

Creating Effective Posters

A Collaboration between the Oregon Tech University Research Committee
(Riley Richards, Darlene Swigart, & Jintai Wang)
& Oregon Tech Librarian (Alla Powers)

2025



IDEAfest 2025 is ready to launch

Create Your IDEAfest Poster!

➤ [Poster Templates, Workshops and More!](#)

- Dates and times for IDEAfest on both Klamath Falls and Portland-Metro campuses
- Link for the poster template

<https://www.oit.edu/academics/ideafest>

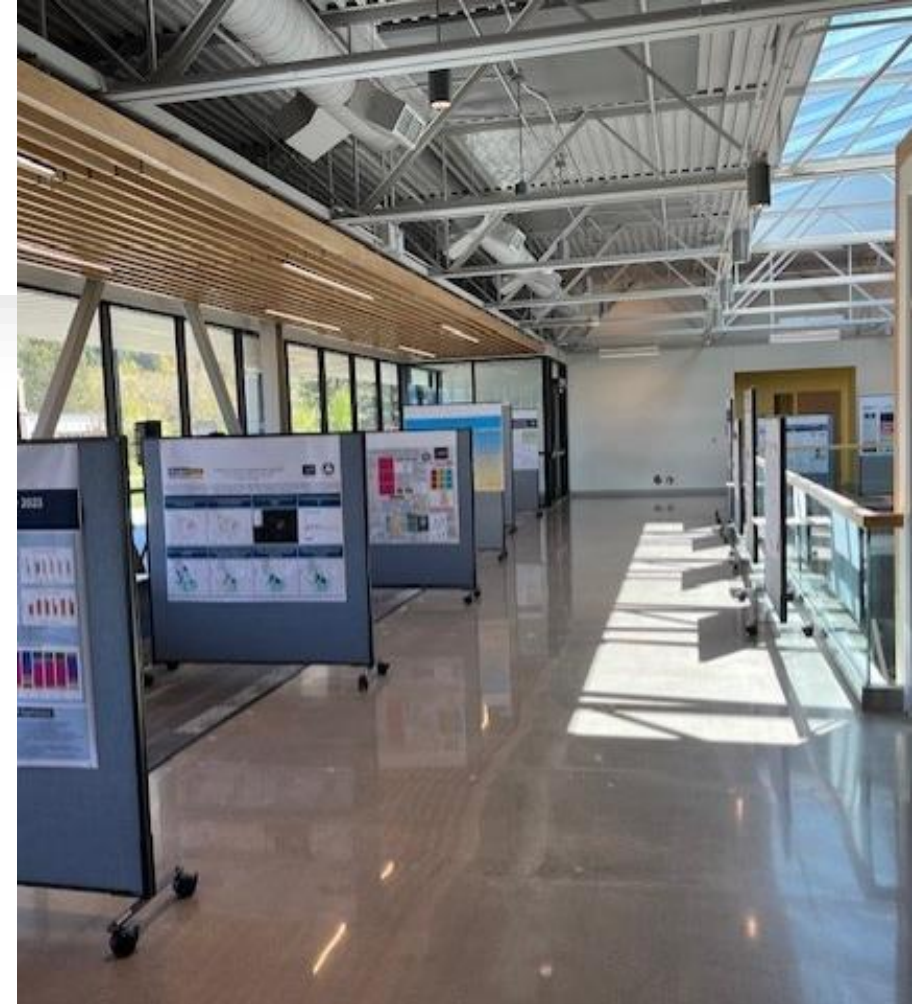
Why Create a Poster?

Showcase your projects or research!

Students: Oregon Tech wants to show off your great work and connect you with potential employers and local industry representatives

Faculty & Staff: Share your research with colleagues, administrators, & board members

Posters are an efficient tool to communicate your projects and findings to interested people



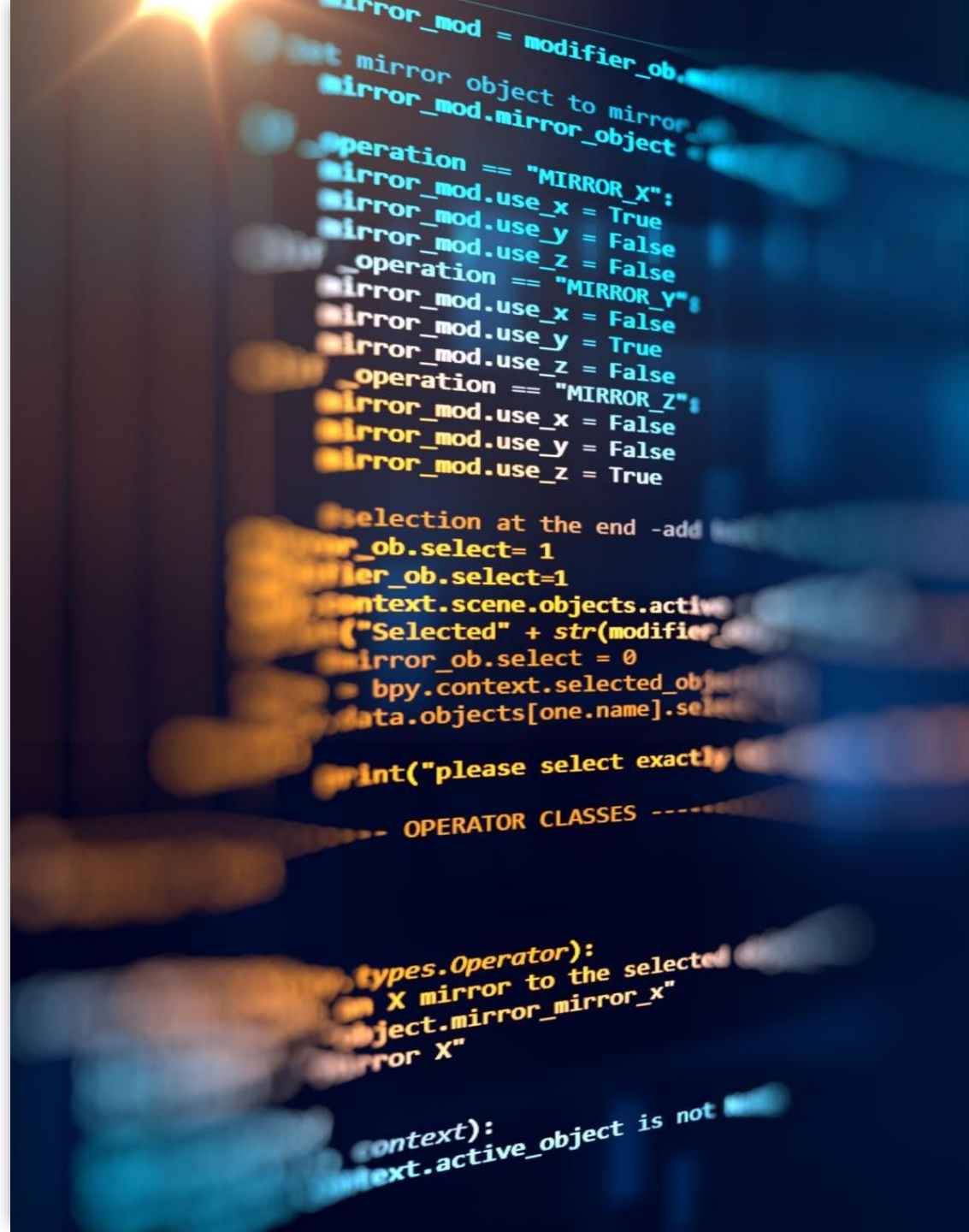
Best Design Practices for Text

- **Limit text**

- Use bullet points and not full sentences

(EXAMPLE: You want to limit the amount of text on the poster by using bullet points and not including full sentences unless necessary.)

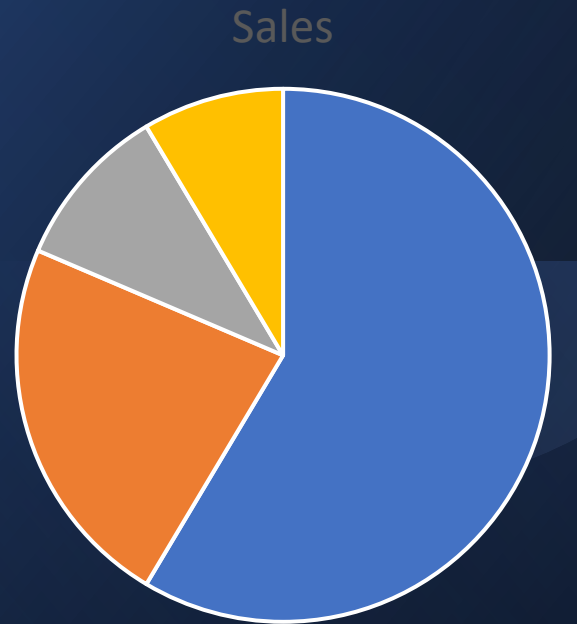
- Descriptive short title to engage interest-**can be a single statement of results**
- Font size to be read at 6 feet distance (minimum 24 size in-text/larger size font for title)
- Use no more than two different fonts
- Select easy to read font such as Times New Roman and Arial



Best Design Practices

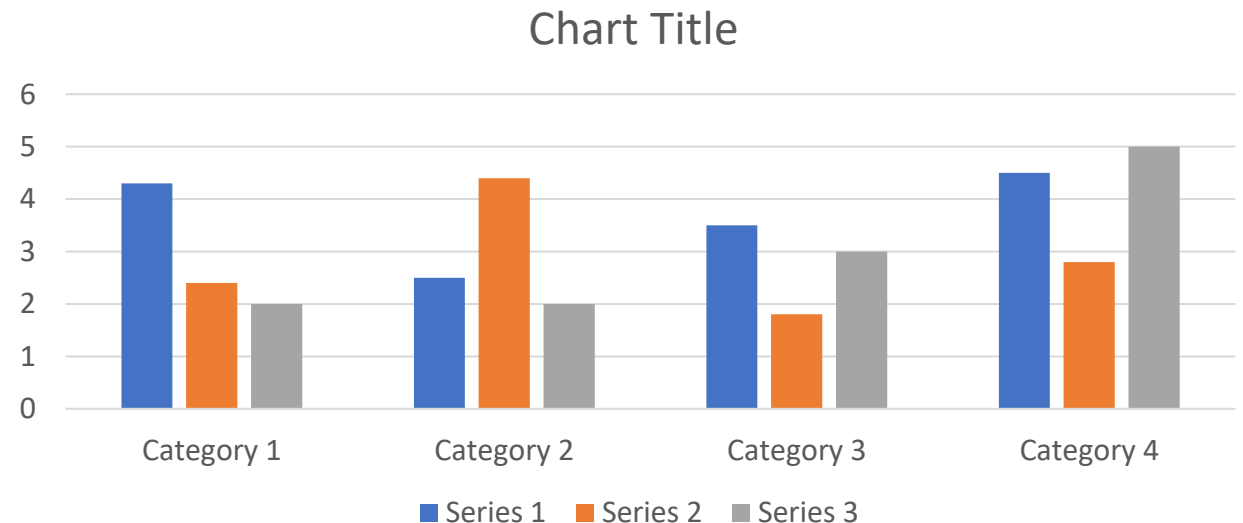
- Limit information to prevent overload
- Poster design is divided into sections
- **The middle is where the eye will go**
- Leave some white space
- Use only 3-5 colors with white or light-colored background
- **Use a contrasting color as a background or to label what you feel is most important (probably the conclusions and results)**
- Add a QR code on your poster for additional information
- Include tables, images & graphics so it is not all text

Graphics and Images



■ 1st Qtr ■ 2nd Qtr ■ 3rd Qtr ■ 4th Qtr

- Graphics relate the most important findings
- Clearly label them with descriptive captions
- **Don't bury your conclusions and results! That's the most interesting part – you want those to be the most prominent items on your poster (the middle)**
- Your images may look great on your computer, but when blown up, they could be grainy & unclear
- Use the highest resolution you can find
- Zoom to 100% in PowerPoint to see if the image appears grainy



Implicit & Explicit Jealousy

- Verbal intimacy: comes from the perception the partner has established a sense of verbal intimacy with a rival or third-party (Bass, B. (1985). Sexuality roles managers: Ground rules for structuring potential threats to marriage. *Academy of Management Journal*, 28, 971-975.)
- Relational Maintenance Strategies Measure (RMSM): Positivity, Openness, Assurances, Social Networks, and Sharing Tasks
- Commitment – Increased positivity and assurances; relationship maintenance -> from individual to unit/togetherness

- Works in the opposite manner too, increased jealousy results in decreased commitment, positivity and satisfaction (Reis, J. L. (2008). Suppressing and communicating romantic jealousy: Questioning the investment model. *Southern Communication Journal*, 73(1), 43-67. DOI: 10.1080/10417940701516430)
- It is natural for individuals to be self-conscious about themselves, their relationship, and the actions/thoughts of their relationship partner. (Abelmann, T. (1981). Individual differences in romantic jealousy: The moderating effects of relationship characteristics. *European Journal of Social Psychology*, 11, 453-461.)

Battle of the Sexes

- Females disclose more – use openness, conflict management, advice tactics – believe it's part of commitment, more they have to lose. (Gerslitz, L., Hunsberger, J. E., & Pomeroy, G. E. (2008). Psychological sex types and strategies in the study of communication variables: self-disclosure and communicative apprehension. *Human Communication Research*, 40, 127-149. DOI: 10.1111/j.1468-2008.2008.00313.x)
- Men feel less hurt over jealousy than women; top four feelings – Angry, Insecure, Hurt, thinks partner focuses on others (Thompson, D. J. (1995). Romantic jealousy as an emotion concept: A prototype analysis. *Journal of Social and Personal Relationships*, 12, 49-62. DOI: 10.1177/0264619595012001001)



Do I think TOO MUCH???

- Rumination: "refers to thoughts that are conscious, recurrent, instrumentally oriented, and not demanded by the immediate environment" (Johannes, L. L., & Tesser, A. (1980). Some representative thoughts. In R. S. Wyer (Ed.), *Handbook of thought* (pp. 1-47). Mahwah, NJ: Lawrence Erlbaum Associates.)
- What if's – Obsessive? Crazy? Acceptable behavior?
- Negative feelings = negative thoughts/relationships
- TRUST is the answer – When one is high the other is low.

- These four feelings lead to – Possessiveness, Compensatory Restoration, Violence towards objects, and experience negative emotions (Carson, C. L., & Cupach, W. R., (2000). Fueling the flames of the green-eyed monster: The role of ruminative thought in reaction to romantic jealousy. *Western Journal of Communication*, 64(3), 308-329. DOI: 10.1080/10570310009374678)
- People actions can be triggered by many different forms and/or thoughts
- Feelings/Actions can be linked to abusive and violent behavior (climax point) (Laner, M. R. (1990). Violence or its precipitants: Which is more likely to be identified as a dating problem? *Deviant Behavior*, 11, 319-323)

Communication Expression & Management of Romantic Jealousy

Riley Richards
Western Michigan University

Objective

Define how romantic partners can effectively, and constructively communicate their jealousy to their partner and positively respond to their partner's jealousy.

Implications

- Signs of jealousy: being possessive, compensatory restoration, and violent tendencies
- Positivity produces positivity and negativity produces negativity
- When confronted: hurt people respond with defense mechanisms
- Situation can flip: couple works to be better people
- Initiator: remain strong and positive in conversation, responding negatively only worsens the situation (dissatisfaction) – seems threatening

- Expressing jealous thoughts reduces rumination
- Clinicians – explore the meaning behind the jealousy
- Turn rumination to a positive – what can you do to improve the situation? Focus on positive outcomes then negative
- Receiver expects negativity, using positivity makes the message more persuasive - preplan an intro to the topic



Basics

- Romantic Jealousy: The behavior and emotions that come after the potential threat or loss to one's own self-esteem and/or presence or quality of a romantic relationship. (Johannes, L. L., & Mulder, T. E. (1985). *Jealousy: Theory, research, and clinical strategies*. New York: Guilford.)
- Threat: "generated by the perception of a real or imagined romantic attraction between one's partner and a (perhaps imaginary) rival" (p. 9)
- Men and women experience jealousy differently, but neither gender experiences it more than the other (Johannes, Richard D., Tesser, D. Del Boca, and Arthur J. Welford. 1984. "Gender Jealousies." Pp. 109-128 in Richard D. Johnson and Frances K. Del Boca (Eds.), *The Social Psychology of Female Male Jealousy: A Critical Analysis of Current Concepts*. New York: Academic Press.)

Discussion

- Remain positive
- Don't attack an individual for their actions/feelings
- Openly discuss jealousy to improve both partners state of mind
- Negative confrontations causes destruction, managed confrontation causes growth

Explicit & Physical Jealousy

- Knowing your partner committed sexual infidelity – flirting <-> intercourse (Bass, B. (1985). Sexuality roles managers: Ground rules for structuring potential threats to marriage. *Academy of Management Journal*, 28, 971-975.)
- Affairs cause the highest amount of jealousy
- Men more threatened by physical activity with rival, women more threatened by emotional connection with a rival – male discloses more to rival than female partner
- Women nurture over nature state of being – focused to find security from mates
- Physical absence of the emotional security causes a rise in jealousy because the male now focuses on a different female

- Men have a stronger need for sexual fidelity, to produce the next generation while women have a stronger need for emotional fidelity to supply a secure environment to raise the children.
- men are most threatened by their partner violating sexual expectations with a rival, while women are most threatened by their partner forming nonsexual yet verbally intimate relationships with a rival.
- Sexual infidelity is the last stage in the romantic relationship (Johannes, L. (1985). *Jealousy and commitment: A longitudinal study*. Psychological Research, 19, 309-324. doi:10.1006/jrps.1985.1001)



Future Research

- Widen age brackets
- Ethnicity
- Relationship status
- Sexuality: Homosexuality/Bisexuality

- Is gender a factor?

"LA PACIFICAN POWER":

TRADITIONAL MARIMBA MUSIC AS AN AGENT OF RESISTANCE AND CHANGE AMID INVISIBILITY IN CONTEMPORARY COLOMBIA

Thesis:

I will argue the issues surrounding the invisibility of traditional marimba music in the Colombian Pacific—examining the cultural, historical, and societal variables that, since the revised Colombian constitution of 1991, have contributed/are contributing to notions of visibility and belonging within national and global contexts. This will be accomplished through the examination of this ethnocultural music through acoustemological, ethnographical, and musicological practices.

Abstract:

Acknowledged as an Intangible Cultural Heritage of Humanity by UNESCO in 2015, traditional marimba music from the southern Pacific Colombian coast has contributed to the growing awareness and embracement of folkloric music and tradition stemming from this coastal region. However, its assimilation into present-day Colombian society is still hindered by continuous acts of corruption, exploitation, marginalization, and systemic racism, which further alienate the constituents of this zone from the remainder of the country. In response, this music acts as a catalyst through which Black autonomy and pride are examined and exercised. This outcome originates from the desired disassociation of prolonged economic disparity, invisibility, and neglect from the state in exchange for a visible becoming and evolving of heritage and societal inclusion and recognition. These gestures take the shape of performative and social practices where music behaves as a medium to achieve advocacy and social justices for Afro-Pacific Colombians.

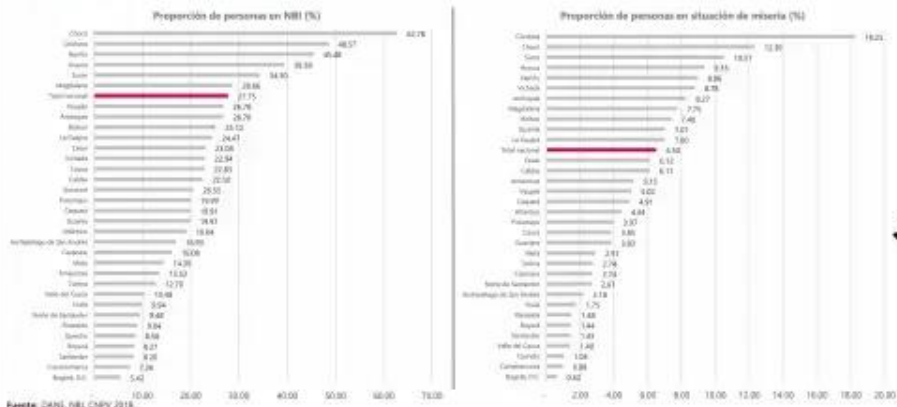
Method:

I will investigate primarily the Southern Pacific provinces of Colombia: *Valle Del Cauca, Cauca, and Nariño*. Given the invisibility of this traditional music, I will strive to depict accurately the evolution of these practices and attendant social constructs, while recognizing their derivation, position in society, intent, and significance. I will rely on musicological, anthropological, and ethnographic studies addressing the life and social practices of these Pacific communities. Beside a few monographs, most relevant scholarship is found in periodicals and audio recordings, primarily in Spanish and emerging from Latin-based institutions—one factor contributing to its global invisibilization. Thus, my research will include academic and non-academic materials related to folklore, race, oral tradition, and musical analysis among others. These materials include monographs, edited collections related to Latin American music studies, and academic articles in English and Spanish. I will also collect information through ethnographic work consisting of virtual and in-person interviews with native informants who have backgrounds in folkloric dance and musicking as well as social and civil advocacy. From these resources, I will develop a framework for the analysis of traditional Pacific marimba music and investigative research with respect to its evolution.

Evidence:

INFORMACIÓN PARA TODOS

Necesidades Básicas Insatisfechas de la población negra, afrodescendiente, afrocolombiana Departamentos, 2018



Video



Sources

Birenbaum Quintero, Michael. "La música pacífica" al Pacífico violento: Música, multiculturalismo y marginalización en el Pacífico negro colombiano." TRANS: Revista Transcultural de Música/Transcultural Music Review 10 (2006): 1

Birenbaum Quintero, Michael. "Música Afropacífica y Autenticidad Identitaria En La Época de La etnodiversidad." In *Música y Sociedad En Colombia: Traslaciones, Legitimaciones e Identificaciones*, 192-216. Colección de Textos de Ciencias Humanas. Bogotá: Editorial Universidad del Rosario, 2009.

Birenbaum Quintero, Michael. *Rites, Rights & Rhythms: A Genealogy of Musical Meaning in Colombia's Black Pacific*. Currents in Latin American and Iberian Music. New York: Oxford University Press, 2019.

Lozano Mancera, Natalia. *Playing Music, Performing Resistance: The Dynamics of Resistance through Music in the Colombian South Pacific Coast*. Masters of Peace. Wien: LIT-Verlag, 2012.

Santamaria Delgado, Carolina., Sevilla Peñuela, Manuel., Arango Melo, Ana María. *Músicas y prácticas sonoras en la pacífico afrocolombiano*. Bogotá: Editorial Pontificia Universidad Javeriana, 2010.

Tascón Hernandez, Héctor Javier. "Después Del Currulao: Creación a Partir de Las Músicas Tradicionales de Marimba de Chonta Del Pacífico Sur Colombiano." In *Comprendiendo/Understanding América El Aporte Esencial de La Música Afroamericana Al Significado Sociocultural Del Continente/The Essential Contribution of Afro-American Music to the Sociocultural Meaning of the Continent*, edited by Tascón Hernandez and Héctor Javier 362-78. Quito: Pontificia Universidad Católica del Ecuador, 2022.

Sexting as Affectionate Communication in Romantic Relationships

Riley J. Richards



Rationale

- Past work focuses on abolishing adolescent sexting due to risky behavior and negative health outcomes.
 - 65-75% undergraduates and 60-80% adults sext
- Affectionate communication: survivability & reproduction
- AET Prop 3: Affectionate Com is adaptive to human viability and fertility.
- Can sexting be a positive outlet for romantic partners? As such, what are their motives?
- Can sexting be a new type of an affectionate exchange in a high technology era?

Method

- College students who are in a current romantic relationship ($N = 170$; 49 male, 121 female)
- 75% Caucasian & 70% Seriously dating
- Completed a mixed method questionnaire
 - Sent ($M = 1.71$) and received ($M = 1.7$) sexting behaviors
 - Motives of sending sexts?
 - Sexting as affection
 - Sent as affection

Results

- **Motives**
 - 54% Emotional Maintenance & Enhancement
 - 24% Long Distance
 - 22% Future Sexual Episode
- **Distance Predication** = n.s.
 - Living with partner ($M = 1.71$)
 - Not living with partner ($M = 1.7$)
- **Sexting as Affectionate Com.**
 - Can function ($M = 5.12$)
 - Actually convey ($M = 2.7$)
- **Affectionate Sext Examples**
 - 51% Sexual Affection
 - 24% Non-Sexual
 - 12% Not Comfortable

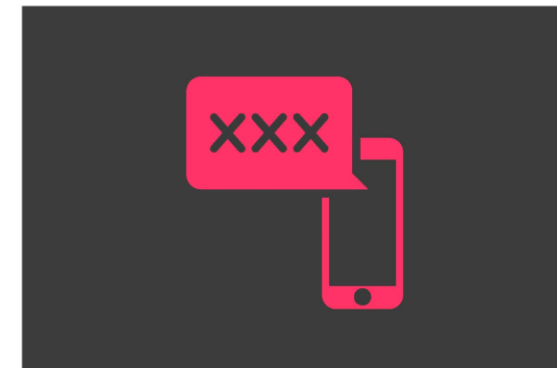
Conclusions

- Discrepancy in Qual & Quant data
- AET pathways: increases material/emotional resources or portrayal as suitable mate.
- Sexting can be a positive outlet to fulfill both pathways.



Future Directions

- **Sexting → Health Benefits**
 - AET is largely supported by positive relationship with health benefits.
 - What are the long-term implications of couples participating in sexting?
- **Sexting → Investment**
 - Com. is dyadic in nature and should be treated as such. Where does trust come into play?
- **Sexting → Surprise!**
 - Face negotiation to non-elusive “surprise dick pic”.





Oregon TECH

Riley Richards, Ph.D.

The Ex-Talk: Disclosing the Taboo Topic to Current Romantic Partners

Introduction

Relationship uncertainty is the leading cause of terminating romantic relationships and communication is the ideal way to reduce it. However, some topics are taboo or labelled as 'off limits.' For example, the state of the relationship, extra-relationship activity, and prior relationships.

What you disclose and don't disclose equally impact the relationship. Blocking off topics closes us off from building stronger relationships and leaves us with more relationship uncertainty.

RQ1: How do romantic partners disclose information regarding their former partners to their current partner?

RQ2: In what ways does the disclosure of former partners to current romantic partners contribute to the relationship?

Methods

Qualitative survey of 256 students, mostly female (60%), Caucasian (73%), heterosexual (87%), and in their current relationship for $M = 17$ months. Sample survey questions:

- Describe a time when you disclosed about your former romantic partners to your current partner?
- How did the exchange of information about past partners help or hurt your relationship?

170 single-spaced pages, analyzed using a Grounded Theory approach.



Results

96% of participants have disclosed or received disclosure about former romantic partners with their current partner. Mostly disclosed past cheating, abuse, and trust issues.

RQ1 A. Delivery

Appropriate: private and in-person

Inappropriate: public space and/or mediated ("he'd only talk about it over text, I thought that was pretty shady of him.")

RQ1 B. Timing

Too Soon: "It had been a week; it was way too soon to talk about that, I don't even know if I like you yet."

Too Late: "I have been with my GF for over a year, last week she told me she was intimate with one of my friends before we got together. That's something she should have told me before we started dating."

Results Cont.

RQ1 C. Level of Detail

Appropriate: "I was with my partner for 5 months; he told me about his past relationships because I asked and wanted to know."

Inappropriate: "He told me all the personal details of their relationship... most of that info. should stay private, especially without their consent."

RQ2: Relationship Impact

Positive: "It helped us trust and respect each other better" and "It allowed me to learn about his background and experiences that shape his ideals, it made me feel closer to him."

Negative: "It hurt my relationship; I got anxious seeing them texting/talking to other girls." and "It was too much, I don't want to deal with all of that in a relationship, so I ended things."

Conclusion

The recipient's evaluation of the appropriate nature of information was the determinate factor if the ex-talk led to a positive or negative outcome.

Appropriateness was determined by timing of disclosure, context of disclosure, and level of detail.

To progress one's relationship, the disclosure should consider doing it in person, the timing and stage of the relationship, and level of detail of the message.



Background:

- Self-compassion (SC) may be protective against difficulties after trauma (Thompson and Walsh, 2008).
- Trauma-related shame (TRS), trauma-related guilt (TRG), and trauma-related mental contamination (TRMC) tend to be positively associated with elevated posttraumatic stress symptoms (PTSS).
- Given that TRS, TRG, and TRMC involve negative self-evaluations, these factors may be particularly important in understanding how SC relates to PTSS.
- Research suggests that SC may lead to reduced TRS and TRG, although no research has studied the relation between SC and TRMC, or how TRS, TRG, and TRMC together relate to SC and PTSS.
- The present study hypothesized that the association between SC and PTSS would be mediated by TRS, TRG, and TRMC.

Participants:

- 324 female undergraduate students ($M_{age}=19.24$; $SD=1.62$) with a history of at least one interpersonal violence (IPV) experience.

Procedures & Measures:

Participants completed questionnaires, including:

- SC: Self-Compassion Scale (Neff, 2003).
 - PTSS: PTSD Checklist of DSM-5 (Weathers et al., 2013).
 - TRS: Trauma-Related Shame Inventory (Økstedalen et al. 2014).
 - TRG: Trauma-Related Guilt Inventory (Kubany et al., 1996).
 - TRMC: Posttraumatic Experience of Mental Contamination Scale (Rachman, 2005).
- Note: Measures of PTSS, TRS, TRG, and TRMC were anchored to participants' most distressing IPV event.

Women who report less self-compassion tend to report more shame, guilt, and internal feelings of dirtiness following interpersonal violence, which may lead to more symptoms of PTSD.



Results:

- Data was analyzed via parallel indirect effects model (see Figure 1).
- Significant negative total effect of SC on PTSS.
- SC was significantly negatively associated with TRS, TRG, and TRMC.
- Controlling for SC, the relations between TRS, TRG, and TRMC and PTSS were also significant.
- Using 5000 bootstrapping samples, there were significant indirect effects of SC on PTSS through:
 - TRS (path ab_1): $B = -2.51$, BC 95% CI [-4.52, -0.89]
 - TRG (path ab_2): $B = -3.67$, BC 95% CI [-5.61, -2.20]
 - TRMC (path ab_3): $B = -2.03$, BC 95% CI [-3.74, -0.88]

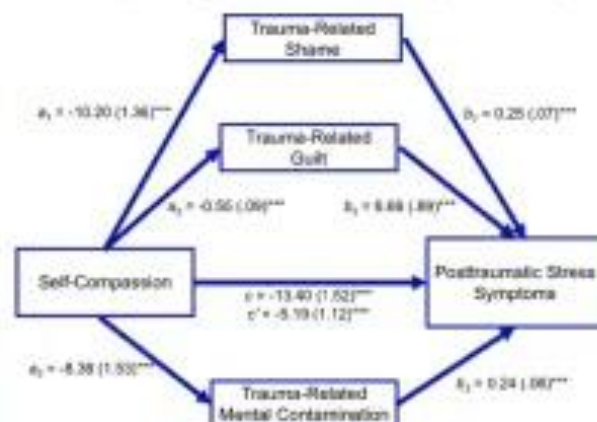


Figure 1. TRS, TRG, and TRMC mediate the association between SC and PTSS. Unstandardized coefficients are presented with SE in parentheses.

Discussion:

- These preliminary findings suggest that targeting self-compassion may be particularly useful in reducing negative emotion after trauma and protecting from posttraumatic stress disorder.
- These data support a growing literature highlighting the importance of how self-compassion is related to recovery after trauma.
- Replication with prospective data is needed.

Table 1. Definitions of key terms.

SC	Self-directed care, kindness, and forgiveness (Thompson and Walsh, 2008).
TRS	Painful emotion in which the entire self, and not just the behavior is being negatively evaluated (Økstedalen et al. 2014).
TRG	Negative evaluations of specific actions or behaviors. (Økstedalen et al. 2014).
TRMC	Perceptions of internal dirtiness that persist in the absence of a physical contaminant and are not alleviated by washing (Rachman, 1994).

Quality over quantity

Use color, visuals, and white space strategically

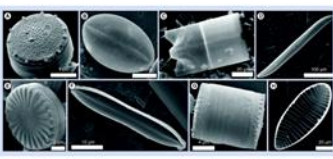
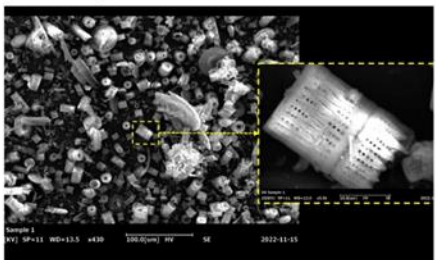
Get Picky about fonts, formatting and visual

Introduction

The increasing interest in studying diatomaceous earth stems from the challenges posed by their presence in various engineering projects, such as the US 97 at Wickiup Junction project in Oregon. Diatomaceous earth consists of fossilized remains of diatoms, which have a highly varied and interlocking shape, giving the impression of strength until the skeletons crush under excessive stress. The engineering properties and cyclic performance of diatomaceous earth are not well understood.

Material

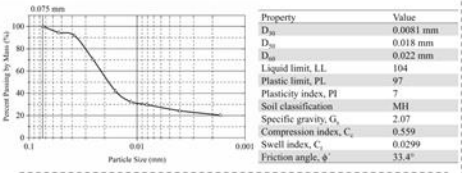
The diatomaceous earth sample used in this research was sourced from Burney, California. Material samples were in the form of cemented diatomite at the time of collection, and were mechanically crushed into a fine, powdered consistency with the goal of separating the individual diatom particles from their clumps. The scanning electron microscope (SEM) image reveals the various shapes of the remains.



SEM image of different diatom species (Hildebrand et al. 2014)

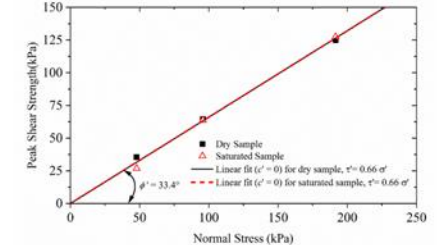
Soil Classification

Soil classification including sieve analysis, hydrometer tests and Atterberg limits testing was performed on the sample (ASTM D6913, D7928, and D4318).



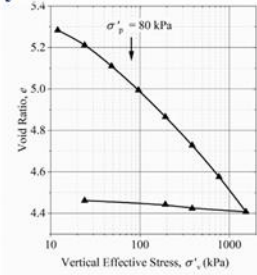
Shear Strength

The shear strength of the diatomaceous earth sample was evaluated with a series of direct shear tests following ASTM D3080. Tests were performed on both oven dried and saturated specimens.



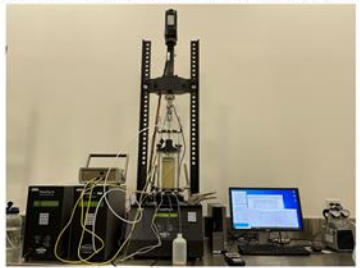
Compressibility

Single dimension consolidation test of the sample was evaluated following ASTM D2435. The specimen was prepared in the same manner as in the direct shear test.



Cyclic Performance

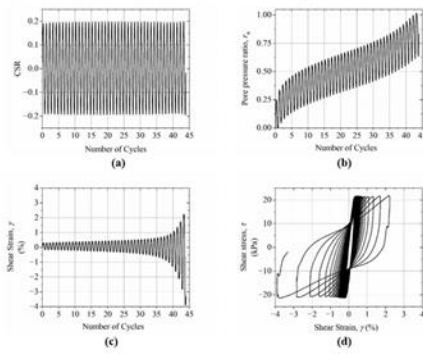
The cyclic performance of diatomaceous earth was evaluated using a series of stress-controlled cyclic triaxial tests following ASTM D5311. Two confining pressures (103 kPa and 52 kPa) were used for the consolidation of specimens and maintained throughout the cyclic phases. The cyclic phase has a loading frequency of 0.2 Hz.



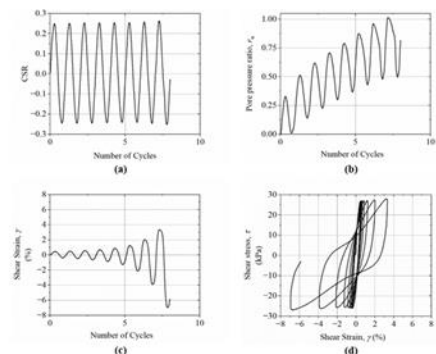
Results

Figure 5 presents the cyclic responses of the diatomaceous earth sample with a confining pressure (σ'_{sc}) = 103 kPa and a cyclic stress ratio (CSR) = 0.2. The CSR was defined as follows, where σ_d is the maximum deviator stress.

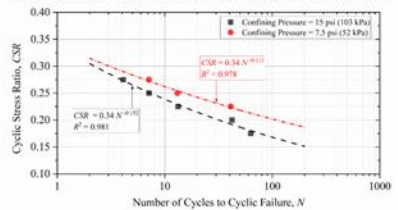
$$CSR = \frac{\text{cyclic shear stress}}{\text{confining pressure}} = \frac{\sigma_d}{2\sigma'_{sc}}$$



Cyclic responses of diatomaceous earth sample when σ'_{sc} = 103 kPa, CSR = 0.2



Cyclic responses of diatomaceous earth sample when σ'_{sc} = 103 kPa, CSR = 0.25



CSR required to cyclic failure ($r_v = 1$) for diatomaceous earth sample under confining pressures of 103 kPa and 52 kPa

Conclusion

This paper presents the results of a series of laboratory tests conducted on a diatomaceous earth. The following conclusions and summary are based on the data, analysis and interpretation presented in this paper.

- (1) The liquid limit, plastic limit and plasticity of the diatomaceous earth are 104, 97 and 7, respectively. The soil sample has a USCS classification of MH with a specific gravity of 2.07. The friction angle of diatomaceous earth is 33.4°.
- (2) The cyclic stress-strain responses of diatomaceous earth exhibits characteristics of cyclic softening.
- (3) The $CSR_{N=15}$ is 0.225 and 0.25 for σ'_{sc} = 103 kPa and 52 kPa, respectively

Quality over
quantity

Use color,
visuals, and
white space
strategically

Get Picky about
fonts,
formatting and
visual

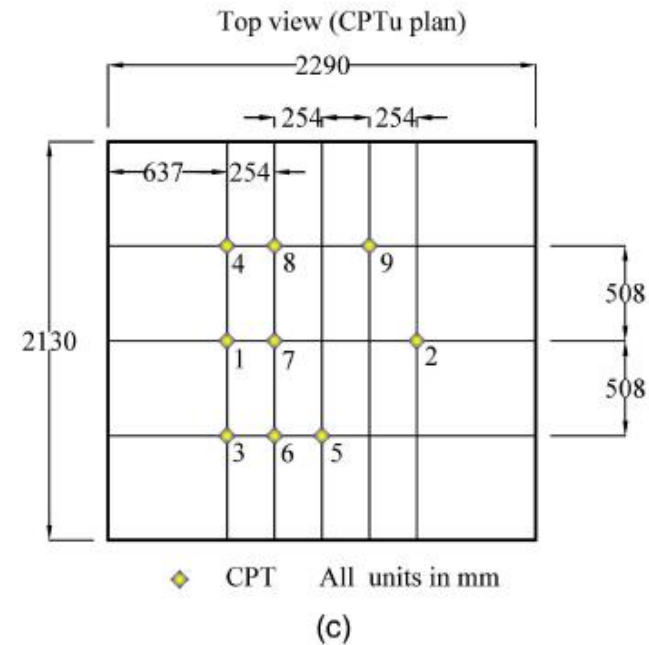
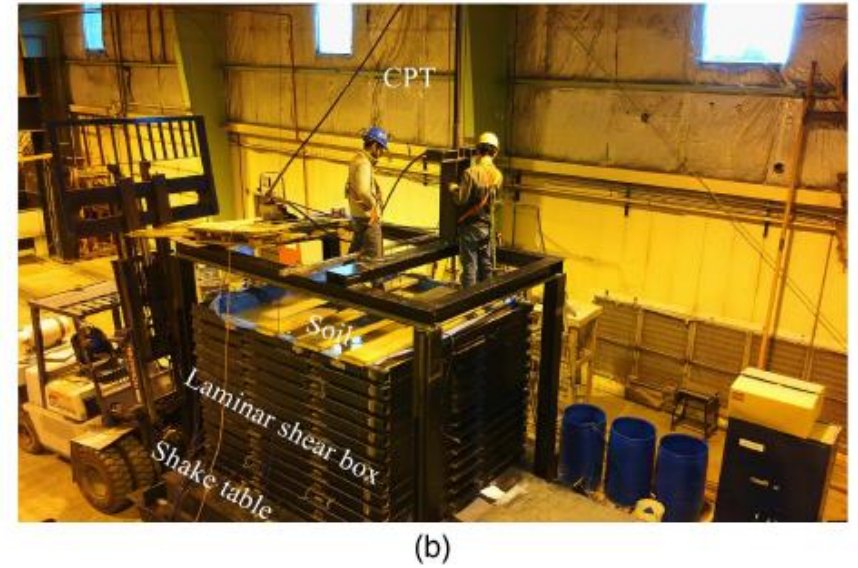
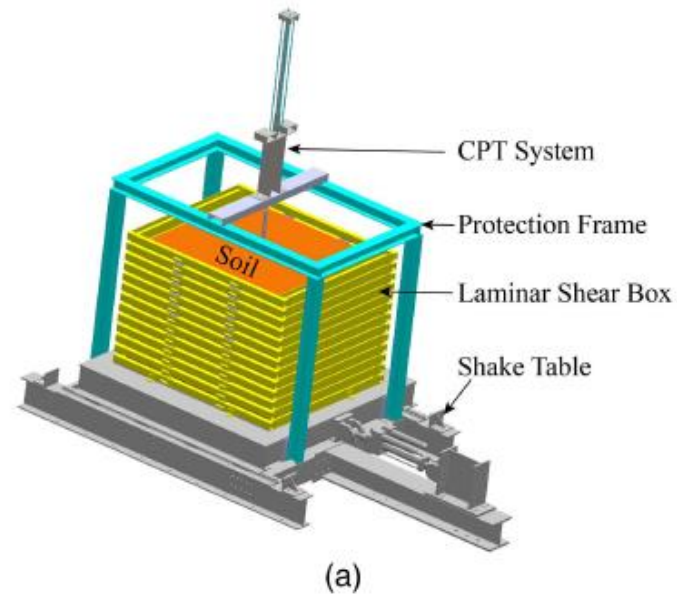
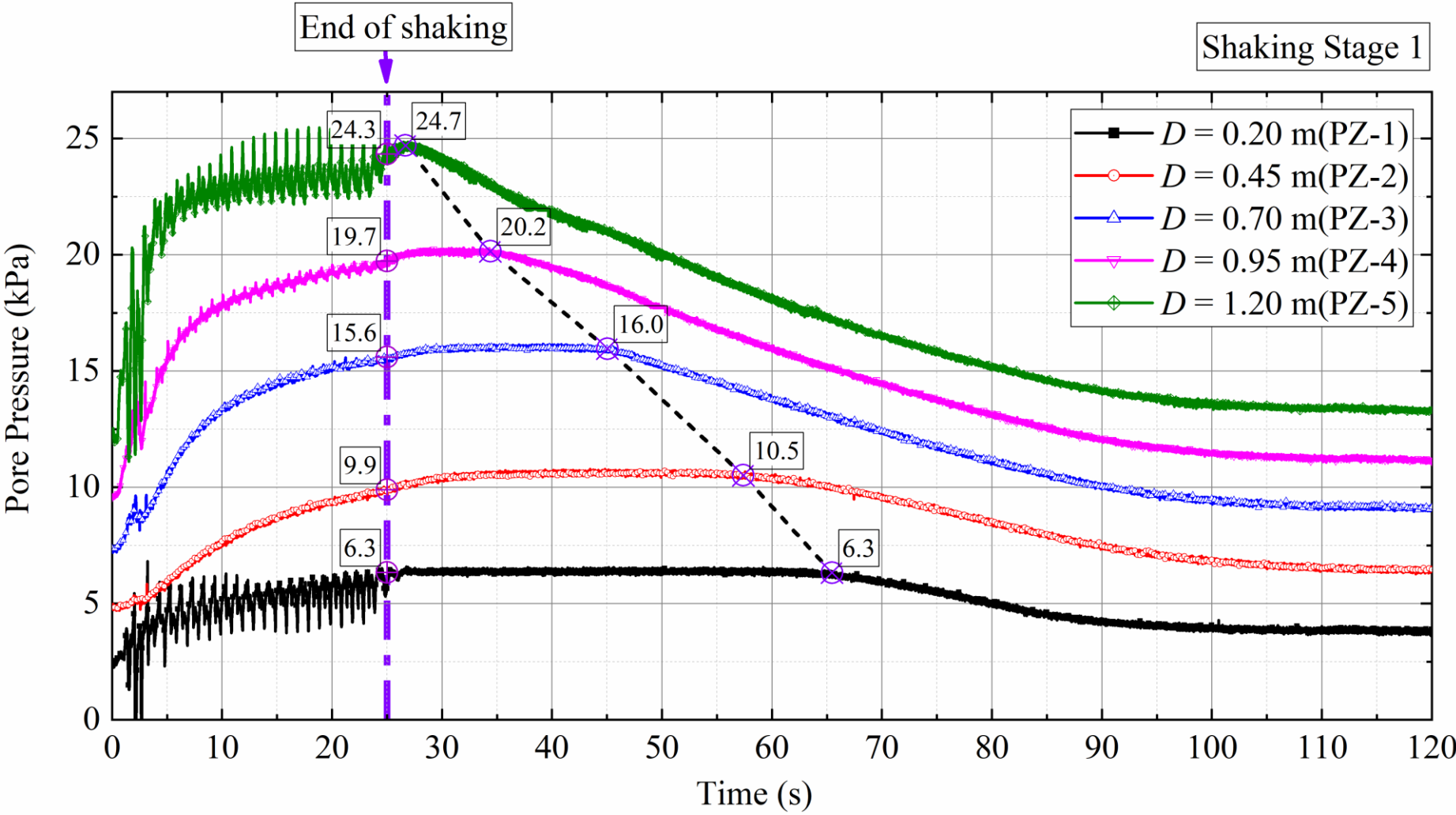


Fig. 6. CPTu test: (a) CPTu design illustration; (b) CPTu in operation; and (c) CPTu plan view.

Quality over quantity

Use color, visuals, and white space strategically

Get Picky about fonts, formatting and visual



'I can hardly read this poster'



'Cool research, tell me more!'

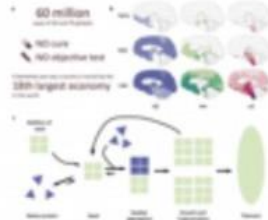
Novel Analytical Methods for Capture and Screening of Transient Oligomeric Species Responsible for Neurodegeneration

Dr BrightCarbon

As an increasingly aging population, the economic, social and medical burdens of neurodegenerative diseases are set to intensify. At the heart of neurodegeneration etiologies are toxic oligomeric proteins whose formation through seeded aggregation is statistically more likely as age increases. The nature of their formation brings a significant barrier to their detection, since besides being at exceedingly low concentrations in a typical patient sample, they are transient and dynamic. Single-molecule methods, particularly nanosensor sensing, are an appropriate tool to apply to protein oligomer detection due to the stochastic sensing mechanism. Protein detection using nanosensors is improved by employing DNA carriers, armed with molecular beacons bound to specific targets to the target analyte. Herein, we show the first step for developing such a sensing device. Specifically, synchronized detection of an ideal analyte, expression and aggregation of a spiculate, and testing of an α -synuclein-targeting molecular beacon.

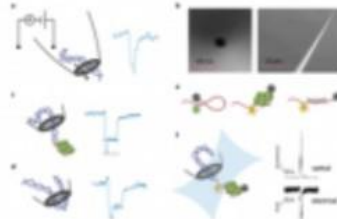
Neurodegenerative Disease

Neurodegeneration is the progressive atrophy and loss of function of neurons that leads to a range of brain-related effects such as personality changes, memory loss and movement disorders.¹ Alzheimer's Disease (AD) is the most common neurodegenerative disorder, with a prevalence of 14.2% in the United States. The prevalence of AD increases with age, with a prevalence of 50 million and 10 million respectively (Figure 1a).² Indeed, this translates to 3.0% of the population over 65 years of age having AD, and 3.2% having PD.³ Moreover, neurodegenerative diseases are incurable and untreatable. The drug L-DOPA is used to treat PD by replacing dopamine lost through death of dopamine neurons.⁴ Misfolded/beta-amyloid, tau protein, and neuronal fibrils, the number of people aged over 65 is projected to double in the next 30 years.⁵ Therefore, a large proportion of these cases will be aged over 65, which will make the development of new therapies more difficult, since, in most developments, neurodegeneration are both slowly and crucial.



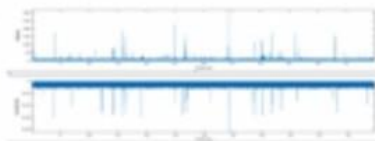
Nanopore Sensing

Nanopore sensing is a label free method of single-molecule detection based on the transport of an analyte (e.g. a piece of *dNA*) in electrolytic solution between two chambers, via a hole of nanometric dimensions. Application of voltage to the analyzer solution triggers passage of ions through the pore and prefluorides of ions carried flow (anodic pulse) indicate the translocation of a single analyte molecule through the pore (Fig. 2a). Further analysis of the properties of the translocating event (e.g. dwell time, current level, etc.) can be used to identify the analyte (Fig. 2b). Although the nanopore sensing is a stochastic process, so, many single-molecule events need to be recorded and analyzed together to build meaningful statistics. Quanta based nanopores are extraordinarily low cost and rapid to produce. The detection of disease biomarkers or ecological factors is a potentially lucrative use of nanopore technology. Several work by use of all demonstrated the simultaneous detection of three proteins in human serum, by introducing a DNA-based carrier (10). The authors also discussed the application of nanopore sensing in the detection of biomarkers. They open the door to detection of biologically relevant biomolecules in complex media, the authors also discussed the issue of detecting proteins in nanopores.



Results

To demonstrate the sensing error, Figure 3b shows a typical trace for 300 pM 3D HSA in a nanosensor, with a 300 ms dwell time. Each spike from the baseline represents a single DNA molecule leaving the nanosensor. From visual inspection of the trace, one can conclude that two identical molecules can lead to several different event shapes. This is caused by the folding effect of the DNA molecule. The shape of the event is determined by the conformation of the DNA molecule. For a secondary population, charge has no effect. Physically, the charge is a measure of the excluded charge from the nanosensor during a translocation and is intrinsically linked to the charge of the molecule passing through.¹⁶ Hence, charge is a useful parameter to discriminate between different analytes or conformations of the same analyte.¹⁶ In the shape of the distributions are logical when analysed together: the major population for dwell time is for longer times, which compensates for the major population for charge being lower currents. The combination of width and height to give area leads to a uniform population with a small constant.



Conclusion

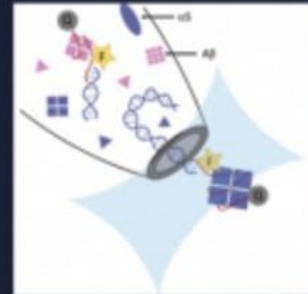
Encouraging work has been presented thus far. The synchronous platform, though technically difficult, shows significant promise. As described above, a weight has been designed to prevent reinforcement due to drift, and a new batch of VGO-4 has been purchased to prevent potential sample degradation. These steps, along with improved techniques through practice, should see a dramatic increase in the synchronous percentage in the 33 Mpa/1000 L experiments.

References

[illegible]

Revolutionising the Study of Neurodegenerative Disease

Dr. BrightCarbon



Single-molecule two-point detection shows the potential to change the way we think about Parkinson's and Alzheimer's Disease

1. Introduction

- Neurodegenerative diseases are caused by abnormal aggregation of proteins such as α S and A β in the brain
- Aggregated proteins become toxic and start destroying neurons

2. Methods

- Aggregated proteins are transient, so are best detected using single-molecule methods
- Nanopore current and confocal fluorescence are used in tandem to produce synchronised signals (Fig 1)

3. Results

- Using a molecular beacon carrier with a matching target sequence we show synchronised detection is possible (Fig 2)

4. Discussion

- Further validity testing is required to confirm if the method works in clinical samples
- We taken a major step towards proving the viability of this sensing mechanism

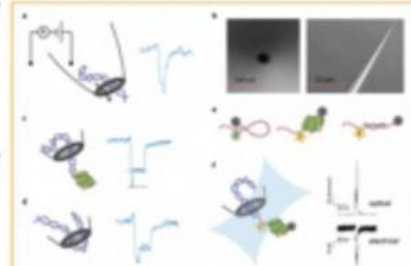


Figure 1. (A, B) nanopore sensing basics; (C, D) nanopore sensing with a DNA carrier; (E, F) nanopore sensing with a molecular beacon carrier for synchronised detection

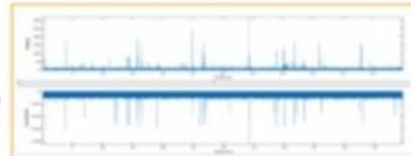


Figure 2. Proof of concept results for a molecular beacon carrier with matching target sequence

References

1. *Learn from the 10 most successful companies in the industry.*

Die Vertriebskosten

Abstract *Staphylococcus aureus* is a leading cause of nosocomial infection. The purpose of this study was to determine the prevalence of *S. aureus* in the nasal cavity of patients in a tertiary care hospital. A total of 100 patients were screened for *S. aureus* colonization of the nasal cavity. The prevalence of *S. aureus* was 45%. The results of this study suggest that *S. aureus* colonization of the nasal cavity is a common occurrence in patients in a tertiary care hospital.



→ **Strongly** (left column) is **strongest** (right column)

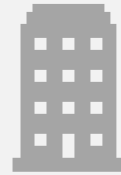
 BrightCarbon



Planning Your Poster Presentation



Q&A only



Elevator Pitch (1–2-minute
summary)



Elaboration (4- 5 minutes)

The 6 Presentation P's

Projection

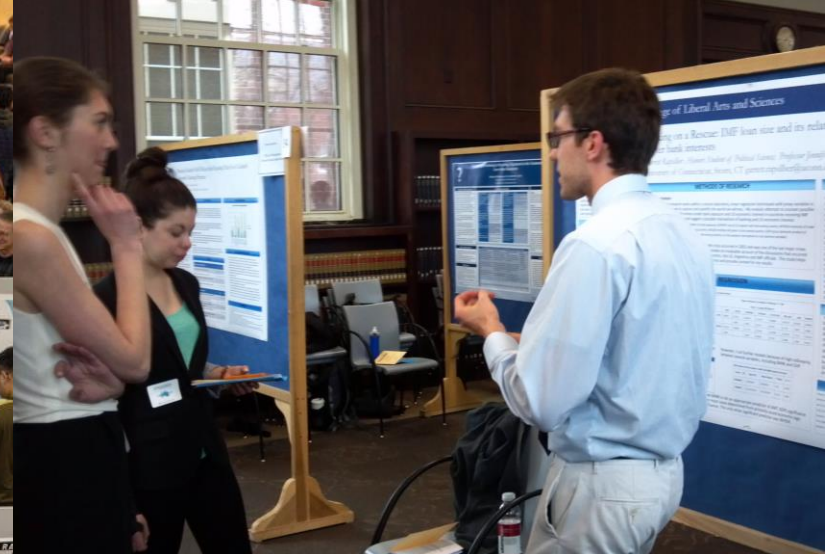
Pace

Pitch

Pronunciation

Pause

Posture



Posture

Getting Help Library

<https://www.oit.edu/academics/ideafest>

Google search: Oregon Tech IDEAfest 2025

On the right-click: Poster Templates, Workshops
and more!

Choose your campus:

Klamath Falls Posters or Portland Metro Posters

Click on the formatted PowerPoint file slide



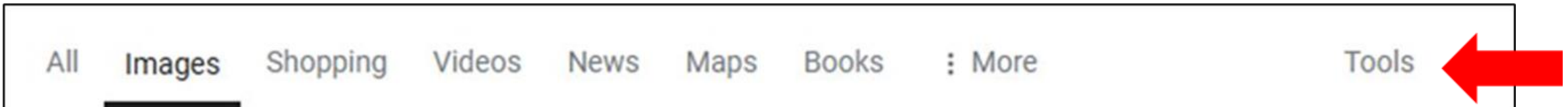
Audience Interaction- Create a QR Code



- For additional information such as videos or websites, create a QR code for your audience
- Interactive and engages audience with poster
- Do not include full hyperlinks (you can't click a piece of paper); use **QR codes** if you want viewers to follow hyperlinks
- There are lots of free QR code generators
- www.qr-code-generator.com
- <https://www.adobe.com/express/feature/image/qr-code-generator>
- **Pay attention to expiration of QR code you create!**

Free Images

- Google Image Search
- Tools -> Usage Rights
 - Choose Creative Commons Licensed
 - Remember to give attribution to the creator



Creative Commons Licenses

- You don't have to ask permission to reuse the images
- Just add a caption giving credit to the creator of the image



From: Wikimedia Commons

Wikimedia Commons is a source of free images

Licensing [\[edit\]](#)

I, the copyright holder of this work, hereby publish it under the following license:

This file is licensed under the [Creative Commons Attribution-Share Alike 4.0 International](#) license.

You are free:

- **to share** – to copy, distribute and transmit the work
- **to remix** – to adapt the work

Under the following conditions:

- **attribution** – You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **share alike** – If you remix, transform, or build upon the material, you must distribute your contributions under the [same or compatible license](#) as the original.





Printing is Free
This Year

STUDENT POSTERS FOR IDEAfest25:

- Klamath Falls Students – submit to the DRC (link on Poster Help Guide) **by Friday, May 16th**.
- Note: The maximum poster size the Klamath Falls DRC can print is 48in.x 36in.
- **For the index code, enter LIB999.**
- Portland Metro Students – submit using special submission form (link on Poster Help Guide) **by May 14th**.

FACULTY & STAFF POSTERS

FOR THE URC RESEARCH SYMPOSIUM:

- Posters presented by faculty & staff at the URC Research Symposium submit poster by **May 27th** to:
Riley.Richards@oit.edu and Darlene.Swigart@oit.edu
- 



Q&A

Thank you for attending!

University Research Committee

Riley Richards: riley.richards@oit.edu

Darlene Swigart: darlene.swigart@oit.edu

Jintai Wang: jintai.wang@oit.edu

Oregon Tech Librarian

Alla Powers: alla.powers@oit.edu