

BIOGRAPHICAL SKETCH

NAME: Succar, Tony A.

eRA COMMONS USER NAME: tsuccar

POSITION TITLE: Postdoctoral Research Fellow, Envision Research Institute

EDUCATION/TRAINING:

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
The University of Sydney Sydney, Australia	B.S.	12/2005	Orthoptics/Vision Science
The University of Sydney Sydney, Australia	M.S.	12/2007	Ophthalmic Science
The University of Sydney Sydney, Australia	Graduate Certificate in Educational Studies	12/2012	Higher Education
The University of Sydney Sydney, Australia	Ph.D.	03/2013	Medicine/Ophthalmology
Envision Research Institute Wichita, KS and Smith-Kettlewell Eye Research Institute San Francisco, CA	Postdoctoral Research Fellow	10/2016	Vision Rehabilitation

A. Personal Statement

The goal of my research is to: 1) develop and implement advanced vision rehabilitation interventions which help to improve the function and overall quality of life of individuals with irreversible vision loss, and 2) evaluate the effectiveness of these interventions, thus building and strengthening the scientific evidence base in vision rehabilitation. My combined background as a low vision orthoptist and clinical vision scientist is well suited to promote the translation of this research into clinical practice and care. My current research encompasses three separate phases. The first phase entails developing a standardized model for prescribing task lighting in low vision by determining if there is an optimum light setting for maximizing function. The second phase will explore the application of a dichoptic training program used for restoring functional 3D vision in individuals with low vision, and the third involves developing a Functional Vision Awareness and Screening (FVAS) program which can be easily administered to detect vision impairment to promote awareness and rehabilitation strategies which enhance functional vision.

B. Positions and Honors**Positions and Employment**

2009-2014	Clinical Research Orthoptist, Save Sight Institute, The University of Sydney
2013-2014	Clinical Associate Lecturer, The University of Sydney, Sydney Medical School, Discipline of Ophthalmology, Save Sight Institute
2013-2014	Associate Lecturer, School of Medicine, Medical Education Unit, The University of Western Sydney
2014-2016	Postdoctoral Research Fellow, Envision Research Institute

Awards and Honors

Rotary Youth Leadership Award: As President of the Orthoptic Student Association (2003-2005, nominated by the Head of School of Applied Vision Sciences – Neryla Jolly)

- PhD Scholarship Award: The University of Sydney Postgraduate Scholarship in Vision & Eye Health Research.
- Conference Awards: Best Oral Presentation in Educational Research
Nepean Scientific Day, 8 November 2013, Sydney
First Runner-up, The Asia-Pacific Ophthalmic Quiz
Asia Pacific Academy of Ophthalmology-American Academy of Ophthalmology
Joint Congress Bali, 2009
- Grants Awarded: Top-Up Grant, University of Sydney Postgraduate Research Support Scheme
Scholarship to attend the Higher Education and Research Development
Conference on Social Inclusion and Widening Participation. Gold Coast 2011

C. Contribution to Science

1. My research in vision rehabilitation started by working towards the development of an extraocular retinal prosthesis (bionic eye) as a visual rehabilitative device for individuals with severe vision impairment. Building on previous experimentation using animal models we conducted retinal electrical stimulation studies in human participants. Stimulation with contact lens electrodes were used to determine specific parameters regarding the size and duration of current pulses necessary to elicit phosphenes. All participants reported visual sensation from corneal electrode stimulation which made them likely candidates for the implantation of the retinal prosthesis.
 - a. **Tony Succar**, Vivek Chowdhury and Minas Coroneo (2006) *Electrical Stimulation of The Visual System. Presentation at the annual COSSOM Scientific Conference. Prince of Wales Hospital, Department of Ophthalmology, University of New South Wales.*
2. My passion to help people with incurable eye diseases led me to conduct a clinical trial to assess if oral carbonic anhydrase inhibitor (CAI) acetazolamide (diamox) improves visual acuity and retinal profile on OCT in patients with X-linked retinoschisis (XLRs). We conducted the first randomized, controlled cross over study and found that demonstrated that CAIs do improve vision and appear to have an effect on reducing central macular thickness (CMT) by removing subretinal fluid (SRF) from the retina in patients with XLRs.
 - a. Gurbaxani, A., Wei, M., **Succar, T.**, McCluskey, P., Jamieson, R., Grigg, J. (2013), *Acetazolamide in Retinoschisis: A Prospective Study. Ophthalmology. 121(3), 802-803. PMID: 24309554.*
3. Following this I was awarded the University of Sydney Postgraduate Scholarship in Vision and Eye Health Research for my work towards developing a Virtual Ophthalmology Clinic (VOC), an interactive web-based teaching module on which medical students can practice formulating a diagnosis and treatment plan on virtual patients with simulated eye conditions. A randomized controlled trial (RCT) was conducted to determine the impact of VOC on medical students' learning. On the basis of a statistically significant improvement in academic performance and highly positive student feedback, the implementation of VOC may provide a means to address challenges to ophthalmic learning outcomes in an already crowded medical curriculum.
 - a. **Succar, T.**, Zebington, G., Billson, F., Byth, K., Barrie, S., McCluskey, P., Grigg, J. (2013), *The impact of the Virtual Ophthalmology Clinic on medical students' learning: a randomized controlled trial. Eye. 27(10), 1151-1157. PMID: 23867718.*
 - b. **Tony Succar** and John Grigg (2016). *Application of Virtual Technology for Medical Student Ophthalmology Teaching. Association of University Professors of Ophthalmology (AUPO), 50th Annual Meeting. Marriott Harbor Beach Resort and Spa Ft. Lauderdale, FL.*
4. I was then awarded the Envision Postdoctoral Research Fellowship in Low Vision Rehabilitation, where I conducted my initial lighting research. The purpose of this research was to investigate how optimum illuminance differs from preferred illuminance and whether lighting impacts reading function objectively. Low vision participants in this study were most likely to benefit from a specific lighting prescription versus simply increasing task lighting to a subjectively comfortable level. An objective lighting

assessment shows greater benefits for reading performance. Our findings provided an evidence-based foundation for the development of an objective lighting prescription protocol for individuals with low vision. I am currently exploring the application of a dichoptic training program used for restoring functional 3D vision in individuals with macular degeneration. The pilot results of this research will be presented at the upcoming Association of Research in Vision and Ophthalmology, May 2016.

- a. *Reading Function Improves with Task Lighting.* **T Succar, L Walker, K Kendrick, A Mies, D Fletcher. *Visibility* 9 (3 & 4), 6-7 (2015)**
- b. *Task Lighting Enhances the Reading Function of Participants with Low Vision.* **T Succar, L Walker, K Kendrick, A Mies, D Fletcher. *Envision Conference, Denver, Colorado (2015).***
- c. *Association for Research in Vision and Ophthalmology (ARVO) Conference, May 2014, Denver, Colorado. Poster Presentation: Impact of Task Lighting on Reading Function in Low Vision.* **Succar, T. Walker, L. Kendrick, K. Mies, A. Fletcher, D.**
- d. [Restoring Functional Stereopsis in AMD with Dichoptic Training](#)
T Succar, S Ghahghaei, D Fletcher, L Walker
Association for Research and Vision in Ophthalmology. Seattle, Washington, May 2016.

Complete List of Published Work in Google Scholar:

<https://scholar.google.com.au/citations?user=3nSlf5EAAA&hl=en&oi=ao>

D. Research Support

Ongoing Research Support

Restoring Functional 3D Vision in Macular Degeneration

11/01/2014 – 10/31/2016

Envision Research Fellowship

The purpose of this study is to create a visual rehabilitation model to train the two eyes to work together, with the goal of restoring depth vision and improving overall quality of life.

Role: PI

Feasibility of Telerehabilitation for Low Vision (PI Bittner)

2/01/2015 – 11/30/2016

Envision Research Conference Research Award

The purpose of this study is to create a self-sustaining enterprise that will facilitate the virtual provision of low vision rehabilitation therapy by trained low vision OTs to individuals residing in remote areas, hospitals, or nursing homes who otherwise would not readily have access to this level of care.

Role: Team Member

Completed Research Support

Impact of Task Lighting on Reading Function in Low Vision

12/1/2014-11/1/2015

Envision Pilot Project Fund (\$5,000)

Individuals with low vision often complain of reading difficulties and optimum levels of localized lighting have been shown to enhance reading function. The purpose of this study was to investigate whether: (1) lighting impacts reading function objectively; and (2) the LuxIQ is a useful or necessary tool for assessing lighting function.

Role: PI