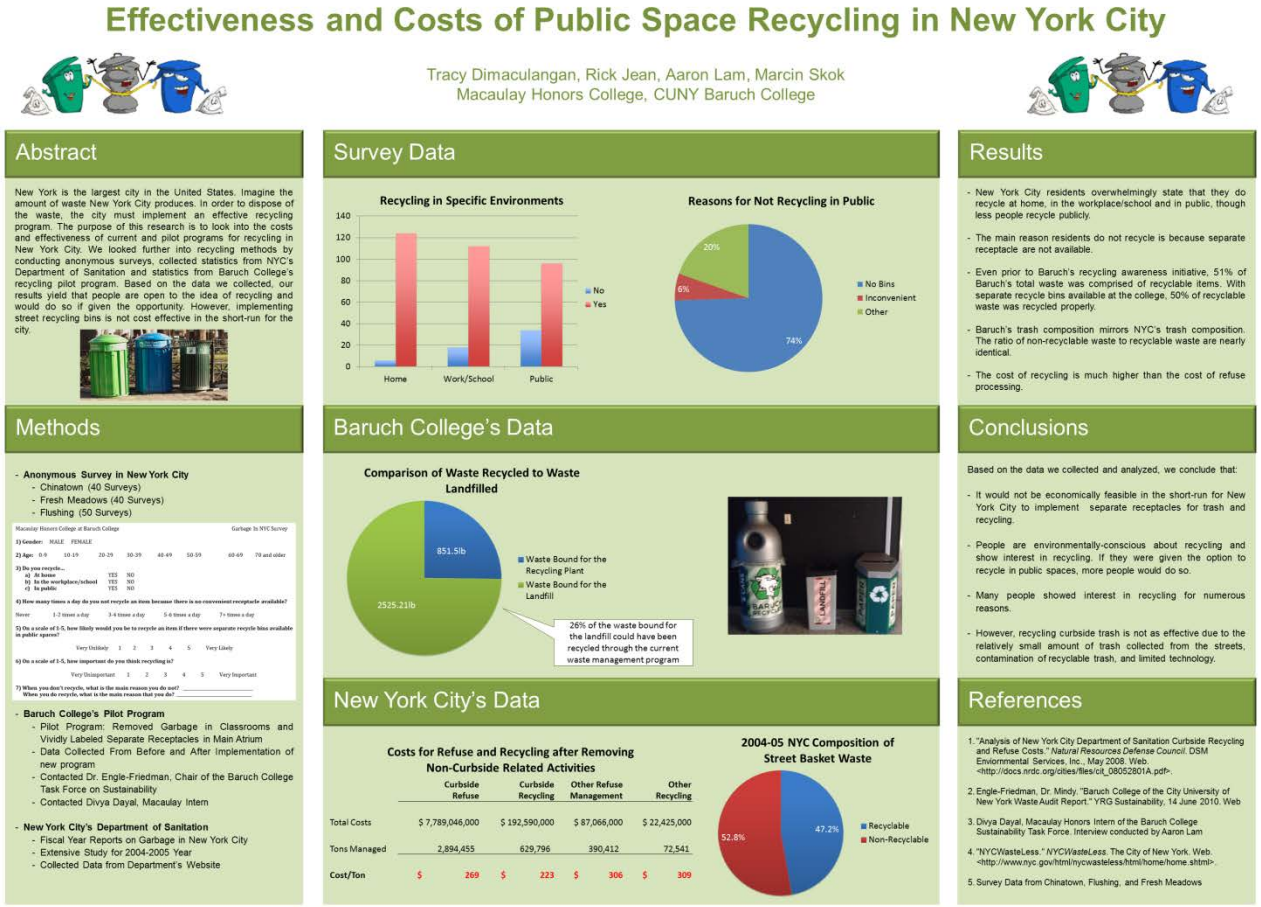
How to Create a Scientific Poster

then how to present it

Presented by Dr. Mariah Judd
juddm@iupui.edu
February 15, 2013

What makes a good poster?

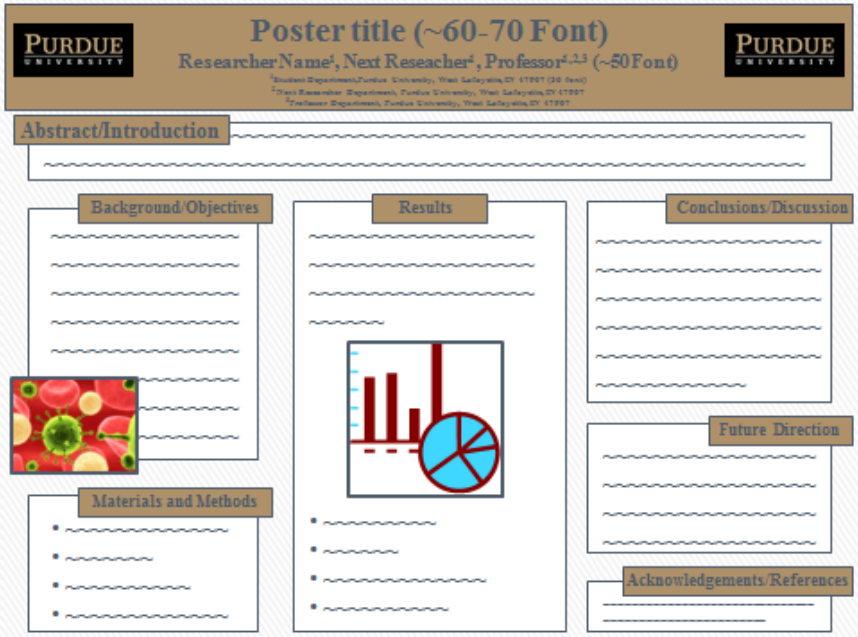
- What are the first things you notice?
  - Color
  - Pictures
  - Title
  - Figures
  - Section titles
  - Bullets
  - …….text



Where to start

- Brain storm ideas for what you want your poster to tell your audience
- Finalize your list to 2-4 key points
- Define the **title and sections**
  - Introduction, methods, results, discussion, summary, selected references, etc.
- Start selecting pictures, tables, charts etc. that you want to include
- Start planning the layout of your poster by sketching a rough draft
- Keep your key points in mind throughout this process

Organization



- Poster starts in upper left corner
- Typically, the flow should be top to bottom, left to right
- Title-author(s)-sponsoring institution(s) header should be at the top of the poster just under the title
- Think about using things like letters, numbers and even arrows to help direct the reader to the next section you want them to read

Poster title (~60-70 Font)

Researcher Name[1], Next Reseacher[1], Professor[1,2,3] (~50 Font)
[1]Student Department,Purdue University, West Lafayette, IN 47907 (36 font)
[2] Next Researcher Department, Purdue University, West Lafayette, IN 47907
[3]Professor Department, Purdue University, West Lafayette, IN 47907

Abstract/Introduction

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Background/Objectives

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Materials and Methods

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Results

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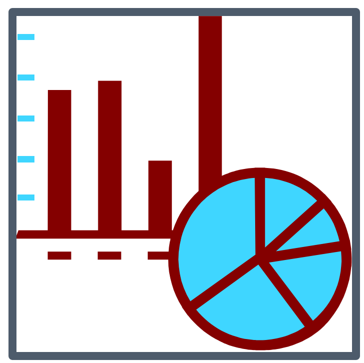

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Conclusions/Discussion

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Future Direction

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- Template provided to you
  - Must be 32x40 and portrait
  - Cannot use color background
  - Must use logos for IUPUI and CRL provided on template
  - All other details are editable at your discretion

Enter Title of the Research Here

IUPUI
StudentFirst LastName and Mentor LastName
Indiana University School of Nursing
Indiana University-Purdue University Indianapolis
IUPUI CENTER FOR RESEARCH AND LEARNING
INDIANA UNIVERSITY-PURDUE UNIVERSITY INDIANAPOLIS

Abstract

Put your abstract here. Make sure you check the font sizes ,etc.

Introduction

Brief introduction that should include the purpose or research question of your study and the significance of your study

Review of Literature

Provide a brief literature review, what is already known.

Make sure to use important references.

Methods

What did you do or plan to do?

Include study population if any, data-gathering procedures, tests, etc.

Current Status of Research

Include here the status of your project,
initial observations,
future directions,
problems encountered, etc.

References

1. Bartlett, R., M. Bussey, et al. (2005). "Movement variability cannot be determined reliably from no-marker conditions." J Biomech.

2. Wilson, D. J., B. K. Smith, et al. (1999). "Accuracy of digitization using automated and manual methods." Phys Ther 79(6): 558-66.

Content

- Introduction/Background/Objectives:
  - This could be in addition to an abstract or in place of one
  - What is the state of the field? What made you ask the question you asked?
  - Justify your study, give strong rationale
  - List objectives
- Methods
  - Provide only enough for credibility. You don't have to explain everything, just the high points required the main points of your results.
- Results
  - Present relevant data
  - Integrate tables, graphs, photos
  - Limit items in tables & graphs
  - Discuss only the pertinent points

Content

- Discussion/Conclusions:
  - Only the main points/ list them! What did your results show? How did your results add to the current field (outlined in the background section).
- Acknowledgements
  - Funding, collaborators, your lab trainer
- References
  - If you listed any references in your introduction or methods sections or anywhere else in your poster, you must list them on your poster.

Simplicity

- Don’t present too much - you want to keep the readers’ interest, not overwhelm them
- Concentrate on 2-4 key points (remember those?)
- Use graphics as much as possible instead of text
- When possible, use bullets or outlines instead of full sentences

Headings

- Highlight title, headers, and subheaders
  - Bolding
  - Contrasting color
  - Color blocking
- Make headers and subheaders at least 25% larger that the regular text
- Be sure you can read all type from at least 6 feet away
- Be sure everyone knows who did this work by putting it under the title

Poster title (~60-70 Font)

Researcher Name[1], Next Reseacher[1], Professor[1,2,3] (~40-50 Font)

[1]Student Department,Purdue University, West Lafayette, IN 47907 (30-35 font)
[2] Next Researcher Department, Purdue University, West Lafayette, IN 47907
[3]Professor Department, Purdue University, West Lafayette, IN 47907

Abstract/Introduction (~50 font)

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Background/Objectives

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Background/Objectives

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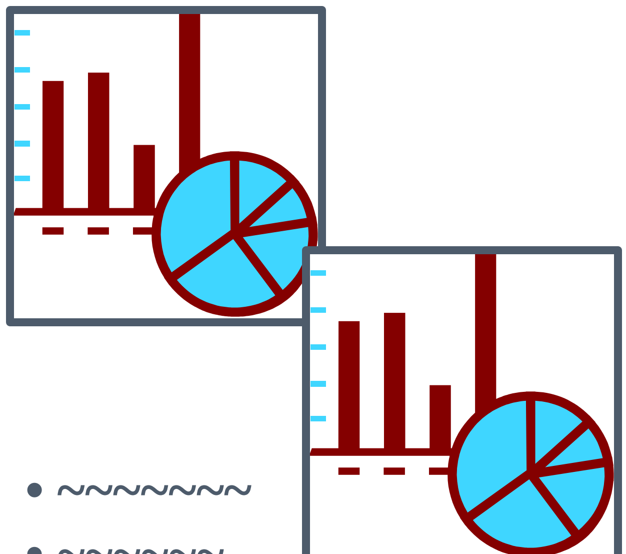

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Conclusions/Discussion

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Future Direction

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Expression, purification, and crystallization 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 PLCζ protein fit for structure identification through X-ray crystallography. To date, there is no available empirical data of the 3D structure of PLCζ. The identification of the structure is crucial as it presents information that will facilitate understanding of the protein mechanism and regulation, both of which remained unknown. Bioinformatic analysis was also utilised to draw initial structural information, specifically on the domain differences of PLCζ and empirically determined structure PLCδ1.

INTRODUCTION

- Phospholipase C-zeta (PLC-ζ), a member of phospholipase c family was identified as the sperm factor responsible for activating oocytes, and thereby causing fertilization[1].

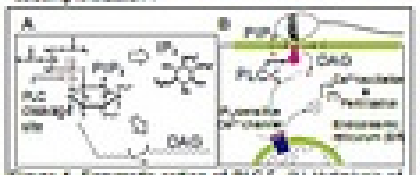


Figure 1. Enzymatic action of PLC-ζ. (A) Hydrolysis of PIP_2 by PLC-ζ (released from sperm) produces DAG and (IP_3. (B) In turn, IP_3 activates Ca^{2+} channel of ER to release calcium. This hypothesize to produce Ca^{2+} oscillation and eventually fertilization.[2]

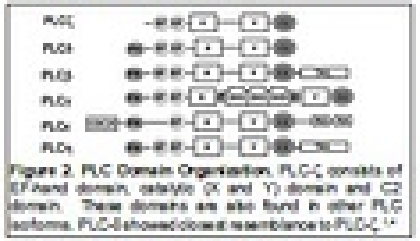


Figure 2. PLC Domain Organization. PLC-ζ consists of EF-hand domain, catalytic (X and Y) domain and C2 domain. These domains are also found in other PLC isoforms. PLC-δ showed closest resemblance to PLCζ.[3,4]

- Bioinformatic analysis through sequence alignment and homology modeling revealed that the calcium binding region of C2 domain as well as the catalytic Y-region of PLC-ζ were expected to be significantly different from empirically determined PLCδ1.

EXPERIMENTAL RESULTS

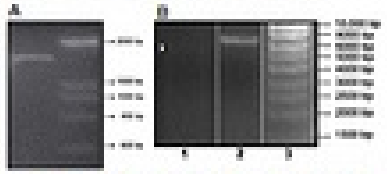


Figure 3. Molecular cloning of PLCζ134 construct. (A) Two-step PCR amplification successfully produce a PLCζ construct with 6×HIS and 3C protease cleavage site (681 bp in size). (B) Construct was ligated into pET102/D-TOPO vector. This is validated by restriction digest using CleI. Vector alone (1) showed a lower band compared to vector with the construct (2).

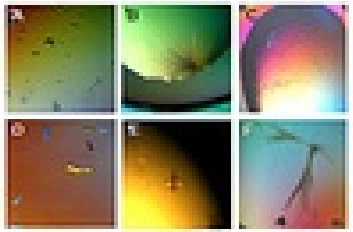


Figure 5. Crystallisation of PLCζ134 Construct. Six different screening conditions were found to be suitable for crystallizing the protein. Crystals were confirmed to be protein due to birefringence characteristics under polarised light. Protein crystals A-E were needed to be optimised to obtain larger crystal. Protein crystal F was tested for X-ray diffraction. Preliminary analysis, however, revealed that X-ray diffraction pattern was hindered by presence of high salt concentration.

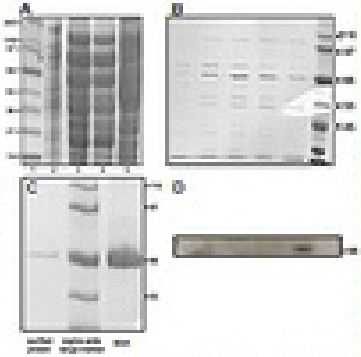


Figure 4. Protein expression and purification. (A) Molecular weight marker (lane 1); Protein bands after IPTG induction (lane 2). Protein construct migrated at 83 kDa. Nickel beads were used to capture protein (lane 3) and the beads were washed with high salt concentration (lane 4) to remove contaminants (lane 5). (B) Fractions collected after cleaved protein (by 3C protease) passed through FPLC-ion exchange method. Bands migrating at around 55 kDa (which corresponds to PLCζ134 protein) are found. (C) Further purification through FPLC-gel filtration method to obtain purified sample. (D) To verify that indeed the protein band is PLCζ, Western blot was employed using antibody specific to X-Y linker.

CONCLUSION

- It was predicted from the bioinformatic analysis that PLC-ζ will fold in the same general topology as PLC-δ1 (without PH-domain).
- Specific differences were predicted to be in the Y-region of catalytic domain and C2 domain.
- This hypothesis, however, was not tested as X-ray diffraction data collection failed. This was due to presence of high salt concentration. Future study may need to alter buffer systems to obtain this structural data.
- The recombinant mouse PLC-ζ was successfully expressed, purified and crystallized. However, the expression level is low.
- It was assumed that the protein was catalytically active in bacterial cell and overproduction caused toxicity and metabolic stress.
- To obtain higher protein expression, different vector system and bacterial strain may be used.[5]
- The ultimate aim is to reveal the 3D structure of human PLC-ζ. However, the expression of the human PLC-ζ was much lower. It is possible though to construct a more accurate model if an empirical 3D structure of mouse PLC-ζ was determined and used as a template.

ACKNOWLEDGEMENTS

I would like to thank Dr A. Rossbach for the antibody used in Western blotting, Dr. LD D'Cruz for the PLCζ134 construct, 3C protease and his supervision, Mr. Peter Wilson for technical support.

EXPERIMENTAL PROCEDURE

PLCζ134 construct was generated using two-step PCR to incorporate 6×HIS and 3C protease recognition site. Construct was ligated into pET102-D/TOPO vector and transformed into *E. coli* BL21(DE3). Protein expression was induced using IPTG. Bacterial lysis was carried out using French Press. Protein construct was captured using Nickel beads and cleavage of the protein from the tags were completed by 3C protease. Further purification was carried out using FPLC (ion-exchange and gel filtration chromatography). Crystallization of protein was carried out using sitting drop vapor-diffusion method.

REFERENCES

1. Saunders CM *et al* (2002) PLC-zeta: a sperm-specific trigger of Ca^{2+} oscillations in eggs and embryo development. *Development* 15, 3333-44.
2. Parrington J, Lai FA, and Swann K. (1996) A novel protein for Ca^{2+} signalling at fertilization. *Curr Top Dev Biol* 34, 215-43.
3. Dumon-Seignovert L, Cariot G, and Vuillard L. (2004) The toxicity of recombinant proteins in *Escherichia coli*: a comparison of overexpression in BL21(DE3), C41(DE3), and C43(DE3). *Protein Expression and Purification* 37, 203-206.
4. Essen LO, Perisic O, Cheung R, Katan M, and Williams RL. (1996) Crystal structure of a mammalian phosphoinositide-specific phospholipase C delta. *Nature* 380, 595-602.

Text

- All text should be in short, concise statements; minimize descriptive long sentences
- Normally set line spacing on text at 1.5
- Size of text is very flexible but just as you can make it too small, you are also make it too big.
- REMEMBER - be able to read it from 6 feet away

QEDML: An XML Based Standard for Scientific Survey Questionnaire Design and Deployment

Philip Cookson, pchilp@philology.com.au
Director of Research
Philology Pty Ltd

Dr. Abhijit Chattaraj, abhijit@philology.com.au
Principal Technology Consultant
Philology Pty Ltd

PHILOLOGY
www.philology.com.au

Abstract

Accurate and efficient data collection is central to all scientific research. In the social, behavioural and medical sciences one of the principal means of data collection is a survey questionnaire administered to respondents via paper based forms, face-to-face or telephone interviews, or through online surveys.

Here, we present QEDML (Questionnaire Editing and Deployment Mark-up Language) an XML (based) standard for encoding survey questionnaires and sequencing logic. Further, surveys can be output to a range of document formats using XSLT transforms. Surveys can be designed (by "dragging and dropping" pre-existing components (questions, instructions, and control logic). QEDML also allows creation of high quality printed questionnaires (PDF or MS Word) or scripts for automatic deployment as online telephone based surveys. Questionnaires maybe created in any Unicode compatible language, and multiple language translations may be contained within a single survey document—facilitating simultaneous deployment of surveys for multi-lingual scientific data collection.

The QEDML software system has been fully implemented on the Mac OS X platform. This empowers researchers to design, deploy and analyse survey questionnaires effectively and efficiently – either on a stand-alone Mac (for face interviewing/research applications), or via the Internet (for global online survey data collection). In Figures 2a, 2b and 2c, we present the QEDML software suite for Mac OS X.

Methodology

Why use XML to encode Survey Questionnaires?
XML (eXtensible Mark-up Language) enables storage and exchange of structured text information, retaining both content and context of data.

XML is important as a standard for encoding information because:
- It provides support for multiple languages (using Unicode)
- It is extensible: new tags and language elements may be introduced while maintaining backwards compatibility
- Tools such as XSLT renderers allow multiple output formats to be automatically generated from an XML document
- It is capable of representing hierarchical (tree-structured) information and encoding meta-data attributes.

These attributes make XML the ideal choice for encoding survey questionnaires to facilitate their storage and interchange.

What is QEDML and how is it used to represent a survey questionnaire?
QEDML is an open standard for encoding questionnaire designs with simple, human-readable, tags. Based on the XML standard, QEDML defines a comprehensive set of tags that are optimized for describing the core elements of a survey questionnaire.

Figure 1 provides an example of a QEDML document snippet showing how XML can be used to mark-up a survey question.

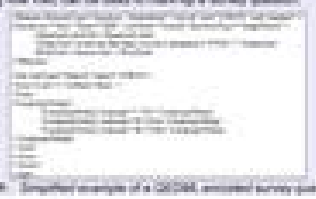


Figure 1: Simplified example of a QEDML encoded survey question

QEDML provides portability for complex questionnaire designs between different survey systems, and is able to generate accurate representations of the questionnaire even with relatively simple survey scripting languages. With QEDML, the goal of "design once" using re-usable questionnaire components, and "deploy anywhere" (Paper, CATI, Web, CAPI) questionnaires can become a reality.

Figure 2a provides a functional overview of the QEDML standard software suite as it applies to the scientific survey questionnaire design and deployment process.

Figure 2a: Functional Overview of the QEDML Standard Software Suite

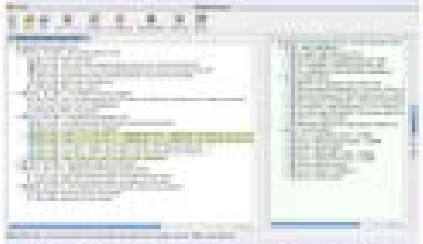


Figure 2b: The QEDML Designer Software for Mac OS X

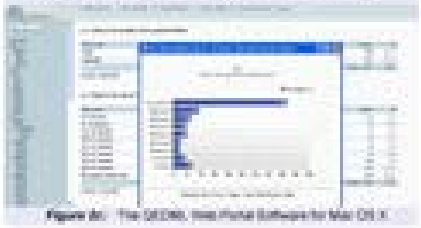


Figure 2c: The QEDML Web Portal Software for Mac OS X

Rationale

The rationale for implementing survey automation systems
The implementation of comprehensive survey automation systems based on an open XML standard has the power to transform the way that survey based market research is conducted. The key benefits of implementing a survey automation system are:

- Faster end-to-end turn around of survey based research projects
- Cost efficiency due to re-usability, repeatability & economies of scale
- Improved consistency and quality through reduction in manual error
- Improved management of multi-lingual survey questionnaires
- New value added functions such as real-time online reporting of results, tighter project management, analysis of cross-study data sets, and interactive web-based data collection

The Need for a Survey Questionnaire Repository
Typically, individual questions in any given research study are contained within a larger "library" of commonly used survey questions, or longitudinal research studies it is common for 80% or more of a survey questionnaire to be identical with the previous wave of a study. This situation creates a compelling case for creating a questionnaire repository that can be used as the foundation for creating new surveys.

It is necessary to archive completed questionnaires, frequently used questions, and sequences. Such data can be represented using a suitable encoding standard such as QEDML. Survey data can then be stored in XML format in a modern database system with native support for XML storage, retrieval, & access.

Thus, it is possible to create an archive of complete questionnaires, sequences of questions, and individual questions. This data can be used for efficient and consistent designing of new surveys. This approach offers the benefit of storing all translated text associated with each question element, as well as high level meta-data associated with a project. The outcome is a system capable of quickly retrieving complete survey questionnaire designs and all relevant meta-data.

Case Study Examples

We present two case studies of how the QEDML standard software suite has been applied in the context of social, behavioural, and medical survey research applications. We refer to research by The Australian Psychological Society (www.psychology.org.au) and The National Allied Health Classification Committee (www.nahcc.org.au).

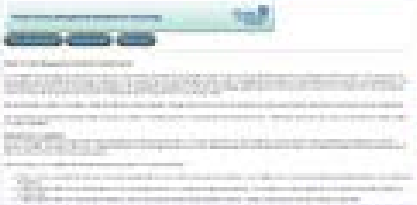


Figure 3: A self-assessment survey to measure and provide prescriptive advice for assessing "Private Practice Management Standards" for psychologists (Ref: www.psychology.org.au)

Figure 4: An adaptive data collection engine for assisting clinicians in the classification of ICI (Indications For Intervention) Codes (Ref: www.nahcc.org.au)

Conclusion

The most effective means of creating a robust repository for survey questionnaire and respondent data collection and reporting is to use a hybrid design consisting of a survey questionnaire encoded using XML standards such as QEDML, and a relational database table structure for the respondent data set. This design maximizes the capability for using the repository both for reporting purposes, and as an archive of survey questions.

The design of a comprehensive survey automation system inherently requires the integration of people, processes, and technology. Existing approaches for conducting "real world" research surveys are not able to be fully automated. As a result, survey automation software must be supplemented by well documented and coordinated processes and procedures for managing the manual steps involved in the data collection and analysis phases to ensure the data integrity of the overall system.

The architectural design described in this poster is of particular relevance to research organizations that manage survey research involving over several years, and those that conduct survey research in several different languages.

References

"Using XML to encode Questionnaire Designs: Existing Standards & Technical Implementation Issues" P. Cookson and J. Sokell. Proc. of 40th Statistical Computing London U.K. Jan 2006

"Architectural Design of a Survey Questionnaire and Respondent Data Repository: Practical Considerations" P. Cookson and J. Sokell. Association for Survey Computing Conference, London, U.K. Sept 2006

Further information on the QEDML standard: www.qedml.com.au

Graphics

- Pictures can say a thousand words.
  - Study system
  - Microscopy images
  - Special instrumentation
  - Infection patterns
- But, make sure that your image says something relative to your poster and your 2-4 main points!
- Always view images at ~125% to check for pixilation.

Minimal Bioavailability of Aerosolized Tobramycin in the Sinonasal Tract:

A Safer Approach to Administration of Aminoglycosides for Sinusitis Exacerbations and Persistence in Patients Post-Endoscopic Sinus Surgery

David Greene, MD, FACS.

Chief of Otolaryngology, Medical/Surgical Specialists, Physicians Regional Health System; Adjunct Faculty, Cleveland Clinic

ABSTRACT

Sinus infections post sinus surgery constitutes a major challenge in rhinology. Prior studies suggest that nebulized antibiotics constitute an effective treatment for these infections. Potentially toxic agents such as aminoglycosides and amphotericin B have been used topically in the sinuses for years. However the safety of these nebulized agents have not been adequately studied. The pulmonary literature suggests substantial bioavailability with potential toxicity. Thus, objective measures in the sinonasal tract are necessary to assess the safety of intranasal use.

The present study objectively examines the safety of tobramycin nebulization (Aerosol Science Laboratories, Inc./ASL Pharmacy, Camarillo, CA) using measurement of peak and trough blood levels retrospectively reviewed from our practice.

We found that tobramycin is present in the blood only minimal amounts, far below the levels produced by IV administration and nowhere near toxicity. Compared with data from the pulmonary literature, sinonasal nebulization produces minimal blood levels in comparison to pulmonary applications.

Favorable post-treatment endoscopy and patient-reported outcomes are consistent with effectiveness; however, further study will be needed to establish this definitively.

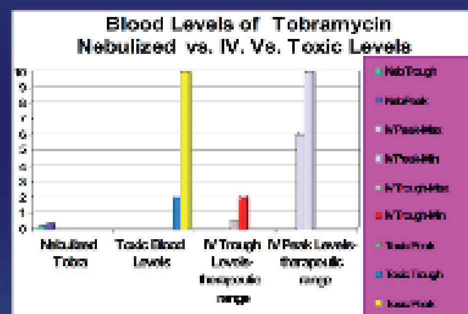
INTRODUCTION

Sinus infections post sinus surgery constitute a major challenge in rhinology. Nebulized and topical antimicrobials have been used for the treatment of these challenging cases of sinusitis for many years. However, while toxic drugs such as the aminoglycosides and amphotericin B have been used in the sinonasal tract topically for years with anecdotal success and no reports of complications. The pulmonary literature has extensively explored the bioavailability and toxicity of these drugs when nebulized through the lungs, with demonstration of high absorption and possible toxicity. However, knowledge of the effects of absorption in the sinonasal tract is inadequate at this time.

The present study reviews serum peak and trough data from our experience monitoring patients treated with nebulized tobramycin for recalcitrant or recurrent sinusitis post FESS. We also review clinical findings that assess the effectiveness of nebulized tobramycin in these cases. To address the known problem of excessive absorption to the blood via pulmonary nebulization, this practice utilizes a vibrating mesh aerosolization system which produces particles measuring 3.1 microns, which has been shown to precipitate in the nose and sinuses, and not pass on to the lung. Blood levels in sinonasal treatment are compared to intravenous norms and known toxic levels from the literature.

METHODS AND MATERIALS

- N=20
- Study Design: Retrospective chart review
- Inclusion criteria:
  - -History of endoscopic sinus surgery
  - -Recurrent or persistent sinusitis, confirmed on endo/CT per ARS criteria.
  - -Failure of oral Rx.
  - -Patient elects to admit nebulized Rx.
- Treatment:
  - Tobramycin nebulized, 125 mg in 2 ml TID
  - -Aerosolization to particle size of 3.1 microns by being passed through a high speed vibrating mesh filter (ASL, Camarillo, CA).
- Data and Outcomes:
  - -Peak and trough serum tobramycin levels.
  - -Pre- and Post-treatment exam, endoscopy, CT.
  - -Hx prior antibiotics, complications, surgery.
  - -Patient history pre and post.
  - -Complications.



RESULTS

- N= 20 patients.
- Age: Average,55 years old (range 24-72).
- Hx prior ESS: 1-11 (majority referred to practice after prior FESS).
- Sinusitis confirmed on CT: 100%
- Sinusitis confirmed on endoscopy: 100%
- Pts undergoing endoscope-guided cultures: 100% Bacteria cultured (total): Includes--pseudomonas, strep pneumonia, gram negative bacilli, cladosporium, penicillium, enterobacter cloacum, stenotrophomonas, prevotella, resistant pseudomonas, staph aureus, bacteriodes. (Note: not all cs produced definitive isolates b/c of heavy prior abx tx, access, etc. Rx of tobra based on sensitivities when available)

- Peak tobramycin: average 0.337, range 0.1-0.6, SD 0.2.
- Trough tobramycin: average 0.14, range 0.1-0.5, SD 0.13.

- Pts. Failing oral Rx: 100%
- Outcomes:
  - -95% (19/20) patients reporting improvement.
  - -55% endoscopically cleared; 70% endo improved.
  - -0% complications from tobra toxicity.

CONCLUSIONS

Review of 20 cases treated with nebulized tobramycin for sinusitis reveals only minimal exposure in the blood stream. Thus, it may be concluded that nebulized tobramycin treatment for sinusitis in patients with infection post endoscopic sinus surgery, which is opened and marsupialized the sinuses, thus made them amenable to topical treatment, as a safe alternative to intravenous administration.

While the endoscopic and subjective history reported by the patients strongly support efficacy for this modality of treatment, further research as both perspective and quantifiable is needed to prove this definitively.

Sinus Science™ Aerosol Delivery System with vibrating mesh device and chamber for nasal inhalation (ASL Pharmacy, Camarillo, CA)

REFERENCES

1. Vaughan WC, Carvalho G. Use of nebulized antibiotics for acute infections in chronic sinusitis. Otolaryngol Head Neck Surg. 2002 Dec;127(6):558-68.
2. Vaughan WC. Nebulization of Antibiotics in Management of Sinusitis. Curr Infect Dis Rep. 2004 Jun;6(3):187-190.
3. Dubin MG, Liu C, Lin SY, Senior BA. American Rhinologic Society member survey on "maximal medical therapy" for chronic rhinosinusitis. Am J Rhinol. 2007 Jul-Aug;21(4):483-8.
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5. Laube BL. Devices for aerosol delivery to treat sinusitis. J Aerosol Med. 2007; 20 Suppl 1:S5-17; discussion S17-8. Review.
6. Miller TR, Muntz HR, Gilbert ME, Orlandi RR. Comparison of topical medication delivery systems after sinus surgery. Laryngoscope. 2004 Feb;114(2):201-4.
7. Vaughan WC, Carvalho G. Use of nebulized antibiotics for acute infections in chronic sinusitis. Otolaryngol Head Neck Surg. 2002 Dec;127(6):558-68.
8. Kahler DA, Schowengerdt KO, Fricker FJ, Mansfield M, Visner GA, Faro A. Toxic serum trough concentrations after administration of nebulized tobramycin. Pharmacotherapy. 2003 Apr;23(4):543-5. 9. Mukhopadhyay S, Staddon GE, Eastman C, Palmer M, Davies ER, Carswell F. Assessment of potential ototoxicity following high dose nebulized tobramycin in patients with cystic fibrosis. J Antimicrob Chemother. 1996 Mar;37(3):423-36.

Aesthetics

- The purpose is to highlight your content
- Never have the aesthetics overwhelm the main points of your poster
- Should grab people's attention but not take that attention away from your main points.
- Some white space is a very good thing, necessary actually, but IT MUST BE INTENTIONAL and BALANCED!

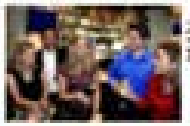
Low dose oral EtOH enhances socialization and collaborative projects among scientists during a scientific conference

By Scicurious
The internet: http://scienceblogs.com/neuratopia

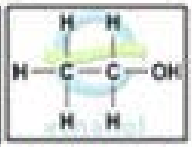
ScienceBlogs

Neuratopia

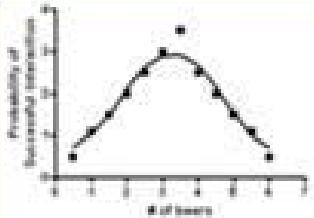
Introduction



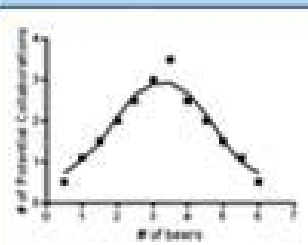
Materials and Methods



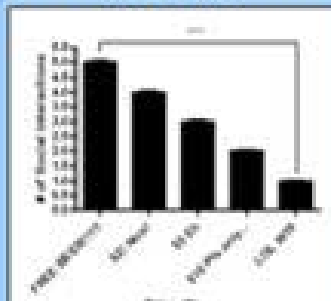
Low-dose EtOH enhances and high-dose EtOH decreases successful scientific social interaction



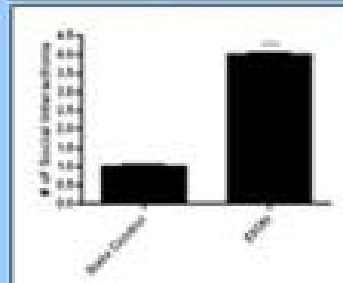
Low-dose EtOH enhances, and high-dose EtOH decreases probability of collaboration



EtOH price correlates with successful social interaction



EtOH availability influenced social interaction and collaboration regardless of price



Conclusions

-The presence of EtOH enhanced the probability of successful social interaction at lower doses of EtOH. However, in the presence of high amounts of EtOH (slurring, confusion, clumsiness) scientists appeared too impaired to properly socialize

-The presence of EtOH in similar amounts had corresponding effects on the numbers of potential collaborations pursued

-EtOH price correlated with successful social interaction. At the highest doses, postdocs and students failed to even show up.

-Availability of EtOH significantly enhanced social interaction among those present regardless of price

The study appears to indicate that scientific social interaction is significantly enhanced by the presence of EtOH. The implications are clear: conferences should (re-)discover cheap or moderately priced alcohol whenever possible to facilitate scientific communication.

Model/Lit Cited/Whatevs

Acknowledgments

With funding!!!

Color

- Muted colors, or shades of gray, are always a good choice for the background.
  - Use more intense colors as borders or for emphasis, but be conservative - overuse of color is distracting.
- Creativity is important but there is a line when it just becomes distracting.
- Pick a color scheme. Two to three related colors will unify the poster.

Prevalence and Determinants of Gender Violence amongst Rural High School Students in KwaZulu-Natal

M Taylor[1], SB Dlamini[1], N Mkhize[1], CC Jinabhai[1], R Sathiparsad[2], H De Vries[3]

1.School of Family & Public Health Medicine, Nelson R Mandela School of Medicine (NRMSM), UKZN
2.School of Social Work & Community Development , UKZN
3.Dept of Health Promotion & Health Education, Maastricht University

Back Ground

- South Africa: High burden of disease[1]
- Decreased lifespan to under 50 years[2]
- KwaZulu-Natal: prevalence of HIV and AIDS 21.9% between 15-49 years[3]
- Increased awareness of an association between sexual abuse, sexual risk behaviour and HIV[4]
- Need to reduce gender violence by effective interventions targeting youth
- Should understand determinants of gender violence in order to develop appropriately targeted interventions

Aim

- The aim of this study was to investigate the prevalence and determinants of gender violence amongst high school students.

For the purpose of this study gender violence included physical abuse (hitting) and sexual abuse (forced sex = rape).

Method

- Cross sectional study
- Area: Ugu District, KwaZulu-Natal
- Of n=30 Secondary Schools, n=8 were randomly selected
- All learners in one randomly selected grade 9 class invited to participate
- Completed an anonymous self-reported questionnaire
- Instrument: structured questionnaire developed from focus group discussions, translated into isiZulu and piloted

Study Instrument

- Theoretical framework: I-Change Behaviour Change Model (de Vries et al,2003).
- Demographic information, beliefs and attitudes to gender violence, social influences, self-efficacy and intentions were investigated
- Responses: Likert scale (1-5) Strongly disagree to strongly agree.

Ethical Clearance

- Ethics Clearance was obtained from NRMSM Ethics Committee, permission
- From the Dept of Education and Principals and written informed consent from parents and Students.

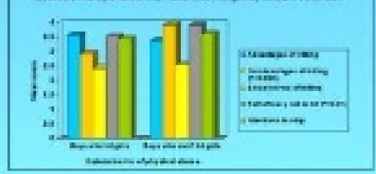
Results

Study sample n=288

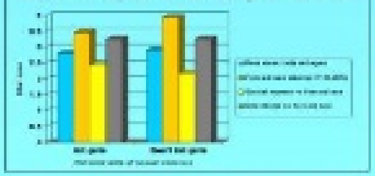
Boys: Girls: Mean age	n= 124 (42.9%) n= 165 (57.1%) 16.07 years (SD 1.62) Range 14-21 years
n= 45 (36.8%) boys reported hitting girls n= 12 (10.7%) boys had forced a girl to have sex	

Results (Cont.)

Differences between determinants of physical abuse (hitting) between boys who hit / did not hit girls, mean scores.



Differences between determinants of sexual abuse (forced sex), between boys who hit / did not hit girls, mean scores.



Factors influencing Physical Violence: Hitting girl friend

Factor	B (SE)	P Value	Odds Ratio	95% CI
Hitting a girl shows the boy loves her	-1.60(0.67)	0.006	0.20	0.05, 0.72
Father hits mother	-2.54 (1.05)	0.03	0.056	0.01, 0.79
Hitting a girl is okay	-2.79(1.21)	0.02	0.05	0.005,0.60
Boys make the decisions	-2.19(1.21)	0.02	0.11	0.03, 0.90

Factors influencing Sexual Violence : Forcing a girl to have sex

Factor	B (SE)	P Value	Odds Ratio	95% CI
Forced sex is okay for male needs	1.56(0.68)	0.02	4.77	1.25, 18.27
Forced sex is okay if you promise gifts	-1.56(0.51)	0.002	0.20	0.07, 0.56

Summary of Results

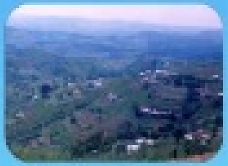
Boys were less likely to hit girls if:

- They did not associate hitting with evidence of love,
- In their socialization, fathers did not hit their mothers,
- They did not believe that boys have to make all the decisions, and,
- They didn't think that hitting girls was acceptable

- Boys who believed forced sex was justified to satisfy male sexual needs were almost five times more likely to have abused girls
- Boys who did not think that if you promised gifts you were entitled to sex were less likely to force sex

Conclusions & Recommendations

- A high proportion of boys reported engaging in gender violence
- School based programmes are urgently required to promote gender equity
- Such programmes need to teach skills to communicate and resolve conflict non-violently
- Cross sectional study so cannot be certain of direction, but study suggests that forced sex during an HIV epidemic could facilitate HIV transmission.



References

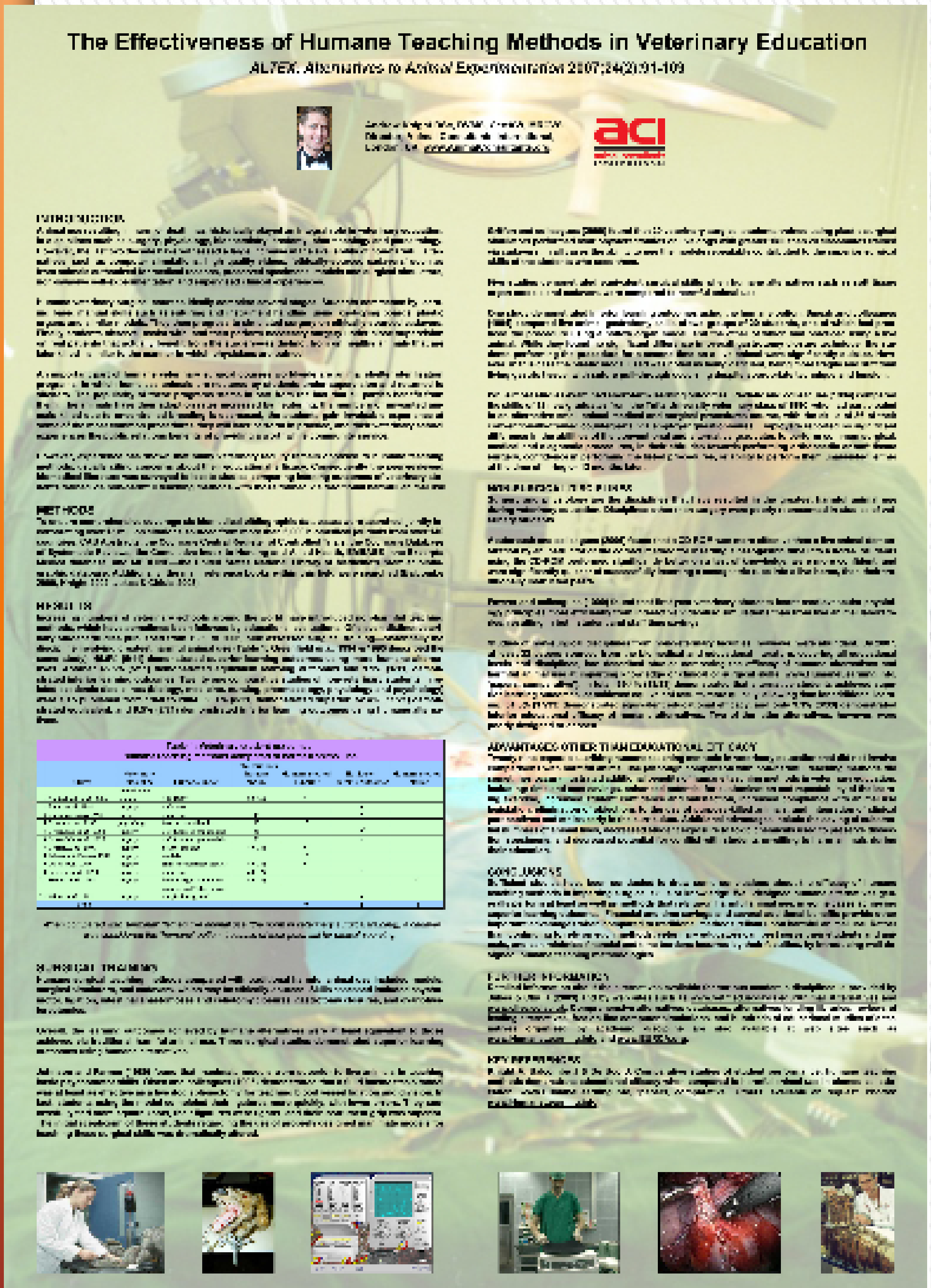
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

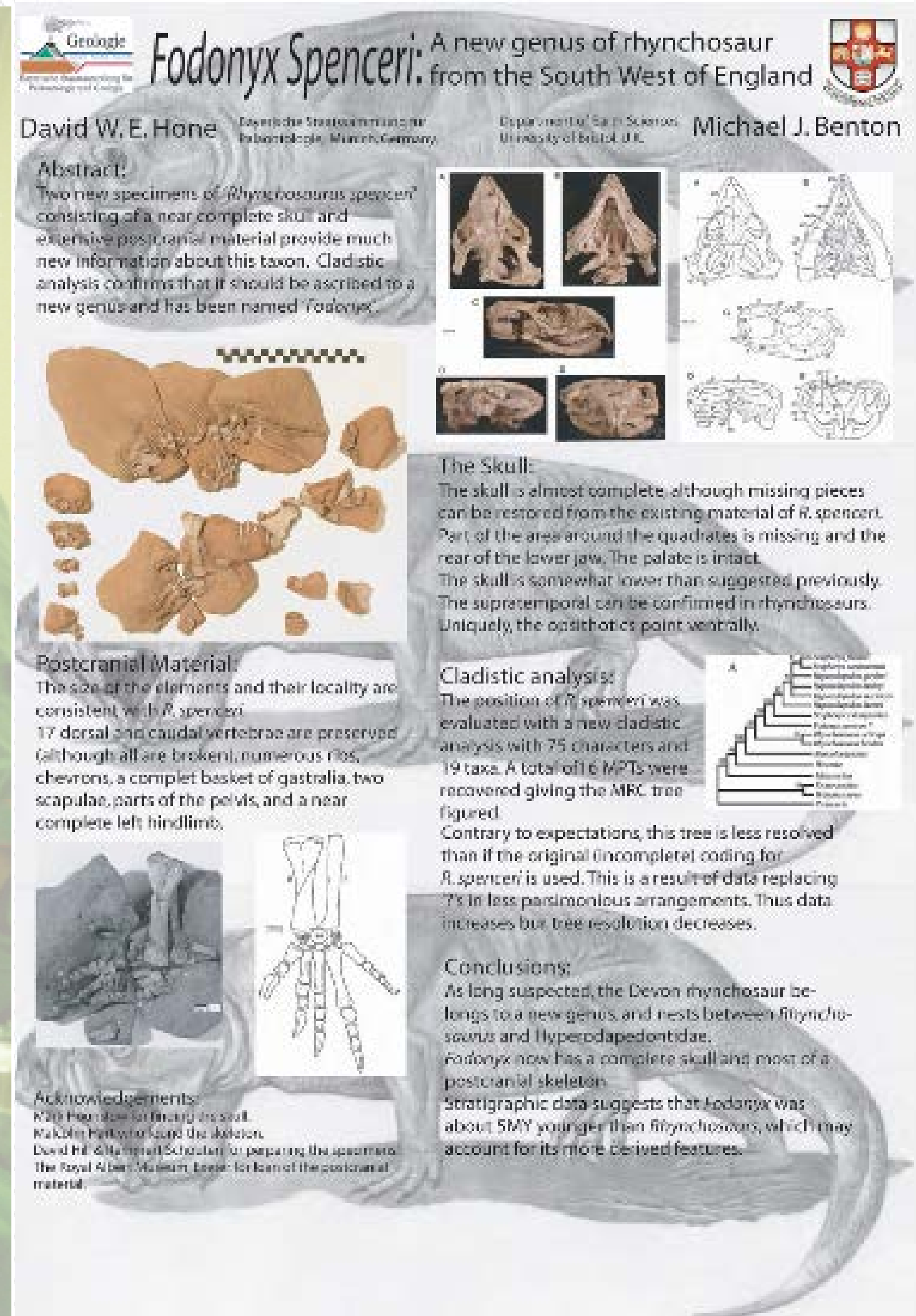
Acknowledgements

- Schools, Parents and Students for participating in the study.
- SANPAD for their support

Use of Backgrounds

- Adding a background can take a poster from basic to exceptional, but there is a fine line between attention grabbing and distracting!
- Background options from safe to risky:
  - A solid color
  - A gradient of color
  - A simple repeating pattern
  - A picture with a monotone color palette
- Bad backgrounds are one of the biggest mistakes you can make!!! It can ruin a perfectly good poster.


The Effectiveness of Humane Teaching Methods in Veterinary Education
ALTEX: Alternatives to Animal Experimentation 2007;24(2):91-109


Geologie
Fodonyx Spenceri: A new genus of rhynchosaur from the South West of England
David W. E. Hone
Michael J. Benton
Abstract:
Two new specimens of Rhynchosaurus spenceri consisting of a near complete skull and extensive postcranial material provide much new information about this taxon. Cladistic analysis confirms that it should be ascribed to a new genus and has been named Fodonyx.
The Skull:
The skull is almost complete, although missing pieces can be restored from the existing material of R. spenceri.
Part of the area around the quadrates is missing and the rear of the lower jaw. The palate is intact.
The skull is somewhat lower than suggested previously.
The supratemporal can be confirmed in rhynchosaurs.
Uniquely, the opisthotics point ventrally.
Postcranial Material:
The size of the elements and their locality are consistent with R. spenceri.
17 dorsal and caudal vertebrae are preserved (although all are broken), numerous ribs, chevrons, a complet basket of gastralia, two scapulae, parts of the pelvis, and a near complete left hindlimb.
Cladistic analysis:
The position of R. spenceri was evaluated with a new cladistic analysis with 75 characters and 19 taxa. A total of 16 MPTs were recovered giving the MRC tree figured.
Contrary to expectations, this tree is less resolved than if the original (incomplete) coding for R. spenceri is used. This is a result of data replacing ?'s in less parsimonious arrangements. Thus data increases but tree resolution decreases.
Conclusions:
As long suspected, the Devon rhynchosaur belongs to a new genus, and nests between Rhynchosaurus and Hyperodapedontidae.
Fodonyx now has a complete skull and most of a postcranial skeleton.
Stratigraphic data suggests that Fodonyx was about 5MY younger than Rhynchosaurus, which may account for its more derived features.
Acknowledgements:

Square it up

- When you are nearing the point when you have your final format, make sure things are even and square.
- The eye looks for equality and alignment and is distracted when things are off

Identifying WRKY protein-protein interactions in *Arabidopsis thaliana*

PURDUE UNIVERSITY

Moyer, Michelle[1] and Chen, Zhixiang [2]

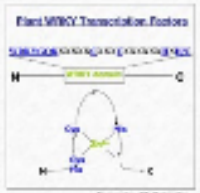
[1]Summer Intern, Department of Botany and Plant Pathology, Purdue University, West Lafayette, Indiana
[2] Department of Botany and Plant Pathology, Purdue University, West Lafayette, Indiana

Introduction

Knowing how plants respond to invading pathogens is key in understanding the basics of plant physiology. This vision for knowledge is now beyond the observable macroscopic phenotypic responses; it has delved into the microscopic world since plant pathological research began to study the biochemical and genotypic interactions between the host plant and the pathogen.

Using the model plant, *Arabidopsis thaliana*, has aided studies involving plant-microbe interactions. Its nanomolecule small genome has been completely sequenced, thus allowing researchers to identify and perform functional analysis assays on little-known genes and proteins. It was with this information that a superfamily of transcription factors, encoded by WRKY genes, was discovered as major family of pathogen defense-response related genes in the Plant Kingdom.[1]

This superfamily of around 72 genes[2], encode transcription factors that have zinc-finger motifs[3] (Fig. 1) and bind to W-box elements (conserved sequence promoters) upstream of many defense-response genes. The up-regulation of WRKY gene transcription has been shown to occur during the onset of pathogen invasion and this up-regulation has the implication of WRKY gene product involvement in pathogen defense-response.[3]



In addition to the complete understanding of the WRKY gene family's role as transcription factors, another question that remains to be answered is whether the protein binding domain of the WRKY gene zinc-finger motif leads to any specific interactions between WRKY and other proteins. The following project addresses this question by screening a cDNA library of the *Arabidopsis* genome in search of proteins that interact with specific WRKY genes.

WRKY Gene Cloning

- WRKY genes of interest in this project are WRKY 6, 22, 25, 37, 55, and 64. These are amplified from a stock of previously purified DNA by using PCR. Table 1 is a list of primers used to amplify the individual gene sequences; Table 2 is the program used for amplification.

WRKY Gene	Primer Sequences/Restriction Sites	Restriction Enzyme
WRKY 6		
WRKY 22		
WRKY 25		
WRKY 37		
WRKY 55		
WRKY 64		

Program
Repeat 29x

- Figure 1 shows the PCR amplified WRKY genes 6, 25, 37 and 64.

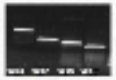
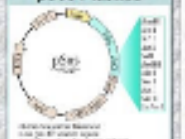


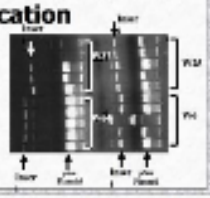
Figure 1: PCR amplified WRKY genes.

pSos Plasmid



Plasmid Vector Amplification

- The pSos Plasmid and appropriate WRKY genes were digested with the same restriction enzymes and ligated.
- After DNA isolation, a sample digestion was done to ensure that the pSos plasmid amplified in the *E. coli* contained the WRKY gene insert.
- *E. coli* containing the appropriate pSos plasmid and WRKY gene insert were then cultured overnight.
- The DNA from this stock was then used throughout the rest of the project.

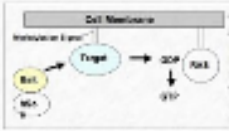


pMyr Plasmid

Cytotrap® Yeast-2-Hybrid vs. Conventional Yeast-2-Hybrid

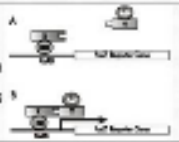
	Cytotrap®	Conventional
Purpose	Detects protein-protein interactions in vivo by activating the RAS signaling pathway	Detects protein-protein interactions in vivo by activating the lacZ reporter gene.
Uses	Used for the isolation, cDNA expression, cytotoxic and transformation modified genetics, and proteins that are novel to yeast.	Used to identify genes that encode for a protein that can interaction with a given protein.
Yeast Strain	Temperature sensitive cdc25H containing the yeast homologs of the human Sos gene, which activates the Ras-signaling pathway.	The YGC2 strain is a mutant in the production of HIS3 and β-galactosidase (lacZ).
How it works	The Sos gene complements the cdc25H mutant at 37°, thus allowing growth of the mammalian cell activity. The Ras-signaling pathway is induced when the Sos gene is localized to the plasma membrane via interaction between the bait fusion protein and the gene fusion protein. See Figure.	In the GAL4 system, expression of the reporter gene are only activated when the DNA binding domain (BD) of a transcriptional activator complex binds of the DNA gene site upstream and localized to the UAS (up-stream activating sequence) of the lacZ reporter gene. Yeast interactions occur in the nucleus. See figure.
Bait Protein	The bait protein is the protein of interest, expressed as a fusion protein with Sos via the pSos plasmid.	The bait protein is the protein of interest (X), expressed as a fusion protein with the GAL4 BD.
Prey Protein	The prey protein is a fusion protein between a myristylation sequence and a cDNA library via the pMyr plasmid.	The prey protein is expressed as a library of proteins (Y) fused to the GAL4 AD.

To study the WRKY protein-protein interactions, the Cytotrap® Yeast-2-Hybrid assay was used because of its advantages over the conventional yeast-2-hybrid assay.



Cytotrap® Ras-signaling pathway. The interaction between the bait and prey (Target) bring the hSos protein to the cell membrane, where it complements the cdc25H mutation and induces RAS.

GAL4 Traditional Yeast-2-Hybrid. The interaction between the bait protein (X) and the prey protein (Y) allows the DNA Binding Domain and Activating Domain of the GAL4 gene to interact resulting in the transcription of the lacZ reporter gene.



Yeast Transformation

Bait Transformation:

- The transformation of cdc25H competent cells (the *Saccharomyces cerevisiae* strain cell line that contains the SOS recruiting) to the CytoTrap® protocol.
- The transformed cultures were then plated onto SD/Glucose (-Uracil) plates for 4-6 days at room temperature to select for yeast carrying the pSos plasmid vector.

Prey Transformation:

- The transformation of cdc25H yeast cells with the prey construct was done via the 2-hybrid "Quick" protocol for the maintenance of a plasmid.
- The yeast culture was then plated onto SD/Glucose (-Leucine, -Uracil) agar and grown at room temperature.
- After 48 hours, these plated were replicated onto SD/Galactose (-Leucine, -Uracil) and grown at 37°C for 4 days in order to complete the library screen.

References

[1] Eulgem, T. et. al. 2000. The WRKY superfamily of plant transcription factors. Trends in Plant Science. Vol 5, No. 5: 199-206

[2] Z. Chen, unpublished data.

[3] Dong, J., C. Chen, and Z. Chen. 2003. Expression profiles of the Arabidopsis WRKY gene superfamily during plant defense response. PMB 51: 21-37

[4] Agrobacterium, R., R.D. Kangwanrak, D.J. Pantuleb, R.A. Woods, and R.D. Gietz. 2000. Transformation of Saccharomyces cerevisiae for DNA/polyethylene glycol (Lithium-DNA/PEG) protocol. Technical Tips Online.

Acknowledgements

I would like to thank Dr. Zhixiang Chen his patience and knowledge, Dr. Dengbiol Xing for the help with the Yeast-2-Hybrid Assays, and everyone in Dr. Chen's Lab for their sincere desire in helping me to learn the ropes of the lab. I would also like to thank Muthu Bangarusampadian for coordinating this summer research opportunity and supplying the summer interns with a plethora of goods.

Effectiveness and Costs of Public Space Recycling in New York City

Tracy Dimaculangan, Rick Jean, Aaron Lam, Marcin Skok
Macaulay Honors College, CUNY Baruch College

Abstract

New York is the largest city in the United States. Imagine the amount of waste New York City produces. In order to dispose of the waste, the city must implement an effective recycling program. The purpose of this research is to look into the costs and effectiveness of current and pilot programs for recycling in New York City. We looked further into recycling methods by conducting anonymous surveys, collected statistics from NYC's Department of Sanitation and statistics from Baruch College's recycling pilot program. Based on the data we collected, our results yield that people are open to the idea of recycling and would do so if given the opportunity. However, implementing street recycling bins is not cost effective in the short-run for the city.

Methods

- **Anonymous Survey in New York City**
  - Chinatown (40 Surveys)
  - Fresh Meadows (40 Surveys)
  - Flushing (50 Surveys)

Macaulay Honors College at Baruch College — Garbage in NYC Survey

1) Gender: MALE FEMALE

2) Age: 0-9 10-19 20-29 30-39 40-49 50-59 60-69 70 and older

3) Do you recycle...
a) At home YES NO
b) In the workplace/school YES NO
c) In public YES NO

4) How many times a day do you not recycle an item because there is no convenient receptacle available?
Never 1-2 times a day 3-4 times a day 5-6 times a day 7+ times a day

5) On a scale of 1-5, how likely would you be to recycle an item if there were separate recycle bins available in public spaces?
Very Unlikely 1 2 3 4 5 Very Likely

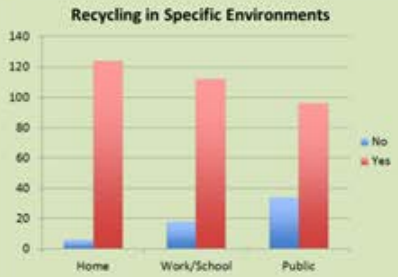
6) On a scale of 1-5, how important do you think recycling is?
Very Unimportant 1 2 3 4 5 Very Important

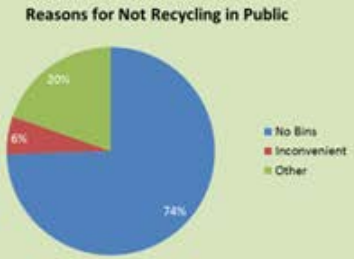
7) Where you don't recycle, what is the main reason you do not? _____
Where you do recycle, what is the main reason that you do? _____

- **Baruch College's Pilot Program**
  - Pilot Program: Removed Garbage in Classrooms and Vividly Labeled Separate Receptacles in Main Atrium
  - Data Collected From Before and After Implementation of new program
  - Contacted Dr. Engle-Friedman, Chair of the Baruch College Task Force on Sustainability
  - Contacted Divya Dayal, Macaulay Intern

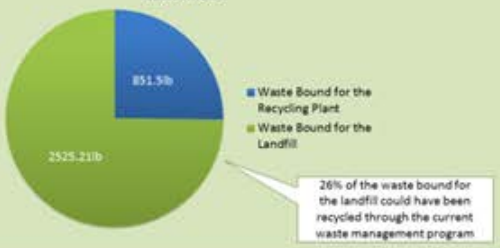
- **New York City's Department of Sanitation**
  - Fiscal Year Reports on Garbage in New York City
  - Extensive Study for 2004-2005 Year
  - Collected Data from Department's Website

Survey Data





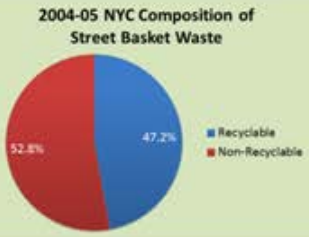
Baruch College's Data



New York City's Data

Costs for Refuse and Recycling after Removing Non-Curbside Related Activities

	Curbside Refuse	Curbside Recycling	Other Refuse Management	Other Recycling
Total Costs	$ 7,789,046,000	$ 192,590,000	$ 87,066,000	$ 22,425,000
Tons Managed	2,894,455	629,796	390,412	72,541
Cost/Ton	$ 269	$ 223	$ 306	$ 309



Results

- New York City residents overwhelmingly state that they do recycle at home, in the workplace/school and in public, though less people recycle publicly.
- The main reason residents do not recycle is because separate receptacle are not available.
- Even prior to Baruch's recycling awareness initiative, 51% of Baruch's total waste was comprised of recyclable items. With separate recycle bins available at the college, 50% of recyclable waste was recycled properly.
- Baruch's trash composition mirrors NYC's trash composition. The ratio of non-recyclable waste to recyclable waste are nearly identical.
- The cost of recycling is much higher than the cost of refuse processing.

Conclusions

Based on the data we collected and analyzed, we conclude that:

- It would not be economically feasible in the short-run for New York City to implement separate receptacles for trash and recycling.
- People are environmentally-conscious about recycling and show interest in recycling. If they were given the option to recycle in public spaces, more people would do so.
- Many people showed interest in recycling for numerous reasons.
- However, recycling curbside trash is not as effective due to the relatively small amount of trash collected from the streets, contamination of recyclable trash, and limited technology.

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2. Engle-Friedman, Dr. Mindy. "Baruch College of the City University of New York Waste Audit Report." YRG Sustainability, 14 June 2010. Web
3. Divya Dayal, Macaulay Honors Intern of the Baruch College Sustainability Task Force. Interview conducted by Aaron Lam
4. "NYCWasteLess." *NYCWasteLess*. The City of New York. Web. <http://www.nyc.gov/html/nycwasteless/html/home/home.shtml>.
5. Survey Data from Chinatown, Flushing, and Fresh Meadows

Determining the Relationship between GFAP, SPARC, and Msi-1 Expression in Axolotl Spinal Cord

Sarah T. Scott and Ellen A. G. Chernoff

Department of Biology
Indiana University – Purdue University, Indianapolis

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ABSTRACT

The salamander *Ambystoma mexicana* (axolotl) has the unique ability to completely regenerate an injured spinal cord at any stage of its life. Once the cord is damaged, ependymal cells act as stem cells disorganizing themselves in an epithelial to mesenchymal transition (EMT), and then rebuilding the cord in the mesenchymal to epithelial transition (MET). Previous research allowed us to discover that during these transformations, three proteins appear and disappear. The first protein is GFAP (Glial Fibrilary Acidic Protein, a cytoskeletal protein), which is present in the intact spinal cord (when the central canal is visible in the regenerating cord). The second is SPARC (Secreted Protein, Acidic and Rich in Cysteine, a matricellular protein associated with injury), which is present in the epithelium, appearing when the epithelium is restored (MET). The third protein is Musashi-1 (Msi-1, a mRNA binding protein), which is present in the intact epithelium of embryo and juvenile axolotl, while absent in intact adult axolotl epithelium. Msi-1 up-regulates in the mesenchymal outgrowth in adult axolotl. We will determine if GFAP, SPARC, and Msi-1 ever exist in the spinal cord at the same stage of regeneration. Using these three proteins as markers uniquely allows us to visualize the ependymal cells in the complex lesion site through the entire regenerative process.

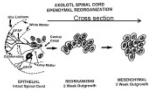
My goal was to determine the presence of these three proteins using fluorescent immunohistochemistry. Transected sections of three and five week regenerating axolotl spinal cord were stained with GFAP and SPARC antibody and photographed under a fluorescent microscope. I compared the photographs to determine whether GFAP and SPARC exist in the same stage of regeneration. Our lab has also studied the presence of Msi-1 in the regenerating spinal cord and we compare it to the present research's findings. We should be able to determine the proteins' relationship after the comparisons.

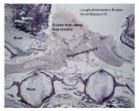
BACKGROUND

We are researching the relationship between GFAP, SPARC, and Msi-1 expression in the regenerating axolotl/salamander spinal cord. Knowing the relationship among these ependymal cell markers will allow us to visualize the ependymal cells through the entire regeneration process within a complex wound site. The purpose of this research is to allow us to follow the ependymal cells in all of their forms of tissue organization during spinal cord regeneration in an species that regenerates successfully.

LITERATURE REVIEW

- Amphibian regeneration of the lumbar transected spinal cord regenerates via gap replacement.
- Ependymal cells are responsible for the regeneration of the amphibian spinal cord.
- Ependymal cells containing GFAP line the walls of the intact spinal cord central canal.
- Musashi (Msi-1) is a marker of activated neural stem/progenitor cells and maintains Notch signaling
- SPARC is a matricellular protein that has the role of building the extracellular matrix.





METHODS

1) The transected and intact spinal cords of *Ambystoma mexicanum* (the axolotl salamander) were used in this research project as subjects.
2) We used fluorescent immunohistochemistry to stain sectioned spinal cord tissue with GFAP, SPARC, and Msi-1 protein markers (Red).
3) Sections were also stained with DAPI, (Blue) a DNA-binding molecule, which allows us to see the nuclei of the ependymal cells.
4) Stained sections were viewed and photographed under a fluorescent microscope
5) Red and blue channel images were merged using Photoshop.
6) We compared the images of regenerating cord in the same stage with different stains to determine if protein is present at both stages.

A Nikon Eclipse E800 microscope was used to view and photograph stained sections.

RESULTS AND DISCUSSION

- The results were expected – SPARC & GFAP are present in specific stages of regeneration. GFAP and SPARC are present in a complementary pattern.
- We were able to successfully label with GFAP, SPARC, and Msi-1 in the regenerating axolotl spinal cord at different stages of the process.
- As of now, we have not mapped out the entire regeneration process using these markers. However, we have been able to compare SPARC and GFAP. We plan to compare Msi-1, also.

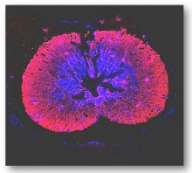


Figure 1: GFAP is present in the radial glial processes of an intact axolotl spinal cord.

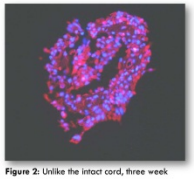


Figure 2: Unlike the intact cord, three week regenerating axolotl spinal cord contains no low levels of GFAP

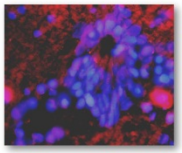


Figure 3: The intact adult axolotl cord lacks the presences of ependymal cell Msi-1.

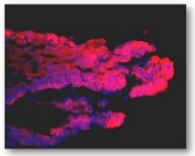


Figure 4: Msi-1 up-regulates in the mesenchymal outgrowth after two weeks of regeneration.

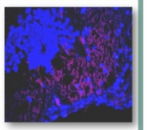


Figure 5: in the deep stump of a three week regenerating axolotl cord, SPARC is not present in the ependymal cells

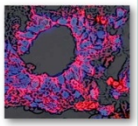


Figure 6: When the ependymal cells are re-epithelializing; SPARC has a strong presence

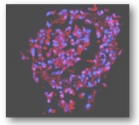


Figure 7: SPARC begins to appear in condensing mesenchymal outgrowth after three weeks of regeneration.

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How to Present a Poster

- Know your RESEARCH!
- Know your RESULTS!
- Know your TECHNIQUES!
- Know your REASONS!
- Know your **POSTER!**

General Information

- The typical poster reader will approach a poster, stop, read, and move on in 90 seconds or less
- You need to attract and hold the reader until the message in the poster is evident
- Know your poster!!!!!
- Have something to give people:
  - A brief summary of the poster
  - Your CV or resume with e-mail, website, mail address, etc.
  - Your business cards
  - An 8.5x11 print out of your poster with contact information on the back

Resources

- Mariah Judd, juddm@iupui.edu
- Website from the CRL http://www.crl.iupui.edu/resources/poster-design.asp
  - General tips and guidelines as well as downloadable version of template

Now lets learn HOW to build an actual poster...

Tricks of the Trade

- **PAGE SET UP** This is the first thing that you will do. This defines the parameters of the space that you will be building your poster in.
- At the top of the screen click on “Design” then the far left icon is “Page Setup” A typical poster is something like 46-52 x 34-40. Check the guidelines of the conference you are presenting at for the maximum dimensions for a poster.
- Standard posters are landscape but sometimes a profile poster will highlight your data better so keep it in mind.

Tricks of the Trade

- **BOXES** This is a great way to get a feel for the layout of your poster. They make it easy to add color to your poster and highlight your text. They are also easily stylized.
- On your “Home” tab in the “Drawing” section there is a button called “Shapes”. By clicking on this button it will pull down every shape you could imagine. Select the one that you want (usually the standard box or the box with rounded edges) then on your poster you can create your box by clicking and pulling out until your box is the size that you desire

Tricks of the Trade

- **BOXES** continued
- Now you can stylize your shape a number of ways.
  - Select the box that you want to stylize and left click on your mouse. Then select “format shape” at the very bottom of the pull down box.
  - From this screen you can change just about anything you desire from the color to the transparency of your shape to the shape outlines, color and thickness.
  - Once you have gotten your shape how you like it, you can copy and paste it over and over again to keep your poster consistent

Tricks of the Trade

- **TEXT BOXES** these are very easy and necessary when building a poster. I suggest that you make your "boxes", then overlay your text boxes over the boxes so that you have more control over the margins and everything else!!
- At the top of the page, select the "Insert" tab. Then about half way over within the "text" section there is a button called "text box". Click on this button then on your poster click where you want your text box to be and start typing the text that you want.
  - You can copy and paste text from another source and this will automatically create a text box for you but you will more than likely need to format it once you paste it into your poster.

Tricks of the Trade

- **TEXT BOXES** continued
- Once you have your text, you can format the text by highlighting the text that you want to format then under the “Home” tab you can change the font, the text size, bold, italicize, shadow, change the color and even the spacing of your text.
- There are more advanced ways of enhancing your text but usually for a poster you don’t want to over stylize so these basic functions should be enough for you to make a great poster.

Tricks of the Trade

- **BACKGROUND** This is a more advanced tool for bringing your poster to the next level. A bad background can KILL an otherwise good poster so if in doubt go without!!
- An easy way to give your poster a basic solid color background is to insert a giant “BOX” the size of your poster.
- Once you have created the box, select the box, then at the top of your screen click on the “Format” tab. Then towards the left side of the banner within the “Arrange” section there is a button called “Send to the Back” By clicking on this it will send your box behind all other items on your poster. Above “Send to Back” is “Bring to Front” this button can be used to bring any item to the front of all other items. You might want to use this button to bring your text forward or a graphic. These buttons can be VERY helpful as you start to arrange all of your items.

Tricks of the Trade

- **BACKGROUND** continued
- Another option with the background box is to add some depth to it by making it a gradient or a texture.
- The most tricky background is using an actual picture. The trick to making it work is making sure that your text and graphics are what stand out the most and not the background!!
- If you do use a picture, make sure that it will not print pixilated. To check this, view the slide at 125% and if it is viewable then it will probably print well.

Tricks of the Trade

- **FINISHING TOUCHES**
- Before you send that baby to print, print it 8.5x11 and check EVERYTHING. Check alignment, check spelling, check language, check colors, check picture quality, check proportions of fonts…check everything!
- Make multiple copies and hand it out to colleagues to get their feedback.
- To do this, in PowerPoint, go to print and select “scale to fit paper”. Depending on the version you have this could be a box you check or an option in a drop down menu. In the latest version, it is under “Full page slides” and it an option you select.
- I suggest always printing in color