

The P&O Scholar

Student & Graduate News

Edition 7: April 2015

This newsletter is a biannual newsletter connecting prosthetics and orthotics students and graduates around the world who attend ISPO-recognised programs for student prosthetists/orthotists (ISPO Category I) and orthopaedic technologists (ISPO Category II). Students, recent graduates and faculty of ISPO programs are encouraged to submit articles, share news and stories and exchange information. Articles, pictures and news to Sandra Sexton, ISPO Grant Manager - Email: sandra@ispoint.org. Please ensure that you have consent to share any images for this newsletter.

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Jana Schneider from Russia is studying prosthetics and orthotics in Germany (story page 6)

Call for articles for Edition 8

We are looking for clinical and technical content about staff and student projects.

Deadline 31 July 2015



Increasing Access to Passive Silicone Prostheses

Kathryn Blaharski, BS, MSOP Candidate
Eastern Michigan University, Ypsilanti, Michigan

Passive silicone partial hand prostheses can cost several hundred to several thousand dollars and there currently is no simple mainstream process to create such prosthetic devices [3]. Such devices are considered to be cosmetic rather than functional and insurance companies in the USA often refuse to pay for them. For example, Medicare states “no payments may be made for any expenses incurred for items or services which are not reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member” [1]. The goal of this project was to come up with a repeatable method of fabricating inexpensive and easily accessible partial hand prostheses. With the integration of silicone modelling techniques and anaplastology, I was able to fabricate inexpensive passive silicone prostheses. Hand amputations are easily seen as the hands and face are the first things that we use to present ourselves to the world around us [4,5]. The thumb was the primary focus of this project as it has the greatest impact of any of the digits on the function of the hand [2].

PlatSil Gel 25 (Polytech Development, Corp., Pennsylvania) was pigmented and poured directly onto the sound hand (Figure 1 shows unpigmented silicone). The prosthetic grade silicone captured the fine details of the hand and fingers, even including finger prints. Removal of the silicone yielded a glove which mirrored the sound hand to replace the amputated digit(s) (Figure 2). The glove was filled with more pigmented PlatSil Gel 25 (Polytech Development, Corp., Pennsylvania) silicone to create finished passive silicone thumb prosthesis (Figure 3).



Figure 1 - Unpigmented silicone

Sixteen grams of Part A PlatSil Silicone and sixteen grams of Part B PlatSil Silicone were used in the fabrication of the passive prosthesis including the suspension for the device. PlatSil Gel 25 (Polytech Development, Corp., Pennsylvania) silicone costs approximately \$18.00 (USD) per pound, and the passive prosthesis weighed thirty-two grams (including the suspension); therefore the total cost of the prosthesis and suspension was \$1.27 (USD) and required only two hours of fabrication time.



Figure 2

The total cost of all of the materials involved in creating the prosthesis shown here was \$6.33, which included consumable materials that were not utilized in the final product. Not only is this fabrication cost effective, it is time efficient and replicable. With a fabrication process such as this, amputees could potentially gain access to passive silicone prostheses even without the help of insurance to cover the cost.



Figure 3

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3D Printing at Eastern Michigan University

Author: David Trevisan

When I arrived at the Masters in Orthotics and Prosthetics programme at Eastern Michigan University in the fall of 2013, I had no experience with 3D printing. Early on in my graduate education, one of the professors introduced us to the possibilities and benefits of this emerging fabrication technique that builds objects in three dimensions.

Due to faculty and student interest, the programme now hosts several printers open for student use and experimentations, with a variety of materials. I have participated in several projects using the technology, including showcasing 3D printing at the annual American Academy of Orthotists and Prosthetists Scientific Symposium in 2014. There have been several publications touting the benefits of 3D printing in the fabrication of low cost componentry, but what will the introduction of this technology ultimately mean for the field of P&O? 3D printing lends itself to one-off manufacturing, which has clear applicability to custom patient devices. The main challenge involved with 3D printing as applied to prosthetics and orthotics lies with materials limitations. The layer-by-layer nature of

fabrication and the thermal properties of materials currently limit options, although this is being addressed in the commercial market.

Much like the implementation of CNC and utilization of CAD/CAM carvers in prosthetics and orthotics, 3D printing technology is currently commercially driven, although individuals are taking that development and applying it to patient care. Eastern Michigan University students are currently working with a Rostock MAX V2 3D printer (SeeMeCNC, Goshen, IN) and Tritan™ material from Taulman 3D (St Charles, MO) to fabricate lower extremity sockets.

One of our goals is to use a readily available commercial kit that would lower costs and be applicable for single office use. While 3D printing technology is unlikely to replace current fabrication processes in orthotics and prosthetics any time soon, it may augment these practices and provide clinicians with new ways to treat patients, both near and far. We are on the brink of a new era, and I am thankful to have had the opportunity to experiment with this new aspect of patient care so early in my career.

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- Receive a membership **certificate**, reflecting your commitment to global exchange of knowledge and participation in the leading worldwide prosthetics and orthotics network.

Authors: Students of the Meisterschule 2014/2015

About the Meister School

The Meister School is a special training school (Fachschule) in the city of Munich. Beside the qualification of a Meister, the target is to support the development of the personal, social and technical skills of the students. The school is free of charge, but you have to pay for material expenses. Before being able to apply, you have to do an apprenticeship as an orthopaedic technician or a similar job. Several years of practical experience are recommended. However, it is not possible to attend a practical semester at our Meister School.



The goal of many students is to successfully lead their own company. The qualification is necessary in Germany in order to conclude delivery contracts with the different health insurance companies. Each year about 16 students attend the Meister School to get the qualification as a German Meister for orthopaedic technology.

The focus of our school lies in practical education in combination with the necessary theory. As a consequence, we have many patients coming to our school. We supply prosthetic and orthotic devices in direct contact with the patients in order to increase and improve our experience and to get an immediate response and feedback.

Our very committed teachers come from many different sections and professions. On one side we have teachers for the basic subjects like English and Maths and on the other side we have very experienced tutors (OTM in German) for the biomechanics and all subjects concerning medical supplies. For the medical subjects like anatomy and orthopaedics, we have highly qualified university lecturers and physicians from both Munich universities.



We also attend workshops which are held by external experts from international companies like “Otto Bock” to support our lessons. The course ends with an exam, the so-called “Meisterprüfung” which is equivalent to a bachelor degree in the European Qualifications Framework (EQR in German). After successfully passing their exams, the students also receive an ISPO Category 1 certificate.

The German education system is called a dual education system because it combines work and classes at school. It is a co-operation between vocational schools (at college level) and companies. School is attended 9 to 13 weeks a year or once a week. At school, theoretical knowledge is taught in combination with practical training while real work experience is gained in the companies which pay the wages of the trainees. The apprenticeship as a prosthetist and orthotist takes 3 years.

A Meister is the highest qualification in German craftsmanship. To become a German “Meister” (possible in almost every craftsman’s trade), you have to attend a full-time course at a special Meister school for between 1 and 1 ½ years. But as a precondition you must already be a qualified worker in your field of work.

The City of Munich was founded in 1158 and has a population of 1.4 million. The city lies 50 km north of the Alps and is the capital of Bavaria, the largest federal state of Germany. The unemployment rate is very low at approximately 4.5%, but the living costs are very high.

The famous “Oktoberfest” has existed since 1810. About 6 million visitors from all over the world celebrate together, drinking 6,000,000 litres of beer and eating 500,000 grilled chicken. Since 1900, Munich has one of the best soccer teams in the world named FC Bayern München. Munich also has very nice museums, castles, parks and churches. Apart from this, there are many good hospitals and - among numerous colleges - three big and renowned universities with over 90,000 students. In addition, over 65,000 students attend 195 vocational schools.

Technical progress can be seen everywhere, but is there the possibility of optimization in our profession?

Looking at current developments, I think there is a lot of potential to improve the medical care for people with physical disabilities. There could be many good inventions in the future. This belief was one of the reasons I decided to deepen my technical know-how in this job by attending the Meister School for Orthopaedic Technology in Munich. My name is Joel and I am 28 years old. I am from Switzerland, a country south-west of Germany.

I had the chance to complete my apprenticeship as an orthopaedic technician in one of the largest companies in Switzerland. We worked there with the newest technologies such as CNC systems (with this system you can create models that the Computer will grind for you). The company has many branches all over Switzerland with about 200 employees.

After a few years of experience in prosthetics, orthotics and several other jobs, I wanted to improve myself. In Switzerland we don't have a Meister School for orthopaedic technology; which is why I came to Munich, over 500 km away from my hometown. At school we learn more about the human body and how all the bones and muscles are connected. Small connections are often neglected, but they can have a deep impact on patients' health. For example, a false shoe inlay can cause serious back pain.

I wonder how long it will take until we can scan the body with the help of our smart phone camera, create prosthetics on the computer and print it in 3D.



Joel, 28, Switzerland



Melanie, 31, Germany

I am Melanie Kaske and I was born in 1984 in Gütersloh, a city in Northern Germany. In 2006, I finished my apprenticeship as an orthopaedic technician and worked in this role in Berlin until September 2014. In order to improve my professional skills, I found my way to Munich to the Meister School of orthopaedic technology - an exciting new chapter in my life.

My days start at 6 o'clock in the morning. After quite a long drive to school by the local transport, very long school days await me. Usually lessons take place from 8 in the morning until 6 o'clock in the evening, but after that you still have to learn and do your homework.

We, a class of 16 students, are taught by very dedicated teachers, but also by renowned specialists from local hospitals. We really enjoy being at this school where we learn a lot because the education is at a very high level. But this doesn't leave much time for meeting friends, doing sports or just hanging around and enjoying the city.

Studying here is not always easy because I miss my family at home in Berlin.

But Munich is a beautiful city. It's amazing how on the one hand Bavarian tradition is maintained and on the other hand a very modern life style is lived - just look at the Munich Oktoberfest!

Although the course is very demanding, I have made the right decision to come to Munich and to study at this great, modern and well-equipped school. I like it!

I had a dream and it is wonderful when dreams come true.

My name is Jana Schneider; I am 25 years old and come from Russia. I was born in a small Russian Province called Karpovka. Compared to Germany, it has a very low standard of living with few prospects for the future. Twelve years ago, I had the possibility to emigrate from Russia to Germany. The first years in Germany were not easy because I had to learn a new language and to get used to the new culture.

Jana



Since my childhood, I have been very interested in and passionate about medicine and craftsmanship, so I chose this profession. After 3.5 years of vocational training, I passed my final exams as an orthopaedic technician with very good results for which I was granted a scholarship.

In order to make good use of my scholarship and to develop further in life, I quit my job and applied for the Meister School. For this I moved to the big and beautiful city of Munich in the heart of Bavaria, but I have to live apart from my family. The lessons are very exciting and my classmates are great. I hope that all the classmates gain as much knowledge as possible in theory and practice and that we all pass the exams at the end of the year.

Collaboration Rwanda - Scotland

Mr. Roy Bowers, Dr. Arjan Buis and Lynn Legg from Strathclyde University, Glasgow visited the College of Medicine and Health Sciences in Rwanda and met the faculty from the department of Prosthetics and Orthotics. In their interactions they discussed possible areas of collaboration between the department and Strathclyde University. Still in the initial phase, the collaboration seeks to establish an academic partnership between the College and the University of Strathclyde in order to bolster the teaching, research and outreach activities in the area of orthopaedic technology. More importantly, during their recent visit at the College of Medicine and Health Sciences, Dr. Arjan Buis, Mr. Roy Bowers and Lynn Legg, initiated the first ever award for the best graduates in the Department of Prosthetics and Orthotics. The award was presented for the first time on 17 November 2014.

The first beneficiaries of this award were TUYISENGE Frederic, MUKAZI Muhoozi Yvonne, MUSANABERA Christine and RUKUNDO Jean de Dieu. The prizes were handed to them by the Principal of the College of Medicine and Health Sciences, Prof. Phil COTTON with Mr. Desire Ngendahayo, the Head of Prosthetics and Orthotics.

The Principal commended these 'best' students for having been outstanding among others. He further called them to keep the same spirit in serving the people with disabilities, excellently and professionally.



Mr Roy Bowers, and Dr. Arjan Buis During with students who recently graduated in their previous visit at UR-CMHS



Smiles were all around the recent graduates after receiving their certificates and prizes of the best students from the Principal and the Head of Department of Prosthetics and Orthotics.



The 15th graduation ceremony of Kilimanjaro Christian Medical University College, Tanzania, took place on 8 November 2014.

A total number of nine candidates were awarded BSc Degree in Prosthetics and Orthotics by Tumaini University Makumira.

The distribution of graduates per country are as follows; Tanzania (3), Kenya (2), Indonesia (1), Pakistan (1), Sierra Leone (1) and Zambia (1).

KCMUCo Graduation ceremony

Tanzania Training Centre for Orthopaedic Technology, Tanzania

My name is Nitah Eshiloni, and I am a 22 year old woman from Zambia. I went to the Tanzania Training Centre for Orthopaedic Technology in 2011 to pursue a Diploma for 3 years which I completed this year in August 2014 under the sponsorship of The International Society for Prosthetics and Orthotics funded by the United States Agency for International Development.

The experience at TATCOT for 3 years has been of great help in that I have learned and gained different working skills which will be used and delivered in the working field of prosthetics and orthotics anywhere.

My expectation now that I am done is to get a job. I am looking forward to delivering my skills to help and work with physically challenged people. In addition to this, gain more experience through the different challenges which will present themselves and make a difference in the Prosthetics and Orthotics world in Zambia while working hand in hand with the Orthopaedic technologist in the country. I am also looking forward to furthering my studies and growing in the field.

Lastly I would like to express my great gratitude to the sponsorship which enabled me to pursue the 3 year Diploma course at TATCOT and to become the first female in the country to have a Diploma in Orthopaedic Technology.

Nitah Eshiloni, Graduate Profile



Nitah, 22, Zambia



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**Louise Puli, La Trobe University Melbourne BPO (honours)
Participant in the FK Norway staff exchange programme & lecturer at TATCOT Tanzania 2012-2014**

I have always been a person who gets easily bored. When I decided to study at University I tried to find the most interesting, challenging and ever changing career so that I could ensure that every day would be different and interesting. I also dreamed of a career where I could travel the world and serve the community.

I am so glad I found Prosthetics and Orthotics.

Upon graduation, I decided that my major area of interest was paediatrics and worked at Sydney Children's Hospital, and then Melbourne Children's hospital. After 5 years working and becoming a confident clinician, I decided that I would like to extend my skills to include teaching and so I went back to study teaching at the weekend. At this point I decided it was time to live my dream of working abroad and I applied to join the FK Norway Staff Exchange Programme. I was successful and spent the last 2 years working as a teacher at TATCOT Tanzania.

Being a part of the FK staff exchange programme has been absolutely fantastic. It is a programme not only about giving but also learning and allowed me and my colleagues from around the world to all improve through sharing our experiences and strengths.



Louise, with a patient

Coming from Australia to Tanzania I was surprised to see the technology being taught was much the same as in Melbourne with the addition of polypropylene componentry originally designed by ICRC. I was able to experience life in another culture and learn to speak Swahili. Even though it was my first time in Africa, the staff and students were so welcoming I quickly felt at home. I found TATCOT students to be dedicated and hard working with strong dreams for their futures. They also had excellent practical skills as many of which had completed a diploma before commencing degree studies. I felt I was able to contribute positively to the school and share my knowledge in many areas and wholeheartedly enjoyed every minute. Working and living in a developing country taught me so much and also exposed me to the difficulties facing disabled people in these communities. It spurred a passion in me to help and continue working in the developing world.



Louise (at the centre), with colleagues from TATCOT

Apart from my position in Tanzania, my prosthetics/orthotics career has taken me to many interesting countries including Norway, Ethiopia, Cambodia and India, and I have worked with people from many more. My main reflection is how lucky we are to belong to a profession which truly has an international community, where people from around the world can collaborate and help each other in the interest of our patients.

Now having returned to Australia, I am studying my Masters and am on the hunt for my next P&O adventure!

Amandi J. Rhett - Student Profile

Baylor College of Medicine, Masters of Science in Orthotics and Prosthetics

I am Amandi Rhett, currently a first year student at Baylor College of Medicine’s Orthotics and Prosthetics Program, located in Houston, TX. I chose Baylor College of Medicine’s Orthotics and Prosthetics (P&O) programme because of its structure of 12 months of didactic education, the incorporated 18 months dual residency, and the wealth of resources at the Texas Medical Centre.

After working as a Mechanical Engineer and competing as a professional track and field athlete, the appeal of the programme structure came at the right time for me to pursue my first career choice: Orthotics and Prosthetics. The BCM O&P faculty and institutional values have created an environment that fosters not only the development of skilled clinicians but encourages critical thinking and problem solving to become leaders in our profession.

I first became interested in the field of P&O my first year as a student track-and-field athlete at Georgia Tech. The first workout of my collegiate career is one that I will never forget. I found myself doubled over in utter exhaustion, gasping for air, and clutching my lactic-acid-filled hamstrings. This was a new level of training for my body, and it required me to push myself beyond my limits. I realized then, as a gifted athlete, my mobility afforded me an education and an opportunity to pursue my sport at a collegiate and professional level.

For me, the questions remained: How do individuals who have lost or need assistance with their mobility regain their functioning? And, where can I fit as a part of their rehabilitation? With my pursuit of an engineering degree and my passion for mobility, it was



Amandi, Texas

at this point that my desire to be a part of a team of health professionals that would aide, increase, and enhance mobility for all persons, whether to compete as an athlete or perform everyday tasks, began.

With an MSOP degree, my goal is to become a skilled O&P practitioner, provide a unique contribution to Paralympic sport as an industry professional and coach, and contribute to evidence based practice through lifelong involvement in continuing education and research.

Afghan Diploma in Prosthetics and Orthotics, ICRC, Afghanistan

Mahpekay Sidiqy - Graduate Profile



Mahpekay, Afghanistan

I am Mahpekay Sidiqy from Afghanistan. I have worked in the field of prosthetics and orthotics since 2005. For the first five years I worked at the Kabul Orthopaedic Organization (KOO) as a Technician assistant, starting at first as a tailoring helper and developing to a casting helper.

Throughout these years, in addition to my full-time employment, I attended several professional courses there. My aspiration has always been to develop myself further professionally and acquire a good understanding of prosthetics and orthotics.

The opportunity for further improvement was finally available when I was introduced to ICRC by KOO and invited to participate in the Afghan Diploma in Prosthetics and Orthotics school conducted by the ICRC. I enrolled and studied prosthetics and orthotics, graduating with an ISPO Category II level certificate in 2012.

My interests in this field are manifold. In addition to my engagement as a P&O professional, I am also a bilateral above knee amputee and therefore am also a user of prosthetics services myself.

Being able to observe the problems of the P&O profession from both aspects, my desire is to serve as a professional who will offer services to persons with disability in a way which will make them feel better. Having been in similar situations myself, I can understand how my patients feel. The consequences that the wars in Afghanistan over the last three decades brought upon the people of Afghanistan are devastating. Many people have lost their limbs and suffered from diseases which created physical problems and need help. We are all human beings and we depend on each other, thus we should try to help each other.

One further reason why I selected P&O as a profession is because according to Afghan tradition, women are not allowed to go to a male P&O or doctor. Unfortunately, there are few women in the profession and even fewer with good prosthetics/ orthotics education in Afghanistan.

The main reason for choosing this profession at the highest level I can achieve is my belief that it is the best way I can contribute to helping disabled women in Afghanistan.

Some people say that P&O is too physical for women, but having had experience in P&O I say we can do it! I am a double above-knee amputee and even I still managed to do it! Even though I have a physical disability, I am well satisfied and happy being in this profession.

Working as an assistant to a P&O technician, one of my great ambitions was to become a prosthetist/orthotist. People around me tried to discourage me, telling me because I am disabled and a woman, that I could not achieve that ambition. They thought that I did not have the ability to keep up with the practical work and follow the lectures. But I knew that I could do all of that. Their disbelief encouraged and motivated me to show them that men and women

can share the same goals.

My goal for the future is to become a teacher and share my knowledge with others. To achieve this goal, I will study to become an ISPO Category I certified prosthetist/ orthotist, and will be able to provide better and more appropriate services to my people in need.

Having passed the entry test to Mahidol University, I am currently enrolled in the Blended Learning Bachelor program implemented jointly by Mahidol University, Human Study e.V. and the ICRC. I am grateful to the facilitators of this educational program for providing me and my colleagues with the opportunity to study and develop ourselves further in the prosthetics/orthotics profession.

Deen Mohammad Elham - Student Profile



Deen Mohammad, 28, Afghanistan

My name is Deen Mohammad Elham. I am 28 years old from Khost province, Afghanistan and a third year student within the Afghan Diploma of Prosthetics and Orthotics (ADPO) programme. The oldest of 8 siblings, I graduated from high school in 2005 in Peshawar Pakistan.

After my graduation my family soon moved to our country Afghanistan where I was faced with lots of challenges, therefore my parents could not afford to send me to the university. I immediately started working with a non-government educational institution for an English language school and from 2005 to late 2011 I was an English teacher.

To be honest, I had never imagined being a Prosthetist or Orthotist. In late 2011, I heard an announcement from the ministry of public health about the Afghan Diploma in Prosthetics and Orthotics in Kabul with ICRC, and asked for further details. ICRC is the only organisation providing such training in Afghanistan. I am very thankful to the entire team of ADPO for being very enthusiastic about the profession and helpful to the students.

I am not learning only prosthetics and orthotics, but also how to become an effective and efficient professional in our field. I always try my best to study and do practical work at the workshop.

Having courage is important to succeed and I am looking forward to my graduation. Being far from my family is not easy and it takes a lot of effort to concentrate. At the beginning I found it very difficult.

My focus goes now to people with disabilities who are marginalized and excluded from society and who therefore do not have easy access to prosthetic and orthotic services. My hope and dream for the future is to support the poor people with disabilities in Afghanistan to be independent through the provision of a good physical rehabilitation service.

Damien Dubourgoux
 - Student Profile



Damien, 23, France

My name is Damien Dubourgoux, I was born on May 4, 1992 in Clermont-Ferrand a little town in the centre of France. I am a first year student at the ISTM Montplaisir School of Prosthetics and Orthotics in Valence. Before coming here to study, I studied medicine for three years in the Medecine Faculty of Clermont-Ferrand. I wanted to become a physiotherapist but unfortunately in spite of all the work which I put in during these three years I wasn't been able to join the physiotherapy school of Vichy. This period strengthened me mentally and I love my new course today.

I discovered the job of prosthetist orthotist thanks to a family friend and it's after several short experiences with professionals that I decided to apply to this three-year course.

Passionate about motor sports and mechanics, I'm delighted with the idea of producing something with my own hands. I love being in the workshop because we learn to work with all types of materials such as plaster, plastic and steel. I also appreciate the contact with patients, to take into account their needs to adapt the theory and create something unique for them. In addition to our lessons, we are fundraising for our project next year when we are organizing a humanitarian trip to Madagascar for our internship during which we will share our knowledge and learn the local techniques in the National Equipment Centre.

I am really looking forward to helping those in great need. What could be more beautiful than to restore mobility to someone?

Laure Jézéquel
 - Student Profile

I'm Laure Jézéquel, and graduated from the Montpellier Occupational Therapy Institute in June 2014. I decided to continue my studies in the medical sector so in September 2014 I joined Montplaisir College to become a prosthetist orthotist.

During my occupational therapist training, I did internships where I treated patients with amputations and made upper limb orthoses. I also met prosthetists orthotists who spoke to me about their work I became really interested in P&O, and decided to train in the field.

For the moment, several scientific subjects are not of interest to me, even if I know they are necessary. I hope they will be replaced by pathology or psychology lessons soon.



Laure, France

Fortunately, we spend a lot of time learning the ways to make devices in a practical and effective manner.

Making an impression, drilling, riveting, thermoforming...that's great and when I am doing that, I don't notice how times flies. I'm looking forward to doing a traineeship in a company, meeting patients, manufacturing my first

device alone and working with other practitioners like doctors and physiotherapists.

The school's staff and professors are very supportive; they really want us to succeed. We also can rely on 2nd and 3rd year students. They give advice and guide us, especially for the humanitarian project to Madagascar the class will do in our 2nd year.

During the trip, we will make devices for Malagasy people with local prosthetists orthotists. It's a trip of discovery because we'll learn other working methods, new cultures and ways of living. In short, it's a great opportunity for us.

Thanks to this supportive framework plus the lessons and internships in France or abroad, I hope to gain the knowledge, skills and attitudes to become a good practitioner.

Ikana Tunggal, - Student Profile



Ikana, 35, Indonesia

My name is Ikana Tunggal, I am 35 years old. I come from Central Java in Indonesia, I am married and have 2 children.

When I was in Senior High School I dreamed of continuing my education through university but I am from a poor family, my parents had no money and I needed to get

a job to support them so had to stop my high school education. I found a job working as a security guard. After 5 years, my brother got me a job as a floor man for an oil company. Then in 2011 I saw some job opportunities at JSPO and sent in my CV. They offered me a job as an Orthotic and Prosthetic Technician.

It was very different to anything I had done before, I felt intimidated and not sure if I could do the job. But then I started to learn all the workshop skills - draping, grinding, laminating and bending side bars! I had excellent support from the teachers at JSPO and I really started to enjoy my job. Eventually I was given the opportunity to be the technician for the clinical placement. This was a very busy role but I learned so much about how to solve problems and also got to spend time in the clinic with the patients so I could see what effect the device had for them. That was the best part and I wished I could do

In 2014 Exceed gave me the chance to study at JSPO and offered me a scholarship. I couldn't believe how lucky I was and that I could achieve my dream of finishing my education. I was so happy and determined to take my chance.

Being a student is not as easy as I thought it would be. I am having so many new experiences- studying and sitting exams is challenging, integrating with my younger classmates and also managing my time so I can still spend time with my family. My children understand when I need time to concentrate and study. I often have to study until midnight or morning especially when I have exams.

I have a responsibility to Exceed to try as hard as I can because they believed in me and have given me this opportunity. Also to my family and colleagues past and present who have supported me and continue to do so, along the way.

Mobility India, India

Ruqaiyah Nasser - Student Profile

After I finished my diploma course as a staff nurse, I worked at Algemene Hospital in Mukalla city, Yemen in paediatrics for two years. There, I developed an interest in therapy, and took a six months course. Dr Ahmed, our Centre Manager, informed me about the prosthetics and orthotics course at Mobility India, and suggested that I take it up. I had no idea what the course entailed, but for the next few months I started working under Mr Hani Bansoode, who was also trained at Mobility India, and was the person in-charge of P&O at our centre.

I developed a keen interest in the subject, and decided to take up the course.

At home, it took a lot of persuading for my parents to allow me to come here. I explained to my mother, how a course like this would help women in our country, where it is difficult for men to treat women patients due to cultural norms. I sat with her and explained that it is rare to get a chance like this. Also, in our country, accident and war victims are common, so a course like this would enable me to help hundreds of people in need, especially women. After much persuasion my mother finally agreed and my father came to our centre, had



Ruqaiyah, with a patient

discussions with Dr Ahmed, and signed the necessary papers.

I am thankful to ICRC and USAID--ISPO for supporting my studies. Initially I

did not settle here in India, I found the people, culture and food very different and was a little unhappy. But over a period of time, I began to love this place. I was under good trainers like Rajdeep, Kamraj, Hari and Sanjoy Sir. I now have friends from Yemen, Sudan, Lebanon, and India. I have learned a lot here. Mobility India made a lot of effort to ensure I received adequate learning and necessary training. Due to our inadequate language skills, the trainers would use pictures to enable us understand a concept better. They also provided us additional support with English language. Today, I am a lot more conversant with English

than I was previously. I also got to handle a wide range of cases, and interact with different service users.

I have begun to like it so much here, that I almost don't want to go back. The sense of safety and freedom for women here is immense. Back home, women are dependent on their male counterparts for a wide range of social conduct and I know it will take a lot of getting used to once I am back at Mukulla.

I am in the third year of my diploma course and will shortly be taking my final exams. Once I am back home, I will work at the Centre of Prosthetics and Physiotherapy,

Mukalla, Yemen. I may work there for the rest of my life but I dream of doing a bachelor's and a master's degree in the future. When I decided I wanted to pursue my studies and work with disabled people, I had to call off my engagement because my partner did not approve of a working woman as his life partner. Luckily for me, my parents stood by me I have taken a bold step towards my dreams and aspirations. Mobility India has given me the confidence to go out there and make a difference to people's lives. It has empowered me to make decisions. This is just the first step, with my new, brave wings, I am ready to fly.

Cambodian School of Prosthetics and Orthotics

Hilde Løfsgaard - FK Norway staff exchange programme

My name is Hilde Løfsgaard, I am a 27 year old female prosthetist/orthotist from Norway. I started my prosthetics and orthotics education at Oslo University College in 2008, and finished my bachelor degree in 2011. After training, I started to work at Ortopediteknikk AS in Oslo and in August 2013 I got my authorization as a Prosthetist/Orthotist. In Norway I worked clinically with both prosthetic and orthotic patients and am lucky that we can work with many different types of materials and components.

In October 2014, I became part of an FK Norway exchange project between Norway (Sophies Minde), Cambodia (CSPO), Tanzania (TATCOT) and Malawi (KCH). The main goal of this project is to increase capacity in prosthetics and orthotics Educational

Institutes and Services in Asia, Africa and Norway by exchanging available resources and experiences.

As a FK-exchange participant, I am supposed to live in Cambodia and work as a P&O lecturer at CSPO for 12 months starting from November 2014. It has so far been 3 months for me in Phnom Penh and I really enjoy living in Cambodia, even though it is hard being so far away from friends and family for a whole year. Because I feel the needs of people in this



Hilde, 27, Norway

country I know I can use my previous experience from Norway to help raise the quality of life for many people.

I think Cambodia is a very interesting country. Getting to know the history about the genocide during the Khmer Rouge regime and hearing all the stories had a great impact on me.

Working at CSPO has so far been rewarding, interesting, impressive and challenging. The staff, students and the patients are very nice, friendly and always happy. The challenging part has been the language barrier. In the class that I teach there are 14 students and they come from Cambodia, Myanmar, Korea, Kiribati, Samoa and Zambia. Many of the students were not used to speaking English every day as their means of communication when they started at the school, so to teach a specialist subject like P&O in the English language has not always been easy and at the start we

experienced mis-understandings but the students are working hard to improve their knowledge and English skills every day.

What has impressed me more is how a range of different prosthesis and orthosis is made when they don't have access to many different materials and components, and that the patients are satisfied with what they are given and do not demand more. In Norway the patients read about different materials and

components on the internet and demand the best components without understanding the cost or that the different components are not always right for everyone.

There are so many differences between Norway and Cambodia. One of the biggest differences is the weather. In Norway it can be very cold during the winter with snow, and in the summer temperatures can be around 20-25 Celsius.

I am prepared for a challenging summer in Cambodia! Another difference is the culture. People in Cambodia are very friendly and also very kind, and they will happily share their food, even though they don't have enough. I think the Norwegians have something to learn from the Cambodians! I am looking forward to everything I will learn and experience during the next year, and hopefully I can give something back to Cambodia and CSPO!

Alabama University, USA

Cassandra Delgado, Florida

Cassandra Delgado is a 22-year old native of Graceville, Florida. Currently, she is enrolled in the Masters of Science P&O programme at Alabama State University.

With a family history dictated by type II Diabetes, Cassandra was exposed to several different aspects of the healthcare field. Due to end stages of complications with Diabetes, Cassandra's grandmother became a bilateral amputee. While seeing the challenges that amputees face on a day-to-day basis, Cassandra became more interested in working with that population. While in her undergraduate programme at the University of West Florida, Cassandra was introduced to the career field of P&O. Almost immediately, she knew that her future efforts would be entirely dedicated to helping those with impairments and could not wait to learn more about how she could help others.

Before being accepted to Alabama State University's MSPO programme, Cassandra volunteered her time and completed an internship at a local P&O clinic. During this time, she realized that paediatric patients brought her the most excitement.



Cassandra, 22, Florida

Volunteering became more of an enjoyment rather than a graduation requirement. Although at times it could be stressful, at the end of the day, Cassandra was energized and looking forward to following up with patients. Cassandra completed her first semester of the MSPO programme with a 4.0 GPA and continues to study and work hard while striving for excellence.

This programme has challenged her in unimaginable ways that will aid her in her journey to becoming an excellent and passionate prosthetist and orthotist. One of the greatest aspects of the programme for Cassandra is the structure of her classes. The mornings are spent learning foundational concepts and the afternoons are where those

concepts are applied to the real world. Her professors help her develop and improve her hand skills by giving many projects and ample amount of feedback. Cassandra enjoys the lab time where currently casting and modifications are being taught.

Cassandra has invested a great amount of thought into her future hopes within the field of prosthetics and orthotics. Ideally, she would love to be involved with working for St. Jude Children's Hospital or an organization with similar interests that put efforts into our future generations. However, when considering her family history, Cassandra also has interests working with the Diabetic population. Her main focus in the clinic would be helping increase awareness and involvement in the Lower Extremity Amputation Prevention (LEAP) program for patients with sensation loss in their lower limbs.

Overall, Cassandra is very excited about what her future holds within our field. She continues to push herself in her studies as she prepares to be part of the next generation of prosthetists and orthotists.

Dexter Constant Inaugural Class Reflection

As my first day of graduate school approached in the Alabama State University prosthetics and orthotics programme, I remember feeling a sense of nervousness, excitement, and suspense. I had finished the requirements of my undergraduate degree in biology just weeks previously and quickly embarking on a new journey in the inaugural class of the ASU P&O program, realised my new task would be tough.

With me being in the first class, I had no one to tell me exactly what things would be like. Upon meeting my other three classmates we quickly became acquainted and a bond was formed. With the staff, professors, and students; the department grew into a family. It felt like an honour to set the standard and pave the way for the future of the program. Learning the unique skills' set of a P&O took lots of late night studying and discipline. My professors and staff also stayed late after classes to help my

classmates and I achieved goals that at some points I never thought I could achieve. During my time in the programme I had the opportunity to travel to various P&O conferences and meet some of the leaders in the field. I was also exposed to a wide variety of products and patient care techniques through the many speakers that were invited to our campus.

The graduate programme was definitely a challenge and took much endurance and faith. I was glad to have the staff and faculty at Alabama State University to believe in me and help me along the way during my journey. As the completion of my course work was near its end, I was so relieved to have made it that far but I knew I had another goal to complete after graduation. As a requirement for my certification in the field of P&O I had to complete a 2 year NCOPE residency with an ABC certified P&O facility. I felt the sense of nervousness, excitement, and suspense all over again. I knew this



Dexter (centre)

new journey would take me away from my hometown of Montgomery, AL. After being given the opportunity to network at various conferences I found my residency placement at the Centre of Orthotic and Prosthetics in Memphis, TN. I knew I needed the confidence and skills in the continuation of my education to become ABC-certified. My professors as well as the staff at Alabama State University have equipped me well to provide proficient care in the field of prosthetics and orthotics.

Sri Lanka School of Prosthetics and Orthotics, Sri Lanka

Loganayaki Ramakrishnan - Faculty Member



I am Loganayaki Ramakrishnan from the northern part of Sri Lanka. Currently I am practicing as an assistant lecturer at the Sri Lanka School for P&O (SLSPPO). It is a pleasure to share my story with you.

My journey turned to P/O when I was a part-time teacher and social worker. I entered to the SLSPPO in 2007 May with zero knowledge of Prosthetics and Orthotics.

I enjoyed the time in SLSPPO as a student and achieved the best student award. I really felt the importance of my job and life in my clinical placement. I experienced a real sense of happiness and satisfaction in seeing a patient's smile. That encouraged me to become fully involved in this field

and always work hard to succeed. I graduated as a Prosthetist Orthotist in 2010 from SLSPPO and was assigned the challenge of helping to build up the new P&O centre in Vavuniya General Hospital. I worked intensively at this task before being given the great honour of a scholarship to study P&O to Bachelor degree level in Thailand making me the first graduate in my family, and I am very proud of this achievement.

I returned to my motherland in May 2014 and started to practice as an assistant lecturer. At the same time I am contributing to north east centres as a clinical mentor.

My educational pursuits would not

be possible without generous support from scholarship sponsors “Nippon Foundation” and “Exceed” Thank you for enabling me to accept this opportunity! My passion

now is to contribute to the education of others, especially women’s education which is often overlooked. In this way, I can help improve the lives of people living

with disabilities. Looking to the future I would hope to further my studies, perhaps at post-graduate level. Now that I have taken the first steps I know that anything is possible.

Sirindhorn School of Prosthetics and Orthotics, Thailand

Anna Margarita Lugue - Student Profile

I am Anna Margarita Lugue. I was working as a physiotherapist in the Philippines before I entered the Exceed scholarship. Currently, I am a fourth year student in Sirindhorn School of Prosthetics and Orthotics (SSPO), Thailand.

I came to SSPO because I wanted to learn more about the science behind the human-P&O interaction and wanted to understand how externally applied devices can be maximized to improve mobility of patients. As I learned how to cast sockets and got exposed to a variety of artificial joints, I got a deeper appreciation of how challenging it is to replace or add components of motion following a disability.

The most challenging part is being able to fabricate a device that will fit with the multidimensionality of human motion. Often we are required to simplify motion as something one-dimensional and reduce it as belonging to activity levels in order to address clinical problems. My understanding is that, functional recovery requires more than complex engineered components which mimic the mechanical capabilities of lost anatomical structures. The human system is very dynamic and some patients will always find a way to recover from disability.



Anna Margarita

Patients adapt to the use of any components provided to them. I think the most important thing that came out of my PO education is the realization that there is a limit to what devices can accomplish but components simplified to fit a patient’s needs push boundaries of training possibilities.

I am thankful for having entered this international programme and have been exposed to a wide spectrum of PO technologies. The slightest experience of being able to don different orthoses before patients do, helped me greatly in understanding my patients and my devices better. Moreover, SSPO has provided me a place to learn with and from professionals from all over the world.

It has been very enriching to work around professionals from both developed and developing regions, see their ways of doing things and hear such wide array of perspectives. The experience has opened a lot of research interests and has given me a personal challenge to respond to the needs of my country the way all of my future colleagues are striving to.

I will be returning to the Philippine School of Prosthetics and Orthotics (PSPO) to share what I have learned and to use my new skills to serve persons with disabilities. The Philippines is a country of more than 7,000 islands and the World Health Organization (WHO) estimates that roughly 10% of hundred million Filipinos have disabilities. I am hoping that my efforts can help integrate prosthetics and orthotics as a strong ally of other rehabilitation professions so we can improve the accessibility of our services, offer the best quality and most efficient means possible. I plan to continually learn about the science of human motion and am looking forward to meeting more people who share the same fascination.

Nikolai Santos - Student Profile

My name is Nikolai Santos. I am a Filipino and a 4th year student at the Sirindhorn School of Prosthetics and Orthotics (SSPO), Mahidol University, Thailand. It was through the partnership of University of the East Ramon Magsaysay Medical Centre Incorporated (JERMMMCI), Exceed and the Nippon Foundation that made this endeavour possible.

Before coming to SSPO, I was a physiotherapist at a government hospital in the Philippines. The hospital primarily caters for charity patients and the delivery of healthcare services has always been challenging. Government insurance coverage for rehabilitation services was limited and there was no coverage for orthotic and prosthetic devices at that time. Optimizing functional outcomes was not too easy since provision of prosthetic and orthotic devices are commonly delayed by factors like the availability of materials, cost of components and a very limited number of technicians.

It was uncommon in my daily practice to work alongside prosthetists and/or orthotists. There was a time when I was asked to assist a patient for body weight supported treadmill training. The patient was a transtibial amputee with a comminuted fracture of the other non-amputated leg. A Canadian prosthetist came to help out. While it had been a struggle hoisting my patient up to walk on two painful legs, the session went well with a qualified prosthetist making the necessary adjustments to the prosthesis. It was then a skill that I had very limited knowledge about. It was also one of the experiences that lead me to this profession.

My entry to SSPO is a part of the capacity building project for the newly established Philippine School of Prosthetics and Orthotics (PSPO). PSPO is a pioneering venture by UERMMMCI, Exceed Worldwide and Nippon Foundation aiming to respond to the need for qualified prosthetics and orthotics professionals in my country. Studying in SSPO provided me with a global outlook in prosthetics and orthotics by training with experts in the field from different countries. The school provided me a unique chance to work with my peers in the South-East Asian region which enabled me to appreciate their locally sourced materials and technologies. My views in rehabilitation expanded as my appreciation for potential collaborations with my future colleagues did.

I look forward to the growth of prosthetics and orthotics in my country as it happens alongside the development of the Association of South-East Asian (ASEAN) Economic Community. Recent developments in liberating trade services include the Mutual Recognition Arrangements (MRA) for professional services. Such agreements will enable the qualifications of PO professional services suppliers in the future to be mutually recognized by signatory member states. It can serve as a framework for capacity building, research collaboration and policy developments. I'm hoping that as I go back to PSPO, I can contribute in preparing future leaders in field of prosthetics and orthotics in the Philippines to be capable in responding to the needs of my country and the ASEAN region as well.



Nikolai