

Biomimicry: Innovation Inspired by Nature GROUP CHALLENGE - OVERVIEW



The basic premise:

All groups are facing a **real world design challenge** that was actually posed to the Biomimicry Guild at one time. Your group has been arranged based on group members' diversity of expertise, education and interests. For this project (over the next month), your task is to imagine that your group is actually a biomimetic consulting firm, like the Guild, that has been hired by a Fortune 500 company to solve a specific design challenge.

You'll receive a detailed synopsis of your design challenge today and your group will only have this information to direct your research. Anything you do not understand about the technology you must discover either through background research and/or by contacting the company (Cindy or Sean). You are now faced with many company expectations. **Multiple design briefs (see assignment schedule) that must be met on time and in a professional manner will be submitted over the course of the next month.** The culminating report and presentation being the critical deciding factor whether or not your consulting group will be hired to work "in-house" at the company for the next 2 years to take the challenge from the ideas phase to the product design and development phase. Good luck and have fun!

All potential design solutions must be novel (to the build world) and BIOMIMETIC (no bio-assistance or bio-utilization; see "bio-what?" sheet). However, this does NOT mean that "nature's recipe" must already be fully understood by science or your consulting group. Your task is only to discover, research and present numerous potential design solutions you've unearthed from nature. These solutions must have representatives from nature's FORMS, PROCESSES and SYSTEMS.

Some important background information:

- Entire group challenge project will be worth a **total of 30% of your final grade**
- All group members will be assigned the **same grade** for each part of the group challenge
- **No late assignments will be excepted**
- This group project is going to be challenging and I am expecting high quality work...**don't procrastinate!**
- Groups will be responsible for setting their own goals, pace and meeting time/places as deemed necessary to complete assignments (outside of allocated class time)
- **DON'T DELAY!** Share your schedules, contact information and **set next group meeting time/place TODAY!**

- Groups will be expected to follow their own “group habitat” (code of conduct)
- It is every group member’s responsibility to inform Cindy of any group issues as soon as they begin; nip problems in the bud
- Use your journal to document your research as well as to keep track of decisions made in the group

Assignment schedule:

Part #	Design brief	Due date	Grade %
1	Innovative solutions	October 30 (end of class)	5%
2	Detailed taxonomy	November 6 (end of class)	5%
3	Nature’s technologies report	November 27 (beginning of class)	10%
4	Group final presentation	Nov. 27 or Dec. 4 (in class)	10%

Part 1: Innovative Solutions

- You’ll be given 2 hrs of class time to work on this assignment (1 hr today & 1 hr next week)
- Read over your challenge carefully; discuss with group; ask questions!!
- Follow the “biomimicry methodology” and “design spiral” hand-outs for help
- Identify what the *real* design challenge is for your group
- Interpret the challenge; *biologize* the question; define your design constraints; what Life’s Principles will you try to incorporate?
- BRAINSTORM! Go wild. Think broadly. Cast your biological net as far as you can. Breakdown associative barriers. Do all of this BEFORE you do any literature searching.
- Warning: don’t move into the design space! Be sure to avoid arriving at “solutions” that already exist.
- Discover natural examples that meet your design challenge; remember to turn the problem on its head, think about extremes, imagine yourself inside the challenge...what does the view look like from there?
- List at least 50 natural models (forms, processes and systems); briefly describe each model (one sentence max). Attach list to completed, 2-page “innovative solutions” handout.
- Due at the end of class next week (Oct. 30)