

2000 Academic Awards

The NCPO awards recognise outstanding academic achievements by students. Winners of 2000 academic awards received their prizes at the University Prizes Ceremony on May 31, 2001.

The Australian Orthotic Prosthetic Association Inc. (Victoria Section) Prize for the most outstanding first year student was awarded to Mr. Phillip McLennan.

The Australian Orthopaedic Association (AOA) Prize for the most outstanding second year student was awarded to Ms. Natalie Armstrong.

The International Society for Prosthetics and Orthotics (ISPO) Prize for the most outstanding third year student was awarded to Ms. Rebecca North.

The Robert Gardner Memorial Prize for the best result in PO3IS2 Independent Study Project, donated by the Australian Orthotic Prosthetic Association (AOPA) and Harcourt Australia, was awarded jointly to Mr. Marcus Cassar and Mr. Richard Courtney.

The winner of the Hans Georg Nader Prize for the best Honours thesis, donated by Otto Bock Austral/Asia, was Ms. Tracy Robinson for her project titled "The Effectiveness of Ground Reaction Ankle-Foot Orthoses in the Management of Genu Recurvatum in people with the Late Effects of Polio".

The NCPO and the University gratefully acknowledge the prize donors and congratulate the prize winners.

New Award: EH Armstrong Prize

Last year, Ross Armstrong, a former School of Human Biosciences staff member, and his mother and family, established an annual prize in memory of Ross' father who was a transtibial amputee. The E.H. Armstrong Prize is awarded to recognize contributions to the care and management of lower limb amputees. This contribution may be in the form of an undergraduate, honours or postgraduate research project. It may also recognize services to lower limb amputees through community service, volunteer work or similar activities.

The inaugural winner of the E.H. Armstrong Prize was Dr. Stefania Fatone for her PhD thesis titled "Gait Biomechanics and Prosthetic Management of Children with Proximal Femoral Focal Deficiency (PFFD)".



Nobel Peace Prize Laureate Speaks to P&O Students

As a cheeky young Cambodian, Tun Channa Reth, or Reth as he is affectionately known, was more interested in lollies and wagging school than in Nobel Peace Prizes and the Ottawa treaty. But like millions of his people, suffering was thrust upon him at the hands of the Khmer Rouge regime in their genocidal occupation of Phnom Penh. Exiled to Thailand after losing his father and sister to the Khmer Rouge, Reth eventually returned to Cambodia and was enlisted as a soldier. During his service, Reth stood on one of the millions of landmines left behind by decades of war. He lost both legs and, in his mind, his will to live.

With great effort, and buoyed by his family, Reth faced the many challenges of a landmine survivor in a developing nation. After begging in the streets of Phnom Penh, unable to find meaningful employment due to his physical limitations, he was eventually employed by the Centre of the Dove, where he designs and manufactures wheelchairs. As his nation, his family and his emotional scars healed, the international movement to ban the three dollar devices that kill and maim 26,000 people per year gained momentum. Reth became the ambassador to the International Campaign to Ban Landmines, an initiative that was awarded the Nobel Peace Prize in 1997.

At the request of the Prosthetic and Orthotic Student Society, Reth visited La Trobe University and shared his story. He was accompanied by Helena Hughes from AUSAID, photojournalist John Rodsted and Heather Elliot from the International Campaign to Ban Landmines. Students learned of the scourge of landmines and their indiscriminate use across the globe. They gained an appreciation of the horrendous consequences of landmine accidents and the international movement to ban their use, thus broadening their understanding of the people they may work with as graduates of P&O.

Curriculum Corner

Detail about the P&O curriculum can be found in the 'Course outline and subject descriptions' section on the NCPO homepage: <http://www.latrobe.edu.au/www/ncpo/>

Introduction to Applied Prosthetics and Orthotics

First year students have just completed their first semester, which included an introduction to P&O manufacturing techniques and an introduction to prosthetic theory and applications. Projects completed included the manufacture and bench alignment of a laminated trans-tibial socket; CAD/CAM modification and alignment of a trans-tibial prosthesis and modification and manufacture of a moulded plastic trans-femoral socket. These projects developed hand skills and familiarity with manufacturing procedures, and introduced applied prosthetic and anatomical knowledge.

These students are looking forward to their first clinical placements in July, at facilities throughout Australia. The placements will allow the students to further apply their theory and to witness prosthetic and orthotic clinical practice. Next semester will involve an equivalent introduction to orthotic theory and applications. First year prosthetic and orthotic subjects are coordinated by Rod Cooper, who can be contacted on phone: (03) 9479 5862.

Socks Donated to Cambodia & Vietnam

Instead of trying to sell his seconds and remaindered stock, Richard Law has generously donated over 3000 prosthetic socks to the Vietnam Veterans of America Foundation programs in Cambodia and Vietnam.

The NCPO and the Prosthetic and Orthotic Student Society will arrange delivery of the socks to Cambodia.

Law Comfort Pty Ltd manufacture a variety of prosthetic and orthotic hosiery and can be phoned on: (03) 9725 1395.

Richard Law with boxes of prosthetic socks he donated to VVAF, Cambodia.



Össur & APC Support NCPO

Össur, through the Advanced Prosthetic Centre in Sydney, provided 16 ICEX kits and locks for use in 3rd year practical classes. This donation enables us to teach leading edge techniques to future practitioners. APC also provided 24 prosthetic feet for use in a research project. The NCPO is very grateful for this support of P&O education, as the NCPO budget will only cover basic items. Please contact Tim Bach, phone: (03) 9479 5884, if you would like to donate materials or components for teaching and research purposes.

What's Happening in P&O Clinical Education

Twenty-one fourth year students complete the second of their two nine-week placements early in June. Students were located from Tasmania to Queensland, Melbourne to Perth, and overseas in Chicago, Cambodia and Athens. Fourth year clinical examinations are scheduled for June 18 – 21. At the Clinical Symposium Day on June 22, students receive an address from the Dean of Health Sciences, discuss the course with the Head of the NCPO and learn about employment in Australia and overseas. At the April Symposium Day students began resume writing, practiced interview techniques, and learned about current Honours student projects.

First year students will soon be venturing across Australia on their first placement. Facilities in Sydney, Brisbane, Darwin, Adelaide and Melbourne will introduce 26 first year students to the working life of the prosthetist and orthotist.

We welcome four new clinical facilities: Cole Orthotics, Sydney; Regency Park Centre for the Disabled, Adelaide; Orthopaedics Australia, Melbourne and Orthotic Innovations, Melbourne. These facilities will begin offering first year placements and progress through to fourth year students if they wish.

The Clinical Education Guidelines will be reviewed and reprinted during July and August. Anyone with suggestions regarding amendments please contact Kaisha Gurry, Clin. Ed. Coordinator, phone: (03) 9479 5864. The Clinical Placement Survey for 2001/2002 and Letter of Exchange (new contract requirements) will be sent during July and August.

Advertisers Wanted

The NCPO News welcomes advertisers. Please contact Margaret Hodge on: (03) 9479 5778 for rates & deadlines.

Year 2000 Graduates

Six P&O undergraduate students received their testamurs at a graduation ceremony on Friday 6th of April. Three students received the BP&O degree and three received the BP&O (Honours) degree. Four additional students graduated in absentia. Fourteen other P&O students who completed 4th year in 2000 graduated at an earlier ceremony in October. The total number of year 2000 graduates was 24, including three conversion students.

First Australian PhDs

The millenium year was extra special for the NCPO because the first two Australian Doctoral students in prosthetics and orthotics qualified. Dr Nerrolyn Ford received her PhD in May for her research in Observational Gait Analysis. Dr Ford now works as a Lecturer at British Columbia Institute of Technology,



Dr Nerrolyn Ford (left) Dr Stefania Fatone

Canada. Dr Stefania Fatone took a flying visit from Northwestern University, USA, where she is working as a post-doctoral researcher, to receive her PhD at the recent ceremony. Dr Fatone's thesis examined gait biomechanics and prosthetic management of children with Proximal Femoral Focal Deficiency (PFFD).

NCPO Staff Research

Detail about NCPO research is published at conferences and in journals. An overview of a current staff research project is provided here, please contact Les Barnes, phone: (03) 9479 5847, if you would like more information.

Effects of prosthetic foot design on socket pressures in transtibial amputees walking on slopes & inclines

The pressure between a prosthetic socket and the amputated stump can be a major source of discomfort for amputees and a major cause of tissue breakdown (Sanders, 1995; Zhang *et al.*, 1998). Amputees report difficulties and identify increased socket pressures when traversing uneven, sloping and inclined surfaces. Theoretically, prosthetic feet that accommodate uneven terrain could substantially reduce socket pressures (Cortes *et al.*, 1997). The effects of level surfaces and some prosthetic feet on socket pressures during transtibial amputee ambulation have been investigated (Silver-Thorn & Childress, 1996). No studies have been published which have evaluated the effects of walking on ramps and cambered surfaces on socket pressures, or the extent to which these pressures might be modified by different prosthetic foot designs.

The purpose of this project is to investigate the effects of solid ankle, articulated and dynamic response prosthetic feet on socket pressures during ambulation on ramps and cambered surfaces. Three different prosthetic feet will be tested: a standard SACH foot (solid ankle cushioned heel), a semi-articulated K2 foot

(Flexfoot Inc., USA) and a Greissinger Multi-axial (Otto Bock, Germany). Walking trials will be conducted on three different surfaces: a level walkway, a cambered surface (medio-lateral incline typical of footpaths and roadways) and a ramp.

A socket pressure measurement system, using Force Sensing Resistors, was developed with the assistance of the Faculty's Technical Services Unit during 2000. This system will be used to measure pressures at the stump-socket interface. Pressure profiles during the gait cycle will be determined and peak pressures associated with the different feet will be compared.

References

- Cortes A. *et al.* Pros. & Orth. Int. 21(3):168-74, 1997.
- Sanders JE. Med. Biol. Eng. Comp. 33(4), 509-516, 1995.
- Silver-Thorn MB. & Childress DS. J. Rehab. Res. & Dev. 33(3):227-38, 1996.
- Zhang M. *et al.* Med. Eng. & Phys. 20(3):188-98, 1998.

Project support

This project is supported by a La Trobe University Faculty of Health Sciences Starter Grant, which was awarded to enable an initial research project to be undertaken. Advanced Prosthetic Centre, Sydney, kindly donated eight prosthetic feet used in the project.

2000 Course Review

The NCPO course was reviewed in November 2000. Unfortunately, we can not present the review panel's recommendations because the final report is not yet available. We hope to receive it soon, so that we can implement the recommendations next year.

NCPO Clinic Revival

The NCPO has re-established a fully functioning clinical facility. This has been well received by local health professionals who have begun to utilise NCPO orthotic and prosthetic services. With a promotional campaign over the coming months, the clinic should soon be running at optimal capacity.

As the level of work increases it will become necessary to outsource fabrication to external facilities. Quotes have been submitted by several Melbourne facilities and are currently being reviewed. It is our intention to use different facilities according to their expertise, to provide the most appropriate and cost efficient service to our patients. If you did not receive a copy of the quotation form and would like your facility to be considered for manufacturing, or if you have any other queries regarding the NCPO's clinical services please contact Rod Cooper, Clinic Manager on phone: (03) 9479 5862 or email: <Rod.Cooper@latrobe.edu.au>.

Last Call for Conversion

The last intake into the La Trobe University P&O Conversion Course will be in 2002.

After 2002, it will still be possible for a diplomat to gain a degree, however his/her course requirements will be decided on a case by case basis and will probably involve more study than the Conversion Course. As University regulations allow up to 50% credit towards a degree based on prior learning, a diplomat student would be required to complete approximately two years of coursework to obtain a degree.

Students who enroll in 2002 will have a couple of years to complete their conversion. If you hold a Dip. App. Sci. (P&O) and want to convert to a Bachelor of Prosthetics and Orthotics, please contact Jan Johnston, School of Human Biosciences Reception, phone: (03) 9479 5787 by 1st February 2002.

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A Plaster Grooving Tool

Tips from Stephen Hockey, NCPO technical officer

In our Introduction to P & O Laboratory subject, first year students practise basic safe manufacturing skills that enable them to quickly learn to make prostheses and orthoses during the course. One of the small exercises they undertake is to make a plaster grooving tool for use in practical sessions. As well as producing a useful little gadget, the students are introduced to basic metal working techniques.

Start with a piece of stiff metal about 2mm thick, 20mm wide and 120mm long. We use stainless steel as it doesn't corrode. Remove metal from each end to create a point on one end and a rounded end on the other, as shown in figure 1.

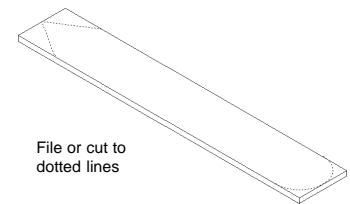


Figure 1. Initial cutting of metal.

Next, bend one end up and one end down as illustrated in figure 2.

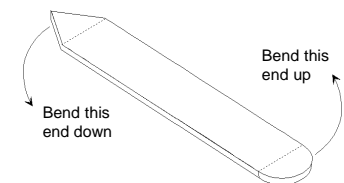


Figure 2. The ends are bent in opposite directions.

After filing a bevel on the outside surfaces of the pointed and rounded ends, the tool is ready for use. Figure 3 shows a completed grooving tool.



Figure 3. The completed device.

This is a nifty gadget for carving away small areas of plaster during modifications. It is especially useful for cutting grooves in AFO casts when preparing them for vacuum moulding, as illustrated in figure 4.



Figure 4. Plaster grooving using this simple tool.