**Biomimicry Workshop 2012 – Class #5**

**Class 5:** Understanding Life’s Principles. Biomimicry Communication

**Intent of Class:** Have a deeper understanding of biomimicry’s Life Principles and learn how to communicate biology to engineers.

**Homework: A) Find examples of Life’s Principles to share with class B) Continue work on your challenge, research nature and abstract strategies C) Develop a summary of your work to-date D) In-Person session logistics E) iSite F) optional radio show and article**

**Homework is due to Marie via email by August 3, 2012**

**A) Find examples of Life’s Principles to share with class:** Hopefully your team has chosen to meet Life’s Principles as one of the non-negotiable context for your challenge. Using Life’s Principles as an evaluation tool is also part of the biomimicry methodology. A deeper understanding of Life’s Principles and the ability to recognize them in Nature is critical to the IBD process. During the next 2 webinars we will learn more about Life Principles. As a Team, you have been assigned one of the main Life’s Principles (see assignments below). Find examples that demonstrate the main principles and the associated strategies, either in Nature or in human inventions. For example, if your team is assigned **Evolve to Survive** you would also find examples of the strategies under this principle: **replicate strategies that work, integrate the unexpected, and reshuffle information.**  Study the definition, review the information of Life’s Principles provided in the materials provided to you from this class and find examples that demonstrates this principle. Prepare no more than one slide per principle/strategy. We will review these examples as a class during webinar #6 in August.

Team H2O: Be Resource (material and energy) Efficient

Team Adapt: Adapt to Changing Conditions

Team Organize: Integrate Development with Growth

Team Communicate: Be Locally Attuned and Responsive

**B)** **Continue work on your challenge, research nature and abstract strategies.** Continue to look for strategies on how Nature performs the function(s) of your challenge by observing Nature, accessing AskNature and other biological resources. Nessly is a great researcher, she is working for you until August 17th, so take advantage of her expertise. You may also want to include information on how Nature does not do your function – for example, if you look up information on how nature communicates and find a study about communication strategies that don’t work in Nature, this may be relevant to solving your challenge. Don’t forget this is just the first step; you must also read the article or review your observations to abstract the strategy for your function (s). You will need to have your research complete by September 10th for the in person session. Be sure to document what you have discovered.

**C) Develop a summary of your work to-date:** During the in-person session you will work with a biologist to take the strategies nature uses to perform your function(s) and help your team dive deeper into identifying a solution(s). Review the Challenge to Biology work sheet and complete this form for your challenge. If you choose, Nessly can develop the initial summary and serve as the keeper of the summary. **It is critical that these summaries are completed by August 3rd** so that they can be sent to the instructors and Great Sand Dunes park biologist for review prior to the workshop. Don’t forget to add information on observations you have made, AskNature and other resources. Keep the strategies you have abstracted short and to the point. Review the Life’s Design for Water table provided after the last webinar as an example of how to summarize the strategies you have abstracted. Your Team can continue to research strategies and add them to your summary after this date. You will be asked to bring the most up-to-date summery to the in- person session. The biologist at the in-person session will help you tease out the important information – so more information is better than less.

**D) In-Person session logistics:**  We are starting to plan for the in-person session. Nessley will be sending out a form to “register” for this session and to gather information on food, camp site needs, car pools, equipment sharing, etc. It is important that we know by mid-August all of the logistical details for this event. As a reminder, the in-person cost is $185 for food and $25 registration fee (that will be used to pay for the camp site). This fee will be collected the first day of the in-person session. If you register for this session you will be responsible for paying this amount once the food has been ordered, even if you have to cancel. It is required that at least one person from each challenge team attend the in person session and be responsible for sharing the session information with your team.

**E) iSite:** Continue your iSite: Here are a few ideas that focus on looking for Life’s Principles

in Nature and observations that may help you with your team challenge.

**Observe Life’s Principles in Action:** Look for the Life Principle your team has been assigned. Study an organism and see how it incorporates this principle into its life cycle. Use your skills of observation (think forms, processes, systems; scales in time and space; patterns, etc.) to explore this Life Principle. Take a list of Life’s Principles with you to your iSite and see how many you can identify. Record your observations.

**Find examples of Nature performing your team’s function(**s): At your iSite think about your

challenge and find an organism that is performing the function(s) of your challenge. Record

your observations, then AskNature or Ask Nessly to dive deeper into the mechanism for the

organism you have observed.

**F) Optional radio show:** During the 2011 Bioneers Conference in San Rafael CA, Dayna

Baumeister and I were interviewed for a segment of the Bioneers Radio show. Cut and paste this link into your internet browser to listen to the 30 minute broadcast: <http://www.bioneers.org/radio/2012-radio-series/millions-of-elders>

**Optional article:** Leverage Points: Places to Intervene in the System by Donella Meadows. http://www.sustainabilityinstitute.org/pubs/Leverage\_Points.pdf