Priprema poster prezentacije

pravila i korišćenje postojećih programa sa primerima dobrih postera

Mr sc med Nada Kosić Bibić
Centar za promociju zdravlja
Zavoda za javno zdravlje Subotica

Poster kao stručni rad

- Poster je način ili metod komunikacije stručnjaka različitih delatnosti, i važan element uspešne profesionalne karijere pojedinih stručnjaka.

- Poster je uobičajeni način prikazivanja stručnih radova na različitim stručnim skupovima.

  Predstavlja obično veliki displej koji brzo i efikasno prenosi informacije, najčešće istraživanja.

Poster kao stručni rad

- Posterom stručnjaci prikazuju rezultate statističkih analiza, evaluaciju programa ili projekata, razmenjuju iskustva u radu.

- Mnogobrojne dugogodišnje saradnje su započele ispred stalka sa posterima.

Kako napraviti dobar poster?

U tome vam mogu pomoći 10 jednostavnih pravila:

1. Definiši svrhu / cilj
2. Prodaj svoj rad u 10 sekundi
3. Naziv postera je važan
4. Prihvatanje postera ne znači ništa
5. Mnoga pravila za "dobar rad" primenite i na poster, takođe
6. Dobri posteri imaju jedinstvene karakteristike
7. Dizajn i format su krucijalni
8. Sadržaj je važan, ali budi koncizan
9. Poster treba da odražava tvoju osobenost
10. Uticaj postera se dešava i tokom i posle poster sesije

Kako napraviti dobar poster?

1. Definiši svrhu / cilj – zavisi od prirode rada koji želiš prikazati na posteru.

   Odgovorite pre toga na pitanja:

   Šta želite da "onaj koji gleda poster" uradi?

   Da li želite da ga uvučete u diskusiju o sadržaju?

   Da li želite saradnju?

   Da li želite da ga naučite nešto novo ili da ga "pokrenete"?

   Ili nešto ...drugo?

Kako napraviti dobar poster?

Poster treba dati odgovore na sledeća pitanja:

Zašto?

Metod?

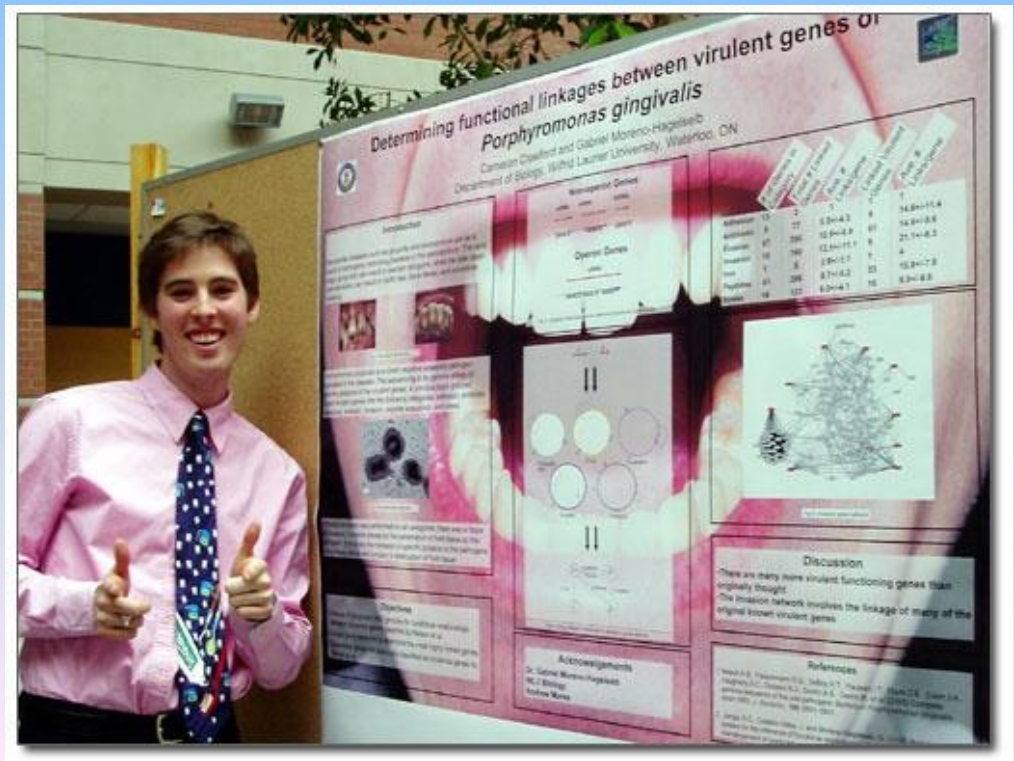
Šta je moja preporuka?

Šta sam ja dodao?

Do čega sam ja došao?

Kako napraviti dobar poster?

2. Prodaj svoj rad u 10 sekundi – često je na stotine postera izloženo i vi se "morate boriti za pažnju". Prvi utisak je presudan, a potom iako u manjoj meri je važno šta ćete reći "prolaznicima". Kratko, jasno i koncizno izložiti motiv vašeg rada.



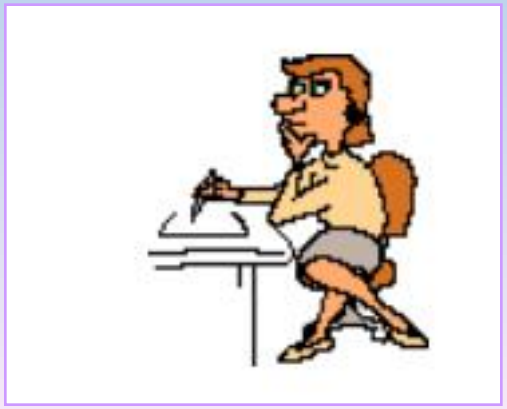
Wow!

Vidi ti to, on je sav u tonu!

Kako napraviti dobar poster?

3. Naziv postera je važan – dobar način da prodaš svoj rad, da neko poželi da dođe i vidi vaš poster. Može odražavati ključno pitanje, obim vašeg ispitivanja ili nagovestiti novi rezultat. Treba biti kratak, snažan i razumljiv širokom auditorijumu, kao naslovi u novinama.

Think BIG! REALLY BIG!!!



Kako napraviti dobar poster?

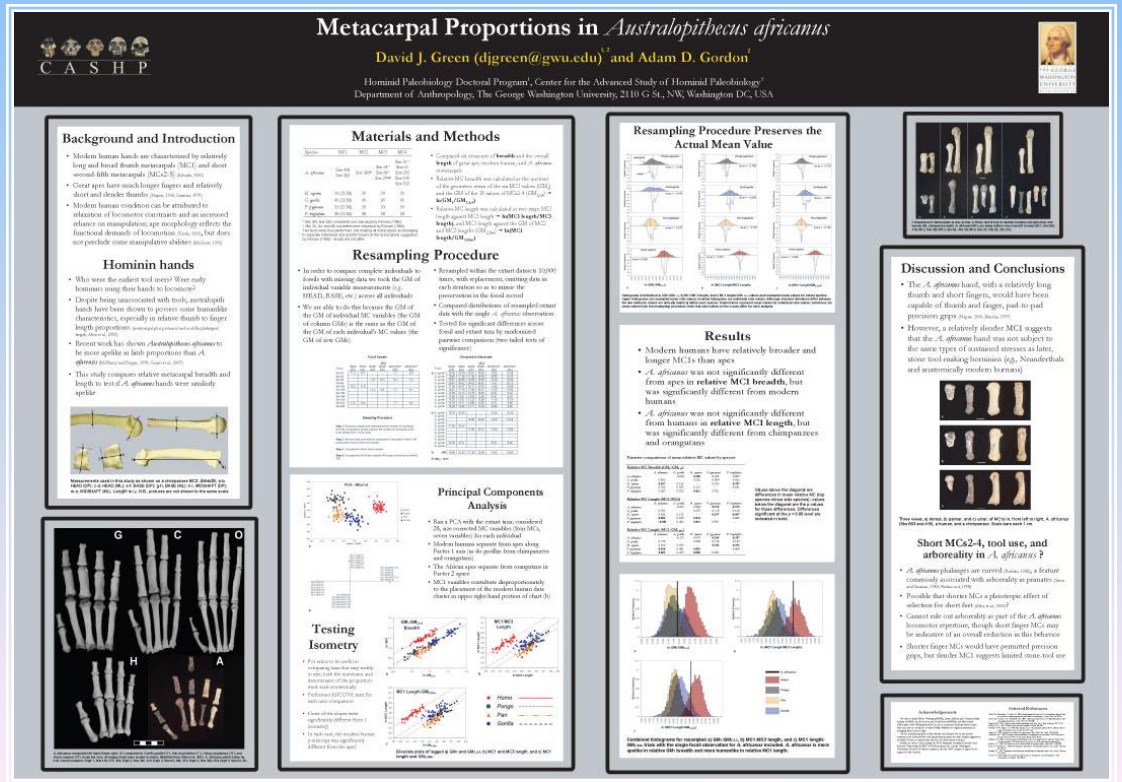
Primeri interesantnih naslova:

- Bela kuga Jablaničkog okruga
- Koliko rade specijalisti opštih bolnica u Srbiji?
- Ustav, zakoni i bolesti – isto danas i pre 120 godina?
- Upravljačke mere u kriznim situacijama
- Zapaženost i efekti nacionalne kampanje o pasivnom pušenju
- Promocija zdrave ishrane u uslovima ekonomske krize

Kako napraviti dobar poster?

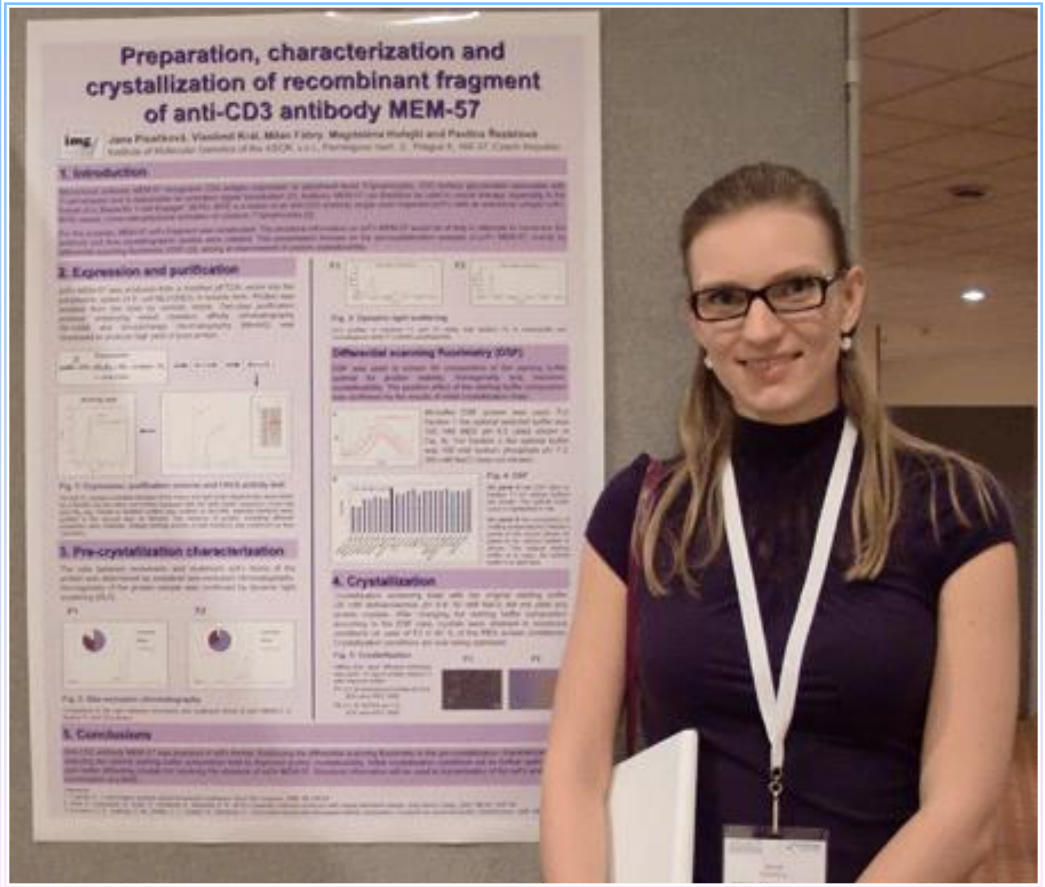
4. Prihvatanje postera ne znači ništa – prihvatanje postera ne znači i odobrenje za vaš rad. Nedostatak finansijskih sredstava čini da mnogi ne prisustvuju stručnim skupovima. Prihvatanje i odobrenje stručne javnosti za rad dobijate zbog stručnosti i dobrog prikaza na posteru.

Kool, wow!, check this out!, you must be smart!



Kako napraviti dobar poster?

5. Mnoga pravila za "dobar rad" primenite i na poster, takođe – identifikuj svoju "publiku" i sadržaj postera njoj prilagodi. Budi jezgrovit i kratko iznesi motive svoga rada, testiraj svoju hipotezu, prikaži glavne rezultate i zaključak.



Poster je samo dobro ilustrovan abstrakt.Ona je i nagradu dobila!

Kako napraviti dobar poster?

6. Dobri posteri imaju jedinstvene karakteristike – poster zahteva da "destiliraš" svoj rad, ne da izgubiš osnovnu poruku i logički tok. Daje vam mogućnost za kreativnost, može biti medij za dalju distribuciju kopija, informacija, hendauta...iskoristite ove prednosti. Daje mogućnost da kažete više nego u okviru tradicionalnog rada.

Odlična reklama za vaš težak rad!

Wow! Vidi ti ovo, mora da je vrlo uspešna!

Ako se zadrži 4 minute uspeo sam!

Impacts of sea-level rise on Seattle, WA

DANIEL MAHR • BROWN UNIVERSITY • GEO132 • DECEMBER 12, 2009

Introduction

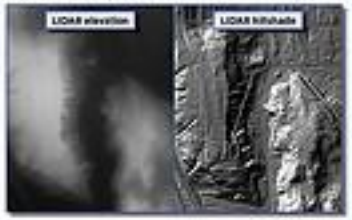
Among the many impacts of global warming, only sea-level rise physically displaces people and their communities. Understanding the impacts of rising oceans is especially important since so many densely populated urban areas exist in coastal regions. I hope to gain a better understanding of these impacts through the use of a geographic information system.

Research questions

- How much land will different amounts of sea-level rise displace in an urban area?
- How does this coverage disproportionately affect different building zones (e.g. residential, commercial, industrial)?

Data

Elevation: LiDAR (Light Detection and Ranging) data are the most accurate remotely sensed digital elevation models available with horizontal and vertical resolutions an order of magnitude better than the alternative (radar elevation data). The trade-off is coverage: LiDAR data are collected from airplanes and are expensive to obtain. Thus, such high-resolution data are only available (for free) in a few areas.



Due to the paucity of LiDAR data, I chose my King County study area as a result of the extensive and freely available LiDAR data set from the Puget Sound LiDAR Consortium. The digital elevation model used has a horizontal resolution of 16 feet and a vertical resolution of 1 foot.

Geocoding: For the correlation of inundation areas with building zones, I used parcel data from the King County Department of Assessments.

Methods

Sea-level rise heights:

- Since elevation data represent sea-level at mid-tide, the mean high tide height must be added to determine the inundation extent at high tide. NOAA's tidal datum tool was used to calculate this value of 8.9984 feet.

Inundation mapping:

- Elevation data were merged into a single digital elevation model mosaic.
- Using the Single Output Map Algebra tool, rasters were created from the DEM representing the inundation coverage at five heights: 3, 6, 9, 12, and 15 feet (each plus the mean high tide height of 8.9984 feet).
- Using Raster Calculator, an aggregated raster was created representing the number of individual inundation rasters covering a given cell. Thus, cells with a value of 5 would be flooded by 3 feet of rise; cells with a value of 4 would be flooded by 6 feet of rise and so on.

Zoning correlation:

- Commercial and residential parcel data were processed and geocoded. 71% of commercial parcels and 56% of residential parcels matched.
- Using Extract Values to Points tool, values (0-5) from the aggregated inundation raster were appended to geocoded parcel points.
- Using Summarize function, tables enumerating the number of each type of parcel in each inundation zone were generated.

Results

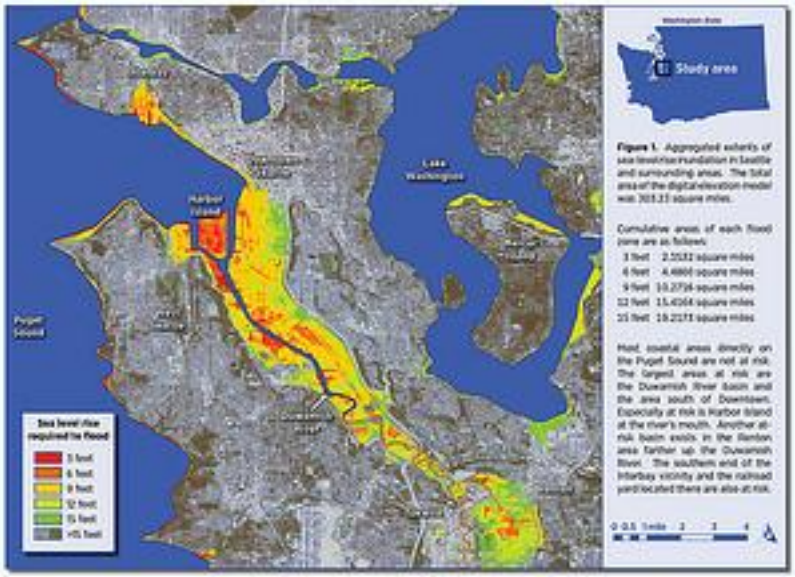


Figure 1. Aggregated extents of sea level rise inundation in Seattle and surrounding areas. The total area of the digital elevation model was 303.23 square miles.

Cumulative areas of each flood zone are as follows:

3 feet	2.1532 square miles
6 feet	4.4860 square miles
9 feet	10.2716 square miles
12 feet	15.4164 square miles
15 feet	19.2173 square miles

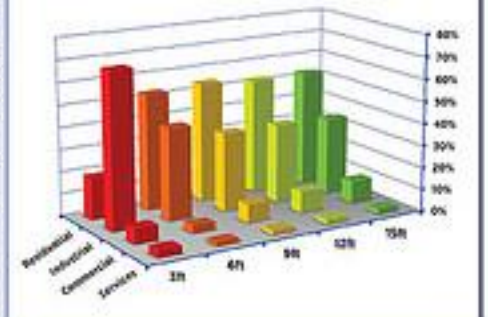
Most coastal areas directly on the Puget Sound are not at risk. The largest areas at risk are the Duwamish River basin and the area south of Downtown. Especially at risk is Harbor Island at the river's mouth. Another at-risk basin exists in the Renton area farther up the Duwamish River. The southern end of the Interbay vicinity and the railroad yard located there are also at risk.

Figure 2. Sea-level rise inundation impact by parcel zone. Each bar represents the percentage of parcels of that zone type out of the total number of parcels inundated for that depth. For example, 71% of parcels inundated by 3 feet of sea-level rise are zoned as industrial. The numerical data from which this plot was derived are tabulated below.

The unit used for this assessment is the number of parcels. Residential zones, which are generally made up of a greater number of smaller parcels, are therefore likely to outnumber other zones. Although a similar analysis using appraised value or square footage as the dependent variable could yield more meaningful results, they are not as practical. In the case of square footage, not all the floors in a given structure would necessarily be inundated by sea-level rise. In the case of appraised value, the replacement value of a given parcel may vastly exceed its taxable value. The low appraised value of vacant lots further complicates this approach.

Parcels categorized as "Services" include government buildings, fire stations, police stations, hospitals, houses of worship, schools, public parking lots, cinemas, and theaters.

	Services	Commercial	Industrial	Residential	Total
3 feet	3 (4%)	6 (7%)	60 (71%)	16 (19%)	85
6 feet	7 (2%)	15 (4%)	175 (43%)	201 (50%)	408
9 feet	15 (3%)	113 (8%)	414 (30%)	1002 (68%)	1544
12 feet	67 (3%)	298 (13%)	1088 (50%)	1143 (52%)	2146
15 feet	94 (3%)	375 (13%)	1290 (55%)	1600 (68%)	3674



Discussion

Sea-level rise extents

Land directly on the coast of Puget Sound are not greatly impacted by sea-level rise. The extent of inundation in these areas rarely exceeds a tenth of a mile from the current shoreline. It is probable that the glacially sculpted terrain in these areas has naturally steep-sloped shorelines and shallow beachfronts where even fifteen feet of sea-level rise does not drastically penetrate into the mainland.

The most vulnerable land lies along the Duwamish River. Unlike the steeply-sloped shoreline directly on Puget Sound, the Duwamish River forms a shallow basin where large swaths of land lie only a few feet above the height of the river. The tipping point where the marginal unit of sea-level rise floods the most area is between six and nine feet. This increment floods the area south of downtown Seattle, including the stadiums for the Mariners and Seahawks, as well as Boeing Field, a two-runway commercial airport. As the river's height above sea-level increases moving south towards Tukwila, the area at risk shrinks. Interestingly, a secondary at-risk basin exists in Renton, where sea-level rise of 12 feet or more would flood a large area of land.

Comparison of inundation to zoning

At three feet of sea-level rise, industrial parcels are the most vulnerable. Much of this can be attributed to Harbor Island, a man-made island at the river's mouth, where many container shipyards, petroleum tanks, and storage warehouses exist right at the shoreline.

At six or more feet of sea-level rise, the percentage of inundated parcels zoned as residential outnumbers all other zones. It should be noted, however, that this is probably due residential parcels being smaller, on average, than other types.

At nine feet of sea-level rise, the percentage of inundated parcels zoned as commercial spikes. This is due to much of the commercial district south of downtown Seattle flooding at nine feet.

There is not a consistent distribution of inundated zones until after six feet of sea-level rise. This has implications for policymakers and how they interpret the appropriate governmental response to different sea-level rise predictions.

Conclusions

Sea-level rise of any height will impact the Seattle area. At heights less than three feet, industrial areas will bear the brunt the inundation. At heights greater than three feet, the impact is more evenly distributed between industrial, commercial and residential parcels.

This discontinuous distribution exemplifies how different sea-level rise predictions can affect the response of policymakers and the government. More mild predictions would suggest an industry-focused response, while more severe predictions would suggest a more even allocation of resources between zone types.

Modeling the impacts of different amounts of sea-level rise in other urban areas would provide further insight into this topic. Since the nuances of different cities varies greatly around the world, it would be especially interesting to see if certain urban-planning regimes are more successful at mitigating the impacts of sea-level rise.

Acknowledgements

Help and Support

Lynn Carlson – Brown University GIS System Manager
Tom Sleeve – Brown University Social Science Data Librarian

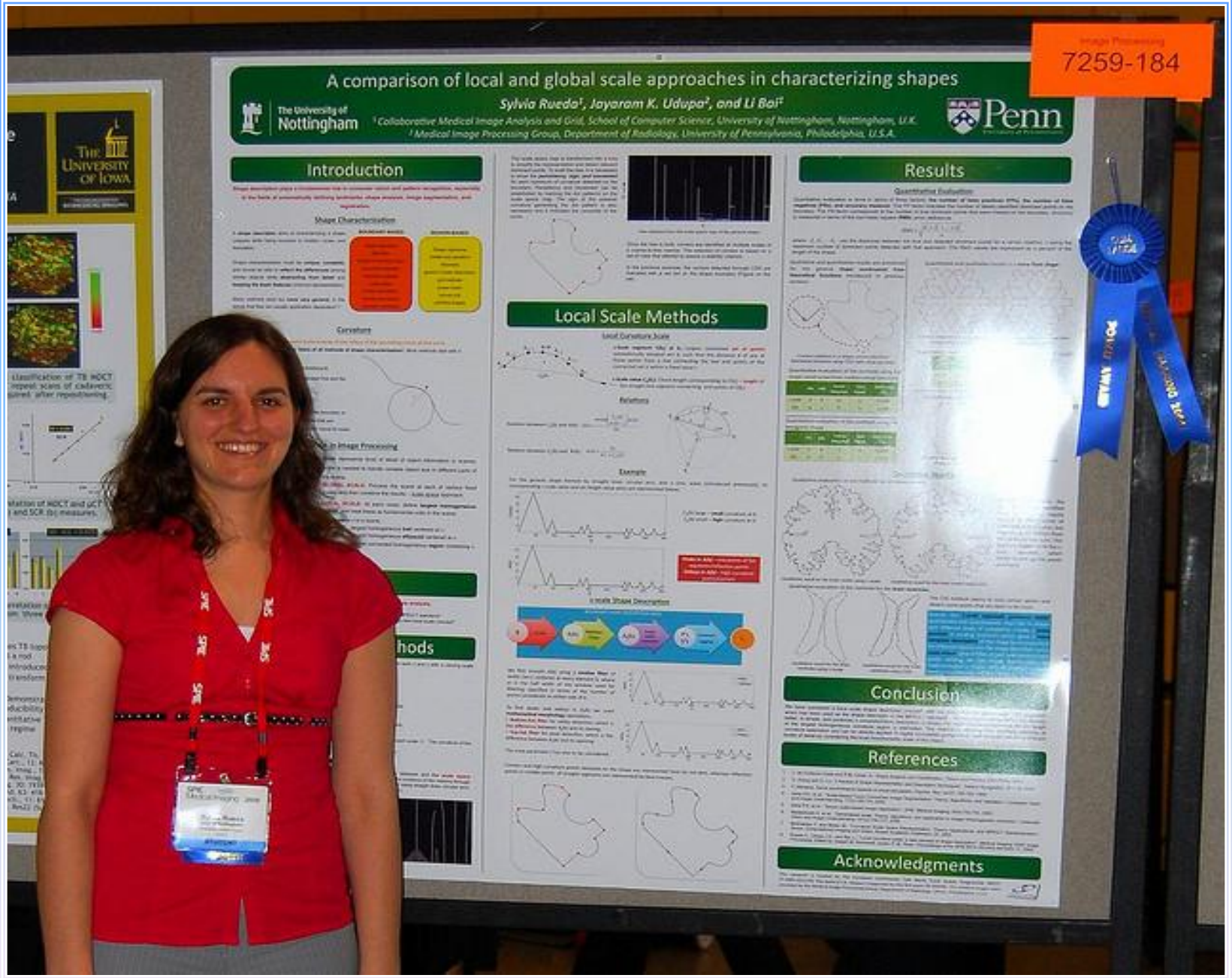
Data

LiDAR Elevation – Puget Sound Lidar Consortium
Parcels – King County Department of Assessments
Geocoding Street Index – ESRI StreetMap Premium
Orthomagery – LANDSAT ETM+ via United States Geologic Survey
Coastline – Washington State Department of Transportation

Software

ESRI ArcInfo 9.3

Ako kažu "Hmm vrlo interesantno, doći ću obavezno kasnije", nisi uspeo!



Ona je uspela, smeši se nagradi!

Identification of QTLs for Tillering Ability in an Inter-Specific Rice Cross

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Introduction

Malaysia generates about 65% of the total rice consumed locally. It is mainly produced under fully irrigated low-land farming conditions. The average annual yield is below 4 tonnes/ha (Fig. 1). Scarcity of suitable land for developing new rice farms, revenue loss due to import of rice and ever-growing population necessitate the development of new varieties with improved yield. Domestication and intensive breeding have resulted in a narrowing of the gene pool of modern rice cultivars.

Wild and unadapted germplasm represents the majority of the existing genetic variation in rice. Common wild rice (*Oryza rufipogon* Griff.) has many useful genes which could improve the quality and yield potential of cultivated rice (Xiao *et al.* 1998, Moncada *et al.* 2001, Septiningsih *et al.* 2003). We are looking at yield-related traits of *O. rufipogon* IRGC105491 (Fig. 2) to enhance the yielding ability of *Oryza sativa* MR219 (Fig. 3).

Fig. 1. Annual rice yield of Malaysia, Asia and the world

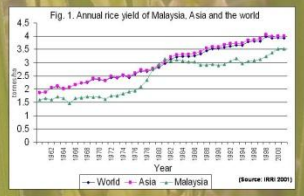


Fig. 2. *O. rufipogon* IRGC105491

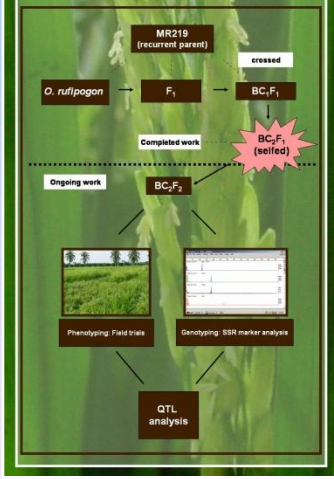
Fig. 3. MR219

MR219, developed through a combination of bulk and pedigree methods of selection has at least four improved traits:
i) Maturation period between 105 and 111 days,
ii) Good resistance to four major pests and diseases of rice,
iii) Large grain size and good eating quality, and
iv) Very high yield potential. A yield of 10.73 tonnes/ha has been recorded under ideal conditions.

Methodology

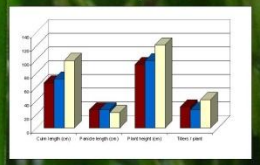
The advanced backcross method (Tanksley and Nelson 1996) is a means of reducing the number of donor parent alleles present in any given backcross (Fig. 4). With fewer donor alleles present, deleterious alleles can be readily exposed; conversely, favorable donor alleles at quantitative trait loci can be more easily recognized. The study involves the simultaneous transfer of tillering genes into an elite breeding line and the mapping of putative alleles with reference to the tillering trait via the advanced backcross quantitative trait loci (AB-QTL) approach.

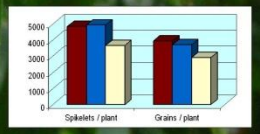
Fig. 4. The AB-QTL Strategy

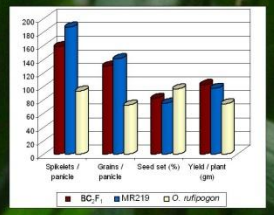


Results

Fig. 5. Various morphological data of BC_2F_1, MR219 and *O. rufipogon*







Discussions

On average, *O. rufipogon* exhibits 51.3% more panicle-bearing tillers in comparison to MR219. BC_2F_1 progenies showed 15% more tillering compared to MR219 which more than compensates the observed 7.8% lower number of filled grains per panicle. Moreover, a marked decrease in plant height by 5.9% and culm length by 8.2% would reduce the problem of lodging exhibited by the MR219 cultivar.

Conclusions

The AB-QTL method remains an efficient tool for transferring genes into established crop varieties. With each succeeding backcross generation, a greater proportion of the recurrent non-target genes remain along with the donor's gene of interest.

Tillering-related traits of BC_2F_2 will be regressed to SSR marker data for linkage mapping and QTL analysis. We hope to identify regions of the chromosome controlling tillering traits, characterize the relative importance of marker regions in terms of the proportion of phenotypic variation each controls and determine whether the same regions affect more than one trait.

Acknowledgements

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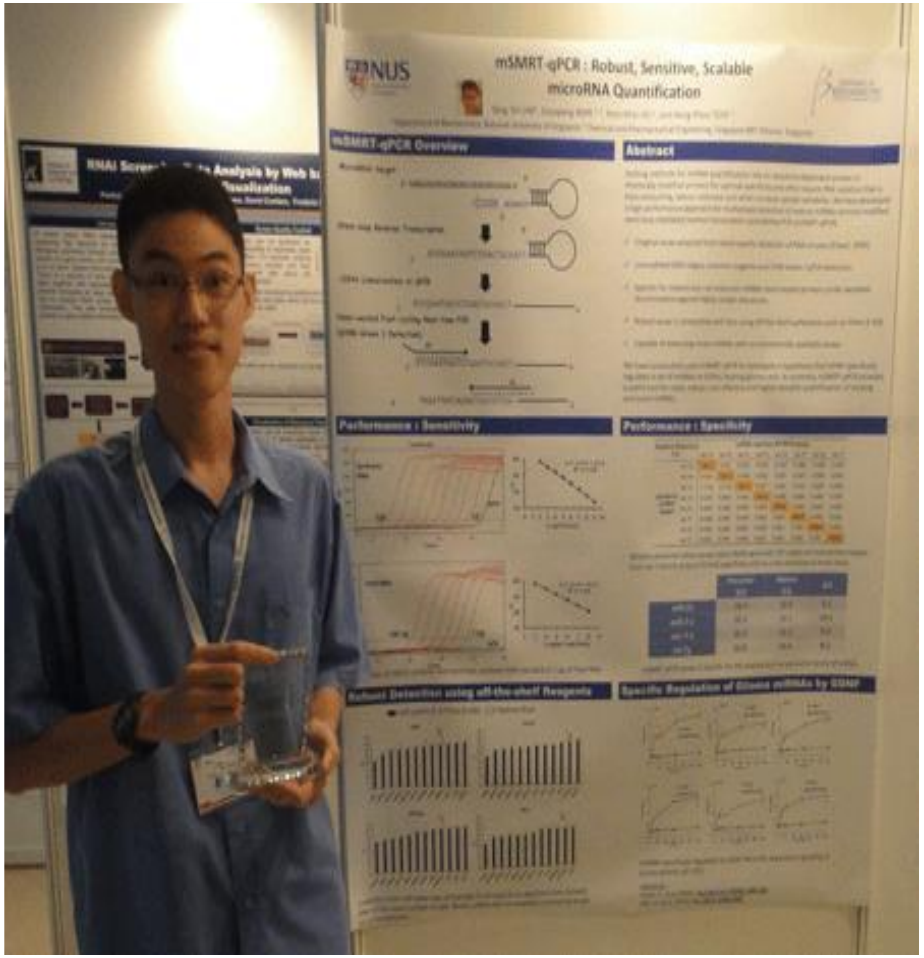
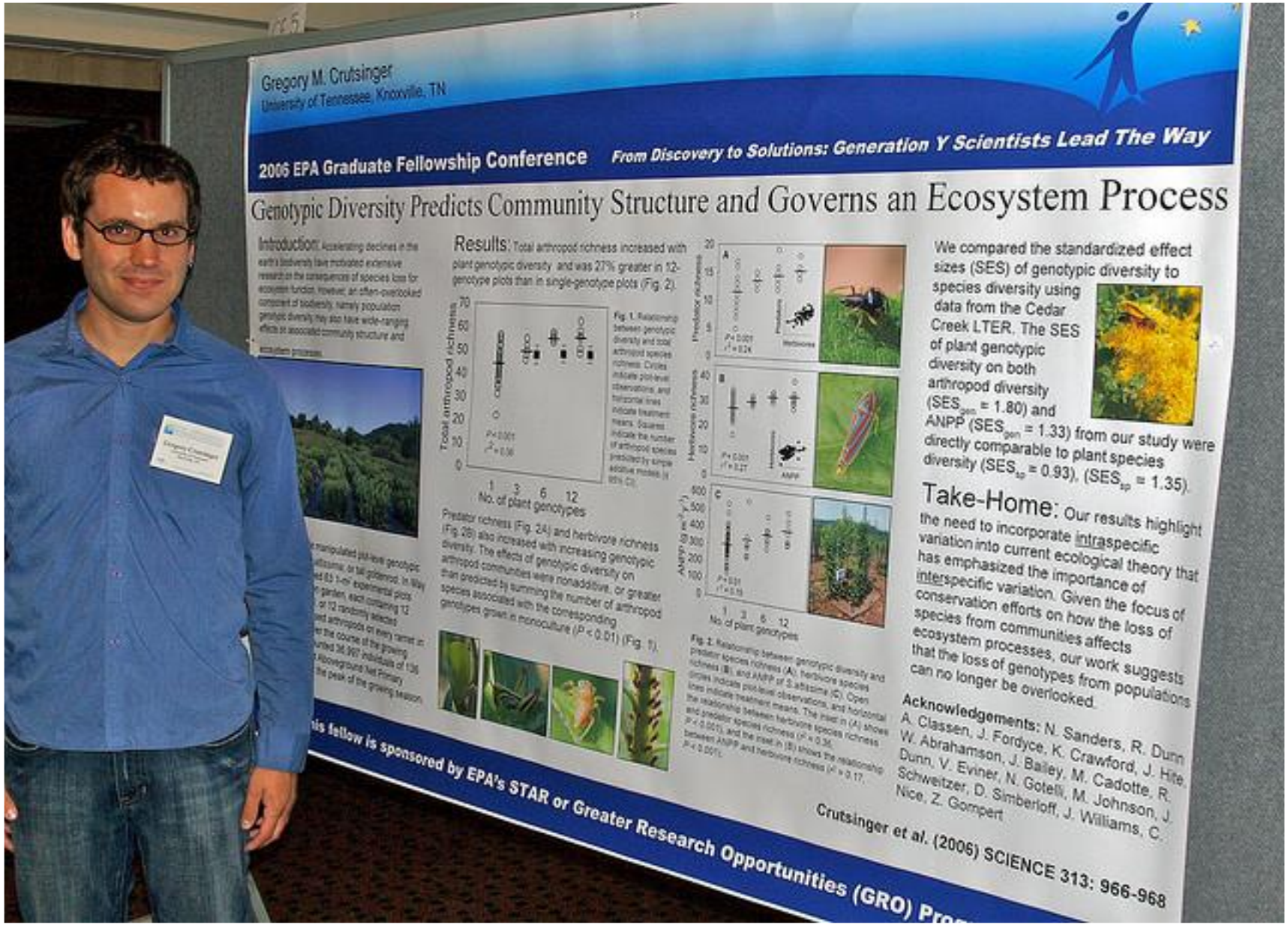
References

1. IRRI (International Rice Research Institute) 2001. World Rice Statistics. Los Banos (Philippines): IRRI. *http://www.irri.org/science/ricestat/*
2. Department of Statistics Malaysia 2004. *http://www.statistics.gov.my/English/frameset_keystats.php*
3. Moncada *et al.* 2001. *Theoretical and Applied Genetics*, 102:41-52.
4. Septiningsih *et al.* 2003. *Theoretical and Applied Genetics*, 107:1419-1432.
5. Tanksley and Nelson 1996. *Theoretical and Applied Genetics*, 92:191-203.
6. Xiao *et al.* 1998. *Genetics*, 150:899-909.



Odlično je ilustrovao, pa je i nagradu dobio!



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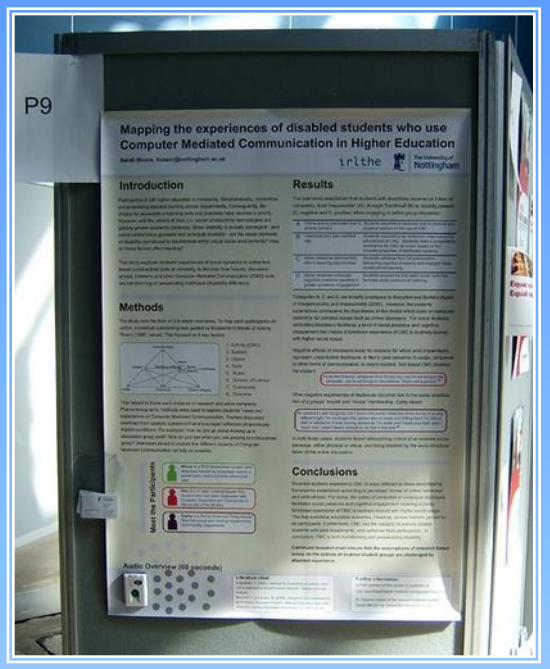
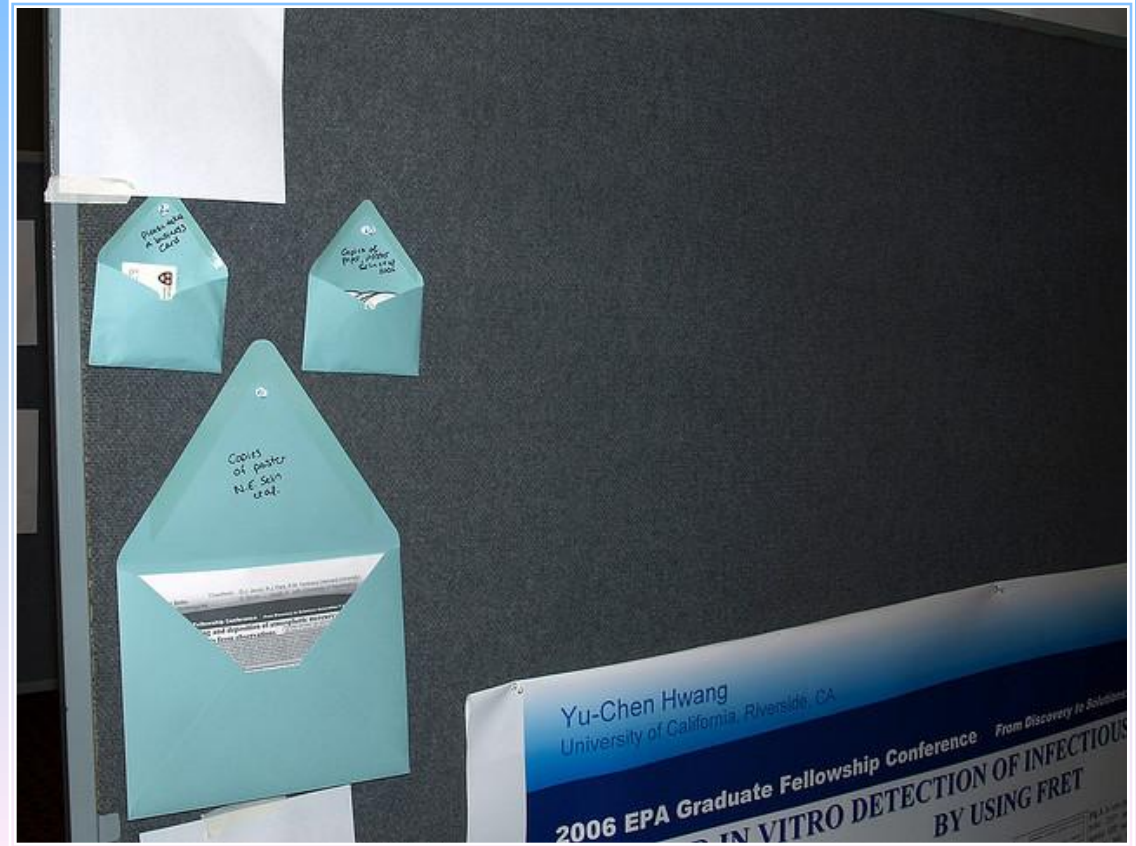
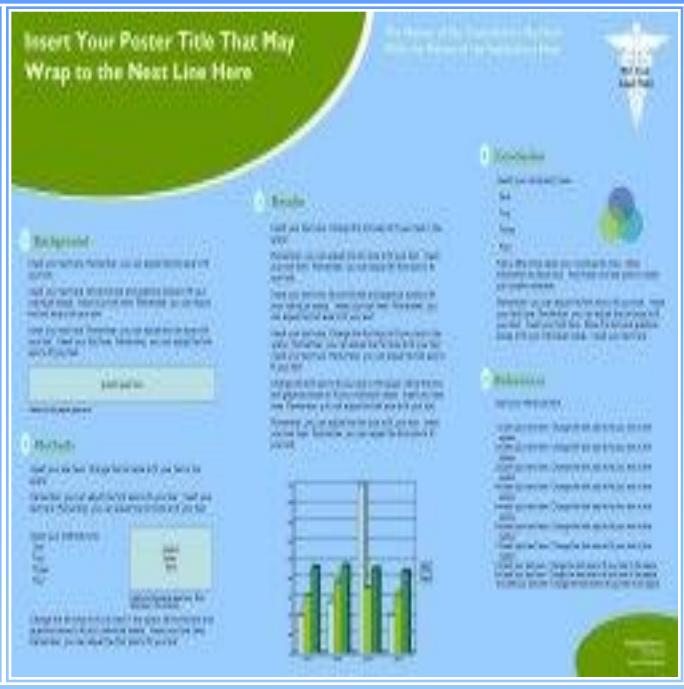


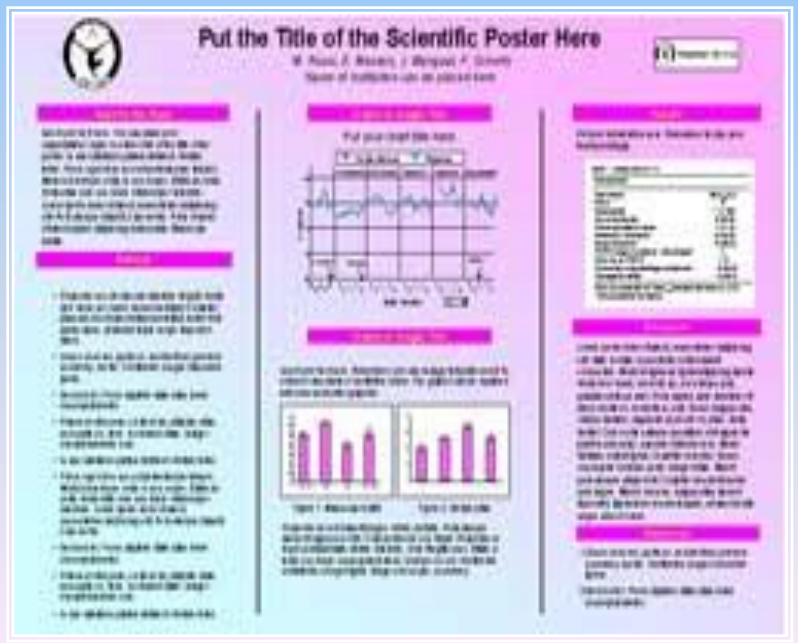
Možeš koristiti i trikove!



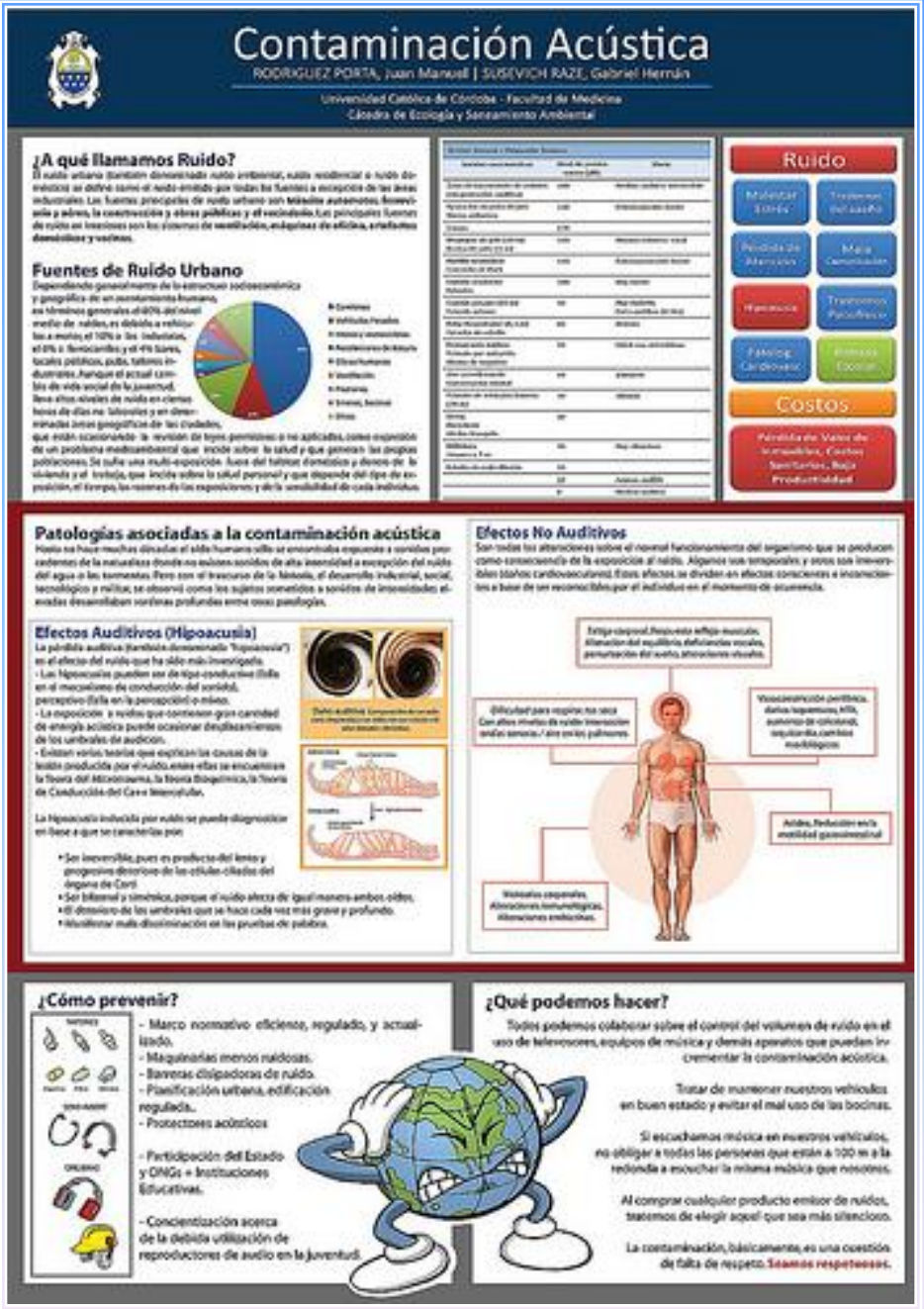
Kako napraviti dobar poster?

7. Dizajn i format su krucijalni – poster je belo platno koje treba da organizuješ na logičan, ali atraktivan i moderan način i tako vodiš "posmatrača" od početka do kraja. Pokušajte da ga vodite kroz poster na novi neuobičajeni način, a oku lako prijemčiv. Tragajte za podesnim oblicima i rešenjima na posteru miksajući ih sa poznatim. Nikada ne koristite font manji od 24. Poster postavite u visini očiju radi lakšeg čitanja i uočavanja.





Biraj format i dizajn!



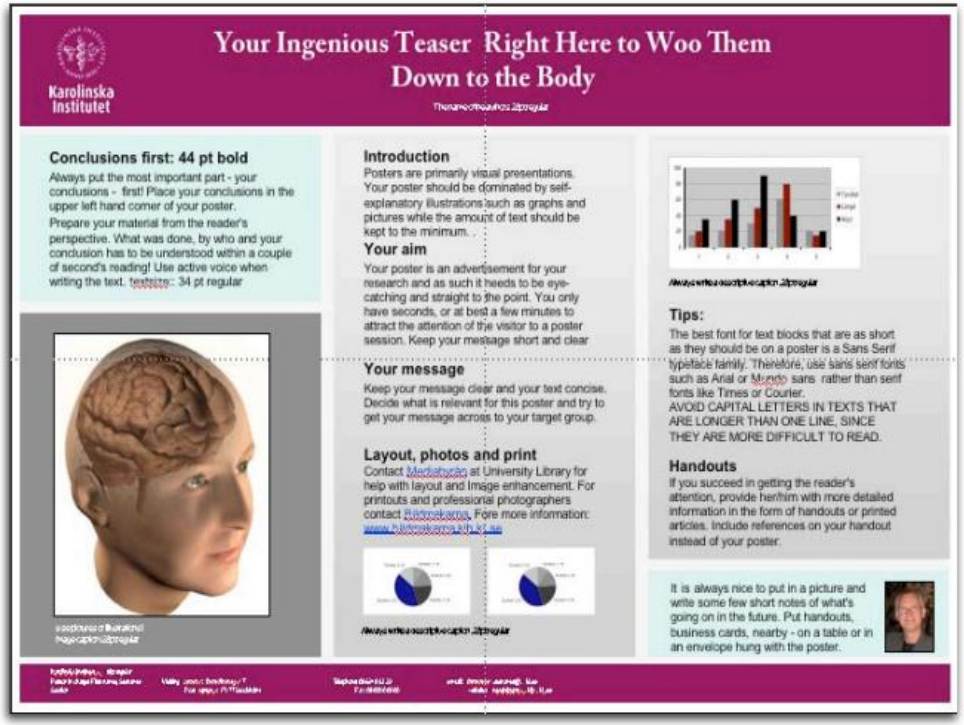
Biraj format i dizajn!

Kako napraviti dobar poster?

8. Sadržaj je važan, ali budi koncizan – sve na posteru treba da prenese osnovnu poruku. Tekst je u duhu naučnog izražavanja, jasan, precizan i bez suvišnih reči. Sačini pažljiv izbor grafikona ili slika bez cilja da sve fascinira ili bude kompleksno. Sačini set očiglednih i jasnih zaključaka jer "posmatrač" često njih istražuje, a potom ide na rezultate koji su praćeni odgovarajućim metodom.

Kako napraviti dobar poster?

- Prebroj reči – preporuka do 800 reči
- Tok – lak, logičan, jednostavan
- Font – izbor fonta koji se lako čita, ne koristi CAPSLOCK i underline
- Pravopisne greške - prekontroliši



Naslov – 85 pt

Autori -56 pt

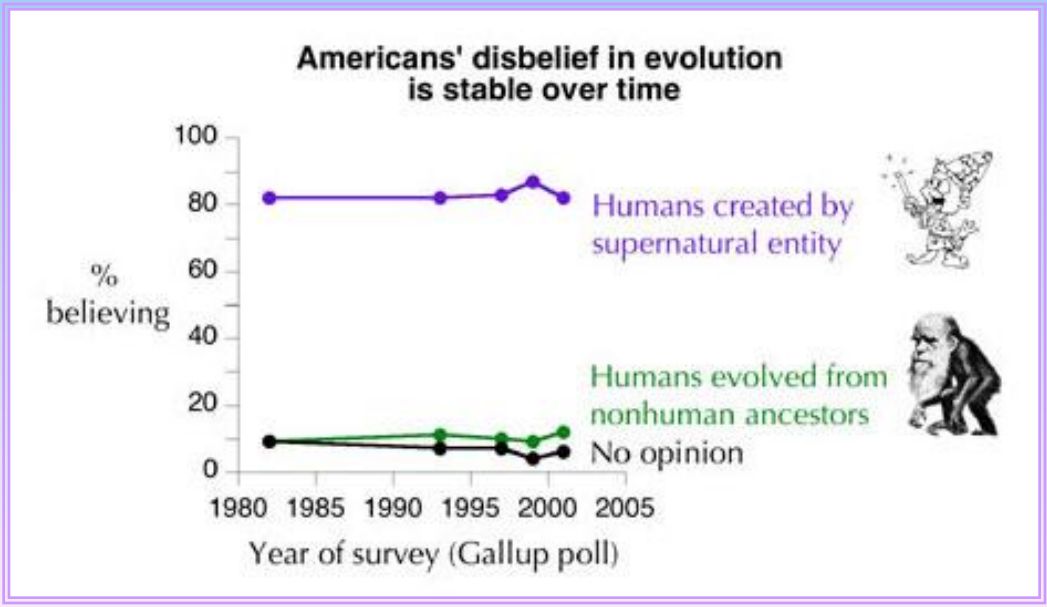
Podnaslovi - 36 pt

Body text – 24 pt

Caption – 18 pt

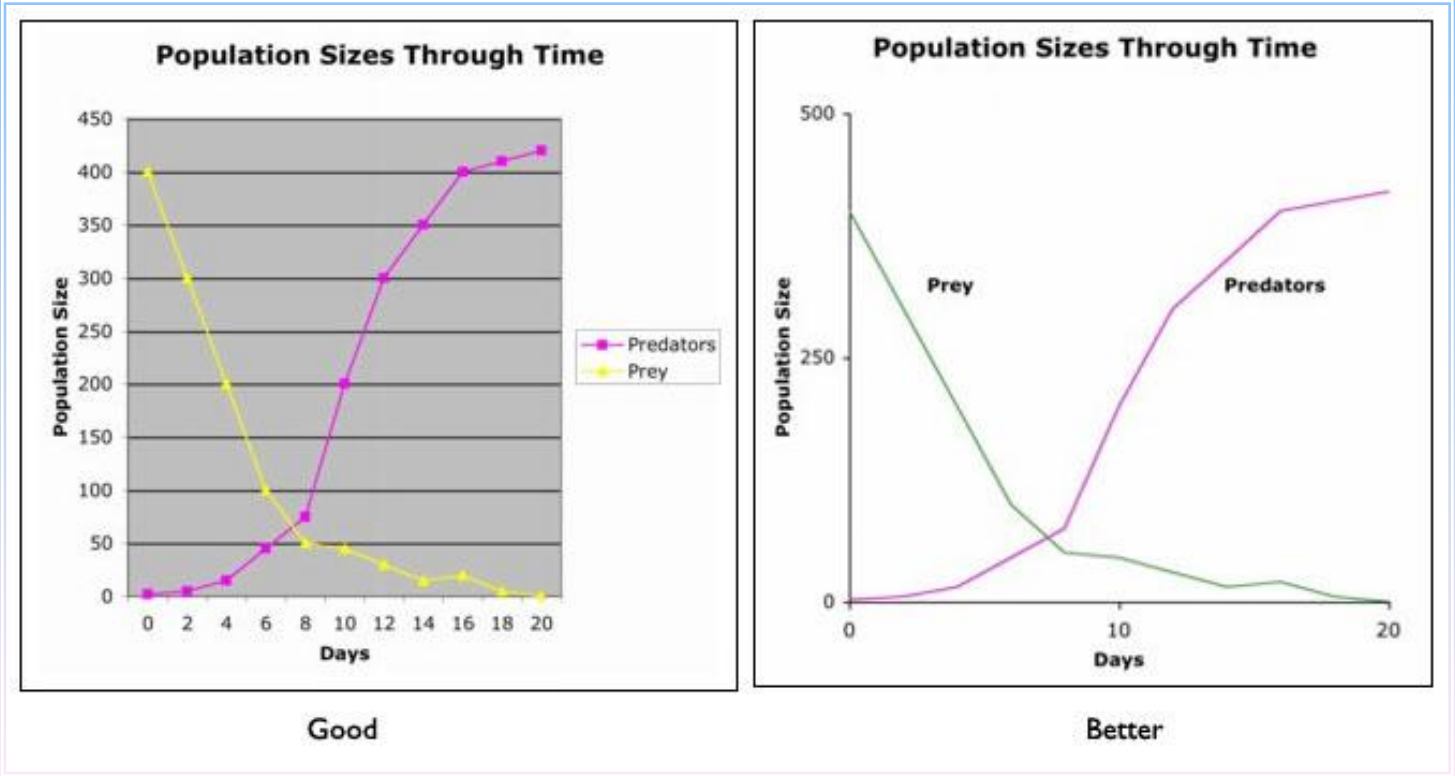
Kako napraviti dobar poster?

- Dobar izbor grafikona/dijagrama/ilustracije/slike – privlače pažnju,
  brzo šalju poruku,
  podižu razumevanje,
  zadržavaju posmatrača,
  efektivniji i informativniji su od reči



Kako napraviti dobar poster?

- Poželjno - jednostavne ne 3D grafikone, bez grid lines, uz male ilustracije, Y-axis label horizontalno, visoko kvalitetne fotografije, izbor boje!!!



Inorganic Biochemistry of Iron Proteins

Jared J. Heymann, Claire J. Parker Siburt, Katherine D. Weaver, and Alvin L. Crumbliss

Duke University – Department of Chemistry – Durham, NC

Purpose:

To study iron protein biochemistry from the perspective of the iron

Protein = Ligand

The Iron Paradox

Iron is needed for nearly every living cell

~~~~~~~~~~~~~~~~

Iron is toxic and can produce reactive oxygen species & must be controlled

Iron Abundance In Humans

45-55 mg/kg in humans

70% in Red Blood Cells (Hemoglobin)

0.1% in Transferrin

~~~~~~~~However~~~~~~~~

Turnover of transferrin iron is ~30 mg / 24 hours with 80% of this Fe being transported to the bone marrow for hemoglobin synthesis

Bacteria can also target Tf as a source of iron

Proteins act as the 1st & 2nd coordination shell of iron and can modulate the kinetics and thermodynamics of reaction.

Techniques:

Spectroelectrochemistry
UV-Visible Spectroscopy
Fluorescence Spectroscopy
Difference Spectroscopy
Stopped-Flow Kinetics
SUPREX

TRANSFERRIN

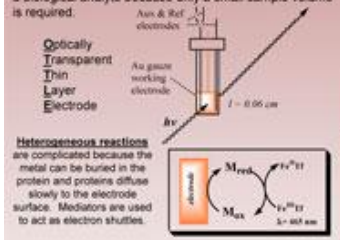
A mechanistic study of the iron release by receptor-bound transferrin using spectroelectrochemistry

Transferrin

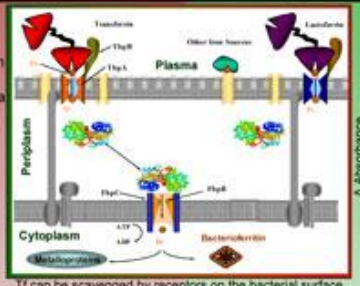
How is Fe^{3+} removed from Tf when $K_d = 10^{-20}$?

Hypothesis: When transferrin binds to a receptor, the reduction potential shifts into a biologically relevant range.

Spectroelectrochemistry utilizes a short pathlength created by an *OTTLE* cell, to measure the variations in visible spectra as the analyte is oxidized or reduced by an externally applied potential. This technique is ideal for a biological analyte because only a small sample volume is required.

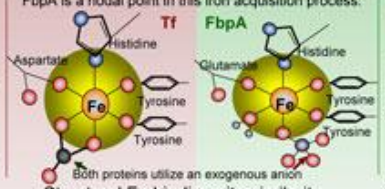


Heterogeneous reactions are complicated because the metal can be buried in the protein and proteins diffuse slowly to the electrode surface. Mediators are used to act as electron shuttles.



Tf can be scavenged by receptors on the bacterial surface

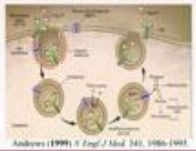
FbpA is a nodal point in this iron acquisition process.



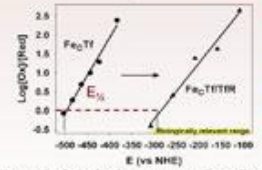
Both proteins utilize an exogenous anion

Structural Fe binding site similarity between Tf and FbpA

Iron loaded Tf binds to the human **receptor** and is taken into the cell by **endocytosis.** Tf releases iron inside in the endosome where the conditions are acidic (Andrews, 1999). However, the chemical mechanism is unclear. The reduction potential of Fe-Tf in the plasma (pH 7.4) and in the endosome (pH 5.8) is too low for biological reducing agents.



Andrews (1999) *N Engl J Med*, 341, 1986-1995



Using spectroelectrochemistry, we measured a positive shift in redox potential of Fe-Tf upon receptor binding

The transferrin receptor is capable of shifting the reduction potential into the range accessible by biological reducing agents, allowing for a redox mechanism of Fe release.

Transferrin not only supplies iron to mammalian cells, but has been identified as a target for pathogens to mechanistically steal iron from their host.

Kraiter, Zak, Aisen and Crumbliss. (**1998**) Inorg. Chem. 37, 964.
Dhungana, Taboy, Anderson, Vaughan, Aisen, Mietzner and Crumbliss. (**2003**) *PNAS* 100, 3659-64.
Dhungana, Taboy, Zak, Larvie, Crumbliss and Aisen. (**2004**) Biochem. 43, 205-9.

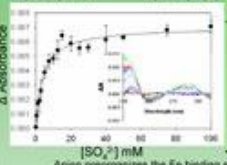
FERRIC BINDING PROTEIN

Role of a synergistic anion on modulating iron uptake in a bacterial transferrin by pathogenic bacteria: A study in kinetics and thermodynamics

Like Tf, FbpA requires a synergistic anion to facilitate tight iron binding, which may play a role in ease and rate of Fe uptake by the bacteria.

1. FbpA acts as an anion binding protein

apo-FbpA + X^{n-} ⇌ apo-FbpA(X)

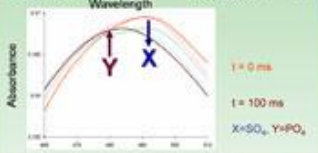


Anion preorganizes the Fe binding site

Anion	K_d (mM)
Sulfate	4.1
Phosphate	2.3
Arsenate	2.1
NTA	2.1
Oxalate	0.21
Citrate	0.099
Pyrophosphate	0.018

2. FeFbpA-X can exchange anions

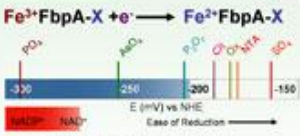
$FeFbpA\text{-}X + Y^{m-} \overset{K}{\rightleftharpoons} FeFbpA\text{-}Y + X^{n-}$



3. Anion identity modulates both thermodynamic stability and redox potential

$Fe^{3+} + FbpA\text{-}X \rightleftharpoons Fe^{3+}FbpA\text{-}X$

$Fe^{3+}FbpA\text{-}X + e^- \longrightarrow Fe^{2+}FbpA\text{-}X$



Redox potential varies by ~140 mV (14 kJ) based on identity of X

Anion	log K
Phosphate	18.6
Arsenate	18.1
Oxalate	17.6
NTA	17.3
Pyrophosphate	17.3
Citrate	17.1
Sulfate	16.2

Thermodynamic stability varies by two orders of magnitude (14 kJ) based on identity of X

Iron transport can occur by a redox or non-redox mechanism in the periplasm. The **thermodynamic stability** and **reduction potential** are both varied by the identity of the synergistic anion. **Kinetically labile** exchange is possible in the diverse anionic conditions of the periplasm.

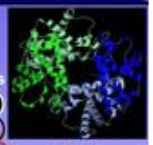
Heymann, Weaver, Mietzner and Crumbliss. (**2006**) *unpublished.*
Dhungana, Anderson, Mietzner and Crumbliss. (**2005**) Biochem. 44, 9606-18.
Roulhac, Powell, Dhungana, Weaver, Mietzner, Crumbliss and Fitzgerald. (**2004**) Biochem. 43, 15767-74.
Dhungana, Taboy, Anderson, Vaughan, Aisen, Mietzner and Crumbliss. (**2003**) *PNAS* 100, 3659-64.

HEMOGLOBIN

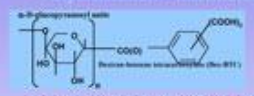
Effects of subunit cross-linking on hemoglobin oxidation states determined by spectroelectrochemistry

Chemically modified Hb

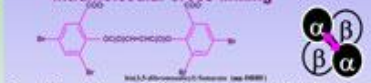
- Pyridoxalation
- Pegylation
- Conjugation to polysaccharides & proteins



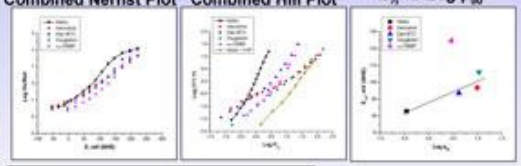
- Polymerization – intermolecular cross-linking



- Intramolecular cross-linking



Combined Nernst Plot | **Combined Hill Plot** | **$E_{½}$ vs Log p_{50}**



Sample	$E_{½}$ mV (NHE)	Oxidation n_{50}	Log P_{50}	Oxygenation n_{50}
HbA_o	83	1.3	-0.455	2.28
Hemolink	97	0.7	0.994	0.71
Dex-BTC	94	0.9	0.618	1.49
$Oxyglo_{bin}$	106	0.9	1.028	1.11
aa-DBBF	125	1.0	0.461	1.56

Implications

- Reengineering redox center not necessary
- Drive for autoxidation not thermodynamic
- Structural modifications perturb kinetics by altering exposure of heme cavity

Modified Hb Conclusions

Oxygen Transport	Anaerobic Reduction Potentials
Loss of cooperativity	Loss of cooperativity
Lower oxygen affinity	$E_{½}$ potential increased vs HbA_o
T-state stabilization	Normal physiological range
	Decreased tendency to form metHb

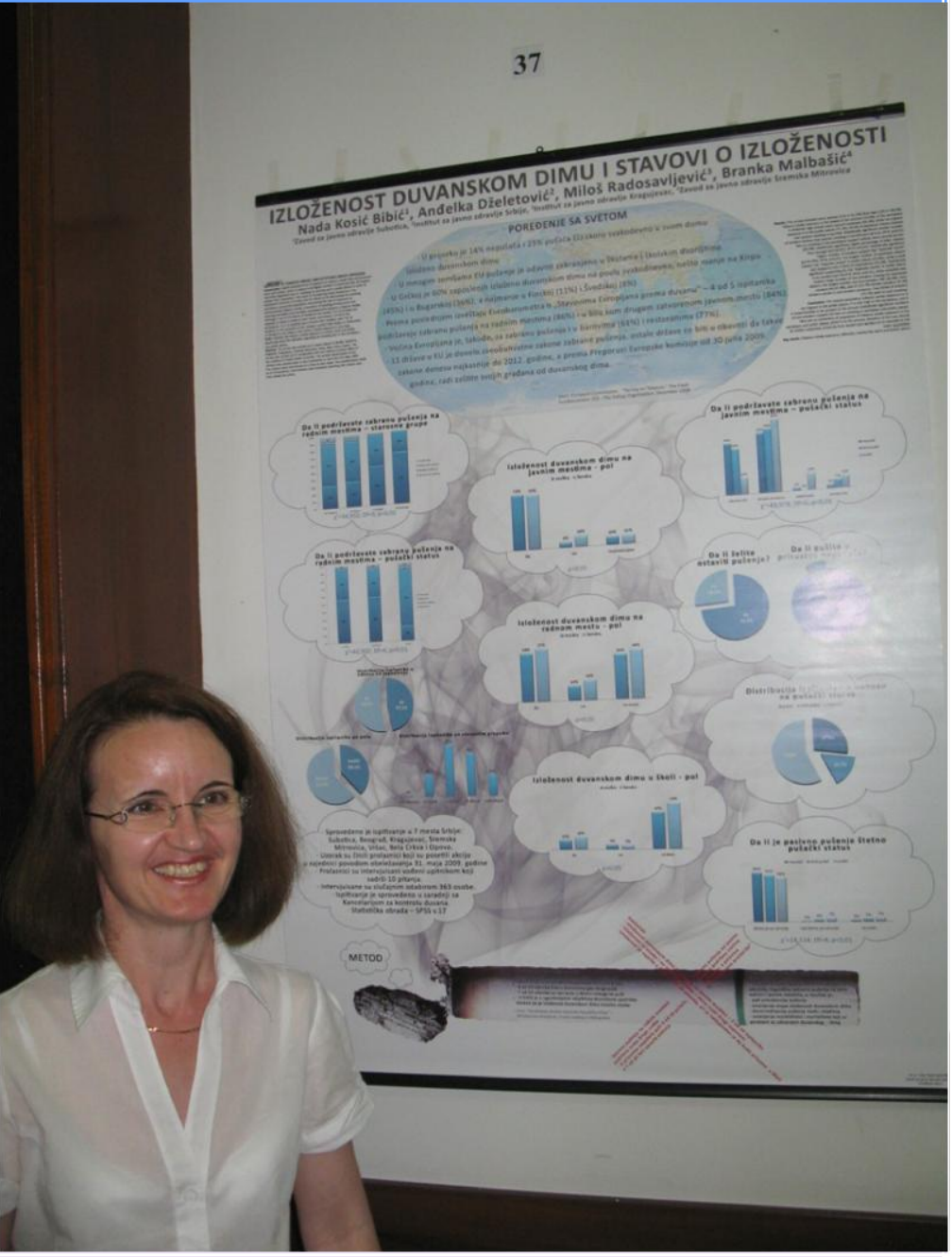
Bonaventura, Henkens, Weaver, Henrich, Pearce, Alayash and Crumbliss. (**2006**) *unpublished.*
Taboy, Bonaventura and Crumbliss. (**2002**) *Meth. In Enzymology* 353, 187-209.
Reiss. (**2001**) *Chem. Rev.* 101, 2797-2919.

Wow!

Kako napraviti dobar poster?

9. Poster treba da odražava tvoju osobenost – poster je drugačiji medijum koji treba da predstavlja deo tvoje osobenosti, dok je pisani stručni rad konvencionalno bezličan. Često stručna saradnja započne iz posve ličnih razloga, a ne zbog stručnih.

Interesantno i nagrađeno!



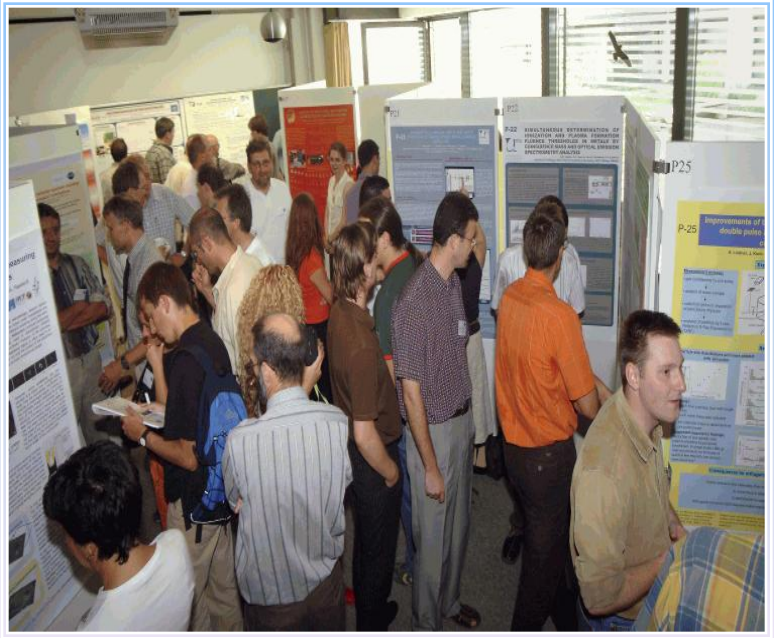
Evo još nagrađenih!

Kako napraviti dobar poster?

10. Uticaj postera se dešava i tokom i posle poster sesije – budi deo gužve ispred postera. Ne gnjavi "posmatrača" daj mu vremena i prostora da sam "putuje" kroz tvoj poster, ali ne dozvoli da čeka tvoju pažnju. Napravi kontakt očima sa "posmatračima".

Kako napraviti dobar poster?

Potrudi se da te ponovo kontaktiraju. Pripremi kopiju postera, hendaut ili standardnu verziju na A4, ili URL adresu online, svoju e-mail, telefon. Prati one koji su bili – traži da ti se potpišu. Posetioci lakše pamte tebe nego kontakt sa tvog postera. Učini da te zapamte – budi predusretljiv, otvoren, radoznao, samopouzdan ali nikako arogantan i agresivan, nametljiv. Ako pitaju odgovaraj jednostavno i otvoreno o svom radu.



Budi deo gužve!

U kom programu napraviti dobar poster?

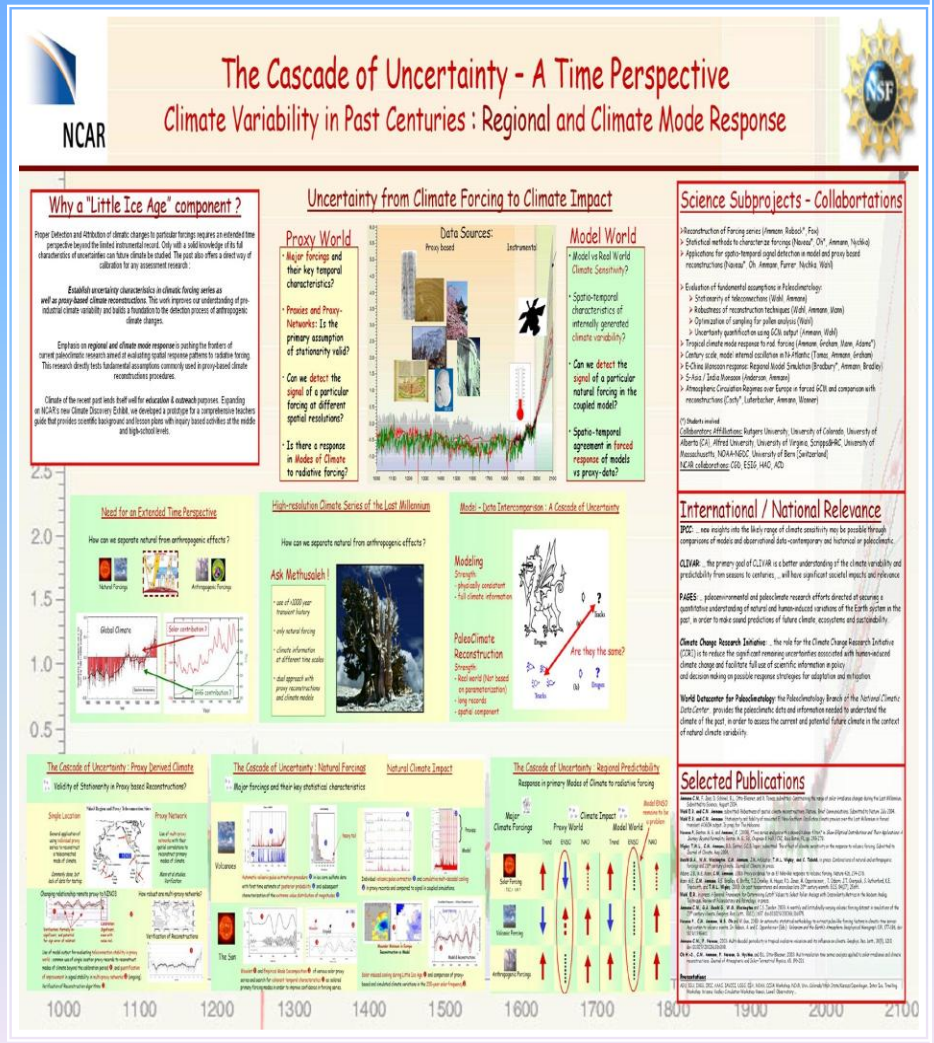
Računarski programi

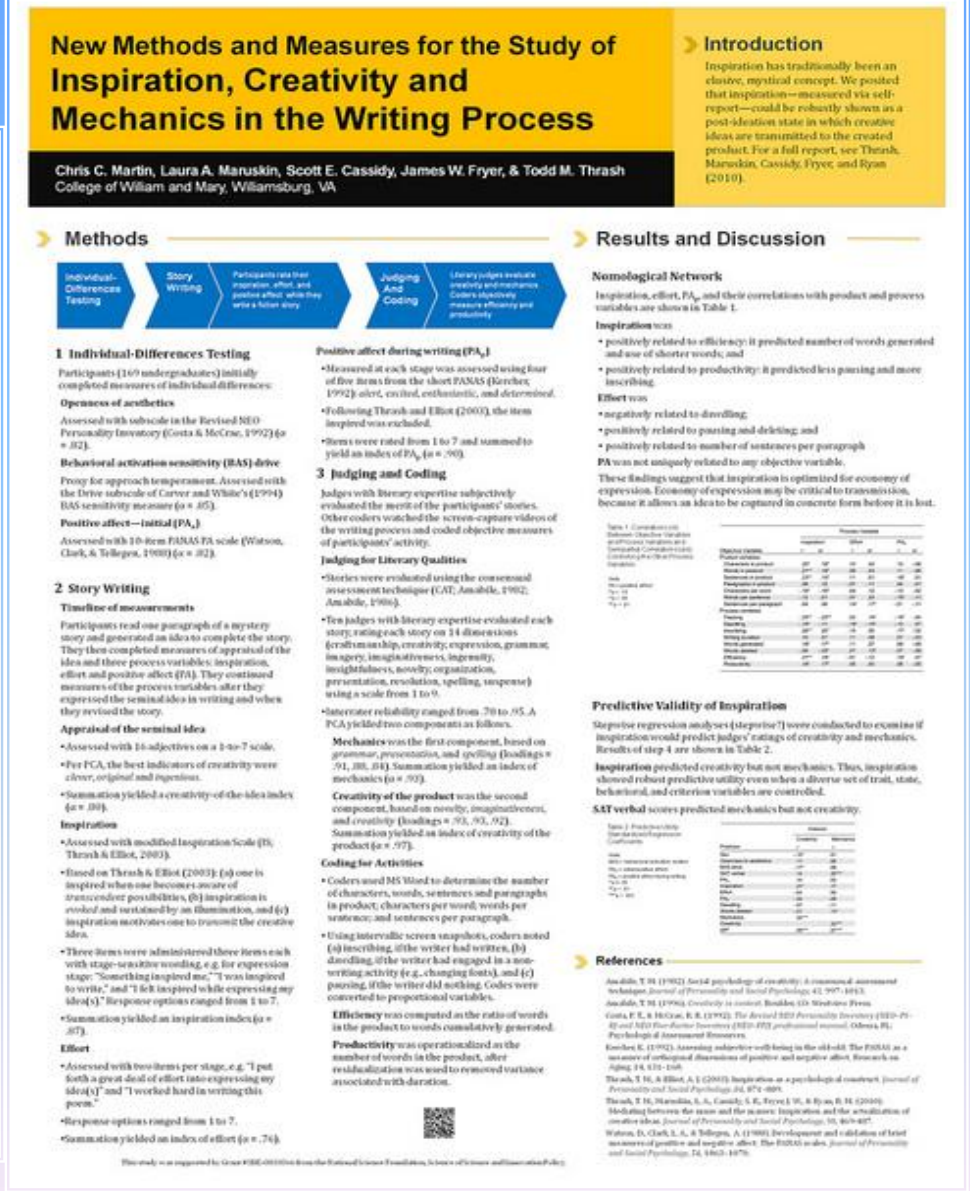
- Za dizajniranje velikih postera – page layout aplikacije QuarkXPress i InDesign
- Grafički paketi - Illustrator, CorelDRAW, Freehand, Canvas, Omnigraffle i Inkscape
- Softverski paket PosterGenius
- PowerPoint nudi bogatu ponudu Templates

- Ako ste zainteresovani da dobijete komentare za svoj poster pošaljite ga na "Pimp My Poster"

Koje su najčešće greške?

Staviti sve na poster





New Methods and Measures for the Study of Inspiration, Creativity and Mechanics in the Writing Process

Chris C. Martin, Laura A. Maruskin, Scott E. Cassidy, James W. Fryer, & Todd M. Thrash
College of William and Mary, Williamsburg, VA

Introduction

Inspiration has traditionally been an elusive, mystical concept. We posited that inspiration—measured via self-report—could be robustly shown as a post-ideation state in which creative ideas are transmitted to the created product. For a full report, see Thrash, Maruskin, Cassidy, Fryer, and Ryan (2010).

Methods

Individual-Difference Testing → Story Writing → Judging And Coding

1 Individual-Difference Testing

Participants (169 undergraduates) initially completed measures of individual differences:

Openness of aesthetics

Assessed with subscale in the Revised NEO Personality Inventory (Costa & McCrae, 1992) (α = .82).

Behavioral activation sensitivity (BAS) drive

Proxy for approach temperament. Assessed with the Drive subscale of Carver and White's (1994) BAS sensitivity measure (α = .85).

Positive affect—initial (PA_i)

Assessed with 10-item PANAS PA scale (Watson, Clark, & Tellegen, 1988) (α = .82).

2 Story Writing

Timeline of measurements

Participants read one paragraph of a mystery story and generated an idea to complete the story. They then completed measures of appraisal of the idea and three process variables: inspiration, effort and positive affect (PA). They continued measures of the process variables after they expressed the seminal idea in writing and when they revised the story.

Appraisal of the seminal idea

- Assessed with 16 adjectives on a 1-to-7 scale.
- For PCA, the best indicators of creativity were *clever, original* and *ingenious*.
- Summation yielded a creativity-of-the-idea index (α = .88).

Inspiration

- Assessed with modified Inspiration Scale (IS; Thrash & Elliot, 2003).
- Based on Thrash & Elliot (2003): (a) one is inspired when one becomes aware of transcendent possibilities, (b) inspiration is evoked and sustained by an illumination, and (c) inspiration motivates one to transmit the creative idea.
- Three items were administered three times each with stage-sensitive wording, e.g. for expression stage: "Something inspired me," "I was inspired to write," and "I felt inspired while expressing my idea(s)." Response options ranged from 1 to 7.
- Summation yielded an inspiration index (α = .87).

Effort

- Assessed with two items per stage, e.g. "I put forth a great deal of effort into expressing my idea(s)" and "I worked hard in writing this poem."
- Response options ranged from 1 to 7.
- Summation yielded an index of effort (α = .74).

Positive affect during writing (PA_w)

- Measured at each stage was assessed using four of five items from the short PANAS (Kercher, 1992): *alert, excited, enthusiastic,* and *determined*.
- Following Thrash and Elliot (2003), the item *inspired* was excluded.
- Items were rated from 1 to 7 and summed to yield an index of PA_w (α = .90).

3 Judging and Coding

Judges with literary expertise subjectively evaluated the merit of the participants' stories. Other coders watched the screen-capture videos of the writing process and coded objective measures of participants' activity.

Judging for Literary Qualities

- Stories were evaluated using the consensual assessment technique (CAT; Amabile, 1982; Amabile, 1996).
- Ten judges with literary expertise evaluated each story, rating each story on 14 dimensions (craftsmanship, creativity, expression, grammar, imagery, imaginativeness, ingenuity, insightfulness, novelty, organization, presentation, resolution, spelling, suspense) using a scale from 1 to 9.
- Interrater reliability ranged from .70 to .95. A PCA yielded two components as follows.

Mechanics was the first component, based on *grammar, presentation,* and *spelling* (loadings = .91, .88, .84). Summation yielded an index of mechanics (α = .93).

Creativity of the product was the second component, based on *novelty, imaginativeness,* and *creativity* (loadings = .93, .93, .92). Summation yielded an index of creativity of the product (α = .97).

Coding for Activities

- Coders used MS Word to determine the number of characters, words, sentences and paragraphs in product; characters per word; words per sentence; and sentences per paragraph.
- Using intervallic screen snapshots, coders noted (a) inscribing, if the writer had written, (b) dawdling, if the writer had engaged in a non-writing activity (e.g., changing fonts), and (c) pausing, if the writer did nothing. Codes were converted to proportional variables.

Efficiency was computed as the ratio of words in the product to words cumulatively generated.

Productivity was operationalized as the number of words in the product, after residualization was used to removed variance associated with duration.

Results and Discussion

Nomological Network

Inspiration, effort, PA_w, and their correlations with product and process variables are shown in Table 1.

Inspiration was

- positively related to efficiency: it predicted number of words generated and use of shorter words; and
- positively related to productivity: it predicted less pausing and more inscribing.

Effort was

- negatively related to dawdling;
- positively related to pausing and drifting; and
- positively related to number of sentences per paragraph

PA was not uniquely related to any objective variable.

These findings suggest that inspiration is optimized for economy of expression. Economy of expression may be critical to transmission, because it allows an idea to be captured in concrete form before it is lost.

Predictive Validity of Inspiration

Stepwise regression analyses (stepwise?) were conducted to examine if inspiration would predict judges' ratings of creativity and mechanics. Results of step 4 are shown in Table 2.

Inspiration predicted creativity but not mechanics. Thus, inspiration showed robust predictive utility even when a diverse set of trait, state, behavioral, and criterion variables are controlled.

SAT verbal scores predicted mechanics but not creativity.

References

Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology, 43*, 997–1013.

Amabile, T. M. (1996). *Creativity in context*. Boulder, CO: Westview Press.

Costa, P. T., & McCrae, R. R. (1992). *The Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Kercher, K. (1992). Assessing subjective well-being in the old-old: The PANAS as a measure of orthogonal dimensions of positive and negative affect. *Research on Aging, 14*, 131–168.

Thrash, T. M., & Elliot, A. J. (2003). Inspiration as a psychological construct. *Journal of Personality and Social Psychology, 84*, 871–889.

Thrash, T. M., Maruskin, L. A., Cassidy, S. E., Fryer, J. W., & Ryan, R. M. (2010). Mediating between the muse and the acolyte: Inspiration and the actualization of creative ideas. *Journal of Personality and Social Psychology, 99*, 469–487.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Nije fer, toliko godina rada na ovaj mali papir! Uf! Dok pročitam ima da zaspem!

Koje su najčešće greške?

Loš izbor boja, nečitljivost

Svetla pozadina daje više mogućnosti!

2-3 boje, ne više!

Plavo na crvenom izgleda zamućeno ljudskom oku!

Žuta ili bela se teško čitaju!

Crveno na plavom izgleda zamućeno ljudskom oku!

Koristi boju da bi poboljšao čitljivost!
Tamna slova na svetloj pozadini su dobar izbor!

Koje su najčešće greške?

Loš izbor dizajna

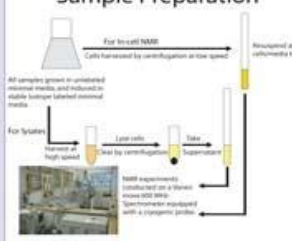
Multidimensional NMR Spectroscopy of Proteins in Living Cells

Leonard D. Spicer,[1] Patrick Reardon,[2] Anne Marie Augustus[2]
[1]Department of Biochemistry and Department of Radiology
[2]Department of Biochemistry
Duke University Medical Center
Department of Biochemistry
Box 3711 DUMC
Durham, NC 27710

Abstract

We have successfully implemented a suite of 3D NMR spectroscopy experiments which provide sufficient data to assign the full backbone resonances of the protein GB1 in live E.coli cells. This represents a unique demonstration that proteins can be studied with detailed NMR characterization in a living cell where the crowded and complex environment likely influences their behavior. The purified and homogeneous samples of proteins and other macromolecules normally studied in structural biology may not reveal this functionally important information. Experiments of this type are essential for de novo assignment of proteins undergoing structural changes in response to perturbing influences such as intermolecular interactions. In-cell multidimensional NMR experiments depend critically on both recent advances in NMR probe performance at high magnetic fields and NMR techniques which considerably reduce the time needed for data acquisition. For the protein GB1, the data were collected using fast projection reconstruction (PR) NMR methods and cryogenically cooled probes on the 600 MHz and 800 MHz NMR spectrometers in the Duke NMR Spectroscopy Center. We have also studied the behavior of the methionine repressor protein, MetJ, using this strategy. Our data suggest that MetJ is primarily associated nonspecifically with DNA in intact cells. This indicates that the repressor likely undergoes linear diffusion along DNA in finding its specific methox recognition sequences rather than the slower random 3D diffusion associated with free cytoplasmic proteins. Support for the NMR Center and the instrumentation used in this research was provided by grants from the NIH and NSF.

Sample Preparation



Model Systems

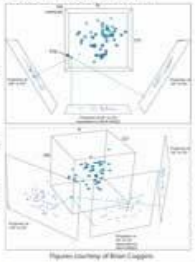
GB1
GB1 is the 56 residue IgG binding domain from Streptococus protein G.

MetJ (shown on DNA)
MetJ is a 24 kDa dimeric repressor protein that regulates the methionine biosynthesis pathway in E.coli.

HCA II
Human Carbonic Anhydrase II is a 29 kDa monomeric enzyme that catalyzes the formation of bicarbonate.

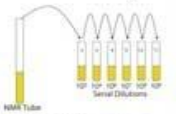
Projection Reconstruction

PR-NMR is a reduced dimensionality technique in which data are normally collected in the appropriate orthogonal planes as well as in a series of radially projected planes through the multi-dimensional space.
A projection reconstruction method is then used to combine the 2D data sets into a higher dimensional construct which produces a true multi-dimensional spectrum as illustrated. Since the data are collected in only two dimensions, considerable time is saved in the experiment.



Figures courtesy of Brian Coggins

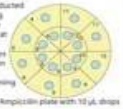
Cell Viability



NMR Tube

Serial Dilutions

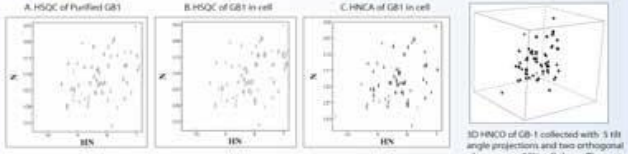
Viability studies were conducted using a micro-drop plating assay. 10 µL aliquots were taken from the NMR tube at various time points, and serially diluted. 10 µL drops are placed on an ampicillin LB agar plate, incubated overnight, and colony forming units counted.



Ampicillin plate with 10 µL drops

GB1

Assignment Spectra

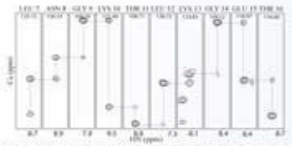


2D plots from (A.) purified GB1, (B.) GB1 in cell, and(C.) a 3D HNCA spectrum of GB-1in cell projected along Ca axis onto HN/N plane. HSQC experiments were collected in ~7 minutes. HNCA was collected in ~2 hrs. In cell spectra were acquired on a ~20% cell slurry. Axis units are ppm.

3D HNCO

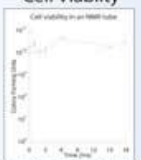
3D HNCO of GB-1 collected with .5 kHz angle projections and two orthogonal planes on a ~20% cell slurry. The experiment was completed in ~1hr.

Magnetization Transfer for an HNCA experiment



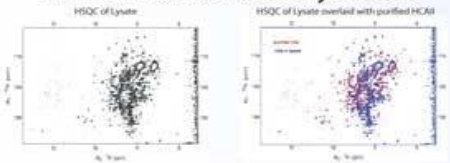
HNCA strip plot showing scalar couplings between HN and Ca carbons in the i and i-1 positions for residues 7-16. The y-axis is ^{13}C chemical shift. The ^{15}N chemical shift for each plane is noted at the top of the strip. In addition an HA/CA/NH data set was also required to complete the assignment. The HA/CA/NH experiment took ~ 3hrs to acquire.

Cell Viablity



Cells expressing GB1 remain viable in the NMR tube during the course of our experiments. The first three hours of the data are the average of 2 experiments, while the later time points result from one experiment. Standard deviations are shown for the first three hours.

Human Carbonic Anhydrase II



HSQC of Lysate

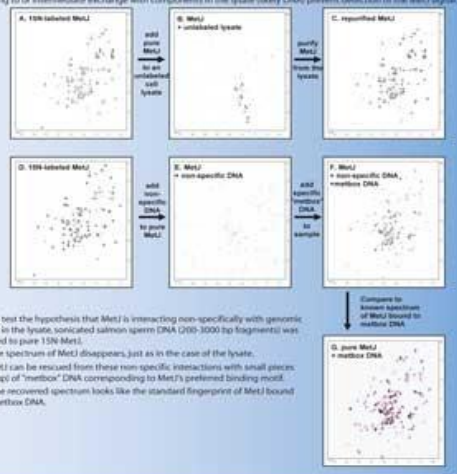
HSQC of Lysate overlaid with purified HCAII

Some HCA II resonances can be observed in a whole cell lysate. The above spectra were acquired on a whole cell lysate of a 500 ml culture. The aquisition time was ~ 2 hours.

Human Carbonic Anhydrase II is generally considered a cytoplasmic enzyme. However, earlier biochemical data have indicated that HCA II may be membrane associated. Association with the membrane could render the protein undetectable by in-cell NMR, due to the increase in rotational correlation time or intermediate exchange. The weak signals detected in this experiment suggest that this carbonic anhydrase isoform maintains some level of membrane association.

MetJ

The characteristic HSQC spectrum for MetJ was not visible in whole or lysed cells over-expressing MetJ.
A. Therefore, pure 15N-labeled MetJ was used in order to ensure there was enough well-folded, well-behaved material for NMR analysis, as well as to eliminate the non-specific background labelling in the cells.
B. When pure 15N-labeled MetJ was added to an unlabeled cell lysate, the spectrum completely changed, and the MetJ fingerprint was lost.
C. The fact that MetJ could be re-purified from this lysate, however, shows that MetJ was not being degraded. Instead, binding to or intermediate exchange with components in the lysate (likely DNA) prevent detection of the MetJ signal.



D. To test the hypothesis that MetJ is interacting non-specifically with genomic DNA in the lysate, sonicated salmon sperm DNA (200-3000 bp fragments) was added to pure 15N-MetJ.
E. The spectrum of MetJ disappears, just as in the case of the lysate.
F. MetJ can be rescued from these non-specific interactions with small pieces (20 bp) of "metbox" DNA corresponding to MetJ's preferred binding motif.
G. The recovered spectrum looks like the standard fingerprint of MetJ bound to metbox DNA.

Summary

In summary, we have demonstrated the de novo assignment of the small protein GB1 from 3D data collected on whole, living E.coli cells. This was enabled by new NMR experiments incorporating fast projection reconstruction data acquisition and the enhanced sensitivity of cryogenic probes. The implementation of heteronuclear 3D data aquisition in living cells opens a route to previously inaccessible studies of proteins in the biological milieu inside the cell. Furthermore, we have demonstrated how in-cell NMR can yield new insights into the behavior of proteins in their natural environment. In the case of MetJ, the protein may be associated with DNA non-specifically, allowing it to undergo linear diffusion to locate its specific cognate binding site. For HCA II, our data support biochemical results that suggest association with membranes and/or membrane-bound proteins.

References

1. Serber, Z., Dotsch, V. (2001) Biochemistry 40, 14317-14323.
2. Serber, Z., Corsini, L., Durst, F. & Dotsch, V. (2005) Methods Enzymol 394, 17-41.
3. Wieruszeski, J.-M., Bohin, A., Bohin, J.-P., Lippens, G. (2001) J Magn Reson 151, 118-123.
4. Hubbard, J. A., MacLachlan L.K., King G. W., Jones J. J., Fosberry A.P. (2003) Mol Microbiol 49, 1191-1200.
5. Dedmon, M. M., Patel, C. N., Young, G. B. & Pielak, G. J. (2002) Proc Natl Acad Sci U S A 99, 12681-4.
6. Freeman, R. & Kupce, E. (2004) Concepts Magn Reson 23A, 63-75.
7. Kupce, E. & Freeman, R. (2003) J Biomol NMR 27, 383-7.
8. Szyperski, T., Wider, G., Bushweller, J. H. & Wüthrich, K. (1993) J Am Chem Soc 115, 9307-9306.
9. Kim, S. & Szyperski, T. (2003) J Am Chem Soc 125, 1385-1393.
10. Coggins, B. E., Venters, R. A. & Zhou, P. (2004) J Am Chem Soc 126, 1000-1.
11. Parkes, J. L. & Coleman, P. S. (1989) Arch Biochem Biophys 275, 459-68.
12. Lieberman, D. M. & Reithmeier, R. A. (1988) J Biol Chem 263, 10022-8.

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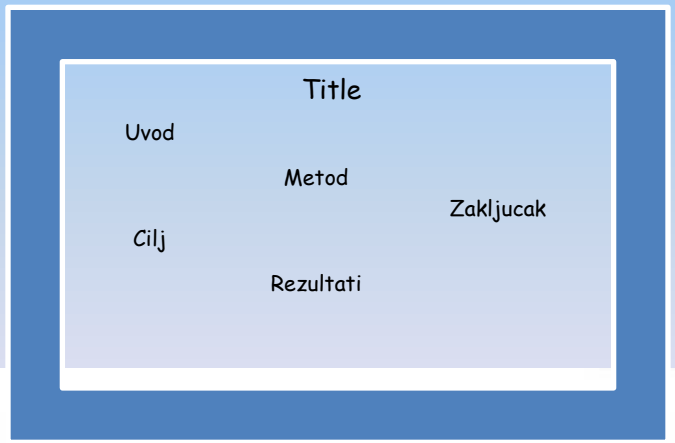
"Ugly layout print ugly poster"

Daj nešto na brzinu, u cajtnotu sam!

Poster – standardi i pravila

Na međunarodnom nivou definisana su stroga pravila za postere:

- Veličina postera i orjentacija – do 48"x36" (122x91cm) A_0 118x84cm
- Priprema postera – veličina slova (32 point za naslove, 24 point za tekst) koja omogućuje čitljivost sa 6 stopa udaljenosti, sastavni elementi (uvod, metod, rezultati, zaključak), background-izgled i dizajn, grafika/ slike



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Umesto zaključka

Ček lista preporuka koje treba zapamtiti za kraj:

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Na vreme planiraj, pripremi i štampaj poster!

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A Vi?

Hvala na ukazanom poverenju!