Chantal (nymf.hathaway):
Welcome everyone to today’s Science Circle subject: “Women in Technology” by Darkeagle Darkstone. Darkeagle will be using text chat today.
This means the presentation will be recorded and uploaded as a PDF file.
Download will be available at the Science Circle website http://sciencecircle.org/
We’ll probably take photos, so if you want to see them, go to http://www.flickr.com/photos/science_circle/

Other media we use:
Twitter https://twitter.com/ScienceCircle
LinkedIn http://www.linkedin.com/company/science-circle
Facebook https://www.facebook.com/groups/155012474522202/
If you didn’t receive the "Women in Technology" topic card:
At the landing point there is a picture of Darkeagle: Click it please :)
Let’s go for an inspiring hour... and enjoy!

Dark we are yours 😊

Darkeagle Darkstone: I put up a web page at http://www.vwc.selfip.net/women.htm where you can find most of the information I found on this topic.
My main concern for this topic is to find ways to recruit women (and underrepresented populations as well) into the STEM Fields
Darkeagle Darkstone: Aside from the fact that ending unjust discrimination, and extending to women the opportunity to thrive socially, economically, and personally, are the right things to do, we really need women in the Information, Communications Technologies (ICT) Sectors.
This was recently highlighted in the Mid Pacific ICT 3rd quarter newsletter's section on "Improving Diversity in ICT Education and Workforce":

"Right now, in 2013, we are about 1.5 million ICT workers short of what employers are asking for in America. At the same time, demand for ICT workforce is increasing. Supply from public educational systems is not even close to meeting that demand. There is no way America is going to meet its ICT workforce needs unless it is recruiting from and ensuring the success of representatives of all the diverse segments of its population. We need more women in the ICT workforce. We need more Hispanics, African Americans, Native Americans and Pacific Islanders. We need more disabled people. We need more people from lower socio-economic classes...

This is a big but extremely important challenge."

The truth is that I am probably "preaching to the choir here"...Most of you understand how important it is to get women into technology.

Mr Geo Somerset (astronomer.somerset): not only technology but in all branches of science and technology

Darkeagle Darkstone: The questions I would like to explore in this group revolve around how we can do that.

The answer turns out to be a complex equation of access, self-image, stereotypes, bad information, discouragement and socio-economics — and sometimes just wrong perceptions about ICT. For example, the decline of the dot.com era coupled with an increase in global outsourcing of jobs has negatively affected the appeal of ICT careers. People believe the press that all the jobs are overseas. The geek image is often a turn-off for young women and Blacks and they believe only a certain type of person and knowledge can be successful. But the biggest barriers are the lack of early introduction to STEM during K-12, availability of role models, and engaging pedagogy that leads to the choice to pursue a technology career.

This is an international crisis which threatens to have devastating consequences for the world's economy.

So, why does this problem even exist?

Vic Michalak: Historically, student populations in ICT degree programs declined by from 50-90% in most universities in the United States from 2001 through 2009 and are slowly rebounding as the recession ebbs...

It was partly due to the dot.com bubble and burst...

Darkeagle Darkstone: right Vic

Still, Anecdotally, women avoid, and leave career paths in ICT because they are aggressively discouraged from pursuing those careers.

They are told that they cannot succeed in any science. Their efforts are sabotaged.

They don't get the same support, or opportunities as males in this sector do, and women are being sexually harassed if they dare to enter these male dominated fields.

Why would they want to be where they are not wanted or where they are abused?

Chantal (nymf.hathaway): Netherlands is already focusing for years on women for technology... we have all sorts of programs but no such luck... here women do not seem interested in technology...

Science yes but less in tech

Darkeagle Darkstone: It is a frustrating issue.
Vic Michalak: I would first like to explore WHY you (and others) may feel that we need to have more women and underrepresented populations in ICT -- I have my own thoughts, but I would like to hear yours...

Magika (magyk.crystal): raises hand
Vic Michalak: Magika, please go ahead...

Darkeagle Darkstone: I would also like to hear everyone's opinion on that as well.

Magika (magyk.crystal): only anecdotes, natural sciences seem more amenable to females
Chantal (nymf.hathaway): and medicine

Darkeagle Darkstone: that is actually supported by some research

Magika (magyk.crystal): even at young ages, boys gravitate more toward, video games , not all of course,, but from observations

Vic Michalak: Why do you think? (I have my own ideas but I want to hear from others)

Chantal (nymf.hathaway): Hypatia has been death for a while :(

Darkeagle Darkstone: and women are discouraged from middle school up from following careers in STEM

Vic Michalak: Okay, so let's take this apart... What do you mean by peer pressure in this case... What are peers saying?

Darkeagle Darkstone: At the bottom of that web page I gave the URL for is a list of modern women in STEM

Vic Michalak: Geo has a point - women are not necessarily underrepresented in the military (will have to check on that to make sure, but it is true in most fields in the military)... corwin Gant: Women population is about 4.5 times as large as men population, therefore, there should be at least four times as many women as men on every professional echelon, to start with...

Darkeagle Darkstone: @MrGEO, That is great to hear, but it is rare

Vic Michalak: What are peers saying? What kind of peer pressure?

Magika (magyk.crystal): listens to pop numbers there are 4 times as many women?

Mr Geo Somerset (astronomer.somerset): it's not as rare as you think Nasa Employs a great many women and during the second world war who did most of the technology jobs working in factories and production lines

Vic Michalak: Okay, women out there, why natural science and not ICT?

Darkeagle Darkstone: I have spoken with people around the ages of 11, 12, and 13, and they consistently tell me that even being good in school is not considered to be cool. Being good in Math or Science is considered Geeky and definitely not for those who want to be popular.

Vic Michalak: Yes... I understand that. Which is why the U.S. is lagging behind. That same sentiment is NOT present in Asian schools for example..
Darkeagle Darkstone: Why is that still the case? Look at the role models for these careers the kids see on TV right.

Vic Michalak: Being dumb and unemployed is not cool either...

Darkeagle Darkstone: there are cultural differences.

Mr Geo Somerset (astronomer.somerset): very true Vic.

Darkeagle Darkstone: What are those other cultures doing that America isn't?

Tonito Alderson: Are women not applying because of the discriminatory factors, or because they don't see the field as what they want?

Vic Michalak: ALL historically (white) male-dominated fields have had the problem of not letting women or minorities into them.

Darkeagle Darkstone: They don't get the same support, or opportunities as males in this sector do, and women are being sexually harassed if they dare to enter these male dominated fields.

Mr Geo Somerset (astronomer.somerset): and in the UK girls have consistently done better than the boys in academic achievements at schools for many many years.

Chantal (nymf.hathaway): in other countries science and tech are considered cool... I can say for the Netherlands we have VIP scientists.

Magiika (magyk.crystal): also in the US more females graduate college than males.

Tonito Alderson: But, Darkeagle, do they know about these factors in advance so they do not apply, or does that become a retention issues for ones that are in?

Darkeagle Darkstone: Even in America, Girls have better performance in Math and Science up to their freshman year in High School. but they start trying to hide that by the 8th grade both Tonito
Mr Geo Somerset (astronomer.somerset): and I’d like to point out that we have Microsoft UK just 40 miles down the road from us and they employ a huge number of women programmers and software developers.

Tonito Alderson: Then I suggest that there are two different issues to look at, perhaps separately.

Darkeagle Darkstone: That is excellent.

Vic Michalak: Go ahead Tonito...

Tonito Alderson: I want to start with the recruitment. Who is saying that we need more women in ICT? (which organizations?)

Chantal (nymf.hathaway): we have a new hype in the Netherlands: IT safety... so we learn the students to hack and the field is a huge success... but... among the men.

Darkeagle Darkstone: Most of the research tells us that women need to have the same role models for their gender as men already have for theirs.

Vic Michalak: That is my primary question.... [disclosure - I am highly in favor of it, but WHY?]

That is a chicken-and-the-egg thing - no role models before women enter ICT...

Chantal (nymf.hathaway): Must say I love the IT chick in NCSI... she rocks.

Darkeagle Darkstone: The industry itself is telling us that they have the jobs, and the data being collected by government employment services around the world are validating that.

Mr Geo Somerset (astronomer.somerset): maybe women don’t see ICT as an appealing job.

Chantal (nymf.hathaway): Must agree Astro :(.

Darkeagle Darkstone: They don’t.

But WHY?

Mr Geo Somerset (astronomer.somerset): so the problem is therefore not one of recruitment but one of interest.

Tonito Alderson: Geo, my point. I was in policing in Canada when women were few. Over the years, there was a call for more women, but there was not the same percentage of applications as from men.

Vic Michalak: Okay, here is my thoughts - we need women in ICT for the same reason that women (generalizing) favor natural sciences... It is a relational thing. If there were more women in ICT we may dwell more on how ICT could be used for conversation and relating to each other rather than dwell on the technical and monetary aspects.

Magiika (magyk.crystal): well I have known several women who studied computers as a second career... but could not get a job., one went to nursing one to be a teacher,, not sure about the third.

Darkeagle Darkstone: Part of the problem is with how the employers themselves are presenting their jobs.

Tonito Alderson: Turning it around, should there not be more men in nursing? I suspect there will not be near the number of applicants from men as from women.

Vic Michalak: Yes, we need diversity in all fields...

Otherwise we get stuck in one mindset.

Mr Geo Somerset (astronomer.somerset): not all women are career orientated many see work from a financial necessity.

Corwin Gant: Valentina Tyeryeshkovna comes to my mind...and how she lives in the US, incognito, age 87, happily retired after a career doing math for an American breast cancer research corporation after 30 years of work...

Darkeagle Darkstone: Tonito is right in that this is a 2 way problem.

Chantal (nymf.hathaway): Maybe we should just accept for every field an interested one and do not mind equality?

Darkeagle Darkstone: I wish this were just a matter of equality.

We need to get the jobs in this sector filled.

Chantal (nymf.hathaway): agrees... Europe is screaming the same.
Darkeagle Darkstone: My interest is in California, but this is an international problem
Vic Michalak: I, for one, cannot wait to see what happens when educated women take over positions of leadership in the U.S. (inevitable because there are more women in colleges now than men for the first time since before WWII).
Tonito Alderson: There are a lot of men that are unemployed if the women do not want the jobs (btw, similar to a previous comment, I am not necessarily against the point that is being made about finding ways to increase representation)
Darkeagle Darkstone: The bottom line is that the more people who are employed, the more tax payers there are, and the better off our communities will be. The better paying those jobs are, the better that formula works.
Vic Michalak: Think of how the U.S. Congress might actually work if there were more women there than hard-headed men...
Darkeagle Darkstone: LOL, Maybe it would work
Chantal (nymf.hathaway): Maybe??
Sure thing!
Mr Geo Somerset (astronomer.somerset): it is interesting that all this call for equality is being driven by males and not females I have not heard of single female pressure groups pushing for equality in the ICT sector
Chantal (nymf.hathaway): Women seem more social... building bridges... maybe that’s why we choose caring-jobs
Darkeagle Darkstone: In addition to hearing encouraging words from instructors and counselors, women need to see—in posters, videos and career events with women actually working in STEM disciplines—what a typical day looks like for women employed as technicians in STEM workplaces. Women need proactive personal encouragement and positive media messages to counteract the status quo at many community colleges,
Chantal (nymf.hathaway): I agree with the both of you Darkeagle and Astro
Vic Michalak: ICT is not just technology (cold physics and circuits) - it is communication and uses that will help people worldwide - which should be attractive to more women (if we continue the generalization).
Tonito Alderson: I also experienced times when there was definite reverse discrimination in the workplace. Employment equality programs. Someone would be hired due to quotas over someone more qualified. There are certainly reasons to support this, but it adds to difficulties in the workplace along the discriminatory lines.
Darkeagle Darkstone: Some people might think that this is a condescending and disrespectful statement, but men get this treatment every day of their lives
Darkeagle Darkstone: right
Tonito Alderson: btw, in my PhD program, which is ICT related, there are 3 guys and 9 gals
Darkeagle Darkstone: These Strategies can serve minorities as well
Cool!
Chantal (nymf.hathaway): Thinks presenting girls a day in the life of... will bring more insight and a better decision but in the end... I wonder if tech is a female 'thing'
Darkeagle Darkstone: LOL
Chantal (nymf.hathaway): Looks at Tonito's comment and thinks... I am def wrong ☹️
Mr Geo Somerset (astronomer.somerset): isn’t it the truth that over the years science and technology have been placed on the back burner for all sexes with the decline of industry in general in the UK we have far fewer industrial firms offering jobs to any one let alone females our work place is evolving away from manufacturing and technology to service industries
Tonito Alderson: wrong about what, Chantal?
Chantal (nymf.hathaway): Tonito: I wonder if tech is a female 'thing'
Darkeagle Darkstone: I just had a conversation in Face book with a former student, a young man who is a fantastic network administrator and a body builder. He is also a single dad. he was lamenting his lack of cooking skills.
I told him that anyone who can read a technical manual can read a cookbook.
The reverse is also true.
Tonito Alderson: Chantal and all, perhaps the type of tech could be broken down when looking at the issue. My program is more at the educational level rather than hands on tech.
Chantal (nymf.hathaway): oke
Tonito Alderson: edu/research
Darkeagle Darkstone: Work is almost never a gender specific skill set, but it is often perceived socially as such.
Vic Michalak: Technology covers a lot of area --- we have a large company here where I live and there are many jobs open for the hard core programmer who likes to work alone or in small groups as well as those who have strategic vision as well as those who want to work with customers (those who will use the tech).... there are places in ICT for every interest and temperament.
Darkeagle Darkstone: right
Mr Geo Somerset (astronomer.somerset): and does not the USA have laws against sexual discrimination, like the UK and Europe.
Darkeagle Darkstone: True, there are such laws, but they don’t seem to be working very well. It is clear that we need to begin this recruitment process at an early age, but our need is immediate.
Tonito Alderson: as there are laws against drugs, impaired driving (DWI), etc
Mr Geo Somerset (astronomer.somerset): well that down to your administration to ensure they work
Darkeagle Darkstone: This may well take and "Ad Campaign"
Mr Geo Somerset (astronomer.somerset): and to be quite honest they seem unable to agree or enforce anything
Tonito Alderson: Again, there are recruitment and retention issues. Over time, successful recruitment will help stamp out the discriminatory practices as women are greater in number.
Chantal (nymf.hathaway): Thinks America? You guys need Paris Hilton to do rocket science... maybe that will work
Magiika (magyk.crystal): sighs deeply,,
Chantal (nymf.hathaway): Or the movie Gravity 🎥
Vic Michalak: I do not buy the "science and doing well in school is not cool" thing in school -- I know it exists and I fought the same thing over 50 years ago but I just ignored them. I was far more interested in the world and in learning than is being "popular" (which is such a temporary thing - gone in 3-4 years when everyone scatters to their own lives). --- At some point you cannot just "follow the crowd"
Chantal (nymf.hathaway): Agrees with Vic but isn't that a bit difficult for majority in life... following their own dreams
corwin Gant: The USA has big problems with its own defunct government and legal system atm....don't count on us for ***reason***...
Darkeagle Darkstone: True Vic, and many of the women in that list I put on that web page did just that
Magiika (magyk.crystal): nods

Darkeagle Darkstone: As for where community colleges can find women to enroll in STEM programs, Milgram suggested that recruitment efforts focus on the large number of female students on their campuses who are still deciding what to major in.
“The number one audience for community colleges is female students already enrolled in the college that have not declared a major,” Milgram said.
This approach has two advantages: these women are already affiliated with the college, and they have made the commitment to improve their position in the workforce.

Mr Geo Somerset (astronomer.somerset): does the ICT industry actively promote itself as employees
Vic Michalak: Yes, following dreams and one’s own ideals is always hard.
Tonito Alderson: A thought...how many people were attracted to space by the social media presence of Chris Hadfield, who recently commanded the ISS (and I went to school with him years ago)? Do you think that increased interest? Men or women (hopefully both)?
Mr Geo Somerset (astronomer.somerset): I have not seen one advert for the industry except in sales
Darkeagle Darkstone: too true Geo
Mr Geo Somerset (astronomer.somerset): and therein lies the true problem
Darkeagle Darkstone: The industries themselves need to do a better job of recruiting
Chantal (nymf.hathaway): I think it does Tonito... here it works, we have scientists who are popular here... come on TV and explain certain discoveries 😊
Mr Geo Somerset (astronomer.somerset): it’s not one of equality it’s one of image of the industry itself
Tonito Alderson: Well said, Geo
Vic Michalak: Uh, are you saying that the men in charge of ICT would be willing to recruit more females and minorities to compete with them?
Darkeagle Darkstone: But here we encounter another problem. Have any of you tried to find a job online recently?
Chantal (nymf.hathaway): Listens
Darkeagle Darkstone: The online job market has become polluted
Vic Michalak: Isn't "the industry" part of the problem (see above)?
Darkeagle Darkstone: it is full of scams
Mr Geo Somerset (astronomer.somerset): exactly Vic
Vic Michalak: You know, there was a time when medicine was the same way --- a white male-dominated field. How did that change?
Mr Geo Somerset (astronomer.somerset): and that’s not the only problem online jobs actually decreases employment not encourages it
Chantal (nymf.hathaway): so true Vic!
Darkeagle Darkstone: By the force of sheer need
Mr Geo Somerset (astronomer.somerset): exactly
Darkeagle Darkstone: right Geo
I tell my students to go directly to the companies they want to work for
Vic Michalak: Okay, so maybe ICT will change its face when enough Asian women start working in it?
Chantal (nymf.hathaway): 😊
Vic Michalak: Darkeagle... good advice.
Darkeagle Darkstone: But since employers are not getting employees from the job sites, many are recruiting by referral.
Students need to be in those referral networks
Perhaps Vic
Mr Geo Somerset (astronomer.somerset): can I give you an example of this in Italy a certain car manufacturer use to employ hundreds of workers on its production lines requiring trained technician and a skilled work force then they decided to introduce ICT driven technology do you know how many people work in that factory now
Tonito Alderson: What industry organizations are there? What are they doing to encourage women, such as at monthly meetings? (I don't need an answer, as there are many organizations that could be considered)
corwin Gant: "Hewwooo, my name is Nameeb, and how may I help you today? And have you unplugged and plugged your router modem to your window already?...And how many computers shall you have installed your window on, today?..."

Vic Michalak: I give my students the analogy of getting a job is like getting a date. You can give out a generic message (resume) that you want a job, but if you really want a job you need to show some interest in the company (learn something about it online), go talk to people who work there, visit the place and see what it is like and why they might want you, etc.

Chantal (nymf.hathaway): smiles at Corwin

Mr Geo Somerset (astronomer.somerset): the employment in that factory decreased from hundreds down to a handful of computer and robotics technicians and engineers

Chantal (nymf.hathaway): Excellent advise Vic!

Țulpa (jes.cobalt): Heheheh Corwin XD

corwin Gant: sorry...I couldn't resit

Vic Michalak: @ corwin -- of course that is how you start out in ICT - learning how to use tech lingo and dealing with awful customers and trying to solve problems (at first in a very canned way, then more imaginatively later on when you learn)

Tonito Alderson: More career planning is needed for woman, and men, entering the workforce. They need to see the opportunities, and employers should actively promote the movement.

Darkeagle Darkstone: So, even though each of us has some influence on the people around us and each is probably trying to address these issues, we need a larger effort by the companies themselves because as companies realize that they can virtualize entire office buildings, these problems will get worse as they did in that factory

Which brings us, of course, to the issue of digital literacy.

Tonito Alderson: Yes, DD, one of my research interests
Darkeagle Darkstone: Part of the reason for this problem in the first place, is that America is doing a horrible job of promoting digital literacy
Chantal (nymf.hathaway): In Europe we have a lady on IT at the parliament... she is an inspiration to women... she supports women openly when they show affection for the field... THAT works
Darkeagle Darkstone: and has been since computers became a fact of life
That is fantastic Chantal
Chantal (nymf.hathaway): yes it works 😊
Vic Michalak: I want to also move beyond thinking we need women in ICT only because we need to fill empty jobs (bristles when everything boils down to money). There are many good reasons why we need women and a diversity of people in ICT (and other fields), which will enrich everyone in the long run.
Darkeagle Darkstone: true
Tonito Alderson: Many students and adults do not have the higher order skills without technology, so they continue to suffer with technology
corwin Gant: I am a dinosaur...I still use a 1984 Mac Ultra laptop with DOS Ver 5 when I need to chew my way around Bill Gates’ impositions and into a chip sub architecture
Darkeagle Darkstone: And even though I began this with a similar statement, I resisted the urge to emphasize that because it is about the only thing people have been promoting
Women are valuable
Chantal (nymf.hathaway): Smiles You be it!
Darkeagle Darkstone: Companies do better with more of them on their staff and in their administration
We have been saying that for decades.
Tonito Alderson: Yes, DD, women are valuable. It reminds me of a comment one of my students said about women in policing. He said every squad should have one
Mr Geo Somerset (astronomer.somerset): isn’t it a fact the real threat to the ICT industry is from the telecommunications industry how many people use mobile phone technology instead of computers
Darkeagle Darkstone: I was hoping that pointing out the hardheaded absolute current need would bring a new motivation
Tonito Alderson: Sadly, that was a time when not every squad of 6-10 officers had a woman and sometimes one was not available anywhere in the city--not too long ago
Darkeagle Darkstone: That may still be the case in many areas Tonito
Tonito Alderson: It definitely is, DD.
Darkeagle Darkstone: Well this has been a lively discussion, but I don't want to keep all of you from any more of your weekend.
Tonito Alderson: But I do not think it is discrimination keeping women (or men) away from certain jobs. They have just not been attracted to it
Darkeagle Darkstone: Please be evangelistic about this
Chantal (nymf.hathaway): Maybe that’s just a sign of the times... earth has been ruled by men for as long as mankind is here... the law of the strongest... just recently in human history females step forward and start to hunt their dreams.... we will get there, just give us time 😊
Vic Michalak: Geo, I think we are merely continuing along a trend to the small and more portable devices that will lead to the "Internet of Everything (IOE)"... all part of ICT. On the other hand, this really does threaten the desktop/laptop people if they do not evolve.
Mr Geo Somerset (astronomer.somerset): I agree Vic
Tonito Alderson: The Royal Canadian Mounted Police hired their first female officers in 1974
Darkeagle Darkstone: :-)
Vic Michalak: DD... yes, we have traditionally tried to wrap things up in an hour... It is a little like only staying 3 days as a guest ("guests and fish start to smell after 3 days") --- you always want people to want to continue and want to return and to think about the topic some more! 🤪

Tonito Alderson: Sorry for bringing up policing, but the problem being suggested today is more than ICT. AND, women in policing are currently complaining of harassment

Mr Geo Somerset (astronomer.somerset): socio interactions are like evolution it takes a very long time for things to change

Darkeagle Darkstone: and in the military

Vic Michalak: Tonito... I agree. The problem is in all fields -- men using harassment as a power play. By the way, men harass other men, just in different ways.

Chantal (nymf.hathaway): Thinks of Malala and rests her case

Tonito Alderson: Yes, gays are only just now welcome in the US military (if they truly are)---and that is another subject entirely.

Vic Michalak: Chantal.. yes, that is certainly an extreme case (but not that uncommon in places who think of females as "less than").

Darkeagle Darkstone: and we need every able minded person to go get a job in ICT

Mr Geo Somerset (astronomer.somerset): can I point out we had a woman prime minster and she ended up being the most hated person in the UK by men and women equally

Chantal (nymf.hathaway): Minorities always have had a hard time on earth

Tonito Alderson: So where do I apply for my ICT job??? :)

Vic Michalak: 😊

Darkeagle Darkstone: Pick a company and do your homework

Tonito Alderson: Good point, Darkeagle

Darkeagle Darkstone: Get to know the people who work there

Vic Michalak: Networking is crucial...

(to use a ICT pun, but true)

Chantal (nymf.hathaway): yes and for that ICT is excellent 😊

Darkeagle Darkstone: and with the advent of crowd sourcing networking is crucial

Vic Michalak: I need to head off to First Life.... Not an easy subject to solve in a hour, but well worth the discussion...

Tonito Alderson: An interesting topic!

Chantal (nymf.hathaway): Thank you Vic for joining us, enjoy your day! 😊

Darkeagle Darkstone: Well I have to log off and take my beautiful wife to the movies as I promised her. So, have fun without me.