BETTER PATHWAYS TO LIVING SUCCESSFULLY WITH APHASIA

2011 ANNUAL REPORT

The Centre for Clinical Research Excellence in Aphasia Rehabilitation
OUR AIMS

The Centre for Clinical Research Excellence in Aphasia Rehabilitation exists to:

COMMUNICATE WITH PEOPLE WITH APHASIA AND THEIR FAMILIES, TO ESTABLISH THEIR NEEDS, CONCERNS AND PRIORITIES.

RESEARCH AND DEVELOP THE BEST POSSIBLE METHODS OF REHABILITATION FOR PEOPLE WITH APHASIA.

PROVIDE RELEVANT AND ACCESSIBLE GUIDELINES FOR APHASIA THERAPY, THROUGH COLLABORATION WITH PEOPLE WITH APHASIA, THEIR FAMILIES AND FRIENDS, SPEECH PATHOLOGISTS AND OTHER HEALTH PROFESSIONALS.
The CCRE Aphasia Rehabilitation was awarded in June 2009 and significant developments were made throughout 2010 with initial appointments and substantial capacity building.

The Centre has continued this trajectory and 2011 has been a tremendous year for consolidation and strengthening of the CCRE research mission. The CCRE Aphasia has made further progress in capacity building, research project completion, and importantly translating findings into the Australian Aphasia Rehabilitation Pathway, securing this centre as an essential part of the national rehabilitation sciences landscape.

CAPACITY BUILDING

Four of our original postdoctoral researchers have now been awarded their own funding from sources such as the Australian Research Council but continue to be involved with the CCRE. The CCRE continues to support 7 postdoctoral researchers. The Centre now has 22 research higher degree student affiliates supervised by staff within the CCRE, 22 Research affiliates collaborating on projects with us, 150 clinical affiliates involved in our community of practise and 90 people with aphasia registered to participate in research.

The University of Queensland has also provided dedicated space for clinical research for the CCRE Aphasia Rehabilitation that will allow further development of our programs.

COLLABORATION AND FUNDING

Significant collaboration between Centre investigators and our affiliates has culminated in $25.67 million of additional competitive grant funding awarded in 2011 (see Appendix 2), for a range of complementary research projects and programs including involvement of one of our investigators in a new ARC Centre of Excellence.

Centre investigators continue to encourage a supportive environment for research expansion with a number of applications submitted for future funding including applications for the 2013 rounds of NHMRC project grants, ARC Discovery Projects, and ARC Future Fellowships.

RESEARCH PROGRESS

Significant progress has been made on all projects named in the original NH&MRC CCRE funding following on from 2010 ethics approval, development of measures and piloting of research protocols.

Centre investigators produced 45 publications and made numerous presentations at both national and international conferences in 2011. Publications arising from the specific CCRE research projects are listed in Appendix 3.

A description of research progress is provided in the following section.
TRANSLATING RESEARCH INTO THE AUSTRALIAN APHASIA REHABILITATION PATHWAY

A major objective of the CCRE in Aphasia Rehabilitation is to translate our research findings into the Australian Aphasia Rehabilitation Pathway. To this end, a Knowledge Transfer and Exchange plan has been developed for the CCRE Aphasia and a Community of Practice meeting was convened with major stakeholders at The University of Queensland in October, 2011. Knowledge synthesis for the Australian Aphasia Rehabilitation Pathway is in progress and feedback mechanisms will be put in place to enable engagement and exchange with all CCRE affiliates and external stakeholders.

The CCRE Aphasia agreed to host the International Aphasia Rehabilitation Conference in Melbourne in October 2012 with a number of key international speakers planned for the meeting. Our close ties with the consumer organization, the Australian Aphasia Association will see a number of CCRE researchers supporting their 2012 conference, also to be held in Melbourne.

Additionally, the CCRE will support a one day satellite meeting for aphasia alongside the 2012 Stroke conference in Sydney which will include promotion of Aphasia the Movie. Aphasia the Movie has been acclaimed on the international film festival circuit including Winner 2011 Feel Good Film Festival Los Angeles.

PROFESSOR LEORA CHERNEY VISITED MELBOURNE AND BRISBANE

Professor Cherney directs the Center for Aphasia Research at the Rehabilitation Institute of Chicago where she is conducting clinical research studies to establish the efficacy and effectiveness of a variety of aphasia treatments. Several innovative treatments have been computerized using state-of-the-art computer technology with a “virtual therapist”. Other treatments are biologically-motivated and include investigations of cortical stimulation or pharmacologic agents in conjunction with intensive speech-language therapy. Other interests relate to group programs to enhance communication, and encourage and engage participation of stroke survivors with aphasia in everyday life activities. Prior research interest focused on discourse and unilateral neglect in individuals with right hemisphere damage following stroke.

PROFESSOR GUYLAINE LE DORZE SPENT HER SABBATICAL AT UQ

Professor Le Dorze is a professor at the School of Speech/Language Pathology and Audiology at the Université de Montréal. Her main research focuses on communication disorders, aphasia rehabilitation, psychosocial consequences of communication disorders, ageing, families and therapy evaluation.

OTHER HIGHLIGHTS FROM 2011
DIAGNOSIS OF APHASIA
An initial pilot study was conducted that indicated that aphasia could be detected on the basis of an interview (O’Halloran et al, 2010). However, clinicians reported that conducting a 45 minute interview was too long for the acute setting and a quicker screening tool was required. Therefore we have developed a screening tool based on the Inpatient Functional Communication Interview (IFCI) called the Communication Disability Screener (CDS) (O’Halloran & Worrall, 2012). Research is currently being undertaken to investigate the psychometric properties of the CDS.

CCRE PARTICIPATORY ENVIRONMENT
People with aphasia are able to participate in their healthcare if the communicative environment is accessible. Nurses are a key communication partner for people with aphasia during their stay in hospital, but many are not familiar with aphasia and its consequences for communication. This project aims to improve undergraduate nursing students’ knowledge of and attitudes towards people with aphasia. It also aims to explore the effectiveness of two training modalities: face to face training, and online training. A 3 x 3 Randomised Controlled Trial will be used to evaluate the effectiveness of these training modalities. During 2011-2012, the Participatory Environment project has resulted in new collaborations between CCRE researchers and the School of Nursing, University of Sydney, and the Aphasia Institute, Toronto. Data collection for this project will be completed at the University of Sydney during September-October 2012, with project completion expected by March 2013.

IMPAIRMENT-BASED RESEARCH
This strand of research focuses on identifying the nature of the language impairment & evaluating the effectiveness of therapy for language impairments in aphasia. There are a number of projects within the strand which are outlined below.

Research affiliate Biedermann and CI Nickels, funded by the Australian Research Council, have been investigating lexical-syntactic and morphological problems of people with aphasia, for example, problems producing plurals. They have developed a comprehensive testing battery which, in time, should enable clinicians to assess these impairments. In addition with PhD student Nora Fieder (CCRE higher degree research affiliate), they have been investigating problems in producing the correct determiners for different noun types (e.g., mass nouns, singular count nouns). Dr Renvall (CCRE postdoctoral research fellow) and CI Nickels have been developing techniques to enable assessment of relatively neglected word classes representing more abstract vocabulary. Leading on from this they have started a new line of research extending anomia treatment into these word classes initially focusing on adjectives used to express emotions. They have conducted the first single-case treatment study and it seems that significant benefits can be obtained from such therapy and will be investigated further in follow up studies. CI Nickels and
Dr Renvall are currently also conducting a brain imaging study (funded by a Macquarie University Research Development grant) which aims to shed light on brain activation patterns related to processing of nouns and adjectives in non-language-impaired people and people with aphasia.

In Stroke Association funded research, CI Nickels and CCRE clinical affiliate Osborne have been investigating the effectiveness of Constraint Induced Aphasia Therapy when conducted at a clinically realistic intensity and contrasting this with the same treatment applied without constraint. Preliminary results show positive effects but little difference between the techniques. A follow up study has used volunteers to implement the treatment. AI Rose, with CCRE clinical affiliate Michelle Attard and CCRE higher research degree affiliate Lucy Lanyon have completed a feasibility study comparing two intensive aphasia group therapies: Multi-modality Aphasia Therapy (M-MAT) and Constraint Induced Aphasia Therapy (Attard, Rose & Lanyon, submitted to Aphasiology). In 2012, they will run a large pilot study with 20 participants across five treatment groups, controlling for aphasia severity.

CI Copland and colleagues Ms Sophie Van Hees (CCRE higher degree research affiliate), Dr Tony Angwin, and Dr Katie McMahon have completed a study comparing semantic and phonological targeted treatments of word retrieval in a group of individuals with aphasia (van Hees et al. A comparison of semantic feature analysis and phonological components analysis for the treatment of naming impairments in aphasia (submitted to Neuropsychological Rehabilitation).

AI Ballard and CI Nickels together with PhD student Dominique Scholl are currently conducting a Randomised Controlled Trial (funded by an NH&MRC project grant) which investigates the influence of concomitant apraxia of speech (AOS) on outcomes of intensive naming therapy in individuals with aphasia. They are comparing three different conditions: people with aphasia who receive a language therapy (Semantic Feature Analysis; SFA), people with aphasia and AOS who receive SFA, and those with aphasia and AOS receiving an articulatory-kinematic treatment.

**THE EFFECT OF SALIENCY AND REPETITION ON EVERYDAY NAMING**

Dr Renvall (CCRE postdoctoral research fellow), CI Nickels, and AI Davidson are currently writing a review manuscript focusing on how to choose the most functionally relevant (or salient) items for language therapy. As part of this manuscript, Renvall et al. provide lists of words and topics that will provide guidance for researchers and clinicians when identifying and selecting relevant items for word retrieval therapies. Future research aims to examine the vocabulary inherent in specific discourse tasks (Davidson & Renvall). The treatment research noted above under Impairment-based research (e.g. Renvall & Nickels; Osborne & Nickels) also aims to use functionally relevant stimuli and investigate the impact of treatment on the use of these stimuli in everyday life.
NEUROPLASTICITY

Based on ARC Discovery funding, CCRE PhD affiliate Shiree Heath with CI Copland, CI Nickels, Dr Katie McMahon, CCRE Research Affiliate Angwin and CCRE Postdoctoral Fellow Dr Anna MacDonald have completed 6 neuroimaging studies regarding the neurocognitive mechanisms underpinning facilitation of naming in healthy individuals and in aphasia. There were two publications this year (PLOS One, BMC Neuroscience – highly accessed) and a further two papers under review (Neuropsychologia, BMC Neuroscience). Dr MacDonald is lead author on a further publication being prepared for submission. An additional series of studies by CCRE PhD Affiliate Sophie Van Hees is examining brain activity before and after aphasia therapy. Data from these studies is currently being analysed. Preliminary results have been presented at the Academy of Aphasia Meeting (2011) and a platform paper at Science of Aphasia (2012). Work on measuring acute neurophysiological markers of aphasia recovery, funded by the Royal Brisbane & Women’s Hospital (RBWH) Foundation and an ARC Future Fellowship to CI Copland, is continuing in collaboration with the Neurology and Speech Pathology Departments at RBWH. Also funded by an ARC Discovery grant CI Copland, CCRE Postdoctoral Fellow Anna MacDonald, and colleagues have completed two double blind randomised controlled trials of the effects of levodopa on new word learning, with results presented at American Speech Hearing Association, San Diego (2011) and accepted for platform presentation at Science of Aphasia, The Netherlands (2012). Further neuroimaging studies on the effects of levodopa are ongoing with PhD student Alicia Rawlings, and based on these results, trials of pharmacotherapy in aphasia are being planned. One GO8 DAAD Australian – German Collaborative Grant (with Prof Agnes Floel and Dr Marcus Meinzer, Berlin) and two University of Queensland grants have been obtained by CCRE Postdoctoral Fellow Dr Amy Rodriguez and CI Copland to examine whether exercise or direct current brain stimulation might enhance neuroplasticity and new word learning (as a model for aphasia treatment). The potential of new behavioural techniques that manipulate brain mechanisms in order to improve language processing in aphasia has also been examined in one study presenting stimuli selectively to a single hemisphere (Van Hees et al. Aphasiology, 2011) and in another using dual cognitive tasks that engage or inhibit a particular hemisphere (Conway-Smith et al., Behavioral & Brain Functions, 2012).

TRANSITION PLANNING

Transitions across the continuum of care are responsible for many breakdowns in service provision as reported by patients with aphasia and their family (Worrall et al., 2007). The overarching aim of this study is to explore the information needs of people with aphasia, their family members and friends based on
the lived experience. This research will provide health professionals with consumer driven recommendations for how people living with aphasia can be better informed and supported as their needs change throughout the care continuum.

Two surveys have been designed to evaluate the information needs of people living with aphasia across the continuum of care. The first is a survey of speech pathologists who work with people with aphasia. The survey aims to identify; a) current practice in information provision and b) barriers speech pathologists face in this process and how they may be overcome. The second survey examines the experiences and information needs of family and friends of people with aphasia across the continuum of care. Both surveys are in the process of being piloted and respondents will be invited to complete the surveys in June, 2012.

In addition, data collection will commence in June 2012 as part of a final year honours project. Semi-structure in-depth interviews will be conducted with people with aphasia and nominated friends to explore and compare information provided and information desired.
### CENTRE STAFFING

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<tr>
<th>Name</th>
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<tr>
<td>Professor Linda Worrall</td>
<td>Chief Investigator &amp; Executive</td>
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<td>Professor Alison Ferguson</td>
<td>Chief Investigator &amp; Executive</td>
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<td>Professor Leanne Togher</td>
<td>Chief Investigator &amp; Executive</td>
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<td>Professor Lyndsey Nickels</td>
<td>Chief Investigator</td>
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<td>Associate Professor David Copland</td>
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<td>Associate Professor Jacinta Dougla</td>
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<td>Professor Beth Armstrong</td>
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<td>Professor Leslie Gonzales Rothi</td>
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<td>Professor Nina Simmons Mackie</td>
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<td>Dr Kati Renvall</td>
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<td>Dr Robyn O’Halloran</td>
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<td>Dr Amy Rodriguez</td>
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<td>Dr Kyla Brown</td>
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<td>Dr Belinda Kenny</td>
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<td>Dr Erin Godecke</td>
<td>Supported Postdoctoral Fellow</td>
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<td>Dr Anna MacDonald (nee Holmes)</td>
<td>Supported Postdoctoral Fellow</td>
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<td>Dr Scott Barnes</td>
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<td>Dr Zaneta Mok</td>
<td>Postdoctoral Fellow</td>
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<tr>
<td>Dr Emma Powe</td>
<td>Original Postdoctoral Fellow - now Lecturer &amp; CCRE associate</td>
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<tr>
<td>Dr Tanya Rose</td>
<td>Original Postdoctoral Fellow - now Lecturer &amp; CCRE associate</td>
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COMPETITIVE GRANTS AWARDED IN 2011

**COPLAND, D.** Enhancing language learning through physical exercise and cortical stimulation. Go8 Australia - Germany Joint Research Co-operation Scheme; $15,400.

**COPLAND, D.** Control of language production and its neural substrates. ARC Discovery Projects; $323,000.


Croot, K., **NICKELS, L.**, & Taylor, C. Alzheimer’s Australia Research Dementia Grants Program: Hazel Hawke Grant (2011) "The right word at the right time: keeping communication going in progressive aphasia." $25,000.


Jalbert, I., Suttle, C., Stapleton, F., **TOGHER, L.** (2011-2012). Curriculum review to ensure evidence-based practice in Australasian Optometry, Office of Learning and Teaching; $220,000.

Kohnen, S., **NICKELS, L.**, & Rapp, B. ARC Discovery project (2011 - 2013) "Using generalisation to better treat poor spelling." $240,000.


Osborne, A. & **NICKELS, L.** National Stroke Foundation Clinical Research Development Award (2011) “Evaluation of the implementation of Constraint Induced Aphasia Therapy within the Constraints of the workplace” $30,000.

ROSE, M. La Trobe University Living with Disability Research Group Grant (2011). A comparison of Constraint induced aphasia therapy and multi-modality aphasia therapy. $10,000.

ROSE, T. UQ New Staff Research Start-Up Fund (2011). Meeting the information needs of people living with chronic aphasia. $11,983.

Tate, R., Perdices, M., McDonald, S. & TOGHER, L. (2011). Developing the CONSORT statement for N-of-1 Trials: the Single Case Reporting Guidelines for Behavioural Interventions (SCRIBE). Lifetime Care and Support Authority; $125,000.

TOGHER, L. speechBITE consolidation 2011-2013, Motor Accident Authority of New South Wales/Research Support; $422,866.

TOGHER, L. SpeechBITE Funding, 2011-2012, National Relay Service/speechBITE funding; $10,000.

TOGHER, L. Senior Research Fellowship 2012-2016, National Health and Medical Research Council/Career Awards: Research Fellowships; $655,910.
RELEVANT CENTRE PUBLICATIONS IN 2011


RELEVANT CENTRE PUBLICATIONS IN 2011 CONT....


O’HALLORAN, R., WORRALL, L. and Hickson, L. (2011). Environmental factors that influence communication between patients and their healthcare providers in acute hospital stroke units: An
RELEVANT CENTRE PUBLICATIONS IN 2011 CONT....

observational study. International Journal of Language and Communication Disorders, 46 1: 30-47.


The CCRE in Aphasia Rehabilitation focuses on delivering research to improve the lives of people with aphasia. Our centre undertakes a number of clinical studies/trials and you can find regular updates about our research on our website:

WWW.CCREAPHASIA.ORG.AU

If you would like to support and/or participate in our research, please contact us on (07) 3365 2891 or CCRE.APHASIA@UQ.EDU.AU

The CCRE is headquartered on the St Lucia campus of The University of Queensland.

CONTACT CCRE IN APHASIA REHABILITATION

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If you would like further information about aphasia community groups, please contact:

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