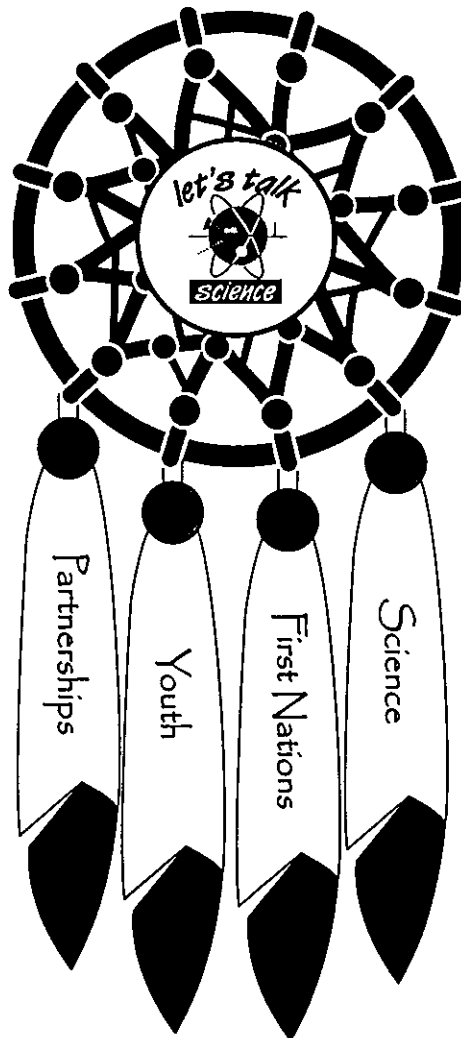


1999 Native Youth Science Leadership Project

Final Report



Let's Talk Science

September, 1999

PREAMBLE

This report was composed at the conclusion of the 1999 Native Youth Science Leadership Program (NYSLP). As the coordinator of this year's program, this is my written account of the summer of 1999. This year the NYSLP united efforts from academic, corporate, government and First Nations sectors in Ontario. As we recognize and embrace these partnerships it is important to reiterate the astounding lessons learned and the messages delivered by the 1999 NYSLP.

This summer, seven high school students (3 female, 4 male) joined Let's Talk Science as Assistant Counselors for summer Science camps delivered at The University of Western Ontario. After receiving an appropriately designed orientation and training program, which fostered personal development and team building, they learned and then delivered hands-on Science programs to children. As their public speaking, presentation and teamwork skills evolved, the Assistant Counselors naturally assumed roles as young Ambassadors for their individual communities, First Nations people as a whole, Let's Talk Science and the University of Western Ontario. Throughout their term of employment with the NYSLP (June 28th - August 27th, 1999), each Assistant Counselor grew in confidence and Scientific literacy.

As I reflect upon this summer's accomplishments, the tangible and intangible, I eagerly anticipate the blossoming of many achievements. The seven Assistant Counselors grew into young adults who gained a richer insight into their future, their education and themselves. Importantly, as a First Nations woman, I can attest to the urgent need for similar growth among Canada's Native peoples. So it is with an inner pride and honour, that I await the future that beholds the 1999 NYSLP participants – the Assistant Counselors and the children throughout Southwestern Ontario.

Jodie-Lynn Waddilove
1999 Native Youth Science Leadership Program Coordinator

1999 PROGRAM SUPPORTERS

**Great West Life Assurance Company
London Life
The Bank of Montreal
The Department of Indian and Northern Affairs Canada
The Southern First Nations Secretariat
Oneida of the Thames
Chippewa of the Thames
The Munsee-Delaware Nation
Sport Western, UWO**

LET'S TALK SCIENCE FIRST NATIONS ADVISORY COUNCIL

As a result of collaborative efforts between Let's Talk Science and area First Nations communities (Chippewas of the Thames, the Munsee-Delaware Nation, the Oneida of the Thames and Walpole Island) the Let's Talk Science First Nations Advisory Council was formed in 1997.

Begun as a pilot project by the Advisory Council in 1998, the NYSLP has evolved into a unique leadership and mentorship program thanks to the efforts from all partners. Although Let's Talk Science develops and delivers the NYSLP, the Advisory Council is informed and monitors the administration of this program. Input from the Advisory Council throughout the year ensures that the First Nations communities have the opportunity to actively participate in this program.

As a result, a sincere and committed participation from the First Nations communities is critical. The present relations with the Advisory Council need an increased participation by the First Nation membership. It is the intention to maintain a collective and well-informed circle of partners. With the possible extension of membership to include the individual Chief and Councils, such a formal endorsement and/or participation may allow the progress and successes of the NYSLP to spread even more. It is the intent of this program to expand the opportunities for Aboriginal students - the future leaders of our communities.

PROGRAM OVERVIEW

During July and August seven Native high school students (3 female and 4 male) were employed as Assistant Counselors for Let's Talk Science's summer Science camps offered on the campus of The University of Western Ontario through Sport Western. They were responsible for assisting two university students with the delivery of hands-on Science activities for children, aged 4-15. When not working directly with the children, they participated in a development program designed to improve their confidence, leadership ability and attitudes towards lifelong learning.

In July, the NYSLP participants were trained to lead Science activities in the summer camps and in August they also traveled to area Reserves to share the activities with young Native children (please see Appendix 1 for photos).

FIRST NATIONS PEOPLE, EDUCATION AND SCIENCE

- According to *First Perspective Online*, jail is more likely than university for Aboriginals. An Aboriginal woman's chances of being in prison are far greater for her than attending university.
- Aboriginal people make up to 70 percent of most prison populations, though they make up only two percent of the Canadian population.
- Facts from *Stats, Issue No. 9 - December /January 1996*, indicates the highest concentration of First Nations students in General Arts and Sciences programs, Social Sciences, Business and Commerce and Education. The lowest participation rates were found in Agriculture and Biological Sciences and in Mathematics and Physical Sciences.
- 28 percent of First Nations people living on reserve and 11 percent of First Nations people living off reserve, aged between 15 and 49, have less than a grade nine education compared to 6 percent of the Canadian Population, says Statistics Canada, 1993.
- 70 percent of First Nations peoples living on reserve and 44 percent of First Nations people living off reserve, aged between 50 and 64, have less than a grade 9 education compared to 26 percent of the Canadian population.
- Few Aboriginal people complete university programs. For Aboriginal people aged 15 and over, less than 3 percent have a university degree compared to 12 percent of the Canadian population.

The Mission, Vision, Values statement that follows outlines the NYSLP's intent to address these pressing issues.

MISSION, VISION AND VALUES

1999 Native Youth Science Leadership Program (NYSLP)

PREAMBLE

This document reflects the collective vision of education and leadership goals as described by First Nation peoples in Canada, and understood by Let's Talk Science. The collaboration between First Nations communities in Southwestern Ontario and Let's Talk Science will foster this pursuit. Fulfilling this vision will depend on partnerships between youth, educators, government, industry and Aboriginal and non-Aboriginal people.

VISION

Let's Talk Science is a national registered charitable organization working to develop a society that is Scientifically literate and globally competitive through innovative educational programs, research and advocacy. Recognizing that First Nation peoples are underrepresented in scientific fields, the Native Youth Science Leadership Program (NYSLP) was developed to share with First Nation youth the exciting opportunities available to them through higher education.

In employing First Nations' youth to educate other youth within First Nation communities, it is the mandate of the Native Youth Science Leadership Program to develop leadership skills and to enable role models and ambassadors to emerge as representatives of their communities and Nations. Their experiences with the NYSLP will enable participants and counsellors to engage confidently in scientific, technological and educational realms of society.

MISSION

As a program offered through Let's Talk Science, the Native Youth Science Leadership Program is seeking to increase the pursuit of scientific and higher education, in general, among Canada's First Nation Peoples. In order to address the disparity in the educational pursuits of First Nation children in science, technology, engineering and mathematics, the Native Youth Science Leadership Program is committed to developing and embracing its partnerships within the community.

OBJECTIVES

The objectives of this project are to:

- Provide high school aged First Nation youth with opportunities to experience fun, hands-on science and technology programs and learn about associated careers.
- Foster personal development including leadership skills, self-esteem and self-confidence.
- Increase the critical skill base of participants to improve their career options.
- Introduce First Nation youth to the university environment.
- Provide First Nation youth with an opportunity to work outside of their communities.

CORE VALUES

As we carry out our mission, the NYSLP will be guided by the following values:

- *Respect*: We will respect our partners and the youth, who participate in our programs.
- *Mutual Exchange*: We will encourage an open and collaborative effort in communicating and delivering the NYSLP.
- *Accountability*: We will ensure that we are accountable to all partners and communities involved.
- *Professionalism*: We will deliver and develop the NYSLP in a professional and ethical manner.
- *Compassion*: We will be compassionate and aware of the diversity of our partners and participants.
- *Innovation*: We will use creative and innovative means to design and implement the NYSLP.

COMMITMENT TO OUR COMMUNITIES

The partners and participants involved with the NYSLP are committed to their communities through:

- Quality service
- Sharing of resources
- Collaboration of efforts
- Cultural sensitivity
- Partnership and consultation
- Communication
- Effective methods of delivery of service
- Dedication to education

NYSLP PARTICIPANT SELECTION

Each of three First Nations communities sponsored NYSLP participants and administered their wages during the summer. Although the First Nations Advisory Council had authorized Let's Talk Science to interview and hire the Assistant Counselors, the final hiring decisions were actually made by each participating community. This resulted in a delay in hiring and prevented the involvement of the NYSLP coordinator and summer camp counselors in the process. There is need for improved efforts regarding the selection process. For example, a working relationship involving the Chiefs and Councils, the Employment Offices and the Education workers on reserve and the LTS staff, may improve and expedite the selection process. Despite the efforts made, this year's process was hindered by delays caused by bureaucratic practices on the reserves. The selection process should also be standardized to include a clear pre-hiring orientation session of what is expected of the chosen candidates.

PERSONAL AND PROFESSIONAL DEVELOPMENT

With the goals of fostering leadership skills, self-esteem and self-confidence, an orientation week was specially designed for NYSLP participants to ease their transition to employment off reserve. Each participant received an Assistant Counselor handbook, which included detailed information regarding employment policies, an NYSLP outline, training modules and other relevant materials (Appendix 2 contains a partial training schedule).

In addition to their science camp training the students also participated in regular individual and team building activities, which included public speaking exercises, grammar lessons, and interviewing techniques. As indicated by the program survey completed by each student at the end of the 1999 NYSLP, orientation week and these workshops significantly improved their individual levels of confidence, public speaking skills, and leadership and communications skills. Notably, each student regularly wrote about these development opportunities in their individual journals. They appear to have provided a foundation upon which additional skills were built throughout the summer.

During the first week of August a 'personal/professional development program' was offered to extend the aims of the orientation week. This week focused on each individual Assistant Counselor as a First Nations secondary school student. It was our goal to provide an active week, which would encourage the students to consider future career opportunities. The week was filled with visits to different professional environments in London and included:

- a provocative presentation by a First Nations family physician
- a personalized tour of the London City Police Headquarters
- a private meeting with the Honourable Diane Haskett, Mayor of the City of London
- a tour of City Hall

- an extensive career and facility presentation of St. Joseph's Hospital
The highlight of the week was an overnight field trip to the First Nations Technical Institute in Deseronto, Ontario.

All the visits and sessions delivered the same message: higher education, scientific and non-scientific, are vital to one's success. This message is especially important for First Nations students who face daunting statistics accompanied by significant social barriers. These development week activities appeared to inspire several NYSLP participants to establish more ambitious career objectives.

It is imperative that a personal and professional development week similar to the 1999 program remains as a permanent feature of the NYSLP. To simply educate and share Science awareness would undermine the greater vision of the NYSLP. Hence, the planning of an enticing career-oriented week for the students at mid-point of the program is crucial and invaluable.

FIRST NATIONS OUTREACH EFFORTS

The purpose of the outreach efforts in August was to increase awareness of the NYSLP, Let's Talk Science and most importantly Scientific literacy. By maintaining the relations created this summer, enthusiasm and interest from the First Nations communities can be fostered and should lead to greater opportunities and partnerships. The NYSLP participants delivered Science activities to children in five First Nations communities throughout Southwestern Ontario. Each community welcomed the educational sessions for their students. Both the day camp children and the on-reserve day camp counselors appreciated and learned more about Science. The First Nations communities were impressed by Let's Talk Science and the 1999 NYSLP's goals to address the disparity in education for Aboriginal people.

To witness the leaders and ambassadors emerge from the 1999 NYSLP was a very heartening experience. All seven NYSLP participants were very enthusiastic about teaching their own people within their own communities. To aid and foster the learning of young Native children was clearly a momentous experience for the NYSLP participants.

PROGRAM EVALUATION

Each week, NYSLP participants completed a private journal (Appendix 3), which helped to ensure a confidential forum for communication between individuals and the NYSLP Program Coordinator. Furthermore, several individual writing exercises ("My Story" and "Six Adjectives") helped the NYSLP participants to set individual goals and learn more about themselves. It also helped the NYSLP coordinator to understand some of the issues facing the students.

A series of science content quizzes (Appendix 4) were given to participants throughout the summer.

Every two weeks, the NYSLP coordinator and the two Head Counselors conducted individual evaluations with each participants. Although time consuming, this strategy was critical to monitoring the program and to highlight any necessary changes.

Regular team meetings provided continuity and were encouraging for the students. Additionally, very brief daily get-togethers (10-15 minutes) were instrumental for maintaining a team environment.

Program evaluations at the end (Appendix 5), as well as the individual evaluations of the Program Coordinator and the two Head Counselors helped assess the greater scope of the program (Appendix 6). It also allowed for student input.

RESULTS

The Science content quizzes that were administered throughout the summer demonstrated an improved level of understanding of science and technology. The questions were of increasing complexity on each successive quiz.

Letters about the program written by participants are included in Appendix 5. All participants viewed their experience as very positive. Interestingly, when asked to comment about the NYSLP, most commented about their leadership role in the summer science camps instead. It is not clear that the Native youth viewed the NYSLP as a "camp for them". Rather we believe that they understood the leadership activities as part of their "on the job training".

According to weekly self-reports and biweekly performance assessments that were done by the camp coordinators and NYSLP coordinator, the program appears to have successfully fulfilled the following objectives established by the Advisory Committee.

- a) Provide high school aged First Nation youth with opportunities to experience fun, hands-on science and technology programs and learn about associated careers.

"Working with this program has furthered my knowledge in the science field and changed my career views. The children are great, we all are learning and teaching one another."

"This is a good program for the kids. It keeps the young minds working, but at the same time it is fun. As well, visiting the First Nations communities in Southwestern Ontario will help young Aboriginal children get excited about science, which I feel is a profession that Native people are hardly getting involved in. I also believe that children are the future."

"The Let's Talk Science program is an exceptional way to teach young children about science. It is fun, educational and the only one around. The Native Youth Science Leadership Program will encourage Indigenous youth to be turned more onto science."

- b) Foster personal development including leadership skills, self-esteem and self-confidence (see Appendix 6 for self-reported scores).

"My leadership skills and maturity have increased dramatically since June. I feel more confident in speaking out."

"I think that the moment that I will cherish would be when one camper asked for my e-mail address so that we could keep in touch."

- c) Increase the critical skill base of participants to improve their career options.

"The program is a good experience for high school students and it teaches them a little bit of skills that they will need in the future."

"My most significant accomplishment this summer was the speech skills I improved."

"I really didn't know many things about writing letters or anything like that so I've learned more and I am thankful!"

"I am thankful to JLW for showing me how not to be so nervous when it comes to speaking and comm

- d) Introduce First Nation youth to the university environment.

There were no quotes relating to this objective specifically. However it was very clear by the actions of participants that they felt very comfortable on campus by the end of the summer.

- e) Provide First Nation youth with an opportunity to work outside of their communities. For most NYSLP participants, this was their first off-reserve employment opportunity.

"My most significant accomplishment for this summer was the fact that I got to teach Science to my own people!"

"Even though I have only had a few jobs so far, this one was by far the most enjoyable and rewarding. I really enjoy the combination of young children and science. They just look so amazed with all the experiments and its fun to hear what they have to say."

The following quote summarizes many of the comments received from NYSLP participants.

"The summer is actually over and today is the last day of work. I am really glad that I got the chance to work in this position because it has really helped me figure out a bunch of

things and learn a lot of new stuff as well. I think this NYSLP is a really good thing to have for Native high school students to experience. I know I never would have found out so much stuff about Science unless I got this job and it helped me find out what I have to do to make it where I want to go. Thanks, it was a fun summer."

CONCLUSIONS AND RECOMMENDATIONS

- Maintain the NYSLP Coordinator position for an Aboriginal young person. Preferably a First Nations university student who can relate easily to high school students. This position is essential to provide a realistic and positive role model for program participants.
- The NYSLP coordinator and summer camp counselors should be involved in final hiring decisions for assistant counselors.
- Orientation week is very important and should be reserved for individual and team building sessions. Training that will foster the building of self-confidence, public speaking and communication skills is crucial to the summer's program. A comprehensive handbook with relevant kit and training information is an important component of the orientation.
- As part of Orientation week, the following responsibilities should also be addressed.
 - pick up and drop-off for campers
 - set up and clean up duties
 - need for greater initiative on the part of the assistant camp counselors while the Coordinators are occupied or during camp activities
 - swimming
 - the importance of maintaining an awareness of individual and group conduct as well as keeping a level of professionalism in the presence of the campers
- The Personal/Professional Development Week should continue with a career perspective to entice and enlighten the students. This will assist them in planning their future goals. As well the University offers many departments and facilities, which would be of great benefit during this week.
- Ideally, six participants will fulfil the expectations of the program, while maintaining its efficiency and efficacy. A very structured program is needed, with an organized Program Coordinator who will maintain a professional presence throughout the summer. It is vital that the person in this position prepares accordingly.