Student-Conducted Research on Alcohol as Service Learning: Curricular Strategy to Expand Available Data for Social Norms Programming

David W. Craig, Ph.D.
Professor of Biochemistry

Hobart and William Smith Colleges
Geneva, NY 14456

http://www.alcoholeducationproject.org
We Need More Data!

- Continuous ongoing data collection program required to mount an effective social norms program
- Multiple corroborating data sources enhance credibility of norms messages
- High response rates needed for greatest credibility and impact
- Data collection requires substantial investment in time
Factors enhancing finding a home for ATOD data collection in the curriculum and co-curriculum

- Research methods training in the curriculum
- Student Interest and Concern in ATOD Impact
- New interdisciplinary program development
- Service learning initiatives
Examples from HWS

Low/No Cost Data Collection Strategies

• Undergraduate/Graduate Student Research Projects
  – Independent study late night BAC measurement
  – Web-based survey administration

• Coursework combining data collection with community information dissemination
  – First year seminar course: *Alcohol in College: What is Myth? What is Reality?*
Results from a Study Measuring Late Night Blood Alcohol Levels in a Residential College
Protocol for BAC Measurement Seeks to Ensure Subject Anonymity and Safety

• Breathalyzer instrument chosen does not display BAC result
• Instrument displays a sample ID number.
  – ID entered onto blank survey form on clipboard for subject to fill out.
  – After returning the survey to a closed box with slot, subjects are given a card with the sample ID so that they may call later to find out what their BAC was.
Results – sample characteristics

• 1837 Participants
  (85% participation of those randomly selected):
  – 54% males, 46% females
  – 18% over 21, 82% under 21
  – 65% from school nights and 35% from weekend nights
  – Class rank: 45% 1st yr, 26% 2nd yr, 17% 3rd yr, and 12% 4th yr
BAC for All Subjects

Distribution of BAC levels of HWS students returning home late at night (N=1837)

- Majority return home with BAC of 0%!
- 75% with BAC of .05% or less.
BAC on School Nights and Weekend Nights

Distribution of BAC levels of HWS students returning home late at night

- School Night (N=1138)
- Weekend Night (N=704)

Blood Alcohol Concentration (%)

Percent of Students

0 0.01-0.05 0.06-0.07 0.08-0.09 >=0.10
BAC by Gender

Distribution of BAC levels of HWS students returning home late at night by gender

- Males (N=945)
- Females (N=793)
Distribution of BAC levels of HWS students returning home late at night by underage/of age

- Under 21 (N=1402)
- 21 or older (N=307)
BAC by Class Year

Distribution of BAC levels of HWS students returning home late at night by class year

- First Year (N=793)
- Second Year (N=456)
- Third Year (N=287)
- Fourth Year (N=202)
Correlation of measured BAC with estimated BAC (NHTSA method) from self-report drinking behaviors (N=1241)

Pretty good agreement between measured and estimated BAC up to .10%. Above that level students begin to forget drinks they have consumed.

Regression Coefficient .979 +/- .021
Std Error of Estimate .027
## Perceptions of Intoxication: Risk Factor?

<table>
<thead>
<tr>
<th>Meas BAC (g/dL)</th>
<th>Sober</th>
<th>A little Buzzed</th>
<th>Pretty Drunk</th>
<th>Wasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>66.9</td>
<td>8.6</td>
<td>1.3</td>
<td>0</td>
</tr>
<tr>
<td>.01-.05</td>
<td>26.5</td>
<td>41.1</td>
<td>10.4</td>
<td>4.2</td>
</tr>
<tr>
<td>.06-.07</td>
<td>1.3</td>
<td>19.6</td>
<td>20.8</td>
<td>8.3</td>
</tr>
<tr>
<td>.08-.09</td>
<td>1.3</td>
<td>14.7</td>
<td>18.2</td>
<td>16.7</td>
</tr>
<tr>
<td>&gt;=.10</td>
<td>4.0</td>
<td>16.0</td>
<td>49.4</td>
<td>70.8</td>
</tr>
</tbody>
</table>

- **51.6%** Accurate
- **40.8%** Under-Estimate
- **7.2%** Over-Estimate

<table>
<thead>
<tr>
<th>Meas BAC (g/dL)</th>
<th>.01-.05</th>
<th>.06-.07</th>
<th>.08-.09</th>
<th>&gt;=.10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BAC (g/dL)</strong></td>
<td>0.01</td>
<td>0.06</td>
<td>0.08</td>
<td>0.10</td>
</tr>
</tbody>
</table>

### Perceived Intoxication Level (% within level)
How well does Friday course enrollments predict Thursday night drinking?

The more academically rigorous Friday is the less drinking on Thursday night!
What’s Your BAC?

75% of HWS Students Blew a 0.05 or lower BAC Returning Home Late at Night

Data collected from 1,261 randomly selected students returning to residence halls late at night between 11pm and 3am during Spring `03, Fall `03, Spring `04, Fall `04, and Spring `05.

BAC measurements were collected every night of the week (59% of sample from school nights, 41% from weekend nights). Men are 53% of the sample and women are 47% of the sample.

These results were obtained from chemistry department independent study and honors students advised by Professor David W. Craig: Davidek Heron (H03), Maranda Bliss (WS03), Zachary Schneider (H04), Matthew Yarger (H04), Jeffrey Quinto (H05), Adam Bordonaro (H05), Lauren Gianniny (WS05), and Andrew Stern (H05).

See http://people.hws.edu/craig/bac for more information.
Data collected from 1,261 randomly selected students returning to residence halls late at night between 11pm and 3am during Spring '03, Fall '03, Spring '04, Fall '04, and Spring '05.

88% on School Nights and 56% on Weekend Nights blew a 0.05 or lower BAC returning home late at night.

See http://people.hws.edu/craigb for more information.
72% of Males and 78% of Females Blew a 0.05 or lower BAC Returning Home Late at Night

Data collected from 1,261 randomly selected students returning to residence halls late at night between 11pm and 3am during Spring `03, Fall `03, Spring `04, Fall `04, and Spring `05

BAC measurements were collected every night of the week (59% of sample from school nights, 41% from weekend nights). Men are 53% of the sample and women are 47%.

These results were obtained from chemistry department independent study and honors students advised by Professor David W. Craig: Davidek Heron (H03), Maranda Bliss (WS03), Zachary Schneider (H04), Matthew Yarger (H04), Jeffrey Quinto (H05), Adam Bordonaro (H05), Lauren Giannini (WS05), and Andrew Stern (H05).

See http://people.hws.edu/craig/bac for more information
82% of HWS student-athletes blew a 0.05 or lower BAC returning home late at night.

Distribution of BAC levels of HWS student-athletes returning home late at night:

- 68.4% with 0 BAC levels
- 13.5% with 0.01-0.05 BAC levels
- 5.6% with 0.06-0.07 BAC levels
- 6.8% with 0.08-0.09 BAC levels
- 5.6% with BAC levels >= 0.10

Source: Data collected from 194 randomly selected student-athletes returning to residence halls late at night between 11pm and 3am every night of the week during Fall '04, Spring '05, and Fall '05. These results were obtained from chemistry department independent study and honors students advised by Professor David W. Craig: Jeffrey Quinto (H05), Lauren Gianniny (WS05), Andrew Stern (H05), Adam Bordonaro (H06), John Bowie (H06), Patrick O’Brien-Gorman (H06), Sam Breier (H06), Alana Braren (WS06), and Lia Blue (WS06).
Survey of Alcohol Use, Safety, and Sexual Behavior

A web-delivered survey developed as part of undergraduate research
Data Collection Results

- 398 randomly selected subjects stratified equally by class year and gender
- Invitation to participate delivered by electronic mail with 3 follow up reminders
- 203 respondents after 14 days representing 51% response rate
- 42% male, 58% female
- 26% 1st year, 24% 2nd year, 25% 3rd year, 25% 4th year
Norms messages from student survey

- 88% of the class believe that one should never drink alcohol to an intoxicating level that interferes with academics or other responsibilities. (77% in 2007 senior survey)

- The majority of HWS students drink three or fewer drinks with alcohol or none at all when partying. (Four drinks in 2007 senior survey)
Using Clickers in the Curriculum and Co-Curriculum to Collect Data and Disseminate Alcohol Norms

- First year seminar residence hall presentations
- Science of Feeling Good and Feeling Bad with Alcohol lectures
What are ‘Clickers’?
Using Clickers you can…

• Ask anonymous survey questions in a group setting
• Collect and code results instantaneously
• Display results to audience immediately
• Assess success in learning immediately (Did we reduce harmful misperceptions?)
BOOZE NEWS
Alcohol in College:
What is myth? What is reality?

First Year Seminar 060
Greg Alberti, Charlie Barth, Brittany Callaghan, Andrew Dennis, Mike Faracca, Katherine Hoering, Leslie Hopke, Bryan Lee, Meredith Levensen, Molly Lieberman, Laura Patterson, Tyler Vincent, Liz Witbeck, Cynthia Woodward, and Prof. David W. Craig

Goals for this meeting:

1. Have some fun!
2. Help you become seekers of truth with regard to alcohol use on our campus.
3. Help you achieve more academically.
In this presentation we will be asking some questions about your attitudes and personal use of alcohol. We will also ask you questions about what you think is typical among students at HWS. All of these responses will be anonymous. No individual response will be identified. We will share with you distributions of question responses from this group and from surveys of the campus at large during this presentation. Your participation in answering these questions is voluntary. You may skip any questions that you do not wish to answer. If you are under the age of 18 you should not answer the survey questions. Data from this session will be saved and merged with data from other residential hall sessions to support research on this topic. We will send summary posters of the merged results to your RA to share before the end of the term.
First, we need some information about you.

What is your age?

A. Less than 21
B. 21 – 24
C. Greater than 24
What is your class rank?

A. 1st year
B. Sophomore
C. Junior
D. Senior
E. Graduate student
Your personal attitude about alcohol.

Which statement below about drinking alcoholic beverages do you feel best represents your own attitude?

A. Drinking is never a good thing to do.
B. Drinking is all right but a student should never get drunk.
C. An occasional "drunk" is OK as long as it doesn't interfere with academics or responsibilities.
D. An occasional "drunk" is OK even if it does interfere with academics or responsibilities.
E. A frequent "drunk" is OK if that's what the individual wants to do.
Now for your perception of other students…

Which statement below about drinking alcoholic beverages do you think is the **most common attitude among students in general here**?

A. Drinking is never a good thing to do.
B. Drinking is all right but a student should never get drunk.
C. An occasional "drunk" is OK as long as it doesn't interfere with academics or responsibilities.
D. An occasional "drunk" is OK even if it does interfere with academics or responsibilities.
E. A frequent "drunk" is OK if that's what the individual wants to do.
Do you believe that nearly 8 out of 10 HWS students have a BAC of 0% and nearly 9 out of ten have a .05 or lower BAC on school nights when returning home late at night 11pm to 3am?

1. Yes
2. No
BAC on School Nights and Weekend Nights

Distribution of BAC levels of HWS students returning home late at night by school night/weekend night

- School Night (N=904)
- Weekend Night (N=578)

Blood Alcohol Concentration (%)

- 0
- 0.01-.05
- 0.06-.07
- 0.08-.09
- >=.10

Percent of Students
Have you answered these questions honestly and to the best of your ability?

1. Yes
2. No
Do you believe that nearly 8 out of 10 HWS students have a BAC of 0% and nearly 9 out of ten have a .05 or lower BAC on school nights when returning home late at night 11pm to 3am?

1. Yes
2. No
The End