

**Division of Neurosurgery**  
**University of Cape Town**  
**2013 Academic Report**

2013 saw the fruition of a number of long-term objectives concerning infrastructure and staffing. The establishment of the UCT/GSH Neurosurgery Clinical Hub in the F3 Core Area has transformed our meetings and we were delighted to be able to acknowledge the generosity of the donors who made it possible, especially the Parker family and the Mauerberger Foundation Fund at an opening ceremony on 22 August 2013. A new Cathlab at UCTPAH enhanced the neurointerventional program and the first fluorescence-guided glioma resection was performed by Dr Sally Rothemeyer.

Members of the Division collaborated with our counterparts in Neurology to run a very successful GP Refresher Course in February and this was matched by the first edition of Continuing Medical Education (March 2013) devoted entirely to neurosurgical topics. Dr Rothemeyer and Dr David Le Feuvre organised the Surgical Research Day and the year ended on a high note on the international front with Professor Anthony Figaji hosting the 4<sup>th</sup> biennial meeting of the International Society for Intraoperative Neurophysiology (ISIN).

Well-deserved promotions went to Professor Allan Taylor (Head of Clinical Unit), Professor Patrick Semple (Professor) and Dr David Le Feuvre (Associate Professor). This year saw the award of a number of substantial research grants and training fellowships. Dr Tiago Morgado was appointed as the inaugural Neurocritical Care Fellow (funded by Johnson and Johnson) and the Division hosted our first ever postdoctoral student in Dr Nelleke Langerak (UCT Postdoctoral Award) who received a prestigious CIPHER grant from the International AIDS Society which will enable her to stay on as a Senior Research Officer. Dr Llewellyn Padayachy received a Harry Crossley Award for his doctoral research, Ursula Rohlwink a CIDRI Wellcome Trust Postdoctoral Award pending completion of her PhD in 2014 and Professor Figaji received a substantial research grant from the Cancer Research Initiative of South Africa (CARISA) and was nominated by the University Selection Committee for the very prestigious SARChI Chair in Clinical Neuroscience.

We were fortunate to have Dr Nte Mjoli stay on as Chief Registrar while Dr Edwin Mogere passed the FCNeurosurg(SA) exam. Two registrars received major international awards. Dr David Roytowski received the International Abstract Award from the American Association of Neurological Surgeons and was invited to present at the main plenary session, an extraordinary achievement while Dr Mogere received the Professor Ming Chien Kao Scholarship from the World Federation of Neurosurgical Societies and presented his work at the 14<sup>th</sup> World Congress of Neurosurgery in Seoul, Korea where he also participated in the Pediatric neurosurgery Pre-Congress Course, talking on *Management of asymptomatic patients: chronic subdural haematoma*. Dr Rohen Harrichandparsad, a neurosurgeon from Durban, completed training in neuro-intervention and is now running a service at the Inkosi Albert Luthuli Central Hospital. Visiting professors included Dr Abhaya Kulkarni (Hospital for Sick Children, Toronto, Canada) and Dr Mohamed Raji Mahmud (National Hospital Abuja, Nigeria).

We were greatly honoured by the generous establishment of the Estelle Yach Award by the Mauerberger Foundation Fund and this will be used to establish an annual neurosurgical meeting in Cape Town. A great deal of work went into organizing an annual ISPN/ESPN African Paediatric Neurosurgery Course which will kick off in Pretoria in March 2014. Finally, the plans to return the academic department to J Block, co-located with Neurology and Neuropsychology as a Clinical Neurosciences Centre were formally approved by the hospital and submitted to the Provincial Department of Health with a request for support.

### **Postgraduate students**

Dr Padayachy registered for a PhD and Ursula Rohlwink continued with her PhD (Neuroscience) in Neurosurgery, while the number of neurosurgical trainees grew to 11. Registrars included Drs Nte Mjoli, Edwin Mogere, Johan Malan, David Roytowski, Nico Enslin, Mohamed Ben Husein, Ncedile Mankahla, Emmanuel Wegoye with Drs Chris Young and Nqobile Thango as medical officers and Dr Tiago Morgado as the first ever Neurocritical Care Fellow.

### ***MMed degrees conferred***

**Dr Peter Ssenyonga** *The endovascular treatment of craniocervical vascular trauma* (with distinction)  
(supervised by Professor Taylor and Dr Le Feuvre)

**Dr Crispin Thompson** *Central cord syndrome* (supervised by Dr David Welsh)

### ***MMed Dissertations passed***

**Dr Nico Enslin.** *Decompressive craniotomy in severe traumatic brain injury: the GSH experience between 2005-2011* (supervised by Professor Semple)

### **Publications**

Ben Husein M, Le Feuvre M

#### **Intracranial haemorrhage.**

*Continuing Medical Education* 2013; 31 (3): 102-106

Enslin N, Taylor A

#### **Distinguishing neurological from non-organic disorders.**

*Continuing Medical Education* 2013; 31 (3): 80-84

Enslin JM, Le Feuvre D, Taylor A.

#### **Developmental venous anomaly with contralateral impaired venous drainage in a 17-year-old male: a case report.**

*Interventional Neuroradiology*: 2013 Mar; 19(1): 67-72. Epub 2013 Mar 4. PMID: 23472726

Fieggen AG, Mogere EK.

#### **Africa is not a surgical finishing school.**

*AANS Neurosurgeon* February 2013 [<http://www.aansneurosurgeon.org/2210513/6/2598>]

Fieggen AG

#### **What can a neurosurgeon do for you?**

*Continuing Medical Education* 2013; 31 (3) 74

Figaji AA, Fieggen AG.

**Endoscopic challenges and applications in tuberculous hydrocephalus.**

*World Neurosurgery* 2013;79(2 Suppl): S24.e9-14

Figaji AA.

**Letter: Oxygen monitoring.**

*J Neurosurg Peds* 2013 Nov 1(Epub ahead of print) doi: 10.3171/2012.11.PEDS12486. Epub 2013 Nov 1

Figaji AA.

**Letter Re Medelsohn et al., Intracranial pressure monitors in traumatic brain injury: A Systematic review.**

*Can J Neurol Sci* 2013; 40(3): 433-434

Figaji AA.

**Brain monitoring issues in pediatrics.** In LeRoux PD, Levine JM, Kofke WA (eds) *Monitoring in Neurocritical care*. 1<sup>st</sup> Edition. Expert Consult. Elsevier Saunders (Philadelphia) 2013. ISBN 9781437701678

Figaji AA, Adelson PD.

**Pediatric Head Injury.** In Ullman JS, Raksin PB, Ellegala DB (eds) *Atlas of Emergency Neurosurgery*. AANS Publications Committee & AANS/CNS Section on Neurotrauma and Critical Care. Thieme Medical Publishers, New York (*in press*).

Argent AC, Figaji AA.

**Intracranial hypertension.** In Wheeler DS, Wong HR, Shanley TP (eds) *Pediatric Critical Care Medicine: Basic Science and Clinical Evidence, 2nd Edition/ Volume 2: Pediatric Critical Care Medicine: A Systems Approach*. (*in press*)

Griffiths B, Skelton J, Semple P, Ross I.

**An unusual case of hypopituitarism.**

*The Lancet Diabetes and Endocrinology* [http://dx.doi.org/10.1016/S2213-8587\(13\)70047-0](http://dx.doi.org/10.1016/S2213-8587(13)70047-0)

Grunt S, Fieggen AG, Vermeulen J, Blecher J, Langerak N.

**Selection criteria for selective dorsal rhizotomy in children with spastic cerebral palsy- systematic review of the literature.** *Dev Med Child Neurol* 2013 Sep 24. doi: 10.1111/dmcn.12277. [Epub ahead of print]

Langerak NG, du Toit J, Burger M, Springer PE, Cotton MF, Laughton B.

**Spastic diplegia in children with HIV encephalopathy: first description of gait and physical status.**

*Dev Med Child Neurol* 2013. DOI: 10.1111/dmcn.12319 [Epub ahead of print]

Langerak NG, Vaughan CL, Peacock WJ, Peter JC, Fieggen AG.

**Re: Long-term follow up of SDR.**

*J Neurosurg Pediatr.* 2013 Oct 11. [Epub ahead of print]

Langerak N, Fieggen AG.

**The transition from childhood into adulthood: a challenge in living with cerebral palsy.**

*Continuing Medical Education* 2013; 31 (3) 113-114

Lubbe DE, Fisher-Jeffes N, Semple PL.

**Endoscopic resection of skull base tumours using the ultrasonic dissector.**

*JLO* 2012 126 625-629

Malan J, Semple PL

**Emergency presentations of neurosurgical conditions.**

*Continuing Medical Education* 2013; 31 (3) 91-95

Mankahla N, Morgado T, Figaji AA.

**Complications in Neurosurgery.**

*J Neurol Dis* (accepted, *in press*)

Mankahla N, Rothemeyer S  
**Neurosurgical complications of HIV**  
*Continuing Medical Education* 2013; 31 (3): 111-112

Mjoli N, Fieggen AG.  
**Minor head trauma: when does it become a major headache?**  
*Continuing Medical Education* 2013; 31 (3): 91-95

Mogere E, Morgado T, Welsh D  
**An approach to the painful upper limb: the differential diagnosis of cervical radiculopathy.**  
*Continuing Medical Education* 2013; 31 (3): 96-101

Morgado T, Kinsky M, Carrara H, Rothemeyer S, Semple PL.  
**The prognostic value of CT-evident cerebral infarcts in adult patients with tuberculous meningitis treated with EVD.** *World Neurosurgery* 2013 Nov;80(5):605-11. doi: 10.1016/j.wneu.2013.01.129. Epub 2013 Feb 26

Morgado T, Welsh D  
**Cervical spondylotic myelopathy**  
*Continuing Medical Education* 2013; 31 (3): 109-110

Padayachy LC Fieggen AG.  
**Intraoperative ultrasound-guidance in neurosurgery.**  
*World Neurosurg* 2013 Oct 4. doi:pii: S1878-8750(13)01285-0. 10.1016/j.wneu.2013.09.052. [Epub ahead of print]

Rohlwink UK, Figaji AA.  
**Biomarkers of brain injury in cerebral infections.**  
*Clin Chem* 2013; Oct 29 (Epub ahead of print).

Roytowski D, Figaji A  
**Raised intracranial pressure: what it is and how to recognise it**  
*Continuing Medical Education* 2013; 31 (3): 85-90

Roytowski D, Semple P, Padayachy L, Carrara H  
**Intracranial pressure monitoring as an early predictor of third ventriculostomy failure**  
*J Neurosurg* 119 (8): A554

Schrieff LE, Thomas KGF, Dollman AK, Rohlwink UK, Figaji AA.  
**Demographic Profile of Severe Head Injury Admissions to Red Cross War Memorial Children's Hospital, 2006-2011.**  
*SAMJ* 2013; 103(9): 616-620

Selden C, Spearman CW, Kahn D, Miller M, Figaji A, Erro E, Bundy J, Massie I, Chalmers S, Arendse H, Gautier, A, Sharratt P, Fuller B, Hodgson H.  
**Evaluation of encapsulated liver cell spheroids in a fluidised-bed bioartificial liver for treatment of ischaemic acute liver failure in pigs in a translational setting.**  
*PLOS One* 2013 Dec 18;8(12):e82312. doi: 10.1371/journal.pone.0082312. eCollection 2013

Semple PL  
**The transition from microsurgical to endoscopic transphenoidal surgery in a high volume centre**  
*World Neurosurgery*

Semple PL, Ross I.  
**Endocrinopathies and other biochemical abnormalities in pituitary apoplexy**  
In: Turgut M, Mahapatra A, Powell M, Muthukumar N (eds) *Pituitary Apoplexy* (Springer) 2013; 107-115

Tromp S, Burman R

**Tackling the McDreamy complex: what neurosurgery offers medical students**

*Continuing Medical Education* 2013; 31 (3): 72-73

Van Der Walt JJN, Thomas JM, Figaji AA.

**Intraoperative neurophysiological monitoring for the anaesthetist. Part 1: A review of the theory and practice of intraoperative neurophysiological monitoring.** *SA J Anaesth Analg* 2013; 19(3): 139-144

Van Der Walt JJN, Thomas JM, Figaji AA.

**Intraoperative neurophysiological monitoring for the anaesthetist - Part 2: A review of anaesthesia and its implications for intraoperative neurophysiological monitoring.** *South Afr J Anesth Analg* 2013; 19: 197-202

Wegoye E, Padayachy L

**Recognising congenital anomalies of the nervous system**

*Continuing Medical Education* 2013; 31 (3): 107-108

### **Presentations at Conferences**

Professor Fieggen served as a Visiting Professor in the Louisiana State University Division of Neurosurgery, Shreveport Louisiana in April, following which he gave invited presentations at the 81<sup>st</sup> Annual Meeting of the American Association of Neurological Surgeons in New Orleans (*Monitoring the Nervous System and Humanitarian Neurosurgery*). He gave invited talks at the 16<sup>th</sup> Quadriennial Meeting of the World Society for Stereotactic and Functional Neurosurgery (WSSFN) in Tokyo, Japan (*Surgery for Spasticity*) and the 15<sup>th</sup> World Congress of Neurosurgery in Seoul, Korea (*Controversies in management: Paediatric brain tumours*). He was invited to teach on the ISPN Paediatric Neurosurgery Course at Neuropedicon, Udaipur, India where he gave 6 talks on a range of topics, and visited Professor Rick Boop (Chair of Neurosurgery at University of Tennessee, Memphis) and Professor Matthew Wood (Professor of Neuroscience and Associate Head, Medical Sciences Division, Oxford University as well as Honorary Professor of Neurosurgery, UCT) to discuss potential research collaborations. He was honoured to present the Founders' Lecture at the SA Spine Society Congress in Port Elizabeth.

Professor Figaji presented at the 41<sup>st</sup> Annual Meeting of the ISPN meeting in Mainz, Germany and taught on the ISPN Paediatric Neurosurgery Course in Manado, Indonesia and Nairobi, Kenya. He convened a very successful meeting of the International Society for Intraoperative Neurophysiology (ISIN), held in Cape Town from 11-16 November 2013. Various members of the Division presented at the Pre-Congress Intraoperative Neurophysiology Course. He was a contributor and co-author of the Multimodality Monitoring Consensus Conference and Position Statement (Neurocritical care Society).

Associate Professor Taylor and Dr Le Feuvre presented at the 10<sup>th</sup> Biennial Meeting of the *World Federation for Interventional and Therapeutic Neuroangiography* (WFITN) in Buenos Aires. Professor Taylor continues to serve on the international faculty of the benchmark Pierre Lasjaunias Neurovascular Educational Team (PLANET) (*Surgical treatment of berry aneurysms, Surgical treatment in BAVMs*).

Dr Llewellyn Padayachy paid a very successful research visit to SINTEF and the Department of Neurosurgery, St Olaf's Hospital in Trondheim, Norway and presented at the 15<sup>th</sup> Congress of the International Society Craniofacial Surgery, Jackson Hole, USA (*Intraoperative blood transfusion patterns in surgery for non-syndromic craniosynostosis*), the 6<sup>th</sup> IFNE World Congress of Neuroendoscopy (*Management of multiloculated hydrocephalus and Changes in optic nerve sheath diameter is a sensitive radiological marker of ETV outcome*) and the 62<sup>nd</sup> Annual Meeting of the Neurological Society of India in Mumbai, India (*The use of ultrasound as a navigation tool in paediatric neurosurgery*), the 41<sup>st</sup> Annual Meeting of the ISPN (*Intraoperative ultrasound guidance improves the accuracy of ventricular catheter placement*). He completed the PLANET Course in Chiang Mai, Thailand and the 31<sup>st</sup> European Microsurgery Workshop and Symposium on Cerebral Revascularisation in Vienna, Austria.

Dr Sally Röthemeyer was invited to chair a session at the 16<sup>th</sup> Quadriennial Meeting of the World Society for Stereotactic and Functional Neurosurgery (WSSFN) in Tokyo, Japan (*Surgery for Psychiatric Disorders*) and attended the 15<sup>th</sup> World Congress of Neurosurgery in Seoul, Korea.

Dr Nelleke Langerak had a productive year as the first ever postdoctoral fellow in the Division, funded by a UCT Postdoctoral Award and travelled to Kuala Lumpur, Malaysia to receive a CIPHER grant for \$150,000 from the International AIDS Society at their 7<sup>th</sup> International Congress. Her work was accepted for presentation at a meeting hosted by the Institut Pasteur in Paris, France and was invited to present at various local meetings including SANDTA, SASP and the ICNA/ACNA Children with Cerebral Palsy Workshop.

### **Editorial activities**

Members of the department serve on the editorial boards *Neurosurgery* (Peter, Fieggen), *Child's Nervous System* (Figaji), *Journal of Paediatric Neurosciences*, *World Neurosurgery* and *British Journal of Neurosurgery* (Fieggen), *Interventional Neuroradiology* (Taylor) and *European Spine Journal* (Welsh). Professor Fieggen served as Guest Editor of the March 2013 issue of Continuing Medical Education, focusing on the topic of *Neurosurgery for Primary Care Practitioners*. Professors Fieggen and Figaji served as Section Editors of the ISPN online textbook *The Guide to Pediatric Neurosurgery* and Professor Figaji also served as Section Editor for the *Handbook of Paediatrics* (7<sup>th</sup> edition).

## **Teaching**

### ***Undergraduate***

Professor Fieggen was asked to serve a term as Chair of the MBChB Program Committee, commencing February 2013. Dr le Feuvre continued to serve as convener of the undergraduate curriculum in Neurosurgery, which is taught as a combined Clinical Neurosciences course with Neurology. Annual lectures are given to students in Physiotherapy, Occupational Therapy and Nursing and medical students are taught in the following areas:

- MBChB III: Videoconferencing case discussion on Spina Bifida and lectures on congenital anomalies and hydrocephalus
- MBChB V: four-week Neurosciences block
  - 6 tutorials on specific topics, with material on Vula
  - weekly teaching ward round
  - two mornings spent in ward/ theatre
- MBChB VI: weekly tutorial on Paediatric Neurosurgery as part of Paediatric Surgery

### ***Postgraduate***

The two-year curriculum of topics supervised by Emeritus Professor JC Peter continued; a monthly Journal Club was co-ordinated by Dr Padayachy. Dr Welsh continues to serve as co-convener of the annual UCT Cadaver-based Spinal Approaches Course.

On the international front, members of the Division continue to serve on the faculty of major paediatric neurosurgery courses (ESPN, ISPN and AAC PNS) and the benchmark Pierre Lasjaunias Neurovascular Educational Team (PLANET) Course held twice a year.

### **Professional activities**

Profs Fieggen and Semple continued to serve on the Council of the *College of Neurosurgeons of South Africa* for the triennium 2008-2011, with Semple serving as President of the College and also a Senator of the Colleges of Medicine of South Africa.

Prof Taylor continued to serve as Secretary of the *Society of Neurosurgeons of South Africa* for 2008-2010 and Dr Norman Fisher-Jeffes (part-time Senior Lecturer) completed his term as Past President of the Society. He was elected member-at-large of the executive of the *World Federation for Interventional and Therapeutic Neuroangiography* (WFITN).

Dr Welsh continued to serve as Treasurer and Membership Secretary of the *South African Spine Society*.

Dr Roger Melvill (part-time Senior Lecturer) completed his term as Vice-President of the *World Society for Stereotactic and Functional Neurosurgery* (WSSFN) and was succeeded in this position by Prof Fieggen. The highly

successful WSSFN 2011 Interim Meeting held in Cape Town has led to the creation of an educational fund for African neurosurgeons and this supported Dr Peter Ssenyonga for a visit to learn about epilepsy surgery.

Prof Figaji serves on the Executive Boards of the International Society for Intraoperative Neurophysiology and the International Neurotrauma Society, the Scientific Committees of the ISPN, the World Congress of Paediatric Critical Care (Chair of the Brain Section for Istanbul 2014) and the International neurotrauma Symposium (Budapest 2014). He was invited to join the Paediatric Traumatic Brain Injury Consortium.

Prof Fieggen served as the Senior Delegate of SNSA to the Executive Committee of the WFNS. He was elected to another term on the Executive Board of the ISPN, serving as Web editor and Communication Chair (2012-2013) and Chair of the Ways and Means Committee (2013-2014) and has been appointed to the influential position of Chair of the Paediatric Neurosurgery Committee of the WFNS for the term 2013-2017. He was elected Interim President of the newly formed Continental Association of African Neurosurgical Societies (CAANS), the official continental representative at the WFNS.

### **Press**

Dr Rothemeyer's innovative work in the treatment of brain tumours was highlighted by the UCT Monday Paper in a feature entitled *New light on brain tumours* and this was followed up by an article in the Weekend Argus (05/10/2013) *City neurosurgeons get the edge on brain cancer*. This story also featured as one of the Monday Paper *Highlights of 2013*. Dr Joseph Raimondo's work on epilepsy utilizing a new patch clamping apparatus and his collaboration with UCT neurosurgeons was featured in the story *Patch-clamping apparatus helps UCT researchers 'listen in' on brain's communication*. This exciting story was picked up by various media including print (Argus, Tatler) and radio.

### **Research Grants**

Generous grants from the Mauerberger Foundation Fund, the Parker Family, the Wellcome Trust, the Medical Research Council of South Africa, the Integra Foundation and Johnson & Johnson (Codman), Baroque Medical, Boston Scientific, Karl Storz and the University of Cape Town (including the Department of Surgery and the Department of Paediatrics and Child Health) are gratefully acknowledged.