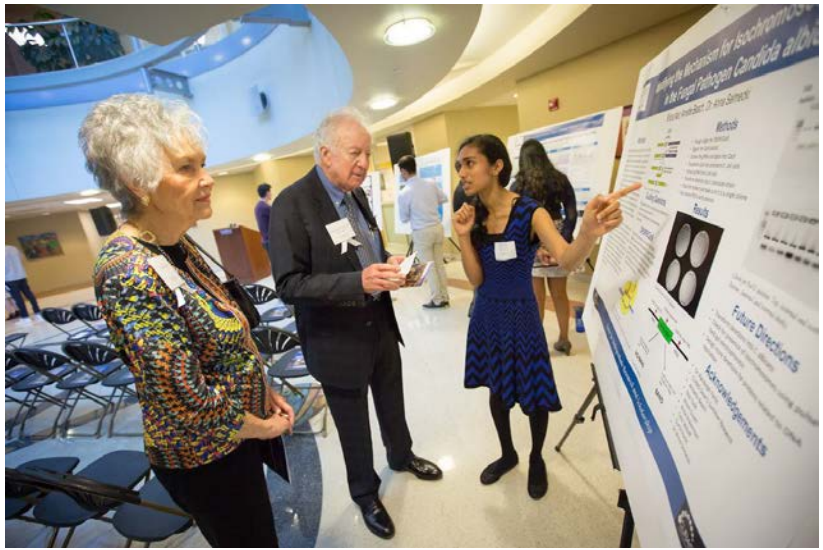
MASTERING THE ART OF THE RESEARCH POSTER

Presented by Betni Kalk and Alex Myers from the JMC's Media Department

ABOUT RESEARCH POSTERS

- Research posters summarize information or research concisely and attractively to help publicize it and generate discussion.



- The poster is usually a mixture of a brief text mixed with tables, graphs, pictures, and other presentation formats.

- At a conference, the researcher stands by the poster display while other participants can come and view the presentation and interact with the author.

TEXT

- Title is short and draws interest
- Word count of about 300 to 800 words
- Text is clear and to the point
- Use of bullets, numbering, and head lines make it easy to read
- Includes acknowledgments, your name and institutional affiliation
- Research posters don’t usually need Abstracts, this helps reduce the amount of text on the poster

HIERARCHY

- Poster Title should be the largest text on Page and legible from a distance of at least 5 feet to catch the attention of people passing by. Many advisors suggest that the title should be legible at 10 ft!

- Headers for Sections are smaller than the title, but larger than body copy

- Body copy can be small, but should be legible at a distance of 1.5 feet or more

LEGIBILITY & FONTS

- Choose Legible Fonts – Sans Serif are best for smaller text size. Serifs are the small lines at the ends of characters. A couple familiar Sans serif fonts are Arial and Helvetica but there are lots more!
- Keeping to one simple font is usually best but you can use a different font for Title or Headers. However, never use more than two fonts per poster. There are usually plenty of variations within a font family such as bold and italics that one font should suffice!
- Left Paragraph Alignment usually is best for legibility of body copy. The ragged ends of centered text can fatigue the eye when there is lots of text.
- Info should flow from left to right & from top to bottom
- Avoid Underlining – rely on value changes, scale, italics and bolding
- Try not to exceed column widths of 70-80 characters.
- Consider using different font weights rather than multiple fonts.

CONTRAST

Is there enough Contrast? Contrast gets the viewers attention and separates groupings of text or images.

Is there too much contrast in some areas that pull attention to the wrong areas?

Contrast is easily created by changing one or more of these:

- Scale
- Weight (like a thick or thin border)
- Color: *Hue and/or Value*
- Texture

SPACE

No one likes to feel claustrophobic - your poster should breathe easily too!

- Make sure there is space around your groupings of text and/or columns
- Leave space at the edges of the poster.
- Spacings between groups and elements should be consistent and proportional.

COLORS

Choosing a color palette makes designing a bit easier. Most software have themes that can dictate colors.

Color Palette + accent color for emphasis

For example: **navy, turquoise** and a **very light blue** with accent of **orange**

Creighton has its own color palette that you can use to keep consistent with Creighton brand.

http://www.creighton.edu/fileadmin/UCOM/brand_guidelines.pdf

BALANCE / TYPE OF COMPOSITION

- Asymmetrical is usually more interesting
- Symmetrical is very formal and also difficult to maintain if there variation in content
- Often mixing the two will provide stability and an anomaly that makes the composition much more interesting.

REPETITION

For consistency, repetition is necessary. Items such as fonts, sizes of text, borders on columns – these are mostly going to be repeated.

However, too much of the same thing can get boring so some changes are sometimes needed.

Subtle changes such as background color changes or text color changes or **bolding**, CAPITALIZATION, drop shadows and *Italics* are good amount of variety without drastically changing the design system you have created.

BACKGROUNDS

- Backgrounds of columns of text should usually be a little different than page color so that areas are defined or separated. Both the column backgrounds and page color should be light values such as white or tints – such as cream or light pastel blue
- Consider using subtle gradients.
- Patterns and textures can also be used if very subtle and small. Bold items will detract from text or make it illegible.
- For backgrounds of Title Bars – These could be dark such as black, navy, dark red, violet, forest green. However, the text on top these backgrounds must be white or light
- Column headers might also have background colors – these could be either light or dark but the text on top then has to be highly legible. For a example of what not to do, white text on yellow does NOT show up.

GROUPINGS/COLUMNS

For text boxes – typically keep them the same width if they are in a column together.

GRAPHICS

- Adding borders to these is NOT recommend
- Adding a research-related graphic near the title could be good
- Logos should be placed at the bottom of the poster unless otherwise required

PHOTOGRAPHS/GRAPHICS

- Imagery goes a long way in getting a viewers attention and to help explain your research. It is recommended that you include at least one photo or graphic.

- Too many graphics can also overwhelm a poster, choose what is necessary.

PHOTOGRAPHS

- Photos will usually look better with a thin border of a medium to dark color, especially if the image has some areas of white that will fade into background.

- It is best if the aesthetic is the same - for example, either all bright colors or all desaturated. But it is usually ok to mix color photos with black & whites if the contrast is similar

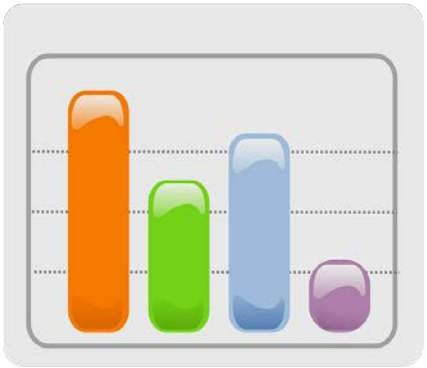
GRAPHICS

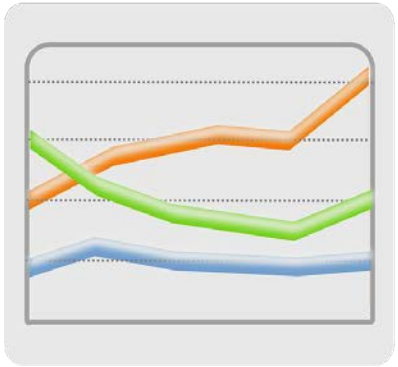
- Adding a research-related graphic near the title could be good but isn’t necessary

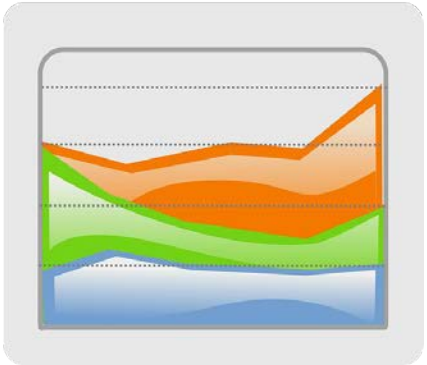
- Adding borders to these is usually not recommended unless you are consistently doing so but if you do, then leave white space (or background color) around it

- Be consistent in the aesthetic concerning effects such as highlights or shadows, colors and line weight (thickness of lines)

GRAPHICS







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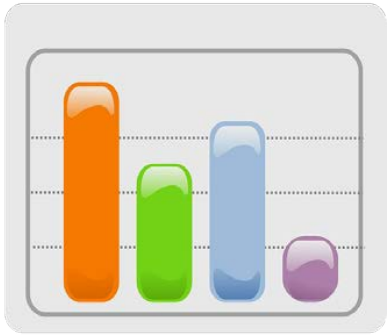
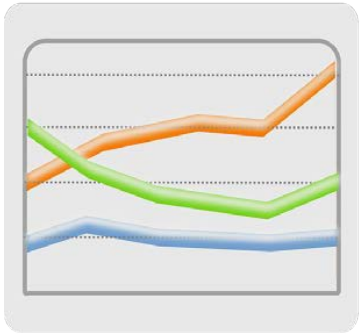
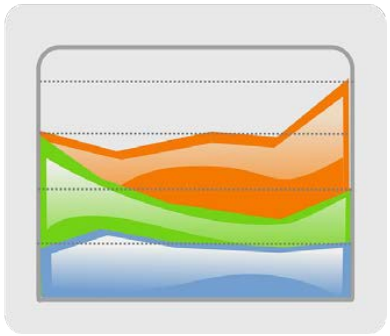
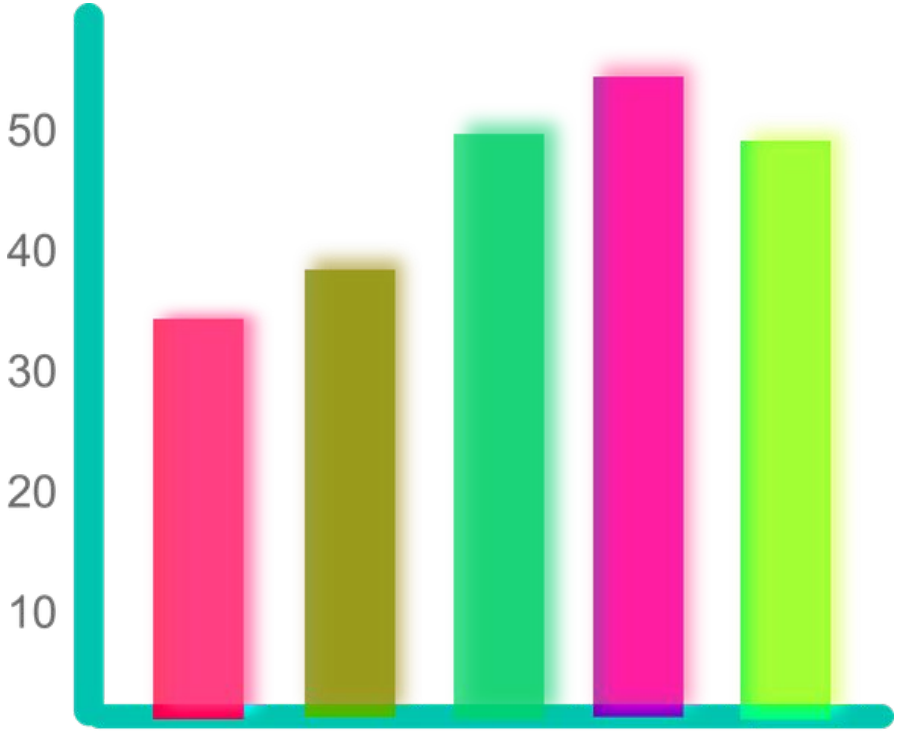








This grouping does not look good next to the other graph due to different aesthetics and color

LOGOS

Its best to group them together in one area and with same heights or widths depending on their orientation. Logos should be placed at the bottom of the poster unless otherwise required to not distract from other graphics or the title.

There are Creighton Logos for you to use. Creighton has brand guides that include colors to consider using as well as rules for how to use/not use the logos.

Creighton University
http://www.creighton.edu/fileadmin/UCOM/brand_guidelines.pdf

http://www.creighton.edu/ucom/resourcesguidelines/brandstandards/

http://www.creighton.edu/fileadmin/user/UCOM/logos/Creighton_LogoGuidelines.pdf

CREATE AREAS OF EMPHASIS

- Breaking out of the grid / Changing alignment of groupings of text or image
- Inverting colors
- Borders
- Background colors
- For Text - Subtle changes such as background color changes or text color changes or **bolding**, CAPITALIZATION, drop shadows and *Italics* are good amount of variety without drastically changing the design system you have created.

ALIGNMENT

Using a grid and/or guides makes designing easier most of the time because of the rules for you to line up groupings of text and graphics. Humans like pattern and grids provide a sense of order and predictability.

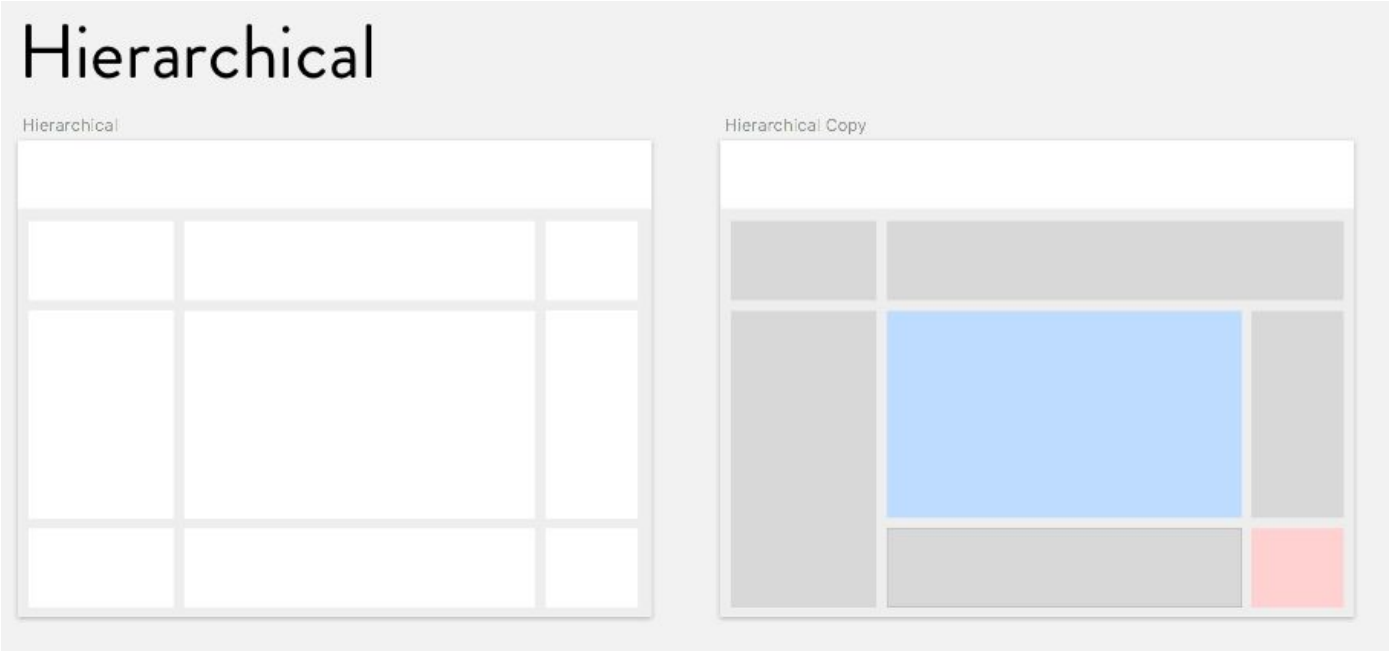
- Guides can be simple or complex.
- Their sections can be a basic grid or an asymmetrical grid of different proportions.
- They are typically straight lines but can also be diagonal or curved!
- But you can also BREAK the rules to create an interesting design.
- Consider dividing your overall poster into thirds.

EXAMPLE GRID SYSTEMS

Proportions of each area correspond to the function of that area in organizing content.

A quiet tension between the three main areas.

This is always a more spontaneous approach.



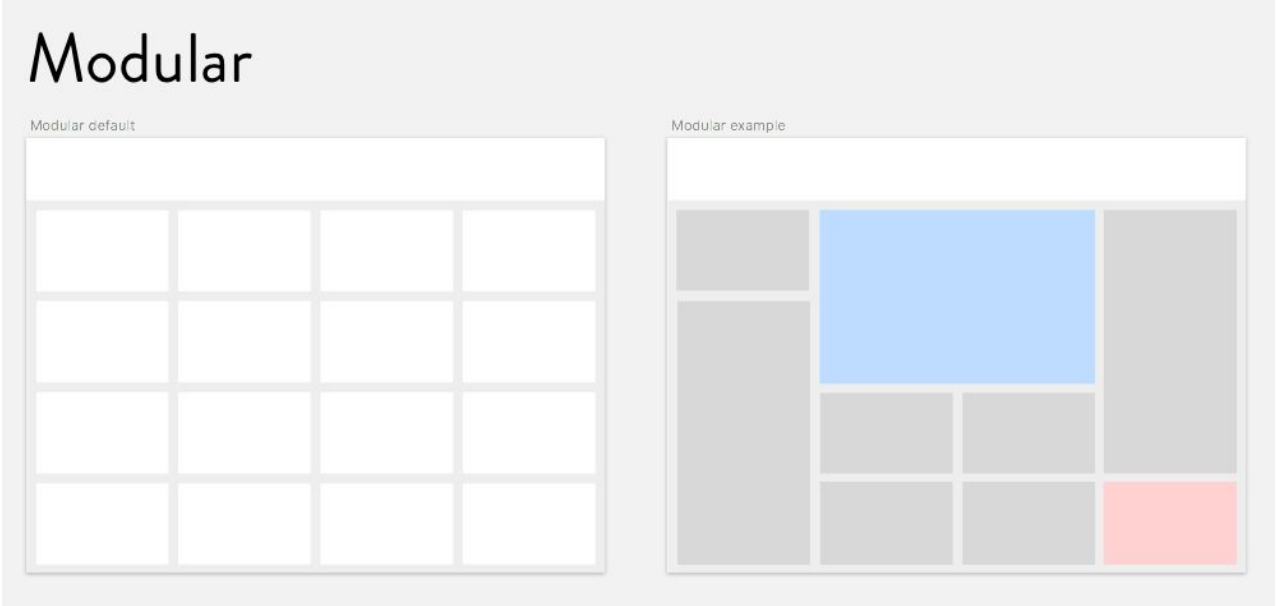
EXAMPLE GRID SYSTEMS

Creates a matrix of cells that can be altered and adjusted to fit any need.

Simultaneously a simple and complex grid system.

One of the most versatile.

All elements will be sized proportionately to each other and will maintain a visual unity.



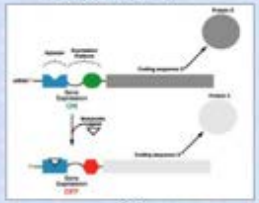
Kinetic investigation of natural products and extracts for potential riboswitch ligands

Heidi Klem[1], Samantha Stoupa[1], Adam Kotula[1], Shelby Lennon[1], and Juliane K. Soukup[1,2]
[1]Department of Chemistry, Creighton University, 2500 California Plaza, Omaha, NE 68178
[2]Department of Biomedical Sciences, Creighton University School of Medicine, 2500 California Plaza, Omaha, NE 68178

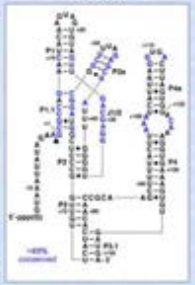
Abstract

Riboswitches are elements within the noncoding regions of mRNAs that directly bind to cellular metabolites and modulate gene expression. glmS is a catalytic riboswitch, or ribozyme, found in gram-positive bacteria. This ribozyme regulates the expression of Glucosamine synthase, the enzyme responsible for production of Glucosamine-6- phosphate (GlcN6P). GlmS will initiate self-cleavage once it binds to its natural ligand, GlcN6P, via negative feedback inhibition. Cleavage results in degradation of the RNA and down regulation of gene expression. This current project investigates a series of natural products and extracts in search of novel riboswitch ligands or competitive inhibitors. Kinetic analyses are performed to identify potential activators and inhibitors of glmS ribozyme self-cleavage. Multiple natural extracts have been observed to bind with glmS and produce results comparable to that of the GlcN6P binding. An inhibitor has yet to be discovered. Future results of this project will determine which extracts should undergo additional characterization. The ability to affectively target bacterial Riboswitches offers hope to oppose antibiotic resistance.

Riboswitches bind specifically to a ligand, resulting in a structural change that affects gene expression



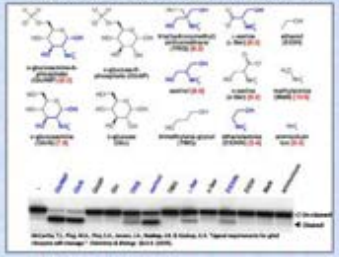
Glucosamine 6-phosphate ribozyme



glmS

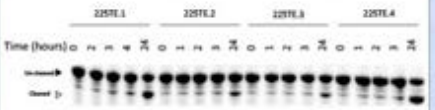
- Only riboswitch that is also a ribozyme
- Only ribozyme that utilizes a coenzyme in mechanism of catalysis
- Glucosamine-6-phosphate (GlcN6P)-dependent self-cleaving ribozyme

Ligand specificity - importance of amine functionality



Natural products/extracts as ligands

Self-cleavage results from experiments using natural products as glmS ligands



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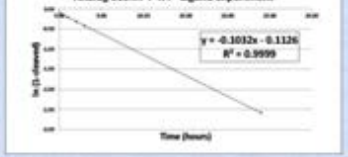
First order rate constant determination
Analog 809MPY 4.4 - Ligand experiment



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Funding / Acknowledgements

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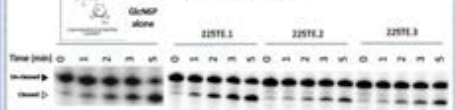
Self-cleavage results from experiment using natural products as competitive inhibitors of glmS self-cleavage



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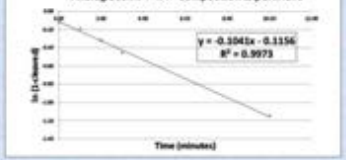

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377 BMS 3.7	0.090	809 MPY 4.4	0.11
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Future Studies

- Continued assessment of the ligand and/or competitive inhibition capabilities of various natural extracts provided by Professor König
- Determination of extract compositions in samples of interest

BEFORE

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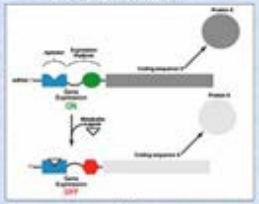

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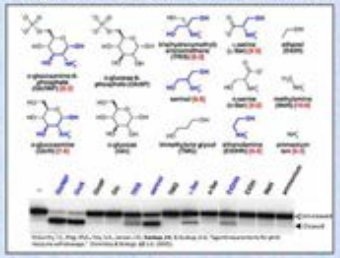

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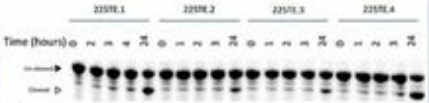

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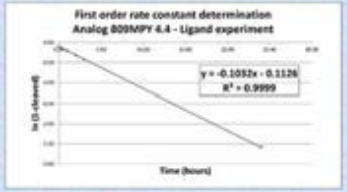

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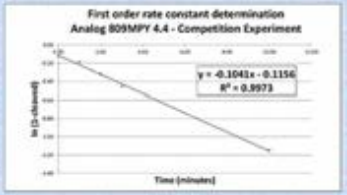

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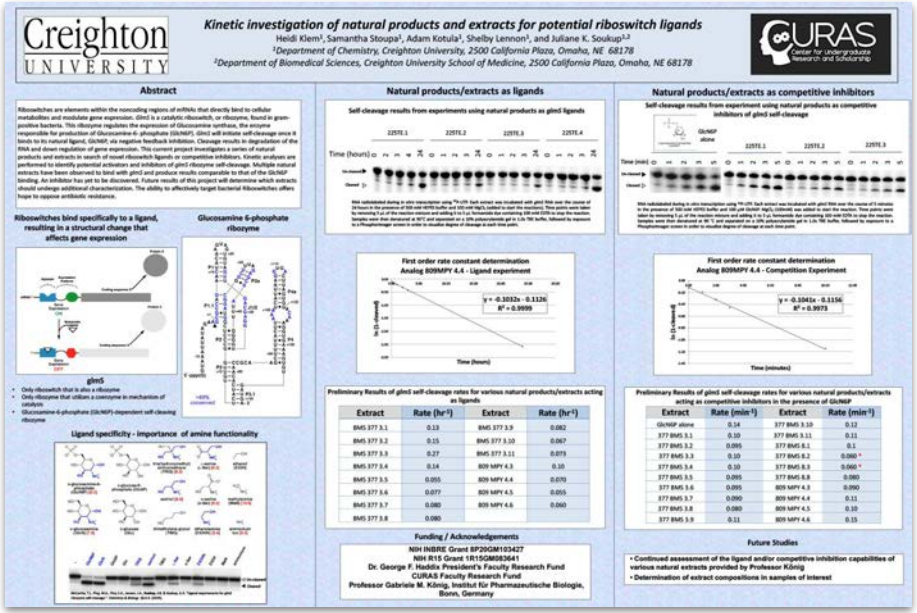
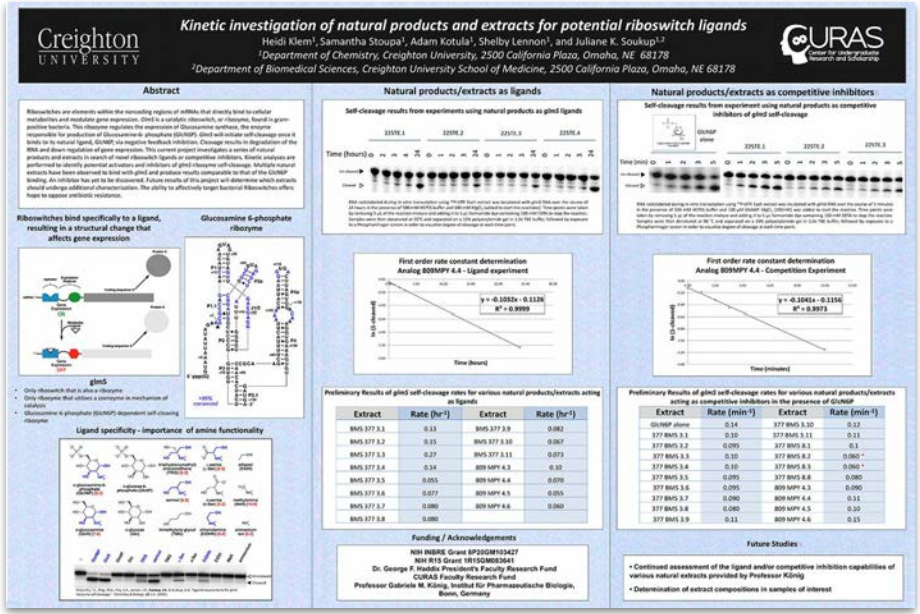
AFTER





BEFORE > AFTER

Studies Toward the Preparation of N-*α*,N-*im*-bis(butyloxycarbonyl)L-4-benzyl-L-histidine.

Julie Nguyen[‡†], D. David Smith[†], and Martin Hulce[‡].
Departments of [†]Biomedical Sciences and [‡]Chemistry
Creighton University, 2500 California Plaza, Omaha, NE 68178

Abstract

Benzyl-L-histidine is a component of N-α-benzyl-[benzyl-L-histidine[10]] calcitonin gene-related peptide (8-37) ([Bn-β-His(Bn)10]-CGRP(8-37)), a potent antagonist of CGRP receptors. To confirm the location of the benzyl group on His[10], N-α-*butyloxycarbonyl*-N-*im*-butyloxycarbonyl-4-benzyl-L-histidine [Boc-His(Bn)(Boc)-OH] was prepared by methods previously used for the preparation of Boc-His(Boc)-OH, employing di-tert-butyl dicarbonate and triethylamine (Figure). Boc-His(Bn)(Boc)-OH was isolated as an intractable oil containing minor impurities revealed by thin layer chromatography. All attempts at crystallization failed. Boc-His(Bn)(Boc)-OH was isolated as a colorless oil after gravity and wet flash chromatography on silica but in low recoveries of 35% and 67% respectively. Conversion to the dicyclohexylamine and cyclohexylamine salts produced viscous semisolids that proved difficult to work with. In contrast, the *tert*-butylamine salt, Boc-His(Bn)(Boc)-OH·TBA, was isolated as a white, free-flowing powder in an isolated yield of 81% (Figure). In summary, Boc-His(Bn)(Boc)-OH can be readily prepared as Boc-His(Bn)(Boc)OH·TBA by methods that should be amenable to scale up.

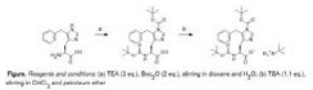


Figure. *Reagents and conditions:* (a) TEA (3 eq.), Boc_2O (2 eq.), stirring in dioxane and H_2O; (b) TBA (1.1 eq.), stirring in $CHCl_3$, and petroleum ether

Background

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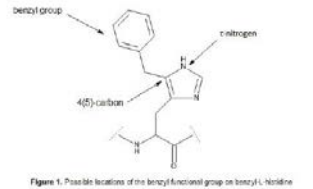

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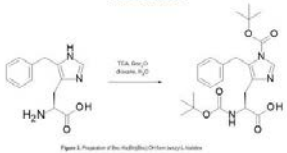
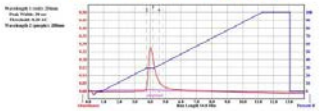


Crude Boc-His(Bn)(Boc)-OH was isolated as a white foam (2.322 g, 101%). We speculated that the presence of solvent in the isolated foam accounts for the larger-than-expected yield.

Wet Flash Chromatography



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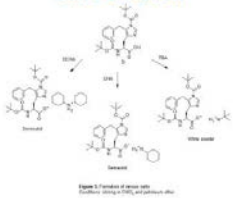

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Crude Boc-His(Bn)(Boc)-OH was converted to various salts until the product was isolated as a solid that was easy to work with.

Preparation of the *tert*-butylamine salt

Figure 4. Conversion of Boc-His(Bn)(Boc)-OH into its tert-butylamine salt

The TBA salt was isolated as a white, free-flowing powder in a good yield of 81% as opposed to the semisolids resulting from the DCHA and CHA salts.

Synthesis of Boc-His(Bn)(Boc)-OH·TBA

To a stirring suspension of 4(5)-benzyl-L-histidine (1.58 g, 6.45 mmol) and TEA (2.7 mL, 19.35 mmol) in water (5 mL), a solution of Boc_2O (3.52 g, 16.13 mmol) in dioxane (4 mL) was added dropwise[3]. After continued stirring for 24 hours, the dioxane was removed *in vacuo*, water (10 mL) was added, and the aqueous phase of the solution was washed with diethyl ether (3 x 50 mL)[3]. The pH of the aqueous phase was lowered to 3 with a sat. $KHSO_4$ solution and extracted with ethyl acetate (1 x 200 mL, 1 x 100 mL)[3]. The combined organic phases were washed with brine (50 mL) and dried over magnesium sulfate[3]. The solvent was evaporated *in vacuo* to yield the crude product as a white foam[3]. The foam was dissolved in a minimum amount chloroform and added dropwise to a stirred solution of *tert*-butylamine (0.8 mL, 7.62 mmol) and petroleum ether (100 mL). After a few minutes, a white precipitate was formed. The mixture was stirred for 1 hour at room temperature, stored overnight at 4 °C, filtered, and dried *in vacuo* to yield Boc-His(Bn)(Boc)-OH·TBA as a white powder (2.20 g, 81%); mp 149-150 °C.

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References

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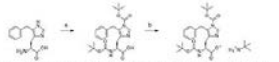

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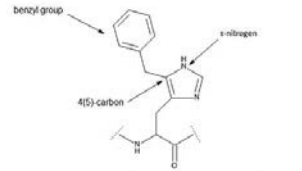

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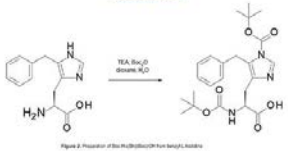

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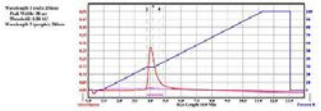

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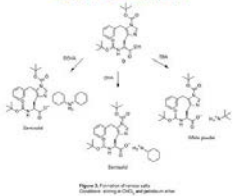

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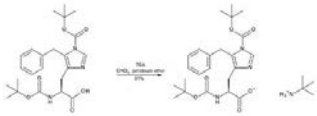

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AFTER

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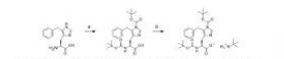

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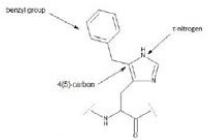

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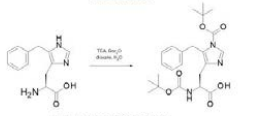

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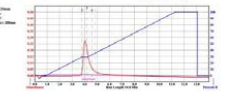

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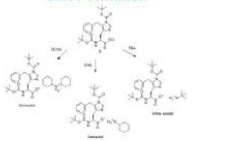

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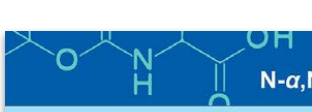

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Julie Nguyen[‡†], D. David Smith[†], and Martin Hulce[‡].
Departments of [†]Biomedical Sciences and [‡]Chemistry

Abstract

Benzyl-L-histidine is a component of N-α-benzyl-[benzyl-L-histidine[10]] calcitonin gene-related peptide (8-37) ([Bn-His(Bn)10]-CGRP(8-37)), a potent antagonist of CGRP receptors. To confirm the location of the benzyl group on His[10], N-α-butyloxycarbonyl-N-im-butyloxycarbonyl-4-benzyl-L-histidine [Boc-His(Bn)(Boc)-OH] was prepared by methods previously used for the preparation of Boc-His(Boc)-OH, employing di-tert-butyl dicarbonate and triethylamine (Figure). Boc-His(Bn)(Boc)-OH was isolated as an intractable oil containing minor impurities revealed by thin layer chromatography. All attempts at crystallization failed. Boc-His(Bn)(Boc)-OH was isolated as a colorless oil after gravity and wet flash chromatography on silica but in low recoveries of 35% and 67% respectively. Conversion to the dicyclohexylamine and cyclohexylamine salts produced viscous semisolids that proved difficult to work with. In contrast, the tert-butylamine salt, Boc-His(Bn)(Boc)-OH·TBA, was isolated as a white, free-flowing powder in an isolated yield of 81% (Figure). In summary, Boc-His(Bn)(Boc)-OH can be readily prepared as Boc-His(Bn)(Boc)OH·TBA by methods that should be amenable to scale up.

Figure. Reagents and conditions: (a) TEA (3 mL), Boc_2O (2 mL), stirring in dioxane and H_2O; (b) TBA (1.1 mL), stirring in $CHCl_3$, and petroleum ether

Background

Calcitonin gene-related peptide (CGRP) is a potent vasodilatory neuropeptide that causes extensive relaxation of cerebral arteries during a migraine attack, resulting in pain and discomfort[1]. This occurs when it binds to receptors in cerebral blood vessels, which causes these vessels to vasodilate[1]. Previous studies revealed that the N-α-benzyl-[benzyl-L-histidine[10]]CGRP(8-37) is a potent antagonist of CGRP receptors[3]. The exact structure of the potent antagonist, however, is currently unknown. The location of the benzyl group could either be on the 4(5)-carbon of the imidazole ring or on the π-nitrogen of the imidazole ring (**Figure 2**).

Figure 1. Possible locations of the benzyl functional group on benzyl-L-histidine

To test the hypothesis that the benzyl group is on the 4(5) carbon, we sought to make the protected derivative, N-α,N-*im*-bis(butyloxycarbonyl)L-4-benzyl-L-histidine (Boc-His(Bn)(Boc)-OH), for use in solid phase peptide synthesis.

Preparation of N-*α*,N-*im*-bis(butyloxycarbonyl)L-4-benzyl-L-histidine

Figure 2. Preparation of Boc-His(Bn)(Boc)-OH from benzyl-L-histidine

Crude Boc-His(Bn)(Boc)-OH was isolated as a white foam (2.322 g, 101%). We speculated that the presence of solvent in the isolated foam accounts for the larger-than-expected yield.

Wet Flash Chromatography

Figure 5. Results of wet flash chromatography performed on the crude product

Boc-His(Bn)(Boc)-OH was isolated as a colorless oil after gravity and wet flash chromatography on silica but in low recoveries of 35% and 67% respectively.

Salt Formation

Figure 3. Formation of various salts

Crude Boc-His(Bn)(Boc)-OH was converted to various salts until the product was isolated as a solid that was easy to work with.

Preparation of the *tert*-butylamine salt

Figure 4. Conversion of Boc-His(Bn)(Boc)-OH into its tert-butylamine salt

The TBA salt was isolated as a white, free-flowing powder in a good yield of 81% as opposed to the semisolids resulting from the DCHA and CHA salts.

Synthesis of Boc-His(Bn)(Boc)-OH·TBA

To a stirring suspension of 4(5)-benzyl-L-histidine (1.58 g, 6.45 mmol) and TEA (2.7 mL, 19.35 mmol) in water (8 mL), a solution of Boc_2O (3.52 g, 16.13 mmol) in dioxane (4 mL) was added dropwise[2]. After continued stirring for 24 hours, the dioxane was removed *in vacuo*, water (10 mL) was added, and the aqueous phase of the solution was washed with diethyl ether (3 x 50 mL)[2]. The pH of the aqueous phase was lowered to 3 with a sat. $KHSO_4$ solution and extracted with ethyl acetate (1 x 200 mL, 1 x 100 mL)[2]. The combined organic phases were washed with brine (50 mL) and dried over magnesium sulfate[2]. The solvent was evaporated *in vacuo* to yield the crude product as a white foam[2]. The foam was dissolved in a minimum amount chloroform and added dropwise to a stirred solution of *tert*-butylamine (0.8 mL, 7.62 mmol) and petroleum ether (100 mL). After a few minutes, a white precipitate was formed. The mixture was stirred for 1 hour at room temperature, stored overnight at 4 °C, filtered, and dried *in vacuo* to yield Boc-His(Bn)(Boc)-OH·TBA as a white powder (2.20 g, 81%); mp 149-150 °C.

^{1}H NMR (400 MHz, $CDCl_3$) *δ*= 8.04 (s, 1 H), 7.29-7.00 (m, 5 H), 5.69-5.67 (d, 1 H), 4.26-4.20 (m, 3 H), 3.22-3.13 (dd, 2 H), 1.40-1.37 (m, 27 H)

Conclusion

N-α-butyloxycarbonyl-N-*im*-butyloxycarbonyl-4-benzyl-L-histidine can be readily prepared as its *tert*-butylamine salt by a procedure that should be amenable to large scale preparations.

References

(1) Durham, Paul L. Calcitonin Gene-Related Peptide (CGRP) and Migraine. *Headache*, **2006**, 46 Suppl 1, S3–S8.
(2) Konieu, O., Lenche, G., Nothisen, M., Remy, J., Strub, J., Schaeffer-Reiss, C., Van Dorsselaer, A., Baati, R., & Wagner, A. (2014). Selective Irreversible Chemical Tagging of Cysteine with 3-Arylpropiolonitriles. *Bioconjugate Chemistry*, **2014**, 25, 202-206. http:// dx.doi.org/10.1021/bc400469d
(3) Taylor, C. K., Smith, D. D., Hulce, M., & Abel, P. W. Pharmacological Characterization of Novel α-Calcitonin Gene-Related Peptide (CGRP) Receptor Peptide Antagonists That Are Selective for Human CGRP Receptors. *Journal of Pharmacology and Experimental Therapeutics*, **2006**, 319(2), 749.

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Cognitive diversity has been shown to promote innovation and divergent creativity (Post, De Lia, DiTomaso, Tirpak, & Borwankar, 2009). A type of cognitive diversity, access to different mental models provides additional perspectives that may be drawn on to produce more solutions, which span a greater number of conceptual categories. Therefore, it is hypothesized that the fluency and flexibility of divergent creativity would benefit from incongruence between the leader and subordinate in leadership style.

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Hypothesis 1b. Type incongruence will have a positive effect on divergent flexibility.
Hypothesis 2. Type congruence will have a positive effect on convergent quality.

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A pool of 116 items was developed to measure the underlying constructs of each of the three leadership types. These items were administered to a total of 484 participants during the preliminary testing phase.

For each of the four iterations of the test cycle, exploratory factor analysis (i.e. principal axis factoring with promax rotation) was utilized to analyze the dimensionality of the CIP leadership instrument.

At the conclusion of this phase, the number of scale items was trimmed down to a total of 68. The resulting scale was comprised of three subscales, one for each leadership style, with 6-7 factors each.

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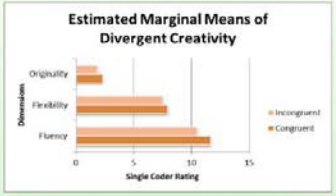

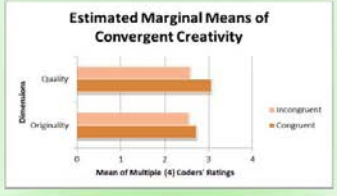

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Post hoc comparisons of the estimated marginal means indicate that:

- **H1a: Not Supported.** Leadership type incongruence did not produce a positive effect on the fluency of divergent output (M=10.60, SD=3.890)
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- **H2: Supported.** Incongruence produced a significant effect on the quality of convergent output (M=3.065, SD=0.850).

Discussion

Limitations

- Small sample size for tests of congruence effects
- Relatively few participants differentiated on the CIP-Q, significantly reducing the power of the analyses
- No certainty that student participants had actual leadership experience or ability. This point was supported by the fact that participant leadership type had no effect on output.

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- Examine the impact of leadership type and congruence on early and late stage creative processes
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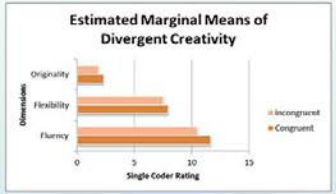

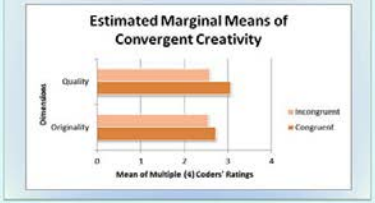

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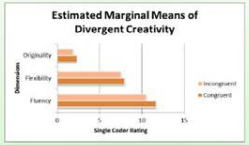

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For each of the four iterations of the test cycle, exploratory factor analysis (i.e. principal axis factoring with promax rotation) was utilized to analyze the dimensionality of the CIP leadership instrument.
At the conclusion of this phase, the number of scale items was trimmed down to a total of 68. The resulting scale was comprised of three subscales, one for each leadership style, with 6-7 factors each.
Methods: Experimental
151 participants were recruited through the University SONA system. Each took a demographics survey, the CIP-Q, the NEO-PI-R, and the alternate uses task, measures of task engagement and leader liking.
Participants were randomly assigned to one of three leader-type conditions, and were exposed to an experimenter whose script reflected the facets of a charismatic, ideological, or pragmatic sense-making model.
Two thinking tasks were administered:
Divergent thinking: broad parameters with the goal of generating as many solutions as possible. Evaluated on dimensions of fluency, flexibility, and originality.
Convergent thinking: multiple, narrow parameters with the goal of generating a single, highly feasible solution. Evaluated on dimensions of originality and quality by four separate coders.
Participants were categorized into a leadership style if either a) one of their scores on a subscale were more than one standard deviation for all responses above their other subscale scores, or b) one of the scores on a subscale were more than one standard deviation above all responses for that subscale.
Incongruence is operationally defined as a condition where the leader's and subordinate's sense-making model type is not the same.
Figures
Estimated Marginal Means of Divergent Creativity
Estimated Marginal Means of Convergent Creativity
Analysis & Results
A correlation matrix was generated to determine which of the measures act as covariates.
- Divergent fluency: Remote Associates Task score, task engagement, conscientiousness
- Divergent flexibility: Alternate Uses Task score, Remote Associates Task score, task engagement
- Convergent Quality: Social desirability score, agreeableness score
Analyses of covariance (ANCOVA) was conducted to examine the relationships between leadership style congruence and the various dimensions of creative performance. Results indicated that there was a significant main effect of congruence on convergent output quality [F(1, 48)=4.135, p=0.048], but no effect of congruence on divergent output fluency [F(2, 47)=1.075, p=0.305] or flexibility [F(2, 47)=0.485, p=0.489] .
Post hoc comparisons of the estimated marginal means indicate that:
- H1a: Not Supported. Leadership type incongruence did not produce a positive effect on the fluency of divergent output (M=10.60, SD=3.890)
- H1b: Not Supported. Leadership type incongruence did not produce a positive effect on the flexibility of divergent output (M=7.57, SD=2.404).
- H2: Supported. Incongruence produced a significant effect on the quality of convergent output (M=3.065, SD=0.850).
Discussion
Limitations
- Small sample size for tests of congruence effects
- Relatively few participants differentiated on the CIP-Q, significantly reducing the power of the analyses
- No certainty that student participants had actual leadership experience or ability. This point was supported by the fact that participant leadership type had no effect on output.
Further Study
- Examine the impact of leadership type and congruence on early and late stage creative processes
- Differentiate between type combinations in cases of incongruence
- Use a larger sample, with confirmed leaders
Final Conclusions
- Similarity in mental models between leaders and subordinates can have beneficial effects on the quality of creative work.
Key References
Lovelace, J. B., & Hunter, S. T. (2013). Charismatic, Ideological, and Pragmatic Leaders' Influence on Subordinate Creative Performance Across the Creative Process. Creativity Research Journal, 25(1), 59-74. doi:10.1080/10400419.2
Mumford, M. D. (2006). Pathways to outstanding leadership: A comparative analysis of charismatic, ideological, and pragmatic leaders. Mahwah, NJ: Lawrence Erlbaum Associates.
Reiter-Palmon, R., & Illies, J. J. (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. The Leadership Quarterly, 15, 55-77.doi:10.1016/j.leaqua.2003.12.005.

IF USING CURAS PRINTER

The standard poster size is 3 x 4 feet, though other dimensions are possible. The poster paper comes on a long roll and the limiting dimension is the width of the paper roll (42 inches), but the poster's other dimension can be greater.

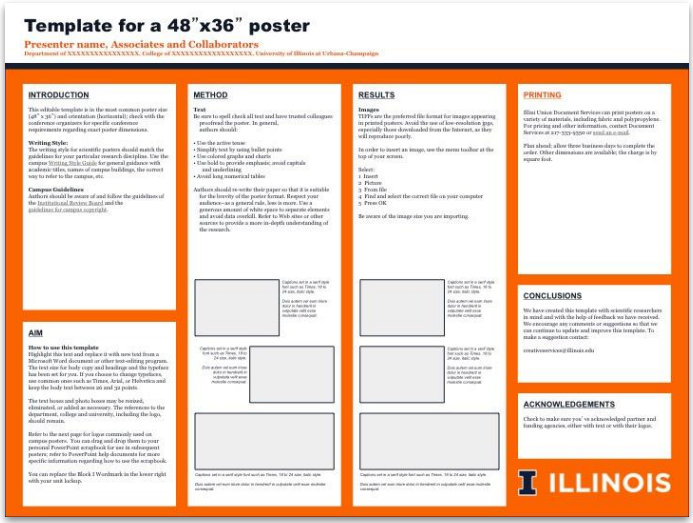
The most popular size (36 x 48 inches) can easily be scaled to 42 x 56 inches, if desired.

TEMPLATES

Templates can be a good place to start. CURAS has one.

These below are GREAT.

http://publicaffairs.illinois.edu/marketing/templates/researchposter.html



Template for a 48"x36" poster

Presenter name, Associates and Collaborators

Department of XXXXXXXXXXXXXXXX, College of XXXXXXXXXXXXXXXXXX, University of Illinois at Urbana-Champaign

INTRODUCTION

This editable template is in the most common poster size (48" x 36") and orientation (horizontal); check with the conference organizers for specific conference requirements regarding exact poster dimensions.

Writing Style:
The writing style for scientific posters should match the guidelines for your particular research discipline. Use the campus Writing Style Guide for general guidance with academic titles, names of campus buildings, the correct way to refer to the campus, etc.

Campus Guidelines
Authors should be aware of and follow the guidelines of the Institutional Review Board and the guidelines for campus copyright.

AIM

How to use this template
Highlight this text and replace it with new text from a Microsoft Word document or other text-editing program. The text size for body copy and headings and the typeface has been set for you. If you choose to change typefaces, use common ones such as Times, Arial, or Helvetica and keep the body text between 26 and 32 points.

The text boxes and photo boxes may be resized, eliminated, or added as necessary. The references to the department, college and university, including the logo, should remain.

Refer to the next page for logos commonly used on campus posters. You can drag and drop them to your personal PowerPoint scrapbook for use in subsequent posters; refer to PowerPoint help documents for more specific information regarding how to use the scrapbook.

You can replace the Block I Wordmark in the lower right with your unit lockup.

METHOD

Text
Be sure to spell check all text and have trusted colleagues proofread the poster. In general, authors should:

- Use the active tense
- Simplify text by using bullet points
- Use colored graphs and charts
- Use bold to provide emphasis; avoid capitals and underlining
- Avoid long numerical tables

Authors should re-write their paper so that it is suitable for the brevity of the poster format. Respect your audience—as a general rule, less is more. Use a generous amount of white space to separate elements and avoid data overkill. Refer to Web sites or other sources to provide a more in-depth understanding of the research.

Captions set in a serif style font such as Times. 10 to 24 size, italic style.

Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat.

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RESULTS

Images
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In order to insert an image, use the menu toolbar at the top of your screen.

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2 Picture
3 From file
4 Find and select the correct file on your computer
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PRINTING

Illini Union Document Services can print posters on a variety of materials, including fabric and polypropylene. For pricing and other information, contact Document Services at 217-333-9550 or email us e-mail.

Plan ahead; allow three business days to complete the order. Other dimensions are available; the charge is by square foot.

CONCLUSIONS

We have created this template with scientific researchers in mind and with the help of feedback we have received. We encourage any comments or suggestions so that we can continue to update and improve this template. To make a suggestion contact:

creativeservices@illinois.edu

ACKNOWLEDGEMENTS

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