simone Reade Gr. 8

Truro Junior High

Izabelle Chase Gr. 6
Tyree Desmond Gr. 8
Nathan Morris Gr. 9
Janelle Paris Gr. 6
Tristan Rollins Gr. 8

St. Andrew's Jr.

Sydney Bower Gr. 7
Jada Desmond Gr. 7
Marcel Desmond Gr. 7
Kayla Jordan Gr. 7
Jason MacDonald Gr. 7
Ashton MacRae Gr. 6

Whitney Pier Memorial Jr.

Travis Collier Gr. 9
Maryn Wren Fraser Gr. 9
Tyra Kirton Gr. 9
Nicholas Maclean Gr. 9

VSP Participants

Ayéélé Atiwoto Gr. 9
Similoluwa Bankole Gr. 10
Unity Cooper 1st yr university
Akili Cyrus Gr. 11
Rylee Hendricks Gr.8
Favour Fagbile 1st yr university
Karin Jafer Gr. 12
Zielle Jones Gr. 10
Kawama Kasutu Gr. 10
Rafeeda Khashmelmous Gr. 12
Kevin Khisa Gr. 12
Leah Khisa Gr. 11
Mukisa Kakembo 1st yr university
Massan Kamara 1st yr university
Mulenga Kasutu 1st yr university
Benedicta Koumako Gr.12
Lescott Makiwa Gr. 12
Fatuma Marsman Gr. 12
Haley Matthews Gr.11
Diteasha Mercer Gr. 11
Adrien Mopoho Gr. 12
Nikaya Paris Gr.12
Haja Ramatu Nabay Gr.12
Isaiah Reade Gr.11
Acacia Sealey-Magionas Gr. 10
Kyla Simmons Gr. 12
Preston Simmons Gr. 12
Levi Smith III Gr. 12
Hannah Sparling Gr. 10
Jaime Spinazola Gr. 8
Helen Timbo 1st yr university
Tarrah Turner Gr. 10

FLL Participants

Oxford Jr. High

Keyan Clayton Gr. 9
Neisha Deleon Gr. 9
Storme McNeil Gr. 7
Riley Paris Gr. 8
Kennedy Prest Gr. 9
Simone Reade Gr. 8
Branden Thompson Gr. 8

Truro Jr. High

Nathan Andong Gr. 6
Tyree Desmond Gr. 8
Brandon Martin Gr. 8
Nathan Morris Gr. 9
Tristan Rollins Gr. 8

Whitney Pier Memorial Jr

Travis Collier Gr. 9
Maryn Wren Fraser Gr. 9
Tyra Kirton Gr. 9
Nicholas Maclean Gr. 9

2015 PROJECT CHALLENGE TEAMS

Tech Genius, Oxford Jr.
Young Innovators, Truro Jr.
Science Explorers, Caledonia Jr.

2015 STEM QUIZ TOURNAMENT TEAMS

Tech Genius, Oxford Jr.
Young Innovators, Truro Jr.
Science Explorers, Caledonia Jr.

2014-15 FINAL POINTS STANDINGS

1. Tech Genius, Oxford Jr. 550 pts
2. Young Innovators, Truro Jr. 415 pts
3. Science Explorers, Caledonia Jr. 290 pts
4. Young Science Wolfpack, Memorial Jr. 155 pts
5. STEM Achievers, St. Andrews 100 pts

Summer Research Award Winners

Dario Brooks Dalhousie
Prudence Bull Emmanuel SMU
Bintou Kaïra Dalhousie
Tiffany Richards MSVU

School Advisors

Brian Borden- Student support worker,
Memorial Jr., Sydney
Gord Gallimore- Student Success Teacher,
St. Andrew's Jr., Antigonish
Aaron Jackson- Teacher, Caledonia Jr.
Lorraine Reddick- Student support worker,
Dr. John H. Gillis High, Antigonish
Tracey Skinner- Student support worker,
Truro Jr. Truro
Annette Woods-Teacher Oxford Jr. Halifax

Academic Mentors

Halifax

Dr. Pemberton Cyrus- Associate Dean of
Engineering, Dalhousie University
Dr. Kevin Hewitt- Assoc. Prof. Physics &
Atmospheric Science, Dalhousie University
Dr. Wilbur Menendez Sanchez- NSCC Faculty
Academics & Career Connections
Dr. Tobias Karakach- Research Officer NRC
Photometry Radiometry and Thermometry
Dr. Sophia Stone- Assoc. Prof. Department of
Biology, Dalhousie University

Truro

Dr. Chibuike C. Udenigwe- Assoc. Prof.
Department of Environmental Sciences,
Dalhousie University

Antigonish

Dr. Emeka Oguejiofor- Assoc. Prof. Department of
Engineering, St. FX University

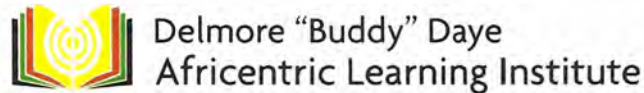
Sydney

Dr. O. Thomas Bouman- Assoc. Prof. Biology
Chair, Cape Breton University
Dr. Geoffrey Lee Dadswell- Assoc. Prof. of
Physics, Cape Breton University



ACKNOWLEDGEMENTS

ILA would like to acknowledge the funders of its unique, educational programs:



Faculty of Engineering • Faculty of Medicine University
Faculty of Science • President's Office • Strategic Initiatives Program



2014-15 Media Coverage

WRITTEN BY TEENS FOR TEENS

TEENS NOW TALK™



25 MUST HAVE
summer items

Celebrity
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Imhotep Legacy Academy

Increasing the representation of African Canadians in STEM professions: science, technology, engineering and math

Interview



Learning can be so much fun – we want to show you how. The TNT teen team of Danielle Ingraham, Tyrique Dixon Bowden and Ayonna Smith met up with the Imhotep Legacy Academy, an exciting program that motivates the African Nova Scotian youth of today to become the successful scientists, mathematicians and engineers of tomorrow.

The team put weeks of developing their writing, communication, reporting and photography skills to work while having tons of fun interviewing youth attending the Imhotep Legacy Academy. They visited the academy at two of its three locations – Oxford Junior High School in Halifax and Caledonia Junior High School in Dartmouth.

"I am very shy, and this process helped me to open up, ask questions and enjoy being around people I didn't know," says Danielle. "I left wishing our school had this program." "I learned so much about the program," says Tyrique. "The students were having so much fun and you can see how learning about math and science was made fun and easy to remember."

The team sat down with Adena Brown, coordinator of Imhotep Legacy Academy (ILA). ILA is an academic enrichment program affiliated with Dalhousie University, which aims to increase the representation of African Canadians in science, technology, engineering, and math professions. The programming is offered to students at three levels of their education.

TNT: How can youth get involved in the program?

Adena: It is free to come. All you have to do is sign up. Our groups meet on the following days and locations:

- Truro Junior High: Wednesdays, 3:30–5:30 p.m.**
- Caledonia Junior High: Tuesdays, 3:15–4:30 p.m.**
- Oxford Junior High School: Fridays, 3:15–4:30 p.m.**

TNT: What kinds of things do students learn?

Adena: Students do science activities that are appropriate to their age level. The grade sevens might make pinhole cameras and take pictures outside, then develop the pictures themselves. They make different types of slime, plastic and polymers. All of the activities are STEM related. The math exercises are built around what the students are working on in class, so it helps them directly with what they are working on.

For more details, feel free to contact the Imhotep Legacy Academy office.
 Phone: (902) 494.2400
 Toll-free: 1 (866) 996 9452
 Email: imhotep@dal.ca
 Web: www.dal.ca/faculty/science/imhotep.html



Imhotep Legacy Academy Students in Truro NS

After-School Program Coordinator Alma Zalo, with participants Tristan Rollins, Braiden Lynn, Nathan Morris, Haley Matthews.

Imhotep Legacy Academy Students at Oxford School Halifax



Nykeala West

Education, to me, means having a voice and the opportunity to learn things that not everybody gets to learn. Imhotep Academy has taught me that math becomes easier when you sing it. It has helped me understand science and math. I heard about it through a presentation that was done at my school, but I didn't decide to come until recently.



Barb Loppie

I learned that songs are an easier way to learn math. Imhotep Academy has taught me about sound waves and the physics of music. The higher the notes, the faster the speakers vibrate. I have also learned about plant chromatography, which is about extracting colours from plants. It is plant DNA and the pigments it contains. One of my friends told me about the program.



KaiLun Grant

What education means to me is having the opportunity to express yourself in the job that you pick. I learned that you can make a steam boat out of a milk carton. Imhotep Academy is helping me with math and my understanding of science. I heard about the program through my friend's brother, who was in the program.



Simone Reade

I learned how to do math, long division. Imhotep Academy has helped me by doing stuff in math we hadn't done yet, so I was ahead of my class. I heard about it because my brother was in it for 3 years.



Kennedy Priest

What education means to me is having a successful future. Imhotep Academy is helping me with my math skills. I heard about the program through my mom's work, her friend's son was in the program.



Imhotep Legacy Academy Students at Caledonia Junior High in Dartmouth

Shay-Lynn Johnson

What education means to me is getting good grades. I want to become a police officer, and math and science are very important to my career.



Carmen McCulloch

Education means learning what you need to know for when you get older. I want to be a marine biologist – the fun science and math knowledge I learn at Imhotep today will come in handy in my future.



Jessica Thomas

Education, to me, means power. I want to be a lawyer. Today, making slime: tomorrow, crime scene investigations.



Delmore "Buddy" Daye
Africentric Learning Institute

Dedicated to improving the educational experiences, opportunities and outcomes for African Nova Scotian learners and educators

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Truro junior students second at Imhotep science competition

Published on June 01, 2015

TRURO – A group of students from Truro Junior High School earned a second-place finish at the Imhotep Legacy Academy Science Quest provincial championships.



© Joey Smith – Truro Daily News

Truro Junior High School students Tyree Desmond, left, Tristan Rollins and Nathan Morris finished second at the Imhotep Legacy Academy Science Quest provincial championships on Saturday in Westphal.

Nathan Morris, Tyree Desmond and Tristan Rollins entered a project on African American scientist and inventor Valerie Thomas into the competition at the Black Cultural Centre in Westphal on Saturday.

“They did really well,” said ILA co-ordinator Ernest Korankye, who worked with the boys for six weeks on the project. “The judges were happy with the whole project and their creativity.”

The competition, called the Stem Project Challenge, had students re-create inventions and/or technological innovations pioneered by scientists of African descent for a public presentation.

Thomas invented the illusion transmitter, for which she received a patent in 1980. The device produces optical illusion images using two concave mirrors.

Using the same principles as Thomas, the boys built their own illusion mirror. Using a wooden frame, LED lights, glass, a mirror and tint film, they created the perception of a hole with great depth.

“I was very, very proud of them even before the competition,” Korankye said. “For them to come up with the project themselves is a big thing.”

Oxford Junior High School in Halifax won the challenge for its presentation on U.S. space scientist George Carruthers and his invention, the Lunar Spectrograph.

Caledonia junior high also took part in the competition and made a presentation on U.S. inventor Lonnie Johnson and his invention, the Super Soaker water gun.

There was also a quiz championship where teams were tested on their knowledge of science, mathematics and technology subjects, and inventions and technological innovations pioneered by scientists of African descent.

The Truro team, however, withdrew from the quiz due to a scheduling conflict.

Web Source: <http://www.trurodaily.com/News/Local/2015-06-01/article-4166605/Truro-junior-students-second-at-Imhotep-science-competition/1>

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Spring is now here, so please give S.A.J Property Management and Construction a call for any chimney repairs & installation, interior/exterior painting, flat/shingle roofing repairs, and all masonry work. Please call 902-580-9500 Jason or 402-6922 Russell.

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► **Gwen's Bridal**

School proms and Wedding Bells are ringing. Contact Gwen Cain-Shepherd at 902-433-0591 for men and women's bridal, evening, church, formal and informal wear, specializing in the full figured women. Check out our profile in this issue!

► **Imhotep's Legacy Academy (ILA)**

Imhotep's Legacy Academy has been in operation since Sept 2003. It is an educational support organization that provides mentoring and tutoring programs in sciences, technology, engineering & mathematics (STEM) to African Nova Scotia students in junior and high schools in metro and other communities across the province (Truro, Antigonish, Sydney). ILA also provides on-line tutoring in STEM for grades 10-12 students and in person at the Killam Memorial Library, Dalhousie University. Finally ILA provides scholarships and research studentships to African Nova Scotian students at the post-secondary level. Call for more info 902-494-7884.



EDUCATION FOR CHANGE: New Specializations in the Master of Education Program

Last year, the Faculty of Education introduced the “Education for Change” field of study to the Master of Education program, with three areas of specialization: social justice education, Indigenous education, and environmental and sustainability education.

“These three specializations embody areas of scholarship and change that are critically important at this moment in history, and reflect the broad commitments of our faculty,” explains Dr. Paul Berger, Chair of Graduate Studies and Research in Education.

Students who choose to pursue the “Education for Change” field can complete a thesis or portfolio relating to their specialization, or they can pursue a course-based program in which they study educational theory, research, and practice in their chosen field.

A number of Master of Education students are pursuing the new specializations. Here is a closer look at some of the work taking place.

Social Justice Education

Diandra Singh

MEd student, thesis route

Thesis: “Students’ Perceptions of the Imhotep’s Legacy Academy After-School Programme”

Supervisor: Dr. Tony Bartley

The Social Justice Education specialization caught my interest as my main reason for being an educator is to help urban youth excel academically, in spite of the systems that oppress them.

I focused my research on a Dalhousie University programme: the Imhotep’s Legacy Academy (ILA). The ILA offers hands-on, culturally relevant, after-school STEM (science, technology, engineering, mathematics) programmes to African Nova Scotian students in Grades 7-9, to redress the issues they face within the education system. I wanted to research students’ views to help the ILA enhance their programme. Soon, I was on a plane to Halifax and traveling across icy Nova Scotia terrain (Cape Breton, Antigonish, Truro, Dartmouth, and Halifax), collecting data for my mixed methods study.

My data analysis revealed that the ILA students had much to share about their experiences, which enabled me to make meaningful recommendations to the Board of Directors. I was given the opportunity to disseminate findings at the ILA’s annual closing ceremonies and was humbled by the appreciative feedback I received. Changes are happening within the ILA that are based on my research findings: my research *did* matter and students’ voices *were* heard through it. None of this would have been possible without Lakehead giving me the support and freedom to pursue an academic path that met my learning needs and interests!

(continued on next page)