

**Winter Forum 2010 Student Learning Assessment Report  
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**Submitted by the Office of Assessment, Trinity College**

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## Executive Summary

The Winter Forum (WF) “Making the Green Economy Work”, took place January 10<sup>th</sup> – 12<sup>th</sup>, 2010. By all accounts, it was an experience that engaged students and faculty in a way that few other events at Duke in the recent past have achieved. Despite some opportunities for improvement, overall the assessment is very positive. This is evidenced by this small sampling of student comments taken from the post-forum survey:

- *It was an amazing experience, although it was nothing like I thought it would be. I learned so much from the panels, but I think I learned the most in our small-group sessions and with conversations with other people at the forum. Can't wait for Winter Forum 2011!*
- *It was great! Exceeded my expectations. Especially enjoyed how involved students were able to get, rather than simply getting lectured at.*
- *I enjoyed it thoroughly and appreciate all that happened. I will look forward to see what this Forum sprouts into!!!*

This perception is not just held by the students:

- *It was a pleasure and an inspiration to be part of the first Winter Forum. I was impressed with the organization, the success of the format, the broad multidisciplinary quality of it all, and especially with the level of engagement of the students and the quality of their participation and presentations.  
Congratulations, well done,  
Josiah Knight*

- *I was going to say it was Duke at its best, and it was--but I really would say it was just plain education at its best. Inspiring—Dick (President Brodhead)*
- *You didn't just launch this new idea successfully; you set the bar very, very high. I worried a bit that my opening remarks were too hyperbolic when I said that a future generation of Dukies would look back and wonder how cool it must have been to be at the very first Winter Forum. I'm not so worried any more.*

*Steve (Steve Nowicki)*

- *I spent yesterday afternoon listening to the student presentations for the Winter Forum. I have rarely been so inspired. I must admit that, in the SACS discussions, I was skeptical that we could recruit students to come back early or that they could really develop through an intellectual project in two and a half days. Boy, was I wrong on both counts. It was an amazing community of engagement all around. The students were so articulate and took such ownership in their learning (many saying that they were going to sign up again for next year), and faculty on my row were saying "that is MY team" and were so integrated with the projects and proud of THEIR students. It was the epitome of the best that Duke is and will be a hard act to follow.*

*Lee (Lee Willard)*

The WF succeeded on several levels. In particular, the participation of students in the forum helped them move toward achieving the overall student learning outcomes of the Quality Enhancement Plan, specifically encouraging movement towards becoming world citizens. The

assessment of the WF, via indirect, self-report surveys and direct, rubric-based evaluation, both point to an increase in the students' awareness of this global issue from multiple disciplinary perspectives as well as from multiple cultural perspectives. The data indicate greater learning gains with respect to students' multi-disciplinary perspectives, but both areas do reflect movement.

Several areas of concern are evident. First, the composition of the audience drawn to this WF does not reflect the targeted student population. Obviously the audience largely will be influenced by the WF topic; however, one of the main goals of the forum was to reach populations that, for several reasons, normally would not be able to take advantage of other globalization opportunities here at Duke. We did not reach two of our main constituencies in this area. Also, the make-up of the participants with regard to major discipline was skewed. Two conspicuously absent groups were those interested in the Humanities and those interested in the Arts (identified by student major and confirmed by self-reported areas of interest). One additional group that was to be targeted in the original drafting of the WF was alumni. Perhaps a rethinking of the scope of their participation is needed. Elements of this issue may be remedied by earlier and more targeted advertising of the event.

Although, overall, the WF was successful, the pre-forum knowledge assessment was not as thorough a measure as desired. This component was comprised of only four items (two multiple choice, and two true/false) and it provided mixed results. The knowledge assessment requires more depth and breadth for the next winter forum.

One important element was the ability of the forum to advance participants' knowledge about and ability to think critically regarding global issues. Overall students reported favorable assessments of the WF with respect to meeting their expectations, particularly in reference to evaluating and thinking about global issues. Students report their experiences fell slightly short of their expectations the areas of general educational goals like critical thinking. Students related a high level of engagement in the activities, including the expectation that they will pursue similar opportunities in the future. Many indicated that they plan to integrate the information and skills acquired into their daily home and school life.

One of the major concerns reported by students was the amount of work associated with the WF and the timing of that work. Most felt that pushing the assigned readings/homework to earlier in the term would be very beneficial. Again, this is a solvable issue given the longer window of time available for planning the 2011 WF.

Assessment should be integrated into the WF planning process. For this forum we were unable to obtain a set of student learning outcomes (SLOs) specific to this topic. SLOs allow and encourage the development of rubric more highly tailored to the objectives of the program. In turn, this rubric would have enabled the collection of richer and more precise data to inform future forums. Again, this challenge was due to the somewhat abbreviated planning period; we expect a more specific assessment plan will be in place for the 2011 WF.

Overall, the 2010 WF provided an opportunity for student-faculty engagement that often may not be visible on campus. It moved our students toward a deeper understanding of this important global issue as well as their contribution to the ongoing dialogue. It will take some time to determine the impact this experience has and will continue to have on the broader Duke population. The assessment provided valuable feedback for the 2011 WF, which can be an equal or even greater success.

## Winter Forum 2010 Student Learning Assessment Report

February 15, 2010

The overriding goal of the Duke University Quality Enhancement Plan (QEP), “Global Duke: Enhancing Students’ Capacity for World Citizenship”, is to enable Duke graduates to learn and function most effectively in the world—to be “world citizens”. In order for the QEP to be successful in achieving that goal, participants in all programs need to make progress in the following three student learning objectives: (1) Knowledge: an awareness of significant contemporary issues and their global scope, including the history, differences, and perspectives of and within regions and cultures; (2) Skills: the ability to engage positively with, and learn from, people of different backgrounds and in different environments; and (3) Attitudes: self-awareness as both a national and global citizen (See Table 1 below). In addition, the activities associated with the QEP should contribute to the development of connections within the student body through shared experiences, and in so doing, strengthen the sense of Duke as a learning community.

TABLE 1  
Knowledge, Skills, and Attitudes and Values of a World Citizen

Element	Details
Knowledge	Understanding of culture, diversity, globalization, interdependence, global irregularities, peace and conflict, nature and environment, sustainable development, possible future scenarios, social justice
Skills	Research and inquiry skills, theory testing, critical thinking, communication skills and political skills essential for civic engagement in a global society, cooperation, and conflict resolution, ability to challenge injustice and inequalities
Attitudes and values	Appreciation of human dignity, respect for people and things, belief that people can make a difference, empathy toward other cultures and viewpoints, respect for diversity, valuing justice and fairness, commitment to social justice and equity, curiosity about global issues and global conditions that shape one's life, concern for the environment, and commitment to sustainable development

The first part of the Duke QEP to be implemented was the 2010 Winter Forum, “Making the Green Economy Work”. The Winter Forum (WF) took place January 10-12, 2010 (See Appendix I for an event program). This Forum was co-directed by Tim Profeta, Director of the Nicholas Institute for the Environment Policy Solutions, and Brian Murray, Director of Economic Analysis of the Nicholas Institute for Environmental Policy Solutions.

By connecting students, faculty and individuals from outside the university together for a series of lectures, associated group work, and social engagements, the WF was intended to move student participants towards the achievement of the above stated student learning objectives (SLOs). The WF exposed student participants to an important global issue and in the process imparted relevant knowledge and enhanced their ability to evaluate that issue from multiple disciplinary and cultural perspectives. The WF-specific SLOs enhance the student’s abilities to:

- a) Evaluate a global issue from perspectives of multiple disciplines.  
Relates to QEP Objectives: 1, 2
- b) Evaluate a global issue from multiple cultural perspectives.

- Relates to QEP Objectives: 1, 2
- c) Engage in collaborative group work, centered on a global issue that serves to deepen their understanding of that issue.  
Relates to QEP Objectives: 2, 4
- d) Relate the Winter Forum experience to classroom coursework and co-curricular experiences.  
Relates to QEP Objectives: 2, 3, & 4

An ancillary but equally important set of goals for the WF was: (1) To provide a large-scale activity that brings many undergraduate students together with graduate and professional students, international students, faculty, and alumni in a shared, collective, intellectual endeavor; and (2) to provides another route by which students explore global issues for those segments of the student population that, for a variety of reasons, find it particularly hard to fit travel abroad into their schedules (e.g., athletes, scientists).

### **Assessment:**

#### **Participants**

Faculty participants (both speakers and group facilitators/mentors) in the WF were drawn from a wide array of disciplines and schools/institutes within the university. These included the Nicholas School of the Environment, Trinity College of Arts and Sciences, Fuqua School of Business, and the Nicholas Institute for the Environment Policy Solutions. Additional speakers and facilitators were drawn from private industry, politics, and the Duke student body (the Duke International Relations Association, or DIRA). The student-to-faculty target ratio of 10:1 was achieved with an actual ratio of one faculty and one graduate student facilitator for all but one of the 7- to 9-person student teams. Only seven graduate students participated in the 2010 WF. This number falls below the expected graduate student participation level, but their participation was valued by the undergraduate participants. Feedback in the form of graduate student comments from the post-program survey (detailed below) indicates that some of the graduate students felt the level of sophistication of the presentations was not as engaging to them as it was to the undergraduate participants. For a partial list of faculty participants and affiliations, see Appendix XI.

Alumni were not represented well at the forum, from the presenter/facilitator side. Also, it was hoped that the new Global Advising Program would be in place at the time of the WF and that would enable the participation of the Global Advisors. This was not the case, but we are optimistic that program will be in place in time for the 2011 WF.

The target undergraduate participants in year one of the program was 75; this target was achieved. The total number of undergraduates applying to participate and participating was 78 and 72, respectively. The long-term attendance goal (post-year 3) originally was 400. This goal was thought to ensure that the WF would reach a significant portion of the undergraduate student population. In a debriefing meeting held following the WF, the advisory council began to reconsider that goal. Due to the perceived high level of interaction between faculty and students and among students, etc., there is strong agreement that a cap of 100 undergraduate participants should be implemented. Whether this lowered ceiling will affects the ability of the WF to impact a significant number of Duke undergraduates is yet to be determined. Over the next few years we will continue to assess the longer-term effects, namely the influence of the WF participants on the rest of the student body.

A full demographic breakdown of the forum applicants (N=78) is listed in Appendix II. There was a good representation of both Trinity College and Pratt School of Engineering students. Also, the gender breakdown was effectively equal. The breakdown by matriculation year shows that just over half of the applicants were in their second or third year at Duke with just a quarter of the applicants in their first year and the remainder made up of fourth year students. Two of our main target populations were those students who either traditionally do not take advantage of travel as a globalization experience or have other commitments that tend to discourage that type of experience. Two such groups are African-American students and Scholarship athletes. As the Ethnicity and Athletic status breakdowns show, the WF was not successful at recruiting these populations. Only 4% of the participants in the WF were African-American, even though the Duke student body is comprised of approximately 10% African American students. Also, there were no athletes of any designation participating in the WF.

With respect to academic interests of the participants, as indicated by major, the largest percent of participants were undeclared or unknown. This is a function of a large number of participants being in their first or second year and not having declared a major. Of those having declared a major, economics, engineering, environment, and public policy are well represented. Conspicuously absent are majors in the humanities and arts, literature and performance disciplines. Obviously the participants in any WF will be largely motivated by the specific topic, yet it is important that recruitment efforts focus on diversity of discipline.

### **Student Learning Outcomes**

**Test of Student Knowledge:** A brief test of student knowledge was submitted by the event organizers and, as part of the application, it was administered prior to participation in the WF. This test was made up of four items (multiple choice and True/False) with the intention of eliciting information about: the student's sense of the interdisciplinary and intercultural complexity of the issue; the student's factual knowledge in relation to the global issue that is the topic of the Forum; and the student's ability to engage in rigorous analytical thinking on the issue. The four test items are as follows:

- 1) Which of the following is the current leading source of electricity generation in the US?
  - Nuclear Power
  - Coal
  - Combination of Wind, hydroelectric, geothermal and other renewable
  - Natural Gas
- 2) Which of the following represents the top 2 leading emitters of greenhouse gases?
  - US EU (European Union)
  - EU China
  - India, EU
  - China, US
- 3) True or False: Environmental pollution is an external cost, or negative impact, which is consistently reflected in the full cost of products we purchase.
- 4) True or False: A venture capitalist is an investor who invests in a startup venture; higher returns are expected because of the higher risks.

As a follow-up, 10 days after the end of the forum, the participants were sent a supplemental, online post-program survey. Completion of this post-test was voluntary and it included the post-program self-report assessment instrument. This post-forum administration was incentivized. All participants that completed both the pre- and post-program instrument were entered in to a drawing for one of three iPod Shuffles. It was expected that students would show increased knowledge and awareness of the relevant issues. The test gave the students immediate feedback concerning gains in their level of knowledge (Relates to Winter Forum Outcomes: a & b).

Performance on the pre- and post-test is detailed in Table 2 below. Performance on item 1 was marginally higher (95% vs. 86% post- versus pre- respectively), however this was the only item in which an increase in performance was seen. Approximately 9% of the respondents missed item 2 on both the pre- and post-forum instrument and 15% got the incorrect answer on both the pre- and post-forum instrument in response to item 3. For item 4, there was a very slight increase in the percent of respondents who answered incorrectly. These results should be interpreted in a guarded fashion. A four-item knowledge test may not provide enough information about the probable knowledge gains made by the participants. In the next iteration there should be an increase in both the number and type of knowledge questions.

Table 2

<b>Winter Forum Pre-to-Post Program Survey</b>				
<b>Making the Green Economy Work, January 2010</b>				
	Pre survey N =	76	(including graduate students)	
	Post survey N =	59	(including graduate students)	
<b>Which of the following is the current leading source of electricity generation in the US?</b>	<b>nuclear power</b>	<b>coal</b>	<b>combination of renewables</b>	<b>natural gas</b>
Pre-program	0 0.0%	65 85.5%	0 0.0%	11 14.5%
Post-program	1 1.7%	56 94.9%	2 3.4%	0 0.0%
<b>Which of the following represents the top 2 leading emitters of greenhouse gases?</b>	<b>US, EU</b>	<b>EU, China</b>	<b>India, EU</b>	<b>China, US</b>
Pre-program	5 6.6%	2 2.6%	0 0.0%	69 90.8%
Post-program	5 8.5%	0 0.0%	0 0.0%	54 91.5%
<b>True or False: Environmental pollution is an external cost, or negative impact, which is consistently reflected in the full cost of products we purchase.</b>	<b>TRUE</b>	<b>FALSE</b>		
Pre-program	12 15.8%	64 84.2%		
Post-program	9 15.3%	50 84.7%		
<b>True or False: A venture capitalist is an investor who invests in a startup venture; higher returns are expected because of the higher risks.</b>	<b>TRUE</b>	<b>FALSE</b>		
Pre-program	72 94.7%	4 5.3%		
Post-program	55 93.2%	4 6.8%		

**Student Surveys:** Prior to the WF, students were surveyed about expected gains in relation to the four learning outcomes as well as other topic-relevant issues. As mentioned above, at the conclusion of the WF participants were asked to assess their perceived gains (Relates to Winter Forum Outcomes: a, b, c, & d).

The Office of Assessment administered a pre-program survey to undergraduate and graduate student participants one week prior to the opening of the 2010 WF. Seventy-six participants responded to the survey, representing 97.4% of registered students. (Participants who had not responded to the online form by the beginning of the opening panel were asked to complete a pen/paper version of the form that evening.) The post-program survey was issued roughly 10 days after the conclusion of the Winter Forum; 59 undergraduate and graduate student participants responded, representing 75.6% of registered students. The pre-program and post-program surveys were incentivized jointly: respondents who completed both surveys were eligible for a drawing for one of three iPod Shuffle MP3 players.

On both surveys, participants were asked to report their perceived ability to evaluate a global issue from perspectives of multiple disciplines (WF Objective 1, QEP Objectives 1, 2), evaluate a global issue from multiple cultural perspectives (WF Objective 2, QEP Objectives 1, 2), and engage in collaborative group work, centered on a global issue that serves to deepen their understanding of that issue (WF Objective 3, QEP Objectives 2, 4). Participants reported substantially higher levels of ability in all three areas by the end of the program. On a scale of 1 to 5 (5 representing very high ability), participants on average rated their abilities 3.95, 3.58, and 3.83, respectively, up from means of 3.11, 3.12, and 2.95 prior to the program. In a similar vein, participants on average reported increases in their ability to evaluate global issues from a historical perspective (2.75 to 3.42), to think critically about the relationship between science and public policy (3.36 to 4.19), to relate what you know about the 2010 Winter Forum topic to future coursework and co-curricular experiences (WF Objective 4, QEP Objectives 2, 4) (3.27 to 4.02), and to engage in collaborative group work centered on the 2010 WF topic (3.29 to 4.07).

The pre-program survey also asked participants to indicate the importance they attribute to the preceding ability areas. On a five-point scale (5 representing very important), the means roughly centered on "important" (4). *Being able to evaluate global issues from a multi-disciplinary perspective* rated highest on this scale of importance (4.22), followed by *being able to think critically about the relationship between science and public policy* (4.12), and *being able to relate what you know about the 2010 WF topic to future coursework and co-curricular experiences* (4.03). Participants rated all ability areas important (3s and 4s), despite their somewhat lower levels of self-reported ability.

The pre-program and post-program surveys explored participants' self-reported expectations and gains in six general education learning outcomes. The relationships between expectations and actual gains varied, though the magnitudes of difference were relatively small. (Five on the pre-program survey represents 'Very high expectation' and 5 on the post-program survey represents gains achieved 'Very highly'.) Participants rated their gains slightly lower than their expectations on the following items: *gaining factual knowledge* (expectation = 3.92, gain = 3.83); *learning to apply knowledge, concepts, principles, or theories to a specific situation or problem* (expectation = 4.05, gain = 3.86); *learning to analyze ideas, arguments and points of view* (expectation = 3.91, gain = 3.86); *learning to integrate and synthesize knowledge* (expectation = 3.96, gain = 3.74); and *learning to evaluate the merits of ideas and competing claims* (expectation = 4.05, gain = 3.74). The reverse is true for perceived gains in *understanding fundamental concepts and principles* (expectation = 3.83, gain = 3.88).



Using the same scale, the pre-program and post-program surveys compared expectations and perceived gains in enhancements in writing skills (expectation = 2.85, gain = 2.58), speaking skills (expectation = 3.41, gain = 3.19), and critical thinking skills (expectation = 3.68, gain = 3.66), all of which show participants rating their gains slightly lower than their expectations. The reverse is true for their assessments of their ability to work independently (expectation = 2.75, gain = 2.78) and their ability to work in a team (expectation = 3.72, gain = 3.83).

Participants also evaluated their *ability to recognize ethical problems in science and public policy* (expectation = 3.74, gain = 3.64), *ability to work through ethical problems in science and public policy* (expectation = 3.78, gain = 3.53), and *ability to take a stand even when others disagree* (expectation = 3.57, gain = 3.34). Self-reported gains in these areas are slightly lower than participants' expectations.

The pre-program and post-program surveys compared participants' self-reported areas of interest (where 1 represents no interest and 4 represents substantial interest). Not surprisingly, participants rated economics (3.03 pre-program, 3.02 post-program) and environmental science (3.28 pre-program, 3.07 post-program) the highest. Prehealth rated the lowest on both surveys (2.00 pre-program, 1.76 post-program). Across almost all disciplines represented in the surveys, interest levels declined by the post-program survey. The greatest decline was seen among the arts (2.65 pre-program, 2.09 post-program) and foreign languages (3.00 pre-program, 2.52 post-program).

With respect to the intellectual and professional opportunities made possible by the Winter Forum, participants indicated that *opportunities to gain information to integrate into their daily life* most substantially exceeded their expectations (3.24 pre-program, 3.51 post-program). Participants also indicated that, on average, their expectations of *an environment encouraging of open and honest exchange* were surpassed (3.93 pre-program, 4.05 post-program). Conversely, participants overall indicated that their experience *developing academic and professional networks* rated lower than their expectations (3.82 pre-program, 3.54 post-program). It should be noted that on a scale of 1 to 5, 5 represents very high expectations or very highly achieved; these averages indicate high levels of perceived access to networks, expertise, and diversity of points of view.

A majority of respondents indicated that they plan to pursue further involvement in sustainability (N=45, or 76.3%) at the conclusion of the program. Among them, 62.7% plan to adopt a more sustainability-oriented lifestyle, 59.3% will consider a career in a "green" job, 55.9% intend to enroll in additional courses, and 30.5% plan to join a student group focused on this subject. These questions were asked on the post-program survey only.

Participants rated the keynote panel (4.54) and student interaction in general (4.34) the most enjoyable elements of the Winter Forum, where 5 represents enjoyed very much. With the exception of the Model U.N. (3.54), all components were rated above 4.00. When asked to evaluate these components' contributions to their learning gains, one observes a similar pattern: the keynote panel had the greatest contribution (4.22) followed by intellectual debate in general (4.07). Participants indicated that the Model U.N. had the least impact (3.51), though still a moderate to high impact.

Programmatically, participants felt that the venue was suitable (4.57, where 5 represents strongly agree) and that the keynote was an effective introduction to the Winter Forum (4.56). Participants had mixed appraisals of the effectiveness of the monetary incentive for the group work; on average, they were neutral about the incentive (3.29). Open-ended responses tend to

suggest that each individual would not receive a large share of the prize and that most participants have other intrinsic motivations. Participants suggest that pre-program work should be issued earlier, with 25 respondents (42.4%) indicating it should be communicated sometime prior to fall break. Communication between program coordinators and students (3.90, where 5 represents very effective), between faculty and students (3.57), and among students (3.76) was rated neutral to effective.

Only 12 respondents (20.4%) to the post-program survey indicated that they would not reapply to a future Winter Forum. The open-ended responses suggest that many are graduating in May 2010 or do not have a strong interest in the topic of the 2011 program. A majority of respondents will recommend the Winter Forum to other Duke students (N=45, or 76.3%).

Please see Appendices VIII and X for copies of the pre- and post-program surveys and a complete set of results.

**Forum Activities Assessed by Rubric:** A random set of 3 out of 4 trained raters from the Office of Assessment, Trinity College (OATC) and the Office of Institutional Research (IR) attended all of the event activities and, using a standardized rubric(s), assessed the impact of a subset of the activities in terms of effectiveness in helping the participants successfully achieve the SLOs established for the WF. The rubric was developed collaboratively by the OATC and the IR. The rubrics used followed a developmental approach and can be viewed in Appendix III. The developers/raters met three times prior to the forum to familiarize themselves with the rubric and calibrate its application (Relates to Winter Forum Outcomes: a, b, & c). The developmental scale used by all rubric was based on Bloom's taxonomy<sup>1</sup>, including the following levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.

The opening plenary and the first three faculty presentations were assessed by a minimum of three raters and the final session (student competition) was rated by only 1 rater. (It had been agreed that we would not rate the faculty portion of that session; however one of the raters completed the rubric score sheet anyway so we have added that entry to the data for a total of 14 separate ratings.) The presentations were assessed on three areas: 1) the developmental level at which presenters delivered information and reflected the perspectives of multiple disciplines; 2) the developmental level at which presenters reflected multiple cultural, geographical, and historical (CGH) perspectives; and 3) a global rating indicating whether the presentation met expected outcomes. A full detail of the data for faculty presentations can be found in Appendix IV.

In terms of multiple disciplinary perspectives, presentations in the opening plenary and sessions 1, 2 and 4 were rated at the analysis/synthesis level. The information was presented in a way that exposed the participants to not only a set of facts but also integrates the information into a coherent analytic set of information. Session 3 was rated at the comprehension/application level. This indicates that the information was presented in a way that allowed comprehension and straightforward application without a large amount of analysis or synthesis of the information.

In terms of multiple CGH perspectives, the presentations were rated predominantly in the comprehension/analysis range. However, there was far less agreement in the ratings in this area. This may be due to the design of the rubric as well as having multiple speakers, rather than a single speaker, in each presentation. The Global Expectations question was added to

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<sup>1</sup> Bloom, B., Englehart, M. Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York, Toronto: Longmans, Green.

supplement the rubric. The global ratings almost universally (92%) show that the presentations either met or exceeded expectations. Of all of the sessions, the opening plenary was consistently the highest rated presentation on all three areas. This corroborates the student perceptions as detailed in the survey data above.

The student engagement in each of the presentations was assessed using a similar developmental rubric. The ratings show that for both multiple disciplines as well as multiple CGH, the students fell in the comprehension/application range. This is not unexpected; the forum was set up to encourage participants ask clarifying and probing questions and attempt to integrate the new information in to their existing knowledge and beliefs. (In this case, as in the ratings detailed above, the one rating for session 4 should be disregarded as we do not have any corroborative data.) A breakdown of these ratings can be seen in Appendix V.

During three of the sessions the students were separated in to their respective groups and tasked with a challenge associated with the theme of the WF. The group assignments were designed to balance, as far as possible, gender, ethnicity, program, and year in school. The break-out session in the third overall session was too brief to allow the proper rotation of observers, therefore only two of the three breakout sessions were assessed. Each session was assessed at three points (beginning 7 to 10 minutes, middle 7 to 10 minutes, and final 7 to 10 minutes) using a similar developmentally-related rubric. A full breakout of the ratings can be seen in Appendix VII. Overall, there is a gradual shift in the ratings from beginning of the sessions to the end of the sessions. The level of participant interaction moved from being predominantly at the knowledge/comprehension level at the beginning of the sessions to the comprehension/application level during the middle of the sessions and eventually reaching the comprehension/analysis level by the final section of the session. This pattern of ratings also was observed in reference to evaluation from multiple disciplines and from multiple CGH, as well as in regard to the level of collaborative work.

Participants were required to do multiple presentations of group work and perform interactive tasks during the WF. This included the team business proposal competition, summary presentations, and participation in a Model UN. Each of these activities was assessed similarly, to evaluate participants' use of multiple disciplinary and multiple CGH perspectives. Summarizing the ratings of all activities, aggregated, participants were engaging the material at the analysis/synthesis level (60% of the ratings) with respect to multiple disciplinary perspectives. The participants were engaging the material at an even higher level, synthesis/evaluation with respect to multiple CGH perspectives (52% of the ratings) although there was a lesser degree of agreement in these ratings. In terms of the global question, 100% of the ratings indicate that the presentations either 'Met' or 'Exceeded' expectations. A breakdown of the overall ratings can be found in Appendix VI.  
(Relates to Winter Forum Outcomes: a, b, & c)

In addition to this assessment, the final group presentation was judged by an expert panel of venture capitalists. This panel judged and gave feedback to each group with respect to: 1) maximizing the amount of capital the team will be able to amass in 10 years and (2) the size of the negative carbon footprint from today's status quo (e.g., by saving energy, by reducing carbon emissions, by sequestering carbon). In addition, the panel gave feedback on feasibility of the project and quality of the presentation itself. Overall, each group was praised for their ingenuity and presentation. None of the panel's ratings are figured in to this report beyond this. The panel's task was to select the recipient of the monetary award for the 'best' plan.

## Ongoing and Planned Assessment Activities

In order to assess the long-term effect of WF participation, the Office of Assessment will track the student cohorts participating in the WF as they matriculate through the university. This tracking will include breaking out student groups and years by use of socio-demographic data (ethnicity, gender, etc.) as well as other institutional markers (program, co-enrolled in other programs, graduation with distinction, etc.). Included in this tracking will be our standard practice of tracking and using existing institutional data on academic performance, co-curricular activities and existing college and university-wide surveys (e.g., Enrolled Student, Senior Exit, Advising, and Alumni surveys). The Winter Forum Advisory group, in collaboration with the survey administrators and program directors, will review these instruments to determine what information they can already provide about the effects of participation in the WF and determine what, if any, new items could be added to enhance assessment of the WF. The tracking and reporting of institutional data as well as the administration of existing surveys will remain under the control of the offices in which each is currently housed (Office of Institutional Research and the Office of Assessment, Trinity College).

To assess attainment of the overarching goal of Duke's QEP, ***to enhance our students' capacity for global citizenship***, we will administer standardized psychometric inventories to all matriculating cohorts (or samples thereof) and follow these up with appropriate sub-group analyses. This will allow for a complete factorial comparison of all QEP program participants and appropriate control groups. The instruments used will assess some of the basic skills (critical reflection and ethical and moral reasoning) we feel are necessary to obtain the overarching goal, as well as assess aspects of our students' intercultural competence development, specifically their ability to see the world from others' perspectives. The tools used will be:

- For critical reflection, the Reasoning about Current Issues Inventory (RCI)
- For ethical and moral development, the Defining Issues Test (DIT-2)
- For Cultural Perspective-Taking, the Global Perspectives Inventory (GPI)

The use of these standardized instruments provide us with the ability to evaluate the impact of the specific programming on our students but also allows for the comparison of our students to nationally (and in most cases internationally) normed results.

**Six-month Follow-Up:** Integration of the QEP Components into the larger Duke community (e.g., by means of house courses, class projects, presentations, use of Cultural Fund and University Fund monies [<http://osaf.studentaffairs.duke.edu/funding/sources/index.html>] or the like) will be assessed using institutional data, self report, and e-portfolio content analysis. At the end of the first term after a Winter Forum and Global Semester Abroad, we will assess the comprehensiveness of the data collected and make appropriate additions if necessary.

**One-year Follow-Up:** Similar to six-month.

## Appendix I



NICHOLAS INSTITUTE FOR ENVIRONMENTAL POLICY SOLUTIONS  
DUKE UNIVERSITY

## “Making the Green Economy Work”

Duke University's Inaugural Winter Forum

January 10 – 12, 2010  
Durham, North Carolina

~

### Sunday January 10th

**5:30pm - 6:45pm**

Dinner for Winter Forum participants at Blue Express Café, Levine Science Research Ctr.  
Tables for each of the 8 breakout groups

**7:00pm - 8:30pm**

Love Auditorium, Levine Science Research Center

Welcome by Steve Nowicki, Dean of Undergraduate Education &  
Tim Profeta, Faculty Co-Director

Keynote Panel, “Envisioning the Green Economy”

**Chad Holliday**, Former Chairman and CEO, DuPont

**& Allen Joines**, Mayor of Winston-Salem, North Carolina

**& David Orr**, Paul Sears Distinguished Professor of Environmental Studies and Politics and Special

Assistant to the President of Oberlin College

Moderated by: Tim Profeta

**8:30pm - 9:30pm**

Dessert Reception, Hall of Science, Levine Science Research Center



**Monday January 11th**

Sanford School of Public Policy, Room 04

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**8:30 - 8:55am** – Continental Breakfast, Fleishman Commons

**8:55-9:00am** – Welcome, Tim Profeta

**9:00 - 11:45am** – Session I – “Approaching the Green Economy”

**Faculty leads – Jim Salzman, Jonathan Wiener**

**9:00-10:00 am Interdisciplinary Faculty Panel**

Jim Salzman, Jonathan Wiener, Erika Weinthal, Bob Clemen, Gale Boyd, and Norman Wirzba will set the stage for the two-day program by discussing how we got where we are today, and how we might get from here to there. The panel will address the underlying causes of environmental problems; the options for improving environmental quality; and the obstacles, tradeoffs and opportunities that confront an effort to transform the US economy into a “Green Economy.”

Each speaker, in 5-6 minutes, will provide one perspective on these challenges, focusing on the problem of climate change and the choice among energy sources such as coal, nuclear, wind, and solar. Issues include;

- (i) Market failures, notably the risks (externalities) posed by different energy systems, and the risk-risk tradeoffs among energy choices;
- (ii) Political failures, such as free riding, special interest group pressures, and the difficulties of mobilizing collective action, domestically and internationally;
- (iii) Business obstacles, such as the economic costs of constructing and operating energy systems, and of producing innovations;
- (iv) Trends in the demand for energy and obstacles to greater energy efficiency; and
- (v) Public attitudes, desires, and ethics.

The panel will conclude with time for questions and comments from the audience and the panelists.

**Required Readings:** For both the Faculty Panel above and the following Team Exercise, students need to read both of the following two materials (posted on the Winter Forum’s Blackboard site) before January 10th:

- “Briefing Memorandum – Options for Future U.S. Electric Power: Coal, Nuclear, Wind and Solar” (7 pages)
- Excerpt from J. Salzman and B. Thompson, *Concepts and Insights in Environmental Law and Policy* (2<sup>nd</sup> ed. 2007), Chapters 2 (“Perspectives on Environmental Law and Policy”) and 3 (“The Practice of Environmental Protection”) (30 pages total)

**10:10-11:25am Team Exercise**

Students will break up into their 8 teams (including a faculty member advising each team, and one team member with a computer with PowerPoint and email access), and move to breakout rooms around the Sanford School building. For the first 45 minutes, each team should brainstorm how best to address the United States’ choices for its energy future and the move toward a “Green Economy,” such as coal,

nuclear, wind, and solar. Teams should consider the challenges each approach raises, and potential solutions.

In the remaining 30 minutes, each team should produce its proposal for the best path from the present to a Green Economy. Each team's proposal must be presented and justified on a single PowerPoint slide. This slide must cover at least: (1) which energy source(s) the US should choose, (2) the benefits this path will yield and the obstacles or tradeoffs this path will face, and (3) how the team's proposal will address or surmount these obstacles or tradeoffs.

Each team's single PowerPoint slide must be provided by flash drive or by email to **Jessica.Sheffield@duke.edu (to be confirmed)** in Sanford room 04 no later than 11:28 am, so that all 8 proposals may then be presented to the full group.

### **11:30am-12:00pm Reconvene and Debrief**

All 8 teams will reconvene in Sanford Room 04. The moderators (Jim Salzman & Jonathan Wiener) will lead an open discussion and comparison of the 8 proposals shown on the PowerPoint slides.

**12:00 - 1:00 pm** - Box Lunches for full group, Fleishman Commons

### **1:00 - 4:30pm - Session II Lessons from Copenhagen Faculty leads, Brian Murray and Tim Profeta**

Introduce students to the history leading up to the recently completed (Dec 2009) UN climate conference Copenhagen, the key issues negotiated there, the outcome of the negotiations, the path forward, stumbling blocks, ways to get around them and what it could mean for the economy for the future (30 minutes).

Group Exercise – "Model UN" facilitated by Duke International Relations Association  
Breakout into country groups - US, EU, Russia, China, India, Forest Bloc (Brazil and Indonesia), OPEC, low-lying island countries and other developing countries - to evaluate perspectives on how negotiations worked for them, or not. Groups will develop and negotiate positions on 3 key areas; Targets and Timetables, Technology Transfer, and Adaptation. Students from DIRA leading this session include:

<b>Name</b>	<b>Country</b>
Caitlin Gorback	OPEC
Alexander Robel	Russia
Jack Zhang	China
Colette Nickel Watt	European Union
Jessica Lutkenhaus	Forested Bloc
Bethany Horstmann	India
Angela Mitchell	LDC's and Island Nations
Emily Bailey	United States

**4:30** - Debrief and Break

**5:45** – Dinner, Fleishman Commons

## Tuesday January 12th

Sanford School of Public Policy, Room 04

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**8:30-9:00am** – Continental Breakfast, Fleishman Commons

**9:00 - 11:45am - Session III**

**Providing Green Energy: Challenges and Opportunities for Wind Power**

**Faculty Leads – Josiah Knight, Gary Gereffi**

**09:00 - 10:00 Panel presentations and open discussion**

Gary Gereffi, Center. on Globalization, Governance and Competitiveness (CGGC): Moderator

Josiah Knight, Pratt School: Basic physical principals and performance limits

Spencer Hanes, Jr., Mgr., Renewable Energy and Carbon Strategy, Duke Energy: Coastal wind project of Duke Energy

Jeffrey Gendell, Tontine Associates: Investor perspective

Gloria Ayee, CGGC: Value chain analysis

**10:00 - 10:15 Transition and break**

**10:15 - 11:30 Breakout mini-sessions**

Facilitated discussion of a wind energy proposal: location, business and social factors.

**11:30 - 12:00 Report on discussions**

Group facilitators will use the closing minutes of the breakout session to identify for emphasis some points raised in the session. The moderator will present these points and coordinate a full group discussion in the final 30 minutes.

### Resources:

- G. Ayee, M. Lowe, and G. Gereffi, Wind Power: Generating Electricity and Employment (Chapter 11 of Manufacturing Climate Solutions: Carbon-Reducing Technologies and US Jobs) [www.cggc.duke.edu](http://www.cggc.duke.edu)
- Duke Energy, Redefining our Boundaries: 2008-2009 Sustainability Report <http://sustainabilityreport.duke-energy.com/>
- C.J. Yang, E. Williams, and J. Monast. 2008. [Wind Power: Barriers and Policy Solutions](#) . Climate Change Policy Partnership

**12:00 - 1:00pm** - Box Lunches for full group, Fleishman Commons

**1:00 – Session IV – Start-Up Businesses in the Green Economy:**



**A Student Competition**  
**Faculty lead, Bill Brown**

**Judges:**

**Katrin Burt, InterSouth Partners**  
**Ryan Shockley, First Reserve**  
**David Kirkpatrick, SJF Ventures**  
**Mike Michael, Independent Consultant**

A panel of expert judges will judge start-up green-tech business proposals from student teams.

Each team was asked to put together a business that furthers the green economy. The goal is two-fold (i) to maximize the amount of capital the team will be able to amass in 10 years and (ii) to have a negative carbon footprint from today's status quo (e.g., by saving energy, by reducing carbon emissions, by sequestering carbon). The team is asked to imagine that they have just graduated and that each member has enough money for living expenses for 12 months. In addition, the team has \$1,000,000 to spend on developing its ideas, business plan and any prototypes necessary to convince a first round of investors to buy into the company.

**5:00 - 6:00pm Closing reception hosted by President Brodhead, Hart House**  
(Walking directions provided in registration packet)

**Small Group Room Assignments**

Team 1	Sanford 03
Team 2	Sanford 102
Team 3	Sanford 150
Team 4	Sanford 223e
Team 5	Sanford 224
Team 6	Sanford 225
Team 7	Sanford 223d
Team 8	Sanford 223

## Appendix II

Winter Forum applicant pool  
Applications received through 4:00 pm on November 4, 2009

N = 78

Academic program	N	%	First major	N	%
Trinity	62	79.5%	U-BIO-BS	2	2.6%
Pratt	13	16.7%	U-BME-BSE	1	1.3%
Unknown*	3	3.8%	U-CE-BSE	4	5.1%
			U-ECE-BSE	2	2.6%
			U-ECON-AB	1	1.3%
			U-ECON-BS	7	9.0%
			U-ENVS-AB	4	5.1%
			U-ENVS-BS	2	2.6%
			U-EOS-AB	1	1.3%
			U-ICS-AB	3	3.8%
			U-ME-BSE	5	6.4%
			U-PFS-AB	6	7.7%
			U-PSY-AB	1	1.3%
			Undeclared	17	21.8%
			Unknown	22	28.2%
Matric year	N	%	Second major	N	%
Summer 06 - Spring 07	12	15.4%	U-ECON-BS2	4	5.1%
Summer 07 - Spring 08	24	30.8%	U-ENVS-BS2	1	1.3%
Summer 08 - Spring 09	20	25.6%	U-HIST-AB2	1	1.3%
Summer 09 - Spring 10	19	24.4%	U-MATH-AB2	1	1.3%
Unknown*	3	3.8%	U-PFS-AB2	1	1.3%
			U-SPAN-AB2	1	1.3%
Gender	N	%			
Female	38	48.7%			
Male	39	50.0%			
Unknown*	1	1.3%			
Ethnicity	N	%			
AA	3	3.8%			
AI/AN	0	0.0%			
AP	23	29.5%			
Caucasian	40	51.3%			
Hispanic	2	2.6%			
Not specified	1	1.3%			
Other	6	7.7%			
Unknown*	3	3.8%			
Athletic status	N	%			
Non-athlete	75	96.2%			
Tier 1 Scholarship	0	0.0%			
Tier 1 Non-Scholarship	0	0.0%			
Tier 2	0	0.0%			
Tier 3	0	0.0%			
Unknown*	3	3.8%			
Focus	N	%			
Focus	30	38.5%			
Non-Focus	45	57.7%			
Unknown*	3	3.8%			
Any Financial Aid through Oct. 09	N	%			
Aid received	48	61.5%			
No aid received	27	34.6%			
Unknown*	3	3.8%			

\* Three applicants are not in the Office of Assessment student database. One is a Spring 2008 transfer student, one is a Masters of Engineering Management graduate student, and one is a non-degree visiting student.

## Appendix III

**Winter Forum Student Participation Rubric****Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Welcome and keynote panel (Sun. pm)  
 Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)  
 Student Presentations (Tues. pm), Group number: \_\_\_\_\_

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Notes or Comments:

**Winter Forum Student Participation Rubric****Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Welcome and keynote panel (Sun. pm)  
 Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)  
 Student Presentations (Tues. pm), Group number: \_\_\_\_\_

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Notes or Comments:

## Appendix III, continued

## Winter Forum Break-out Session Rubric

**Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)

**Group:**

- 1       5  
 2       6  
 3       7  
 4       8

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engage in collaborative group work centered around a global issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Notes or Comments:

## Winter Forum Break-out Session Rubric

**Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)

**Group:**

- 1       5  
 2       6  
 3       7  
 4       8

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engage in collaborative group work centered around a global issue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Notes or Comments:

## Appendix III, continued

## Winter Forum Presentation Rubric

**Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Welcome and keynote panel (Sun. pm)  
 Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)  
 Student Presentations (Tues. pm), Group number: \_\_\_\_

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Presentation outcomes:

- Did not meet expectations  
 Met expectations  
 Exceeded expectations  
 Not applicable

## Notes or Comments:

## Winter Forum Presentation Rubric

**Evaluator:**

- Hill, Jennifer  
 Serra, Matt  
 Thornton, Jess  
 Walton, Meredith  
 Other: \_\_\_\_\_

**Session:**

- Welcome and keynote panel (Sun. pm)  
 Approaching the Green Economy (Mon. am)  
 Lessons from Copenhagen (Mon. pm)  
 Enabling the Green Economy (Tues. am)  
 Student Presentations (Tues. pm), Group number: \_\_\_\_

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	N/A
The ability to evaluate a global issue from perspectives of multiple disciplines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Presentation outcomes:

- Did not meet expectations  
 Met expectations  
 Exceeded expectations  
 Not applicable

## Notes or Comments:

## Appendix IV

2010 Winter Forum																
Assessment of Faculty Presentations																
Overall N= 14																
<b>The ability to evaluate a global issue from perspectives of multiple disciplines.</b>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Overall	14	0	0.0%	3	21.4%	2	14.3%	4	28.6%	5	35.7%	0	0.0%	0	0.0%	3.79
Welcome	4	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	100.0%	0	0.0%	0	0.0%	5.00
Session 1	3	0	0.0%	0	0.0%	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Session 2	3	0	0.0%	2	66.7%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	2.67
Session 3	3	0	0.0%	1	33.3%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.67
Session 4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	5.00
<b>The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.</b>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Overall	14	2	14.3%	3	21.4%	0	0.0%	5	35.7%	2	14.3%	1	7.1%	1	7.1%	3.38
Welcome	4	0	0.0%	0	0.0%	0	0.0%	3	75.0%	1	25.0%	0	0.0%	0	0.0%	4.25
Session 1	3	0	0.0%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	4.00
Session 2	3	1	33.3%	1	33.3%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	2.33
Session 3	3	1	33.3%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1.50
Session 4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	5.00
<b>Global question (Presentation outcomes)</b>																
	N evaluators	Did not meet expectations [1]		Met expectations [2]		Exceeded expectations [3]		NA		Mean						
		N	%	N	%	N	%	N	%							
Overall	13	0	0.0%	8	61.5%	4	30.8%	1	7.7%	2.33						
Welcome	3	0	0.0%	0	0.0%	2	66.7%	1	33.3%	3.00						
Session 1	3	0	0.0%	2	66.7%	1	33.3%	0	0.0%	2.33						
Session 2	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	2.00						
Session 3	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	2.00						
Session 4	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%	3.00						
<b>Comments</b>																
Chad - lots of ideas and examples of application; Allen - facts shared; lots of stats; Bill - shares ideas; draws conclusions																
Holliday hit analysis on historical perspectives. The majority of the rest of the talk was application. The mayor johnson hovered around comprehension. Third speaker, bill c?, discussed topic to analysis level across disciplines - education, economics, biology. Holliday touched on cross cultural too. I think the q and a J. Knight: most of the talk is about the transfer of knowledge.VHS is breaking down how wind turbines work, but I don't think it moves out of comprehension.																
Salzman: compreh/application - recap of last night and intro																
weiner: application across disciplines																
weinthal: 'collective action problem' = synthesis																
Clemens: example of the phone call with bank/investor is application across disciplines. And then took it to analysis at the end																
Boyd:Analysis of historical perspectives. Used the graph to break down what happened with energy use over time in the us.																
Wirzba: five c's is analysis. But his discussion brings it to evaluation (maybe, I'm a little undecided).																
The overall effect of the multiple speakers is analysis across disciplines.																
Started out by providing background information with explanation. Comprehension																

## Appendix V

2010 Winter Forum																
Assessment of Student Engagement																
Overall N= 14																
<i>The ability to evaluate a global issue from perspectives of multiple disciplines</i>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%			
Overall	14	1	7.1%	5	35.7%	6	42.9%	1	7.1%	0	0.0%	1	7.1%	0	0.0%	2.79
Welcome	4	0	0.0%	1	25.0%	2	50.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	3.50
Session 1	3	0	0.0%	1	33.3%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.67
Session 2	3	0	0.0%	0	0.0%	2	66.7%	1	33.3%	0	0.0%	0	0.0%	0	0.0%	3.33
Session 3	3	0	0.0%	3	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Session 4	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.00
<i>The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives</i>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%			
Overall	14	0	0.0%	5	35.7%	4	28.6%	0	0.0%	1	7.1%	1	7.1%	3	21.4%	2.36
Welcome	4	0	0.0%	1	25.0%	2	50.0%	0	0.0%	0	0.0%	1	25.0%	0	0.0%	3.50
Session 1	3	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1.33
Session 2	3	0	0.0%	0	0.0%	2	66.7%	0	0.0%	1	33.3%	0	0.0%	0	0.0%	3.67
Session 3	3	0	0.0%	2	66.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	33.3%	1.33
Session 4	1	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0.00
<b>Comments</b>																
Questions & answers draw on and apply information given during the beginning of the presentations. Students opinions/questions demonstrated evaluation of topics discussed.																
1. Idea of progress=growth is unsustainable																
2. Suggestions for addressing population growth and food																
3. Obama administration and formation of czar positions and interdisciplinaryism- are there positives.																
4. How can we educate people about real costs outside of just raising prices?																
Student presentations in rock on. Groups had to listen, revise their positions.																
1. Trade offs between off shore and on shore																
2. What are The biggest challenges to wind																
3. Why did the speaker yesterday prefer solar to wind. When this discussion promoted wind.																
Student questions to judging panel:																
1. What factors are looked for in a pitch. Do you compromise/ handicap for socially conscious ideas?																
2. Asked for an example of a green company that the panelists invested in and why.																
3. Asked for an example of investment that took them by surprise. Something that succeeded.																

## Appendix VI

2010 Winter Forum																
Assessment of Student Presentations																
Overall N=	25															
<i>The ability to evaluate a global issue from perspectives of multiple disciplines</i>																
	Nevaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Overall (all session 4)	25	0	0.0%	0	0.0%	4	16.0%	4	16.0%	11	44.0%	0	0.0%	6	24.0%	4.37
<i>The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives</i>																
	Nevaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Overall (all session 4)	25	3	12.0%	4	16.0%	2	8.0%	3	12.0%	2	8.0%	11	44.0%	0	0.0%	4.20
<i>Global question (Presentation outcomes)</i>																
	Nevaluators	Did not meet expectations [1]		Met expectations [2]		Exceeded expectations [3]		NA		Mean						
		N	%	N	%	N	%	N	%							
Overall (all session 4)	25	0	0.0%	22	88.0%	3	12.0%	0	0.0%	2.12						
<b>Comments</b>																
Consumer utility tool. Inefficient use of resources - track utility consumption over time and compare to others. Integrating feedback to change behavior in utility use. Multiple-																
Eco blend. Cellulosic insulation in malaysia. Not really cross cultural, but based abroad.																
Ecotourismgroup. Tourism and travel already a large part of economy. And Eco tourism is growing. Green exped. Brought in info about carbon emissions, promoting ldd's, and																
Encenive. Energy saving solutions. Socketsense. Shuts off vampire energy plugs. Adreeses need to block low levelpower use (vampires), but also provides feedback to change																
Gonex. Green retrofits. Purchase forclosed buildings in certian markerts, then retrofit buildings to make themgreener and resell them																
Green thumb. Provide third party estimates of environmental impacts for consumer products.																
Home assistance to help with green upgrades. Consultant to homeowners. Created sample business case.																
Proposal is a website to connect local agriculture to consumers. Discuss components of economics, carbon footprints.																



## Appendix VII

2010 Winter Forum																
Assessment of Student Break-out Groups																
Overall N =	47															
<i>Sessions 1 &amp; 2 combined: The ability to evaluate a global issue from perspectives of multiple disciplines.</i>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		N/A		Mean
		N	%	N	%	N	%	N	%	N	%	N	%			
Overall Time <sub>1</sub>	16	1	6.3%	8	50.0%	2	12.5%	1	6.3%	0	0.0%	0	0.0%	4	25.0%	2.25
Overall Time <sub>2</sub>	16	1	6.3%	4	25.0%	7	43.8%	3	18.8%	0	0.0%	0	0.0%	1	6.3%	2.80
Overall Time <sub>3</sub>	15	0	0.0%	4	26.7%	2	13.3%	6	40.0%	0	0.0%	0	0.0%	3	20.0%	3.17
Team 1 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 1 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 1 Time <sub>3</sub>	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2.00
Team 2 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 2 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 2 Time <sub>3</sub>	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2.00
Team 3 Time <sub>1</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3.00
Team 3 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 3 Time <sub>3</sub>	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 4 Time <sub>1</sub>	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2.00
Team 4 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 4 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 5 Time <sub>1</sub>	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1.00
Team 5 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 5 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 6 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 6 Time <sub>2</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 6 Time <sub>3</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 7 Time <sub>1</sub>	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 7 Time <sub>2</sub>	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1.00
Team 7 Time <sub>3</sub>	1	0	0.0%	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 8 Time <sub>1</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3.00
Team 8 Time <sub>2</sub>	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 8 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%	4.00

## Appendix VII, continued

<b>Sessions 1 &amp; 2 combined: The ability to evaluate a global issue from multiple cultural, geographical, and historical perspectives.</b>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%			
Overall Time <sub>1</sub>	16	1	6.3%	9	56.3%	1	6.3%	2	12.5%	0	0.0%	0	0.0%	3	18.8%	2.31
Overall Time <sub>2</sub>	16	2	12.5%	6	37.5%	5	31.3%	1	6.3%	0	0.0%	0	0.0%	2	12.5%	2.36
Overall Time <sub>3</sub>	15	1	6.7%	2	13.3%	3	20.0%	5	33.3%	0	0.0%	0	0.0%	4	26.7%	3.09
Team 1 Time <sub>1</sub>	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.50
Team 1 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3.00
Team 1 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%	4.00
Team 2 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 2 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 2 Time <sub>3</sub>	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2.00
Team 3 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 3 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 3 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%	4.00
Team 4 Time <sub>1</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 4 Time <sub>2</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 4 Time <sub>3</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 5 Time <sub>1</sub>	2	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	2.00
Team 5 Time <sub>2</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 5 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 6 Time <sub>1</sub>	2	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 6 Time <sub>2</sub>	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.50
Team 6 Time <sub>3</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 7 Time <sub>1</sub>	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 7 Time <sub>2</sub>	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 7 Time <sub>3</sub>	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.00
Team 8 Time <sub>1</sub>	2	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0.00
Team 8 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3.00
Team 8 Time <sub>3</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	3.00

## Appendix VII, continued

<b>Sessions 1 &amp; 2 combined: Engage in collaborative group work centered around a global issue.</b>																
	N evaluators	Knowledge [1]		Comprehension [2]		Application [3]		Analysis [4]		Synthesis [5]		Evaluation [6]		NA		Mean
		N	%	N	%	N	%	N	%	N	%	N	%			
Overall Time <sub>1</sub>	16	3	18.8%	4	25.0%	7	43.8%	1	6.3%	0	0.0%	0	0.0%	1	6.3%	2.40
Overall Time <sub>2</sub>	16	1	6.3%	2	12.5%	10	62.5%	2	12.5%	1	6.3%	0	0.0%	0	0.0%	3.00
Overall Time <sub>3</sub>	15	1	6.7%	3	20.0%	2	13.3%	8	53.3%	0	0.0%	0	0.0%	1	6.7%	3.21
Team 1 Time <sub>1</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 1 Time <sub>2</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 1 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	1	50.0%	4.00
Team 2 Time <sub>1</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 2 Time <sub>2</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 2 Time <sub>3</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 3 Time <sub>1</sub>	2	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.50
Team 3 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 3 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 4 Time <sub>1</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 4 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 4 Time <sub>4</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 5 Time <sub>1</sub>	2	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	50.0%	1.00
Team 5 Time <sub>2</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 5 Time <sub>3</sub>	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	4.00
Team 6 Time <sub>1</sub>	2	0	0.0%	0	0.0%	2	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 6 Time <sub>2</sub>	2	0	0.0%	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	4.00
Team 6 Time <sub>3</sub>	2	0	0.0%	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.00
Team 7 Time <sub>1</sub>	2	0	0.0%	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	3.50
Team 7 Time <sub>2</sub>	2	1	50.0%	0	0.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 7 Time <sub>3</sub>	1	1	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1.00
Team 8 Time <sub>1</sub>	2	1	50.0%	0	0.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.00
Team 8 Time <sub>2</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50
Team 8 Time <sub>3</sub>	2	0	0.0%	1	50.0%	1	50.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2.50

## Appendix VIII

**Making the Green Economy Work****Winter Forum Application  
Fall 2009**

Thank you for your interest in the Winter Forum, *Making the Green Economy Work*, and welcome to the program's application process. Please read the following instructions carefully.

1. This application form requires you to respond to several short-answer questions, each of which demands some thought and reflection. Before you begin typing your responses, please print out [this PDF version of the application form](#). To be able to open the PDF, you need to have [Adobe Reader](#) installed on your computer. If you cannot view the PDF, you may print a copy of this entire form by pressing Ctrl-P on your keyboard and selecting a local printer.
2. Using the printed PDF as a guide, write your answers to all questions in word processing software.  
  
**\*\*\* Do not write your responses in the application form itself. The form will time-out while you compose your responses and you will lose any information you have entered. \*\*\***
3. When you are satisfied with your responses to the application questions, return to this website and paste your responses in the appropriate text boxes.
4. Press submit. All responses are required; you will not be able to submit the form unless you have provided a response to each item.
5. You will receive a confirmation email at the email address you listed at the beginning of the application form.

In general, please be as complete, yet as concise as possible. Your responses will remain confidential. The information submitted here will be stored on a secure server and it will be viewed only by members of the selection committee. Your responses will not impact your tenure at Duke University or any course(s) taken while at the university. If an item does not apply to you, please enter 'N/A' or 'None'. Part of this application is a Prior-Knowledge assessment. Please answer those questions as best you can without the aid of any resource materials.

**Note:** How you answer these questions will not be a factor in your acceptance to the program. We are gathering these answers from prospective participants to gauge the audience's level of knowledge on these issues prior to the program.

## Appendix VIII, continued

If you have any questions about this form, please contact Jennifer Hill (919-668-1617, jih9@duke.edu). Thank you for your participation.

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*Before you begin the Winter Forum application, you should have read the instructions listed above. You should have your responses to all questions prepared and ready to paste into the fields below. Please note that, if you take more than a few minutes to paste your responses, the form may time-out.*

---

First name:

Last name:

Email address (where you can be reached on or after October 7):

Local address:

---

**1 While at Duke have you attended or participated in any of the following programs or activities (please mark all that apply)?**

**A. Study abroad**

Yes  No

If yes, where?

**B. DukeEngage**

Yes  No

If yes, where?

**C. Class(es) at the Marine Lab**

Yes  No

If yes, what course(s)?

## Appendix VIII, continued

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**D. Research at the Marine Lab**

Yes  No

If yes, what area(s)?

---

**E. Service Learning course(s)**

Yes  No

If yes, what course(s)?

---

**2** While at Duke do you intend to attend or participate in any of the following programs or activities (please mark all that apply)?

**A. Study abroad**

Yes  No

If yes, where?

---

**B. DukeEngage**

Yes  No

If yes, where?

---

**C. Class(es) at the Marine Lab**

Yes  No

If yes, what course(s)?

---

**D. Research at the Marine Lab**

Yes  No

If yes, what area(s)?

---

**E. Service Learning course(s)**

Yes  No

If yes, what course(s)?

---

## Appendix VIII continued

The following short-answer questions demand some thought and reflection, and this form may time-out while you compose your responses. You are strongly encouraged to write your answers to all questions in word processing software *before* entering them in this form. When you are satisfied with your responses to the application questions, paste your responses in the appropriate text boxes below.

- 3 In one or two brief paragraphs (no more than 200 words) please describe what experience(s) prompted your interest in this topic?**

- 4 In one or two brief paragraphs (no more than 200 words) please tell us what do you hope to gain from participation in this years Winter Forum on *Making the Green Economy Work*.**

---

### Prior-knowledge Section

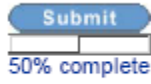
**Reminder:** Please answer those questions as best you can without the aid of any resource materials. How you answer these questions will not be a factor in your acceptance to the program. We are gathering these answers from prospective participants to gauge the audience's level of knowledge on these issues prior to the program.

- 5 Which of the following is the current leading source of electricity generation in the US?**
- nuclear power
  - coal
  - combination of wind, hydroelectric, geothermal and other renewables
  - natural gas
- 6 Which of the following represents the top 2 leading emitters of greenhouse gases?**
- US, EU (European Union)
  - EU, China
  - India, EU
  - China, US
- 7 True or False: Environmental pollution is an external cost, or negative impact, which is consistently reflected in the full cost of products we purchase.**
- True
  - False

## Appendix VIII, continued

8 True or False: A venture capitalist is an investor who invests in a startup venture; higher returns are expected because of the higher risks.

- True
- False





Appendix IX  
Pre- and Post-program Surveys

## Making the Green Economy Work

### Winter Forum Pre-program Survey January 2010

Thank you for completing the following pre-program survey for the 2010 Winter Forum, *Making the Green Economy Work*. The information you supply here will be used to help us understand students' expectations of the Winter Forum. We encourage your candid and thoughtful responses. All individual responses will remain confidential and results will be reported only in aggregate form.

If you have any questions about this survey, please contact the Office of Assessment at 919-668-1617. Thank you again for your participation.

**1 EMPLID**

**2 For the items below, please indicate your current ability to address the overall topic of the 2010 Winter Forum.**

	Very low ability	Low ability	Moderate ability	High ability	Very high ability
Your ability to evaluate global issues from a multi-disciplinary perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a multi-cultural perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a multi-geographical perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a historical perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to think critically about the relationship between science and public policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to relate what you know about the 2010 Winter Forum topic to future coursework and co-curricular experiences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to engage in collaborative group work centered on the 2010 Winter Forum topic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Appendix IX, continued

Continued.

	Very low expectation	Low expectation	Moderate expectation	High expectation	Very high expectation	Not applicable
Enhance my writing skills (describing, communicating, presenting your opinions).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhance my speaking skills (communicating with faculty and peers, asking for advice, presenting your own ideas).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhance my critical thinking skills (understanding concepts, problem solving, and trouble shooting).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop my ability to work independently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop my ability to work as part of a team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop my ability to recognize ethical problems in science and public policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop my ability to work through ethical problems in science and public policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop my ability to take a stand even when others disagree.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5 Please indicate the extent to which each of the following disciplines interests you.

	No interest	Slight interest	Moderate interest	Substantial interest
Arts (visual and performance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business, accounting, or finance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engineering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign languages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Math, statistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pre-health (pre-med, pre-dental, pre-vet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sociology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you selected Other above, please list the discipline or area.

## Appendix IX, continued

**Making the Green Economy Work****Winter Forum Post-program Survey  
January 2010**

Thank you for completing the following post-program survey for the 2010 Winter Forum, *Making the Green Economy Work*. The information you supply here will be used to help us understand students' experiences at the Winter Forum. We encourage your candid and thoughtful responses. All individual responses will remain confidential and results will be reported only in aggregate form.

If you have any questions about this survey, please contact the Office of Assessment at 919-668-1617. Thank you again for your participation.

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**Knowledge Section**

**Reminder:** Please answer the knowledge questions as best you can without the aid of any resource materials. We are gathering these answers to gauge the audience's level of knowledge on these issues after the program.

**1 Which of the following is the current leading source of electricity generation in the US?**

- nuclear power
- coal
- combination of wind, hydroelectric, geothermal and other renewables
- natural gas

**2 Which of the following represents the top 2 leading emitters of greenhouse gases?**

- US, EU (European Union)
- EU, China
- India, EU
- China, US

**3 True or False: Environmental pollution is an external cost, or negative impact, which is consistently reflected in the full cost of products we purchase.**

- True
- False

**4 True or False: A venture capitalist is an investor who invests in a startup venture; higher returns are expected because of the higher risks.**

- True
  - False
-

## Appendix IX, continued

- 5 For the items below, please indicate your current ability, after the conclusion of the program, to address the overall topic of the 2010 Winter Forum.

	Very low ability	Low ability	Moderate ability	High ability	Very high ability
Your ability to evaluate global issues from a multi-disciplinary perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a multi-cultural perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a multi-geographical perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to evaluate global issues from a historical perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to think critically about the relationship between science and public policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to relate what you know about the 2010 Winter Forum topic to future coursework and co-curricular experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to engage in collaborative group work centered on the 2010 Winter Forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- 6 Please indicate the extent to which you made learning gains in the following areas.

	Not at all	A little	Moderately	Highly	Very highly
Gained factual knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understood fundamental concepts and principles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learned to apply knowledge, concepts, principles, or theories to a specific situation or problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learned to analyze ideas, arguments, and points of view	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learned to integrate and synthesize knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learned to evaluate the merits of ideas and competing claims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhanced my writing skills (describing, communicating, presenting your opinions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhanced my speaking skills (communicating with faculty and peers, asking for advice, presenting your own ideas)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhanced my critical thinking skills (understanding concepts, problem solving, and troubleshooting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed my ability to work independently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed my ability to work as part of a team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed my ability to recognize ethical problems in science and public policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed my ability to work through ethical problems in science and public policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed my ability to take a stand even when others disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix IX, continued

- 7 Please indicate the extent to which each of the following disciplines interests you now after the conclusion of the program.

	No interest	Some interest	Interest	Substantial interest
Arts (visual and performance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business, accounting, or finance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engineering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign languages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Math, statistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural sciences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pre-health (pre-med, pre-dental, pre-vet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sociology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- 8 Please indicate the degree to which the 2010 Winter Forum provided the following opportunities

	Not at all	A little	Moderately	Highly	Very highly
Exposure to cutting edge ideas and theory via scholars and experts in the field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An environment that encourages open and honest exchange of ideas from multiple disciplinary, cultural, and geographical perspectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An opportunity to develop academic and professional networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information that will help me clarify my education goals and objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information that will help me clarify my career goals and objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information that I will integrate in my daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information that I will integrate in other courses and course work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix IX, continued

## 9 Please indicate your opinion of the following aspects of the 2010 Winter Forum

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The Sanford School of Public Policy site was comfortable, convenient, and appropriate for the Winter Forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The locations assigned for the break-out groups effectively facilitated group work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The opening keynote session, dinner, and reception were an effective introduction to the Winter Forum (i.e. framed the issue)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The \$2,000 prize for the start-up business competition was important with respect to your group's motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will consider applying for the next Winter Forum that will focus on global health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please comment on your intention to apply or not apply for future Winter Forum programs.

## 10 My involvement in the Winter Forum has prompted me to pursue further involvement in sustainability

- Yes  
 No (skip to item 12)  
 Unsure

## 11 If yes, I would become more involved by (check all that apply):

- Enrolling in future course(s)  
 Joining a student group that works with sustainability issues  
 Adopting a more sustainability-oriented lifestyle  
 Considering a career in a "green" job  
 N/A  
 Other:

## 12 To what extent did you enjoy or not enjoy the following elements of the Winter Forum program?

	Did not enjoy at all	Mostly did not enjoy	Neutral	Mostly enjoyed	Enjoyed very much
Keynote panel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team Sessions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Model UN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other panels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interaction with professors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interaction with other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual debate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix IX, continued

13 Please evaluate the following components of the Winter Forum with respect to its contribution to your learning gains

	Not at all	A little	Moderately	Highly	Very highly	N/A
Keynote Panel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team sessions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Model UN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other panels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interactions with professors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interaction with other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual debate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14 Will you recommend the Winter Forum to other Duke students?

- Yes  
 No  
 Unsure

15 Please evaluate the effectiveness of the pre-Winter Forum communication among/between the following groups with respect to preparing you for the Winter Forum activities.

	Very Ineffective	Ineffective	Neutral	Effective	Very Effective	N/A
Program coordinators to students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty to students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students to faculty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16 How early in the semester should work/assignments be available for future Winter Forums?

- Start of fall term classes  
 Before fall break  
 Before Thanksgiving break



## Appendix X

Winter Forum Pre-to-Post Program Survey									
Making the Green Economy Work, January 2010									
	Pre survey N =	76	(including graduate students)						
	Post survey N =	59	(including graduate students)						
<b>B. For the items below, please indicate your ability to address the overall topic of the 2010 Winter Forum.</b>									
<b>Your ability to evaluate global issues from a multi-disciplinary perspective.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	5	11	32	25	2	0	1	3.11	0.92
	6.6%	14.5%	42.1%	32.9%	2.6%	0.0%	1.3%		
Post-program	0	0	14	34	11	0	0	3.95	0.65
	0.0%	0.0%	23.7%	57.6%	18.6%	0.0%	0.0%		
<b>Your ability to evaluate global issues from a multi-cultural perspective.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	3	13	34	22	3	0	1	3.12	0.88
	3.9%	17.1%	44.7%	28.9%	3.9%	0.0%	1.3%		
Post-program	0	3	25	25	6	0	0	3.58	0.75
	0.0%	5.1%	42.4%	42.4%	10.2%	0.0%	0.0%		
<b>Your ability to evaluate global issues from a multi-geographical perspective.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	1	21	33	19	0	0	2	2.95	0.77
	1.3%	27.6%	43.4%	25.0%	0.0%	0.0%	2.6%		
Post-program	0	1	17	32	9	0	0	3.83	0.70
	0.0%	1.7%	28.8%	54.2%	15.3%	0.0%	0.0%		
<b>Your ability to evaluate global issues from a historical perspective.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	6	23	31	14	1	0	1	2.75	0.90
	7.9%	30.3%	40.8%	18.4%	1.3%	0.0%	1.3%		
Post-program	0	3	33	18	5	0	0	3.42	0.72
	0.0%	5.1%	55.9%	30.5%	8.5%	0.0%	0.0%		
<b>Your ability to think critically about the relationship between science and public policy.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	1	9	31	30	4	0	1	3.36	0.82
	1.3%	11.8%	40.8%	39.5%	5.3%	0.0%	1.3%		
Post-program	0	0	8	32	19	0	0	4.19	0.66
	0.0%	0.0%	13.6%	54.2%	32.2%	0.0%	0.0%		
<b>Your ability to relate what you know about the 2010 Winter Forum topic to future coursework and co-curricular experiences.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	2	13	29	25	6	0	1	3.27	0.93
	2.6%	17.1%	38.2%	32.9%	7.9%	0.0%	1.3%		
Post-program	1	1	9	33	15	0	0	4.02	0.80
	1.7%	1.7%	15.3%	55.9%	25.4%	0.0%	0.0%		
<b>Your ability to engage in collaborative group work centered on the 2010 Winter Forum topic.</b>	<b>Very low ability [1]</b>	<b>Low ability [2]</b>	<b>Moderate ability [3]</b>	<b>High ability [4]</b>	<b>Very high ability [5]</b>	<b>NA</b>	<b>No response</b>	<b>Mean</b>	<b>SD</b>
Pre-program	2	11	32	23	7	0	1	3.29	0.93
	2.6%	14.5%	42.1%	30.3%	9.2%	0.0%	1.3%		
Post-program	1	1	11	26	20	0	0	4.07	0.87
	1.7%	1.7%	18.6%	44.1%	33.9%	0.0%	0.0%		



## Appendix X, continued

Winter Forum Pre-to-Post Program Survey									
Making the Green Economy Work, January 2010									
Pre survey N =	76	(including graduate students)							
Post survey N =	59	(including graduate students)							
D. With respect to the 2010 Winter Forum, to what extent do you expect to / did you make gains in the following general abilities?									
Gain factual knowledge.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	1	22	35	18	0	0	3.92	0.76
Pre-program	0.0%	1.3%	28.9%	46.1%	23.7%	0.0%	0.0%		
Post-program	1	2	18	23	15	0	0	3.83	0.91
Post-program	1.7%	3.4%	30.5%	39.0%	25.4%	0.0%	0.0%		
Understand fundamental concepts and principles.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	4	22	32	17	0	1	3.83	0.84
Pre-program	0.0%	5.3%	28.9%	42.1%	22.4%	0.0%	1.3%		
Post-program	1	2	13	30	13	0	0	3.88	0.85
Post-program	1.7%	3.4%	22.0%	50.8%	22.0%	0.0%	0.0%		
Learn to apply knowledge, concepts, principles, or theories to a specific situation or problem.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	3	14	35	24	0	0	4.05	0.81
Pre-program	0.0%	3.9%	18.4%	46.1%	31.6%	0.0%	0.0%		
Post-program	2	0	15	28	13	0	1	3.86	0.89
Post-program	3.4%	0.0%	25.4%	47.5%	22.0%	0.0%	1.7%		
Learn to analyze ideas, arguments and points of view.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	4	25	21	26	0	0	3.91	0.94
Pre-program	0.0%	5.3%	32.9%	27.6%	34.2%	0.0%	0.0%		
Post-program	1	3	12	30	13	0	0	3.86	0.88
Post-program	1.7%	5.1%	20.3%	50.8%	22.0%	0.0%	0.0%		
Learn to integrate and synthesize knowledge.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	4	19	28	24	1	0	3.96	0.89
Pre-program	0.0%	5.3%	25.0%	36.8%	31.6%	1.3%	0.0%		
Post-program	2	2	17	25	12	0	1	3.74	0.95
Post-program	3.4%	3.4%	28.8%	42.4%	20.3%	0.0%	1.7%		
Learn to evaluate the merits of ideas and competing claims.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	0	4	15	30	27	0	0	4.05	0.88
Pre-program	0.0%	5.3%	19.7%	39.5%	35.5%	0.0%	0.0%		
Post-program	1	2	19	25	11	0	1	3.74	0.87
Post-program	1.7%	3.4%	32.2%	42.4%	18.6%	0.0%	1.7%		
Enhance my writing skills (describing, communicating, presenting your opinions).	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	NA	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
	3	26	30	11	5	0	1	2.85	0.95
Pre-program	3.9%	34.2%	39.5%	14.5%	6.6%	0.0%	1.3%		
Post-program	11	21	12	12	3	0	0	2.58	1.16
Post-program	18.6%	35.6%	20.3%	20.3%	5.1%	0.0%	0.0%		

## Appendix X, continued

Enhance my speaking skills (communicating with faculty and peers, asking for advice, presenting your own ideas).	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	1	9	33	24	9	0	0	3.41	0.90
	1.3%	11.8%	43.4%	31.6%	11.8%	0.0%	0.0%		
Post-program	4	9	25	14	7	0	0	3.19	1.06
	6.8%	15.3%	42.4%	23.7%	11.9%	0.0%	0.0%		
Enhance my critical thinking skills (understanding concepts, problem solving, and trouble shooting).	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	0	8	21	34	13	0	0	3.68	0.88
	0.0%	10.5%	27.6%	44.7%	17.1%	0.0%	0.0%		
Post-program	2	5	17	22	13	0	0	3.66	1.03
	3.4%	8.5%	28.8%	37.3%	22.0%	0.0%	0.0%		
Develop my ability to work independently.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	4	28	29	13	2	0	0	2.75	0.90
	5.3%	36.8%	38.2%	17.1%	2.6%	0.0%	0.0%		
Post-program	8	18	17	11	5	0	0	2.78	1.16
	13.6%	30.5%	28.8%	18.6%	8.5%	0.0%	0.0%		
Develop my ability to work as part of a team.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	0	8	23	27	18	0	0	3.72	0.95
	0.0%	10.5%	30.3%	35.5%	23.7%	0.0%	0.0%		
Post-program	3	1	16	22	17	0	0	3.83	1.04
	5.1%	1.7%	27.1%	37.3%	28.8%	0.0%	0.0%		
Develop my ability to recognize ethical problems in science and public policy.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	0	1	30	33	12	0	0	3.74	0.74
	0.0%	1.3%	39.5%	43.4%	15.8%	0.0%	0.0%		
Post-program	2	4	20	20	13	0	0	3.64	1.01
	3.4%	6.8%	33.9%	33.9%	22.0%	0.0%	0.0%		
Develop my ability to work through ethical problems in science and public policy.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	0	1	32	26	17	0	0	3.78	0.81
	0.0%	1.3%	42.1%	34.2%	22.4%	0.0%	0.0%		
Post-program	4	2	24	17	12	0	0	3.53	1.07
	6.8%	3.4%	40.7%	28.8%	20.3%	0.0%	0.0%		
Develop my ability to take a stand even when others disagree.	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	N/A	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]				
Pre-program	2	10	21	29	14	0	0	3.57	1.02
	2.6%	13.2%	27.6%	38.2%	18.4%	0.0%	0.0%		
Post-program	2	9	22	19	7	0	0	3.34	0.99
	3.4%	15.3%	37.3%	32.2%	11.9%	0.0%	0.0%		

## Appendix X, continued

Winter Forum Pre-to-Post Program Survey								
Making the Green Economy Work, January 2010								
Pre survey N =	76	(including graduate students)						
Post survey N =	59	(including graduate students)						
E. Please indicate the extent to which each of the following disciplines interests you.								
	No interest [1]	Slight interest [2]	Moderate interest [3]	Substantial interest [4]	Not applicable	No response	Mean	SD
<b>Arts (visual and performance)</b>								
Pre-program	10 13.2%	21 27.6%	28 36.8%	15 19.7%	0 0.0%	2 2.6%	2.65	0.96
Post-program	19 32.2%	21 35.6%	12 20.3%	6 10.2%	0 0.0%	1 1.7%	2.09	0.98
<b>Business, accounting, or finance</b>								
Pre-program	9 11.8%	20 26.3%	16 21.1%	31 40.8%	0 0.0%	0 0.0%	2.91	1.07
Post-program	6 10.2%	13 22.0%	17 28.8%	22 37.3%	0 0.0%	1 1.7%	2.95	1.02
<b>Computer science</b>								
Pre-program	18 23.7%	29 38.2%	29 38.2%	23 30.3%	0 0.0%	1 1.3%	2.20	0.89
Post-program	20 33.9%	20 33.9%	14 23.7%	4 6.8%	0 0.0%	1 1.7%	2.03	0.94
<b>Economics</b>								
Pre-program	6 7.9%	21 27.6%	13 17.1%	35 46.1%	0 0.0%	1 1.3%	3.03	1.04
Post-program	6 10.2%	12 20.3%	16 27.1%	25 42.4%	0 0.0%	0 0.0%	3.02	1.03
<b>Engineering</b>								
Pre-program	11 14.5%	25 32.9%	24 31.6%	15 19.7%	0 0.0%	1 1.3%	2.57	0.98
Post-program	12 20.3%	17 28.8%	18 30.5%	11 18.6%	0 0.0%	1 1.7%	2.48	1.03
<b>Environmental science</b>								
Pre-program	3 3.9%	10 13.2%	25 32.9%	37 48.7%	0 0.0%	1 1.3%	3.28	0.85
Post-program	4 6.8%	12 20.3%	18 30.5%	24 40.7%	0 0.0%	1 1.7%	3.07	0.95
<b>Foreign languages</b>								
Pre-program	6 7.9%	19 25.0%	19 25.0%	31 40.8%	0 0.0%	1 1.3%	3.00	1.00
Post-program	13 22.0%	17 28.8%	13 22.0%	15 25.4%	0 0.0%	1 1.7%	2.52	1.11
<b>Marine science</b>								
Pre-program	17 22.4%	29 38.2%	20 26.3%	9 11.8%	0 0.0%	1 1.3%	2.28	0.95
Post-program	22 37.3%	15 25.4%	16 27.1%	6 10.2%	0 0.0%	0 0.0%	2.10	1.03
<b>Math, statistics</b>								
Pre-program	9 11.8%	25 32.9%	28 36.8%	13 17.1%	0 0.0%	1 1.3%	2.60	0.92
Post-program	9 15.3%	29 49.2%	13 22.0%	7 11.9%	0 0.0%	1 1.7%	2.31	0.88



## Appendix X, continued

Winter Forum Pre-to-Post Program Survey								
Making the Green Economy Work, January 2010								
Pre survey N=	76	(including graduate students)						
Post survey N=	59	(including graduate students)						
F. Please indicate the degree to which you expect that the 2010 Winter Forum will provide / did provide the following opportunities.								
<b>Exposure to cutting edge ideas and theory via scholars and experts in the field.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	0	0	26	25	25	0	3.99	0.82
Pre-program	0.0%	0.0%	34.2%	32.9%	32.9%	0.0%		
Post-program	0	4	8	29	18	0	4.03	0.85
	0.0%	6.8%	13.6%	49.2%	30.5%	0.0%		
<b>An environment that encourages open and honest exchange of ideas from multiple disciplinary, cultural and geographic perspectives.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	0	2	19	36	18	1	3.93	0.78
Pre-program	0.0%	2.6%	25.0%	47.4%	23.7%	1.3%		
Post-program	1	1	12	25	20	0	4.05	0.88
	1.7%	1.7%	20.3%	42.4%	33.9%	0.0%		
<b>An opportunity to develop academic and professional networks.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	0	3	22	37	14	0	3.82	0.78
Pre-program	0.0%	3.9%	28.9%	48.7%	18.4%	0.0%		
Post-program	1	8	17	24	9	0	3.54	0.97
	1.7%	13.6%	28.8%	40.7%	15.3%	0.0%		
<b>Information that will help clarify my education goals and objectives.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	1	10	25	28	10	2	3.49	0.94
Pre-program	1.3%	13.2%	32.9%	36.8%	13.2%	2.6%		
Post-program	1	8	22	17	11	0	3.49	1.01
	1.7%	13.6%	37.3%	28.8%	18.6%	0.0%		
<b>Information that will help clarify my career goals and objectives.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	1	10	24	26	14	1	3.56	0.99
Pre-program	1.3%	13.2%	31.6%	34.2%	18.4%	1.3%		
Post-program	2	7	20	16	14	0	3.56	1.09
	3.4%	11.9%	33.9%	27.1%	23.7%	0.0%		
<b>Information that I will integrate in my daily life.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	2	14	29	24	6	1	3.24	0.94
Pre-program	2.6%	18.4%	38.2%	31.6%	7.9%	1.3%		
Post-program	1	8	22	16	12	0	3.51	1.02
	1.7%	13.6%	37.3%	27.1%	20.3%	0.0%		
<b>Information that I will integrate in other courses and course work.</b>	Very low expectation (pre)	Low expectation (pre)	Moderate expectation (pre)	High expectation (pre)	Very high expectation (pre)	No response	Mean	SD
	Not at all (post) [1]	A little (post) [2]	Moderately (post) [3]	Highly (post) [4]	Very highly (post) [5]			
	0	5	31	26	14	0	3.64	0.86
Pre-program	0.0%	6.6%	40.8%	34.2%	18.4%	0.0%		
Post-program	1	3	18	26	11	0	3.73	0.89
	1.7%	5.1%	30.5%	44.1%	18.6%	0.0%		

## Appendix X, continued

<b>Winter Forum Pre-to-Post Program Survey</b>								
<b>Making the Green Economy Work, January 2010</b>								
Pre survey N =	76	(including graduate students)						
Post survey N =	59	(including graduate students)						
Please indicate your opinion of the following aspects of the 2010 Winter Forum ( <i>post only</i> ).								
	Strongly disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly agree [5]	No response	Mean	SD
The Sanford School of Public Policy site was comfortable, convenient, and appropriate for the Winter Forum.	0	0	3	19	36	1	4.57	0.60
	0.0%	0.0%	5.1%	32.2%	61.0%	1.7%		
The locations assigned for the break-out groups effectively facilitated group work.	0	0	2	20	36	1	4.59	0.56
	0.0%	0.0%	3.4%	33.9%	61.0%	1.7%		
The opening keynote session, dinner, and reception were an effective introduction to the Winter Forum (i.e. framed the issue).	0	1	2	19	37	0	4.56	0.65
	0.0%	1.7%	3.4%	32.2%	62.7%	0.0%		
The \$2,000 prize for the start-up business competition was important with respect to your group's motivation.	5	10	19	13	12	0	3.29	1.22
	8.5%	16.9%	32.2%	22.0%	20.3%	0.0%		
I will consider applying for the next Winter Forum that will focus on global health.	7	5	19	8	19	1	3.47	1.35
	11.9%	8.5%	32.2%	13.6%	32.2%	1.7%		
Please comment on your intention to apply or not apply for future Winter Forum programs (see open-end item 9b).								
My involvement in the Winter Forum has prompted me to pursue further involvement in sustainability ( <i>post only</i> ).								
	N	%						
Yes	45	76.3%						
No	8	13.6%						
Unsure	5	8.5%						
No response	1	1.7%						
If yes, I would become more involved by ( <i>post only</i> , check all that apply):								
	N	%						
Enrolling in future course(s)	33	55.9%						
Joining a student group that works with sustainability issues	18	30.5%						
Adopting a more sustainability-oriented lifestyle	37	62.7%						
Considering a career in a "green" job	35	59.3%						
N/A	0	0.0%						
Other	3	5.1%						
Other (from above)								
I'm already an environmental professional								
Continuing my team's green business plan								
I am already very involved in sustainability.								



## Appendix X, continued

To what extent did you enjoy or not enjoy the following elements of the Winter Forum program (*post only*)?

	Did not enjoy at all [1]	Mostly did not enjoy [2]	Neutral [3]	Mostly enjoyed [4]	Enjoyed very much [5]	No response	Mean	SD
Keynote panel	0	0	5	17	37	0	4.54	0.65
	0.0%	0.0%	8.5%	28.8%	62.7%	0.0%		
Team Sessions	1	2	6	27	23	0	4.17	0.87
	1.7%	3.4%	10.2%	45.8%	39.0%	0.0%		
Model UN	1	10	15	22	11	0	3.54	1.04
	1.7%	16.9%	25.4%	37.3%	18.6%	0.0%		
Other panels	0	1	6	33	19	0	4.19	0.68
	0.0%	1.7%	10.2%	55.9%	32.2%	0.0%		
Interaction with professors	1	1	6	24	27	0	4.27	0.85
	1.7%	1.7%	10.2%	40.7%	45.8%	0.0%		
Interaction with other students	0	2	6	21	30	0	4.34	0.80
	0.0%	3.4%	10.2%	35.6%	50.8%	0.0%		
Intellectual debate	1	0	6	27	25	0	4.27	0.78
	1.7%	0.0%	10.2%	45.8%	42.4%	0.0%		

Please evaluate the following components of the Winter Forum with respect to its contribution to your learning gains (*post only*).

	Not at all [1]	A little [2]	Moderately [3]	Highly [4]	Very highly [5]	No response	Mean	SD
Keynote panel	1	3	11	11	33	0	4.22	1.04
	1.7%	5.1%	18.6%	18.6%	55.9%	0.0%		
Team Sessions	3	3	9	22	22	0	3.97	1.10
	5.1%	5.1%	15.3%	37.3%	37.3%	0.0%		
Model UN	2	9	17	19	12	0	3.51	1.09
	3.4%	15.3%	28.8%	32.2%	20.3%	0.0%		
Other panels	1	4	10	22	21	1	4.03	1.02
	1.7%	6.8%	16.9%	37.3%	35.6%	1.7%		
Interaction with professors	1	4	11	24	19	0	3.95	0.97
	1.7%	6.8%	18.6%	40.7%	32.2%	0.0%		
Interaction with other students	0	5	13	26	15	0	3.86	0.90
	0.0%	8.5%	22.0%	44.1%	25.4%	0.0%		
Intellectual debate	1	2	13	20	22	1	4.07	0.98
	1.7%	3.4%	22.0%	33.9%	37.3%	1.7%		

Will you recommend the Winter Forum to other Duke students (*post only*)?

	N	%
Yes	45	76.3%
No	8	13.6%
Unsure	5	8.5%
No response	1	1.7%

Please evaluate the effectiveness of the pre-Winter Forum communication among/between the following groups with respect to preparing you for the Winter Forum activities (*post only*).

	Very ineffective [1]	Ineffective [2]	Neutral [3]	Effective [4]	Very effective [5]	NA	No response	Mean	SD
Program coordinators to students	1	4	11	26	16	0	1	3.90	0.95
	1.7%	6.8%	18.6%	44.1%	27.1%	0.0%	1.7%		
Faculty to students	0	8	16	27	7	0	1	3.57	0.88
	0.0%	13.6%	27.1%	45.8%	11.9%	0.0%	1.7%		
Students to students	0	4	18	26	8	2	1	3.76	0.90
	0.0%	6.8%	30.5%	44.1%	13.6%	3.4%	1.7%		

How early in the semester should work/assignments be available for future Winter Forums (*post only*)?

	N	%
Start of fall term classes	6	10.2%
Before fall break	19	32.2%
Before Thanksgiving break	33	55.9%
Blank	1	1.7%

## Appendix X, continued

Please share any comments you may have about your expectations of the 2010 Winter Forum (*pre only*).

I expect it to be an interesting and busy event full of good info/ideas from experts and time to discuss/practice these in our small groups.

I expect it to be tiring yet rewarding.

I expect to have discussions that break down and clarify major relevant policy (i.e. copenhagen summit)

I hope to gain a better understanding of what a green economy encompasses and be inspired to start my own business venture.

I just want to say that when I signed up for Winter Forum, I feel that I was misled. It said nothing about the amount of out of forum work that would be required. I've spent so much time on this (mostly trying to have some background in environmental science) both during the school year and during break. Next time, I suggest you make it a point to tell participants what exactly they will be getting into. For my liking, I would much prefer a conference that had guest speakers and then breakout discussions of what the speaker's said. I realize we are doing this, but I don't like that it is set up so that you are always with your same team. Things to keep in mind.

I was under the impression that the Forum would be more of a seminar on issues of the Green Economy, with experts presenting current issues and exciting new technology. When I learned that it was to be a competition, I was completely caught off guard. It should have been advertised for what it actually was. Since it has become something that I did not anticipate, I currently have no expectations, but am hoping that I will be able to take something from the experience nonetheless.

It looks like a lot of work has been put into the preparation, and I'm looking forward to Sunday, Monday, & Tuesday. All of the emails sent out over winter break, each with tasks included were overwhelming, but this is because no expectation was set when we applied. We had no idea of whether we were going to be something where participants listened to speakers. I'm glad the winter forum took the student-participation direction, but many of us did not know this when we signed up, so student motivation may not be as high as it could have been.

Looking forward to it!

This was a lot more work than was let on in the beginning, I feel as though I was VERY misled.

## Appendix X, continued

Please comment on your intention to apply or not apply for future Winter Forum programs (post only).
As many others will say, whether or not the next Winter Forum will have an (announced) start-up competition will be a big reason if I apply. Just having it explicitly stated whether or not there will be a start-up component will increase my likelihood to apply.
Definitely will. Very good learning opportunity especially if one does not know much about a certain topic.
Global health does not interest me
Global health doesn't interest me that much.
Global Health is not my specialty, so who knows if I will be able to get in. However, the atmosphere within winter forum was incredible. I felt almost everyone was fully engaged in all of the discussion, panels, and break-out sessions. Teams also spent a good deal of time together during meals and at night working through the competition and just talking about ideas. I wouldn't pass up such an opportunity intellectual growth and collaboration for anything.
Graduating... also not interested in global health
I am a graduating senior and therefore cannot apply for the Winter Forum next year. If I were not, I would absolutely apply.
I am a graduating senior.
I am a senior.
I am applying without a doubt.
I am definitely applying to a future Winter Forum!
I am graduating in May and will thus not be eligible to apply for next year's Winter Forum. Additionally, global health holds only limited interest for me. However, I think the forum was exceptionally well run and very valuable.
I am interested in Global Health too.
I am not as interested in global health as I am in energy and the environment, but if future programs appeal to my interest I will definitely apply. (I still might apply to global health anyway, the experience was a great one with the interdisciplinary learning)
I am not as interested in the topic.
I am not interested in global health, so I am not going to apply.
I am not interested in the topic
I am not really interested in Global Health. If it was something more to do with my major (Mechanical Engineering) then I would be excited to apply.
I have studied global health before and it is not of interest to me. However, this Winter Forum was amazing and I have highly recommended it to all my friends, especially those pursuing the certificate in global health.
I have travel plans for next winter break. also, I'm not as interested in the topic of Global Health.
I like the Winter Forum idea, yet I am not interested in global health.
I liked the entire winter forum program, especially the people in my group that I met, but I am only slightly interested in Global Health. I would probably apply regardless of the topic.
I loved the experience. I gained great perspective that I had not come to the table with originally and made some great friends and faculty allies.
I plan to apply for upcoming Winter Forum programs because this year's Winter Forum was such a great experience for me to learn about new topics from experts in the field.
I think global health issues are very closely related to environmental issues we dealt with at the forum. It would be interesting to see how global health issues would be resolved on an international stage since it is something that cuts alot closer to our hearts.
I was very happy to meet and interact with knowledgeable and insightful faculty. Yet, as a graduate student in an undergraduate forum I did not learn anything new that I hadn't come across before. I was very bored at some point at this year's forum
I will apply undoubtedly.
I will be graduating in the Spring so I will not be able to attend.
I will definitely apply next year. I applied this year because the topic perfectly aligned with my interests. I think it's just as relevant, however, to attend next year's considering that I am very uninvolved in global health classes/activities/etc. The Forum benefits majors in the area as well as people looking to build knowledge bases from the ground up.
I will no longer be at Duke. If I was still here my answer would have changed to agree.
I will not be applying since I am graduating in the Spring.
I would apply for the next Winter Forum, but I am graduating this year.
I would love to learn more about global health.
I'm graduating after this semester and won't be eligible
I'm graduating in May.
I'm graduating, but the next Winter Forum sounds great.
I'm just not sure if I'm really interested enough in global in health to merit the time spent on the winter forum
Interested in applying.
It allows me to be exposed to critical issues that face societies and explore them with highly motivated peers as well as faculty and speakers who really care and know the fields.
It was an engaging and intellectual experience. I loved it and will definitely apply for future programs.
It will depend on the topic and my interest.
My decision to apply will be based on whether or not my plans over break interfere. This was a great forum and I'm interested in coming back.
n/a
Nope
Not a topic of interest
Not particularly interested in that topic. But might apply to explore more of it.
The forum was a great experience, and I'd be glad to participate again.
The most important factor affecting my decision to apply for a future Winter Forum is whether I can make time for the amount of work that I know it will be. I was unable to do much of what I wanted to during winter break, and I was unable to fully move in properly (I still have to put posters up on my walls and move some piles off my desk that I put there the day I moved in after study abroad) because I was doing work on the start-up business or Forum readings during winter break and after Forum on each of the Forum nights. Although I won't be returning from study abroad next spring, I don't know if I will want to spend as much time over winter break on extracurricular work, especially for a topic of less interest for me.
This year's Winter Forum was special in that it focused on synthesizing information that was essentially already common knowledge to many of us. It's this opportunity to synthesize issues, and thus come to more informed conclusions regarding them, that makes me want to participate in the next Winter Forum, regardless of its topic.

## Appendix X, continued

Please share any comments you may have about your expectations of the 2010 Winter Forum (post only).

Assignments, such as the business plan should be given between fall break and Thanksgiving break so that groups have sufficient time to meet in person and discuss their ideas. Also this will give them time to talk to their faculty-mentor. Additionally, the Forum should hold another "Welcome event" and make sure that ALL faculty is present, so that groups can meet them and can begin to discuss their ideas.

Readings should be limited in length and provide supplementary information, not information that will be presented at the Forum.

Otherwise, the Forum was a great event, it had many interactive segments, which allowed us to digest and reevaluate the information presented to us. The format also helped with keeping up the energy. Other 3-day events like the DukeEngage Academy, in which we were lectured at, proved ineffective because we were too tired by hour-two that we just stopped listening.

Be up front about ALL aspects of the Forum from the beginning, especially regarding outside work.

Enjoyable experience.

For next year, I recommend being more clear about the work requirements necessary both before and during the Winter Forum. The business plan required a lot more work than anyone anticipated and that part of the program wasn't explained clearly in the initial descriptions of the Forum.

good overall experience

I am a graduate student and I was not sure about my role. I asked the organizers and nobody answered my question. Only half of the team worked on the green business plan and faculty member thought they should not step into our project and thus we did not get many guidance from them (or just not helpful suggestions). Although I learned a lot from doing I was very frustrated about the team experience.

I don't think a monetary prize is a good way to incentivize students. 2,000 divided among 10 students is only 200 dollars per, which in my personal opinion, is not enough to pay back perhaps 50 hours of work or more. Instead, perhaps, continued contact and feedback with professors or judges; dinner with the keynote speaker, or such would be more useful. (We are Duke students after all, we love to meet people and network)

I enjoyed it thoroughly and appreciate all that happened. I will look forward to see what this Forum sprouts into!!!

I enjoyed it very much. Thanks for the opportunity.

I had a great experience. I would advocate for less work/assignments though.

I think that full disclosure of the work expectations would be appropriate for future winter forums. While I did enjoy the forum very much, I was a little taken aback by the work load of the start-up competition and reading assignments that were not announced until after the application process.

I think there should be snack time around 3:00 like at Duke Engage Academy. It was hard to sit in that room from 1pm until dinner at like 6 or 7. Also maybe people wouldn't be falling asleep if they had a coke or something.

I thought it was pretty good overall, but I felt that the advertising was very misleading. There was no mention of the work/commitment involved in participating in the Winter Forum. There was quite a lot of work involved, so I felt rather deceived. But the program was good overall.

I thought it was very interesting and glad I took part in it.

I was not prepared for the time commitment outside of the actual forum. We are all Duke student and we all have very busy lives and have a lot on our plates, so this was kind of an unwelcome addition. Also, we kind of felt deceived because we were not told of the work load this would entail when we signed up.

It was an amazing experience, although it was nothing like I thought it would be. I learned so much from the panels, but I think I learned the most in our small-group sessions and with conversations with other people at the forum. The food was amazing and Sanford is awesome, although it is a little far away. Can't wait for Winter Forum 2011!

It was great! Exceeded my expectations. Especially enjoyed how involved students were able to get, rather than simply getting lectured at

My only complaint was that the large group business project was difficult to coordinate between individuals. Finals and Winter Break ensured that our group really only met once together before our presentation.

n/a

n/a

On question 15, our team's faculty advisor did not respond to a crucial email sent over winter break, leaving us hanging despite his promise of support. I was disappointed with the surprise obligations expected of us, and although I think there was a general feeling of accomplishment and satisfaction with Winter Forum among the students, I would not be surprised if word spreads that it is a considerable amount of work. For busy Duke students, sometimes the thrill of a new intellectual pursuit cannot outweigh the extra burden it will cause. Please make next year's Winter Forum applicants aware of ALL expectations regarding pre-Forum work.

## Appendix X, continued

<p>One aspect of the Winter Forum that I really enjoyed was that students of different disciplines came together to discuss this issue. Being an environmental science and biology major, I came in with extensive knowledge of environmental issues, but not a lot of background in business and economics. Thus, it was really great to interact with students studying public policy, economics and political science as well as work on the business start-up project. It was a great opportunity for people of different backgrounds to come together and think about how we can make the green economy work.</p> <p>I had one concern though. The focus of the forum was on issues of energy, which of course, an immense global environmental concern. However, I think that some students who came in with little knowledge of environmental issues, left with somewhat of a narrow knowledge of environmental concerns. For example, there wasn't much talk about natural resource and species conservation, which is an extremely large environmental concern. In some discussions, people did not realize how for example, a project promoting alternative energy, could in turn, actually be harming an ecosystem or particular species. I would have liked if perhaps students had a chance Overall a great experience. I have recommended the Winter forum as a possible workshop to the associate director of my program (Master's of Engineering Management). Hopefully more people from my program will consider attending future winter forums.</p> <p>Overall, my participation in the Winter Forum was a positive experience. Yet, as a graduate student in Environmental Economics I did not learn anything new and wondered at times what my role in the Forum should be. Still, I appreciate having the opportunity to interact with the great participating faculty and undergraduate students.</p> <p>That being said, I was very much disappointed by the ambiguous statements the forum made: I was hoping for newer holistic perspectives and approaches to mitigating climate change and achieving sustainability; instead we were offered some quick-and-dirty approaches to a type of sustainability (the GMOs were the most blatant example). I realize that as an European who have been working with grassroot environmental organizations for 9 years I am very much biased against GMOs. Yet, given that genetically altered crops are so controversial scientifically in terms their impacts on the environment and human health, I think it was highly inappropriate to have an inaugural speaker from Dupont who touted GMOs.</p> <p>The failure to consider the negative impact of a proposed climate change mitigation strategy on ecosystems for the team projects was another weakness of the Forum in my opinion. Some of the student projects proposed business solutions that are known to be highly detrimental to the ar</p> <p>Please continue this! This was one of the highlights of my Duke career.</p> <p>The Forum was engaging and informative, but the incorporation of the start-up competition should be made clear at the outset of the forum, as it appeared as an obligation none of us were expecting. I likely still would have participated had the competition been clearly a part of the Forum before I applied, but it would have been good to anticipate the level of time commitment that was required. Overall, a great chance to interact with faculty from different areas of the University and build team cooperation and leadership skills among students.</p> <p>the green venture was a great idea, but the timing was just terrible - the last few weeks of the semester are impossible to do anything with, and working independently over break is very inefficient compared to working together in person. timing assignments before fall break should help with this. Overall, an excellent program!</p> <p>The group discussion groups were my favorite part. I now feel like I have a clear idea of how the USA should plan to reduce its carbon emissions of the next ten years.</p> <p>The participants should know all assignments BEFORE applying.</p> <p>The startup competition requirements should have been clearer. Not because it would make some people not participate, but for planning/scheduling purposes.</p> <p>The Winter Forum should not become a fifth class in the fall semester in the name of preparation. It's a short conference and simply does not merit that type of time commitment.</p> <p>That said, the conference was great - I'd love to attend another one.</p> <p>The Winter Forum was amazing! The main thing I would change would be to inform students of assignments before they apply and to give them more time to work on projects during the forum. That would not only make it easier but would also enhance the experience. I felt that I would have gotten a lot more out of the start-up competition if I had spent more time working on it in person with my group.</p> <p>Also, giving out bottled water at a forum on sustainability is like giving out malaria at a forum on global health. Try not to do either at next year's event.</p> <p>While I think the start up challenge was a very good idea to get students involved in thinking about how to resolve the issue, the time given to prepare for it before exams and before the holidays was not substantial enough to involve the entire team. I think that for the next winter forum, earlier notice about the start up challenge should be given such that students can have more opportunity to brainstorm.</p> <p>You should make students aware they will be doing work for this, amount ranging from a little to a LOT!</p>
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Appendix XI  
Participating Faculty

<b>Faculty</b>	<b>Department/School</b>	<b>Position/Title</b>
Steve Nowicki	Trinity College	Dean of Undergraduate Education
Tim Profeta	NSOE	Director and Senior Associate Dean, Nicholas Institute for Environmental Policy Solutions
Bill Chameides	NSOE	Dean and Nicholas Professor of the Environment
Jim Salzman	Law & NSOE	Samuel F. Mordecai Professor of Law and Nicholas Institute Professor of Environmental Policy
Jonathan Wiener	Law & NSOE	Perkins Professor of Law and Professor of Environmental Policy
Erika Weinthal	NSOE	Associate Professor of Environmental Policy
Bob Clemen	Fuqua	Professor of Decision Sciences at Fuqua School of Business
Gale Boyd	Economics	Director of the Triangle Research Data Center and Research Scholar in Economics Dept
Norman Wirzba	Divinity	Research Professor of Theology, Ecology and Rural Life
Brian Murray	NSOE	Research Professor in Environmental Sciences & Policy
Josiah Knight	Pratt	Associate Professor of Mechanical Engineering
Gary Gereffi	Sociology	Professor in Sociology Department
Bill Brown	Law	Visiting Professor of the Practice of Law