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## **UWC WiPiSA lunch**

### **WiPiSA Lunch at UWC**

**By Lynndle Maasdorp**

Dear WiPiSA members

On Thursday 23<sup>rd</sup> July 2015 we had the WiPiSA lunch at the University of the Western Cape. The event was a huge success. We initially thought to cater for 30 ladies, especially since we had not catered for an event of this nature before, however this was a gross underestimation! By the Tuesday afternoon before the event we had approximately 85 females who had rsvp'd! Our department then kindly agreed to assist with two additional food platters. The number of ladies who had signed the register at the event was 65.

<b>1st years</b>	28
<b>2nd years</b>	17
<b>3rd year</b>	1
<b>honours</b>	4
<b>masters</b>	9
<b>PhD</b>	2
<b>PhD/staff</b>	2
<b>staff</b>	2

Table 1: WiPiSA lunch attendees and the levels in their academic career respectively

Responses to the feedback form provided **[total 60]**

1. How would you rate your experience of being a part of this event?

- a) Great **[55]**
- b) Average **[4]**
- c) Bad **[1]**

2. Did you find the event useful?

- a) Yes **[58]**
- b) No **[1]** and one insert for “kind of”

3. Do you have any suggestions or feedback? **[Answers taken Verbatim]**

“Engaging with people who hold such high qualifications is inspiring; this event should be hosted often”

“As much as it is about us we need to encourage more students”

“I strongly support WiPiSA; more women should start taking risks and actually go after what they want especially as a science student”

“I suggest that we should do WiPiSA lunch often because we gain more information and encouragement”

“This is good; keep it up, thank you”

“- More speakers – It was inspiring”

“Also give advice on job opportunities and the various career fields of physics.”

“I enjoyed myself and I was highly motivated to continue with physics”

“This was a great event that should take place annually, to motivate young females who are part of the physics course. Personally I feel very motivated, not everyone enjoys physics, such a beautiful subject”

“An ordered distribution of lunch will save a lot of time and extend the period of the talk”

“Great motivational event”

“Keep on keeping on!”

“The event was very informative and motivating”

“The event was great and I learnt that there should be nothing to stop me from achieving my goals. I think there should be more of these events as they are useful”

“Keep this event running as it carries great information and inspiration for female physicists”

“That an event like this be an annual thing. Such seminars are needed in the society we live in that still needs to change its mind set when it comes to women in science”

“Should be longer. We need a small one on one question and answer session after the lunch”

“The event is very good and organised and it has helped me a lot and next time if you can increase the time and allow us to ask questions it would be perfect”

“The event could have been a supper rather than a lunch event because a lot of people have practicals during this time and thus had to leave early.”

“I enjoyed it and it changes the way I see things in physics”

“More food next time”

“More events of this nature. At least quarterly”

“More female guest speakers (from different disciplines)”

“Don't drag on the conversation”

## **Photos**



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## ***UCT WiPiSA Lunch***

By Prof. Renée C. Kraan-Korteweg

### **UCT Astronomy WiPiSA Lunch**

With the generous support of Women in Physics in South Africa (WiPiSA), Prof. Renée Kraan-Korteweg in the Department of Astronomy at the University of Cape Town hosted a lunch for women in Astronomy on 17 September 2014. Women students in Astrophysics from first year through to PhD, postdoctoral fellows and female faculty members were invited and we managed a turn-out of 36 women! We were even surprised ourselves at the large number! The aim of the lunch was to show junior women in academia the options available to them with a degree in Astrophysics, both inside and outside academia and to show them, that there are successful women in a male-dominated field like Physics and that the number of women in the field is growing.

Prof. Kraan-Korteweg kicked off the lunch with a welcome and various faculty members shared some of their experiences of being women researchers and their various and differing career paths. We were treated to an excellent guest speech by Dr Carolina Ödman-Govender who provided insights into life for physical scientists outside of academia. This is something that is often neglected in academia since faculty members are not fully aware of the opportunities that exist to scientists outside of pure research careers and therefore it is often difficult for students to find out about them. The feedback from the students who attended was that these insights were very valuable as they weigh up their futures. There was also discussion of work/life balance and the importance of mentors. A highlight of the lunch was the award to Dr Amanda Weltman of the 2013 Jubilee Silver medal by Prof Kraan-Korteweg on behalf of the SAIP. A short interview of Dr Weltman follows. As a department we were very encouraged by the success of the lunch and plan on this becoming an annual event.



photo credit: B. Kuck.  
UCT WiPiSA lunch attendees.

### **Interview of Dr Amanda Weltman, Silver Medal Winner.**

#### **1) Dr Weltman, what is a 'chameleon' particle and how can it be detected?**

A chameleon particle is a new kind of particle whose mass and thus behaviour depends sensitively on its environment. It interacts with all kinds of matter particles and is thus detectable in a broad range of experiments on earth and in space. For example quantum laser experiments, casimir force experiments and IAXO - the proposed new axion telescope at CERN hold the possibility of detecting a chameleon field. More indirectly, we may be able to constrain or find signatures of these fields through astrophysical experiments and radio astronomy observations for example using MeerKAT or the SKA one day. Essentially by comparing subtle effects in regions of high and low density we may be able to tease out its effects in astrophysical observations.

#### **2) You obtained your PhD from the Columbia University in New York and worked as Postdoc at the University of Cambridge in England. Why did you come back to Cape Town, where you had started your studies?**

My husband and I love South Africa and we felt that we would have the possibility to make a far greater impact on science and society in South Africa which is our home than we would in the USA or Europe.

#### **3) Your example shows that it is possible to win awards as a scientist without sacrificing family life. What would you advise young Physics students with the same aim to do?**

I don't think there is any one algorithm or path to follow to make it work. There are many subtle ingredients that have made this recipe work for me and I think other scientists all have their own blend. What has been crucial has been to find and maintain support

structures. For many that is one's parents or grandparents, friends, cousins, neighbours, colleagues and most importantly one's spouse. If you want to make a family life and a career work, I think it is crucial to have a spouse that recognises and respects what you do and who is willing to negotiate with you the delicate dance that is managing any career and a young family. I have found science to be a fantastic career for having a young family though it is filled with all kinds of unique challenges. Finding good partnerships is invaluable in life - a good life partner, colleagues and friends - really does make it easier to find the balance or to at least ride the wave without ever perfectly being in balance. My advice for young physics students is to focus on the physics and do good work. Try to work on interesting problems in new ways. It is liberating and if you are enjoying the science you will find a way to always fit it all in. And marry wisely. And be willing to constantly readjust your expectations of yourself in every arena. Some days you will rock and others you will want to crawl under a rock.

#### **4) How can Physics be made a more popular career choice in South Africa, in particular among females?**

I don't really know. I don't really know if we should be trying to do that. I think, rather, we should be teaching our daughters (and our sons) that they can be whatever they aspire to be and we should be providing them with the tools to do that. This means excellent education at a very early age and it means lots of role models. But rather than selling physics as a career choice - I think we should be investing in the women that do make this choice or want to make this choice - to make it a more sustainable option. I have seen excellent initiatives in the USA and in other areas of science - biology for example - where funding agencies provide support to make it more possible for women in their field to be more involved through the critical early family years. I have seen grants to provide for childcare, for travel funds for women to attend conferences with their children and a caregiver even for women to buy washing machines to reduce their workload at home (biology!). Maybe we should be investing in the women that are entering the field and in the field to ensure that we create a next generation of mentors and then the students will naturally follow.



Photo credit: B. Kuck  
Prof. R. Kraan-Korteweg (left) with Dr A. Weltman (right)



Photo credit: S.-L. Blyth  
Prof. R. Kraan-Korteweg (left) with Dr A. Weltman (right)

### **Feedback**

“I want to give feedback about the Wipisa lunch and say that it was a great idea and a good way to give a platform for people to start interacting. It’s so hard to remove oneself from work and to give some time for just chatting with others and share experiences and this was a lovely way to be encouraged and to have space to speak to people we normally don’t see.”

Lauren Hunt – NASSP Honours

“Regarding the meeting held for women in astrophysics, I personally think that was the best thing that ever took place. I have learned a lot and I would advise this to continue. It was inspirational and what made it more meaningful was that not only did we speak about success but also the difficulties we go through on this path of the academics. As students from different backgrounds we tend to think that no one has gone through what you’re going through (challenges which school unrelated). This meeting gave an insight of our women in astrophysics behind their success, it showed that we can become what we want in any circumstance. I really want to thank everyone who participated and organized this, it was worth it. Much appreciated. I recommend that this should be done very often as it will impact more young women.”

Lerato Sebokolodi – NASSP Honours

“It was very enjoyable and a great opportunity to hear from fellow women in the field and also just to chat with everyone. Think it’s also great for the younger students who are maybe still deciding what exactly they want to do in the future.”

Kerry Paterson – Masters in Astronomy

“Thank you so much for inviting me; I agree that it was a great gathering. I know that if I had been to such an event as an undergraduate it would have been very helpful - seeing all the stages of the academic career, as well as alternatives. It also felt like a very supportive space; it is the biggest group of “sciencey” women I’ve had lunch with, and I appreciated how the conversation ranged from maths to physics to childcare and family life - all things that we care about passionately. Thank you for making it happen; I hope it does become an annual event.”

Dr Claire Blackman

“Thank you for the opportunity to come to UCT and share some of my experiences with the other women of the department. I thoroughly enjoyed the interaction with the group and I am thrilled that two honour's students followed up on my invitation to chat careers - they have already emailed me. I do hope events like this become a regular feature of the department, my feeling is that it addresses a need. I sure would have liked something like this when I was a student! Please feel free to give my email address to any students who are curious about "post-academic" careers.”

Dr Carolina Ödman-Govender

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## ***IMT WiPiSA Lunch***

By Faith February

### **Report on WiPiSA lunch at IMT**

Thank you very much for allowing the Institute for Maritime Technology (IMT) to host the Women in Physics Lunch and for providing funds of R3000. The event was a first at IMT and I am thrilled to report that it was a huge success.



## Figure 1 Layout of the programme

Directors: Vice Admiral (ret) RJ Mudimu (Chairman), Ms T Skweyiya, Mr KPE Wakeford (CEO), Dr M Khanyile, Adv S Baloyi, Adv VLA De La Hunt, Mr BMF Mobu, Mr NM Tyibilika, Mr RM Vokwane, Mr JG Grobler (Chief Financial Officer)

Customer Focus : Care and Respect for Others : Excellence : Integrity : Leading by Example : Results Driven : Teamwork

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# Gateway to Defence Solutions

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Fourteen girls from three schools (Simon's Town High School, Masiphumelele High School and Ocean View High School) attended the event on the 21<sup>st</sup> of August 2015 at IMT. A layout of the programme can be found in Figure 1. Our Senior Manager Dr Mkaza welcomed the girls and encouraged them to be disciplined and motivated for what they want to become in life.

**Figure 2** Dr Mkaza: Senior Manager IMT addresses the girls

Kelly Petersen is part of the Armscor Talent Development Programme and shared her experiences of moving from hands-on training to assisting on research projects. Prishani Sookay is a Computer Scientist and proved to the girls that the road to success is not always straightforward and smooth.

**Figure 3** Kelly Petersen and Prishani Sookay

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Faith February is a Physicist in the Electro-Optics group at IMT and could show the girls the different visual and infrared sensors that are used. They were amazed at the international experiments that IMT is involved in and the benefits the various technologies give to the client.

**Figure 4** Faith February is a member of SAIP

The highlight of the day was the diving in the tank area. The girls did not know that diving is also based on sound Physics principles. Benita Maritz is a scientist that supervised the diving operation.

**Figure 5** Benita Maritz as diving supervisor



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The lunch was very enjoyable and a huge thanks to Ms Joanita Le Kay who did all the logistical arrangements and also decorated the venue to brighten up the atmosphere. The girls were thrilled and really felt spoilt by the small gift boxes she made and placed at their tables. She also arranged the gifts for the presenters.

**Figure 6** Ms Joanita Le Kay who did all the logistical arrangements

**Figure 7** The presenters with their gifts



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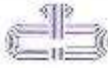


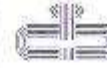

A big thank you also to Armscor who supplied the girls with goodie bags and sponsored the transport. The South African Institute of Physics sent us a big box of promotional material on Career options in Science, Engineering and Technology, Study Physics booklets and Women in Physics pamphlets. We are grateful to all the sponsors that added lustre to the event.

**Figure 8** Goodie bags from Armscor and promotional material from SAIP

The whole program ended on a high note with a science demonstration by Mr Alphonso Hendricks. It was very interactive and the girls enjoyed it. In the end some were awarded with prizes.

**Figure 9** Mr Hendricks during the science demonstration and two of the girls with their prizes

	<h1>IMT</h1>
<b>MEMORANDUM</b>	
Add/To: _____ Van/From: <u>Amanda Vuyi</u> Datum/Date: _____	
<p>Today here at IMT I have first learnt that nothing is impossible. I learnt that in all things you do you need to be disciplined and you must know what you want to be in life. I'm so excited today because now I know that I have many opportunities as a young lady.</p> <p>It is also so amazing that today I saw beautiful <del>white</del> women in Science and that motivates me so much and I'm looking forward that I can't wait to be in the Science world in the next coming years.</p> <p>Thank you so much for the teaching and encouragement.</p>	

	<h1>IMT</h1>
<b>MEMORANDUM</b>	
Add/To: <u>IMT E, ARMSCOR</u> Van/From: <u>Amanda Williams</u> Datum/Date: <u>21/08/18</u>	
<p>Today definitely made my top 10 days of my year. I really enjoyed myself, and that learned more than I expected to learn. I really <sup>with</sup> hope there would be more companies like IMT, who don't only look at what they can benefit, but by also reaching out to the communities!</p> <p style="text-align: center;">  </p>	

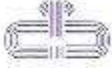
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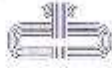
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The school girls were very impressed and enjoyed the day thoroughly. Some of their responses can be found below.



	<b>IMT</b>
<b>MEMORANDUM</b>	
Aan/ To: <u>IMT</u>	
Van/From: <u>Therese Z.</u> Datum/Date: <u>21.08.2016</u>	
<p>Today was such an awesome day. It was a great eye opener. My mind was broadened beyond my wildest imagination. My knowledge was increased and my curiosity resolved. I feel more empowered as a girl to strive for more and to work hard, do to work @ very hard.</p> <p>Thank you ;)</p>	

	<b>IMT</b>
<b>MEMORANDUM</b>	
Aan/ To: _____	
Van/From: <u>Therese Z.</u> Datum/Date: <u>21.08.2016</u>	
<p>Today has been an inspiring &amp; motivational guidance which opened my eyes to real careers &amp; a chance to take a different career path which is a challenge but, yet exciting &amp; fun. It didn't just encourage me as a young teenager but it also was an opportunity for me to see possibilities where we as women are cherished and equally respected for what we as women can offer.</p> <p>It has been awesome, short but but, very meaningful &amp; is highlight to my decision making 'issue' on choosing a well &amp; non-regrettable career.</p> <p>Thank you &amp; God Bless!</p>	

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## **WSU WiPiSA Lunch**

**By Mary Matthews**

**South African Institute of Physics (SAIP) – Women in Physics in South Africa (WiPiSA) sponsored venture to promote and motivate young female students to pursue studies in Physics and take up careers in Physics**

**Program – 11 August 2015 (12H00 to 14H00)**

**Executive Dining Hall, Nelson Mandela Drive site, Mthatha Campus  
Walter Sisulu University**

- 1 Prayer
- 2 Icebreaker and self-introduction
- 3 Welcome to WSU, Faculty of Natural Sciences – Dean (Prof. N. D. Jumbam)
- 4 Purpose of venture – HoD (Prof. S. Chikwembani)
- 5 Presentation (Current Highlights in the field of Physics in SA and opportunities) –M. Mathews
- 6 Presentation (Effective Pedagogic Strategies in Physics) –M. John
- 7 Group photos
- 8 Discussions (Strategies to attract more female students in to Physics programs and careers)
- 9 Summing up and way forward
- 10 Vote of thanks from the FET sector – N Sitsheke
- 11 Vote of thanks WSU – T Mtetwa
- 12 Working lunch – establishing linkages and partnerships

The past is History, the future is a mystery and today is a gift – that is why it is called the present. This discussion forum is a gift from WiPiSA to the women physicists of Mthatha district, Eastern Cape.

The above venture was held successfully with the Dean, FNS, HOD Physical Sciences and 24 WSU participants both senior students and staff. We were joined by our stakeholders the FET sector with 4 officials from the district office and 17 educators from schools in the Mthatha District.

The aim was to encourage and promote the idea of taking up programs in Physics at the HET

sector and pursue studies, research and careers in Physics nationally and internationally. The percentage of women in Physics is low and hence this initiative to capture them young, train them well and enhance their horizons in this scarce skill realm.

The Dean Prof N Jumbam welcomed all present and informed of the current structure of the Faculty of Natural Sciences at NMD. He said that one needs to visualize and dream big. Then as you work diligently, doors will open and you can achieve great things. He emphasized that diligence and perseverance are key to achieving one's goals.

The HOD of Physical Sciences Prof S Chikwembani, as custodian of all academic matters in Physics, highlighted the purpose of the venture. He encouraged both students and educators to play their part in making Physics accessible, interesting and useful to their students. From existing statistics, the percentage of women in Physics is low and hence he welcomed this idea to motivate female learners from an early stage.

The main speaker M Mathews made an interesting presentation on "Current advancements in Physics and Opportunities" using illustrative photographs. She touched on Nanotechnology in nano water filtration, transistors, medical tissue engineering and drug delivery; nuclear reactor for therapy and energy production; the MeerKAT as Phase 1 of the Square Kilometre Array (SKA); twisted laser beam in quantum cryptography; Electronics; Biophysics; Harnessing solar energy and wind energy to add to national grid and Elementary Particle Physics. The contribution of Prof Sau Lan Wu to Elementary Particle Physics and her biography were shared to motivate female Physicists.

The educators at FET were enlightened by the presentation "Effective Pedagogic Strategies in teaching Physics" by M John from the Faculty of Education. She reminded everyone that students come with prior knowledge which must be respected, queried and reevaluated. Educators must present Physics in such a way as to add value to their existing knowledge base using a constructivist approach. Physics must be fun, visually interesting, practically done and concepts subsumed with good understanding. This will kindle genuine interest in them and enable them to apply their knowledge.

The senior students were enthusiastic in promoting the venture as they proceed with their studies, enter the work environment or engage in community activities to act as role models and ambassadors. The educators were pleased to be part of the venture as stakeholders and appreciated the forum which empowered them and motivated them to do better. Positive linkages were established.

During the discussions and working lunch, the participants brainstormed on ways to better encourage and motivate young female learners in Physics. Below is the summary of the deliberations.

## **SUGGESTED STRATEGIES TO ATTRACT MORE FEMALE STUDENTS IN TO PHYSICS PROGRAMMES AND CAREERS**

- 1 A follow up session** of a similar form as organized on 11 August 2015 should be organized by WSU where teachers will share how best they can prepare and address certain topics in a Physics/Physical sciences class.
- 2 Social Media-** University facebook and website should be used to post some events/activities/ideas related to Physics.
- 3 Active email system-** Physics students and physical sciences teachers must

have active email addresses. They must get used to sending and responding to emails.

- 4 Whatsapp group:** Share physics related information in an instant with all physics students and physical sciences teachers through use of whatsapp on mobile phones.
- 5 Relate each physics lesson to career field(s)** on a day to day basis during teaching and learning sessions. Do not leave career guidance to the Life Orientation Teacher.
- 6 Organise Science Clubs** and let learners lead small activities under the mentorship of a teacher. Make time for presentations in the classrooms or during assembly even if they are for 5- 10 minutes long, before the start of every physics class or once a week in morning assembly.
- 7 Organise Special Science days** within the school. Participate in those organized at circuit/cluster/district level activities - Quiz, exhibition, debate, science show with fun experiments, etc can be prepared and conducted starting at classroom level.
  
- 8 Extend** this kind of interactions to other districts and rural areas.
- 9 Arrange work experiential learning** for third year students.
- 10 Arrange campus interviews** for probable selection and placement for third year students in Physics related work environments.
- 11 Make Physics FUN** for learners by organizing activities that will challenge and motivate them.
- 12 Practical aspect of Physics** must be a key thrust at FET level – either as demonstration or practical sessions.
- 13 Organize tours** for students to annual Grahamstown Science festival, relevant industries, observatories, ESKOM, TELKOM sites etc.
- 14 Facilitator must be well-prepared, motivated** and have a POSITIVE attitude towards the success of the learners.
- 15** Third year Physics students to avail themselves to spread the word and act as role models, be **ambassadors and motivational speakers** in urban and rural schools.
- 16** Each learning must start from **prior knowledge and connect practical life experiences** into Physics teaching.
- 17 HET/WSU to work with DST and SAASTA** in their efforts to encourage and motivate young learners to take up science, pursue science and succeed in their chosen areas of specialization.



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***iThemba Labs WiPiSA Lunch***

**Report for the WiPiSA Departmental  
Lunch 2015 held at iThemba LABS.**

by  
**Thifhelimbilu Daphney Bucher**  
**22 June 2015**





The WiPiSA Departmental Lunch 2015 was held at iThemba LABS, Cape Town. The programme of the day was as follows:

*Venue: Red Cafeteria, iThemba LABS Hospital*

**MC: Ms Ntombizonke Kheswa**

<b>9:30</b>	Welcome address:	iThemba LABS Acting Director, Dr JJ Lawrie
<b>9:35</b>	Purpose of the event:	Dr TD Bucher, iThemba LABS
<b>**</b>	Zazise/Introduce yourself:	All
<b>10:00</b>	Speaker:	Dr G J Andrense, University of Stellenbsoch
<b>10:45 am ----- Tea break-----</b>		
<b>11:00</b>	Speaker:	Dr C Steenkamp, University of Stellenbsoch
<b>11:45</b>	Speaker:	Dr C Odman-Govender, SKA & SAAO
<b>12:30</b>	Discussion & questionnaire	Ms N Khumalo, iThemba LABS
<b>12:45 pm -----Lunch-----</b>		

*Thank you all for coming*

**How the event unfolds**

It's always a challenge to move physicist away from the work, I sent out an invitation for the lunch two weeks before the day of the event. They responded well and I expected to have about 35 people to attend. However, on the day we had 30 people who came for the lunch. As seen on the programme above, Women in Physics SA - iThemba LABS were welcomed by the Acting Director of iThemba LABS Dr JJ Lawrie. He said it was great to see us coming together to encourage one another. He said he is looking forward to see the number of women in physics at iThemba LABS grows, and that in the future the director of iThemba LABS can be a woman.

I (Dr Thifhelimbilu Daphney Bucher) organiser of the event, talked about the purpose of the event. Since I am the one who applied for funding from the WiPiSA, I told them why I took the responsibility to organise such event. My objectives for the event were aligned to the ones of WiPiSA. In the programme, we had an item "Zazise/introduce yourself", which I thought it is significant to know a person by names, where the person come from, for students - which university are they registered with and in which division here at iThemba LABS is the person working or doing research.

Our first speaker was Dr Gillian Andrensen. He holds a PhD degree in Nuclear Physics from Stellenbosch University. We knew him from the time he worked at iThemba LABS, for about 6 year, as the manager of the Community Interactive and Training division. His focus was to interact with public through community outreach program. At the end of 2013, Gillian left iThemba LABS to take a position at Centre for student recruitment, University of Stellenbosch.

He gave a talk titled “**Looking at a WOMAN differently**”. Just some of what he spoke: He taught us that we (women) should believe in ourselves, that we are world class. We should know what we want and it is important to pay attention to the detail in what we do at work. And that for us to be successful we should work together, support each other in achieving our goals. He made us to smile and laugh which was very good, since most of our times are spent in the office/lab stressed and depressed because the results from the program/ experiments are not coming. It was really great to have him as one of the speaker.

The second speaker from the program was Dr Christine Steenkamp. Christine is a lecturer, research scientist at the Laser Research Institute, a mother to three kids, and a wife. From her we learnt about her journey from childhood to where she is now. Why she chose physics and specifically laser physics. During her PhD studies she manufactures a laser machine that it was used in the later stage for the training for other postgraduate students. She told us it was really a challenge to have that machine working and was working even at nights and weekends. We learnt that is possible to have career in physics and still manage to have a family which is very important to have a balance of the two. She taught us that anything is possible as long as you put your mind to it and work hard. Christine is like a role model to us and was great to hear from her.

The last speaker of the day was Dr Carolina Odman-Govender. She is a proud mum working in science, development, technology, hacking (the good kind), photography, and hanging out in a state of happiness. She grew up in Switzerland studied at the Swiss Federal Institute of Technology. She holds a PhD degree from Cambridge University in Theoretical Cosmology. My main aim of inviting her was to have someone who come another field of physics which we are not used to at iThemba LABS. Most importantly to hear from her, if she had some stumbling block in her studies and how did she deal with them. She told us about her choice of leaving research to educational programme and what are the challenges she faced. Carolina also express how she feels about Prof Sir Tim Hunt, a noble laureate who said he is in favour of a laboratory where women are separated from men. Because women in labs "cry" when criticised and "fall in love" with male counterparts.

During lunch time we had discussion over several matters that affect students and postdocs. One of them is the funding; our government wants more PhD graduate in science, Physics included. However the PhD bursary and the salary for the post-doc are not good.

We also talked about the studies done recently “[Why PhD penetration in corporate SA is so low](#)”. Some people the feel disappointed that they have a PhD degree but they can’t get a job and it seems they are over qualified for some companies but in the research or academics where they require PhD’s jobs are very limited.

### **Some of the response from the attendees**

I must say that the event was successful and here are the comments from the speaker and some of the ladies who attend.

"I spent this morning with South Africa's brightest present and future. Every one of these ladies is a qualified physicist with a mind and a heart ready to take on the world!" Dr Carolina Odman Govender

"What a beautiful and mind stimulating gathering. Im inspired" Ms Edzani Ratsibi

Ms Hombakazi Wanana, an administrator at the Nuclear Physics department. She said when she first arrived at iThemba LABS, she saw several name tags by the doors with title Dr, and made her to feel small and intimidated. After the event she said," Thank you Daphney for inviting me, I feel very inspired and now I am going to register to study further".

"The changes in any society depend on the way it encourages the education of girls and women as they can highly contribute to its development in all domains. Educated women see and need to promote education in others.

"A woman with knowledge is a respectable women, she has the power to make people listen to her and the charisma that make people to follow her"

Here are some advantages of girls' and women's Education.

Educated women are on the heart of all changes as:

1. They are healthier and tend to have self-confidence
2. They are able to influence their future
3. They are able to reduce poverty
4. They are able to reduce the risk of children mortality
5. They are less likely to become victims of domestic or sexual violence
6. They are better equipped to contribute to the family income.
7. They are more likely insisting on education for their own kids
8. They contribute and prosper their community
9. They are less likely to be taken advantage of
10. They reduce corruption that read to terrorism.

Ms Agnes-Alex Mboniryivuze from Rwanda.

### **Photos of the event**



The iThemba LABS Acting Director Dr JJ Lawrie doing the welcome address.



The event organiser, Dr T. Daphney Bucher, giving the objectives of the WiPiSA Departmental Lunch at iThemba LABS.



Our motivational speaker, Dr Gillian Andrense, talking about that “We are born Original”.



Our second speaker, Dr Christine Steenkamp, only female part-time lecturer at the Department of Physics, University of Stellenbosch.



Dr Carolina Odman-Govender, telling us that she feels very excited and honoured to be invited as a speaker at our WiPiSA Departmental Lunch. The lady seated is Ms Ntombizonke Kheswa, the master of ceremony.



These are ladies and gentleman who attended the WiPiSA Departmental lunch 2015 at iThemba LABS. Postgraduate students do research here using the facility but registered with different South African universities.

From left front: Zandile Mabika (UWC), Nomvelo Dindikazi (Unizulu), Bernadetta Robeiro (UWC), Avuyile Bulala (intern), Daphney Bucher (NPD), Agnes Mboniyirivuze (MRD), Edzani Ratsibi (RPD), Hombakazi Wanana (NPD), Nokuzola Lusani (UNISA). From left back: Christine Steenkamp (US), Angela Karoro (MRD), Aline Simo (UNISA), Nametso Mongwaketsi (MRD), Caroline Odman-Govender (SKA- SAAO), Thobeka Lamula (Unizulu), Nontobeko Khumalo (UWC), Takalani Nethavhanani (UWC), Sibaliso Mhlanga (UCT), Ntevheleni Thovhogi (MRD),

Nadia Steyn (NPD), Nagla Numan (UNISA), Ntombizonke Kheswa (NPD), Shonny Nkuna (Intern), Gillian Andrense (US).

### **Links for future networking**

Since these days everyone is making use of the internet. We agreed to create a group on Facebook called WiPiSA-iThemba LABS. We will use this platform to share the latest on our work, opportunities, etc...We also have the emailing list.

### **Catering**

Since the policy of iThemba LABS/NRF says that for every purchase over two thousand rand, one has to get three quotations and the lowest price is considered. The catering was done by iThemba LABS hospital Canteen; this won the bid because the price was less for catering which included food, crockery, cutlery, and decoration of the venue, compared with other two quotations.

On behalf of all ladies who attended, I would like to thank WiPiSA for accepting our application for funding.

Report Compiled by TD Bucher.

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## ***Attracting women and girls to careers in Physics: HSRC Seminar Report ; 06 August 2015***

By Portia Tshigoli, Rodney Managa and Palesa Sekhejane

### **Introduction**

Science is part of almost every aspect of our lives, and therefore scientific knowledge is what we need to resolve the economic, social and environmental problems that make current development paths unsustainable. Sustainable development requires that science and innovation be practiced at local, regional and global level with the equal involvement of women and men. Having said that, women are still under-represented in Physics and related career paths. The seminar sought to inspire young girls and women to participate in the physical science related studies and careers. In the 20<sup>th</sup> century, women were not duly recognized in the Physical science discoveries and inventions. The trend is still continuing even in the 21<sup>st</sup> century whereby girls would study the Physics related subject at high school and not continue with the studies at a tertiary institution of learning.

In response to that concern of not having fair representation of women in Physics, Women in Physics in South Africa (WiPiSA) was launched in November 2005 in Durban, as a means of addressing under-representation of Women in Physics (locally and globally). The main aim of WiPiSA is to create

an enable environment by fostering networking ground in order to have viable discussions and propose solutions towards addressing the under-representation of women in the physics related fields. Human Sciences Research Council prides itself by participating in socially beneficial projects and the vision of WiPiSA was one of the critical projects to undertake. HSRC, with the support of WiPiSA, then successfully held a seminar to address challenges hinder women from participating in physics related studies and careers. Two speakers were invited, Ms Thulaganyo Molatji who is a PhD candidate at the University of Johannesburg (UJ), conducting research at Mintek research institute. The key speaker was Dr Malebo Tibane, who is a senior lecturer at University of South Africa (UNISA), in the department of physics. The seminar emphasized on the importance of having women and girls in Physics with the aim of pushing gender parity in the 21<sup>st</sup> century. The seminar benefited young school learners (boys and girls) from grade 10-12, university students and postgraduate scholars in various fields.

## **Key Issues**

### *Challenges facing women in physics and related sectors*

Statistics show that women around the world face similar barriers that hinder their success in physics. Even in countries where it is as common for girls to study physics as for boys, the number of women physicists drops sharply with advancing level i.e postgraduate level. Various key issues were debated at the seminar to which they create barriers for women not to breakthrough into Physics careers.

- First obstacle that disadvantage female is the poor image of Physics, as it perceived to be difficult and dull, and therefore usually understood to be destined for male individuals. Physics is portrayed in a masculine manner that consequentially undermines the effort of women to participate and make a breakthrough in the field.
- Change in educational system is required, since the teaching of Physics in schools is not structured in such a way that inspires the girls, it is rather presented as difficult and unexciting. Also, lack of women teachers tend to give the girls perception that Physics is meant for the boys only.
- Social challenges have huge impact on educational success of every women, the most society and cultures still believed that women are destined for marriage rather than achieving their own professions. The public or society does therefore not encourage it in general, as women are not associated with upper echelons.
- Sexual harassment also intimidates women to go forward with their careers because male colleagues battle to see women as their equal counterparts, but rather as objects.
- Women careers said to be undermined everywhere and are not perceived to be as important as their husband's careers, this issue is associated with gender inequality which needs to be addressed on multiple levels including home-based education.
- Some organisations have historically denied jobs and opportunities to women on the principle that women are likely to be disrupted by life events such as maternity leave, which is discriminatory. It further discourages women who wish to start their families from participating in the field, because the norm has already been created that it is not the field for girls or women.



## **Recommendations**

- They must be an easily accessible database of women in Physics in order to measure progress and encourage collaboration.
- Women forum for the Physical science must be established at local, regional and national level to exchange and disseminate knowledge.
- Women were advised that in order to be successful in taking physics further they need to surround themselves with positive minded people, link up with potential mentors who will encourage them and to have discussions with their peers as it will stimulate their interest. To drive this, it will require special funding and sponsorship available to the women role models and mentors to initiate mentoring programs at local areas.
- Institutional policies need to be revised with the focus of achieving gender parity as means of addressing the inequalities of the past.
- Collaboration and socializing among the women is very essential, so support or formation of peer groups need to be encouraged among young girls.
- Though women are empowered, they must understand that in order to make success, they do need man's support.
- Societal-created problems of discouraging equal participation in physics needs to be solved collectively, meaning that both men and women must be involved in creating and providing solutions. Discussant also pointed out that women need to challenge policies which limit funding to women who are 35 and above to further their studies.
- Another omitted, but critical issue is the financial and mobility support for disabled women to participate in the physics related fields. Most institutions do not cater for disabled women scientists as the equipment and building is not user friendly.

## **Concluding Remarks**

The seminar was prosperous to the attendees, HSRC and WiPiSA as well. Vibrant discussions after the presentations gave the high school learners and university students a rich glimpse of the existing challenges. Proposed ideas and solutions that emanated from the discussions gave attendees ideas how to overcome identified challenges, and become the ideal 21<sup>st</sup> century women in Physics. It was recommended that teaching of sciences should be developed at early stages of learning in order to reap from the cultivation. It was encouraged that science must be used for global development and not destructive missions such as war.

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**Date: 15 August 2015**

**Place: R75 lecture hall (University of Limpopo)**

1) Overview of the Event

The event was facilitated by Ms Chuma Hellen and Ms Ledwaba Sylvia. The lunch had a positive attendance of close to 40 people overall and group photo was taken after the programme. Ms Hellen Chuma was the programme director for the event and introduced the purpose of the day to the audience. She also read out a special message from the outgoing SAIP president (Prof Igle Gledhill), as she could not make it to the event. In addition, Ms Sylvia Ledwaba gave a brief talk about introduction to University of Limpopo WiPiSA members (staff and postgraduate students) and the research projects that they are currently focusing on. Prof. P.E. Ngoepe (Director of Materials Modelling Centre at University of Limpopo) also came through to support the event.

- Background to the event & its objective
  - i. Introduce WiPiSA/SAIP as an organisation as well as its aims and objectives.
  - ii. Encourage students already enrolled for physics in the university to continue specializing in physics related careers.
  - iii. Assist them with accumulation of financial support to further their studies in physics and expose them to possible careers in physics.

2) SAIP Contribution

- Objectives of SAIP at Event
  - Improve institutional structures and climate for women in physics
  - Attract girls into physics

3) Impact Statistics

- a. Who was present, example below
  - i. Undergraduate and Postgraduate students enrolled for Physics at the University of Limpopo
  - ii. Average contact session duration: 5hours
  - iii. Specific Individual Contact: 40
  - iv. Weighted Impact (time in hours x no of persons): 35 learner hours

- v. Market Segment Distribution: 95% students, 5% motivational speakers, 0% public
- vi. Learner level distribution: 95% undergraduate students, 5% postgraduate students
- vii. Race: 100% black
- viii. Gender: 95% female, 5% male

#### 4) Key Highlights & Feedback

1. Some of the questions were:
  - a. “How do undergraduate students acquire financial support for their present study?”
  - b. “What other incentives are put into place to ensure that females continue embarking in physics related careers?”
  - c. “Where can physicists work after their studies?”

#### 5) Photos



The poster features the logos of the University of North-South Africa (UNISA) and the South African Institute of Physics (SAIP) at the top. The word "INVITATION" is prominently displayed in a green banner. Below this, a yellow banner contains the text: "All female physics students from (2nd - 3rd year) undergraduate and Postgraduates are invited to attend a motivational day schedule as follows". Two portraits of speakers are shown: Dr. Majebo Tibane (UNISA) and Prof. Rapela & Maphanga (UL). The theme "Attracting women to physics" is highlighted in a green banner. The event details are listed in a yellow banner: Date: 15th August 2015, Venue: R75, Time: 9h00. A final yellow banner at the bottom states "LUNCH WILL BE SERVED".

**INVITATION**

All female physics students from (2nd - 3rd year) undergraduate and Postgraduates are invited to attend a motivational day schedule as follows

**Dr Majebo Tibane (UNISA)**

**Prof Rapela & Maphanga (UL)**

**Theme:**  
**Attracting women to physics**

**Date: 15th August 2015**  
**Venue: R75**  
**Time: 9h00**

**LUNCH WILL BE SERVED**



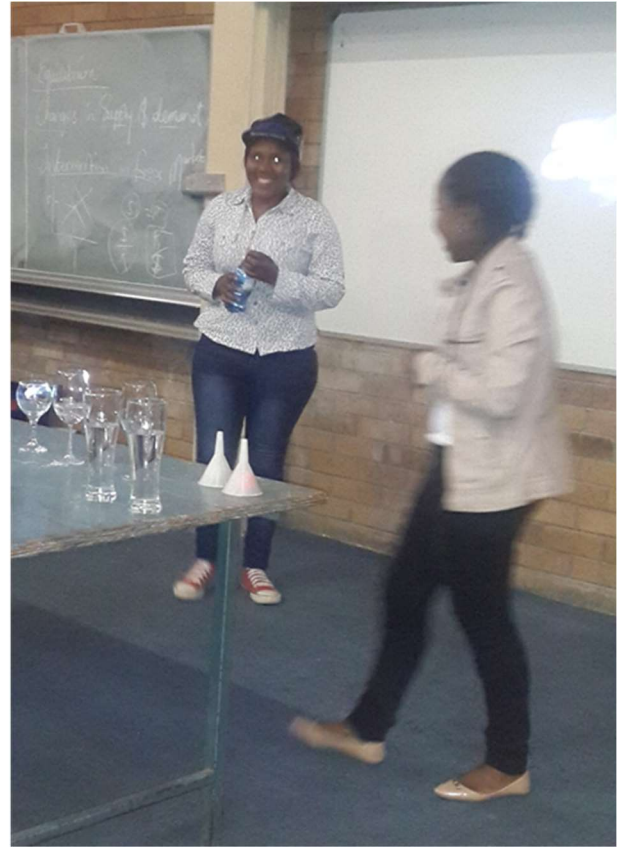
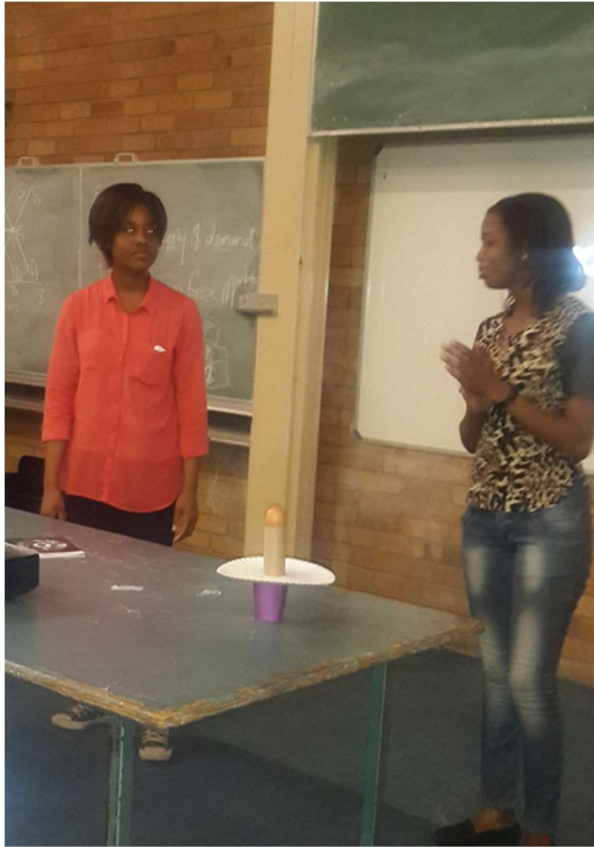
***Figure 1: Attendees for the WiPiSA departmental lunch/ Motivational day 2015(top image) during the motivational talks and group photo after the session (bottom image).***



**Figure 2: Dr M.M. Tibane (left) giving a talk about WiPiSA and Prof R.R. Maphanga (right) giving words of encouragement to the young ladies about important factors that attribute to one's progress.**



**Figure 3: UL science Centre ladies engaging with the audience to demonstrate the Bernoulli's principle (left) and ethanol water absorption (right).**



**Figure 4: UL science Centre ladies engaging with the audience to demonstrate the moment of inertia (left) and the volume experiment (right).**

# SANSA-WiPiSA Luncheon, 9 September 2015, Report

Amoré Nel

September 29, 2015

## Main Objectives

The goal of this luncheon was for women in physics, at all levels, to network and create contacts in the science community. It was hosted by the South African National Space Agency and funded by WiPiSA. The participants consisted of SANSA staff, students, and also students from UCT (University of Cape Town), CPUT (Cape Peninsula University of Technology) and SU (Stellenbosch University). Their level of study varied from undergraduate to masters, and also included engineering students. Eighteen women in total participated in this event.

## Description of Event

Students were picked up from their respective campuses with SANSA vehicles. When they arrived at the SANSA facility, Hermanus, they were given refreshments and a brief meet and greet followed in the conference room. In this session the SANSA staff and students introduced themselves to the visiting students and gave a brief background of their journey into science. After a tour of the SANSA facility the students were picked up and transported to Ell restaurant in the Hemel en Aarde Valley. Here Dr McKinnell introduced herself and welcomed the visiting students. After the luncheon the visiting students were transported back to their campuses.

## Timetable for 9 September 2015

08:00 – 10:00

Pickup at respective campuses

Arrival at SANSA. Refreshments SANSA  
researchers introduce themselves,

11:00 – 12:00

Conference Room



12:00 – 12:45

Tour of the facility

12:45 – 13:00

Photo and Departure to Ell Restaurant

13:30 – 15:30

Arrival at Ell Restaurant

15:30

Depart for respective campuses.





# **WiPiSA Women in Physics Lunch**

## **24 September 2015, Physics Department, University of Stellenbosch**

### **Introduction**

The WiPiSA Women in Physics Departmental Lunches is an initiative of WiPiSA (Women in Physics in South Africa), a project of the South African Institute of Physics (SAIP). 2015 is the second year that a WiPiSA Departmental lunch is hosted by the Physics Department, University of Stellenbosch.

The aims of the event were (i) to bring Women in Physics together - including women physicists in a variety of physics careers, postgraduate students and undergraduate students – in an informal setting, (ii) to share the experiences of the women in physics careers thereby stimulating interest in physics careers, (iii) to talk about challenges faced by women in physics and possible solutions.

All female students enrolled for undergraduate and postgraduate physics programmes at the US Physics Department (28 undergraduates, 13 postgraduates, 41 in total) were invited by e-mail. The attendees were 8 undergraduate and 10 postgraduate students.

The event was organised by Dr Christine Steenkamp with the much appreciated help of a committee of postgraduate students: Ms Stanard Mebwe Pachong, Ms Essraa Ahmed, Ms Cathrine Pfukwa, Ms Nancy Payne, Ms Iulia Minda.

### **Venue and activities**

The event took place on Saturday 24 September 2014, 09:30-14:30. The venue was the Merensky Building, Stellenbosch Campus. The tea room of the Physics Department was chosen as meeting venue, to demonstrate to the undergraduate students that they are members of the department and welcome in the department.

Two speakers, women in physics careers, spoke about their careers and experiences as women. The speakers were Ms Faith February (Senior Scientist, Institute for Maritime Technology, Armscor) and Dr Daphney Bucher (Nuclear Physics, iThemba Labs). Three postgraduate students, Iulia Minda, Nancy Payne and Agnes Mboniyivuze shared their stories. We heard about challenges and sacrifices, but also of supporting mothers and partners and dedication leading to fulfilling careers.

This was followed by an activity (called “cheerleading”, presented by Ms Stanard Mebwe Pachong) where all participants were asked to (anonymously) write down their ideals and their challenges down on self-adhesive notes. These notes were put up to form “word clouds” on the white board. These were discussed in the group. A thought provoking discussion concerned the problem that in rural areas physics/science is never mentioned as a career option at the career fairs to which the high school learners are exposed. Undergraduate students could be equipped to inform their families and former schools about their studies.

The students were made aware of organisations supporting women in Physics/Science, opportunities for funding of postgraduate studies in Physics and the details were afterwards circulated to all participants by e-mail.

The event included a tea break and ended with a light lunch that allowed for lively conversations around the table.

## Outcomes

The students were exposed to women in different physics careers, and were inspired by hearing about their career paths.

Preconceptions about a career in physics being incompatible with family responsibilities were addressed.

The physicists were reminded of the importance of their roles as mentors.

Undergraduate students got to know many of the women who are postgraduate students in the department.

Students were made aware of opportunities for postgraduate bursaries and organisations supporting women in science/physics.

Students were inspired and encouraged (see feedback below).

A mechanism was established by which students could submit comments about women-in-physics issues to Christine Steenkamp (anonymously if preferred).

## Financial report

Expenses		Income	
Item	Amount	Source	Amount
Catering	2500.00	WiPiSA	3000.00
Flowers for speakers	340.98	VAT subtracted	-368.42
Small thank you gift for 6 student helpers	119.97	Physics Department	482.88
Sticky notes and pens (Waltons)	153.51		
Totals	3114.46		3114.46

## Appendices

### 1. Feedback from students

The participating students were asked to give feedback by e-mail. A summary of the feedback is attached.

### 2. Photos of event

Photos of the event are attached.

Report by: Dr CM Steenkamp  
Physics Department, University of Stellenbosch  
E-mail: [cmsteen@sun.ac.za](mailto:cmsteen@sun.ac.za); Tel. 021-8083374

## Appendix 1. Feedback from students

Number of feedback forms completed: 6

<b>Was the Women in Physics Lunch of value to you?</b>	<b>Yes</b>	<b>6</b>	<b>No</b>	<b>0</b>
<p><b>Please say what aspects were of value to you or why you did not find it of value at all:</b></p> <p>All aspects were valuable but what stood out for me the most were the achievements of our invited guests. It was extremely encouraging listening to their stories of how they made it into the physics career and places they have travelled due their hardwork. I was greatly motivated. What I also appreciate about the WiPiSA organisation is that it brings to our attention the importance of having women in Science and that it does not have to be male dominated. We also have the opportunity to share information on possible funding opportunities for women.</p> <p>The interaction with other women in Physics was great! It was good to share my own experiences and also to learn that others have similar challenges and dreams that they face.</p> <p>This Women in Physics Lunch was very informative and helpful as it was full of motivations from some life experience of many participants in Physics studying life. I loved the way every one was free in sharing experience even the audience was more active.</p> <p>I would like to suggest if more women in Physics can be invited in next lunches even from different university and institutions as their contribution can also be very useful.</p> <p>Lovely to meet other women in physics</p> <p>Ask speakers to rather speak about personal experiences rather than academic work.</p> <p>Liked hearing their personal experiences. Things I've never thought of from a woman's personal experiences in the field of science and a working environment were brought to my attention.</p> <p>Was also just nice to chat to the women in the department – there aren't many opportunities for this.</p>				
<b>Would it be valuable to you to have a Women in Physics meeting every year?</b>	<b>Yes</b>	<b>6</b>	<b>No</b>	<b>0</b>

## Appendix 2 Photos of the event

The photos were taken by Ms Nancy Payne.

### Group photo



#### Group photo

**Back:** Ms Stanard Ms Mebwe Pachong, Ms Vuyiswa Dlamini, Dr Christine Steenkamp (Physics Department, Stellenbosch University), Ms Pelerine Tsobgni, Dr Daphney Bucher (iThemba LABS), Ms Li Wang, Ms Nancy Pyne, Ms Anneke Erasmus, Ms Essraa Ahmed, Ms Iulia Minda.

**Middle:** Ms Cathrine Pfukwa, Ms Khomotso Ramabu, Ms Meghan Kenneally, Ms Caitlin Visagie.

**Front:** Ms Agnes Mboniyirivuze, Ms Crischelle Hanekom, Ms Faith February (Institute for Maritime Technology, Armscor) , Ms Nandile Sindani, Ms Monica Farrell.

# Speakers



Figure 1. Mrs Faith October telling about her career as physicist in the defence industry.



Figure 2. Dr Daphney Bucher answering questions after talking about her career in Nuclear Physics.

# The "Cheerleading" activity



Figure 3-4. The (anonymous) contributions on "dreams", and "challenges" were displayed on the whiteboard.



Figure 5. Students from diverse cultures participated, from as far as Sundan and China.

## Lunch



**Figure 6 Undergraduate and postgraduate students and speakers had time to socialise at the lunch table, set up in an undergraduate laboratory.**





## Department of Physics

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12 November 2015

### TO WHOM IT MAY CONCERN

The Woman in Physics lunch took place on Monday, November the 2<sup>nd</sup>, 11h30am, in room 202 in our Physics Department at the University of the Free State. There was about 30 ladies from our physics, astro-physics and medical physics departments. They were 2<sup>nd</sup> and 3<sup>rd</sup> year students, post-graduate students and personnel.

A lady from each of the different departments gave a short informal talk about her personal experience of being a woman in physics and how she manage to balance her career and life as a woman and a mother. They talked about career opportunities, gave examples, described some obstacles they had to overcome and motivated the ladies to please continue with physics if they have to ability to do so. The uniqueness and characteristics of being a woman and having the potential to do physics were emphasized.

Everybody asked questions and gave some comments on what they could share on afterwards and all enjoyed the special food platters provided by caterers. Some of the 3<sup>rd</sup> year ladies specifically came and ask when they can apply for honors as they were really inspired and a lot of their questions were answered.

Dr. Elizabeth Coetsee-Hugo

