# CHAPTER 27: POSTER PRESENTATIONS

## Chapter outline

- Designing the poster
  - Layout
  - Graphics
  - Text
  - Font size and style
  - Color
- Preparing the poster presentation
  - Planning the presentation
  - Practicing the presentation

A Fall/Winter Quarter EDC poster quickly illustrates the essence of your design and its benefits. It contains less text than the posters used at most science fairs or professional science and engineering conferences because it is meant to be viewed in a large room with dozens of visitors circulating rather quickly among the offerings. Your accompanying two-to-five-minute presentation provides further details about the design, so the viewer has little time to read your poster.

EDC project fairs can last several hours, during which time you may be asked to give your poster presentation many times. To ensure a successful presentation, make the poster visually compelling and have team members on hand to explain and answer questions about your project. Your poster and poster presentation should work together to convey your main message. You want your audience to think, “That’s a great design and these are impressive students!”

At the end of this chapter, you will find three sample posters. Each takes a different approach to communicating the problem and solution, but they all follow “best practices” in poster design. If you design a poster for a Spring Quarter project with more technical material, you may use more text—and even tables and equations—than you will find on these examples.

# 27.1 DESIGNING THE POSTER

Decide as a team the main message of your poster: the problem and your solution. Boil those down to two sentences: one that defines the problem users have, and the other that highlights what you have designed—your design's approach to solving the problem.

Now decide what content the poster needs in order to communicate this message. Then consider secondary information.

Next sketch the poster on a large sheet of easel paper. Visualize your poster in sections or panels that convey your main message. Use index cards or Post-it notes to sketch the graphics and accompanying text. Move these around the easel paper to determine what works best. You want the poster to have a clear, persuasive organization that conveys your message. Toward that end, organize the various elements so that the solution clearly correlates with the problem, and the key design features with the requirements that they fulfill. If you have done research that goes beyond the typical EDC project—for instance, specialized lab testing or a large-scale survey—look for a way to highlight that.

Now you can begin to work on the specifics of the poster: the layout, graphics, text, fonts, and color.

## 27.1.1 Layout

Here are tips for the layout of your EDC poster, which will measure 24 inches by 36 inches:

- Use more graphics than text. Your poster should be about 40 percent graphics, 40 percent white space, and 20 percent text.
- Put a title banner across the top. Use 96-point type so the title is visible 10 feet away.
- Arrange information in sections that correspond to the message you want to convey. For example, you might use a two-part format if your organization is "problem/solution," and a three-part format if it's "problem/solution/implementation."

  Within these sections, organize information into blocks of figures and text. Make the blocks of information easy to follow by following these guidelines:

  – Align the blocks of information so the viewer can easily follow the flow of information.
  – Left-justify the text, but use ragged edges (unjustified text) for the right margins.
  – Make the blocks of information similar in shape and size.

  - Use white space to separate blocks of information and columns.
  - Use numbers or arrows to indicate the sequence of blocks of information.
- Use font sizes to indicate the hierarchy of information: bigger fonts for headings and captions, smaller fonts for explanatory text. (See the section below on font sizes and styles.)
- Leave margins on all four sides of the poster.

NOTE: If your project was funded by an outside grant, indicate that at the bottom of the poster (or make sure that it is part of the template provided to you by EDC).

### 27.1.2 Graphics

Emphasize graphics, not text, and select photos, drawings, tables, and other graphics that clearly convey your main message. Here are tips for using graphics effectively:

- Eliminate unimportant information from each graphic. Remove extraneous labels and dimensions from figures, and redo a table to make it less detailed. Don't number figures or include explanatory keys and footnotes (although you should give each figure a caption). If the viewer doesn't get the point of a figure or table in 10 seconds, the graphic has failed in its purpose.
- Make figures large enough to be viewed six feet away.
- Make each figure stand out from the text. You may do this with a border or with a background color from a PowerPoint autoshape.

### 27.1.3 Text

Keep the explanatory text to a minimum, but make it clear, emphatic, and informative. One consultant on poster design recommends repeating this mantra when editing the text: "There always is too much text. Always too much text" (Radel, 1999).

#### Strategies for writing concisely

- Pare down sentences and phrases. Here is a portion of a rough draft of a poster featuring a children's entertainment module for the backseat of a car. The text is loaded with extra words:

Example 27.1: Poster text that is wordy and hard to read

**Solution**

Our solution addresses the problem with the following features:

- It has a flip-down game table. This allows children to easily access games that entertain them on long car rides.
- It has a slide-out drawing board. This allows children to occupy themselves by coloring on those long car rides. It's also space saving because it slides under the game table.
- Finally, it has clearly labeled pouches for storing crayons, game pieces, playing cards, and other items.

Here is the revision:

Example 27.2: Revised poster text that is concise and easy to read

**Solution: Features and Benefits**

- Flip-down game table
  - Entertaining
  - Easily accessed
- Slide-out drawing board
  - Entertaining
  - Space-efficient
- Labeled storage pouches
  - Keep back seat tidy
  - Are easy for kids to use

- Cut unnecessary details. List major features only.
- Emphasize the problem and the design solution. Include a few significant research results if they support the benefits of your design; you can go into more detail on research when you talk about the project.
- Omit references to graphics ("see Figure 3")

## Strategies for making text dynamic

- Use headings to make strong, clear statements. Instead of "Problem Statement," be specific: "Keeping Children Entertained on Long Car Trips."

- Avoid vague wording such as “probably,” “may,” “seems,” “likely,” “in our opinion.”
- Use active over passive voice. Say, “Children dislike long car trips” instead of “Long car trips are disliked by young children.”
- Emphasize the positive results of your project in the conclusion (the last block of information).

### Strategies for making text easy to read

- Avoid long lines of text.
- Avoid abbreviations.
- Use bulleted lists of sentences and phrases rather than long paragraphs. Make sure the bulleted sentences are clear. The following sentence is not clear or easy to read, despite being bulleted:

  > We determined that the main problems with storage in current rear seat designs are that there isn't enough storage space and that items tend to fall under the seat.

  The revision is much easier to read:

  > Rear seat storage problems:
  >
  > 1. Storage space is inadequate
  > 2. Items get lost under seat

## 27.1.4 Font size and style

To make your text easy to read, follow these guidelines:

- Font size
  - Title: 96 point
  - Captions for graphics: 36 to 48 point
  - Main headings: 36 to 48 point
  - Supporting details: 30 to 36 point
- Font style
  - Keep the style simple; avoid fancy fonts and effects.
  - Use a sans serif font (one without flourishes at the end of lines) for headings and titles. Use sans serif or serif (one with flourishes at the end of lines) for the rest of the text.
  - Use the same font size and style for headings of the same importance.
  - Don’t use all uppercase letters for headings; they are hard to read.

### 27.1.5 Color

Keep poster colors subdued and functional so as not to distract from the content.

- Use a neutral background (white or a subdued color).
- Use only two or three colors.
- Avoid garish colors.
- Make sure text and graphics stand out clearly.
- Use similar colors to connect images and ideas. For example, use the same background color for text that points out a specific problem and text that explains how to solve it.

## 27.2 PREPARING THE POSTER PRESENTATION

Your oral poster presentation is not you reading what's on your poster. It’s you elaborating on the poster's contents.

### 27.2.1 Planning the presentation

Review your poster’s main message, and then decide what you want to say about each block of information in the poster. Ask yourself which blocks of information are self-explanatory and which require an explanation. For the latter, jot down what to say to clarify the information.

Different viewers will have different levels of interest in your project, so prepare both a two-minute and a five-minute version of your oral presentation. The five-minute version should expand on the shorter one and be tailored to more knowledgeable and interested viewers, such as the judges. In general, your presentation should cover the following:

- **Introduction** in which the first speaker mentions his or her name, as well as those of other team members present. You may also want to catch the viewers' interest with a striking fact or anecdote related to your project. For instance, a team designing an inexpensive water ski for people with limited use of one arm might introduce their project this way: “People with disabilities want to be able to return to the activities they enjoyed before they became disabled. Over the last decade, for instance, adaptive water skis have enabled people with limited use of one arm to experience the thrill of being pulled over the water by a boat. However, these skis cost around $1,000, making them prohibitively expensive for some. The Rehabilitation Institute of Chicago (RIC) has asked us to design an inexpensive water ski that addresses this problem.”

- Brief explanation of the **problem**, including the client organization, the users, and the mission
- Major **requirements**
- Overview of the **design** and the key **features,** paying special attention to how they meet the requirements. In the five-minute version, you may also include relevant test results that support the design.
- **Conclusion** that sums up how the design addresses the problem

Try to anticipate visitors' questions, and write down answers so you're prepared.

## 27.2.2 Practicing the presentation

Practice the presentation with your team, your classmates, and others. Ask them for constructive criticism, and then practice again.

As you practice, concentrate on using body language effectively, guiding viewers through the poster, demonstrating the prototype, responding to questions, and maintaining a professional demeanor.

### Using body language

The most important rule to keep in mind is to **look at your viewers**, not your poster. Facing the audience and maintaining good eye contact not only draws people into your presentation, but also helps them hear you. You'll be in a crowded hall or room, so make sure you speak loudly enough. Never read directly from the poster or note cards: That conveys the impression that you are unfamiliar with your own project. Look away from your audience only when you want to draw their attention to a graphic. Point to the graphic to direct audience attention.

Stand to the side of your poster so people can see it easily. Stand up straight to show you're enthusiastic about talking about your project.

### Guiding viewers through the poster

Use strong transitions as you move from one section of the poster to another. Example: In moving from the problem to the solution, you might say, "So the problem is twofold: a lack of sufficient backseat storage space in the car and a tendency for items to fall under the seat during long drives. Our design addresses both those problems."

### Using the prototype

If your prototype is especially good at demonstrating the major functions of the design, feature it prominently during your presentation. However, avoid calling attention to functions that do not work well in the prototype. It is per-

fectly acceptable, by the way, to have one team member demonstrate the prototype as another speaks about it.

### Responding to questions

Practice by having your teammates and others ask you questions. If necessary, before answering a question, paraphrase it to make sure you understand and to give yourself a little more time to come up with the answer.

Typical questions address aspects of the prototype that obviously need improvement, safety-related issues, and alternative methods of solving the problem (for instance, “Did you think about implementing this other kind of feature instead?”).

Support your answers with information from testing and research. Avoid vague wording like “Our prototype is not exactly to scale, but it’s pretty close,” and “We’re fairly confident our design will stand up to the wear and tear of everyday use.” Instead, say, “Our mockup is built to nine-tenths scale,” and “We are confident our design will stand up to the wear and tear of everyday use. It’s made from Lexan, the plastic used for those super-tough Nalgene water bottles.”

Finally, don’t interrupt one another. If you feel that a team member is not addressing the question well, let him or her complete the answer before you add your clarification. Interruptions send a message of team disunity to viewers and undermine the overall persuasiveness of the presentation.

### Maintaining a professional demeanor

Greet people who come up to the poster, and give them a chance to look it over. As they leave, thank them for talking with you, expressing interest, and offering suggestions.

If visitors approach you in the middle of your presentation, greet them and tell them where you are in the presentation: “Hello. I'm explaining how our design solves the problem of limited storage space in the backseat of a car.”

Finally, dress professionally. For men that means a jacket and tie, or nice slacks with a shirt and tie. For women it means a dress, skirt, or nice slacks. All team members should dress with the same degree of formality.

Like any oral presentation, poster sessions can be nerve-wracking. The more time you put into planning and practicing, however, the more confident and successful you’re likely to be.

## 27.3 EXAMPLES

On the following pages are three examples of excellent posters. The first is annotated to highlight its outstanding qualities. The other two demonstrate different ways that posters effectively convey a design.

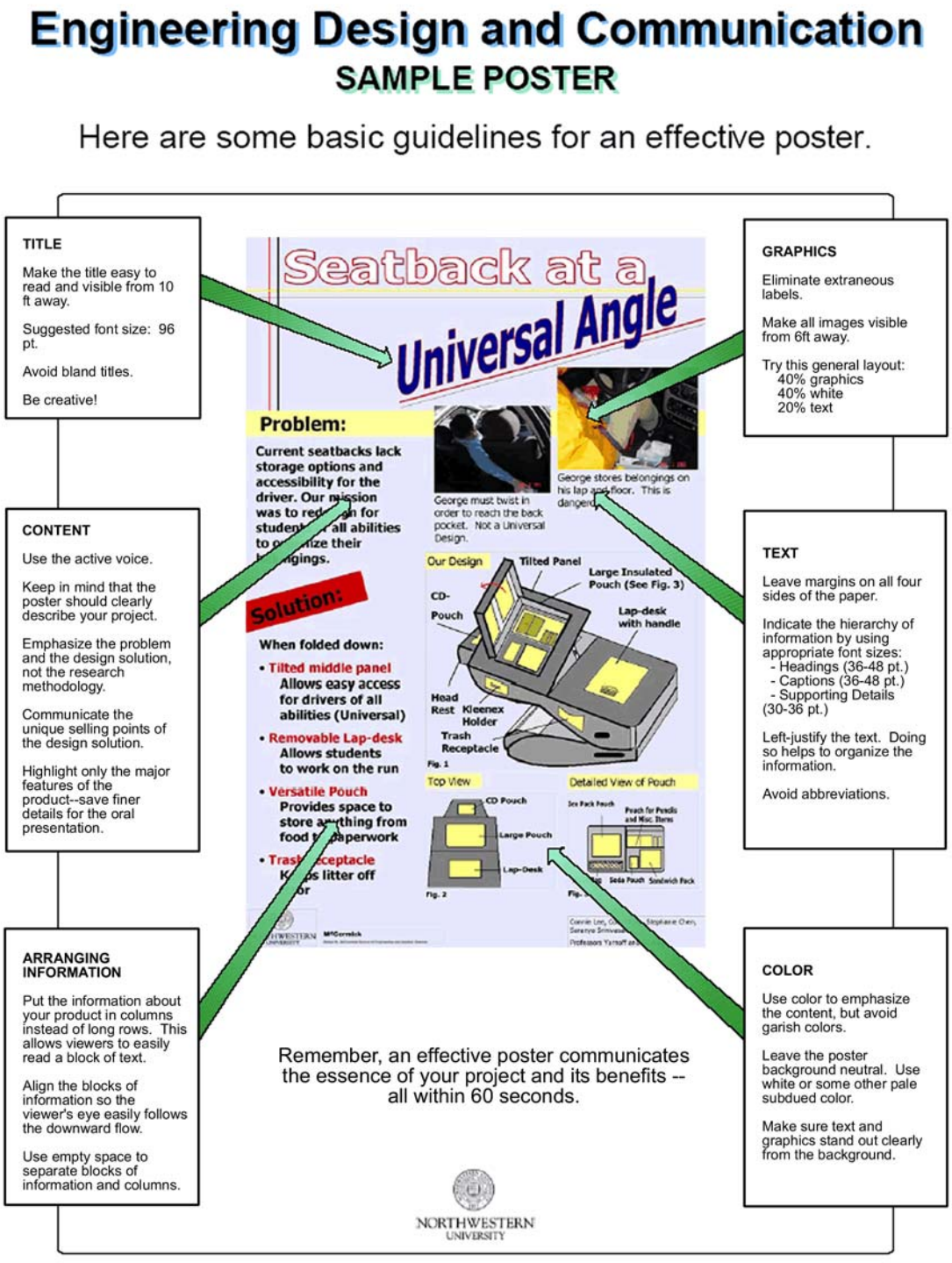


Figure 27.1: Annotated Poster: Seatback at a Universal Angle.
Chen, Shiao, Srinivasan and Lee (2003)

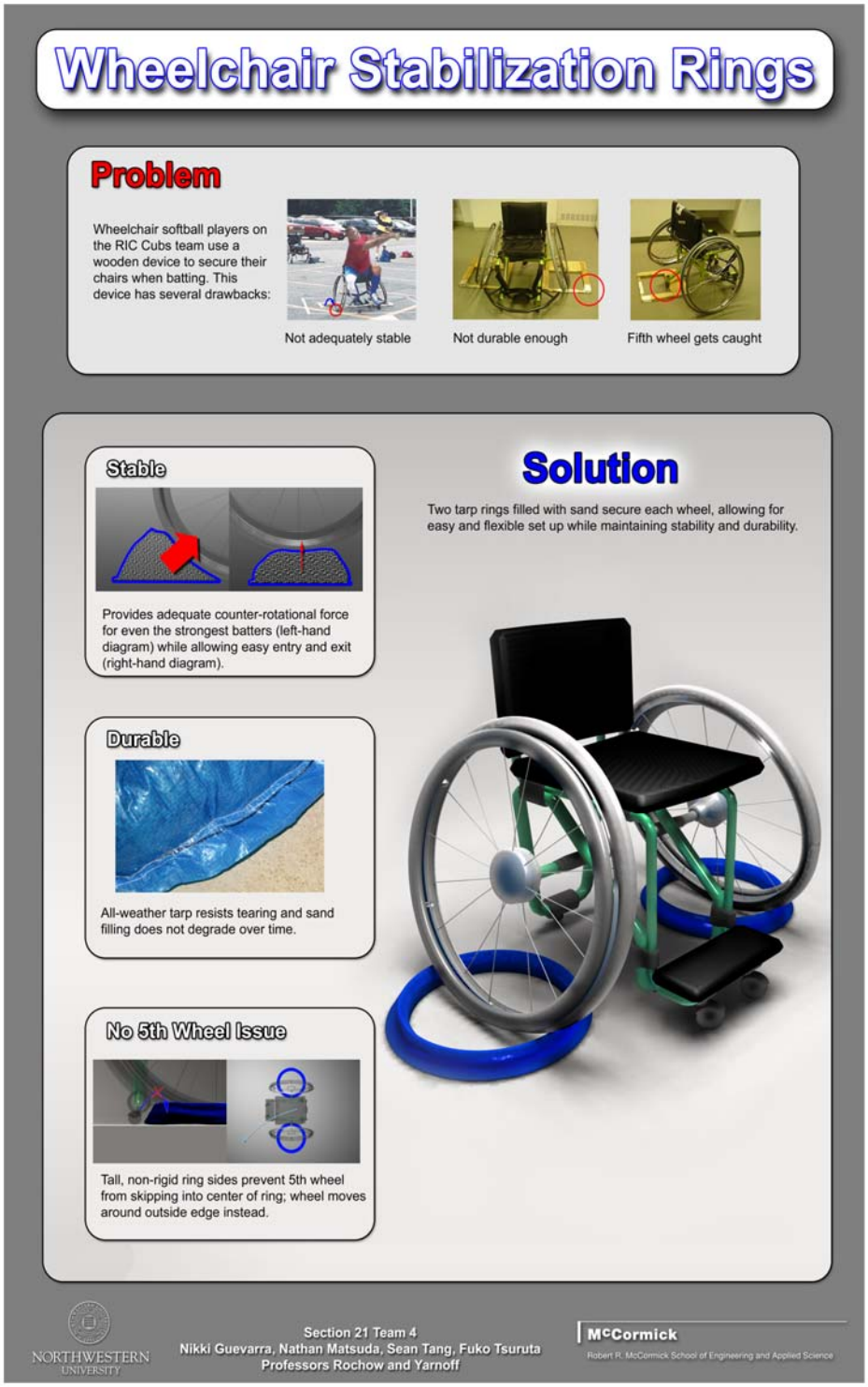


Figure 27.2: Poster: Wheelchair Stabilization Rings.
Guevarra, Matsuda, Tang, and Tsuruta (2004)

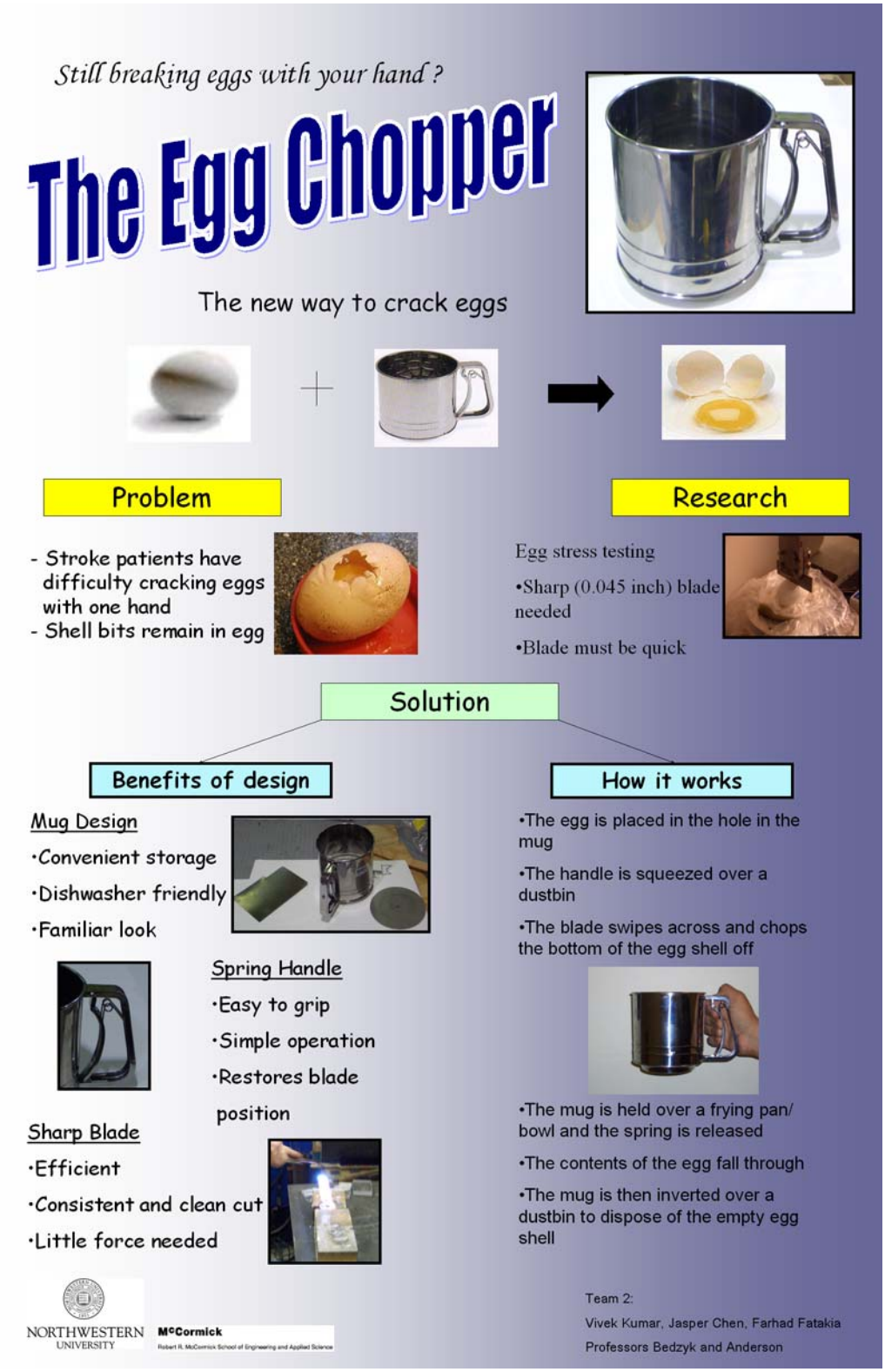


Figure 27.3: Poster: The Egg Chopper.
Chen, Fatakia, and Kuma (2004)

## 27.4 REFERENCES

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