How to Give an Impactful Presentation

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Tissue Engineering, Part A
Tissue Engineering, Part B: Reviews
Tissue Engineering, Part C: Methods

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Today’s Presentation

Best practices for presenting a paper at a research conference

1. Presenting tips
2. Presentation style and content
3. Final thoughts
Presenting Tips

• DO:
  – Speak slowly and clearly
  – Use appropriate gestures

• DON'T
  – Block the slides
  – Talk to the slides
  – Bluff on questions if you do not know how to answer
The Presentation: Style Tips

- Use LARGE not small fonts
- Use SANS SERIF not SERIF fonts
  - Same font throughout
- Use contrasting colors
  - But not too many
  - Consider colorblindness
- Minimize words and simplify figures
The Presentation: Structure

- A complete presentation contains:
  - Title
  - Motivation/Background
  - Hypothesis/Specific Aims
  - Methods
  - Results
  - Discussion
  - Conclusions
  - Acknowledgments
The Title Slide

• Include:
  – Title
  – Authors
  – Affiliations
  – Venue and date

Leveraging Biomaterials for High Fidelity Mandibular Reconstruction

Alexander M. Tatara\textsuperscript{1,2}, Sarita R. Shah\textsuperscript{1,2}, Emma Watson\textsuperscript{1,2}, Brandon T. Smith\textsuperscript{1,2}, Nagi Demian\textsuperscript{3}, Issa A. Hanna\textsuperscript{3}, James C. Melville\textsuperscript{3}, Jonathan Shum\textsuperscript{3}, Tang Ho\textsuperscript{4}, Jonathan Shum\textsuperscript{2}, Jeroen J.J.P. Beucken\textsuperscript{5}, John A. Jansen\textsuperscript{5}, Mark E. Wong\textsuperscript{3}, and Antonios G. Mikos\textsuperscript{1}

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 WFIRM Young Investigator Award
 TERMIS 2016
 December 14th, 2016

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Motivation and Background

• Why is what you are presenting important?
• Why do the specific people in the audience want to hear it?
• What information do they need to understand your presentation?
Motivation

Large mandibular defects have tremendous functional and psychosocial morbidity; difficult to repair

Motivation

Large mandibular defects have tremendous functional and psychosocial morbidity; difficult to repair


What is the problem?

Include all citations
Hypothesis and Specific Aims

• Goal(s) or specific aim(s)
  – No more than three
  – Can include overarching hypothesis
  – Only include aims that you will present results on in the presentation
High Fidelity Strategy: Two-Stage Reconstruction

Optimize defect site with porous space maintenance; Create custom tissue-engineered flap for reconstruction

Two aims that will be addressed in the presentation:

- Optimize defect site with porous space maintenance;
- Create custom tissue-engineered flap for reconstruction

Methods

• List the techniques used and what information they provide
• List controls
• List statistical methods
• Include only specific details that justify the methods/analyses of data
Methods

Implantation 9 weeks
- Implant bioreactors filled with autologous or synthetic graft
- Create defect and implant space maintainer

Reconstruction 12 weeks
- Remove space maintainer
- Reconstruct defect using bioreactor-generated tissue

Osteointegration
- Surgical outcome
- Radiologic outcome

Physiologically-relevant animal model platform to evaluate strategies for mandibular reconstruction

How will success be determined?

Physiologically-relevant animal model platform to evaluate strategies for mandibular reconstruction

- Implantation: 9 weeks
  - Implant bioreactors filled with autologous or synthetic graft
  - Create defect and implant space maintainer

- Reconstruction: 12 weeks
  - Remove space maintainer
  - Reconstruct defect using bioreactor-generated tissue

- Osteointegration
  - Surgical outcome
  - Radiologic outcome

Techniques used in approach

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Results

• Define the experiment at the top of the slide
• Display 1-3 simple images/figures and avoid overcrowding
  – Only include images/figures that you will discuss directly
• Include a take home message at the bottom of the slide
  – Tie conclusions back to specific aims
Evolution of Generated Tissue

Bone Volume/Total Volume (%)

Object Spacing (mm)

Pre-Implantation □ Post-Implantation □ Post-Transfer □ Native Mandible

Those that do not share the same letter are significantly different (p<0.05)

Scaffold continues to remodel and approach native mandibulocortex throughout implantation

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Evolution of Generated Tissue

Sentence summarizing results presented and tying to aims:

*Scaffold continues to remodel and approach native mandibulocortex throughout implantation.*
Discussion

• Reiterate most important results based upon data presented
• Address strengths and weaknesses of study
• Compare to previously published studies
• Provide a mechanistic interpretation
Discussion

• No radiological differences in tissues generated using autologous versus synthetic scaffold

• Porous space maintainers were associated with no dehiscence (0/6)

• Reconstruction successful in 5/6 cases (dehiscence in 1/6)

• Histological, mechanical, and molecular (gene expression data) analysis pending
Discussion

- No radiological differences in tissues generated using autologous versus synthetic scaffold
- Porous space maintainers were associated with no dehiscence (0/6)
- Reconstruction successful in 5/6 cases (dehiscence in 1/6)
- Histological, mechanical, and molecular (gene expression data) analysis pending

Weakness/unexpected results included
Conclusions

- Provide answers to questions posed in specific aims
- Repeat most impactful results
- Include future directions
Acknowledgments

• Funding sources
• Special resources or individuals
  – Do not thank coauthors
Conclusions

- In vivo bioreactors are capable of generating viable bone tissue suitable for mandibular reconstruction
  - No requirement of autologous scaffold, embedded cells, or exogenous growth factors
  - Capable of customizing volume and geometry of tissue

- Technologies such as 3D printing and porous space maintenance can be applied synergistically for high fidelity repair

Acknowledgments

Wake Forest Institute For Regenerative Medicine
Armed Forces Institute of Regenerative Medicine II
Osteo Science Foundation
Baylor College of Medicine Medical Scientist Training Program
Barrow Scholars Program
Conclusions

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Impact of results
Final statement summarizing results
Final Thoughts

• Simplify slides and figures

• Know your material, know your audience, and know how to communicate that material to the specific audience

• Emphasize innovation and implications

• Make the impact of what you say stronger than the impact of the slides
Acknowledgments

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  (https://cwovc.rice.edu/academicpresentations)