Proposal #1:

A. interest **20/20**

this is an interesting idea if you can pull it off!

B. research questions **10/20**

This sounds more like a description of a target population or sampling frame than a set of research questions. For the next revision, please state carefully 2-3 key issues/questions that you want information about from this survey.

Also, it's not clear to me whether you intend to use the list of 300 or so ARCSA professionals as a frame, and you wll contact the people directly using information in the list, or whether you think the list is incomplete and you intend to complete it somehow, or you intend to subsample from the list and look at the records only (not the people) in your subsample. These different choices correspond to somewhat different sets of possible research questions, different levels of effort required to do the survey, etc. please clarify this carefully in I2.

C references **10/10**

the references seem related but since I don't know exactly what your research question is at this point, it's hard to say.

Proposal #2:

A. interest **10/10**

Really interesting idea! And I agree that the information you gather would be useful. However, you haven't made any connection with collecting data by sampling from a target population (of people or things). I can see possibilities here (e.g. use the geocoded data to help understand a survey of undergraduates about where they live, whether the living conditions are good, costs, convenience, etc. There are many possibiities --- this isn't the only one!

B. Research questions **10/10**

again, a great set of research questions, but not linked to a statistical survey project

C. references seem relevant and good **10/10**

TOTAL **70/100**

Project Proposals: Team G

1. First Proposal - Out-of Campus

Description of Rainwater Accredited Professional by Type of The American Rainwater Catchment Systems Association (ARCSA)

Ariel Liu, Sam Lavery, Alejandra Munoz, Terra Mack, Shannon Lauricella.

A. Topic

Rainwater Harvesting in US is a practice/technology/business that in recent years has expanded adepts and adopters. Initially, rainwater collection was pushed by droughts and groundwater depletion and pollution in arid regions of US as a source of fresh water supply (e.g. Texas and California). Nowadays, this practice/technology is considered to be a key element in converting U.S. cities (and its infrastructure) in sustainable environments. Rainwater collection not only provides fresh water supply, it also manages storm water runoff and its pollution and opens the possibility of reuse and energy generation through, for example, fuel cells#. Taking into account that the demand of incorporating rainwater harvesting systems in architecture design is expected, we are urged to describe and quantify the architects that belong to ARCSA to prepare prepare and produce future guidelines and tools that help the architects face this new demand. ARCSA, architecture schools and researches are the potential clients of this survey.

B. Questions of the study

As mentioned before, the survey aims to describe (location, expertise and other organization liaison) and quantify architects among the ARCSA members. A recent survey focused on the Rainwater harvesting business and identified the type of professionals involved; however, it did not describe the type of professional among the ARCSA members. Therefore, a detailed decomposition of the ARCSA members to identify the architects is desired. A list of around 300 accredited ARCSA professionals was obtained from the ARCSA directory in August 2011 with information of the business name, person in charge, address, phone, fax, email, website, category (e.g.Member, Landscape Architect, Rainwater System Installer) and Accredited Professional (AP) (persons in the organization that are AP). However, not all entries are filled for each of the business registered that has AP members, and some businesses presented more than one AP; therefore, more search is needed in order to identify all architects in the ARCSA organization.

C. Research

1. Title: NM Grower Harvest Rain Before Veggies
   Author name(s): Douglass Pushard
   Date: June 2010
   Source: The Quarterly Newsletter of ARCSA, Volume 1, Issue 2, pp. 5
   http://www.arcsa.org/files/ARCSA%20June%202010%20Newsletter.pdf
   Summary: The newsletter gives insight into the types of professionals associated with ARCSA and the uses of harvesting rainwater. This article shows that harvesting rainwater serves several different purposes among different professions and environments, which would be useful in our survey for assessing types of professionals in ARCSA.
   Team member: Terra Mack

2. Title: Domestic rainwater harvesting to improve water supply in rural South Africa
   Author name(s): Jean-Marc Mwenge Kahinda, Akpofure E. Taigbenu, Jean R. Boroto
   Date: August 2007
   Source: Physics and Chemistry of the Earth, 32 (2007) 1050-1057

Summary: This journal article provides background on why the topic of rainwater harvesting is so important to civil and environmental engineers. It describes the social implications and improvements that could be made with continued research into methods of harvesting rainwater.
Team member: Shannon Lauricella

3. Title: Introducing Sustainability into the Architecture Curriculum in the United States
Author name(s): James Wright
Date: 2003
Source: International Journal of Sustainability in Higher Education, Volume 4, Issue 2 http://www.emeraldinsight.com/journals.htm?issn=1467-6370&volume=4&issue=2
Summary: Our survey intends to target architects working for ARCSA and this article serves to demonstrate the relevance of our target population. The purpose of this article is to explain how inextricably linked architecture and sustainability are. It provides a good framework for why architects should be involved with projects, like harvesting rainwater, that provide sustainability.
Team member: Sam Lavery

4. Title: Strategy Use and Challenges of Ecological Design in Landscape Architecture
Author name(s): Meg Calkins
Date: 2004
Source: Landscape and Urban Planning Volume 73, Issue 1
http://www.sciencedirect.com/science/article/pii/S0169204604000945
Summary: This survey tried to identify the reasons why ecological design advancements were not being implemented in landscape architecture. It provides a basis for trying to understand the professional make-up of a ecological design team such as ARCSA.
Team member: Ariel Liu

5. Title: U.S. Rainwater Harvesting Market - 2010 and beyond
Author name(s): Doug Pushard and Jason Kerrigan
Date: 4 October, 2010
Source: Audio visual presentation of ARCSA conference presentation in Austin, Texas. http://www.arcsa.org/content.asp?admin=Y&contentid=91
Summary: Presentation of the findings of a survey to an array of businesses across of the U.S. rainwater harvesting market. Results represent a boost to the anecdotal evidence that - even in a slow economy - rainwater harvesting is a growing market.
Team member: Alejandra Munoz Munoz

2. Second Proposal - On Campus

Spatial and Analytical Study of Student Housing at Carnegie Mellon

Ariel Liu, Sam Lavery, Alejandra Munoz, Terra Mack, Shannon Lauricella.

A. Topic

Carnegie Mellon is an urban university with many students living off-campus. Finding housing off-campus is generally left up to individual students, who take into account many variables when choosing a house or apartment. Many students list their off-campus addresses in the C-Book directory published by APhiO. We propose geocoding this information using GIS and then performing spatial and analytical analysis to create a picture of the dynamics of student housing both on and off-campus at CMU. Each geocoded address would have other attributes from the C-Book linked to it such as: department, year, and a variable describing whether a student is an undergraduate or graduate student. The resulting spatial database will be a valuable tool that would be useful to the university for the planning of shuttle routes, campus police coverage, and future housing projects. Students would also be able to use this database to find neighborhoods in the city that are popular with other students.

B. Questions of the study

Because there is already so much information available in spatial formats that we could intersect with our housing database, we could answer many questions about the dynamics of student housing at CMU. Some questions that we could study include:

- What is the distribution of CMU students by neighborhood?
- What off-campus areas are most popular with undergraduates? With graduate students?
- Do students in certain majors cluster together?
- What percent of off-campus students live within X miles of a shuttle or bus stop.
- What is the average commute distance for undergraduates? For graduate students?

C. Research

1. Title: The Causal Effect of Campus Residency on College Student Retention
   Author name(s): Lauren T. Schuddle
   Date: Summer 2011
   Source: *The Review of Higher Education*, Volume 34, No. 4, pp. 581-610
   http://muse.jhu.edu/journals/review_of_higher_education/v034/34.4.schudde.html
   Summary: Assessing demographics and certain characteristics among those college students who live on and off campus, particularly how campus residency affects retention of students. Our survey could drawn on some of the insight for possible survey measures and execution in looking at campus residency and characteristics among CMU's student populaton.
   Team member: Terra Mack

2. Title: Campus Housing Construction and Renovation
   Author name(s): James C. Grimm, Norbert W. Dunkel
   Date: June 1999
   Source: Full-length book published by *The Association of College and University Housing*
   Summary: This book investigates the relationship between college students and their physical environments by specifically looking at 42 projects in 36 different universities. Housing characteristics studied in the book could be incorporated into the

questions asked in our survey.
Team member: Shannon Lauricella

3. Title: Housing: A Financial Look
Author name(s): Michael R. Fitzgerald
Date: September 25, 2006
Source: CMU's *The Tartan* http://thetartan.org/2006/9/25/news/housing_realestate
Summary: This article, published in Carnegie Mellon's own newspaper, specifically highlights some of the points we want to survey students on-campus. It talks about the price differential in living on-campus versus off-campus as well as the nature of housing prices in close proximity to Carnegie Mellon. Most importantly, this article shows that CMU students have an interest in their housing options, making our suggested survey more relevant.
Team member: Alejandra Munoz Munoz

4. Title: A Quasi-Experimental Approach to Estimating the Impact of Collegiate Housing
Author name(s): Ryan Yeung
Date: 2010
Source: http://student.maxwell.syr.edu/ryyeung/college.doc
Summary: Yeung attempts to identify the relationship between on/off-campus housing with GPA and social and academic integration. This is relevant to studying how areas of academic study play into college housing and proximity to campus.
Team member: Ariel Liu

5. Title: The Disengaged Commuter Student: Fact or Fiction?
Author name(s): George D. Kuh, Robert M. Gonyea, Megan Palmer
Date: 2001
Source:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.182.9974&rep=rep1&type=pdf
Summary: This paper present the findings of a survey that wanted to answer if students that live off-campus are less engaged with studies compared to students that live on campus. Engagement is defined as an important part of the academic experience and it is believed that off-campus housing interferes with this process.
Team member: Sam Lavery