

Change Strategies for Safe Transportation Behaviors

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<p>Alcohol is a key factor in traffic fatalities. College age demographics are among the groups with the highest levels of risk. Awareness and behavior change are critical for transportation safety. This project has taken a two-pronged approach to addressing college student drinking and driving. Its initial focus was on providing entertainment and transportation alternatives to URI students, thus emphasizing the harm reduction potential of such alternatives. Second, it has developed and utilized educational interventions to modify underlying attitudes towards alcohol consumption and specifically DUI.</p> <p>On-campus students typically perceived that there is “nothing to do” on or around the rural campus. A bus service was established as a transport alternative for students attending “College Night” in the state capital. It showed strong student response and substitution potential for DUI behavior. Several student initiatives have since emerged to develop models for alternative safe transportation options.</p> <p>Broad-based change strategies utilize approaches that are well-established URI, notably Social Norms and Stages of Change. In particular, recent work on Resistance to Persuasion was incorporated into the development of effective interventions. In-class interventions complement communication campaigns utilizing various media channels and communication strategies.</p> <p>Students created a series of videos incorporating audience targeting and resistance reducing strategies, such as: Focus on friends/peers, avoid being ‘preachy, feature social consequences, acknowledge resistance, use narratives. Videos focused on economic and psychological consequences for the driver, and the victim’s friends and family. They typically included alternatives (taxi, Designated Driver, Safe Ride) to encourage use of alternative transportation.</p>		
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TABLE of CONTENTS

1. INTRODUCTION.....	1
Background.....	2
College-Age Drinking Interventions.....	2
URI Student Alcohol Policy	2
Literature Review.....	3
Alcohol-Related Traffic Injury Prevention.....	3
Designated Driver and Safe Ride Programs	4
Audience Targeting.....	5
Persuasive Approaches	5
Resistance	5
Research Questions	6
2. ENVIRONMENTAL INTERVENTIONS.....	6
Demonstration Project: Thursday Night Bus Service.....	6
Problem Statement.....	6
Transportation Solutions.....	7
Highlights of Demonstration Project.....	7
Student Use of Transportation Alternatives.....	8
Promotion of Transportation Options	8
Potential for Harm Reduction	8
Initial Survey Results.....	8
Motivations for Bus Use.....	9
Lessons from Transportation as Vehicle for Behavior Change.....	9
Educational Interventions: Alcohol and Safe Transportation	10
Interdisciplinary and Community Focus.....	10
Alcohol Use Interventions: Social Norms	10
Alcohol Use Interventions: Stages of Change	11
Alcohol Use Interventions: Environmental Management.....	11
3. DESCRIPTIVE AND ANALYTICAL STUDIES	12
Campus Climate Checkup.....	12
Drinking Behavior	12
Drinking and Driving.....	12
Social Norms	13
Spring 2004 Survey	14
Drinking Behavior and Designated Driver Use by Gender	14
Perceived Drinking and Driving Risks by Gender	14
DUI and Stages of Change.....	15

Video Production and Testing.....	15
Video Development.....	15
Video Creation and Testing.....	16
Peer Evaluation.....	17
Sample Videos Spring 2005.....	17
Sample Videos Fall 2005.....	18
4. CONCLUSION.....	18
5. REFERENCES.....	20
APPENDIX I: SELECTED CASE STUDIES.....	22
APPENDIX II: DATA COMPARISON ACROSS 3 YEARS OF THE CAMPUS CLIMATE CHECK-UP (CCC)*.....	24
APPENDIX III: CONVENIENCE SAMPLE OF BUS RIDERS.....	27
APPENDIX IV: VIDEO EVALUATION.....	28

LIST OF FIGURES

FIGURE 1. Perception of Drinking Amount.....	13
FIGURE 2. Alcohol Quantity and Frequency.....	13
FIGURE 3. Associated Negative Consequences.....	14

LIST OF TABLES

TABLE 1. Drinking Status Across the Surveys.....	24
TABLE 1a. Drinking Status by Gender Across the Surveys.....	24
TABLE 2. Alcohol Frequency Across the surveys.....	24
TABLE 3. Alcohol Quantity Across the Surveys.....	24
TABLE 4. Alcohol Peak Use Across the Surveys.....	24
TABLE 5. Alcohol Frequency*Quantity Across the Surveys.....	25
TABLE 6. Selected Negative Consequences Across the Surveys	25
TABLE 6a. Drove under the Influence.....	25
TABLE 6b. Drove when had too much to drink.....	25
TABLE 6c. Late for Work or Classes.....	25
TABLE 6e. Memory loss the next morning.....	26
TABLE 7. Other Drug Use Across the Surveys.....	26
TABLE 8. Demographics.....	27
TABLE 9. Reasons for Bus Use.....	27
TABLE 10. Alternatives to Bus Use. Without Bus Service.....	27

1. INTRODUCTION

Alcohol is a major transportation safety issue, in addition to speeding, and lack of seatbelt use. These key human factors in traffic fatalities are the leading cause of death among youths as well as college-age adults. The high school and college age demographics are among the groups with the highest levels of risk (1). Increased enforcement and awareness led to a decline in alcohol-related fatalities until the mid-1990s. But this encouraging trend has not continued in recent years. It appears that decades of campaigns geared towards high school and college students have reached a plateau. Their impact on safe drinking and transportation choices is severely limited. Existing messages often fail to reach at-risk segments of this age group. Since attitudes and habits instilled during high school and college will last past graduation, it is imperative to address existing shortcomings. Awareness and behavior change are critical for transportation safety.

This project has taken a two-pronged approach to addressing college student drinking and driving. Its initial focus was on providing entertainment and transportation alternatives to college students, thus emphasizing the harm reduction potential of such alternatives. Second, it has developed and utilized educational interventions to modify underlying attitudes towards alcohol consumption and specifically DUI.

It is of great importance to create environmental conditions which reduce the incidence of DUI and offer students a behavioral alternative. At the same time transportation and entertainment alternatives for college students need be to accompanied by behavior change processes for this demographic segment. This project has pursued entertainment and transportation alternatives for college students. For the current project the Thursday night bus service proved to be a very popular vehicle for on-campus students to reach entertainment venues in Providence and return safely. It served as a model to explore a number of issues related to college student transportation behavior. A general conclusion was that this service prevented a large number of students from driving after visiting clubs on Thursday night, and that a substantial number of these students would have been driving. Even if a few students may have been drinking more due to the availability of this service, the net impact was positive in terms of harm reduction. Safe ride programs have been shown to have significant impact on reducing the number of students who drive intoxicated.

The successful and popular Thursday night bus service to Providence was used by a large number of students from the rural URI campus, many of whom would have otherwise driven, including some intoxicated drivers. The service was promoted virtually without formal advertising. This specific project concluded in Spring 2004. The lack of safe transportation alternatives gave rise to a number of grass roots initiatives. Through new alliances with units at the University and expansion into the community greater efficacy of interventions and safe behavioral choices is expected. A promising safe ride grass roots initiative, Rhody Rides, has emerged and has commenced initial operation in Spring 2006. Rhody Rides is modeled after successful initiatives on other campuses. Student drivers and navigators will use rental cars to drive intoxicated students home from bars or parties. Considerable evaluative efforts will accompany Rhody Rides; these evaluative activities will provide added valuable insights into safe ride alternatives, and allow for a comparison with the Thursday night bus service.

Attitude and behavior change are pivotal, and many initiatives have focused on these goals. Since termination of the bus service the focus of the current project has shifted towards assessing drinking and driving related behaviors among URI students and developing attitude and behavior change initiatives. Patterns of DD use were documented, and Dr. Mundorf's students conducted observations and interviews with students, educators, administrators and bar owners and they documented a number of problem areas. Subsequently, students began to create messages discouraging drinking and driving and encouraging safe DD use. They created an important foundation for continuing work by revealing shortcomings as well as venues for improvement. Videos were created by student groups and are being utilized to demonstrate ideas

and problems. A number of persuasive approaches are used to improve targeting the college student demographic and to reduce resistance to persuasion.

Background

College-Age Drinking Interventions

This project complements existing programs at URI, which are geared towards attitude and behavior change regarding alternatives to high-risk social life choices. The Cancer Prevention Research Consortium under James O. Prochaska has developed successful behavior change strategies in a number of areas. Unlike most programs, it has targeted the majority of at-risk populations, those who are not necessarily ready for change. The current project addresses the transportation aspect of such change processes. The project will benefit from the methodological breadth and experience in targeting different segments developed by this group.

Traffic injuries resulting from alcohol intoxication are a leading cause of death, especially among adolescents and young adults. Alcohol-related traffic fatalities reached a high of 17,524 in 2002, with a slight decline to 16,694 in 2004 (2). Rhode Island had the highest percentage fatal crashes which were alcohol related in 2003 (57 percent) and 2004 (50 percent). The high school and college age demographics are among the groups with the highest levels of risk due to alcohol, speed, and lack of seatbelt use (GAO, 2003). They are key human factors in traffic fatalities, the leading cause of death among youths as well as college-age adults. Awareness and behavior change are critical for transportation safety. Regarding alcohol-related fatalities, increased enforcement and awareness led to a decline both in absolute numbers and in rates (as a percentage of Vehicle Miles Traveled) until the mid-1990s (GAO, 2003). But this encouraging trend has not continued in recent years. Alcohol and drug abuse among college students takes a substantial toll on individual students, institutions of higher learning, their neighboring communities, and society at large. Awareness of this issue has resulted in increased research and administrative efforts in campus alcohol policy and preventive intervention domains. Results of conventional interventions have shown limited effectiveness; innovative, integrative approaches utilizing both media and classroom settings are needed.

Recent research has identified resistance to persuasion as a neglected factor, which limits the impact of communication campaigns. This project will incorporate a number of strategies, which can reduce resistance and increase the effectiveness of messages and campaigns. Videos incorporate a number of resistance-reducing approaches. For instance, students develop messages and campaigns with the intention to help their peers. Research has shown that such interventions are often better targeted and more appealing than those developed by professionals. Also, the mere fact that the students are involved in the process increases their ownership of these messages and underlying attitudes and thus decreases resistance.

The concern with drunk driving, binge drinking, and other impacts of alcohol on the college and community environment gave rise to an environmental management (EM) approach. There is a critical need to augment on-campus policy and prevention efforts with environmentally based, interactive community interventions. The environmental management approach uses a coalition driven multi-stage EM change process and implements and evaluates EM strategies related to alcohol access, policy/law enforcement, harm reduction, and marketing/promotion. The goal of this work is both applied, in that it provides effective EM tools to local and university administrators and theory based, in that it aims to produce innovative prevention goals (3).

URI Student Alcohol Policy

In 1993, the University of Rhode Island participated in the Harvard School of Public Health – College Alcohol Study. At this time, URI had a reputation as a party school and a binge-drinking rate of 67%, much higher than the national average of 44%. Since then numerous measures have resulted in less open alcohol consumption, but it is still a significant problem, especially when students leave campus by car.

In 1995, the University and President Robert Carothers publicly acknowledged the nature and scope of the alcohol problem and sought ways to address it. Key components of this approach included an alcohol policy that would be strongly repeated and articulated including a ban on serving alcohol at all social functions on campus.

The environmental/policy changes created resistance on the part of many students (and some staff). On the other hand, the changes did seem to initiate a culture change. Applications for admission rose, not only in number, but also in the quality of students. Since 1994, SAT scores increased 140 points. Fewer alcohol poisonings were documented at both the campus medical facility and the local hospital. Since the policy change, the number of "simple" alcohol violations (underage possession or consumption) addressed by the University disciplinary system increased (70 in 1990-91 to 267 in 1993-94) while the number of "complex" violations involving alcohol has declined (155 in 1990-91 to 63 in 1993-94). As minor violations were more consistently and strictly enforced, the more serious violations, alcohol use with behaviors such as vandalism or endangerment, declined (Cohen & Rogers 1997).

Several large funded projects by URI faculty and staff address alcohol, drugs, and risky sexual behavior among students. The extent of these behaviors is reasonably well documented through the Campus Climate Checkup (CCC). This CCC also documents student misperceptions of high-risk behaviors by their peers, which might affect their own attitudes and expectations.

Results from the 1999 Campus Climate Checkup (CCC) confirmed that URI students were still drinking a higher risk rate than national norms (binge-drinking rate of 55% compared to national rates of 44%). Rates decreased since the 1993 Harvard Study, suggesting that the initial policy changes did seem to have an effect on lowering rates of high risk drinking. The results also indicated that students believed that the typical URI students binge drinks more often than they actually do. This misperception was especially strong among the First-Year students. A pilot study found that First-Year students perceived that 79% of their peers were binge drinking, when only 41% of First-Year students reported binge drinking.

Based on a comparison of the drinking rates of students at Summer Orientation against their rates at the end of their first semester it appeared that even though some of our First-Year students arrive on campus with high-risk drinking patterns many others clearly develop these patterns during the first year transition. While URI has made great strides in improving the campus culture through policy change, students still hold the perception that URI is a party school and have inaccurate perceptions of the drinking patterns of the typical URI student. In addition, interviews with convenience samples have documented a considerable perceived lack of non-drinking entertainment available to students, which is compounded by the remote location of campus and lack of public transportation

Literature Review

Alcohol-Related Traffic Injury Prevention.

A number of interventions have been shown to be effective, in particular environmental approaches, such as sobriety checkpoints, limits on alcohol sales to minors, Responsible Beverage Service training, stricter legal limits, and in particular reduction to .08 BAC, as well as zero tolerance laws for minors. However, the effectiveness of educational interventions has been limited by a number of factors (4;5). One of the key problems with such educational interventions is the *top down* approach which most of them take (6). Often the young target audience is not actively engaged, and in many cases cannot even relate to the message. Few studies explored the combination of alcohol consumption and not wearing a seatbelt, even though this deadly combination is frequently found in late-night fatalities. Wilkins (7) describes a High School program designed to illustrate impact of traffic crashes resulting from alcohol/drug use and wearing no seatbelt. The program uses a 'shock' approach demonstrating the impact of the crash as well as the medical aftermath. However, effectiveness was measured only as self-report by 60 high-school students.

Rodrigues (8) draws a number of generalizations from the analysis of a number of successful transportation safety campaigns, in particular the need for audience targeting and segmentation, the application of persuasion, media effects and behavior change theories, the benefits of placing educational messages in entertainment contexts, and the necessity of combining PSAs with other campaign activities and enforcement. Rodrigues also stresses the “use of formative evaluation techniques to appraise and improve campaigns (p. 31).” She emphasizes the environmental approach of combining media, small group, and individual activities into a community structure.

Designated Driver and Safe Ride Programs

Evidence is overwhelming that traffic deaths and injuries are frequently associated with alcohol consumption. By implication, significant reduction in DWI will help reduce negative consequences, from DUI arrests to traffic injuries and deaths. Such improvements will not only benefit potential drivers who have consumed alcohol and their passengers, but also other, sober traffic participants who might become victims of drunk drivers. Designated Driver (DD) and Safe Ride programs are two popular approaches towards reducing driving while intoxicated.

Using a Designated Driver [DD] has become commonplace due to extensive formal and informal media coverage since the 1980s. Not all users will firmly adhere to the idea of a sober DD. A number of initiatives have been launched to encourage DD compliance and safety. They often include incentives to DD, from free coffee and soft drinks to food coupons. Public service campaigns have been devised and implemented to encourage DD use and safety. But issues still remain, from consistent use of DD, to the control of alcohol consumption by drivers and passengers. DeJong and Winsten (9) found high, but inconsistent use of DD by college students. Barr and MacKinnon (10) report that 86% of college students had used DD; those who drink frequently tend to also use DD at high rates. However, they often choose DD who consume alcohol. By the same token, “*less alcohol use among friends was associated with sounder methods of designated driver selection*”(p.552). The key factor, which is often ignored, is *planning ahead* to prevent compromising situations and to encourage the use of safe ride options (6). In addition, interventions need to stress that the availability of DD is not a license for passengers to drink heavily (11).

In order to address some of the shortcomings of DD use, including limited availability of DDs in some settings, safe ride [SR] programs were implemented. SR programs are often seen as a supplement rather than replacement for DD. Especially in a college setting they are particularly popular. Many students frequent a handful of locations on certain nights of the week and weekend. SR programs can target peak travel times (e.g. last call, etc.). Several studies have explored the impact of SR programs on DUI or drinking behavior of SR passengers. The prevailing conclusion is that overall drinking does not increase significantly compared to a control situation.

The consensus seems to be that DD and Safe Ride programs can serve an important harm reduction function. Authors typically rely either on self-report measures (“would you have driven if...”) or on estimates of lives saved. Such evidence (11) projects savings in traffic injuries and deaths based on the number of safe rides provided. The net impact is then calculated based on the percentage of accidents among DUI drivers. Obviously it is not known exactly what would have happened if it hadn’t been for the safe ride. Very few stringent evaluations of SR programs are available. However, one can assume that most likely the user would have been in a more dangerous situation and that the chances of being hurt or killed would have increased considerably. Valde and Fitch (13) analyzed communication pertaining to DD use and conclude that the relationship between driver and passenger is a critical resource. This analysis supports Graham’s tenet that focus on relationships and friends is pivotal in improving compliance with alcohol related behavior change.

Audience Targeting

A content analysis of PSAs by DeJong and Atkin (13) also discusses the difficulty of reaching late teen/early 20s target audience. Their key conclusions are that: 1) messages should feature peers, not adults, 2) should not be preachy, and 3) should feature social, rather than life-threatening consequences. They found that by far the greatest percentage of PSAs (56%) focus on DD, followed by prevention of DUI and support for public action. PSAs focus on increased use of, and making prior plans for a DD, the rewards of being a DD (good friend, attractive, hero), and the friendship function of being a DD. Some of the ads also underscore that having a DD is not a license for excessive drinking by the passengers. Their paper suggests a need to emphasize prevention of DUI and support for public action in addition to promoting DD. Many of the policy changes postulated by DeJong and Atkin have been implemented; nevertheless DUI levels and resulting traffic fatalities have not declined sufficiently. While greater enforcement and environmental management is needed, effective individual behavior change and targeting of core at-risk groups remains the critical missing link.

A study conducted at two test sites in North Carolina and Kansas collected feedback from focus groups on a series of PSAs (14). The order of the PSAs was rotated to minimize sequencing effects, and feedback was both qualitative (specific suggestions and criticisms) as well as quantitative (preference on a number of scales). These PSAs included the concepts of friendship and responsibility and some were written specifically for males or females, while others were geared towards both genders. The methodology relies on self-report regarding the question if the ad would influence respondents not to drive after drinking, and several ads appeared superior. Of course, self-report measures are limited, but they provide an indication of relative importance. In addition, relative memory for the PSAs was assessed.

Persuasive Approaches

Persuasion research has addressed message strategies designed to optimize the impact of messages on the recipient. Persuasion scholars have worked to refine compliance gaining strategies (15). Source and message factors have taken center stage. Communicator credibility influences attitude change. High expertise is critical when extreme attitude change is the goal, whereas limited expertise may be sufficient for moderate attitude change. The intent to persuade can also make a difference when personal gain appears to be at stake (15). Furthermore, communicator attractiveness, similarity, and power all can contribute to greater attitude change under certain conditions. Cialdini (16) has reiterated these factors as the persuasive principles of authority and liking.

One particular feature of arguments that has been part and parcel of most risk avoidance messages is fear. Janis and Feshbach (17) hypothesized that fear induces emotional tension, which is then reduced if the message recipient follows the recommendation in a speech or PSA. Fear appeals are not automatically effective. Their success varies with the level, immediacy, and likelihood of negative consequences, and the perceived efficacy of the recommended remedy. In particular, fear based messages seem to have limited impact on teenagers and college age audiences.

Resistance

In spite of decades of drinking and driving and other behavior change messages, the effectiveness of such interventions has been limited, in particular when teenagers and young adults are concerned. The dangers of adolescent and young adult drinking and driving have been widely documented (2). Effectiveness of behavior change messages geared towards these groups has been severely limited, in spite of widespread exposure through media and school-based programs (13).

Several approaches are evolving, which attempt to gain acceptance among those segments which are either hard to reach, or who are reluctant to embrace change. Stage-based

models have identified targeting and individualization of interventions towards different stages of change and other individual differences and personality traits.

Innovative angles often acknowledge severe impediments to reaching the appropriate and especially to the acceptance by the target of such a message. Some earlier persuasion work has addressed reactance (18) and resistance. Knowles and his coworkers (19, 20, 21) have developed an integrated model of resistance based on the approach-avoidance model of communication. Without resistance persuasion will not have to overcome obstacles and is thus moot. In order to achieve attitude and behavior change, the approach component has to outweigh its avoidance counterpart. Traditional persuasion has stressed *approach*, while neglecting *avoidance*.

Knowles et al. (21) have labeled Alpha Strategies those upfront approaches designed to strengthen arguments, add incentives, increase liking of the source, and reach consensus. *Incentives, reciprocity, commitment, consistency, social proof, source credibility/authority, and scarcity* are key influence strategies used not only in marketing, but also in prosocial behavior change messages, such as PSAs (16). Alpha strategies are limited in their effectiveness when receivers are resistant to adopting them.

Omega strategies are designed to help this shortcoming. Omega strategies are designed to reduce Resistance. Several researchers are working on these in different settings. They are novel to health promotion or transportation, but show great promise:

Acknowledge resistance implies honoring the opposing point of view. Knowles found that acceptance was much greater if a request was prefaced by "I know you may not want to (agree), but...". The author has identified similar effects for attitudes towards alcohol consumption (Laforge, Mundorf & Skarvan, unpublished data).

Changing the time frame towards the future will decrease resistance; people are less concerned with immediate impact and with the how-to of the issue at hand.

Providing multiple alternatives gratifies the motive to accept and the motive to resist. Other approaches dealing with reactance to the influence attempt to *minimize* or *depersonalize* the request, to *redefine* the relationship and to *reframe* from a negative to a positive message (21). Graham et al. (6) presents the problem of high risk drinking away from the individual and toward caring for friends. Intention and Perceived Norms mediated drinking and problem outcomes at 14 months. Intent to intervene, intent to make general prevention plans, and intent to make vehicle-related plans all seem to be factors which discourage risky drinking related behaviors. They also utilized perceived norms -- regarding levels of alcohol use, caring about friends, acceptability of risky behaviors, and willingness to intervene as a way to maximize the impact of peer influence.

Research Questions

RQ 1: Can environmental approaches, such as providing transportation and entertainment alternatives achieve harm reduction with regard to college student DUI?

RQ 2: What educational interventions can lead to cognitive, attitudinal, and behavioral changes regarding safe transportation behaviors among college students?

RQ 3: Which persuasive strategies can serve to minimize resistance to persuasion regarding safe transportation behaviors among college students?

2. ENVIRONMENTAL INTERVENTIONS

Demonstration Project: Thursday Night Bus Service

Problem Statement

Drinking and driving is a critical issue in the college environment. In addition to academic and social consequences, Drinking and Driving is a key problem. At the University of Rhode Island, a series of initiatives have targeted student alcohol consumption. While they have impacted

drinking behavior among students, only gradual change in behavior is helped by offering students an opportunity to use safe transportation.

URI is located in a rural setting. Due to location and zoning, few suitable entertainment venues are available in the immediate vicinity of the campus. Juniors and Seniors tend to live in winter rentals in the coastal community of Narragansett, about 5-6 miles from campus. Narragansett has a number of bars and clubs geared towards college students. These bars are typically 21+. In addition, students travel to the state capital Providence, which itself is home to four colleges and Universities [Brown, Providence College, Rhode Island College, and Johnson & Wales]. No public transportation from Providence to Kingston is available after 10 p.m. Taxi fares are around \$70. Consequently, students drive home at night—and a substantial number is intoxicated.

As part of this project, students conducted observations in Providence clubs and bars. One particularly instructive case study was done by a female student who worked as a bartender at the *Keg Room*, a Providence bar and dance club featuring “Dollar Drafts.” Thursday night is College Night, where 18-21 year olds can enter the bar, but are not permitted to buy drinks. The student conducting the observation noticed in particular a pattern of males buying drinks for females, and she describes several situations where intoxicated patrons plan to drive home. Female URI students are particularly vulnerable due to the possibility of being ‘stuck’ in Providence, and are thus likely to drive home intoxicated. See Appendix I for three sample cases.

Transportation Solutions

As part of a demonstration project funded by the URI Transportation Center and the RI Office of Highway Safety we established a number of venues designed to encourage safe transport behavior among college students at the University of Rhode Island.

Among other things, Thursday night bus service, which provided transport alternatives for students attending “College Night” in Providence, was established. It was exceptionally successful both in terms of student response and its substitution potential of student DUI behavior. It also provided alternatives for on-campus students who typically perceive that there is “nothing to do” on or around campus at night.

Several groups of undergraduate students have been working in vertical teams to assess student preferences and to develop models of transportation behavior change.

Highlights of Demonstration Project

DUI affects close to 1/3 of students (Foss, Marchetti, & Holladay, 2001). Considering the severity of possible consequences this translates into a considerable number of drunk drivers. The problem is confounded because teenagers and young adults are particularly prone to automobile accidents. Risk reduction is critical.

URI students are currently facing limited non-drinking entertainment options. In particular underage students living on campus have few choices in terms of safe transportation to entertainment venues. In addition, even though drinking among college students may be less prevalent than frequently assumed, alcohol consumption is still a problem behavior.

This project addresses transportation and its relationship with entertainment needs and alternatives for URI students living on campus. A lack of entertainment options on the rural URI campus was identified as one of the key problems. Most popular venues close to campus tend to focus on alcohol consumption, and are often not accessible to students under 21. Considerable evidence points to drunk driving or riding with an intoxicated driver to such venues. As an initial approach to alleviate some of these concerns, bus service to Providence on Thursday nights was expanded to allow students to ride there from campus and back.

- Around 150 students utilized buses on a typical Thursday night, up from around 75 during the first year. RIPTA provided 4 - 5 buses (mostly in addition to scheduled vehicles).
- Media coverage (Providence Journal, local television stations, student newspaper) created public awareness.
- Strategies were developed to manage behavior problems on the buses.
- Temporary termination of the RIPTA service created opportunities to explore other public and private sector alternatives.
- Availability of private sector alternative (through club owners CJ&J) prompted re-evaluation of priorities.
- As of Summer 2004, both private and public service were terminated due to lack of funding. Other transportation alternatives were being pursued in collaboration with student government and Greek organizations.
- The project has helped raised student transportation issues among student government and URI administration.
- Alliances with a number of groups on campus have helped strengthen the long-term impact of the project. Several initiatives related to local transportation choices emerged.

Student Use of Transportation Alternatives

Many students took advantage of the RIPTA bus runs encouraged and supported by this project. Even during **Year 1**, buses were filled to capacity. It was estimated that an average 75 students took the bus during the 30 week time frame, for a total of approximately 2,250 student riders. The bus service provided an inexpensive and safe alternative for the 45-minute drive. While not all 2,250 students would have been driving home, quite a large number would have.

During **Year 2**, average ridership continued to increase to between 150 and 200 students per week, or close to 5,000 riders over a 30-week period. Even if only half of these trips had taken place by car, and if most students had carpooled, one might estimate around 1,000 automobile trips, with a considerable number of, at least somewhat, intoxicated drivers.

The service experienced a setback when it was cancelled at the beginning of the 2003/04 academic year. After receiving negative feedback on the cancellation from various sides, the service was reinstated and ran with smaller numbers of students because many students were not aware that it had been reinstated. Because it was scheduled to be phased out, no additional advertising efforts were launched.

Promotion of Transportation Options

Feedback from student riders was positive. In particular we have received many requests for added, later bus runs. After some initial flyers and doorknob hangers for the dorms no paid advertising was needed. Besides voice mail and email much communication was interpersonal, among dorm residents. The second year of this service saw high ridership levels without any formal advertising.

Potential for Harm Reduction

A majority of students reported going out 2 nights to 4 nights a week. This would indicate a need for alternative transportation and entertainment options on nights other than Thursday.

Initial Survey Results

A University of Rhode Island *Transportation Needs Assessment* survey was given to subjects partaking in the Thursday night RIPTA bus service. The frequency responses for nights per week "going out" were: 42.2% reporting two nights a week, 28.9% reporting three nights a week, and

13.3% indicating four nights a week. Only 6.7% of respondents said that they go out one night a week.

When respondents were asked, “will you drink alcoholic beverages while in Providence?” 66.7% reported yes, 33.3% replied no. When surveyed about drinking and driving risk 71.1 % of respondents reported not drinking and driving in the past year, 13.3% reported that they had been drinking and driving once in the past year, and 11.1% reported that they had been drinking and driving twice in the past year. An overall total of 44.4% had driven with someone who was under the influence of alcohol in the past year.

Compared to the overall Freshmen and Sophomore population at URI, as reported in the CCC data (see Appendix II), the group surveyed may be considered at high risk for binge drinking. Of those surveyed, 66.7% reported that they would be drinking while they were in Providence. This finding is not necessarily enough to categorize the group as at high risk for alcohol abuse. However, many of those who answered yes to planning to drink also said that they would be drinking 4 or more drinks. Also high non-response (30%) appears to indicate that reported drinking behavior may be underestimated due to the illegal or undesirable nature of underage drinking.

A majority of students reported going out 2 nights to 4 nights a week. This would indicate a need for alternative transportation and entertainment options on nights other than Thursday. These same students said that they would use alternate transportation if provided and announced on the campus cable system and other venues.

Motivations for Bus Use

The primary reported reason was convenience (48.9%), 22.2% reported that friends were taking it, 11.1% chose safety and 13.3% selecting all choices. (See Appendix III.)

An encouraging finding was that 42.2% of respondents said that would not have left campus without the bus service. This means that the service does indeed provide a real alternative. A somewhat larger group, 51.1% said that they would have used a car or carpool. About 31.1% of respondents reported that “without a bus service” they would use a car if leaving campus while 20% reported that they would carpool. Given the alcohol use pattern described above, either choice would imply a significant risk for drinking and driving. About 29% of respondents reported that they did not take the last bus home at 12:15pm. They might have gotten a ride, stayed overnight in Providence, shared a taxi etc. Since data were collected from students riding up, it is unclear how this discrepancy arose.

The most recent CCC (Reilly et al. unpublished data) also identified motivations for alternative transportation use. In particular, respondents were asked about their (actual or hypothetical) decision to use the bus into Providence on Thursday nights. It should be noted that 42 percent of males and females have at least one drink when driving up to Providence; 20 percent of females and 29 percent of males report having 4 or more drinks. Interestingly, far more males (30.2%) than females (18.5%) said they would forego the trip into the city, while more females (59.3%) than males (38.7%) expected to *ride with friends*. Males are more like to drive (24.6% vs. 17.5%). Both genders cited avoidance of riding with an intoxicated driver (80.8% vs. 72.2%), avoidance of DWI (81.2% vs. 75.0 %), and safety ($f = 75.8$; $m = 70.1\%$) as primary motivators of bus use, while economic considerations were secondary.

One interesting item that sheds some light on risk management, but also the possible facilitation effect of bus use is *drink more while taking fewer risks*. This consideration was important both for males (56.1%) and for females (49.7%).

Lessons from Transportation as Vehicle for Behavior Change

The bus service generated important lessons for interventions that can be applied in future transportation alternatives. The Thursday night bus service provided transport alternatives for URI student entertainment. It serves those interested in concerts, restaurants, and Providence

Place mall, but in particular students attending “College Night,” a long-standing tradition, where clubs admit those 18-21, but (supposedly) serve alcohol only to those 21 and over. A number of strategic lessons were derived from the experience persuasive media use. Specifically key constituencies can facilitate safe entertainment and transportation alternatives:

Peers. RA’s or local students can organize small group non-drinking activities (e.g. dinner, mall, concerts, theater, galleries). Maps, coupons, and listings of current events might provide added incentives for students to seek alternative activities.

Drivers. Within the limits of their responsibilities, union rules, etc., bus drivers could be trained to relay key messages to students prior to and during trips. Also, appropriate response strategies could be developed to aid bus drivers in minimizing problems.

Athletes. Getting responsible older students involved might add to the effectiveness of any intervention. One option would be to have athletes, who are often seen as role models, show up at the bus stop, or even ride the bus up to Providence.

Police. In addition to controlling access to alcohol at the Providence clubs, stricter controls at the buses departing from URI are suggested. Since some students bring alcoholic beverages in soft drink containers, a strictly enforced policy of no beverages on the bus might significantly reduce overall alcohol consumption.

Educational Interventions: Alcohol and Safe Transportation

Interdisciplinary and Community Focus

Several groups of researchers and administrators across campus are concerned about alcohol use and other risk behaviors. In particular the complexity of the problem necessitates collaboration of researchers from psychology, communication, and public health. Part of the environmental approach is to work with the administration, with student government, the Greek system, and, reaching outside the university with the Narragansett Coalition, a group dedicated to improving relationships with the community of Narragansett, where many upper-level URI students live. Alcohol-related concerns are critical in many of the problems that arose.

In order to reach the student population most at risk and to achieve a long-term impact, broad-based change strategies utilize approaches that are well-established across different groups of researchers at URI, notably Social Norms and Stages of Change. In addition to in-class interventions, communication campaigns utilizing readily available media channels incorporate various public relations strategies. Data are collected from on-campus students online, and while traveling to night time entertainment using public or semi-public transport, which provides a tremendous research opportunity.

Many of the initiatives in this project are “grass-roots” efforts by URI students. The project facilitates their exploration and promotion of entertainment and transportation alternatives. On-campus video, newspaper, email, and websites are used to convey persuasive messages as well as information. Information provided includes non-drinking entertainment alternatives and additional safe transportation options and bus routes. Incentives for quality contributions are developed.

Alcohol Use Interventions: Social Norms

Several large funded projects by URI faculty and staff address alcohol, drugs, and risky sexual behavior among students. These behaviors are documented through the Campus Climate Checkup (CCC; see Appendix II). It documents student misperceptions of high-risk behaviors by their peers, which might affect their own attitudes and expectations.

One such project (Reilly, 2002; Mundorf & Labelle, 2004) successfully utilized interventions during the freshman course URI101 to correct such misperceptions. Interactive social norms feedback was effective at correcting misperceptions of high-risk drinking among First-Year students. Reducing the perception of how much the typical student drinks was successful for the experimental group. The Social Norms approach emphasizes the responsible

behavior of the majority in order to encourage modeling. Transportation and DUI related messages emphasize different attitudinal and behavioral dimensions:

- Normative (comparison with peers)
- Risk management (minimizing risk even though problem behavior is unchanged)
- Resiliency skills (ability to resist temptation)
- Values (strengthening of prosocial values)
- Empowerment (taking charge)

Alcohol Use Interventions: Stages of Change

While strong incentives, peer pressure, and situational factors can lead to immediate behavior change, very often such change is short-lived. Much social-science research now views enduring change as the result of a long-term, stage-based change process. This project is aimed at exploring the potential for long-term behavior change with regard to alcohol use, entertainment and transportation behavior. One of the most successful approaches has been Prochaska's Stages of Change model as a behavior change paradigm. One key premise of the model is that people go through several stages of change until they actually achieve a sustained level of a desirable target behavior (Prochaska, Norcross, and DiClemente, 1994). The behavior change sequence includes precontemplation (not intending to take action for the next 6 months), contemplation (intending to take action within the next 6 months), preparation (change planned in the next 30 days), to action stage (overt changes less than 6 months ago). Sustained change (at least 6 months), often after several relapse cycles, culminates at the maintenance stage (Prochaska, Prochaska, and Levesque, 2001). The model implies varied interventions depending on the stage of change and other individual difference variables (e.g. temptations, decisional balance). Consequently, being able to identify the stage of change for transportation users would permit the design of targeted messages, and thus lead to higher effectiveness.

There is also the need to create readiness for change. Prochaska and others have shown repeatedly that by simply offering alternatives without addressing the processes of change, in this case, the corresponding awareness, attitude change typically fails in the long run. Consequently, a number of educational (COM100) and media (advertising, student organizations) channels to promote increased awareness of alternatives and attitudes favoring safe entertainment and transportation choices. Since the expected changes may be long-term in nature, starting early on in a student's campus life is expected to reap the most benefits over time. Francione (2004) has shown that student drinking behavior follows the stage pattern demonstrated in Prochaska's Transtheoretical Model of Change.

Alcohol Use Interventions: Environmental Management

The concern with drunk driving, binge drinking, and other impacts of alcohol on the college and community environment gave rise to an environmental management (EM) approach. There is a critical need to augment on-campus policy and prevention efforts with environmentally based, interactive community interventions. The environmental management approach uses a coalition driven multi-stage EM change process and implements and evaluates EM strategies related to alcohol access, policy/law enforcement, harm reduction, and marketing/promotion. The goal of this work is both applied, in that it provides effective EM tools to local and university administrators and theory based, in that it aims to produce innovative prevention goals.

At the University of Rhode Island, Prof. Mark Wood and his collaborators have received several large grants using the Environmental Management (EM) approach. Using a quasi-experimental design, the environmental management study proposes to demonstrate the feasibility of a coalition driven multi-stage EM change process in two municipalities and two "Greek" communities. Currently the group, named Common Ground is working mainly with one local community and the local "Greek" organizations (Interfraternity Council and Panhellenic Council) to implement and evaluate EM strategies related to alcohol access, policy/law

enforcement, harm reduction, and marketing/promotion. Feasibility and efficacy aims will be evaluated across a diverse yet targeted array of survey, key informant interviews, observational assessments and archival data. The dual long-term objectives of this research are “to provide college administrators with an enhanced armamentarium for reducing collegiate alcohol abuse while furthering the science of prevention” (Wood, 2004). Transportation issues are a high priority on the agenda of student organizations and will continue to play a critical role both in harm reduction and enhancing the quality of the campus experience.

3. Descriptive and Analytical Studies

A number of research studies pertaining to student alcohol use and its possible impact on transportation behavior are being conducted at URI. The author has worked with Dr. Robert Laforge, Cancer Prevention Research Consortium, on a particular aspect of college student alcohol use, which also affects transportation behaviors: Resistance to Persuasion. After extensive review of the research we created an initial intervention, which was administered in Fall 2004 (R. LaForge, N. Mundorf & J. Skarvan, unpublished data); data collection (n=299) and analysis to assess factors determining resistance to alcohol related change messages provided useful initial data. After analysis of these data we identified a number of variables in need for revision, and conducted a second study in Fall 2005 (n=453). Findings from this study will apply to a number of risk behaviors beyond drinking and driving.

In addition, we have utilized other data sets. Specifically, Common Ground conducted a representative telephone survey of 500+ URI students. In addition to extensive information on alcohol use, this questionnaire includes questions related to DUI, Designated Driver use, etc. Graduate student Caren Francione Witt collected data for her Master’s thesis which demonstrate an interesting connection between drinking and seatbelt use.

Campus Climate Checkup

Since 1999 data have been collected from URI students that focus on behaviors related to alcohol and other substances as well as other risk behaviors. Some of the key findings are reported in the tables in Appendix II.

Drinking Behavior

Table 1, in Appendix II, addresses the overall drinking level. Students identified themselves as:

- (a) nondrinkers: do not consume any alcohol,
- (b) drinkers: use alcohol within the past year, but do not engage in Heavy Episodic drinking,
- (c) infrequent heavy episodic drinkers: women who report to drink 4 or more drinks in a row and men who report 5 or more drinks about less than 3 times during the past year, and
- (d) frequent heavy episodic drinkers: women who report to drink 4 or more drinks in a row and men who report 5 or more drinks more than 3 times during the past year.

As can be seen, heavy episodic (“binge”) drinking levels are high across all three surveys. Table 1a. indicates that the main difference between males and females is in the frequency of heavy episodic (“binge”) drinking.

Drinking and Driving

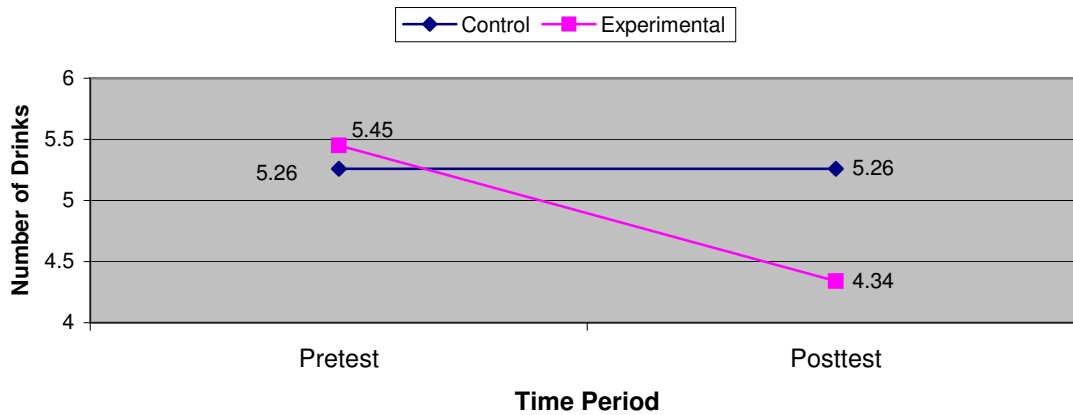
Table 6, in Appendix II, is particularly instructive as far as negative consequences of drinking. Aside from health and academic impacts, transportation related issues are prevalent. Across surveys, more than 30 percent of respondents admitted to driving ‘under the influence’ during the past year. Even though most did so once or twice, a substantial group can be considered to make drinking and driving a habit.

Social Norms

The project "Interactive Social Norms Correction for First Year Students" (23; 24) successfully utilized interventions during the Freshman course URI101 to correct misperceptions. The first objective of the project was to validate that interactive social norms feedback was effective at correcting misperceptions of high-risk drinking among First-Year students.

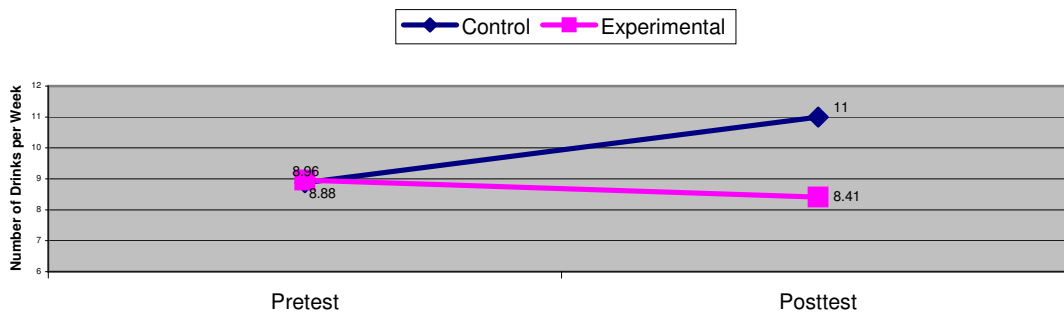
Figure 1 below presents the data regarding the level of misperceptions of control vs. experimental groups at pretest and posttest. The "number of drinks" variable refers to the response of the "typical number of drinks consumed or perceived that others drink when they drink. The figure clearly shows that the experimental group's perceptions decreased while the control group's perceptions remained the same.

FIGURE 1. Perception of Drinking Amount



The second objective of the project was to validate that use of interactive social norms feedback is effective at reducing high-risk drinking among First-Year students. According to the data obtained, drinking levels decreased by about ½ drink per week within the experimental group. Drinking levels in the control group increase by slightly more than 2 drinks per week.

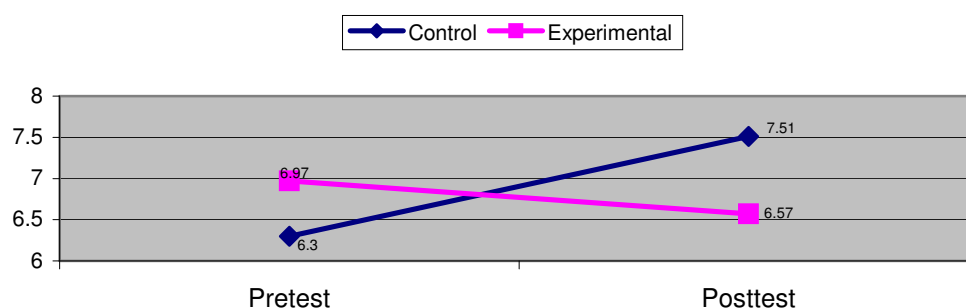
FIGURE 2. Alcohol Quantity and Frequency



The third objective was to validate usefulness of interactive social norms feedback for reducing levels of associated negative consequences. This variable is a composite of associated negative consequences.

Once again the same pattern was present. The control group increased in risky behavior from pretest to posttest, while the experimental group decreased in the amount of risky behavior. This interaction implies to us that the interactive approach (specifically with safe driving messages) may also be effective at reducing risks and changing attitudes.

FIGURE 3. Associated Negative Consequences



Spring 2004 Survey

A survey of 574 students registered for the required General Education course COM100 was conducted to assess various dimensions of student alcohol and transportation behavior (Mundorf, LaForge, & Skarvan, unpublished data). Of the respondents, 87 percent were between 18 and 20 years old, i.e. not of legal drinking age. Fifty-five percent of respondents were female. Preliminary analyses focused on gender differences pertaining to alcohol and transportation related perceptions and behaviors.

Drinking Behavior and Designated Driver Use by Gender

When asked about the number of drinks after which it is still safe to drive, 86 percent of females, but only 60 percent of males responded between 0 and 2 drinks. While fewer than 2 percent of females found 4 or more drinks acceptable, 15 percent of males did. In spite of the cautious female attitude, 42 percent of females admitted to having been a passenger with a drunk driver; compared to 50 percent of males. For the same question concerning the “past 30 days” 32 percent of males and 27 percent of females conceded to having been a passenger with a drunk driver. While around 80 percent of both genders had been designated drivers, and used designated drivers, in the past, 42.6 of females and 47.7 percent of males had done so during the past month. When asked how often they had been a designated driver in the past 30 days, 57.2 percent of females and 52.3 percent of males reported at least one instance. Frequencies typically ranged between 1 and 3 times, with few more than 7 times.

Perceived Drinking and Driving Risks by Gender

Gender differences are particularly instructive in terms of the perceived risks of driving while intoxicated. Responses were collected on a 5-point Likert scale from *Not at All Likely* to *Very Likely*. For reporting purposes *Likely* and *Very Likely* are combined in the following.

Females (24.5%) were far more concerned with being caught or arrested than males (14.5%). Similarly, females (30%) also perceived a greater likelihood of hurting themselves or others compared to males (14.6%). The perceived likelihood of being in an auto accident reveals corresponding female-male percentages (32.6% vs. 16.1%). Even more telling is the response *feeling guilty afterwards*; it was given by 50.1 percent of females in contrast to only 29.8 percent of males.

By contrast, more males (14.7%) than females (10.4%) tend to view drinking and driving as a way to avoid embarrassment, and by the same token a small, but distinct percentage of males

(6.9%) saw DWI as an opportunity to impress friends (vs. 2.3% females). Finally, males (32.3%) also valued the flexibility of *leaving when you want* somewhat higher than females (26.9%).

DUI and Stages of Change

Much of the research conducted at the CPRC is multi-risk oriented, in that it addresses behavioral risks which are typically related. Francione (29) explored factors influencing college student seatbelt use. Based on a sample of n=305 URI students, a distinct inverse relationship emerged for Always Front Seat (Back Seat) seatbelt use and Heavy Drinking. Usage rates declined from 71.4 (49.5) percent for 0 days of heavy drinking to 48.9 (22.2) percent for 10 or more days of heavy drinking in the past 30 days. Similar patterns emerged for Number of Drinking Days, Age of Onset of First Drunk Episode, and Marijuana Use. Interestingly, occasional drinkers (1-2 Drinking Days/month) reported higher usage (76 percent) than non-drinkers (66 percent).

Video Production and Testing

It appears that decades of campaigns geared towards high school and college students have reached a plateau. Their impact on safe drinking and transportation choices is severely limited. Existing messages often fail to reach at-risk segments of this age group. Since attitudes and habits instilled during high school and college will last past graduation, it is imperative to address existing shortcomings.

Recent research has identified resistance to persuasion as a key factor in limiting the impact of communication campaigns. Our work has incorporated a number of strategies, which can reduce resistance and increase the effectiveness of messages and campaigns.

We have developed a series of targeted and tested videos which could become part of comprehensive communication campaigns geared towards college and high school student drinking and driving. Testing is conducted via focus groups and experimental methodologies. Currently, the impact of actively creating such messages (in addition to consuming them) is being assessed for a future project. Based on prior research it is expected that those students involved in message creation will display significantly higher levels of attitude and behavior change compared to those merely consuming the messages.

Video Development

The central activity during the past two years of the project has been the development of persuasive videos addressing drinking and driving related issues. A large number of students were involved in background research and video production/editing at various levels. In particular, the sections of research methods course COM381 taught by Dr. Mundorf were redesigned to focus on college student transportation and entertainment issues. Students created a new set of **videos** targeting Drinking and Driving, Designated Driver Safety and Seatbelt Use. After several semesters of work videos were greatly improved due to a greater emphasis on persuasion theory as well as editing and production training. In Dr. Mundorf's sections 60+ students/semester conducted projects related to:

- Student Alcohol Consumption
- Drinking and Driving
- Use of Designated Drivers
- Alcohol and Seatbelt Use
- Creating and Testing of Safe Transportation/Entertainment Videos
- Transportation Alternatives

After reviewing failures of past campaigns, the following key goals were established:

- Improved Targeting and Persuasive Impact
- Reduced Resistance to Persuasion

- Appeal to College Students
- Improved Message Strength
- Use of Effective Message Delivery

In addition, students were urged to heed the advice in DeJong and Atkin (13) and focus on peers rather than adults, to avoid being “preachy,” and feature social rather than life-threatening consequences. Most characters were actual URI undergraduate students. Realistic settings were chosen based on audience experience. Production techniques were consistent with audience preferences, and music was chosen to maximize targeting and emotional impact.

Since for most students the likelihood of actually getting killed or killing someone in a drunk driving incidence is small, several groups were encouraged to focus on other more common realistic consequences, in addition to the fatal outcomes of drunk driving, such as getting a traffic citation and court date, a revoked license, incurring considerable direct and indirect costs to self and parents. Some projects also featured physical impairment and mutilation, a particularly undesirable outcome for younger demographics.

A key strategy was that of **Reducing Resistance**. As mentioned in the literature review, resistance limits the effectiveness of behavior change messages. Recently some authors have proposed **Omega Strategies** (19) to help reduce resistance. Laforge, Mundorf, and Skarvan (unpublished) tested several such strategies with regard to alcohol and found acknowledging resistance to be a promising approach in reducing resistance to messages encouraging responsible alcohol consumption and reduction of negative impacts.

Other Omega strategies used in the videos include use of narratives (extended stories which have the ability to involve the viewer). One such example was a story about an evening in the life of a designated driver. In subsequent ratings, this story received high marks from college student respondents.

Another approach focuses on redefining the relationship between the source of the video and the implied viewer. While typically this relationship is one of authority, the focus on helping friends rather than oneself was shown to be effective in encouraging students to make ‘vehicle-related plans’ (6). Several of the videos focused on friends discouraging irresponsible driving after alcohol consumption. Also, designated driver use was shown as an attractive social and friendship activity.

Yet another strategy was to provide multiple alternatives to driving home drunk (rather than just one). These included Designated Driver, Safe Ride (i.e. buses, Rhody Rides), calling a taxi, walking home, staying over (under the right circumstances). A related strategy focuses on depersonalizing the request combined with social proof, where many students are shown to engage in desirable behaviors.

Finally framing is used, when a message is reframed to positive from negative. For instance, rather than focusing on the dangers of drinking and driving, this approach dwells on the benefits of remaining safe. Salovey (29) and others have shown the benefit of this approach for smoking, and it stands to reason that it will work for drinking, as well.

Video Creation and Testing

A systematic approach was implemented so that Research Methods classes in Communication Studies were able to develop videos using a series of consecutive steps. These steps involve two cycles of development, testing, revision, and (in Cycle 2) dissemination.

Cycle 1

Students review and critique videos from previous semester
 Instructor discusses Audience Targeting, Persuasion, and Resistance
 Instructor and students propose Topics
 Students create Literature Review on selected topics

Student groups decide on Final Topics
Groups create Storyboards
Class critiques Storyboards
Focus groups view and critique Storyboards
Student groups revise Storyboards

Cycle 2

Student groups create 2 versions of Draft Videos [e.g. male/female; humor/no humor; high/low information]
Class critiques Videos
Student groups create 2 finished versions of Video
Students in Communication Studies classes evaluate Videos (peer evaluation)
Instructor ranks Videos based on evaluation
Transportation professionals from RIDOT, URITC finalize critique and selection
Final edits incorporate evaluations and critiques
Videos are disseminated to appropriate target audiences

Peer Evaluation

A questionnaire was distributed to several COM 100 classes (See Appendix IV). It consisted of questions pertaining to students' individual demographics and drinking patterns. The questionnaire also had questions pertaining to being a designated driver, drinking while being a designated driver and being a passenger to a designated driver. The second part of the questionnaire focused on two different versions of the video shown and asked questions on what was liked and disliked about both. The questionnaire ended with open-ended questions which gave viewers an opportunity to express their views about the videos.

Videos were shown to two COM 100 classes during regular class meetings. Respondents initially filled out the part of the questionnaire asking about Demographics and Drinking/DD habits. Then they were shown one video at a time. After each video they filled the corresponding questions and comments. Different versions of the same video were shown in sequence. The order of videos was held constant. Below is a description of some of some representative videos.

Sample Videos Spring 2005

Dress Up. This video features a group of young men (Version 1) or women (Version 2) "dressing up." Then text then says, "Would you rather dress up for this?" [video of prom night] than this: [video featuring young people in a funeral setting]?

25 Years. This video features a courtroom setting. Presumably a drunk driver is sentenced to 25 years in prison. The phrase "25 years of your life" is heard repeatedly in the background while personal and historical images from the last 25 years flash by. The clip ends with a young woman (presumably the victim's girlfriend) sitting in the courtroom and holding a picture of the victim. The final voice-over says "...and who knows how many years of *his* life"

Cost of DUI Arrest. This video was a testimonial by one of the students in the class who had been arrested for DUI. His testimony focused on the financial, psychological, and other costs of his DUI. While this video had some production flaws, it was effective in focusing on aspects of DUI which are often neglected.

Rewind. This video focused on the severe repercussions of one moment of bad decision-making (in this case the decision to drive after drinking) with the key idea that there is 'no rewind button' in real life. In the first sequence of the video college students go out for a night of drinking and the driver is clearly shown as consuming alcohol. A severe accident results. Then the *Rewind* sequence simulates a DVD or VCR rewind and shows a modified sequence, in which the driver drinks water and everyone lives to enjoy the remainder of a fun night.

Faces. This video focused on yet another possible outcome of Drunk Driving: The victim is not killed but instead mutilated and subjected to extensive suffering. This video featured female accident victims and their mutilated faces on the backdrop of 911 calls. The video then ended with *before-after* shots contrasting the attractive faces of the victims prior to the incident with the mutilated faces. This video was deemed very effective by student judges. However, when shown to transportation professionals it was considered overly repulsive and shocking. These professionals were concerned that viewers might be overwhelmed by the footage and lose sight of the message per se.

Sample Videos Fall 2005

Students in Fall 2005 had the benefit of reviewing the Spring videos. They also received a training session in video editing and a lecture by a videographer involved in editing the earlier videos. Persuasion and resistance were also discussed during the early weeks of the semester. The following describes some of the resulting videos.

Victims. This video was ranked highest both by students and professionals. It focused on the perpetrators and their victims. In particular, this video featured still pictures of the perpetrators during and after their trials, clearly demonstrating their anguish and distress, while at the same time juxtaposing it with images of the victims and their loved ones.

Matt. This video was controversial. It received very high ratings from student reviews, but the message was judged to be confounded by students and professionals. This video was longer than the typical PSA and it featured the last night of a Designated Driver, who ends up getting killed by a drunk driver. The video was considered very well done. It was strong at developing the story and drawing in the audience.

Night Arrest. Another video incorporated several realistic elements, including night shots, police video, and even a local jail cell. However, it was judged to be 'over the top' because the driver was so drunk that he was unable to find the right car. Also, the video was considered less representative because the 'drunk' dimension was exaggerated.

Little Guy. This video focused on the element of distraction. An obviously intoxicated driver is being distracted by his 'inner voice' represented by a *little guy* sitting on his shoulder. The inner voice is suggesting a number of distractions, from changing CDs and lighting a cigarette to picking up a lighter from the car floor, while the driver is taking an occasional drink from the beer bottle until a sudden crash occurs.

4. CONCLUSION

The project has touched student, staff, and faculty at various levels. It has raised awareness across campus, and it will provide opportunities to reach out beyond the URI campus to encourage safe transportation behaviors.

The project is innovative in a number of respects, because it...

- focuses on the communication and media aspect of transportation behavior
- expands the reach of safe transportation campaigns
- addresses *Resistance to Persuasion* in the area of transportation
- integrates Social Norms and Stages of Change approaches
- permits hands-on application and message processing of academic learning
- connects to interdisciplinary URI projects on student alcohol consumption
- focuses on Outreach, but has a strong foundation in Theory

At the University of Rhode Island we have integrated transportation related work into communication and media classes over the past four years. The videos, messages, documentary pieces, and campaign proposals produced showed considerable potential. The goal of these

activities was to maximize student involvement and ownership. Students are applying basic research methodologies. But greater skills are needed to systematically conduct focus groups and use other approaches for testing PSAs. Video production and editing capabilities and knowledge are available among the students. The work strives for an improved match between knowledge of pertinent tools and student involvement in transportation safety projects. We are exploring the possibility of students working on transportation safety in a number of courses over several semesters. Message effectiveness would greatly benefit from a conscious integration into the curriculum.

One additional area of improvement that was noted by several authors (30, 1) is the dissemination of the final product to appropriate audiences. Adequately tested messages and videos will be distributed via on-campus cable and closed-circuit TV, as well as University websites. Reaching beyond the limits of one campus community by using cable TV and local broadcast channels will broaden the audience for the messages and it will serve as a model for other areas. Messages that are successful on the local cable Interconnect can also be disseminated to other cable systems. Experiences from this project could be disseminated to serve as a model for other educational institutions. Videos distributed on the Cox Communication system and its production facilities around the state will help dissemination to high school students and instructors statewide.

Other units at URI, such as the Cancer Prevention Research Consortium and the Office of Student Life, have received major funding from NIAAA to implement an Environmental Management approach towards student alcohol consumption; these projects are designed to reach beyond the campus into neighboring communities. After years of preparation, we are in the process of implementing measures pertaining to numerous aspects of student alcohol consumption. This project has played an important part in enhancing the transportation dimension of this work. It provides a unique challenge and opportunity to stress the emphasis on transportation related risks and to develop tools to target high-risk demographics.

The changes addressed by this project are long-term in nature. Most fundamental change processes need years to evolve. Due to the 4-year cycle of college life, structures and messages need to be in place to target attitudes and behaviors early on, and to reinforce early changes throughout this cycle of college life. As part of a broad-based effort this project is playing an important role in campus wide initiatives, and it is expected to have long-term implications.

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APPENDIX I: Selected Case Studies

The Keg Room, Providence

Case Study #2: Juli & Michelle, URI students

Two University of Rhode Island students, Juli and Michelle, have a thirty minute drive to the Keg Room. It was another “college night” at Keg Room this Thursday when I met these girls. When I was talking to these girls at my bar, they said they always come to Keg Room to party, and have a good time. I asked them what that meant and they replied, “There are a lot of college students here that we can hang with, we really like the drink specials, how can you go wrong with one dollar long island iced teas!” They arrived at the bar around 11:30 and by midnight they each had three long island iced teas. Long island iced teas have five liquors in it. It is a very strong drink! I was asking them questions about a designated driver and they said that usually one of them will not drink a lot so they can drive home. The girls were now sitting at my bar drinking their fourth long island when two males approached them. As I observed these males, they seemed interested in these young ladies. They offered to buy them a shot and the girls accepted. The type of shot they did was called a “red headed slut”. A shot like this consist of Jägermeister, a type of liquor. It was now around 1:00 and the bar was closing. Juli and Michelle were playing pool with the young men when the Keg Room staff took away their beer and advised them to leave because it was closing. They came up to me and said goodbye and wanted to know if they could help me any more with my study. I was looking at Michelle and she was slurring her words, and Juli was telling her to leave me alone and also that they would leave with the boys. I asked Juli if she was okay to drive and she said yeah. I don’t believe everything I hear, and I told her that I would call her a cab, but she refused. Michelle left the bar stumbling, and keg room staff had to escort her out of the bar.

Case Study #7: Mike and Joey, URI Students

Mike and Joey are friends of mine from school that came to visit me at Keg Room one Thursday night. These two guys are good looking and can easily get girls if they wanted to. Watching them and going out with them is fun. I was watching them all night at the bar, and it was absolutely hysterical what I saw. They were both at the bar every 20 minutes buying rounds of drinks and shots for a different girl every time. They are unbelievable. Being their friend I don’t think anything of it when they buy girls drinks because they buy me drinks all the time. When I am on the other end if the story, I can obviously see why they are doing it. In about the 2 ½ hours they were at my bar, they had bought about 6 different girls approximately 2 drinks each. Towards the end of the night, they were talking to these really drunk girls, and asked them if they wanted to go home with them. I was listening to the entire conversation, and the girls were acting real gitty, and they said yes that they would go hang out with them after the bar. I believe these girls were from URI as well from what I was overhearing. I asked them what they were doing and they said that they came out to meet girls and buy them drinks. I laughed, even though I should not have. Are college males these days all worried about girls and getting them drunk so they can have sex with them? Joey and Mike were not drunk, but it was obvious of why they buy these girls drinks. When speaking to the boys afterwards, they told me that the girls we so drunk that they didn’t let them drive and they ended up giving them a ride home to Narragansett. I thought that was nice of them. You never know these days about men and how they act. But it makes me nervous that when I go out to the bar that all guys want are drunken girls so they can take them home. They should be out with their other friends just having a good time, and not worrying about girls. I think twice now before meeting guys at the bar!

Case Study #8: 2 Anonymous girls, Underage drinking

On Thursday nights at the Keg Room, the age is 18+, which means that you can be 18 years old to enter, but 21 to drink. The Keg Room staff will give the 21 year olds a bracelet to show that they are old enough to drink. That is what the bartender, such as me, has to look for when serving drinks. Bartenders are reliable for anything that happens to the patrons at their bar, no matter what age. The other night I got in trouble because I served someone underage, but not on purpose. When I am busy behind the bar, I go real fast and serve people their drinks to make good tips. But sometimes I can see the bracelets and sometimes I can’t because they keep their hands down underneath the bar. Well, I made a mistake. I served these 2 girls drinks all night, serving them 1 dollar long island iced-teas, and they got smashed by the end of the night. I gave them about 6 rounds of drinks. The Keg Room staff spotted them because they were unruly, and saw they had no bracelets. I served them because I didn’t see their hands because they

kept them underneath the bar. I should have asked them to see the bracelets, but I didn't because I was so busy. That was irresponsible of me. If anything had happened to them when they left the club, I would have been responsible. I can also usually tell when people have enough, and they always seemed fine when they came up to the bar, but sometimes you have to make better judgment. So, my boss just told me to make sure that I check everyone's bracelet from now on, and I will! So, there are always girls that will look of age, but are not really 21. I was one of those girls about 2 years ago, so I should of known what was going on.

APPENDIX II: Data Comparison Across 3 Years of the Campus Climate Check-Up (CCC)*

(*Source: Dan Reilly, URI Office of Student Life)

TABLE 1. Drinking Status Across the Surveys

Spring of:	1999	2001	2002
N	696	633	526
Abstainers	11.5%	18.6%	8.3%
Drinkers	34.1%	25.2%	34.0%
Infrequent Heavy Episodic Drinkers	26.85%	30.6%	30.2%
Frequent Heavy Episodic Drinkers	27.5%	24.4%	24.4%

TABLE 1a. Drinking Status by Gender Across the Surveys

Spring of:	1999		2001		2002	
	Men	Women	Men	Women	Men	Women
Abstainers	13.3	9.7	22.5	14.9	10.1%	7.1%
Drinkers	31.3	36.9	22.8	27.9	28.0%	40.9%
Infrequent Heavy Episodic Drinkers	21.2	32.5	23.8	37.6	29.6%	30.8%
Frequent Heavy Episodic Drinkers	34.2	20.8	30.0	19.6	30.2%	20.3%

TABLE 2. Alcohol Frequency Across the surveys

Average number of days/week students drink

Spring of:	1999	2001	2002
N	746	631	688
Average Frequency	1.65	1.60	1.74

TABLE 3. Alcohol Quantity Across the Surveys

Average number of drinks per drinking occasion

Spring of:	1999	2001	2002
N	746	630	658
Average Quantity	3.72	3.46	3.63

TABLE 4. Alcohol Peak Use Across the Surveys

Average highest number of drinks had in the last 30 days

Spring of:	1999	2001	2002
N	746	631	660
Average Alcohol Peak Use	6.62	6.47	6.68

TABLE 5. Alcohol Frequency*Quantity Across the Surveys

Spring of:	1999	2001	2002
N	746	630	676
Average Frequency*Quantity	9.29	7.83	8.62

TABLE 6. Selected Negative Consequences Across the Surveys

Within the past year, as a result of my drinking I ... (reported once or more occasions)

Spring of:	1999	2001	2002
N	739	628	686
Drove Under the Influence	34.3%	32.1%	35.4%
Drove a car when I had too much to drink	22.2%	21.8%	--*
Late for Work or Classes	28.2%	28.9%	--*
Didn't Work or Missed Classes	30.8%	29.6%	35.5%
Memory loss the next morning	44.2%	37.6%	41.6%
Unplanned Sexual Activity	28.8%	26.5%	27.4%

* item not included in the CCC02 survey

TABLE 6a. Drove under the Influence

	Never	Not in last year	1-2 times	3-5 times	6-9 times	10 or more times
1999	56.8%	8.0%	16.1%	7.1%	3.5%	7.5%
2001	57.8%	9.0%	14.5%	8.5%	3.3%	5.8%
2002	50.6%	9.8%	16.6%	7.2%	2.7%	6.5%

TABLE 6b. Drove when had too much to drink

	Never	Not in last year	1-2 times	3-5 times	6-9 times	10 or more times
1999	68.5%	8.2%	12.2%	4.3%	2.0%	3.8%
2001	68.8%	8.5%	12.9%	5.0%	1.1%	2.7%

TABLE 6c. Late for Work or Classes

	Never	Not in last year	1-2 times	3-5 times	6-9 times	10 or more times
1999	62.7%	8.0%	15.1%	7.6%	2.0%	3.4%
2001	62.4%	8.2%	16.2%	8.3%	2.4%	2.0%

TABLE 6d. Didn't Work or Missed Classes

	Never	Not in last year	1-2 times	3-5 times	6-9 times	10 or more times
1999	60.6%	7.4%	17.2%	8.3%	2.1%	3.2%
2001	61.3%	8.3%	17.6%	7.6%	2.2%	2.2%
2002	52.8%	7.5%	20.2%	7.2%	2.5%	3.4%

TABLE 6e. Memory loss the next morning

	Never	Not in last year	1-2 times	3-5 times	6-9 times	10 or more times
1999	42.4%	13.0%	20.6%	12.2%	4.8%	6.6%
2001	49.9%	12.0%	18.7%	10.9%	4.7%	3.3%
2002	44.1%	10.4%	20.2%	5.5%	2.5%	2.2%

TABLE 7. Other Drug Use Across the Surveys

In the past year, how often have you ...

Spring of:	1999	2001	2002
Tobacco Use	(N=743) 45.0%	(N=626) 39.5%	(N=679) 37.1%
No use	54.6%	59.1%	55.5%
Marijuana Use	(N=740) 47.6%	(N=630) 48.2%	(N=680) 46.7%
No use	52.1%	51.0%	46.1%
Other drugs use	(N=739) 32.8%	(N=625) 27.4%	
No use	65.3%	70.7%	

APPENDIX III: Convenience Sample of Bus Riders

TABLE 8: Demographics

	Percent
Female	51.1
Out-of-state	62.2
Drank while in Providence	66.6
Freshmen	88.9
Sophomores	4.4
Seniors	4.4
Grad	2.2

TABLE 9. Reasons for Bus Use

	Percent
Convenience	48.9
Friends taking it	22.2
Safe	11.1
Cost	4.4
All choices	13.3

TABLE 10. Alternatives to Bus Use.

Without Bus Service...

	Percent
Car	31.1
Carpool	20.0
Regular Bus	6.7
Wouldn't go to Prov.	42.2

Appendix IV: Video Evaluation

Video Evaluation

Section 1 (Please answer only once)

1. What is your current age? ____ ____
2. What is your gender?
 - ____ 1. Male
 - ____ 2. Female
3. Please specify your class in school:
 - ____ 1. Freshman
 - ____ 2. Sophomore
 - ____ 3. Junior
 - ____ 4. Senior
 - ____ 5. Other
4. Which of the following best describes your current place of residence?
 - ____ 1. Residence Hall
 - ____ 2. Apartment, house or condo (and not with parents)
 - ____ 3. Fraternity or Sorority House
 - ____ 4. Live with Parents
 - ____ 5. Other

The following questions ask about your use of alcoholic beverages. (One drink is defined as 1.25 ounces of 80 proof liquor, 12 ounces of beer, or 5 ounces of wine.)

9. In a TYPICAL WEEK, on HOW MANY DAYS did you have at least one drink containing alcohol?
[Enter "0" if you don't drink alcohol.]

____ # of days drank in a typical week (Please indicate 0 to 7 days)
10. HOW MANY DRINKS do you have on a TYPICAL DAY when you are drinking?

____ ____ # of drinks on a typical drinking day.
12. In the LAST MONTH how many times have you had **FOUR** or more drinks in a row?

____ ____ # of times having **FOUR** or more drinks in a row
13. During the last 30 days what is the highest number of drinks that you had on any one occasion?

____ ____ # of drinks on one occasion
14. During the last 30 days how often have you been a Designated Driver? ____ ____ times
15. What was the highest number of drinks you had as a Designated Driver? ____ ____ drinks

16. During the last 30 days how often have you been a passenger using a Designated Driver?
____ ____ times

17. During the last 30 days how often were you in a situation where the Designated Driver had been drinking?
____ ____ times

Section 2 (to be answered after each video)

Your Gender ____ Your age ____ On-campus ____ Off-campus ____ Greek ____

Please rate the video you just saw on a scale from **0** to **10**, where **0** is the lowest, **10** the highest:

- ___ How much did you **like** the video overall?
- ___ How much did you **like** the visuals?
- ___ How much did you **like** the audio/music?

- ___ How **effective** is the video overall?
- ___ How **effective** are the visuals?
- ___ How **effective** was the audio/music?

How did this video impact you?

What is the strongest aspect of the video?

What could the creators do to make this video more effective?

Please rate the video you just saw on a scale from **0** to **10**, where **0** is the lowest, **10** the highest:

- ___ How much did you **like** the video overall?
- ___ How much did you **like** the visuals?
- ___ How much did you **like** the audio/music?

- ___ How **effective** is the video overall?
- ___ How **effective** are the visuals?
- ___ How **effective** was the audio/music?

How did this video impact you?

What is the strongest aspect of the video?

What could the creators do to make this video more effective?

The last two videos you saw were somewhat similar. If you had a total of \$100 to award to both videos combined, how much would you give to each?

First video \$ _____ Second video \$ _____

Why did you like one video more?