

Japanese P&O Students Visit NCPO

The NCPO was privileged to host 22 P&O students from Kobe College of Medical Welfare in Japan from 3-5th of June, 2002. The students were in Australia on an educational visit to learn about Australian P&O provision and education. "We chose the NCPO following a review of its curriculum, and because of its international reputation for high quality P&O education," said Mr. Mitsuhiko Uchida, Director of the Kobe P&O program who accompanied the students on their tour. "You have not disappointed us."

During the visit, the Japanese students were given Icox casting and CAD/CAM demonstrations, attended orthotic and prosthetic classes with NCPO students and visited RehabTech and Caulfield General Medical Centre. A highlight of the visit was the 'Research and Education' session, in which students and staff from both facilities exchanged ideas on P&O service provision, education and research. A barbeque in the courtyard provided opportunity for Australian and Japanese students to interact informally. The NCPO and Kobe College hope to build the relationship between the two institutions to facilitate curriculum, student and staff exchanges.



Left: Sessional Lecturer Anneke Deutsch, and volunteer patient Chris Rawlingson, demonstrate Icox casting to the Japanese visitors including Mr. Mitsuhiko Uchida, Director of the Kobe P&O program (standing at right).



Right: NCPO and Kobe College students exchange ideas, and clinical tunic, at the courtyard barbeque.

La Trobe University Withdraws from Joint Project

The Commonwealth Department of Education, Training and Youth Affairs (DETYA) awarded the NCPO and the University of New South Wales (UNSW) a joint grant of \$1,040,000, over three years (2001-03), to develop a Prosthetics and Orthotics degree via distance education. The early conclusion of NCPO involvement in the joint project is reported here.

As suggested in the last edition of the NCPO News, progress towards the joint project has proven problematic since its inception. There were marked differences of opinion between the two universities regarding the course content and project financial arrangements. Despite considerable effort, these differences of opinion remained unresolved and as a result, LTU has chosen to withdraw entirely from the project. It is our understanding that the UNSW retains the bulk of funding and will continue to work towards delivery of the project for which the grant was awarded. LTU has not provided any of the NCPO curriculum to the UNSW, and will not be involved in determining the content and delivery of the UNSW course.

Staff of the NCPO will continue to develop on-line delivery of some topics that are appropriate for this method of delivery. Our intention is to maintain the traditional on-campus delivery style for the majority of academic and practical undergraduate teaching as, at present, this remains the most effective way for

students to learn this material. Recognition of prior learning will continue to be offered and we will go on making alternative enrolment arrangements for individual students, when possible, to facilitate timely progress through the course.

Although the NCPO staff had invested considerable time, energy and resources in the joint project, which began with good intention and seemed to have potential advantages, they recognise that no other outcome was possible. The NCPO wishes the UNSW luck in their P&O educational endeavours. Enquiries regarding the UNSW project should be made directly to Mr Ian Nelmes, UNSW Prosthetic & Orthotic Programs Project Officer, on phone: (02) 9313 8629 or email: i.nelmes@notes.med.unsw.edu.au

Questions regarding LTU's position may be directed to the Head of the NCPO, Mr. Rod Cooper, on phone: (03) 9479 5862 or email: Rod.Cooper@latrobe.edu.au

NCPO Staff Research

NCPO research is published at conferences and in journals.
An overview of a current staff research project is provided here.

Foot Orthosis Modification in Rheumatoid Arthritis

Rheumatoid Arthritis (RA) leads to forefoot deformity and forefoot pain that is thought to be partly due to metatarsal head (MTH) pressure overload. Foot orthoses provided to treat foot pain may incorporate a metatarsal dome placed proximal to the MTHs. Metatarsal domes are intended to redistribute MTH pressure to the midfoot, but their reported effectiveness varies (Chang *et al*, 1994; Hodge *et al*, 1999). Research suggests redistribution of pressure distal to the MTHs may be effective (Hayda *et al*, 1994). Design criteria for a foot orthosis modification FOM to relieve the MTHs has not been reported in the literature. The aim of this project was to design and document a FOM, based on the plantar pressure distribution at the time of peak MTH pressure, for use in RA.

Peak plantar pressure patterns of eight feet from RA subjects were analyzed at the instant of peak MTH pressure, which occurred at 84% of stance phase. At that instant, weight-bearing was through the toes, MTHs and forefoot. The midfoot and rearfoot did not transmit force. Criteria were established to define a FOM shape relative to individual pressure distributions. The criteria resulted in a FOM that was located beneath and distal to the MTHs. Preliminary testing of the new criteria was conducted on three feet in subjects with RA. In two of the three feet, central MTH peak pressure reduced dramatically when compared to reductions achieved by other authors (Chang *et al*, 1994; Hayda *et al*, 1994). These preliminary results suggest a customized, distally placed FOM may be an effective clinical tool in managing the RA foot. Further testing of the design criteria is warranted and will be undertaken during 2002.

Project support

The project was undertaken by Jackie O'Connor as her P&O Honours project last year and testing will be conducted by current P&O honours student, Ben Kettle. Both projects are supervised by Margaret Hodge and form part of a larger study, the aim of which is to optimise foot orthosis contour in RA. Research grants have been provided by the Faculty of Health Sciences.

References

Chang *et al.*, F & A Int. 15, 654-660, 1994
Hayda *et al.*, F & A Int. 15, 561-566, 1994
Hodge *et al.*, Clin. Bio. 14, 567-575, 1999.

Final Graduations for 2001

NCPO staff and students attended the La Trobe University graduation ceremony on Friday the 19th of April, at which the remainder of last year's prosthetic and orthotic students graduated. The occasional address was given by Mr Julian Feller, orthopaedic surgeon and Director of the Musculo-Skeletal Research Centre, La Trobe University. Four P&O Honours undergraduates, who completed their studies in December, received their testamurs during the ceremony. Each student was awarded the B.P&O (hons) degree. Two additional students graduated in absentia, both were conversion students and received the B.P&O degree. These graduations bring the total number of P&O graduates for 2001 to twenty-five.

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/ncpo/>

Theory of Lower Limb Orthotics A Applied Lower Limb Orthotics A

Thirty-four second year students completed the below knee component of the lower limb orthotic subjects in first semester. The Theory subject covered the main aspects of Foot Orthosis and Ankle Foot Orthosis Management. Lectures were presented on orthotic theory, lower limb management of paediatrics, diabetic feet, athletic footwear and footwear modifications. In addition to teaching from NCPO staff, the subject involved specialist lecturers from the Children's Hospital, the Alfred Hospital, Cobbler Col, Brooks Australia and private podiatry clinics.

The Applied subject proved to be quite a challenge for the students. The large number of students were divided into three groups that worked on a rotating schedule. Each student completed six foot orthoses using methods such as casting, foam box and moulding board, one AFO cast, one rigid AFO and one articulated AFO. The students worked with Volunteer Patients for the first time. A strong emphasis was placed on patient assessment, prescription and patient care. The Volunteer Patients reported a very high standard of care by the students and made many comments about their level of professionalism. Overall the work presented at critique was of a very high standard.

The second year students will now undertake Transfemoral Prosthetics in second semester. Transfemoral Prosthetics and Above Knee Orthotics will be presented in third year. More information about second year curriculum can be obtained from Danielle Bonett on phone: (03) 9479 5864.



Graduates and staff in academic regalia at the graduation ceremony.

P&O Clinical Education

Our fourth year students are about to finish their final placement. We had fantastic feedback from the majority of first placements, with students gaining a vast range of clinical and technical experience. A few of our students have managed to secure jobs for when they finish at the end of June.

Clinical Examinations are scheduled From Monday June 24– Wednesday June 26, to allow staff, students and supervisors to attend the ISPO Conference. The Symposium Day is booked for Thursday 27th June.

Please note that this year's clinical exam can be either **prosthetic or orthotic**. The patient pathology is not determined by the student's last placement. All facilities that currently have students should encourage them to prepare in both areas. The 'Grading for 4th year Clinical Exams' section of the Clinical Education Guidelines can be accessed via the NCPO web page: <<http://www.latrobe.edu.au/ncpo/>>. If you require a hard copy, please contact Danielle.

Thank you to facilities that have donated their staff time as examiners for the clinical exams. Any other facility that would like to donate examiner time for 2003 should contact Danielle.

A working party met in May to look at the examination assessment of the 4th year Clinical Education subject. The development of clinical exams was presented and it was established that the exams exist as an educational assessment component rather than as a professional competency exam. As such, they are governed by La Trobe University assessment guidelines. Various exam formats were discussed. A new proposal was that the exam include a patient assessment and prescription component, and the presentation of a written case study with standardised questions. Any comments about the proposed format should be forwarded to NCPO lecturer, Tim Jarrott on phone: (03) 9479 5889.

The next Clinical Supervisors Meeting is scheduled for Tuesday 8th October 2002, at 4.30pm, in the Health Sciences Clinic at the La Trobe University Bundoora campus.

First year placements are scheduled to begin on the 1st of July. Allocation letters have been sent out and students will be contacting facilities soon.

Surveys of Placement availability will be posted out early June. Any new facility wishing to be included should contact the Clinical Education Coordinator, Danielle Bonett on phone: (03) 9479 5864 or e-mail: D.Bonett@latrobe.edu.au

Administrative Staff Changes

Congratulations to Jan Johnston who was recently promoted to Student Services Officer within the School of Human Biosciences. Jan will continue to administer the P&O Conversion Course program. Rita Van Breda has replaced Jan as Enquires Officer. Rita will assist with any enquiries or direct them to the appropriate staff member, and will take over responsibility for the NCPO jobs list. Rita and Jan can be contacted at the School of Human Biosciences reception on phone: (03) 9479 5787.

2001 Academic Prizes



Pictured above are prize winners for 2001.

Back row from left: Greg Halford, Stephen Hughes, Christopher Wallis. Front row from left: Katrina McGrath, Rebecca North, Lee Brentnall.

At a Faculty of Health Sciences ceremony early in June, six NCPO students received academic prizes for 2001.

The Australian Orthotic Prosthetic Association Inc. (Victorian Section) Prize, for the best first year student, was awarded to Mr Christopher Wallis. Ms Lee Brentnall won the Australian Orthopaedic Association (AOA) Prize for the best second year student. The International Society for Prosthetics and Orthotics (ISPO) Prize, for the top third year student, was awarded to Ms Katrina McGrath.

The Robert Gardner Memorial Prize, donated by the Australian Orthotic Prosthetic Association for the best third year independent project, was won jointly by Ms Katrina McGrath and Mr Stephen Hughes. Otto Bock Australasia donate the Hans Georg Nader Prize, for the best P&O Honours thesis, which was awarded to Ms Rebecca North. The E.H. Armstrong Prize for Services to Lower Limb Amputees was awarded to Mr Greg Halford for his Honours project.

The NCPO is grateful to the prize donors for their ongoing generous support of prosthetic and orthotic student achievement, and congratulates the prize winners on their awards.

NCPO in the Community

La Trobe University staff are expected to contribute to community and professional activities. Some recent activities are listed here.

P&O Educators Meeting

The NCPO is involved in convening a Prosthetic and Orthotic Educators Meeting (POEM), to be held in Sweden in August 2002. The aim of the POEM is to develop strategies for the future of P&O university education. P&O Educators from around the world will meet to participate in shaping the future of P&O education. Margaret Hodge, NCPO lecturer, represents the NCPO on the POEM convening committee and can be contacted for information on phone: (03) 9479 5778.

NCPO Clinic Update

As part of the ongoing re-establishment of the National Centre for Prosthetics and Orthotics (NCPO) Health Sciences Clinic, a full time clinical position was advertised in recent weeks and an appointment is expected during June. Having a full time clinician will ensure that the NCPO is able to provide five day per week clinical services and continue to promote and build the existing referrer base. This is an important step in increasing the NCPO clinical profile and in managing clinical services for the local community.

Orthotic and prosthetic treatment is provided at the Health Sciences Clinic by staff of the NCPO. Staff have particular expertise in the areas of transtibial and transfemoral prosthetics, management of the lower limb in Rheumatoid Arthritis, orthotic management of lower limb pathologies and fracture management. The NCPO clinic is able to offer plantar pressure analysis using the Emed Pedar system.

The NCPO is happy to work in collaboration with other orthotic and prosthetic facilities to provide optimal treatment and fabrication assistance, and has the ability to manage complex and time intensive patients. Should you have any specific enquiries regarding the NCPO clinical services please contact the Clinic Manager, Tim Jarrott on phone: (03) 9479 5889 or email: <T.Jarrott@latrobe.edu.au>.

Supervisors attend Module 2 of Quality Supervision Course

Five prosthetic and orthotic Clinical Supervisors attended module 2 of the Foundation for Quality Supervision (FQS) course, in late March. This second module involved general instruction for the multidisciplinary group of 120 participants, and discipline specific activity. General instruction included exploration of stereotyping, theory of 'clinical knowing' and learning about supervision of the challenging student. In the sections that focused on prosthetics and orthotics, participants undertook planning for placements, examined clinical assessment criteria and practiced grading videoed students.

The participants found the course very valuable in providing knowledge and skills to improve supervision. They will be awarded a certificate following successful completion of the assessment which includes a 3,000 word assignment, and may choose to credit the course towards a future qualification.

The FQS Quality Supervision course is held annually in February and March. Participant numbers are limited and, because there is strong competition for places, interested people are advised to register early. For further information contact NCPO lecturer, Margaret Hodge on phone: (03) 9479 5778.

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A Vacuum Casting System

Technical Tips from Stephen Hockey, NCPO technical officer.

The last decade has seen increased interest in Total Surface Bearing (TSB) casting and manufacture of prosthetic sockets. Vacuum casting methods are increasingly recommended by manufacturers and clinicians to improve cast quality. To reflect this in our curriculum, the NCPO installed a vacuum casting system, which enables multiple students to vacuum-cast simultaneously.

Since we have a large pump that creates vacuum, which is piped throughout our building, we tapped into this using 20mm PVC pipe, as shown in Figure 1. At each casting station there is a tap with a 10mm PVC hose coming off it, which is illustrated in Figure 2.

The following parts are required for casting and are illustrated in Figure 3:

- A small 6mm PVC hose in the form of a 'Tee', using a tee piece as is common in watering systems
- A length of plastazote to act as a vacuum proof 'collar'
- A thin plastic freezer bag
- Some Micropore tape

This assembly is placed around the patients stump during casting, and the vacuum applied while the negative cast sets. Figure 4 illustrates the vacuum system in operation.

While we have 12 casting stations equipped in this manner, this set up could be used on a smaller scale with just about any conventional vacuum system. If you would like more information on this topic

please call
Steve Hockey
on phone:
Figure 4
Application of
the vacuum
casting system.



Figure 1. PVC pipe carrying vacuum to the casting station.



Figure 2. Tap in casting station, with 10mm hose.



Figure 3. Equipment used in casting.

