Girls in STEM subject has long been outside of the norm in girl's education. However, girls education in the 21st Century has opened the horizons and possibilities for many and varied careers in the areas of Science, Technology, Engineering and Mathematics. While others education institutions struggle to attract girls into the STEM strands in Senior Schooling, at St Hilda's Schools STEM subjects are thriving.

INTRODUCTION

Girls in STEM subject has long been outside of the norm in girl's education. However, girls education in the 21st Century has opened the horizons and possibilities for many and varied careers in the areas of Science, Technology, Engineering and Mathematics. While others education institutions struggle to attract girls into the STEM strands in Senior Schooling, at St Hilda's Schools STEM subjects are thriving.
In 2014 after a conversation among senior staff the idea of promoting STEM subjects further among the girls at St Hilda’s School was floated among Heads of Faculty at the school.

The objectives being:

- Increase the number of girls undertaking STEM subjects in the Senior School at St Hilda’s School.
- Increase the number of girls undertaking tertiary education in STEM related course.
• Increase the level of achievements of students undertaking STEM subjects of Senior School.

• Recognition both nationally and internationally as leaders in STEM education for girls.

• Through professional development and support develop teaching staff that will become leaders in their field of education.

Goals of the Institute
THE PROCESS

This chapter identifies the process in order to achieve the goals set out for the STEM institute.
THE PLAN

In order to achieve the set out goals for the STEM Institute the following tasks need to be achieved:

- **Develop links with universities by**
  - developing a mentoring systems for high achieving students
  - investigating university credit for QSA STEM subjects with the our schooling context
  - investigating the options of completing University subjects on the St Hilda’s School Campus
• GriffChem
• GriffEng
• Griffith University Mathematics

• Guest Lectures to visit and deliver guest lectures to students on the St Hilda’s School Campus.

• Regular visits to use the facilities at Griffith University

• Provide professional development to staff in St Hilda’s STEM institute.

• Guaranteed Entry for students in the STEM Institute

• Provide Scholarships for elite students of the Institute.

• Provide avenues for communication with other students studying STEM course within the wider community.

  • Through Engineering conferences
  • STEM conferences
  • STEM Blogs

The Plan
The Plan

- **Create links with industry to:**
  - provide opportunities for work experience in STEM related careers
  - provide opportunities for mentoring from industry
  - provide sponsorship for summer schools and other initiatives.

- **St Hilda’s STEM Institute to provide opportunities for students to travel overseas to study in a Summer School Situation.**
  - Create links to a prestigious US College.
  - Provide assistance and guidance to students wishing to study at a Science and Engineering Summer School.
  - Develop Professional Develop links with overseas institutions.
• St Hilda’s STEM Institute will encourage and provide the resources for Science, Mathematics and Engineering competitions.
To become a member of the St Hilda’s School Institute, students must contribute to the STEM subjects in a variety of ways.
To qualify to be a member of the St Hilda’s STEM Institute

To qualify for the institute students must complete or exhibit one activity or achievement from the following list:

- Achieve an A- or above in one of the STEM subjects.
- Compete in any STEM related competition for the St Hilda’s School
- Be selected to be mentored by an outside mentor.
- Mentor other STEM students within the school.
- Participate in a STEM conference.
- Participate in a National or International Summer school.
To Qualify to be a member of the St Hilda’s STEM Institute

• Enroll in a STEM University course while at St Hilda’s School
  • GriffChem
  • GriffEng
  • Griffith University Mathematics.

• Participate in the relationship with one of the Partnership Universities.

• Participate in the Relationship with one of the Partnership Industries.
  • Work Experience
  • Mentorships

• Complete your own research project in a STEM subject.
• Enroll in three STEM subjects in Senior School.
From 2015 St Hilda’s School STEM Institute will be offering the opportunity at this stage to five students from either Year 10 or Year 11 to study at the prestigious Smith College in Massachusetts.
OVERVIEW

The trip will be for approximately 5 weeks.

The students with one or maybe two teachers will leave Brisbane at the start of week two of the June-July holidays. They will travel to Washington DC for three days where they will:

- Visit the Smithsonian Institute
- Tour the Three Houses of Government
- Tour the National Monuments
- Visit Historic Georgetown

The next three days will be spent in New York seeing:

- The Empire State building
- Central Park
- The Museum of Modern Art
- The American Museum of Natural History
- 9/11 Memorial
- Features of Central Park (Plus many other sites)
Once they site seeing is over we will then travel to New Hampshire where the students will enter Smith College for the next four weeks of Summer School.

Please read an excerpt from the website:

The Smith Summer Science and Engineering Program (SSEP) is a four-week residential program for exceptional young women with strong interests in science, engineering and medicine. Each July, select high school students from across the country and abroad come to Smith College to do hands-on research with Smith faculty in the life and physical sciences and in engineering. Girls who will be in high school (grades 9-12) in fall 2015 are eligible to apply for the summer 2015 program.

Established in 1990, the SSEP annually serves approximately 100 girls. Since its inception, nearly 1,800 high school students have participated, representing 46 states, the District of Columbia, Puerto Rico and 53 other countries. More than half of these students have been awarded need-based financial aid. After the program, participants return to high school better prepared to tackle tough science courses and better informed about what to expect in college.
Smith College is among the top-rated liberal arts colleges in the United States and one of the nation’s largest colleges dedicated solely to the education of women. Based in the multibuilding Clark Science Center, the Smith science faculty employs some of the finest researchers and teachers in the country. In 1999 Smith became the first women’s college in the nation to establish its own program in engineering science, the Picker Engineering Program.

Central to the program is a learning environment that is rich in role models. SSEP offers hands-on, cooperative, investigative and challenging learning—where girls get all of the faculty’s attention as well as the opportunities and encouragement to achieve their best. The Smith Summer Science and Engineering Program (SSEP) is a four-week residential program for exceptional young women with strong interests in science, engineering and medicine. Each July, select high school students from across the country and abroad come to Smith College to do hands-on research with Smith faculty in the life and physical sciences and in engineering. Girls who will be in high school (grades 9-12) in fall 2015 are eligible to apply for the summer 2015 program.

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For more information please go to the following Web Site

http://www.smith.edu/summer/programs_ssep.php

Smith College Summer School
DETAILS

Traveling Arrangements:

Two staff will be traveling with the students for the first two weeks of the trip. They will be responsible for the touring of New York and Washington DC. They will then travel with the students to ensure that they are settled into Smith College for the Summer School and then leave the students to complete some Professional Development in the local area. The two staff will return home at the end of week two and the students will be treated as if they are on exchange.

The Smith Summer School is a prestigious Science and Engineering course for young women and they have generously offered us 5 positions for the 2015 Summer School.

If there are more than five students that apply an interview panel will be formed to select the five students to go to the Summer School.
TOUR DATES AND COST

Approximate Tour Dates:

Departure: Sunday 28th July
Return: Sunday 2nd August

Cost:

Approximate cost is 7000 to 9000 US dollars

Sample Program for the Summer School is outlined on page 19.
**Notice of Nondiscrimination**

Smith College is committed to maintaining a diverse community in an atmosphere of mutual respect and appreciation of differences. Smith College does not discriminate in its educational and employment policies on the bases of race, color, creed, religion, national/ethnic origin, sex, sexual orientation, age, or with regard to the bases outlined in the Veterans Readjustment Act and the Americans with Disabilities Act. Smith's admission policies and practices are guided by the same principle, concerning women applying to the undergraduate program and all applicants to the graduate programs.

For more information, please contact the adviser for equity complaints, College Hall 103, (413) 585-2141, or visit www.smith.edu/diversity.

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**Summer Science and Engineering Program for High School Girls**

The Smith Summer Science and Engineering Program is a four-week residential program for exceptional young women with strong interests in science, engineering, and medicine. Each summer, select high school students from across the country and abroad come to Smith College to do hands-on research with Smith faculty in the life and physical sciences and in engineering.

Girls who will be in high school (grades 9–12) in fall 2012 are eligible to apply for the summer 2012 program. There’s so much waiting for you to discover, and we’ll help you decide which scientist you want to be.

**Course 1**

**June**
- 27-28: Planned recreational activities and free time
- 29: Research presentations
- 30: Final Day

**Course 2**
- 27-28: Planned recreational activities and free time
- 29: Research presentations
- 30: Final Day

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**Weekdays**
- 9 a.m.–4 p.m. Research courses*
- 4–5:30 p.m. Organized sports, recreation, free time
- 7–10 p.m. Workshops, discussions, movies, crafts, free time

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*Research courses include:
- **Course 1:** Chemistry, Physics, Biology, Psychology, Neuroscience, Computer Science, Mathematics
- **Course 2:** Chemistry, Physics, Biology, Neuroscience, Computer Science, Mathematics