

Scientific Posters

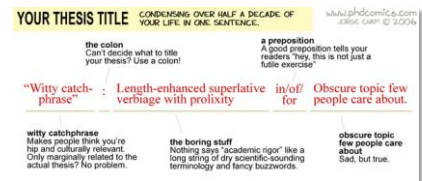
The elements

Elements

- Title
- Author(s) + affiliation
- Abstract/Introduction/Background
- Method(s)
- Data/results
- Conclusion(s)
- References
- Acknowledgements

Element: title

- Must be very interesting
 - conveys of what your poster is about
 - if acceptable for the conference/ audience make the title catchy to get people's attention (provocative...)
 - Audience must be tempted from a distance
- Visible and readable at 5 m
- Concise
 - If too long, make it shorter, reformulate
 - Do not decrease the font size
 - Avoid the use of ':'




Element: title

- Idea: the title should be the simple answer to the main issue that your poster addresses

www.lisabmarshall.com/uncategorized/sample-scientific-posters/

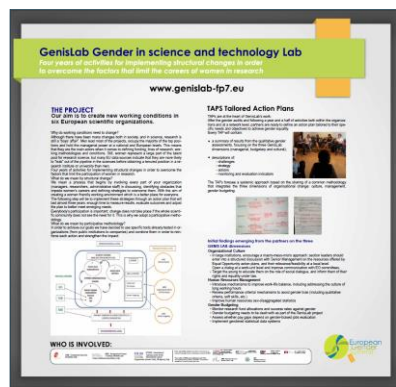
- Compare:

- 
- "A Study of Automobile Emissions Generated at Drive Up Windows"
 - "5% of Air Pollution Derives from Cars Idling at Drive Up Windows"
 - "5% of Air Pollution from Idling at Drive Up Windows"
 - "Drivers Spend an Average of 7.2 Minutes Idling at Drive Up Windows"
 - "Drive Up Windows pollute and frustrate"

Element: title

- Put it on top
 - Another spot might be interesting
 - With people walking around, the lower part might be obscured
- Do not use uppercase only
 - Shouting
 - Harder to read

Element: title



www.epostersonline.com/egs2012/?q=poster/egs2012036009b



<http://www.epostersonline.com/egs2012/?q=poster/egs20120070019>

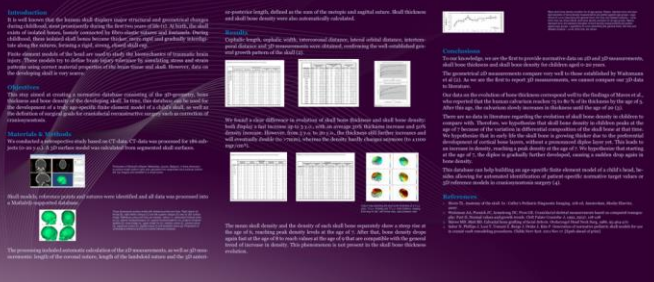
Element: authors/affiliation

- Write the first name in full
 - Initials and titles are not needed
 - A photo of the person who is presenting the poster, or highlight / underline the name
 - Check with advisor on the list of the collaborators
 - Who is to credit?
- Do not forget the affiliation

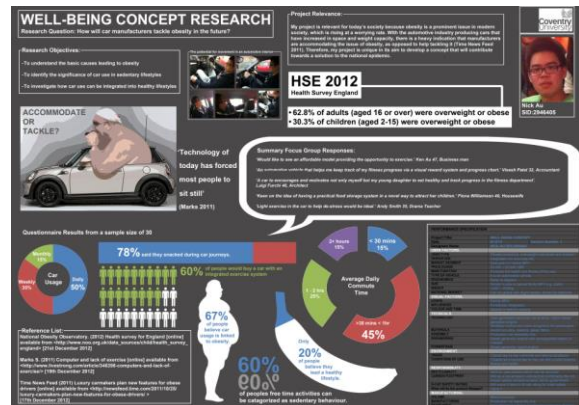
FIRST ATTEMPT TO GENERATE AGE-SPECIFIC 3D-GEOMETRICAL DATA, BONE DENSITY AND BONE THICKNESS OF THE DEVELOPING SKULL

A pilot study

H. Delye, M.D., Ph.D.; T. Clijmans, Ir.; J. Vander Sloten, Ir., Ph.D.; J. Goffin, M.D., Ph.D.
Department of Neurosurgery, University Medical Center St Radboud, Nijmegen, The Netherlands; Division of Biomechanics and Engineering Design (BMEGD), K.U. Leuven, Leuven, Belgium; Division of Experimental Neurosurgery & Neuroanatomy, K.U. Leuven, Leuven, Belgium



www.epostersonline.com/esp/2012/7/q-node/1345




<http://nickauidesign.me/2013/01/15/my-research-poster/>

Element: abstract

- If it is not required, DON'T.
- Most of the times your abstract will be printed in the conference catalog.
- If you do include an abstract in your poster try to make it very short. It should be a very brief summary of the poster

Element: introduction


- Engage your audience – give some background
 - Essential points / positioning the research
 - Explains why this work is important
 - Minimum of background information and definitions.
 - Provide a description and justification of your experimental method(s)
 - Include your hypothesis.
- Must be a help to the structure of the poster
- Summary 150 – 200 words
- *Complete Clear Concise Cohesive*



Cardiff University
POLYFUSION CARDIFF

Expression, purification, and crystallisation of recombinant mouse phospholipase c-zeta (PLC-ζ)

Pang, Allan
BSc Genetics | School of Biosciences, Cardiff University, Cardiff, Wales CF10 3US



ABSTRACT

The aim of this study is to express and purify recombinant PLC-ζ protein. To achieve this, a plasmid vector was constructed containing the 202 amino acid (aa) cDNA sequence of PLC-ζ. The derivation of the plasmid vector was based on the knowledge of the protein structure and sequence. The plasmid vector was then transformed into E. coli cells. The expression of the protein was induced using IPTG. The protein was purified using a Ni-NTA column. The purified protein was then crystallised using a sitting drop vapour diffusion method. The results of the study are discussed in the context of the current understanding of PLC-ζ and its role in signal transduction.

EXPERIMENTAL RESULTS

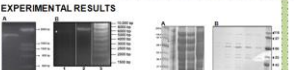


Figure 1: Molecular cloning of PLC-ζ cDNA. The PLC-ζ cDNA was amplified from a cDNA library and ligated into the pET201 vector. The resulting plasmid was transformed into E. coli cells. The expression of the protein was induced using IPTG. The protein was purified using a Ni-NTA column. The purified protein was then crystallised using a sitting drop vapour diffusion method. The results of the study are discussed in the context of the current understanding of PLC-ζ and its role in signal transduction.

CONCLUSION

It was concluded from the bioinformatic analysis that PLC-ζ is a protein with a high degree of similarity to other phospholipases. The protein was successfully expressed and purified. The protein was then crystallised using a sitting drop vapour diffusion method. The results of the study are discussed in the context of the current understanding of PLC-ζ and its role in signal transduction.

INTRODUCTION


Phospholipase C (PLC) is a member of the phospholipase family of enzymes. It is responsible for the hydrolysis of phospholipids into diacylglycerol and inositol trisphosphate. PLC is involved in a wide range of cellular processes, including signal transduction, cell growth, and differentiation. The study of PLC is important for understanding the basic mechanisms of cellular signalling and for identifying potential targets for drug development.

EXPERIMENTAL PROCEDURE

PLC-ζ cDNA was amplified from a cDNA library using PCR. The resulting PCR product was ligated into the pET201 vector. The resulting plasmid was transformed into E. coli cells. The expression of the protein was induced using IPTG. The protein was purified using a Ni-NTA column. The purified protein was then crystallised using a sitting drop vapour diffusion method. The results of the study are discussed in the context of the current understanding of PLC-ζ and its role in signal transduction.

REFERENCES


1. Stansfield CJ et al. (2002) PLC-ζ: a secreted trigger of Ca²⁺ oscillations in eggs and embryos. *Development* 129, 1331-1341.
2. Stansfield CJ et al. (2003) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 130, 219-224.
3. Stansfield CJ et al. (2004) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 131, 219-224.
4. Stansfield CJ et al. (2005) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 132, 219-224.
5. Stansfield CJ et al. (2006) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 133, 219-224.
6. Stansfield CJ et al. (2007) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 134, 219-224.
7. Stansfield CJ et al. (2008) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 135, 219-224.
8. Stansfield CJ et al. (2009) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 136, 219-224.
9. Stansfield CJ et al. (2010) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 137, 219-224.
10. Stansfield CJ et al. (2011) The role of PLC-ζ in the fertilisation of eggs and embryos. *Development* 138, 219-224.



UNIVERSITY OF SASKATCHEWAN

Socio-environmental Dimensions of Safety of Mexican Seasonal Farmworkers in Saskatchewan: Opportunities for Learning Sustainability

PhD Student, School of Environment and Sustainability (SENS) Saskatoon, SK a.vivanco@usask.ca



ABSTRACT

The study aims to explore the socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. The study is based on a qualitative approach, using semi-structured interviews and focus group discussions. The results of the study are discussed in the context of the current understanding of farmworker safety and health. The study highlights the need for improved safety and health measures for farmworkers and the importance of learning sustainability in this context.

EXPERIMENTAL PROCEDURE

The study was conducted using a qualitative approach, involving semi-structured interviews and focus group discussions. The data was analysed using thematic analysis. The results of the study are discussed in the context of the current understanding of farmworker safety and health. The study highlights the need for improved safety and health measures for farmworkers and the importance of learning sustainability in this context.

CONCLUSION

The study concludes that the socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan are complex and multifaceted. The study highlights the need for improved safety and health measures for farmworkers and the importance of learning sustainability in this context. The study also identifies opportunities for learning sustainability in this context.

INTRODUCTION

The study of farmworker safety and health is an important area of research. Farmworkers are a vulnerable population, and their safety and health are often compromised. Understanding the socio-environmental dimensions of farmworker safety and health is essential for developing effective interventions. This study aims to explore the socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan.

EXPERIMENTAL PROCEDURE


The study was conducted using a qualitative approach, involving semi-structured interviews and focus group discussions. The data was analysed using thematic analysis. The results of the study are discussed in the context of the current understanding of farmworker safety and health. The study highlights the need for improved safety and health measures for farmworkers and the importance of learning sustainability in this context.

REFERENCES

1. Vivanco A. (2011) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
2. Vivanco A. (2012) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
3. Vivanco A. (2013) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
4. Vivanco A. (2014) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
5. Vivanco A. (2015) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
6. Vivanco A. (2016) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
7. Vivanco A. (2017) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
8. Vivanco A. (2018) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
9. Vivanco A. (2019) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.
10. Vivanco A. (2020) The socio-environmental dimensions of safety for Mexican seasonal farmworkers in Saskatchewan. *PhD Thesis, University of Saskatchewan*.

www.flickr.com/photos/xerophytes/2397163232/sizes/o/originpool-686865@N24/

chrs-scrs.usask.ca/images/2011awards/2011awards1-Arcadio.jpg



Element: data/results – text

- Keep it short, simple and clear
- Remove all non-essential information
- Avoid footnotes
- Avoid abbreviations, acronyms, jargon, ...
- Use no more than 1000 words
- Use charts as visual eye-candy
- Rule-of-thumb:
 - 20% text
 - 40% graphics
 - 40% space
- Format might be domain dependent


Element: data/results - text

- Quick sedation
- Quick recovery
- Few side effects
- Safe to handle

Element: data/results - text

- Better, still some room for improvement


[illegible][illegible]



Queen's University Belfast

Using students' personal stories for learning

N Catherwood, J Goodfellow, P Ross,
Dr M Corrigan, Dr J Johnston, Mrs C Thomson, Dr K McGlade.



The Higher Education Academy

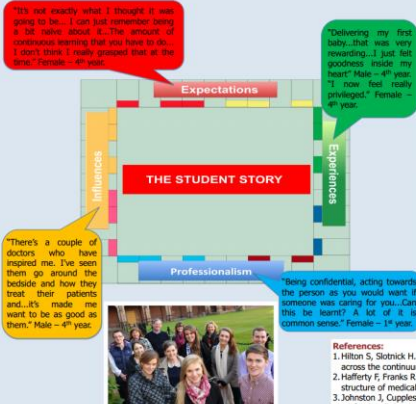
Background

- The **development of cynicism** and a decline in attitudes towards professionalism among medical students as they progress through their training has been linked to the hidden curriculum.^{1,2,3}
- Narrative techniques** are being increasingly employed to help understand complex social interactions.
- This project is interested in how **professional identity** is formed and whether the phenomenon of the **loss of idealism** observed during training, could be addressed with **learning resources** derived from student peer to peer video interviews.

Methods

- 11 first (n=6) and fourth (n=5) year **students interviewed 42 of their peers** on camera.
- Student researchers kept **reflective diaries** and "field notes".
- Transcription** of interviews.
- Themes** from interviews were identified.
- Website** structures brainstormed.

Acknowledgments:
All 42 first and fourth year student participants.
Queen's University Belfast Information Services.



Expectations: "It's not exactly what I thought it was going to be... I can still remember doing a bit weird about it... The amount of seriousness seeming that you have to do... I don't think I really processed that at the time." Female - 4th year

Experiences: "Delivering my first baby, that was very rewarding... I just felt goodness inside my heart." Male - 4th year
"I now feel really privileged." Female - 4th year

Influences: "There's a couple of doctors who have inspired me. I've seen them go around the bedside and how they treat their patients and... it's made me want to be as good as them." Male - 4th year

Professionalism: "Being confidential, acting towards the person as you would want if someone was caring for you... Can this be learnt? A lot of it is common sense." Female - 1st year

Results

- The **game board** presentation incorporates important elements relevant to medical students' development; an on-going **pathway**, elements of **change and external influences** and opportunities.
- Those **themes** deemed most relevant or important as identified in the interviews will feature significantly in the **website**. Emergent themes included students' **expectations**, their **influences**, their **personal experiences** and ideas of **professionalism** in medical school.


Conclusions

- Discrepancies between expectations and experiences** may be contributing to the emergence of cynicism.
- The loss of idealism may be **minimised through using personal stories** to prepare students for the realities of studying medicine whilst also developing a professional identity.
- Stories collected will form a **web based learning resource**.

References:

- Hilton S, Sturnick H. (2005). Proto-professionalism: how professionalisation occurs across the continuum of medical education. *Medical Education* 39:58-65.
- Hafferty F, Franks R. (1994). The hidden curriculum, ethics teaching, and the structure of medical education. *Academic Medicine* 69:861-871.
- Johnston J, Cupples M, McGlade K, Steele K. (2011). Medical Students' attitudes to professionalism an opportunity for the GP Tutor. *Education in Primary Care* 22: 321-7.

<http://www.epostersonline.com/asme2013/?q=node/42&posterview=true>



City of Lit- Iowa City UNESCO City of Literature Mobile Application Research & Development

BIOGRAPHIES

Life stories of local authors emphasize links to Iowa City

Students access primary research documents in local archives including the Iowa Writers Collection and Iowa State Archives at the University of Iowa Special Collections

Students enter their research into a custom web interface

City of Lit spotlights the people and places of Iowa City's rich literary history through an interdisciplinary, civically-engaged collaboration:

Undergraduate students conduct primary research on local authors

An interdisciplinary team of researchers - computer and library and information scientists, artists, writers and literary scholars - review the information for the mobile application

Users view, interact with, and contribute to the collection via the mobile application

App available for download on Apple mobile devices

Search "Iowa City of Lit" on iTunes for iPhone, iPod, and iPad versions

MULTIMEDIA

Audio and video features stream local readings, lectures, and interviews; photography and graphics capture authors and texts

Users sit in an conversation with authors, students, researchers, and even the authors themselves

Users to authors need by their own hand. In a future release, users will be able to contribute personal text and audio commentary by clicking on the app

LITERATURE

Annotated resources both by and about the author connect key texts to the Iowa City community

Each day, a new 30-second audio clip featuring an author is presented on the app's opening screen. The annotated direct content of the university server about projects, user-generated content to the content.

All app documents provide general publication information, biographies, and locations of the literature, biographies, and locations of the literature, biographies, and locations of the literature.

MAPS

Annotated maps use text, images, and GPS function to tour key places for each author in Iowa City

At each location on the virtual tour images and text describe the author's sense of place in Iowa City

Currently, updated features of the app include new reports on Iowa City and the literary world and a new section about the history, local history, and the history of the university's literary world.

Element: data/results - charts

- Table:
 - Limited number of data
 - Label columns
- Charts:
 - Large set of data points
 - Do not forget to label plots, axes, ...
- Charts must be readable at a distance of 2 m!
- Get all the charts in a uniform way, size

clinical

Teaching Human Factors to Medical Students- A Simulation Based Course Hull and East Yorkshire Hospitals NHS

Sega Pathmanathan, Faiza Chowdhury, Jivendra Gosai, Rebekah Molyneux, Makani Purva

Introduction

The role of human factors in medical error has been well recognized with 60% of all errors being attributed to human factors particularly problems in communication¹. A preliminary survey of medical students undergoing an optional placement at our simulation centre suggested that they had no or limited knowledge regarding the role of human factors in error. We designed a simulation based half a day course addressing the role of human factors in error and evaluated how effective it was in achieving its objectives.

Methods

We recruited 6 candidates, who were medical students. Prior to the course each candidate was given a questionnaire to assess their confidence in leadership skills, communication, knowledge of human factors and ability to prioritise both non-clinical and clinical tasks. The course commenced with an overview on Human factors. A practical session on SBAR was provided. The third session was a 15 minute scenario- the candidate is covering a ward of four patients and has a task to do for one of those patients. However as the scenario progresses the candidate is given a number of distractions of varying complexity, which they must prioritise and attend to. The distractions vary from calls from other wards to other urgent tasks on other wards. The candidate is debriefed on the session with the other candidates also giving feedback. The scenario was then re-run after the debrief session with another candidate. Following the course, a post course questionnaire with similar questions as the pre-course was administered to evaluate the effectiveness of the course. Feedback was also obtained.

Results

Confidence in	Mean Pre Course	Mean Post Course	P Value
Knowledge of Human factors contributing to error?	2.33(1.03)	3.83(0.75)	0.02*
Ability to communicate clinical details	3(0)	3.67(1.03)	0.14
Leadership skills?	2.33(0.82)	3.5(0.84)	0.03*
Prioritising clinical tasks in an acute situation?	1.83(0.75)	3.17(1.17)	0.04*
Prioritising non-clinical tasks in an acute situation?	2(0.63)	3.5(1.22)	0.04*
Recognizing when to call for senior input?	3.5(0.55)	4.33(0.82)	0.07

Feedback

Feedback Question	Mean Score
Human Factors: An overview	4.67
SBAR Communication session	4.67
Simulation encounter	5
De Briefing Session	5
Facilitator Feedback	4.67

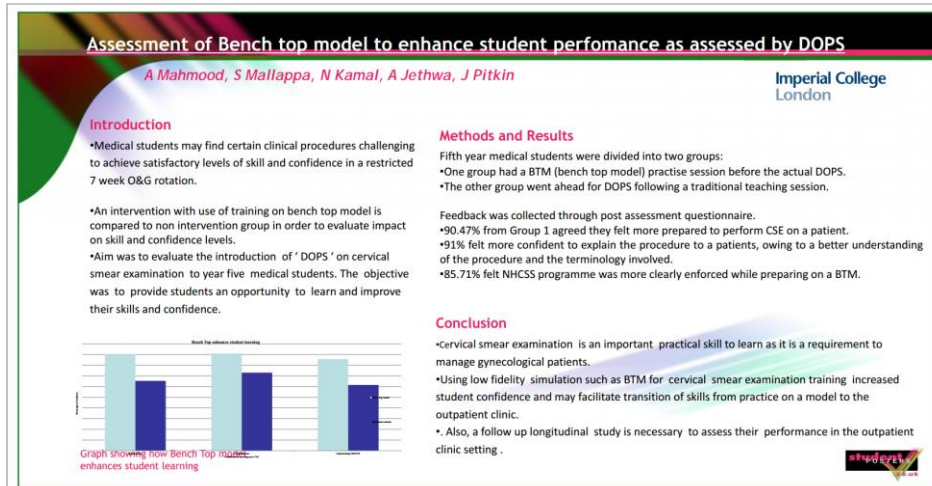
Discussion

The increases seen in confidence levels demonstrate the impact of the course in learning about Human factors. We believe that by developing this, we can fill the gap in human factors awareness. The Yorkshire and Humber Deanery Foundation School has recently included this in their curriculum delivery² and we plan to extend this course to all year one foundation doctors in our region.

References

1) Rogers, Jm, Gervasio, Kusan et al. Analysis of surgical errors in closed malpractice claims at 4 tertiary hospitals. Surgery 2006; 140: 25-33.
2) Yorkshire and Humber Deanery Foundation School Clinical skills and Simulation Strategy. <http://www.yorkhumb.deanery.nhs.uk/health/humbfoundationdocuments/yorkhumbfoundationClinicalSkillsandSimulationStrategy.pdf>

<http://www.epostersonline.com/asme2013/?q=node/83&posterview=true>

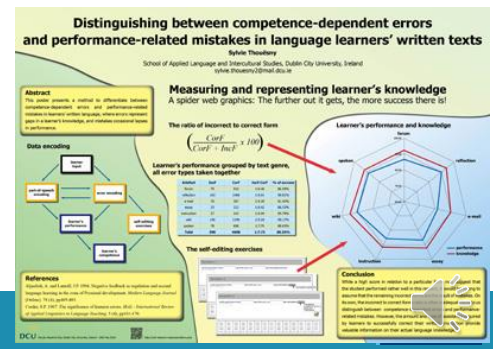


Element: visual elements

- Select what to visualize.
- Sketch it yourself.
 - Convert your sketches into digital.
 - Search online for images, based on your sketches.

Element: conclusion

- Important part of the poster
 - Tie your conclusion back to your hypothesis and results.
 - Discuss why your findings are meaningful and relevant.
 - Include the future directions of your research.
 - Emphasize the important/strong points
- Use bullets to distinguish the different elements



Element: acknowledgements / references

- **Acknowledgements**
 - Funding,
 - Who was helping you out with your research
- **References**
 - Only the important – no literature study
 - Can be expanded during conversation

Element: acknowledgements / references



V53B-2838
AGU 2012

Comparison of Volcanic Gas Compositions obtained using a Portable Sensor Package and Evacuated Flasks from Cascade Range Volcanoes (USA)

Peter Kelly¹, Cynthia Werner², Bill Evans³, Steve Ingebritsen³, Dave Tucker⁴

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⁴ Western Washington University, Bellingham, WA, USA

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1. Introduction

Dealing with most Cascade Range volcanoes, USA, is characterized by low-temperature hydrothermal emissions. It is important to monitor these emissions as part of a comprehensive monitoring strategy yet access is often difficult and most features are sampled by the USGS only once per year at best using a titanium tube and evacuated glass flask (direct sampling).

In an effort to increase the sampling frequency of major gas species and to prepare for building permanent, autonomous gas monitoring units, we built a portable MultiGAS[®] sensor package (Multi-component Gas Analyzer System, e.g. Shimadzu, 2005; Apera, 2005) capable of measuring H₂O, CO₂, SO₂, and H₂ in volcanic gas plumes. In recent years MultiGAS-type instruments have emerged as instant volcanoes gas monitoring tools for both campaign-style and long-term deployment (e.g. Apera et al., 2007). While these instruments are important to assess how well MultiGAS data and data obtained using traditional direct sampling agree and to what extent they may be used interchangeably.

To address these matters, we compare MultiGAS and direct samples we collected at the same time from active hydrothermal features at Mt. Baker, WA, and Mt. Hood, OR (Fig. 1), plus data from direct samples collected in prior years. Evacuated flasks were analyzed at the USGS Volcano Gas Geochemistry Laboratory in Menlo Park, CA.

2. Instrumentation

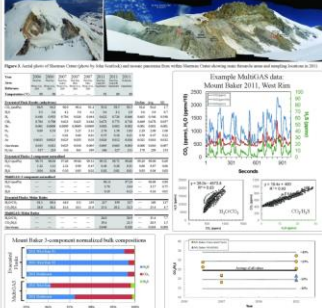


The MultiGAS unit we built is similar to the instrument described by Apera et al. (2007). The main features include:

- Measurement of H₂O, CO₂, SO₂, H₂, pressure, temperature
- H₂O: CO₂ ratio (H₂O = 0 - 100 ppm, CO₂ = 0 - 3000 ppm)
- SO₂: CO₂ ratio (SO₂ = 0 - 100 ppm)
- H₂: CO₂ ratio (H₂ = 0 - 20 ppm)
- Highly portable: weighs ~1 kg, fits in a backpack
- Constructed entirely from commercially available equipment
- Self-contained: runs for 6 hours with 12V battery
- Laptop data at 1 Hz to onboard datalogger and/or to notebook computer
- Optional network computer interface real-time H₂O, CO₂, SO₂, and H₂ mixing ratios, the four-component bulk plume composition, and gas ratios (H₂O/CO₂, SO₂/CO₂, and H₂/CO₂)

3. Mount Baker, WA (3286 m)

We collected simultaneous MultiGAS and direct samples from the West Rim (Steeley group) and Northwest area of Shumner Cone (~200 m) in 2011. Shumner Cone is a site of vigorous degassing located ~1 km south of the summit of Mt. Baker. We present these data plus additional data from direct samples collected in 2008 & 2007.

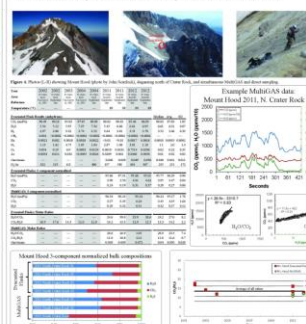


5. Discussion Points

- No SO₂ detected at Mount Baker or Mount Hood
- Mount Baker: Results from evacuated flasks and MultiGAS data collected at the same time show significant differences. CO₂/H₂O ratios differ by 20-50%, gas/air ratios differ by an order of magnitude
- Mount Hood: The two methods show very good agreement, most parameter agree within 20% or less
- For both Mount Baker and Mount Hood, MultiGAS CO₂/H₂O ratios are within ~20% of average values

4. Mount Hood, OR (3429 m)

In 2011 and 2012 we collected simultaneous MultiGAS and direct samples from an area located on the western margin of Crater Rock that is about 0.5 km south of the summit and at ~3100 m elevation. In addition to these data, we present results from direct samples collected between 2002 - 2009.



6. Thanks!

- For MultiGAS loan from: Shimadzu & Apera
- For help with Mount Baker fieldwork: Steve Ingebritsen, U.S. Geological Survey, Menlo Park, CA
- For help with Mount Hood fieldwork: Dave Tucker, U.S. Geological Survey, Menlo Park, CA
- For help with Mount Hood fieldwork: Steve Ingebritsen, U.S. Geological Survey, Menlo Park, CA
- For help with Mount Hood fieldwork: Steve Ingebritsen, U.S. Geological Survey, Menlo Park, CA

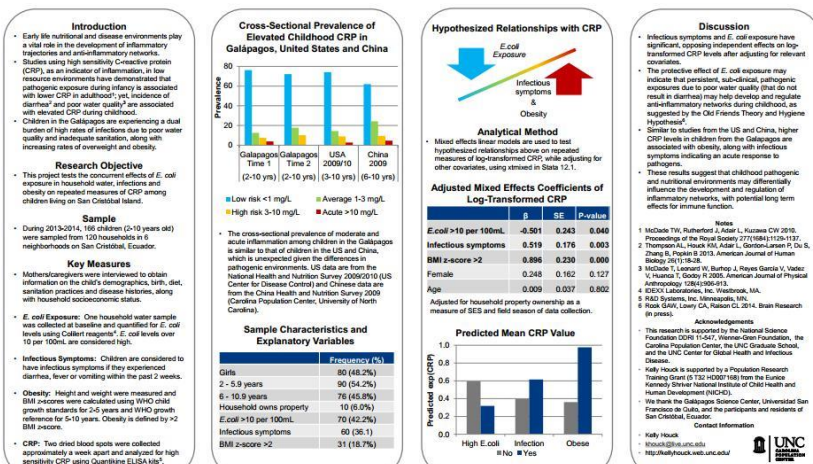
7. References

- 1. Apera, J., et al. (2007) Deploying a portable MultiGAS sensor package for monitoring volcanic gas emissions. *Journal of Volcanology*, 116, 1-10.
- 2. Apera, J., et al. (2007) Deploying a portable MultiGAS sensor package for monitoring volcanic gas emissions. *Journal of Volcanology*, 116, 1-10.
- 3. Apera, J., et al. (2007) Deploying a portable MultiGAS sensor package for monitoring volcanic gas emissions. *Journal of Volcanology*, 116, 1-10.
- 4. Apera, J., et al. (2007) Deploying a portable MultiGAS sensor package for monitoring volcanic gas emissions. *Journal of Volcanology*, 116, 1-10.
- 5. Apera, J., et al. (2007) Deploying a portable MultiGAS sensor package for monitoring volcanic gas emissions. *Journal of Volcanology*, 116, 1-10.

Element: acknowledgements / references


Effects of Early Life Pathogenic Exposures and Obesity on Childhood Inflammation Levels in Galápagos, Ecuador

Kelly M Houck^{a,b}, Amanda L Thompson^{a,b}, Mark V Sorensen^a, ^aUniversity of North Carolina, Chapel Hill, ^bCarolina Population Center



Element: contact information

- Include contact info:
 - E-mail
 - Phone



The Impact of Lee Silverman Voice Treatment (LSVT) on Voice Handicap & Communication Effectiveness

David S. Ford, M.S.^{1,2}; Andrew Palmer, M.S.¹; Linda Bryans, M.A.¹; Joshua Schindler, M.D.¹; Donna J. Graville, Ph.D.¹

¹Northwest Clinic for Voice & Swallowing Disorders, Dept. of Otolaryngology-Head & Neck Surgery, Oregon Health & Sciences University, Portland, OR
²Strata & McQuinn, Inc., Sewickley, PA

Research Questions

1. What is the impact of LSVT on functional communication as rated by individuals with PD and their partners?
2. Are there differences in the efficacy of LSVT as measured by self-ratings of voice handicap and communication effectiveness?


Introduction

Individuals with Parkinson Disease (PD) often present with one or all of the communication symptoms that are characterized within the domain of hypokinetic dyspraxia. In essence, the motor system involved in producing voice and speech becomes hypofunctional (Sally, 2002). Patients may experience hypophonia and hypoarticulation of the vocal folds, resulting in reduced audibility and/or issues with healthy, timely, or clear vocal quality. They may also demonstrate imprecise articulation, reduced prosody, dysfluency/pauses, and misperceptions/misconceptions (PM) causing hyperarousal (Sally, Rang, & Fox, 2011).

Lee Silverman Voice Treatment (LSVT) is reported as the most well-researched, efficacious treatment for voice and all of the communication symptoms in Parkinson Disease (Holman, Hesse, Swankman, & Page, 2007). Although numerous studies have been published reporting efficacy and potential outcomes (Burgoyne, Sally, & Rang, 2005; Rang, Courtney, Chiles, Hesse, & Thompson, 1998; Rang et al., 2001; Rang, Fox, & Courtney, 2001; Sally, Silverman, Rang, Sally, & Fox, 2007), there is compelling evidence suggesting functional outcomes (Karlqvist et al., 1997; Sally et al., 2002; Courtney, Rang, Hesse, & Davis, 2007). In addition, generalizing these findings is difficult as some of these data were collected with anecdotal measures, small numbers of subjects, and anomalies in heterogeneous groups. According to one systematic review (Burgoyne et al., 2007), more evidence of treatment efficacy is needed, particularly with regard to the impact of treatment on "the adequacy of communication in real-world settings" (2007). Thus, the current study was undertaken to investigate the functional impact of LSVT on communication, to identify which aspects of communication are most impacted by treatment, and whether LSVT effects are experienced in communication and voice handicap equally.

Methods

A retrospective chart review was conducted of all patients with PD who had undergone LSVT at the Northwest Clinic for Voice & Swallowing from 2006 to 2012. Inclusionary criteria included a diagnosis of idiopathic PD, no head or neck surgery, no other speech or voice changes, no confounding medical conditions affecting voice or speech, no confounding language disorders, no other speech therapy, having undergone only one course of LSVT, and completion of the full 16-session treatment course of LSVT.



David S. Ford, M.S., is a senior, Parkinson Disease severity (Unified Parkinson Disease Rating Scale (UPDRS)) score prior to LSVT, and time post onset of PD (years).

Results

Background Characteristics: A total of 12 participants (9 males, 4 females) met the inclusion criteria. Their mean age was 68.23 years ($SD = 8.71$) and mean time post onset of PD was 9.10 years ($SD = 8.24$). At baseline, average UPDRS score was 23.15 ($SD = 13.62$).

Acoustic Measures: There was an overall improvement in vocal function across all physical and physiological speech tasks from pre- to post-treatment. There were also improvements in pre- and post-treatment. These improvements were consistent with those reported in previous LSVT studies.

Communication Effectiveness Survey: At baseline, mean self-rating on the CES was 18.87 ($SD = 9.23$). After LSVT, this increased to 28.05 on average ($SD = 9.55$) and this improvement was statistically significant ($p < .01$). Scores on the CES improved for 12/13 participants (92%) as shown in Figure 1 below.

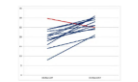


Figure 1. Self-rated CES scores for each participant pre- and post-LSVT. (Note: black = better, red = worse).

Communication Effectiveness Survey (CES): An 8-item patient-reported outcome measure of communication effectiveness that has been shown to be valid for use with individuals with PD (Courtney, Vahedi, & Roperstein, 2007). This instrument was provided to both the patient and their primary communication partner (e.g., a spouse).

The Voice Handicap Index (VHI): A 30 item, self-administered questionnaire that assesses the patient's perception of their voice disorder on physical, functional, and emotional aspects of daily life (Johnson et al., 1997).

Data Analysis: The Wilcoxon Signed Rank Test was used to compare the CES and VHI pre- and post-treatment. The Sign Test was used to identify whether individual items of the CES had changed significantly from pre- to post-treatment.

Voice Handicap Index: There was improvement noted in VHI score scores from 38.38 pre-treatment ($SD = 20.57$) to 28.05 post-treatment ($SD = 9.55$) but this improvement did not reach statistical significance ($p > .05$). Across individual participants, pre- to post-VHI scores improved for 9/11 individuals (82%), but worsened for one or more participants (2/11 (18%)), as shown below. No statistically significant difference was found for any of the three VHI subscales.

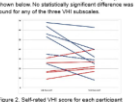


Figure 2. Self-rated VHI scores for each participant pre- and post-LSVT. (Note: black = better, red = worse).

Conclusions

1. Our findings suggest LSVT results in an improvement in functional communication for individuals with PD which is recognized both by individuals themselves and their partners.
2. Improvements were noted across a range of vocal communication settings, with the least benefit for tasks involving phone use.
3. Gains in functional communication were greater than those in self-perceived voice handicap, suggesting that the CES may be a more sensitive outcome measure for measuring post-LSVT changes than the VHI.

See Handout for Reference List

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