Muses:
City College
ACM-W Student Chapter

Strengthening the place
and increasing the number
of women in Computer Science
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The Status of Women in (Computer) Science

- Women have traditionally been under-represented in science in the past, albeit with shining examples.

- Since the last century, the presence of women in the various fields of science has been increased.
  - Mathematics, physics, biology and chemistry enjoy an increasing number of undergraduate students.
  - Computer Science, Electrical & Electronic engineering suffer from a decrease in both undergraduate and successful graduates.
The Status of Women in (Computer) Science

Increase:

- Mathematics
- Chemistry
- Biology
- Physics

Decrease:

- Computer Science
- Electronic & Electrical Engineering

Disconcerting facts concerning computer science:

- 80% drop in female graduates from 1985 to 2005
- 60% drop in number of females expressing interest in majoring in computer science during the past decade
The Status of Women in (Computer) Science

- **Major reasons according to studies:**
  - Misconceptions about computer science in general
  - Fear of the assumed difficulty of programming
  - Dislike for being branded “nerds”
    - Popular result in the very latest surveys (especially in the US)

- **Computer Science has invaded our everyday lives, rapidly expands to other fields, not only science-related**

- **Much to gain for people with computational thinking skills in both other sciences and in the industry**
  - Address the issue of declining number of undergraduates
  - Address the issue of increasing the chance to graduate
ACM-W: Celebrating, Informing & Supporting Women in Computing

- ACM: the world’s largest educational and scientific computing society
- Delivers resources that advance computing as a science and a profession, including but not limited to:
  - Extensive Digital Library
  - Special Interest Groups
  - Professional Chapters
  - Student Chapters
ACM-W: Celebrating, Informing & Supporting Women in Computing

- ACM-W: Started slowly during the end of the previous decade by ACM after the disconcerting results of surveys particular to the presence of women in computing

- **Mission**: Supports, celebrates, and advocates internationally for the full engagement of women in all aspects of the computing field
  - Wide range of programs and services for ACM members
  - Impact in the larger community of the attempts to advance the contributions of technical women
  - ACM-W student chapters have been enabled since 2010 in addition to regular student chapters

- More at: [women.acm.org](http://women.acm.org)
Muses: The ACM-W Student Chapter of CITY College

- ACM Student Chapter of CITY College encouraging students to receive the benefits of ACM and organize activities
- Talks about women being under-represented during ACM Student Chapter events and activities
- Decision to form an ACM-W Student Chapter
- Founded in June 2012
  - Dr. George Eleftherakis
  - 10 founding women members (5 were 1st level students)
  - Membership not limited to computer science students
- Officially established in September 13 by ACM-W
- One of the first and few active chapters in Europe
Muses: The Mission

Following the mission of ACM-W, the Muses aspire to:

- Support and encourage people to come in the field of computing (with a specific focus on women)
- Attract people from the southeast region of Europe to be part of this community
- Engage students in exciting computing activities
- Provide “Mentoring” services to chapter members and pre-college students
- Broaden the computing community
- Connect students with women leaders in the field
Muses: Events & Activities

Java Café

- The Java Café is an activity initiated by the ACM Student Chapter several years ago.
- It takes place approximately every 2 weeks, depending on student schedule issues, among computer science students in CITY College.
- This activity enables the students to:
  - Socialize and bridge the communication gap.
  - Discuss and collaborate in order to solve different problems that they encounter during their studies.
  - Share individual knowledge with the rest of the students through numerous presentations and short workshops (e.g., teaching how to write LaTeX, using NetBeans IDE).
Muses: Events & Activities

Java Café

- Muses are always present during the Java Café activity, learning, helping and socializing with other students
  - As such, female students do not feel left out and alone in a male crowd, since they are a minority in this discipline
- Through the Java Café, the female students that may be encountering difficulties in their studies can also freely ask the other female students for help
  - This also offers a place where the students in general may find solutions to questions they could not ask of lecturers, possibly because of shyness
- “Mentoring” can also take place during Java Café, further enhancing female student social life and bolstering their skills at the same time
Muses: Events & Activities

CSEdWeek 2011 & 2012

- Admiral Grace Murray Hopper: her engineering in programming languages and computer system standards laid the foundation for advancements in computer science from the 1940s - 1970s
- ACM celebrates her contribution to computing annually and during the second week of December, now called CSEdWeek (Computer Science Education Week)
- Some of the Muses were present in the CSEdWeek organized by the ACM Student Chapter of CITY College in 2011
- In 2012, the event was organized mainly by the Muses themselves
The Muses and the ACM Student Chapter of CITY College celebrate the CSEdWeek in a twofold manner:

- A brief workshop for students from all disciplines in the College, and open to the public as well, were they can get their first experience with computing through the “Mentor” educational tool.

- A competition among 1st level students in achieving a goal in the best possible manner by using the “Mentor” educational tool.

The Muses may either act as referees or take part in the competition, and also take the part of instructors during the workshop.
Muses: Events & Activities

SEFM 2012

- The 10th International Conference on Software Engineering & Formal Methods, SEFM 2012, was organized this October with the assistance of Muses.

- The conference evolves around the advancement of the state of the art of formal methods and the application in the field of software engineering.

- The Muses were responsible for many activities, including material preparations and providing secretarial support during the actual conference:
  - Muses members of the chapter have a chance to develop essential skills not specific to computer science.
  - Students develop a broader range of skills than just programming by taking part in such events.
Muses: Events & Activities

SEFM 2012

- The conference brings together a number of researchers, as well as practitioners, of the field, among which are several women.

- The Muses had the chance to socialize and connect with women of experience in the field from all over the world, gaining valuable insight into their future.

- Among the SEFM 2012 participants, there were also two women that the Muses interviewed concerning women in computer science:
  - Prof. Grainne Conole from the UK, also talking about the rise in the interest for innovation in learning.
  - Dr. Nicole Bittel from Switzerland, again with an interest in how innovative teaching could attract more women.
Muses: Events & Activities

See Science Festival 2012

- The 1st South-East Europe Science Festival - Innovation Through Science: Learn, Experience, Innovate, Celebrate, took place in Thessaloniki October 2012

- The festival featured a large set of parallel activities, open to the public, grouped in five main thematic areas: learn, discover, experience, make, enjoy

- The demonstrations were performed by experts from Greece, Italy, Austria, Slovakia, and Hungary and with the help of the volunteers

- Muses volunteered once more for the organization of the Festival, in addition to helping visitors and acting as instructors in certain events particular to computing
Muses: Events & Activities

See Science Festival 2012

- The main goal of the Festival is to raise awareness of the importance of science and attract the younger audiences to it.

- The visiting students were from all levels of education, but mainly from the pre-college level wherein lies the decision on which higher level education field to follow.

- Muses, aiming to attract more people and especially women to computer science, had the opportunity to interact with these students:
  - Showing how women may get the opportunity to embrace their creative and helpful side apart from programming.
  - Explaining the importance of computer science.
  - Talking about initiating “Mentoring” programs.
In an attempt to promote computer science, women in computing and raise awareness to their issue of under-representation, the Muses employ some social networks.

One of the largest social networking platforms is, undoubtedly, Facebook, and Muses has a page used for:

- Announce and organize events and activities
- Upload pictures of events and activities
- Communicate interesting topics about women in computer science and computing generally

Link: [www.facebook.com/AcmWMuses](http://www.facebook.com/AcmWMuses)
Our first Java Cafe for this year was held today giving us the opportunity to meet with the new first level students of City College and to invite them to collaborate in the future for any problem that they may face during the academic year.

New event coming soon for those who are interested in programming a robot in 30 mins!!! ALL departments are welcome to come and join! Please visit our website for more information.

DO YOU WANT to learn how to program a Robot in 30 minutes?

Organized By ACM-W Muses
Muses: Events & Activities

YouTube

- Much like Facebook, YouTube offers a chance to promote events and activities, through videos, and thus further the goal of creating a community of learning.

- Currently it features videos of the See Science Festival 2012 and is planned to include:
  - Interviews with acclaimed women in computer science
  - Videos from the CSEdWeek workshops and competitions
  - Any other events and activities to follow later on
  - Possibly online video tutorials and “mentoring” programs

- Link: [www.youtube.com/acmwmuses](http://www.youtube.com/acmwmuses)
CITY College supports SEE Science Festival in Thessaloniki

3. Careers for Women in IT
   by Nancy, 2009, 2,058 views

4. Microsoft Research - Women in Computer Science: Jasmin Fisher
   by MicrosoftResearch, 871 views

5. Microsoft Research - Women in Computer Science: Siân Lindley
   by MSRC08, 185 views

   by edualgo, 18,358 views
Muses: Events & Activities

Student Spring Symposium

- An international conference organized by students for students annually in CITY College, where they may explore scientific interests and present their findings
- All students are welcome to take part in presenting and organizing the conference, with the ACM Student Chapter at its core
- The Muses have taken part in the organization last year, not as an individual chapter, yet, which is to happen in the near future (May 2013)
- Having been overlooked in past conferences, this year it is planned for Muses to raise awareness through a discussion on the problem of the minority of women in computer science and how everyone can help with it
Muses: Current Projects

Mentoring

- “Mentoring” is an on-going project that has just started and it is based on the mission objective to support and encourage people to come in the field of computing.

- The focus is definitely on women but not limited to them, and the “mentor” programs are targeted at:
  - Chapter members and CITY college students
  - Pre-college students by running workshops at high schools of the region (southeast European countries)
    - By providing basic computational thinking skills and basic programming skills employing tools optimized for children.
Conclusions

- Female students do not feel alone and left out in a predominantly male crowd (Java Café, Mentoring)
- Programming skills are enhanced (Java Café, Mentoring)
- Develop non-computing related but much required skills (organizing events, activities and conferences)
- Embrace their creative, helpful and fun side through these events and activities (escaping the “nerd” status)
- Make contacts and learn through leaders in the field (active presence in conferences)
- Promote the need for, and the fun side of, computing, and how to deal with the female student minority issues (Mentoring, social networking)
Thank you for attending the presentation!

You may visit Muses at:
muses.hosting.acm.org