

Nepalese Prosthetist Visits NCPO

Mr. Gyanendra Chandra Shrestha, a prosthetist from Nepal, visited the NCPO in December last year. Mr. Shrestha had visited the University in 1995 when he attended the ISPO World Congress in Melbourne, and he was interested in seeing the developments in teaching facilities that had occurred since then.

Mr. Shrestha contrasted prosthetic and orthotic services in Nepal with those in Australia. In Nepal, prostheses and orthoses are made from locally available materials. Although

some components are imported from India (e.g. Jaipur feet), components and materials from western countries are far too expensive. He showed pictures of lower limb and spinal orthoses that he had made from recycled PVC pipe. Mr. Shrestha is the only prosthetist in Kathmandu and hopes his sons will continue in the business after he retires.

As a memento of his visit, Mr. Shrestha presented the NCPO with a platter engraved with a traditional Nepalese design. The platter now adorns the School meeting room.



Function of Appreciation for Dr. Tim Bach

On the 1st of February, the NCPO and the School of Human Biosciences hosted a barbecue in the Health Sciences Clinic courtyard to thank Dr. Tim Bach for his contribution as Head of the NCPO. More than forty people from the Prosthetic and Orthotic community attended; others sent

notes of appreciation. The newly appointed Head of the NCPO, Mr. Rod Cooper, thanked Tim for his efforts and presented him with a gift from the department.

Mr. Cooper noted Dr. Bach's achievements in leading the NCPO for the past seven years. During that time, Dr. Bach guided the NCPO through three major review and planning exercises that resulted in significant curriculum improvements. Student perceptions of the course and retention rates improved markedly and the annual number of graduates increased by approximately one third. The profile of the NCPO within the University was strengthened and the NCPO developed a national and

international reputation for providing high quality prosthetic and orthotic education. In particular, Dr. Bach was responsible for expanding the research stream within the NCPO program. He supervised or co-supervised 35 honours degree graduates and Australia's first prosthetic and orthotic doctoral candidates.

In responding, Dr. Bach thanked members of the Prosthetic and Orthotic profession and the staff of the NCPO for their tremendous support and expressed his confidence in Rod as the new Head.

Dr. Bach has been appointed Executive Director of the newly formed Musculoskeletal Research Centre on a half-time basis. The purpose of the MRC is to provide a focus for researchers across the faculty and for collaborators from outside the University who have interests in musculoskeletal rehabilitation research. Dr. Bach will continue as a half-time NCPO staff member with responsibility for honours and higher degree programs and for research leadership.

Staffing Update

The NCPO welcomes Mr. Tim Jarrott as a new lecturer in prosthetics and orthotics. Tim holds an honors degree and has clinical experience in the public prosthetic sector and private orthotic and prosthetic sector. Tim will teach in both prosthetic and orthotic disciplines, and will play an active role in the NCPO clinic.

Ms Danielle Bonett has assumed responsibility for the coordination of Clinical Education in addition to coordination of the lower limb orthotics subjects. Danielle is employed half-time by the NCPO. She has a B.P&O and has extensive experience in private sector and public sector orthotics.



Mr. Tim Jarrott (left) and Ms Danielle Bonett.

Consultancies for Semester one have been arranged to provide practical teaching in three subjects. Anneke Deutsch from Ballarat Health Services and Marcus Wood from St. Vincent's Hospital Melbourne teach in Transtibial Prosthetics. Michael Gurry from Gurry Orthotics is involved Fracture Management. Barbara Rix, a physiotherapist in private practice, teaches Patient Evaluation. These consultants add expertise to the NCPO program and are greatly appreciated by students and staff.

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/>

In response to the recent course review recommendations, the NCPO staff are currently revising all subjects in the curriculum. The NCPO is under increasing pressure from the University to reduce the costs associated with the undergraduate teaching program, in terms of materials expenses and staff time. It is expected that several revisions to the course will be made in 2003 and 2004. All efforts will be made to maintain the high quality of the program while course review recommendations are implemented and cost reductions are achieved. These combined aims represent a challenge to the NCPO staff and provide an opportunity for curriculum development.

Some of the anticipated changes will see first year encompass Upper Limb Prosthetics, Upper Limb Orthotics and Spinal Orthotics. Second year will include Below Knee Orthotics, Transtibial Prosthetics, Patient Evaluation and Fracture management. Third year will encompass Above Knee Orthotics, Transfemoral Prosthetics and a multidisciplinary prescription principles subject.

The research stream of the course will be reviewed with the possibility of developing research-oriented and clinically-oriented pathways according to student interests and abilities.

People interested in contributing to the revision of the course structure should contact the Head of the NCPO, Mr Rod Cooper on phone: (03) 9479 5862.

NCPO P&O Degree by Distance Education

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. NCPO progress in the distance education program is reported here.

Progress in the joint distance education program has ceased pending negotiations between senior representatives from the two Universities. More information will be provided when it becomes available. If you are concerned about this matter, please contact the Head of the NCPO, Mr. Rod Cooper on phone: (03) 9479 5862.

Advertisers Welcome

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

NCPO Staff Research

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

Thermal imaging provides insights into socket pressure distribution

Residual limb monitoring to identify areas of excessive pressure is commonly performed by clinicians as part of the fitting procedures for a new prosthesis. As this process depends on subjective appraisal by the clinician, it is subject to errors of judgement. A recent investigation by NCPO honours student, Fiona Sebire, evaluated the potential of thermal imaging to provide a more quantitative means of identifying areas of excessive pressure.

When pressure is applied to skin and underlying tissues, blood supply to the loaded tissues is diminished. When the pressure is relieved, blood rushes in to the affected area to restore oxygen and nutrient levels. This increase in blood supply, known as the hyperemic response, elevates the temperature of the skin (Mahanty and Roemer, 1979). If the pressure is greater or more prolonged, the hyperemic response is exaggerated and the temperature rise is increased (Goller *et al.*, 1976).

Nine transtibial amputees who had received new prostheses participated in the study. After an initial fitting and standardized loading period, thermal images of the residual limbs were taken at 30 second intervals for ten minutes. Comparisons were made between vascular and traumatic amputees and between areas of high and low load.

The results suggested that the temperature rise was greater in traumatic amputees and in areas of higher load. Difficulties were encountered because of the long time required to obtain each scan (about 20 seconds) and because comparison between successive scans was cumbersome. Improved technology and purpose designed software could overcome these difficulties. It was concluded that the technique has potential as a clinical tool and that further investigation is warranted. The results will be presented at the ISPO Australia Annual Scientific Meeting in Alice Springs in June.

Project support

The project was completed as part of a Student Research Program initiated by the Prosthetics and Orthotics department of Princess Alexandra Hospital in Brisbane. Under the program, the hospital provides a part-time salary for a student researcher to undertake a project identified by hospital P&O staff. Supervision for this project was provided jointly by Mr. Shaun McKay from Princess Alexandra, Dr. Tim Bach from La Trobe University and Professor John Evans from the Queensland University of Technology. The Student Research Program is continuing in 2002. Ms. Nadia Sirotic is studying rocker sole shapes for lower limb fracture braces, in an attempt to optimize rocker sole designs.

References

Mahanty, S.D. & Roemer, R.B. Arch. Phys. Med. Rehabil. 60, 584-590, 1979.
Goller *et al.* Med. Res. Eng. 12 (1), 6-8, 1976.



P&O Clinical Education

The NCPO thanks the facilities that participated in the 2nd year placements during November and December 2001. We appreciate you returning the relevant paperwork so promptly, enabling results to be processed during January.

A large cohort of 4th year students has begun the first of two nine week placements. There are currently students in Tasmania, Victoria, New South Wales, Queensland, South Australia and Western Australia. Two students are completing placements in New Zealand. Thank you to three facilities for providing extra placements for the Block 2 placements due to cancellations.

Clinical Examinations have been rescheduled to Monday June 24 – Wednesday June 26 to allow staff, students and supervisors to attend the ISPO Conference.

The Clinical Supervisors meeting has been rescheduled to Monday 18th March at 4:30 PM in the Health Sciences Clinic.

A working party will meet during the next month to look at the examination assessment of the 4th year Clinical Education subject. Tim Jarrott, NCPO lecturer, will chair this working party. If you are interested in participating, please contact Tim on phone: (03) 9479 5889.

The Calendar and Grading for 4th year Clinical Exams sections of the Clinical Education Guidelines were updated recently and can be accessed via the NCPO web page: <http://www.latrobe.edu.au/ncpo/> Please contact Danielle Bonett if you require a hard copy.

Further information about P&O Clinical Education can be obtained from the Coordinator for 2002, Danielle Bonett, phone: (03) 9479 5864 or e-mail: D.Bonett@latrobe.edu.au

NCPO in the Community

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

AOPA National President & Council

Mr Tim Jarrott, NCPO lecturer, was recently elected National President of the Australian Orthotic and Prosthetic Association (AOPA). Tim has been involved in AOPA matters for some time. He was instrumental in the development of the Continuing Professional Education program which was instigated by AOPA during last year.

Mr Rod Cooper, Head of the NCPO, will continue to sit on the AOPA National Council as the invited NCPO representative.

P&O Educators Meeting

The NCPO is involved in convening a Prosthetic and Orthotic Educators Meeting (POEM) which will be held in Sweden in August 2002. The meeting was conceived by people involved in the delivery of P&O education from Universities around the world. They recognized that many of the challenges facing P&O educational programs are similar. When compared to larger and more established health science programs, P&O academic departments are usually smaller, have fewer staff and face financial challenges. The aim of the POEM is to develop strategies for the future of P&O university education. It is hoped that 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.

Wanted: Used Prosthetic Components

The NCPO uses standard modular prosthetic components when teaching prosthetic subjects. Due to curriculum changes in 2002, we will be teaching transfemoral and transtibial prosthetics at the same time. This means we need



to increase our stocks of components. In the past, facilities have donated excess stock to the NCPO for use in teaching.

If your facility has excess components from old prostheses, and would like to donate them to the NCPO for teaching purposes, please contact **Steve Hockey on phone: (03) 9479 5747** who will pick them up or arrange postage at our expense. We will examine and test each component, discard unsafe items and replace screws and bolts if necessary.

Components will only be used in our teaching program, during which students and volunteer client are carefully supervised by staff. At no stage are student prostheses taken away from the University. At the end of each project, the prostheses are disassembled and the components re-used.

We can use modular components from any manufacturer as long as they have metric threads. Prosthetic feet are useful too, if they are in a safe condition. So, if you are able, please start saving old components, and contact us.

P&O Supervisors attend Quality Supervision 2002

Seven prosthetic and orthotic Clinical Supervisors are attending the Quality Supervision 2002 course at La Trobe University. During the first module, held over three days in February, the 120 participants explored definitions of supervision and examined how adults learn. Different styles of teaching and learning were used to present topics such as the role of the supervisor in management, instruction, counselling and assessment. The second module will be held over two days later in March. P&O specific sessions that focus on relevant issues were developed by NCPO lecturer, Margaret Hodge, for inclusion in the second module. Supervisors who wish to credit the QS course towards a qualification, such as the Conversion Course, must complete the course assessment requirements by the middle of June.

The QS course is presented by the Foundation for Quality Supervision, a multidisciplinary team with extensive experience in health professional education from La Trobe, Monash and Deakin Universities. The QS course is held annually, at around the same time of the year. There is strong competition for places from all health sciences, so if you are interested in attending in the future, you are advised to register early. For further information contact Margaret Hodge on phone: (03) 9479 5778.

Clinical & Technical Note: Custom made prosthesis for an emu

Clinical notes from Rod Cooper, NCPO Head and technical tips from Stephen Hockey, NCPO technical officer.

The NCPO staff recently consulted an unusual prosthetic client. "Enya" the Emu had suffered a traumatic amputation that resulted in a medium length left transtibial stump. As emus are flightless birds, which rely on bipedal locomotion, the loss of one limb posed major functional loss for Enya. Her carers contacted the NCPO with a request for management.

A consultation was conducted at Enya's home and a cast of the residual limb was taken. A prosthesis was manufactured using a custom-made pelite liner, a PVC pylon and an energy-storing tennis ball terminal device. Although the socket was self-suspending, a PTB cuff suspension was incorporated (along with duct tape) for added safety.

There were some initial problems with patient compliance as Enya became accustomed to wearing her prosthesis. Minimal alignment changes were required and Enya is now walking very well.

Kinematic and energy expenditure aspects of gait are yet to be studied.

The NCPO NEWS is produced in March, June, September and December by the National Centre for Prosthetics and Orthotics, La Trobe University, 3086, Victoria, Australia.
Editor: Margaret Hodge
Phone: 03 9479 5778
Fax: 03 9479 5784
Email: M.Hodge@latrobe.edu.au
Web: <http://www.latrobe.edu.au/ncpo/>

Subscription is free to people or organizations with an interest in prosthetics and orthotics. Please contact us if you would like

- more information about any news item
- advertising rates
- to be added to or removed from the mailing list
- an email version instead of a hard copy
- discussion about another matter

Enrollments in Diploma Conversion Course

Sixteen prosthetists and orthotists are enrolled in the Conversion Course this year. There are eleven new enrollments and five continuing enrollments. These students hold a Dip. App. Sci. (P&O) from Lincoln Institute or La Trobe University and will complete four subjects to convert to the Bachelor of Prosthetics and Orthotics.

Enrollments closed on the 1st of February and, because the course has been offered for the intended ten years, no additional new enrollments in the Conversion Course will be offered. In future, 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.

Current Conversion Course students who have questions about administrative or enrollment matters should contact Ms Jan Johnston, Student Services Officer on phone: (03) 9479 5795. Questions about Conversion Course study requirements should be directed to Mr Les Barnes, NCPO lecturer on phone: (03) 9479 5847.



Enya the Emu wearing her custom made prosthesis.