

Stony Brook University

**School of Health Technology & Management
Center for Community Engagement & Leadership Development**

Drowsy Driving Prevention Program



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INSTRUCTOR OVERVIEW OF SESSION CONTENT

1. Welcome - **(5 minutes)**
2. Presentation - Unit 1 - **(45 minutes)**
3. Experiential Exercises - Unit 2 - **(30 minutes)**
4. Final Takeaways - **(10 minutes)**
5. Closing - **(5 minutes)**

Total Workshop Time: Approximately 1.5 hours



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Introduction and Resource Guide

Introduction

During this workshop, students will be introduced to the issue of dangerous driving, focusing on drowsy driving. The session includes a presentation on the current national statistics for dangerous and drowsy driving crashes, powerful videos portraying situations that relate to drowsy driving, and various interactive activities that focus on awareness and prevention of dangerous drowsy driving behaviors.

The goals of the workshop are to (1) emphasize the harm of various drowsy driving behaviors, (2) offer strategies for prevention of these behaviors, (3) equip students with the skills to recognize the signs of a dangerous and/or drowsy driver, and (4) provide examples of how to respond to situations when they or someone else engages in dangerous drowsy driving behaviors. These aims are accomplished through the use of short videos, active discussion, and several exercises related to drowsy driving, including an Assertive Communications Role Play exercise, and a Drowsy Driving Myth vs. Fact (true/false) quiz. The discussion following the Myth vs. Fact activity will serve to summarize the program's important take home messages and provide the faculty an indication of the student's recollection of the program content.

The objectives of this program are to:

- Recognize that driving is a mental, physical, and social test that involves the interaction of the operator, the environment, and the vehicle.
- Recognize the importance of protecting motor vehicle occupants from possible injury or death by using all occupant protection devices and abiding by safe driving practices.
- Understand the rules of the road emphasizing those that promote safe driving.
- Identify factors such as impairment and distractions that can severely decrease a driver's ability to operate a motor vehicle safely, especially drowsy driving.
- Recognize dangerous drivers and driving situations (drowsy driving) and learn how to react safely.
- Understand the influence of a driver state of mind and mental health can have on their behavior and how this affects their actions while driving.

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles. <https://dmv.ny.gov/forms/mv277.pdf>

Intended Audience

- Young Adults (at least 18 years of age)
- Groups of 20-25 learners



How to Use This Guide

This resource guide is divided into sections that contain valuable materials that you will be using during your presentation. Read through the entire Instructor's Guide and Objectives. You will find helpful recommendations, lecture notes, discussion points, and actions provided in this guide that support dangerous driving learning objectives. The audience that you will be presenting to will include young adults (at least 18 – 25 years of age).

This program is multifaceted which includes a PowerPoint, videos, and interactive activities with the participants. The PowerPoint-based component will provide visual representation and communicate the learning objectives to your audience; will serve as a prompt and reminder with discussion points; and will ease program delivery, consistency and facilitation. Various videos are used as demonstration to safely show the participants possible scenarios of individuals who are dangerous drivers". Handouts and exercises are provided specifically for the aforementioned audience. Materials and exercises are geared towards students.

Detailed information about the specific materials provided in each section of this guide, follow this section. As the instructor, it is recommended that you provide your students with copies of:

- Student Participant's Guide (activity handouts and additional content- if applicable)

Instructor's Presentation Guide

The Instructor's Presentation Guide section is to be utilized by only the instructor of the program workshop. To help ease the transition between PowerPoint slides and discussion, the PowerPoint slide image is included and appears on the page. Additionally, text blocks labeled "Overview," "Discussion Points," and "Action," appear either just before or just after each PowerPoint slide image.

In order to achieve learning objectives for the program, the following information is provided to assist you in delivering the content material for Unit 1 lecture material:

- **Overview** – depending on your current knowledge and experience with dangerous driving, this text block provides you with background information you may or may not have prior knowledge of. This section also highlights lecture material to convey learning points.
- **Discussion Points** – prompts suggested to generate a discussion of the lecture in the workshop among students.
- **Action** - describes the next steps to take within the discussion.

It is strongly recommended that instructors become very familiar with their presentation material. Instructors should be able to convey key concepts, delivering the material in a natural manner. Keeping consistent connection and eye contact with your audience is crucial.

Stony Brook University School of Health Technology and Management (SHTM) recommends the delivery of this training exactly how it is written in the curriculum. This program will be delivered by different instructors, and it is essential that those deliveries be standardized and uniform.



Student Participant's Guide

This section contains the generic handouts for all student participants. Be sure to distribute key additional resources found in the Appendices if applicable.

Note: Answers to Discussion Point question prompts and experiential activities can be found throughout the Instructor's Guide and Presentation Notes in this manual. The answers should not be distributed with the participants' handouts.

Other Useful Information to Enhance Training

Materials and Equipment

The following materials and equipment may be needed to conduct the training and are not included in the curriculum materials:

- To deliver the training using PowerPoint, two types of equipment are needed in the training room.
 - (1) a computer (laptop or desktop) and
 - (2) a liquid crystal display (LCD) projector and projection screen
 - Sound system and an interface that has the ability to play videos (i.e. Windows Media Player)

Room Setup and Setting

You may have your own style regarding room setup. Ideally, this workshop should be offered in an easily accessible location to student participants. It is important that the workshop space is well-lit and large enough for tables and chairs. The space should also have good sound acoustics and a good sound system. Suggested seating arrangements and equipment set-up will be included for each activity throughout the workshop session. Be sure to follow building safety guidelines when setting up exercises and activities for student participants.



Instructor's Presentation Guide and Objectives

Instructor's Presentation Guide and Objectives

Welcome

Session Content

Unit 1: Overview dangerous Driving

1. Introduction to the Highway Transportation System
2. Introduction to Safe Driving Practices
3. Introduction to Dangerous Driving and Associated Behaviors
4. Introduction to Drowsy Driving and Prevention

Activities and Videos

Unit 2: Experiential Exercises


1. Assertive Communication Role Play and Discussion; Alternative Drowsy Driving Video(s) and Discussion
2. Myth vs. Fact True/False Quiz and Discussion

Final Takeaways & Closing



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Drowsy Driving Prevention Program



Unit 1: Overview Drowsy Driving

1. Introduction to the Highway Transportation System
2. Introduction to Safe Driving Practices
3. Introduction to Dangerous Driving and Associated Behaviors
4. Introduction to Drowsy Driving and Prevention

Unit 2: Experiential Exercises

1. Assertive Communication Role Play and Discussion; Alternative Drowsy Driving Videos) and Discussion
2. Myth vs. Fact/True/False Quiz and Discussion

Final Takeaways

Presented by: Lisa Bader, Dik Flynn, Patricia Larkin, Daniel Rosenzweig, Stephen Smith, Anna Lohrer
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WELCOME

(SLIDES #1-2)

Speaker's notes: (15 minutes)

- Welcome students to the program and thank them for their voluntary participation.
- Introduce yourself (name, department, etc.).
- Introduce the purpose of the program to the students:
 - To educate you on understanding driving habits, knowledge, attitudes, and behaviors among young adult drivers.
 - This workshop will introduce you to the issue of dangerous driving, focusing on drowsy driving.
 - The session includes a presentation on the current national statistics for dangerous driving crashes, powerful videos portraying situations that are connected with drowsy driving, and various interactive activities focused on awareness and prevention of dangerous drowsy driving behaviors.
 - The goals of the workshop are to:
 - i. Emphasize the harm of various dangerous driving behaviors, especially drowsy driving,
 - ii. Offer strategies for prevention of drowsy driving,
 - iii. Equip you with the skills to recognize the signs of a dangerous driver, and
 - iv. Provide examples of how to respond to situations when they or someone else engages in dangerous driving behaviors.
- Following your welcoming remarks, begin the workshop introducing Unit 1.



Highway Transportation System (HTS)

What is its purpose?

- To move goods and people efficiently, economically, and safely.

Traffic Bottlenecking and crashes are examples of breakdowns in the HTS

New York State Department of Motor Vehicles, (2018). Pre-Licensing Course Material's Manual. A Bridge to Freedom by the New York State Department of Motor Vehicles. New York State Department of Motor Vehicles. <http://dmv.ny.gov/learning/2018/07/2018-pre-licensing-course-materials-manual/>

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Unit 1: Overview Dangerous Driving

1. Introduction to Highway Transportation System (SLIDES #3-5)

PRESENTATION and DISCUSSION (10 minutes)

Instructor Objective: Lead lesson with big picture and narrow down discussion to focus on driver and preventative strategies. Have students recognize that driving is a mental, physical, and social test that involves the interaction of the operator, the environment, and the vehicle.

Highway Transportation System

(SLIDE #3)

Overview

The purpose of the highway transportation system is to move goods and people efficiently, economically, and safely. Efforts are continually being made to improve the system by modifying its individual components:

- the environment
- the vehicle
- the driver
- Traffic Bottlenecking and crashes are examples of breakdowns in the HTS (New York State Department of Motor Vehicles, 2018).



Highway Transportation System (HTS)

Three basic parts of the HTS:

1. The driver (People)
2. Vehicles
3. Environment (Roadways)



Characteristics

- **Most important:** The driver
- **Least predictable:** The driver
- **Most difficult to control:** Predicting the actions of other drivers
- **Causes most crashes:** The driver - responsible for over 90% of crashes
- **Compensation:** The driver

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Unit 1: Overview Dangerous Driving

1. Introduction to Highway Transportation System (SLIDES #3-5)

(SLIDE #4)

Components of the HTS:

There are many parts to each component of the HTS. (New York State Department of Motor Vehicles, 2018).

The Environment:

- The environment is composed of the road, weather other vehicles, obstacles, visibility, etc.
- It has been approved by standardization of traffic controls and laws, and by the construction of limited access highways.

(New York State Department of Motor Vehicles, 2018).

The Vehicles:

- Vehicles differ by type, age and condition. Drivers also vary in many ways (age, sex and fitness levels).
- The vehicles have more safety devices, which will lessen the risk of injury and death.

(New York State Department of Motor Vehicles, 2018).

The Driver:

- Driving is based on trust and being able to predict the actions of others. Thus, the most important part of the HTS is the driver.
- Drivers are responsible for over 90% of all crashes while other parts of the HTS are responsible for the remainder. ***There is always an underlying reason for a crash.**
- The driver is the least predictable component.
- The driver is the only component that can react to changing conditions and can compensate with change. Yet, no driver can control the weather or actions of other drivers. Each driver can control his or her own behavior.

(New York State Department of Motor Vehicles, 2018).



Highway Transportation System (HTS)

Three basic parts of the HTS:

1. The driver (People)
2. Vehicles
3. Environment (Roadways)



Characteristics

- **Most important:** The driver
- **Least predictable:** The driver
- **Most difficult to control:** Predicting the actions of other drivers
- **Causes most crashes:** The driver - responsible for over 90% of crashes
- **Compensation:** The driver

New York State Department of Motor Vehicles (DMV). First Learning Course Instructor's Manual. A Syllabus Prepared by the New York State Department of Motor Vehicles. The New York State Department of Motor Vehicles. https://dmv.ny.gov/vehicles/27_2018

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Unit 1: Overview Dangerous Driving

1. Introduction to Highway Transportation System (SLIDES #3-5)

(SLIDE #4)

Discussion Points

- **What are the three basic parts of the highway transportation system?**
 - Three basic parts of the highway transportation system:
 - The driver (People)
 - Vehicles (Equipment)
 - Environment (Roadways)
- **Which part of the highway transportation system is the least predictable?**
 - Student Response should be: The Driver
- **Which part of the highway transportation system is most important? Why?**
 - Student Response should be: The Driver. The driver is the most important part of the HTS because they control how the vehicle drives. Driving is based on trust and being able to predict the actions of others. A person trusts that their car will perform as planned, the road will be in good shape, the weather will be manageable and other drivers will drive safely. A sudden failure in one vehicle, a change in the weather or traffic density, or the failure of a driver to obey traffic laws can greatly increase the likelihood of a crash. (New York State Department of Motor Vehicles, 2018).
- **Which part of the highway transportation system is the most difficult control? Why?**
 - Student Response should be: Predicting the actions of other drivers. This is the most difficult part of the HTS since you cannot determine what other drivers are thinking or doing in their vehicle.
- **Which part of the highway transportation system causes the most crashes?**
 - Student Response should be: The driver - responsible for over 90% of crashes
- **Which part of the highway transportation system is best able to compensate for changes in other parts?**
 - Student Response should be: The driver - most able to adapt to changes quickly.



Connecting the HTS and Safe Driving

In driving, the following rules of behavior apply:

- Maintain a comfortable space around yourself
- Follow NYS laws and rules of the road
- Avoid crashes
- Signal your intentions
- Wear seat belts



New York State Department of Motor Vehicles, 2018. "Preventing Driver Injuries: Motorist's Manual." Prepared by the New York State Department of Motor Vehicles, New York State Department of Motor Vehicles. <http://dmv.ny.gov/motorist/>

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Unit 1: Overview Dangerous Driving

1. Introduction to Highway Transportation System (SLIDES #3-5)

(SLIDE #5)

Connecting the HTS and Safe Driving - How does the HTS help the driver?

- Improving licensing procedures, driver safety programs, and stricter legislation for chronic offenders have all been designed to help the driver, as well as other drivers and pedestrians. However, the driver remains the most important component of the highway transportation system.
- There are many variables that will impact how well the driver interacts with the vehicle and how the driver will utilize the vehicle in the environment around them.

(New York State Department of Motor Vehicles, 2018).

Discussion Points

- **How does the driver affect the other parts of the highway transportation system?**
 - Student Response should be: the driver affects other parts of the HTS by:
 - Reacting to changing driving conditions
 - Controlling his or her own behavior so that it does not negatively affect other drivers on the road (i.e. no road rage)

Following the rules of the HTS:

- Driving is considered to be a social activity (an interaction of two or more people). Any social activity is usually governed by written or unwritten rules designed to protect everyone.
- Again, driving is based on trust and acknowledging that everyone will follow the rules of the road. No person is expected to use poor equipment that may damage the road or cause another to crash.
 - If a driver does not know, understand or follow the accepted rules of behavior in that system, crashes may occur.
- In driving, the following rules of behavior apply to ensure that drivers recognize the importance of protecting motor vehicle occupants from possible injury or death by using all occupant protection devices and abiding by safe driving practices:
 - maintain a comfortable space around yourself
 - avoid crashes
 - signal your intentions
 - wear seat belts
 - follow NYS laws and rules of the road

(New York State Department of Motor Vehicles, 2018).



Connecting the HTS and Safe Driving**In driving, the following rules of behavior apply:**

- Maintain a comfortable space around yourself
- Follow NYS laws and rules of the road
- Avoid crashes
- Signal your intentions
- Wear seat belts

New York State Department of Motor Vehicles (2018). Practicing Driver Instruction Manual. A Release Provided by the New York State Department of Motor Vehicles. New York State Department of Motor Vehicles. <http://dmv.ny.gov/forms/dmvr22.pdf>Copyright 2018 Stony Brook University School of Health Technology & Management
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Unit 1: Overview Dangerous Driving

2. Introduction to Highway Transportation System (SLIDES #3-5)

(SLIDE #5)

Action: Initiate an open discussion among the students with leading discussion questions as prompts.

Student Objective: Students will be able to describe the importance of the highway transportation system.



Safe Driving Practices

Driving Habit vs. Driving Skill

Driving Habit

- A driving habit is an action taken regularly.
 - An example of this is wearing a safety belt.



Driving Skill:

- A driving skill is the ability to use your knowledge effectively and readily.
 - An example of a good driving skill is practicing the "three-second" rule to maintain a safe distance while following behind another vehicle.

New York State Department of Motor Vehicles. (2018). The Learning Curve Instructor's Manual. A System Prepared by the New York State Department of Motor Vehicles. New York State Department of Motor Vehicles. <https://www.dmv.ny.gov/learning-curve>

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Unit 1: Overview Dangerous Driving

2. Introduction to Safe Driving Practices (SLIDES #6-15)

PRESENTATION and DISCUSSION (10 minutes)

Instructor Objective(s): Have students recognize the importance of protecting motor vehicle occupants from possible injury or death by using all occupant protection devices and abiding by safe driving practices; and understand the rules of the road emphasizing those that promote safe driving.

Safe Driving Practices

(SLIDE #6)

Overview

Safe driving begins with an understanding of the vehicle and traffic rules. Drivers cannot act as an isolated individual on a highway. Drivers share the road with other vehicles as well as pedestrians. Safe driving is dependent upon learning good skills and practicing good habits. (New York State Department of Motor Vehicles, 2018).

Driving Habit vs. Driving Skill:

- A driving habit is an action taken regularly. An example of this is wearing a safety belt.
- A driving skill is the ability to use your knowledge effectively and readily. An example of a good driving skill is practicing the "three-second" rule to maintain a safe distance while following behind another vehicle.

(New York State Department of Motor Vehicles, 2018).

Discussion Points

- **How do our habits affect our driving? How do our habits affect others driving?**
 - Answers will vary but students should refer to how negative habits do not support safe driving behaviors and can lead to crashes which can harm the driver and others on the road.



Safe Driving Practices

What does Safe Driving involve?

- Defensive/careful driving to prevent crashes
- Making allowances for other drivers and allowing for changes in the highway environment
- Crash prevention and avoidance

Crash prevention and avoidance can be achieved by:

- Using your senses and developing good perceptual skills
- Making correct decisions and driving carefully to minimize errors
- Conceding the right of way to prevent a crash
- Using mirrors to avoid blind spots, using seat belts, and having perception to hazards

To be a safe driver, each motorist must demonstrate 7 key characteristics:

- Physical fitness
- Mental fitness
- Driving skills
- Knowledge
- Good driving habits
- Emotional fitness
- Courteous attitude

New York State Department of Motor Vehicles (2018). Pre-Licensing Course Instructor's Manual. A Syllabus Presented by the New York State Department of Motor Vehicles. New York State Department of Motor Vehicles. 2018.000101010101010101.pdf



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Unit 1: Overview Dangerous Driving

2. Introduction to Safe Driving Practices (SLIDES #6-15)

(SLIDE #7)

What does Safe Driving involve?

- Safe driving involves defensive driving to prevent crashes, driving carefully, making allowances for other drivers and allowing for changes in the highway environment.
- Crash prevention and avoidance can be achieved by using your senses and developing good perceptual skills; making correct decisions; driving carefully to minimize errors; conceding the right of way to prevent a crash; use mirrors to avoid blind spots and use seat belts and having perception to hazards.

(New York State Department of Motor Vehicles, 2018).

Safe Driver Characteristics:

To be a safe driver, each motorist must demonstrate 7 key characteristics:

- **Physical fitness**
- **Mental fitness**
- **Driving skills**
- **Knowledge**
- **Good driving habits**
- **Emotional fitness**
- **Courteous attitude**

Discussion Points

- **What does it take to be a safe driver? What are some associated skills that a person needs to drive safely?**
 - Students should answer based on the 7 attributes from the arch associated with being a safe driver as well as associated behaviors of a safe driver.
- **What does “impaired driving” mean? What does “dangerous driving” mean?**
 - Impaired Driving - Impaired driving is dangerous. It's the cause of more than half of all car crashes. It means operating a motor vehicle while you are affected by Alcohol, Legal or illegal drugs, Sleepiness, Distractions, such as using a cell phone or texting, having a medical condition which affects your driving (MedlinePlus, 2018).
 - Dangerous Driving - the act of driving a motor vehicle in a manner that falls far below that expected of a competent and careful driver and hence puts the life of the driver and the lives of other road users at risk (Collins Dictionary, 2018).





Unit 1: Overview Dangerous Driving

2. Introduction to Safe Driving Practices (SLIDES #3-15)

(SLIDES #8-15)

Safe Driver Characteristics VISUAL REPRESENTATION

Note to Instructor: Discuss each trait individually with the assisted arch visual.

- *Physical fitness*: the ability to use the body to operate the vehicle
- *Driving skills*: develop behind the wheel experience. This takes time and a variety of driving scenarios
- *Good driving habits*: combination of skillful driving actions the driver has practiced so frequently that they become second nature and are performed automatically
- *Courteous attitude*: being considerate of others and not driving aggressive or reckless manner (speeding, weaving, tailgating, etc.)
- *Emotional fitness*: the ability to control the effects of one's feelings on driver performance (road rage)
- *Knowledge*: continually acquiring information a driver can use to safely operate a vehicle. This includes how the vehicle operates, driving conditions due to weather, driving conditions due to other vehicles were pedestrians.
- *Mental fitness*: the ability to properly react to the information drivers received from their senses

(New York State Department of Motor Vehicles, 2018).

Discussion Points

- **What does it mean to be “physically fit” to drive?**
 - the ability to use the body to operate the vehicle in a safe manner

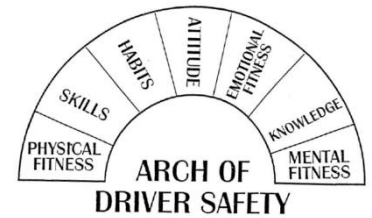
Discussion Points

- **How does a driver's attitude affect his or her driving?**
 - Answers will vary, but students should refer to drivers having a courteous attitude while driving, such as being considerate of others and not driving aggressive or reckless manner (speeding, weaving, tailgating, etc.)

Discussion Points

- **What does it mean to be “emotionally fit” to drive?**
 - the ability to control the effects of one's feelings on driver performance (road rage)
- **Can you be “emotionally fit” to drive sometimes and not “emotionally fit” to drive at other times? Explain.**
 - Answers may vary depending on students' reaction to the question. General answer is no. You must always feel emotionally fit to drive.



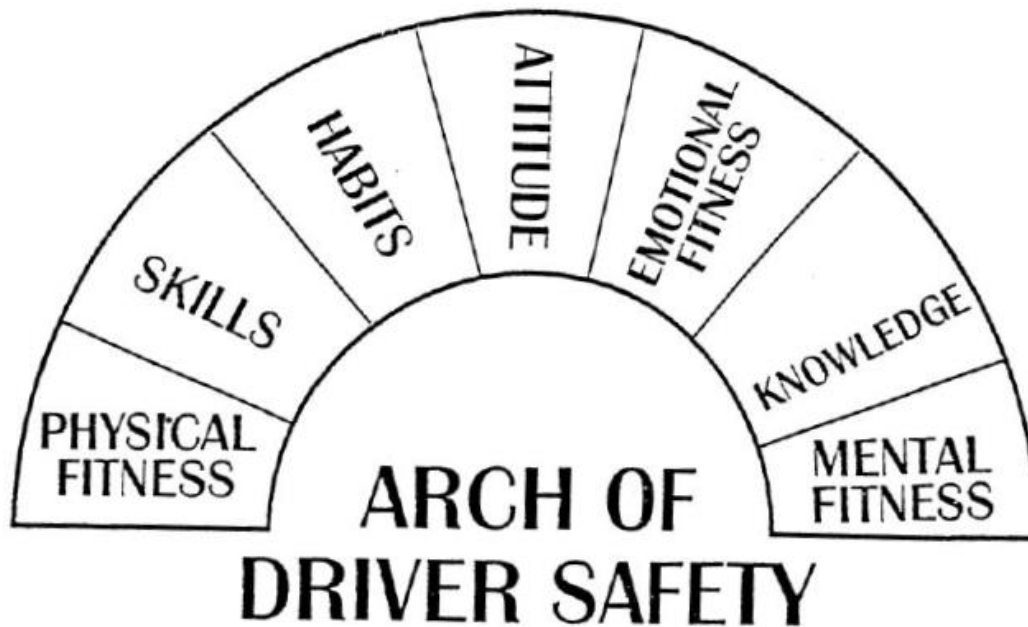


Unit 1: Overview Dangerous Driving

2. Introduction to Safe Driving Practices (SLIDES #3-15)

(SLIDES #8-15)

Action: Pull up the empty arc on the PowerPoint (Slide #s 8-15). Fill in arc and discuss each characteristic to accompany Slides #6-7.



Student Objective: Students will be able to describe and identify safe driving practices.

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles.



Dangerous Driving and Associated Behaviors

Newly licensed drivers, teens and young adults have the highest crash rates in comparison to older drivers.

Motor vehicle crashes have the following risk factor among teenagers and young adults:

- Inexperience
- Teenage passengers
- Distraction while driving, including from using cell phones and texting
- Driving at excessive speeds, close following, and other risky driving
- Drinking and driving
- Driving at night
- Being male
- Social norms

Often, several of these risk factors are present:

- Those who text while driving are more likely to have other risky driving behaviors as well, compared to those who don't text while driving
- Not using a seatbelt
- Young drivers who own their cars may take more risks

National Institute of Child Health and Human Development (NICHD). (2014). Teen risk factors in all-ages fatal motor vehicle crashes. <https://www.nhtsa.gov/press-releases/teen-risk-factors-in-all-ages-fatal-motor-vehicle-crashes>

Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors

(SLIDES #16-27)

PRESENTATION and DISCUSSION (15 minutes)

Instructor Objective(s): Have students identify factors such as impairment and distractions that can severely decrease a driver's ability to operate a motor vehicle safely; and understand the influence of a driver state of mind can have on the behavior and how this affects the actions while driving.

Dangerous Driving and Associated Behaviors

(SLIDE #16)

Overview

Discuss the 4 D's of Impaired Driving (Drunk, Drugged, Distracted and Drowsy). Mention that this workshop/program will focus mostly on Drowsy Driving behaviors/habits.

What are risk factors that cause motor vehicle crashes?

Newly licensed drivers, teens and young adults have the highest crash rates in comparison to older drivers. Motor vehicle crashes have the following risk factor among teenagers and young adults:

- Teenage passengers. A positive factor for teen drivers is the presence of an adult passenger. One study showed that teen crash rates were 75% lower when an adult was in the car.
- Distraction while driving, including from using cell phones and texting; those who text while driving are more likely to have other risky driving behaviors.
- Inexperience, driving at excessive speeds, close following, and other risky driving (i.e. driving at night, not wearing a seatbelt)
- Drinking and driving. While drinking and driving is not very high among novices, it causes a disproportionate number of fatal crashes. In the later teen years and young adulthood, drinking and driving increases greatly.
- Being male. Teenage boys, especially ones with male passengers, are involved in more car crashes than teenage girls. However, the number of females involved in car crashes is increasing.
- Social norms. Risky driving among teenage and young adult drivers is higher among those who report that their friends drive in a risky manner.
- Young drivers who own their cars may take more risks. They are more likely to speed, especially at night, and have two or more teen passengers with them.

Often, several of these risk factors are present. Those who text while driving are more likely to have other risky driving behaviors as well, compared to those who don't text while driving; Not using a seatbelt Young drivers who own their cars may take more risks. (National Institute of Child Health and Human Development).



The 4 D's of Impaired Driving

- Drunk
- Drugged
- Distracted
- Drowsy

Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors

(SLIDES #16-27)

(SLIDE #17)





***NOTE TO INSTRUCTOR: Never say that one issue is worse than another. Be sure to draw parallels and connect all the 4 D's of Impaired Driving. Make sure not to put one issue above another in terms of importance. All have the potential to be interconnected and all are important topics of discussion and understanding.**

What are the 4 D's of Impaired Driving?

- Drunk
- Drugged
- Drowsy
- Distracted

*****Additional Data and Statistics for the 4 D's of Impaired Driving can be found in the Appendix, pages 60-63.**









The 4 D's of Impaired Driving

- Drunk
- Drugged
- Distracted
- Drowsy

Impaired Driving - Drunk

- Drunk Driving is the #1 contributor to highway death toll, claiming thousands of lives every year.
- Nationally, over **17,000 motor vehicle-related deaths** occur each year because of alcohol.
- Alcohol is an odorless, colorless, mind altering depressant drug, which in beverage form is in beer, wine and distilled spirits.
- The amount of alcohol is as follows:
 - Beer - 3.2%-5 % alcohol
 - Wine coolers - 4% to 8% alcohol
 - Malt Liquor: 5% - 10% alcohol
 - Wine: 10% - 16% alcohol
 - Distilled Spirits - 39% - 50% alcohol
- An increased Blood Alcohol Content (BAC), increases crash risk drastically.



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Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors (SLIDES #16-27)

Drunk Driving (SLIDES #18-19):

(SLIDES #18-19)

- Death and injury are associated with drinking and driving. In fact, drunk driving is the number one contributor to highway death toll, claiming thousands (approximately 17,000) of lives every year.
 - Police reports show that about half of all motor vehicle-related deaths involve alcohol; a driver, a passenger or someone else, such as a pedestrian, had been drinking.
 - Young drinking drivers are at the highest risk of all.
 - Drivers 20 years old or younger are almost three times as likely to be involved in alcohol related fatal crashes than other drivers.

(New York State Department of Motor Vehicles, 2018).

What is Alcohol?

- Alcohol is an odorless, colorless, mind altering depressant drug, which in beverage form is in beer, wine and distilled spirits. The amount of alcohol is as follows:
 - Beer - 3.2%-5 % alcohol
 - Wine coolers - 4% to 8% alcohol
 - Malt Liquor: 5% - 10% alcohol
 - Wine: 10% - 16% alcohol
 - Distilled Spirits - 39% - 50% alcohol
 - These amounts could be greater or less depending on the product.” (New York State Department of Motor Vehicles, 2018).
 - However, a 12 oz. can of beer contains the same amount of alcohol as a 4 oz. glass of wine. (New York State Department of Motor Vehicles, 2018).



Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors (SLIDES #16-27)

Drugged Driving (SLIDES #20-21):

(SLIDE #20-21)

What is a drug?

- A drug is any substance that when absorbed by the body, alters normal bodily functions and produces a change or create a desired effect.
- The classes of drugs are stimulants, depressants, hallucinogens, narcotics, and tranquilizers.
 - Many drugs, such as depressants, have effects very similar to alcohol where they may impair judgement, slow reflexes and hamper eye-hand coordination

(New York State Department of Motor Vehicles, 2018).

Characteristics of drugs:

- Drugs come in different forms (i.e. liquid, powder, and tablet) and in various strengths for countless purposes.
- There are many other drugs that alter perception.
- There are over 200 herbal drugs, over 100,000 over the counter drugs, over 20,000 prescription drugs and approximately 500 illicit drugs. Prescriptions of depressants are the most common.

(New York State Department of Motor Vehicles, 2018).

Statistics Images on PowerPoint (describe what the images are showing):

- **Slide 21, Top Figure:** Driving after marijuana use is more common than driving after alcohol use. College and high-school seniors who drove or rode with a driver after alcohol or marijuana use.
 - Among college students who used in the past month, nearly 1 in 3 drove after marijuana use and nearly 1 in 2 rode with a driver who had been using marijuana.
 - The bar chart shows that 7% of college students drove after drinking alcohol and 31% drove after using marijuana; while 16% rode with a driver who had been drinking alcohol and 45% rode with a driver who used marijuana.
 - Among high-school seniors, 9% drove after drinking alcohol and 12% drove after using marijuana; while 15% rode with a driver who had been drinking alcohol and 20% rode with a driver who used marijuana. (National Institute on Drug Abuse, 2015).
- **Slide 21, Bottom Figure:** High-school seniors who smoke marijuana are two times more likely to receive a ticket and 65% more likely to get into a car crash than those who don't smoke. (National Institute on Drug Abuse, 2015).



<p>Stony Brook University</p> <p>The 4 D's of Impaired Driving</p> <ul style="list-style-type: none"> • Drunk • Drugged • Distracted • Drowsy <p>Copyright 2018 Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development</p>	<p>Stony Brook University</p> <p>Impaired Driving - Distracted</p>  <p>The three types of distraction</p> <p>Traffic safety experts classify distractions into three main types:</p> <ol style="list-style-type: none"> 1. Manual 2. Visual 3. Cognitive <p>Copyright 2018 Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development</p>
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Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors

(SLIDES #16-27)

Distracted Driving (SLIDES #22-23):

(SLIDE #23)

- Driver's should avoid and/or at last minimize activities while driving, since their primary task is to safely operate the motor vehicle. As we know, driving requires the driver's full attention. (New York State Department of Motor Vehicles, 2018).

What are some examples of distractions while driving?

- Interactive communication devices: **cell phones**, pagers and navigation systems
- Personal Grooming
- Adjusting the radio system—changing the channel, changing CDs, changing song on iPod or mp3 player
- Occupants—infants, children, teenagers, adults, (any passenger)
- Eating and drinking (alcoholic or non-alcoholic beverages)
- Adjusting vehicle controls—heat/air conditioning, tilt of steering wheel, mirrors, seat position, dash light brightness
- Reading
- Smoking
- Pets that are not contained
- Reaching for objects

What are the three types of Distraction?

- The three types of distraction. Traffic safety experts classify distractions into three main types: **Manual, Visual and, Cognitive** (End Distracted Driving, 2018). Texting involves all three types of distraction.

Discussion Points

1. **Have you ever experienced or observed distracted driving as a driver and/or passenger? Explain how you felt about this experience.**
 - a. Students are encouraged to share their experiences.
2. **What would you do if somebody was being distracted by either eating food or searching for a CD to listen to or texting while driving?**
 - a. Students should answer with suggestions similar to what was presented.



The 4 D's of Impaired Driving

- Drunk
- Drugged
- Distracted
- Drowsy

Impaired Driving - Drowsy

- Drowsy Driving is a serious issue that affects all drivers, and it's estimated that over 6000 fatal crashes per year are due to Drowsy Driving.
- **Proper sleep behaviors** encourage safe driving practices.



Unit 1: Overview Dangerous Driving

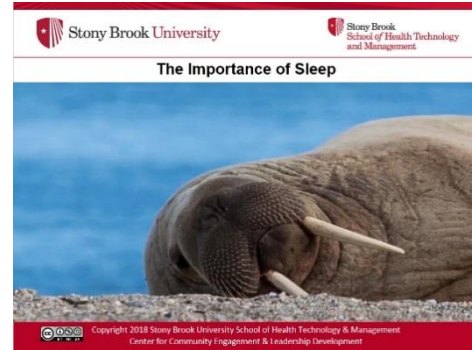
3. Introduction to Dangerous Driving and Associated Behaviors (SLIDES #16-27)

Drowsy (SLIDES #24-25):

(SLIDE #25)

- Drowsy Driving is a serious issue that affects all drivers, and it's estimated that over 6000 fatal crashes per year are due to Drowsy Driving. (www.stopdrowsydriving.org)
- Proper sleep behaviors encourage safe driving practices.





Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors (SLIDES #16-27)

(SLIDES #26)

The Importance of Sleep

- Show 10 Animal Sleep Habits video [[Sleep Habits](#) (3:08)]
- Drowsy or fatigued driving is a dangerous driving habit.
- The video highlights how various animals (not just humans) make time for the sleep they need to be productive.

Mei, R., Fiedur, A., Partner, S. 10 Animals With Interesting Sleeping Habits. (2018, January 11). Retrieved March 2018, from https://www.youtube.com/watch?time_continue=5&v=JAP0pUGPgOk Copyright: Backyard Media, Inc.



Proper Sleep Habits

What can I do to ensure proper sleep habits?

1. Stick to a sleep schedule
2. Practice a relaxing bedtime routine
3. Exercise daily
4. Evaluate your room
5. Use bright light to help manage your circadian rhythms
6. Avoid alcohol, cigarettes and heavy meals in the evening
7. Wind down
8. Speak with your doctor or sleep professional to better evaluate your common sleep habits and behaviors




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Unit 1: Overview Dangerous Driving

3. Introduction to Dangerous Driving and Associated Behaviors

(SLIDES #16-27)

(SLIDE #27)

Proper Sleep Habits


- **Stick to a sleep schedule of the same bedtime and wake up time, even on the weekends.** This helps to regulate your body's clock and could help you fall asleep and stay asleep for the night.
- **Practice a relaxing bedtime ritual.** A relaxing, routine activity right before bedtime conducted away from bright lights helps separate your sleep time from activities that can cause excitement, stress or anxiety which can make it more difficult to fall asleep, get sound and deep sleep or remain asleep.
- **Exercise daily.** Vigorous exercise is best, but even light exercise is better than no activity. Exercise at any time of day, but not at the expense of your sleep.
- **Evaluate your room.** Design your sleep environment to establish the conditions you need for sleep. Your bedroom should be cool – between 60 and 67 degrees, free from any noise that can disturb your sleep, and free from any light.
- **Use bright light to help manage your circadian rhythms.** Avoid bright light in the evening and expose yourself to sunlight in the morning. This will keep your circadian rhythms in check.
- **Avoid alcohol, cigarettes, and heavy meals in the evening.** Alcohol, cigarettes and caffeine can disrupt sleep. Eating big or spicy meals can cause discomfort from indigestion that can make it hard to sleep. If you can, avoid eating large meals for two to three hours before bedtime. Try a light snack 45 minutes before bed if you're still hungry.
- **Wind down.** Your body needs time to shift into sleep mode, so spend the last hour before bed doing a calming activity such as reading. If you have trouble sleeping, avoid electronics before bed or in the middle of the night.
- **If you're still having trouble sleeping,** don't hesitate to speak with your doctor or to find a sleep professional. You may also benefit from recording your sleep in a Sleep Diary to help you better evaluate common patterns or issues you may see with your sleep or sleeping habits.

(National Sleep Foundation, 2018).

Action: Ask students about activities they have observed in other drivers (either as a passenger in the car, or observing other drivers and other vehicles).

Student Objective: Students will be able to identify distractions and poor driving behaviors illustrated by the 4 D's of Impaired Driving.



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Drowsy Driving

What is Drowsy Driving?

- Driving while drowsy is driving while you're **sleepy**.

Why is this important to understand?

- Driving is a complex mental test that deserves your full attention.
- It is estimated that **1 in 5 serious motor vehicle accidents (MVA)** are attributed to drowsy driving or falling asleep at the wheel.




Photo: Getty Images, iStockphoto.com
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Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

PRESENTATION and DISCUSSION (10 minutes)

Instructor Objective: Involve students in discussion of why driving while drowsy is dangerous and why it is common in the young adult population.

(SLIDE #28)

Drowsy Driving

Overview

- Driving is a complex mental test that deserves your full attention. (New York State Department of Motor Vehicles, 2018).

What is Drowsy Driving?

- Driving while you are sleepy

Why is this important to understand?

- Drowsy driving fits under the many dangers to be aware of while driving.
 - It is estimated that 1 in 5 serious motor vehicle crashes are attributed to drowsy driving or falling asleep at the wheel (National Sleep Foundation).
- Very common among teenagers and young adults
 - Most of fatigue-related crashes are caused by drivers under age 25.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #29)

Drowsy Driving

Drowsy Driving Video

- Show recommended drowsy driving video to demonstrate the deficiencies in ability to drive safely under conditions of sleep deprivation.
- **Recommended Drowsy Video:** [You Snooze, You Lose: Preventing Drowsy Driving](#) (2:17)

Everything Driving. You Snooze, You Lose: Preventing Drowsy Driving. (2015, March 02). Retrieved March, 2018, from <https://www.youtube.com/watch?v=0EKzGftcpDk>

*Everything Driving is an online driving course accessible to almost every state in the United States. The driving courses enable those to reduce insurance rates, disable traffic citations (not allowing them to reach driving records), or for those who wish to further their driving safety knowledge. Visit www.everythingdriving.com.





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDES #30-31)

What are the signs/consequences of sleep deprivation and drowsy driving?

- Poor performance- physical and intellectual
 - Falling asleep in class and at the wheel or at your job
 - Difficulty paying attention, concentrating
 - Irritable
 - Yawning
 - Burning eyes
 - Heavy eyelids or prolonged blinking; impaired vision (miss seeing dangers, road signs, other drivers, and obstacles- children crossing the street, a sharp turn...)
 - Head bobbing or nodding off
 - Weaving, drifting out of your lane, hitting rumble strips
 - Difficulty remembering the last couple miles driven
 - Trouble focusing or concentrating; less alert
 - Impaired judgment, poor concentration
 - Can't process information well
 - Reactions will be much slower
 - Missing stop signs or other street signs
 - Losing your grip on the wheel
 - Feeling the need to frequently stretch
- **(2 Images) Common symptoms of drowsy driving image** (from AAA.com/DrowsyDriving)
 - In February 2018, the AAA Foundation for Traffic Safety noted the following in a research brief:
 - “While official statistics from the U.S. government indicate that only approximately 1%–2% of all motor vehicle crashes involve drowsy driving, many studies suggest that the true scope of the problem is likely to be much greater....a study that examined the prevalence of driver drowsiness immediately prior to crashes that occurred in the context of a large-scale naturalistic driving study in which the driving of more than 3,500 people was monitored continuously for a period of several months using in-vehicle cameras and other data collection equipment. Drowsiness was assessed using a validated measure that is based on the percentage of time that a person’s eyes are closed. Using this measure, drowsiness was identified in 8.8%–9.5% of all crashes examined and 10.6%–10.8% of crashes that resulted in significant property damage, airbag deployment, or injury.” (Owens, J.M. et al., 2018).



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #32)

Who does it affect?

- Most common among teenagers, shift workers and people with sleep disorders.
 - Most of fatigue-related crashes are caused by drivers under age 25 (NSF).

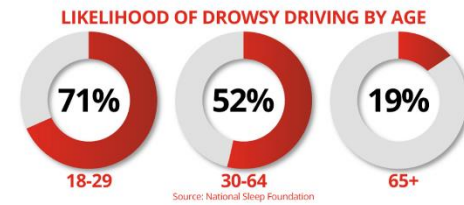
Why is it common among teenagers and young adults?

- Only 20% of adolescents get the recommended nine hours of sleep on school nights, and nearly one-half (45%) sleep less than eight hours on school nights (National Sleep Foundation).
- Why are teenagers sleep deprived?
 - Sports/Extracurricular activities later
 - After school jobs
 - Homework more demanding
 - Socializing
 - Digital media in bedroom
 - Early school start times remain
- Sleepiness while driving is a common complaint among adolescents and college students.
 - In a study of high school students with driver's licenses,
 - one-fifth reported poor-quality sleep,
 - almost two-thirds complained of daytime sleepiness,
 - 40% reported having sleepiness while driving,
 - And 11% reported having had an automobile crash in which sleepiness was the main cause.
- Being sleepy behind the wheel and poor-quality sleep at night also seem to increase the risk of having an automobile crash in college students.
- Countermeasures may potentially help prevent traffic crashes in this age range. (Owens, J., 2014).

Discussion Points

1. **Have you ever experienced or observed drowsy driving as a driver and/or passenger? Explain how you felt about this experience.**
 - a. Students are encouraged to share their experiences.
2. **What would you do if somebody was being drowsy?**
 - a. Students should answer with suggestions similar to what was presented.





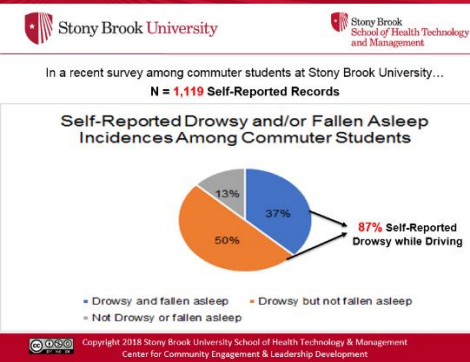
Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #33)

- Image on Likelihood of Drowsy Driving by Age (from www.StopDrowsyDriving.org)
- This image highlights that the young adult population (ages 18-29 years old) are among the highest-risk group.





Unit 1: Overview Dangerous Driving

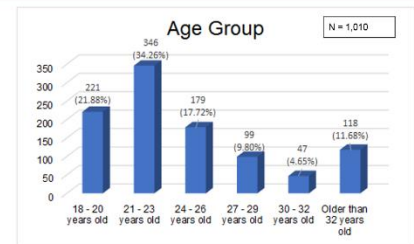
4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #34)

STUDY 1 DATA OVERVIEW

- In February 2018, a pilot survey study was conducted across the Stony Brook campus community. Commuter students were asked as to if they had ever experienced drowsy driving and/or had ever fallen asleep at the wheel.
- The data collected included self-reported drowsy driving/falling asleep at the wheel incidences among commuter students:
 - 1,119 commuter students (men and women) participated and completed the survey.
 - We received the following statistics:
 - 408 (36.46%) participants self-reported “Drowsy and fallen asleep.”
 - 564 (50.4%) self-reported “Drowsy but not fallen asleep.”
 - 147 (13.14%) reported “Not drowsy or fallen asleep.”





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #35)

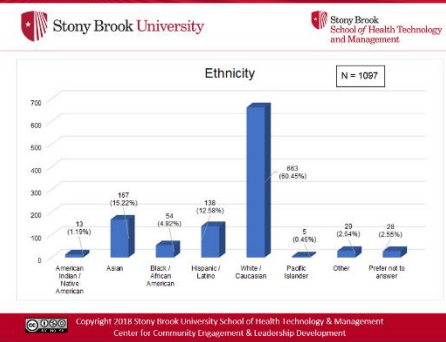
Demographic Frequency Data

Age Group

Based on self-reported data, our results showed that the majority of our study population was between 21-23 years old (~34%) followed by those who are 18-20 years old (~22%)

*Note: N differs for each demographic frequency (also in comparison to the total N = 1,119) based on the number of completed responses recorded for each question. Participants could skip any question they did not feel comfortable answering.





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #36)

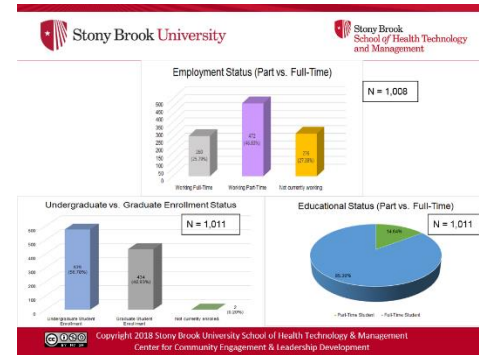
Demographic Frequency Data

Ethnicity

Based on self-reported data, our results showed that the majority of our study population was White/Caucasian (~60%) followed by those who are Asian (~15%) and Hispanic/Latino (~13%)

*Note: N differs for each demographic frequency (also in comparison to the total N = 1,119) based on the number of completed responses recorded for each question. Participants could skip any question they did not feel comfortable answering.





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #37)

Demographic Frequency Data

Employment Status

Based on self-reported data, our results showed that the majority of our study population works part-time (~47%) with an almost even distribution of participants working full time or not currently working (~25%)

Undergraduate vs. Graduate Status

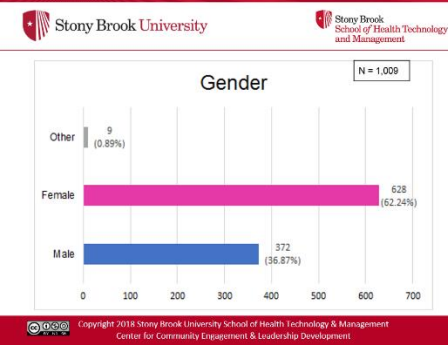
Based on self-reported data, our results showed that the majority of our study population were undergraduate students (~57%) with about 43% being graduate students.

Educational Status

Based on self-reported data, our results showed that the majority of our study population were full time students (~85%); part time students represented ~15% of our population.

*Note: N differs for each demographic frequency (also in comparison to the total N = 1,119) based on the number of completed responses recorded for each question. Participants could skip any question they did not feel comfortable answering.





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #38)

Demographic Frequency Data

Gender

Based on self-reported data, our results showed that the majority of our study population was female (~62%). Males represented ~37%, and the Other category represented ~1%.

*Note: N differs for each demographic frequency (also in comparison to the total N = 1,119) based on the number of completed responses recorded for each question. Participants could skip any question they did not feel comfortable answering.



Males were **1.42** times more likely to drive drowsy with or without falling asleep at the wheel than **Females**.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #39)

Demographic Frequency Data

Males vs. Females Data from Study 1

- The study also concluded that based on self-reports, males were **1.42** times more likely to drive drowsy with or without falling asleep at the wheel than Females.





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #40)

Sleepiness Assessment Tool

By the end of the drowsy driving exercise, students will be able to:

1. Determine their individual level of sleepiness.
2. Link their assessment of individual sleepiness to their ability to drive safely.

Instructions:

- Instruct students to complete a **Sleepiness Assessment tool** (Take the Quiz from the StopDrowsyDriving.org website).
- Instruct students to remember their individual sleepiness score.
- The instructor will explain the significance of the scores and how these scores could impact the ability to drive. See scoring scale below.
- Encourage students to voice their own experiences with regards to drowsy driving, sleep habits, or consequences of sleep deprivation to facilitate group interaction.

Analyze Your Score Interpretation (<https://www.slhn.org/docs/pdf/neuro-epworthsleepscale.pdf>):

0-7: It is unlikely that you are abnormally sleepy.

8-9: You have an average amount of daytime sleepiness.

10-15: You may be excessively sleepy depending on the situation. You may want to consider seeking medical attention.

16-24: You are excessively sleepy and should consider seeking medical attention.

Action: The goal of this activity is to motivate students to relate their individual level of sleepiness to potential consequences, such as in the ability to drive or to their overall health and well-being.



Sleepy (ESS Score 7-9)

- Estimated odds of drowsy driving status for people who were identified as sleepy (ESS score in 7-9) were **1.68 times** the estimated odds for normal people (ESS score in 0-6).

Very Sleepy (ESS Score ≥ 10)

- Estimated odds of drowsy driving status for people who were identified as very sleepy (ESS score ≥ 10) were **3.12 times** the estimated odds for normal people (ESS score in 0-6).



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #41)

ESS Scores from Study 1

Now that you have assessed what your individual Sleepiness Score is, the data from the survey study we conducted highlights that the degree to which one is sleepy impacts driving ability.

For instance:


Sleepy (ESS Score 7-9)


- The estimated odds of drowsy driving status for people who were identified as *sleepy* (ESS score in 7-9) being drowsy and falling asleep over the rest or being drowsy with or without falling asleep over not drowsy or falling asleep were 1.68 times the estimated odds for *normal* people (ESS score in 0-6) (95% CI: 1.22-2.31).

Very Sleepy (ESS Score ≥ 10)

- The estimated odds of drowsy driving status for people who were identified as *very sleepy* (ESS score 10) being drowsy and falling asleep over the rest or being drowsy with or without falling asleep over not drowsy or falling asleep were 3.12 times the estimated odds for *normal* people (ESS score in 0-6) (95% CI: 2.21-4.41).





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Drowsy Driving

Why is driving while drowsy dangerous?

- Safe driving skills are **crucial**.
- When these skills are not at peak, you are at **risk for accidents**.
- **Why?** There is a much slower **reaction time**, or none at all, many drowsy driving crashes involve serious injuries and/or fatalities.



TOTAL HOURS OF SLEEP IN PAST 24 HOURS	Crash Risk
< 6	11.5
6-7	4.3
7-8	1.9
8-9	1.3

AAA Foundation for Traffic Safety (2016). Retrieved March 14, 2018. <http://www.aaa.com/news/traffic-safety>

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Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #42)

Why is driving while drowsy dangerous?

- All are crucial driving skills and when these skills are not at peak, at risk for crashes.
 - Because there is a much slower reaction or none at all, many drowsy driving crashes involve serious injuries and/or fatalities.
- Image of impact on crash risk: Crash risk increases with the less amount of sleep obtained.



The **sleep deprived** group was **2.29 times** more likely to drive drowsy with or without falling asleep at the wheel than the **not sleep deprived** group.

Drowsy driving can be associated with episodes of **"microsleep."**

A "microsleep" includes occurrences of sleep (within seconds) when an individual is not engaged with the environment, with or without eyes closed.

(Marcus, J. H., & Rosekind, M. R., 2017)



Don't be like SpongeBob and try to pull an all-nighter writing a paper for Mrs. Puff's Erving Class!!!

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Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #43)

Sleep Deprived Study 1 Data

Our study also looked investigated how sleep deprivation played a role in drowsy driving and/or falling asleep at the wheel.

Self-Reported data suggested that:

- The estimated odds of drowsy driving status for the *sleep deprived* group being drowsy and falling asleep over the rest or being drowsy with or without falling asleep over not drowsy or falling asleep were 2.29 times the estimated odds for the *not sleep deprived* group (95% CI: 1.72-3.04); i.e., the sleep deprived group was more likely to drive drowsy with or without falling asleep than the not sleep deprived group.

Drowsy driving can be associated with episodes of "microsleep."

What is a "microsleep?"

- A "microsleep" includes occurrences of sleep (within seconds) when an individual is not engaged with the environment, with or without eyes closed. (Marcus, J. H., & Rosekind, M. R., 2017)

How is a "microsleep" linked to drowsy driving?

- Fatigue can also impair aspects of human functioning, including loss of environmental awareness, poor decision-making, reduced attention, slowed reaction time and/or other impairments. A transportation crash is likely to occur as a cause or contribution of these impairments. (Marcus, J. H., & Rosekind, M. R., 2017)
- Human fatigue can influence these impairments when an individual is awake, during microsleeps, or during a full sleep (uncontrolled and unintentional). (Marcus, J. H., & Rosekind, M. R., 2017)

Marcus, J. H., & Rosekind, M. R. (2017). Fatigue in transportation: NTSB investigations and safety recommendations. *BMJ Journals: Injury Prevention*, 23, 232-238. doi:10.1136/injuryprev-2015-041791

***NOTE TO INSTRUCTOR: Connect how sleep deprivation and microsleep can also be linked to impaired driving behaviors, such as distracted driving, where the driver is visually, cognitively and physically impaired and distracted.**



More *total hours of sleep per week* would **reduce** the probability of driving while drowsy with or without falling asleep at the wheel.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #44)

Total Hours of Sleep per Week Study 1 Data

Additionally, we found that students self-reported the total number of hours of sleep per week and we analyzed that to see if there was a correlation or a statistical significance with drowsiness while driving and/or falling asleep at the wheel.

- The estimated odds of drowsy driving status being drowsy and falling asleep over the rest or being drowsy with or without falling asleep over not drowsy or falling asleep were 0.94 times the estimated odds when *Total hours of sleep per week* increased by 1 unit (95% CI: 0.92-0.96, p-value=<.0001), i.e., having more *Total hours of sleep per week* would reduce the probability of driving while drowsy with or without falling asleep.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

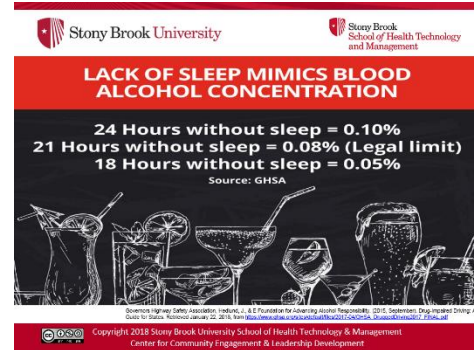
(SLIDE #45)

Length of Commute and its Connection to Drowsy Driving/Falling Asleep at the Wheel

We also found that students who self-reported longer commutes had increased odds of driving drowsy and/or falling asleep at the wheel.

- The estimated odds of drowsy driving status for people who were *long commuters* (≥ 21 miles) being drowsy and falling asleep over the rest or being drowsy with or without falling asleep over not drowsy or falling asleep were 1.64 times the estimated odds for *short commuters* (≤ 10 miles) (95% CI: 1.22-2.2); the estimated odds of drowsy driving status for *moderate commuters* (11-20 miles) being drowsy and falling sleep over the rest or being drowsy with or without falling sleep over not drowsy or falling asleep were 1.43 times the estimated odds for *short commuters* (≤ 10 miles) (95% CI: 1.04-1.97); i.e., short commuters were less likely to drive drowsy with or without falling asleep.





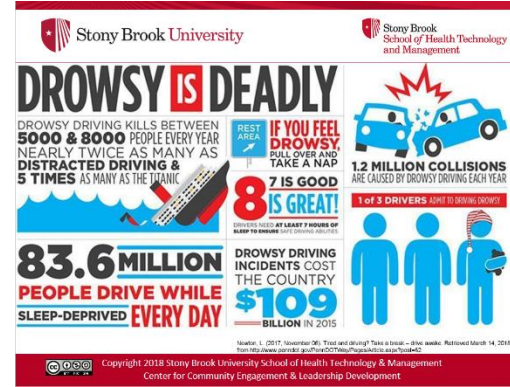
Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #46)

- Image on lack of sleep mimics blood alcohol concentration





Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #47)

- Infographic on how drowsy driving is connected to distracted driving

****Be sure to connect drowsy driving to distracted driving: Drowsy driving can influence and contribute to manual, visual and cognitive distraction.***

Discussion Points

- **Identify at least three behaviors associated with drowsy driving.**
 - a. Yawning
 - b. Burning eyes
 - c. Heavy eyelids or prolonged blinking; impaired vision (miss seeing dangers, road signs, other drivers, and obstacles- children crossing the street, a sharp turn...)
- **Identify at least three consequences of drowsy driving.**
 - a. Motor vehicle crashes (injury/fatal)
 - b. Impaired judgment, poor concentration
 - c. Can't process information well
 - d. Reactions will be much slower
- **Recognize drowsy driving as a common danger and type of distracted driving.**

Action: Ask students what they can do to avoid drowsy driving (either as the driver, a passenger in the car, or observing other drivers and other vehicles). Prompt discussion of the video and have students compare the driving ability of individuals with sleep to those after being deprived of it.

Student Objective: Students will list and describe poor behaviors that drivers engage in and discuss the importance of avoiding them while driving.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #48)

Prevention of Drowsy Driving

- Driving while you're sleepy is dangerous and, just like texting and driving or drunk driving, causes crashes, serious injury and death.
- Best safeguard against putting yourself in this situation is to get adequate sleep—most teens need 8-9 hours to maintain proper alertness during the day and while driving. (This will help you do better in school).
- If you are sleepy while driving, get off the road.
- If you are driving with someone who tells you they are sleepy, or is having trouble keeping their eyes open, head up or drifting out of their lane, speak up. Tell them to pull over and get off the road.

UC Davis. (n.d.). How Avoid Drowsy Driving. Retrieved March, 2018, from <https://shcs.ucdavis.edu/blog/archive/healthy-habits/how-avoid-drowsy-driving>

***NOTE TO INSTRUCTOR: Be sure to discuss what methods do not work as well through the Myth vs. Fact- True/False Quiz**



Prevention of Drowsy Driving

10 Strategies to Reduce Risk of Drowsy Driving

1. Drive during your **normal wake time**.
2. Driving during the **day**.
3. Obtain the **recommended** amount of sleep per night.
4. Practice **good sleep habits** (hygiene).
5. If driving long distances, **take breaks frequently**, get out and move your body around.
6. Drive with a **passenger** if possible.
7. Adjust the interior temperature to be **cool**.
8. **Avoid using sleep aides** the night before driving.
9. **Read all medication labels** for side effects and avoid driving when using ones that can make you sleepy.
 - a. **Prescription medications** and their side effects need to be considered **before driving**; prescription use does not excuse for impaired driving!
10. If you are constantly sleepy, **talk to your doctor**, as this can be a sign of an underlying sleep disorder.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #49)

Reducing the risk of drowsy driving has connections to and is related with proper sleep habits

10 Strategies to Reduce Risk of Drowsy Driving

1. Drive during your normal wake time.
2. Driving during the day, nighttime driving is associated with increased risk of falling asleep.
3. Obtain the recommended amount of sleep per night. For most adults, this requires getting between 7 and 9 hours of sleep per night.
4. Practice good sleep habits. This includes following a regular sleep routine and avoiding “sleep stealers” (using digital devices before bed or consumption of caffeine before bed).
5. If driving long distances, take breaks frequently, get out and move your body around.
6. Drive with a passenger if possible.
7. Adjust the interior temperature to be cool, as warmer air will increase sleepiness.
8. Avoid using sleep aides the night before driving as many have residual effects into the next day.

The use of sleeping aides can have an effect on one’s safe driving abilities. The American Academy of Sleep Medicine (AASM) noted “that sleeping pills can be a safe and effective treatment option for insomnia when used as prescribed by a licensed physician.” The FDA disseminated a safety announcement in which drug makers are “required to lower the recommended doses for products used to treat insomnia that contain the drug zolpidem, including the popular sleeping pills Ambien and Ambien CR. ... The FDA decision was based on concerns about potential drowsiness occurring the morning after taking a sleeping pill, particularly among women. Such daytime drowsiness can be a health and safety risk, especially while driving.” This is a reminder that all medications have the potential to cause side effects, and there is no exception for sleeping pills. (American Academy of Sleep Medicine, 2013)

American Academy of Sleep Medicine. (2013, January 10). AASM Statement on New FDA Safety Announcement for Sleeping Pills. Retrieved August 21, 2018, from <http://news.cision.com/american-academy-of-sleep-medicine/r/aasm-statement-on-new-fda-safety-announcement-for-sleeping-pills,c9356066>

9. Read all medication labels for side effects and avoid driving when using ones that can make you sleepy.
 - a. *Prescription medications and their side effects need to be considered before driving; prescription use does not excuse for impaired driving!



10 Strategies to Reduce Risk of Drowsy Driving

1. Drive during your **normal wake time**.
2. Driving during the **day**.
3. Obtain the **recommended** amount of sleep per night.
4. Practice **good sleep habits** (hygiene).
5. If driving long distances, **take breaks frequently**, get out and move your body around.
6. Drive with a **passenger** if possible.
7. Adjust the interior temperature to be **cool**.
8. **Avoid using sleep aides** the night before driving.
9. **Read all medication labels** for side effects and avoid driving when using ones that can make you sleepy.
 - a. **Prescription medications** and their side effects need to be considered **before** driving; prescription use does not excuse for impaired driving!
10. If you are constantly sleepy, **talk to your doctor**, as this can be a sign of an underlying sleep disorder.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #49)

*One of the most commonly reported side effects of medications is sleepiness. This is an important side effect to discuss with you doctor. The sedating effects of nonprescription and prescription medications can also cause excessive sleepiness.

It is difficult to specifically determine which exact chemicals in a drug are cause a person to feel tired and play a role in alertness. Examples of sedating medications include: dopamine, epinephrine, norepinephrine, serotonin, histamine, glutamate, or acetylcholine.

It is important to take any sleepiness side effects seriously. According to the National Sleep Foundation, “Just as insufficient sleep and sleep disorders can make you less productive and even less safe during the day, so can the sedating effects of certain medications. In fact, drugs like antihistamines can affect your ability to drive, and are associated with an increased risk of next-day driving accidents.” (National Sleep Foundation 2018)

National Sleep Foundation. (2018). Sleepiness, Medication & Drugs: Why Your OTC Medications And Prescription Drugs Might Make You Tired. Retrieved August 21, 2018, from <https://sleepfoundation.org/excessivesleepiness/content/sleepiness-medication-drugs-why-your-otc-medications-and-prescription-drugs-might-make-you>

10. If you are constantly sleepy, talk to your doctor, as this can be a sign of an underlying sleep disorder.

**Recommendations compiled from the [National Sleep Foundation](#), [National Institute for Health, Centers for Disease Control and Prevention](#), [American Academy of Sleep Medicine](#)*

Discussion Questions

- **Describe at least three strategies to achieve adequate sleep and improve sleep health.**
 - a. Obtain the recommended amount of sleep per night. For most adults, this requires getting between 7 and 9 hours of sleep per night.
 - b. Practice good sleep habits. This includes following a regular sleep routine and avoiding “sleep stealers” (using digital devices before bed or consumption of caffeine before bed).
 - c. Avoid using sleep aides the night before driving as many have residual effects into the next day.



- Effective communication skills are **key** to standing up for yourself in an uncomfortable or a potentially dangerous situation, such as when a friend or adult is drowsy while driving.
- Assertive communication is **clear, calm and respectful**.
- The goal of communication is **to be heard** by the person you are talking to.
- Your focus should be on **problem solving**, not blaming.
- Offer a **solution**.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #50)

Introduction to Assertive Communication

Learning effective communication skills are very important so that the students can assert and stand up for themselves when they are in an uncomfortable or a potentially dangerous situation, such as when a friend or adult is drowsy while driving.

- Assertive communication is clear, calm and respectful. It involves a degree of courage and practice to master. Delivering a negative message can be difficult.
- The goal of communication is to be heard by the person you are talking to. It is not just communicating a message but being able to act in your best interest even when it is difficult.
- Saying something like “This is very difficult for me to say to you, but I am uncomfortable when you drive while drowsy. If you want to pull over, I can drive for you...” Your focus should be on problem solving not blaming.

The Assertive Communication Role Play exercise was adapted from the “Speak Up” exercise created by: Agris, J., Ellison, B., Miller-Engel, C., Endee, L., Flynn, E., Johnson, L., . . . Vidal, C. (2016). *Distracted Driving Prevention for High School Students & Introduction to the Allied Health Professions*. Stony Brook, NY: Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development.

Rose, C. (2015, October 22). Assertive Communication Video. Retrieved March, 2018, from <https://www.youtube.com/watch?v=04J2vghWwJk> (Image obtained from this YouTube video)



Traits of effective communication include:

- Making "I" statements.
- Listening to the other person's response.
- Reflecting what you heard to be sure that you understood what the other person was saying.
- Being respectful.
- Making eye contact.
- Making and sticking to your point.
- Expressing your feelings by clearly stating your needs and wants.



Unit 1: Overview Dangerous Driving

4. Introduction to Drowsy Driving and Prevention (SLIDES #28-51)

(SLIDE #51)

Traits of effective communication include:

- Making "I" statements, listening to the other person's response, reflecting what you heard to be sure that you understood what the other person was saying, being respectful, making eye contact, making and sticking to your point and expressing your feelings by clearly stating your needs and wants.
- It is important to have the skills to act assertively to protect yourself. This can be very difficult and involves talking to the person who is acting in a dangerous way.
- Being assertive is not just verbalizing your message but being able to act in your best interest.
- Sometimes walking away from the situation is the best option.
- Learning to communicate in an effective manner takes practice.

The Assertive Communication Role Play exercise was adapted from the "Speak Up" exercise created by: Agris, J., Ellison, B., Miller-Engel, C., Endee, L., Flynn, E., Johnson, L., . . . Vidal, C. (2016). *Distracted Driving Prevention for High School Students & Introduction to the Allied Health Professions*. Stony Brook, NY: Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development.

Schoepp, J. (2015, July 14). *Networking: What it means and 8 ways to help you succeed!* Retrieved March, 2018, from <http://morganconsulting.com/networking-what-does-it-really-mean-and-8-ways-to-help-you-succeed/>

Discussion Points

- **Identify ways to share information with others regarding the dangers of drowsy driving.**
 - a. Making "I" statements, listening to the other person's response, reflecting what you heard to be sure that you understood what the other person was saying, being respectful, making eye contact, making and sticking to your point and expressing your feelings by clearly stating your needs and wants.
 - b. Effective Communication
 - c. Assertive Communication





Unit 2: Experiential Exercises

1. Assertive Communication Role Play; Alternative Dangerous Driving Videos and Discussion

(SLIDES #52-53)

ACTIVITY and VIDEOS (25 minutes)

Assertive Communication Role Play (20 minutes)

Review the key points of how to deliver an assertive message.

1. Speak from the “I.” For example, “I feel uncomfortable when you drive while driving.”
2. State what you want to happen. “I want you to stop driving if you are sleepy.”
3. Problem Solve. “Why don’t you pull over and let me drive instead?” (licensed)

- Instructor randomly divides students into groups of two-three.
- Each student within the group will take on a Role (Either Role 1, Role 2, or Role 3) and will complete the activity within their group (15 minutes).
- Instructor will break into class discussion on activity (5 minutes) following individual group participation.

***NOTE TO INSTRUCTOR: By performing this demonstration with your students, you will be able to show the students exactly how they can communicate their feelings about either driving drowsy or being a passenger in a car with a drowsy driver.**

*The Assertive Communication Role Play exercise was adapted from the “Speak Up” exercise created by: Agris, J., Ellison, B., Miller-Engel, C., Endee, L., Flynn, E., Johnson, L., Vidal, C. (2016). *Distracted Driving Prevention for High School Students & Introduction to the Allied Health Professions*. Stony Brook, NY: Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development.

The context in the Assertive Communication Role Play exercise is different from the context presented in the “Speak Up” exercise.

Discussion Points

- **After participating in the Assertive Communication Role Play activity, how do you think this affects driving habits of others and your own?**
 - Encourage students to discuss their individual experience with the exercise.





Unit 2: Experiential Exercises

1. Assertive Communication Role Play; Alternative Dangerous Driving Videos and Discussion

The following are scripts for role plays that are design to give students the opportunity to practice assertiveness skills:

ROLE PLAY 1

Your friend is driving you to the mall. Your friend was out partying very late the night before and had a bit of trouble waking up and getting ready this morning because he did not get enough sleep. He begins swaying slightly in the lane and is closing his eyes frequently. You know that he is very drowsy and begin to feel uncomfortable.

Student: Drowsy Driving Characteristics Identified: _____

You say _____

You do _____

What would be an assertive way to speak to your friend that is both respectful and effective?

ROLE PLAY 2

You are the passenger in a car and your best friend is a medical resident. She recently finished her 48-hour shift and was late in picking you up from the library. As you get into the car, you notice that she is irritable, and is yawning frequently. As she proceeds to leave the library parking lot, she hits the side of the curb.

You are getting increasingly nervous because you notice that the driver is not focusing on the road, and are scared that she may soon fall asleep at the wheel.

Student: Drowsy Driving Characteristics Identified: _____

You say _____

You do _____

What would be an assertive way to speak to your friend that is both respectful and effective?

Agris, J., Ellison, B., Miller-Engel, C., Endee, L., Flynn, E., Johnson, L., . . . Vidal, C. (2016). *Distracted Driving Prevention for High School Students & Introduction to the Allied Health Professions*. Stony Brook, NY: Stony Brook University School of Health Technology & Management Center for Community Engagement & Leadership Development.



ROLE PLAY 3

You are driving on the Long Island Expressway with one passenger in your car. It is rush hour on a Friday evening, and you notice something strange in the car adjacent to yours. While stuck in typical rush hour traffic, you and your passenger see the other driver nodding on and off at the wheel. As traffic starts to move, you both see erratic driving behavior from the other driver (i.e. drifting in and out of the lane).

You and your passenger do not feel comfortable about this situation.

Student: Drowsy Driving Characteristics Identified: _____

You say _____

You do _____

What would be an assertive way to speak to your passenger to help you address this situation in an effective manner?





Unit 2: Experiential Exercises

1. Assertive Communication Role Play; Alternative Dangerous Driving Videos and Discussion

(SLIDES #52-53)

ALTERNATIVE Dangerous Driving Videos

(if time allows in the workshop following Assertive Communication exercise and Myth vs. Fact Quiz; alternative videos can be found in the PowerPoint notes section).

[Scary Moments in Drowsy Driving](#) (1:58)

[Drowsy Driving Is As Bad AS Driving Drunk, Says New Study - TODAY](#) (2:59)

OTHER VIDEOS

[Microsleeps While Driving](#) (5:09)

[The Dangers of Driver Fatigue](#) (2:54)

[The Facts About Driving Tired](#) (1:06)

Discussion Points

- **(IF TIME ALLOWS) How do you feel following watching the video(s)? ALTERNATIVE VIDEO LINKS IN POWERPOINT NOTES.**
 - Encourage students to discuss their emotional reaction to the videos shown.
- **(IF TIME ALLOWS) What are three lessons you learned from the video(s)? ALTERNATIVE VIDEO LINKS IN POWERPOINT NOTES.**
 - Answers will vary based on what students experience and emotionally react to each video shown.





Unit 2: Experiential Exercises

2. Myth vs. Fact True/False Quiz and Discussion (15 Minutes) (SLIDE #54 and Student Handout)

DROWSY DRIVING: MYTH VS. FACT QUIZ

ANSWER KEY

*The following information was retrieved from StopDrowsyDriving.org,
the AAA Foundation for Traffic Safety and other cited sources.*

Most Americans aren't concerned with the effects of **Drowsy Driving**, because they tend to believe a multitude of myths that have developed over the years:

1. **Myth:** Coffee can overcome drowsiness while driving. **(FALSE)**

Fact: Although caffeine may make you feel more alert, only sleep can truly overcome drowsiness. People who take stimulants while severely sleep deprived are likely to have "micro-sleeps," which are essentially four- to five-second naps. A vehicle travelling 55 mph can cover more than 100 yards in four to five seconds – plenty of time for a crash.

2. **Myth:** I'm a safe driver so it doesn't matter if I'm sleepy. **(FALSE)**

Fact: The only safe driver is an alert one. When sleepy, even the best drivers become confused and use poor judgment.

3. **Myth:** Naps are not useful to avoid drowsy driving. **(FALSE)**

Fact: Even if you think you can't nap, pull over and recline for 15 minutes – it is likely you will be able to fall asleep. Always be sure to do so safely, in busy areas with your car doors locked.

4. **Myth:** Lack of sleep mimics blood alcohol concentration **(TRUE)**

Fact: Yes. 24 hours without sleep = 0.10%; 21 hours without sleep = 0.08% (legal limit). Lack of sleep over 21 hours is equivalent to being cognitively impaired as someone who is drunk.





Unit 2: Experiential Exercises

2. Myth vs. Fact True/False Quiz and Discussion (15 Minutes) (SLIDE #54 and Student Handout)

5. Myth: I can open a window or turn up the radio to fight fatigue on the road. **(FALSE)**

Fact: No. Some of these tricks may help you to feel more alert for an instant; however, they are not effective ways to maintain an acceptable level of alertness for long enough to drive anywhere. Even with the window rolled all the way down and radio cranked up, if you're sleepy, you're still an unnecessarily great hazard to yourself and to everybody else on the road. If you're sleepy enough that you're seeking special measures to stay awake, you should have stopped driving already. Look for a safe and secure place, park the car, and take a nap.

6. Myth: Men have twice as many drowsy driving crashes as women. **(TRUE)**

Fact: Men are more likely than women to drive while drowsy (56% vs. 45%) and are almost twice as likely as women to fall asleep while driving (22% vs. 12%). (Kuhar, S., 2014).

7. Myth: Drowsy driving data is often underreported on local, state, and national levels. **(TRUE)**

Fact: There is agreement that drowsy driving is a problem that is grossly underreported. Local police don't collect data on drowsiness as a cause of crashes. Too often statistics reported don't always reflect the true incidence of the problem. In fact, recent research on drowsy driving using in-vehicle dash cams found that approximately 10% of all crashes involved drowsiness (McClafferty, J., et al., AAA Foundation, 2018)).

8. Myth: I can tell when I am going to fall asleep. **(FALSE)**

Fact: While most people feel they can control and predict when they are about to fall asleep, they cannot. Often, when a person is drowsy they can fall asleep without even being aware of it.





DROWSY DRIVING: MYTH VS. FACT TRUE/FALSE QUIZ

The following information was retrieved from www.StopDrowsyDriving.org and the AAA Foundation for Traffic Safety

Drowsy Driving is a public health concern that is commonly overlooked due to a multitude of myths that have developed over the years. Choose either True or False based on your current knowledge of drowsy driving.

1. T F Coffee can overcome drowsiness while driving.
2. T F I'm a safe driver so it doesn't matter if I'm sleepy.
3. T F Naps are not useful to avoid drowsy driving.
4. T F Lack of sleep mimics blood alcohol concentration.
5. T F I can open a window or turn up the radio to fight fatigue on the road.
6. T F Men have twice as many Drowsy Driving crashes as women.
7. T F Drowsy driving data is often underreported on local, state and national levels.
8. T F I can tell when I am going to fall asleep.



FINAL TAKEAWAYS

(SLIDE #55)

(10 minutes)

Discussion Points

Now that you have completed this program...

- **What are some aspects of the Highway Transportation System that you believe are most important?**
 - By the end of this workshop, students should be able to:
 - **Recognize driving is a mental, physical, and social test that involves the interaction of the operator, the environment, and the vehicle.**
- **What are the 7 components that contribute safe driving practices? How can you enforce safe driving behaviors?**
 - By the end of this workshop, students should be able to:
 - **Recognize the importance of protecting motor vehicle occupants from possible injury or death by using all occupant protection devices and abiding by safe driving practices.**
 - **Understand the rules of the road emphasizing those that promote safe driving.**
- **Identify the 4 D's of Impaired Driving. What are some examples of each? How is the driver's actions, state of mind, and behavior affected by each of the 4 D's?**
 - By the end of this workshop students should be able to:
 - **Identify factors such as impairment and distractions that can severely decrease a driver's ability to operate a motor vehicle safely.**
 - **Understand the influence of a driver state of mind can have on the behavior and how this affects the actions while driving.**
- **What are some dangerous driving situations and how can you avoid them?**
 - By the end of this workshop students should be able to:
 - **Recognize dangerous drivers and driving situations and learn how to react safely.**

New York State Department of Motor Vehicles. (2018). Pre-Licensing Course Instructor's Manual, A Syllabus Prepared by the New York State Department of Motor Vehicles. New York State. Department of Motor Vehicles



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USEFUL RESOURCES

For more information about preventing dangerous driving visit:

1. AAA - Traffic Safety Culture Index Archives: <http://www.aaa.com/hq/traffic/safety/culture/index/>
2. FMV.org - Three Types of Driving Distractions: <http://www.fmv.org/distractions/long/3types-of-distractions.php>
3. First Responders: Distracted Drivers Don't Know How to Stop: <http://www.firstresponders.com/distractions/>
4. Governors Highway and Safety Administration - Drug-impaired Driving: A Guide for States: <http://www.dhs.gov/eisofd/ohd/2017/04/04/2017-FHSA.pdf>
5. National Highway Traffic Safety Administration - Drunk Driving: <http://www.nhtsa.gov/ncii/2017/01/11/driving/drunk-driving>
6. National Highway Traffic Safety Administration - Young Drivers Report the Highest Level of Phone Involvement in Crash or Near-Crash Incidents: <http://www.nhtsa.gov/ncii/2016/04/08/young-drivers-report-the-highest-level-of-phone-involvement-in-crash-or-near-crash-incident>
7. National Institute of Child Health and Human Development - What risk factors do all drivers face? <http://www.nichd.nih.gov/health/topics/driving/conditions/what-risk-factors>
8. National Institute on Drug Abuse - Drugged Driving: <http://www.drugabuse.gov/topics/drugs-and-conditions/drugged-driving>
9. National Safety Council - Understanding the distracted brain: WHY DRIVING WHILE USING HANDS-FREE CELL PHONES IS RISKY BEHAVIOR: <http://www.nsc.org/behavior/driving/understanding-the-distracted-brain>
10. National Safety Council, The AAA Foundation for Traffic Safety, University of Utah, & National Highway Traffic Safety Administration - The Great Multitasking Lie: http://www.nsc.org/behavior/driving/documents/The_Great_Multitasking_Lie.pdf
11. New York State DMV - The Learning Course Instructor's Manual: <http://www.dmv.ny.gov/learning/2017.pdf>
12. New York State DMV - Cell phone use & driving: <http://www.dmv.ny.gov/cellphone/cell-phone-use-while-driving>
13. New York State Governor's Traffic Safety Committee - www.gtsct.com
14. Utah Education Network - Distracted Driving: http://www.utahednet.com/health/safe/distracted_driving.html

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LEARN MORE

Social Media:

Facebook – [facebook.com/stopdrowsydriving](https://www.facebook.com/stopdrowsydriving)
Twitter – twitter.com/DontDriveTired

Website: www.StopDrowsyDriving.org

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Thank you for your participation!



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CLOSING

(SLIDES #56-58)

Speaker's Notes: (5 Minutes)

- Thank the students again for participating in the program's workshop.



APPENDIX A



Other Links to Sleepiness Assessment Tools

- [NATIONAL SLEEP FOUNDATION SLEEPINESS TEST](#)
- [Epworth Sleepiness Scale](#)
- [Berlin Questionnaire: Sleep Apnea](#)
- [Stanford Sleepiness Scale](#)
- [STOP BANG - Obstructive sleep apnea- \(OSA\) screening tool](#)
- [Karolinska Sleepiness Scale \(KSS\)](#)
- [The Cleveland Adolescent Sleepiness Questionnaire: A New Measure to Assess Excessive Daytime Sleepiness in Adolescents](#)



DATA AND STATISTICS

Below you will find additional data that supports the learning concepts that can be discussed in “The 4 D’s of Impaired Driving” section of the curriculum:

Drunk Driving

- Alcohol-impaired motor vehicle crashes happen every day and almost 29 people in the United States die in these crashes. (National Highway Traffic Safety Administration, 2017).
- Drunk driving crashes claim over 10,000 lives per year, even though the fatalities have fallen by a third over the last 30 years. (National Highway Traffic Safety Administration, 2017).
- Drunk driving related deaths and damages cost \$44 billion per year (as of 2010). (National Highway Traffic Safety Administration, 2017).

Drugged Driving

- The Fatality Analysis Reporting System (FARS) reported that in 2015, 57.0% of the fatally-injured drivers were tested for drugs. More than 1/3 (36.5%) of drugs identified were marijuana. (Governors Highway Safety Association, Hedlund, J., & Foundation for Advancing Alcohol Responsibility, 2015).
- In 2015, 19.0% of surviving drivers were tested for drugs. For drivers who survived crashes and were tested for drugs, marijuana was identified in 46.5% of the drugs. (Governors Highway Safety Association, Hedlund, J., & Foundation for Advancing Alcohol Responsibility, 2015).
- The National Highway Traffic Safety Administration conducted a roadside survey (2013-2014) of drivers during weekday days and weekend nights (Berning et al., 2015) where 22% of the drivers tested positive for some drug or medication. Marijuana was more prevalent on weekend nights (15.2%) than weekday days (12.1%). Medication prevalence was higher on weekday nights (10.3%) than on weekend nights (7.3%). In 12.6% of drivers who tested positive, marijuana was by far the most prevalent drug. (Governors Highway Safety Association, Hedlund, J., & Foundation for Advancing Alcohol Responsibility, 2015).

Distracted Driving

- Distraction affiliated crashes were reported to be 10% of fatal crashes and 15% of injury crashes in 2015. (End Distracted Driving, 2018).
- Crashes related to distracted driving are under-reported. Cell phone use is estimated to account for 27% for 2015 car crashes. (End Distracted Driving, 2018).
- 3,477 people were killed, and 391,000 were injured in distracted driving related crashes in 2015. (End Distracted Driving, 2018).
- Teens have an increased crash rate (3 times greater) than drivers who are 20 years old and older. (Insurance Institute for Highway Safety Highway Loss Data Institute, 2017).
- More than 58% of teen crashes is connected to distracted driving. (End Distracted Driving, 2018).
- More than 2 out of 3 drivers report using their cell phone (i.e. talking) while driving in the past 30 days according to a 2012 AAA Foundation for Traffic Safety survey. (Souto, J., 2017)
- Statistics show that drivers who talk on their handheld or hands-free cell phone are six times more likely to be in a distracted driving related car crash. (Utah Education Network)



- 21% of all traffic crashes in the United States are due to people talking on their cell phone, according to the National Safety Council. (National Safety Council, 2012).
- The National Highway Traffic Safety Association reported in 2012 that young drivers (ages 18-20 years old) have the highest incidence of car crash or near-car crash situations. (National Highway Traffic Safety Administration, 2012).

Drowsy Driving

(National Sleep Foundation, 2017)

- According to the National Sleep Foundation's 2005 *Sleep in America* poll, about 168 million people in the United States (60% of adult drivers) have experienced driving while drowsy; more than 1/3 (37% or 103 million people) have reported to have fallen asleep at the wheel.
 - 13% say they have done so at least once a month.
 - 4% or 11 million drivers admit to being in an crash or near crash because they dozed off or were too tired to drive.
- The National Highway Traffic Safety Administration estimates that 100,000 police-reported crashes result from drowsy driving each year, with 1,550 deaths, 71,000 injuries, and \$12.5 billion in cost, resulting in high personal and economic costs.
- Adults 18 – 29 years old have an increased odds to drive while drowsy compared to other age brackets (71% vs. 30-64, 52% vs. 65+, and 19%).
- Men are more likely than women to drive while drowsy (56% vs. 45%). Men are almost twice as likely as women to fall asleep while driving (22% vs. 12%).
- Adults with children have a higher risk to drive drowsy than those without children (59% vs. 45%).
 - 60% of parents with children have not discussed the dangers of drowsy driving or falling asleep at the wheel, according to the NSF's 1999 *Sleep in America* poll.
 - 96% of respondents to a NSF 2002 poll were in agreement that drowsy driving information should be included in testing in order for an individual to receive their driver's license.
- Shift workers are more likely to drive drowsy than those who work a regular daytime schedule (36% vs. 25%).
- Greater risk for sleep related crash as sleep deprivation increases
- Commercial drivers and people with undiagnosed sleep disorders (i.e. sleep apnea and acute insomnia) have an increased risk for drowsy driving crashes.
- Nearly ¾ of adults in America (71%) drive a car to and from work
 - More than ¼ of adults "(27%) said they have driven drowsy to or from work at least a few days a month, 12 percent drove drowsy a few days a week, and four percent said they drove drowsy every day or almost every day.
 - According to NSF's 2000 *Sleep in America* poll, when they are driving drowsy, 42 percent of those polled said they become stressed, 32 percent get impatient and 12 percent tend to drive faster.
 - In the same poll, about one in five drivers (22%) said they pull over to nap when driving drowsy. Older adults are more likely to pull over and nap than younger drivers, who are most likely to drive when drowsy and least likely to pull over and nap."



- People who drive on long highways tend to fall asleep more at high-speeds. Yet, individuals who live in urban areas (24%) are more likely to drive drowsy in comparison to those in rural or suburban areas (17%).

(Kuhar, S., 2014)

- The “drowsy” state is a phase between being awake and being asleep. An individual cannot predict the exact moment of their own sleep onset.
- Drowsiness is a dangerous impairment while driving. A blood alcohol content of 0.05% is equivalent to 17 hours without sleep.

(Owens, J., 2014)

- Sleepiness was identified to be a major factor in individuals without known sleep disorders (Pack et al, 1995).
 - Crash reports were reviewed in North Carolina from 1990-1992. The driver was noted to have been drowsy/fallen asleep while driving. 85% of the crashes was not associated with intoxication and of those, 55% of crashes happened among individuals younger than 25 years of age.

(Cision PRWeb, 2011)

- 41% of drivers admitted to drowsy driving and/or falling asleep at the wheel at some point in their lives according to a recent AAA Foundation for Traffic Safety.
- “I don’t think people realize the dangerous consequences of drowsy driving,” Schwartzapfel said. “If you cause an [crash], it can lead to criminal charges, civil liability and the burden of knowing that you have caused irreparable harm to a victim and the victim’s family.”

(Tefft, B.C., 2014)

- Official government statistics contain underestimates of the true volume of drowsy driving incidences. The data gathered by the National Highway Safety Association is only based on reports completed by police officers who investigate scenes of MVAs. Additionally, 1.4% of all crashes, 2.2% of crashes that result in injuries, and 2.5% of fatal crashes involve a drowsy driver (NHTSA, 2011).
- Drowsy driving impairments are hard to classify since they do not leave behind physical evidence like alcohol impairment- there is no breathalyzer test for drowsy driving. Therefore, it is often hard for police to determine drowsiness and sometimes a driver is hesitant to admit to the police that he or she had fallen asleep.
- Experts have widely regarded official statistics as the “tip of the iceberg” (Stutts et al., 2005) due to the many limitations regarding on crash-involved drivers realizing, remembering, and reporting to a police officer that he or she had fallen asleep or was fatigued while driving.
- About 22-24% of MVAs and near-MVAs involve a moderate to severe drowsy driver.
- A drowsy driver has been involved with as many as 6% of all crashes (134,000 crashes) in which a passenger vehicle is towed from the scene, 7% of crashes that result in any injuries, 13% of crashes that result in severe injuries requiring hospitalization (68,000 any and severe injuries), and 21% (4,998 fatalities) of fatal crashes each year. In total, approximately 328,000 police-reported crashes each year, including 109,000 that result in injuries and 6,400 fatal crashes, involve a drowsy driver.
- More research needs to be done to improve sleep health and surveillance among adults in the United States which ultimately reduces the incidence of drowsy driving and drowsy driving-related MVAs.



- Education on insufficient sleep and sleep disorders and the ability to drive safely needs to be implemented in communities by public health workers. Lifestyle changes can be suggested by physicians to improve a patient's sleep habits.

(Journal of Orthopaedic & Sports Physical Therapy, 2017)

- In the United States, it is estimated that more than 30,000 people die each year in motor vehicle crashes.
- Drowsy driving contributes to ¼ of all motor vehicle crashes.
- According to the AAA Foundation for Traffic and Safety, drivers with less than 4 hours of sleep are 11.5 times more likely to be in a MVA in comparison to drivers who have obtained 7-9 hours of sleep.

(Centers for Disease Control and Prevention, 2013)

- 4.2% of 147,076 respondents reported having fallen asleep while driving within the past 30 days.
 - Men are more likely to report drowsy driving than women (5.3% versus 3.2%).
 - Drowsy driving prevalence decreases with age
- Drowsiness hinders driving skills even if drivers are able to stay awake.
- Driving while drowsy slows reaction time, decreases attentiveness of the driver and hinders decision-making skills. These factors increase the risk for motor vehicle crashes.
- Educational attainment was found not to be associated with drowsy driving.
- Drivers who report sleeping less than 6 hours per day often report falling asleep at the wheel.
- Current data collection methods do not accurately report the number of drowsy driving crashes. However, some modeling studies estimate that 15-33% of fatal crashes could be due to a drowsy driving incident.



FREQUENTLY ASKED QUESTIONS (FAQs)

The following information was retrieved from the [AAA Foundation for Traffic Safety](#) (last updated February 15, 2005)

- **Is drowsy driving a serious problem?**
 - Yes, drowsy driving is a serious public health problem. A driver who falls asleep may crash head-on into another car or obstacle, while driving at full speed. Unfortunately, the driver is unable to steer or break to avoid the crash.
 - People who drive without 24 hours of sleep imitate those who have a blood alcohol concentration (BAC) of 0.10%, which is greater than the legal limit for driving while intoxicated.
 - The National Highway Traffic Safety Administration (NHTSA) estimates that “100,000 police-reported crashes are the direct result of driver fatigue each year, resulting in an estimated 1,500 deaths, 71,000 injuries, and \$12.5 billion in monetary losses, every year.”
 - Many experts believe that the drowsy driving statistics and related crashes are under-reported since it is difficult to determine when drowsiness occurs.
 - In February 2018, the AAA Foundation for Traffic Safety noted the following in a research brief:
 - “While official statistics from the U.S. government indicate that only approximately 1%–2% of all motor vehicle crashes involve drowsy driving, many studies suggest that the true scope of the problem is likely to be much greater....a study that examined the prevalence of driver drowsiness immediately prior to crashes that occurred in the context of a large-scale naturalistic driving study in which the driving of more than 3,500 people was monitored continuously for a period of several months using in-vehicle cameras and other data collection equipment. Drowsiness was assessed using a validated measure that is based on the percentage of time that a person’s eyes are closed. Using this measure, drowsiness was identified in 8.8%–9.5% of all crashes examined and 10.6%–10.8% of crashes that resulted in significant property damage, airbag deployment, or injury.” (Owens, J.M. et al., 2018).
- **What are some signs indicative of drowsy driving?**
 - Warning signs of drowsy driving may include:
 - Unable to recall the last few miles traveled
 - Disconnected or wandering thoughts
 - Hard time focusing or keeping your eyes open
 - Feeling that your head is very heavy
 - Drifting in and out of the lane; driving on the rumble strips
 - Repeated yawning
 - Tailgating and missing traffic signs
 - 90% of police officers have been reported to pull over a driver who they thought was intoxicated. However, the driver turned out to be drowsy and had no indication of intoxication. Therefore, drowsy driving can simulate drunk driving.
- **Which groups are at-risk and are affected by drowsy driving?**
 - Those who are at more risk in general include: Young People; Shift Workers and People with Long Work Hours; People with Undiagnosed or Untreated Sleep Disorders; and Business



Travelers. However, if you are sleepy while driving, you are still at risk, even if you do not fall in any of these demographics. You must always strive to get quality and quantity sleep that you need.

- **How often do people realize that it is dangerous to drive drowsy?**
 - The AAA Foundation for Traffic Safety research noted that the public regards drowsy driving as a danger and cause for motor vehicle crashes. 4 out of 5 drivers in recent crashes noted that “driver drowsiness was very important in causing crashes.” However, drowsy related crashes are considered to contribute less to crashes than those crashes caused by alcohol related crashes.
- **What can I do in advance to avoid and reduce my risk of driving drowsy?**
 - In order to avoid and reduce your risk of driving drowsy you can:
 - Get a good night's sleep the night before; at least 7-9 hours per night.
 - Plan to drive long trips with a companion.
 - Take regular breaks every 100 miles or 2 hours.
 - Avoid alcohol and medications, especially medications that may make you sleepy.
 - Consult your physician or a local sleep disorders center if you experience symptoms with difficulty sleeping or a sleep disorder in order to get proper treatment. Visit the National Sleep Foundation website for more information.
- **At what time of day are drowsy driving related crashes most common?**
 - Most drowsy driving crashes occur in “middle of the night,” during the early morning hours. However, there is evidence that drowsy driving related crashes have a peak in occurring during in the mid-afternoon (between 2PM and 4PM, or 2PM and 6PM). This is less obvious to the general public.
- **What should I do if I am already driving and start to feel tired?**
 - Find a safe place to pull over and take a 15-20 minute nap. However, a nap longer than 20 minutes may make you groggy for at least 15 minutes after waking up.
- **Does coffee have any effect on keeping me awake while driving?**
 - Coffee does not have a long-lasting effect on alertness. The caffeine jolt that comes from drinking a cup of coffee usually takes 20-30 minutes to work and is short lived in duration. Of course, this method also has less of an impact for those who regularly consume caffeine. Those who are sleepy and dependent on caffeine are more likely to experience “microsleeps” where the driver will doze off for 4-5 second at a time. This is plenty of time to drive off the road or crash into another vehicle on the road.
- **Will opening the window or turning up the volume on the radio help me fight drowsiness on the road?**
 - Although opening the window or turning up the volume on the radio might help you feel more alert, in the long run, they are not effective ways to maintain an acceptable level of alertness to avoid drowsy driving signs. If you experience drowsiness while driving, an opened window or cranked up radio will not change the fact that you are putting yourself in a dangerous position and will be a driving hazard to others on the road. If you are sleepy, look for a safe place to park the car and take a nap. You should not have to see special measures to stay awake.
- **Will certain devices help keep me awake while I'm driving?**
 - No devices to be worn on the body to keep drowsy drivers awake have been scientifically validated yet. Only rumble strips serve as a warning mechanism. Rumble strips produce noise and mechanical vibration if an automobile starts to ride on it. Driving on the rumble strip



indicates that you are too tired to drive safely. You should never rely on this mechanism to alert you each time you feel drowsy as rumble strips do not prevent the action of crashing into other cars on the road.



APPENDIX B



THEORETICAL FOUNDATIONS

Theoretical foundation information retrieved from [Rural Health Information Hub](#).

The Health Belief Model

What is it?

- Utilized to help support health promotion and disease prevention programs, this is a theoretical, concept-based, model which identifies changes in health behaviors and attitudes. The model focuses on individualized health beliefs which can predict health related behaviors concerning health conditions.

How is it applied?

- This model can be applied to long and short-term health promotion and disease prevention programs. Several factors play a role in the model's level of predictability: perceived susceptibility, perceived severity, perceived benefits of taking a certain action, perceived barriers to said action, cues to the action, and self-efficacy.
- There are also 5 key components that are connected to the decision-making actions that prompt certain health behaviors:
 1. Collection of information through health needs assessments to determine at risk populations to be targeted.
 2. Associating health issue consequences with risk behaviors in order to understand a perceived threat.
 3. Conveying the steps required towards recommended action and benefits to health actions to the public.
 4. Offering guidance and mitigating around barriers to action.
 5. Showcasing healthy actions via activities that provide support, skill development and enhance self-efficacy to increase the likelihood of healthy behavior changes.

How is this theoretical foundation used in curriculum development?

- Experiential Activities and Discussion Points connected to the Health Belief Model include:
 - Link to the Epworth Sleepiness Scale Assessment via www.StopDrowsyDriving.org (Pages 36-37 – Instructor's Manual)
 - Myth vs. Fact: True/False Quiz (Pages 53-55 – Instructor's Manual; Page 4 – Student Manual)
 - Presentation of Study 1 Data (Pages 30-41 – Instructor's Manual)



Social Cognitive Theory

What is it?

- Focuses on how people learn from personal experiences, their interaction with others and the environment, as well as the how a person is affected by the actions of others.

How is it applied?

- This theory can be applied to different populations under various situations and circumstances. The theory ultimately offers social support through self-efficacy and observational learning. Other reinforcements may be used to instill expectations and to achieve healthy changes in behavior.
- Key concepts include:
 1. **Self-efficacy:** Thought that an individual can control and execute a certain behavior.
 2. **Behavioral capability:** Having the skill(s) to demonstrate a behavior.
 3. **Expectations:** Predicting behavior change outcomes.
 4. **Expectancies:** Identifying and allocating outcomes of behavior change with a certain value.
 5. **Self-control:** control and observe an individual behavior.
 6. **Observational learning:** Observing others perform a desired behavior and identifying the outcomes from a specific behavior.
 7. **Reinforcements:** Utilizing incentives and rewards that enable and support a change in behavior.

How is this theoretical foundation used in curriculum development?

- Experiential Activities and Discussion Points connected to the Social Cognitive Theory include:
 - Assertive Communication Role Play (Pages 49-52 – Instructor’s Manual; Pages 2-3 Student Manual)



Relapse Prevention Model

What is it?

- This model anticipates barriers that may enable an individual to relapse in behavior.

How is it applied?

- Coping skills are provided to those who follow this model. Individuals who participate in this model are less likely to return to their previous unhealthy behaviors since they will have received necessary information to cope with obstacles countering their health.
- Key concepts include:
 1. Skills training
 2. Cognitive re-framing
 3. Lifestyle re-balancing

How is this theoretical foundation used in curriculum development?

- Experiential Activities and Discussion Points connected to the Relapse Prevention Model include:
 - Assertive Communication Role Play (Pages 49-52 – Instructor’s Manual; Pages 2-3 Student Manual)



KEY TERMS

Adolescents – a juvenile between the onset of puberty and maturity

American Automobile Association (AAA) - The American Automobile Association (AAA – pronounced "Triple A") is a federation of motor clubs throughout North America. AAA is a non-profit member service organization with over 58 million members in the United States and Canada. AAA provides services to its members, including roadside assistance and others.

Assertive Communication - Being assertive is a core communication skill. Being assertive means that you express yourself effectively and stand up for your point of view, while also respecting the rights and beliefs of others. Being assertive can also help boost your self-esteem and earn others' respect.

Behaviors Associated with Drowsy Driving – our eyelids droop and your head starts to nod. Yawning becomes almost constant and your vision seems blurry. You blink hard, focus your eyes and suddenly realize that you've veered onto the shoulder or into oncoming traffic for a moment and quickly straighten the wheel. This time you were lucky; next time you could become the latest victim of the tragedy of drowsy driving.

According to the National Sleep Foundation's Sleep in America poll, 60% of Americans have driven while feeling sleepy and 37% admit to having fallen asleep at the wheel in the past year. However, many people cannot tell if or when they are about to fall asleep. And if sleepiness comes on while driving, many say to themselves, "I can handle this, I'll be fine." Yet they're putting themselves and others in danger. What they really need is a nap or a good night's sleep.

Blood Alcohol Concentration (BAC) – Levels represent the percent of your blood that is concentrated with alcohol. A BAC of .10 means that .1% of your bloodstream is composed of alcohol.

Consequences of Drowsy Driving – The Consequences of Drowsy Driving. According to Centers of Disease Control and Prevention, drowsy driving is the combination of driving and sleepiness. ... In addition, the National Highway Traffic Safety Administration estimates that up to 6,000 fatal crashes each year may be caused by drowsy drivers.

Consequences of Inadequate Sleep in Teens and Young Adults – sleep patterns in adolescents, factors contributing to chronic sleep loss (i.e., electronic media use, caffeine consumption), and health-related consequences, such as depression, increased obesity risk, and higher rates of drowsy driving crashes.

Decision-making Skills – The thought process of selecting a logical choice from the available options. When trying to make a good decision, a person must weigh the positives and negatives of each option and consider all the alternatives. For effective decision making, a person must be able to forecast the outcome of each option as well, and based on all these items, determine which option is the best for that situation.

Distracted Driving – Distracted driving is any activity that diverts attention from driving, including talking or texting on your phone, eating and drinking, talking to people in your vehicle, fiddling with the stereo, entertainment or navigation system—anything that takes your attention away from the task of safe driving.

Driven Drowsy – Sleep-deprived driving (commonly known as tired driving, drowsy driving, or fatigued driving) is the operation of a motor vehicle while being cognitively impaired by a lack of



sleep. ... When a person does not get an adequate amount of sleep, his or her ability to function is affected.

Driving While Intoxicated – The criminal law offense of operating a vehicle after having drunk an amount of alcohol sufficient to raise one's blood alcohol content above a legal limit, commonly referred to by the acronym DWI. Also known as driving under the influence (DUI), which, in some jurisdictions means that the driver had a lower level of intoxication than DWI but was still impaired. In some jurisdictions, the term driving while impaired is used.

Drowsiness – A feeling of being sleepy and lethargic; sleepiness.

Drowsy Driving Crashes – usually involve only one vehicle where the driver is alone, and the injuries tend to be serious or fatal. Can also include two vehicles. Also, skid marks or evidence of other evasive maneuvers are usually absent from the drowsy driving crash scene.

Drowsy Driving - the operation of a motor vehicle while being impaired by a lack of sleep. Sleepiness can impair drivers by causing slower reaction times, compromised vision and coordination, lapses in judgment and delays in processing information.

Educational Attainment – the highest level of education that an individual has completed. This is distinct from the level of schooling that an individual is attending.

Effective Communication Skills – Effective communication is about more than just exchanging information. It's about understanding the emotion and intentions behind the information. As well as being able to clearly convey a message, you need to also listen in a way that gains the full meaning of what's being said and makes the other person feel heard and understood.

Epworth Sleepiness Scale (ESS) - a scale intended to measure daytime sleepiness that is measured by use of a very short questionnaire. This can be helpful in diagnosing sleep disorders. It was introduced in 1991 by Dr. Murray Johns of Epworth Hospital in Melbourne, Australia.

Excessive Daytime Sleepiness (EDS) - A neurological disorder marked by a sudden recurrent uncontrollable compulsion to sleep

Fatigue – Extreme tiredness, typically resulting from mental or physical exertion or illness.

Fatigue-Related Crashes – Fatigue-related crashes are often more severe than other crashes as drivers' reaction times are often delayed or drivers have not employed any crash avoidance maneuvers. However, the identification of fatigue- related crashes is hindered by the absence of a universally accepted definition of fatigue.

Health Belief Model – explains changes in health-related behavior.

Health Needs Assessment – a systematic method for reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health and reduce inequalities.

Impaired Judgement – medical condition that results in a person not being able to make good decisions because of an underlying medical problem, environmental factors, diet or drugs/alcohol. It is often accompanied by impaired social skills, impulsive or inappropriate behavior. Impaired judgement can be a symptom of a disease or be the primary medical problem and can also result from normal aging.

Levels of Sleepiness related to the ability to drive safely – Studies have shown that going too long without sleep can impair your ability to drive the same way as drinking too much alcohol. Being awake for at least 18 hours is the same as someone having a blood content (BAC) of 0.05%. Being awake for at least 24 hours is equal to having a blood alcohol content of 0.10%. This is higher than the legal limit (0.08% BAC) in all states.



Medical and Work-Loss Costs – medical costs refer to the medical costs associated with the fatal injury event.

“Microsleeps” – a fleeting, uncontrollable, brief episode of sleep which can last anywhere from a single fraction of a second up to 10 full seconds. These episodes of microsleep occur most frequently when a sleepy person is trying to fight sleep and remain awake.

Motor Vehicle Crashes – The unintended crash of one motor vehicle with another, a stationary object, or person, resulting in injuries, death and/or loss of property. MVAs kill 45,000/year—US; 60% are < age 35 and account for 500,000 hospitalizations and most of the 20,000 annual spinal cord injuries, at a cost of \$75 billion/year. Motor vehicle crashes are also known as road traffic crashes.

National Sleep Foundation (NSF) - a U.S. nonprofit organization that promotes public understanding of sleep and sleep disorders. It engages in various activities to advance its purpose and goals, including the operation of several websites and the sponsorship of research.

Poor Concentration – the act or process of lacking concentration.

Poor Quality Sleep – Sleep insufficiency exists when sleep is insufficient to support adequate alertness, performance, and health, either because of reduced total sleep time (decreased quantity) or fragmentation of sleep by brief arousals (decreased quality).

Reaction Time – The amount of time it takes to respond to a stimulus.

Relapse Prevention Model – provides a strategy for anticipating barriers and other factors contributing to participant relapse.

Shift Workers – an employee who is employed in a business in which shifts are continuously rostered 24 hours a day for 7 days a week; and is regularly rostered to work those shifts; and regularly works on Sundays and public holidays.

Signs of a Drowsy Driver – Difficulty focusing, frequent blinking, or heavy eyelids; Daydreaming; wandering/disconnected thoughts; Trouble remembering the last few miles driven; missing exits or traffic signs; Yawning repeatedly or rubbing your eyes; Trouble keeping your head up; Drifting from your lane, tailgating, or hitting a shoulder rumble strip; Feeling restless and irritable.

Sleep Deprivation - not obtaining adequate total sleep.

Sleep Hygiene - a variety of different practices and habits that are necessary to have good nighttime sleep quality and full daytime alertness.

Sleep Hygiene (Healthy Sleep Tips) – Healthy sleep habits can make a big difference in your quality of life. Having healthy sleep habits is often referred to as having good sleep hygiene. Try to keep the following sleep practices on a consistent basis: Stick to a sleep schedule of the same bedtime and wake up time, even on the weekends.

“Sleep Stealers” – Psychological Factors: Stress is considered by most sleep experts to be the number one cause of short-term sleeping difficulties. You're not going to solve all your problems while sitting in bed at night, so give it a rest and get some rest. **Lifestyle Stressors:** Without realizing it, you may be doing things during the day or night that can work against getting a good night's sleep. These include drinking alcohol or beverages containing caffeine in the afternoon or evening, exercising close to bedtime, following an irregular morning and nighttime schedule, and working or doing other mentally intense activities right before or after getting into bed. **Medications:** In addition, certain medications such as decongestants, steroids and some medicines for high blood pressure, asthma, or depression can cause sleeping difficulties as a side effect.

Sleepiness – The state of being sleepy.



Sleepiness Assessment – assess their general level of sleepiness and determine if sleep disorders could be the cause of health problems.

Social Cognitive Theory – focuses on how people learn from individual experiences, the actions of others, and their interaction with their environment

Target Population – the total group of individuals from which the sample might be drawn. A sample is the group of people who take part in the investigation.

Undiagnosed or Untreated Sleep Disorders – Untreated sleep disorders have been linked to hypertension, heart disease, stroke, depression, diabetes and other chronic diseases. ... In fact, the overwhelming majority of people with sleep disorders are undiagnosed and untreated.



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APPENDIX C



Project Team Biographies

Lisa M. Endee

Lisa Endee is a Clinical Assistant Professor of Polysomnographic Technology at Stony Brook University in the School of Health Technology and Management and an affiliate member of the Center for Community Engagement and Leadership Development. She has received two Bachelor of Science degrees, one from Fordham University (1996) and another from the State University of New York at Stony Brook (1999) in Respiratory Care. Lisa is currently completing her final semester of a Master's Degree program in Public Health at Stony Brook University.

Lisa spent the early part of her career at Good Samaritan Hospital Medical Center, in West Islip, NY, where she expanded her knowledge and experience in the field of Polysomnography. In 2005, Lisa advanced to the role of Clinical Coordinator of the Sleep Apnea Center, where she was responsible for the day to day clinical operations of a 6-bed testing facility. During her leadership, she organized the establishment of a satellite 4-bed Pediatric Sleep Disorders Center and led the Sleep Apnea Center to becoming an American Academy of Sleep Medicine accredited facility.

Throughout her clinical career, Lisa maintained her relationship with Stony Brook University, providing over 10 years of service as an adjunct faculty member and Clinical Instructor. In 2012, she transitioned to academia and joined Stony Brook University as a full-time faculty member. Her responsibilities include teaching and clinical oversight of students in the Respiratory Care and Polysomnographic Technology Programs. The many areas of Lisa's expertise include pediatric and adult polysomnography, sleep laboratory management, standards for accreditation, and quality assurance and performance improvement in sleep diagnostics.

Lisa is the author of a chapter in the well-known textbook "Fundamentals of Sleep Technology," has been an item writer for the National Board for Respiratory Care Sleep Specialty Exam, and has co-authored several articles for the American Association of Respiratory Care's Sleep Section. She serves as an active member of numerous professional organizational committees, including the AAST's Membership and Communications Committee, Speaker's Bureau Taskforce, and Fellow Committee.

Lisa's professional areas of interest include patient and public education in the areas of sleep wellness and health. She has been an invited presenter at various community and academic venues, on topics that include sleep diagnostics and therapeutics, the dangers and prevention of drowsy driving, and the effect of digital media on sleep. In addition, Lisa has become actively involved in a Distracted Driving Awareness and Prevention Initiative



under Stony Brook University's Center for Community Engagement and Leadership Development. Her expertise has led to the development of a supplemental Drowsy Driving component that is currently being implemented in several high needs school districts on Long Island. Most recently, through grant funding from the Governors Traffic Safety Committee and the National Road Safety Foundation, Lisa has spearheaded two public health initiatives targeting the prevention of drowsy driving. She led the development of a stopdrowsydriving.org website and launch of a Drowsy Driving Prevention social media campaign (November 2017) to reduce incidence of drowsy driving related crashes and injuries in New York State, and has served as the Principle Investigator of the Stony Brook University Prevention of Drowsy Driving Data Collection, Curriculum Development, Pilot Training and Evaluation Project, from which this curriculum was developed.

Erik W. Flynn

As an Education Specialist in the Health Careers Academic Readiness and Excellence (HCARE) program, formerly the Health Careers Opportunity Program (HCOP), Erik creates educational pathways for pre-college and college age students to pursue careers in the allied health professions. He has demonstrated his skills in program implementation, recruitment and retention, public relations, program evaluation, and grants development support. In order to cultivate a community-University relationship, Erik works with the Program Director to develop and implement HCARE outreach activities in six local school district communities. Since 2010, the success of this program has reached thousands of students in grades 7-12. As an Education Specialist, Erik serves to promote University resources using an interdisciplinary approach through building and sustaining community-University partnerships. Namely, as a flagship of the HCARE program, Erik provides the HCARE Summer Program by serving as the coordinator for academic and faculty presentations, program scheduling, and evaluation. Through a year-round program, Erik continues to collaborate with highly-skilled personnel to deliver these presentations that continue to inspire both individual student and team achievements. Subsequently, Erik has touted these successes through recruitment efforts which have successfully maintained student awareness of college readiness and healthcare awareness activities that have increased high-needs student participation, and further developed positive school community relations with Stony Brook University. Recently, Erik has extended his recruitment efforts through teaching the Stony Brook University undergraduate course, called Introduction to Health Professions, and he has begun a post-graduate certificate in Educational Leadership.



Pamela Linden

Pamela Linden, LMSW, PhD, has extensive experience exploring social systems which intersect social work and law. Dr. Linden is a Clinical Associate Professor in the SBU School of Health Technology & Management and an affiliate member of the SHTM Center for Community Engagement and Leadership Development. She co-authored the OJJDP-sponsored Developing Accountability in the Lives of Youth (DAILY) curriculum for New York State county court teams. Her doctoral thesis was a study of the youth perception of Juvenile Treatment Courts in New York State. As a research scientist at the New York State Psychiatric Institute from 2001 – 2003, she contributed to a study investigating community outcomes of Assisted Outpatient Treatment for individuals with mental illness (Kendra's Law). In 2001, she joined the Stony Brook University School of Social Welfare as a research specialist after spending ten years administering residential and case management programs for individuals with severe and persistent mental illness. Dr. Linden has conducted a variety of evaluation research projects, including a Felony Youth Part in Suffolk County, a BJA funded study of Veteran's Treatment Courts in NYS, a continuing aftercare program for youth returning to NYC from residential substance abuse treatment, and the implementation of a trauma-informed organizational change model for agencies serving youth in residential care. As a training consultant for the Suffolk County Probation Department from 2008-2010, Dr. Linden contributed to an evaluation of alternative to incarceration (ATI) programs as well as conducted numerous training presentations on evidence based practices.

Dr. Linden earned her MSW and PhD from Stony Brook University and completed her training in Veterinary Social Work from the University of Tennessee at Knoxville. Dr. Linden is the first certified Veterinary Social Worker in New York State. At Stony Brook, Dr. Linden developed the first social work internship with Patchogue Rotary Animal Assisted Therapy (PRAAT), a not for profit organization in Patchogue that screens, trains and supports human-dog teams that visit individuals in schools, hospital and hospice facilities. In addition to being an operational consultant for PRAAT, Dr. Linden is the faculty advisor for Stony Brook University's first Animal Assisted Activity student club.

Dr. Linden is a member of the Board of Directors at the Guide Dog Foundation/American's Vet Dogs in Smithtown, NY. She is an affiliate member of the Long Island Veterinary Medical Association and is a member of the National Association of Social Workers. In 2011, Dr. Linden was named Social Worker of the Year by the National Association of Social Workers Suffolk County Division. Dr. Linden has a keen interest in understanding the human-animal bond and its application in health settings.

Russell Rozensky

Russell Rozensky received his Baccalaureate Degree in science specializing in Respiratory Care from Stony Brook University in 1997. He went on to receive an Advance Certificate in



Healthcare Management and a Master of Science degree in Healthcare Policy and Management both from Stony Brook University. Began his career as a staff respiratory therapist working two part-time jobs with one at John T Mather Memorial Hospital in Port Jefferson New York and the other at Southside Community Hospital in Bayshore, New York. In the fall of 1998, Russ received training in the field of polysomnographic technology and was asked to open a sleep laboratory at John T Mather Hospital. He was also appointed as a clinical preceptor for the Respiratory Care Program at Stony Brook University. Russ began working with a single bed and acquisition system performing the studies on weekends, and rather quickly was in need of hiring additional faculty. Beginning in 2000, Russ was asked to provide guest lectures for the Respiratory Care Program on the topics of “Sleep Diagnostics and Therapeutics”.

By 2001, Russ was asked to help design a sleep center that would meet the needs of the community. Russ worked in consultation with architects and the hospital to construct a state-of-the-art four-bedroom sleep center including exam rooms for patients, patient waiting area, office for the physicians, and clerical space. At Stony Brook University he became an adjunct faculty member in the Respiratory Care program teaching 2 courses specifically in polysomnographic technology.

In 2005 Russ accepted a full-time teaching position in Stony Brook University’s Respiratory Care Program where he was to instruct courses and polysomnographic technology to the respiratory care students. In 2008, he spearheaded the application for the certificate program in polysomnographic technology offered at Stony Brook University and was able to receive accreditation by the Committee on Accreditation for Polysomnographic Technologists Education (Co APSG). He was promoted as the program director of this certificate program, and then in 2013 he began the process of shifting the certificate program over to a baccalaureate degree program.

In the fall of 2015, the Polysomnographic Technology Program was approved by the State University of New York (SUNY) as a recognized baccalaureate degree educational program. In the spring of 2016, the program was recognized by the New York State Office of Professions as a recognized program that would recognize graduates as being eligible to become licensed practitioners within New York State. In the summer of 2016, the program received the final accreditation as it official received accreditation from the Commission on Accreditation of Allied Health Educational Programs (CAAHEP), on the recommendation of Co APSG as a Polysomnographic Technology Educational Program. Russ was quite busy with other projects while he was working on the programs enhancement and transformation over the last decade. He has remained extremely active in the professions of respiratory therapy and polysomnographic technology. Since 2003, Russ has been a site visitor for the Commission on Accreditation for Respiratory Care, has been on the editorial advisory board at sleep review magazine, and since 2014 and member of the New York State respiratory



therapy licensing board. He has presented many lectures at the national, state, and local levels over the last 20 years and has published over 20 articles. Russ' main goal has always been to be a dedicated educator for both students and the community in the field of sleep diagnostics and therapeutics as well as respiratory care.

Stephen G. Smith

Stephen Smith received a Bachelor of Science Degree in Respiratory Therapy from Long Island University in 1978 and a Master's Degree in Public Administration with an emphasis in Health Care Administration from Long Island University in 1983. Professor Smith started his career as a respiratory therapist at Queens Hospital Center in Jamaica, NY. In 1980 he accepted a position as a Respiratory Care Clinician at Stony Brook University Hospital and in 1981 was promoted to Assistant Director of Respiratory Care. In 1984 Stephen accepted a position as Director of Respiratory Care at Long Island Jewish Medical Center. In 1985 he became a partner and Vice President of Operations and Clinical Services at Anthony Home Health Care, Inc. In 1995 Stephen left the corporate world to return to clinical practice as the Assistant Director of Respiratory Care at Southside Hospital in Bay Shore, NY. He remained there until October of 2000 when he returned to Stony Brook University Hospital as Associate Director of Respiratory Care. Stephen accepted a full-time faculty position at Stony Brook in 2005 and is currently responsible for teaching the department's cardiology courses. Professor Smith is our clinical liaison to the Long Island State Veteran's Home, which is located on Stony Brook University campus, and has served as Vice-President and President of the school's Faculty Assembly. Professor Smith was appointed as a member of the New York State Education Department Respiratory Therapy Board in 2002, where he was elected as Chair, and now serves as an Extended Member of the licensure board. In 2014 he was elected by the members of the New York State Society for Respiratory Care to a four year term as the Long Island Regional Director and in 2017 was elected by the members of the NYSSRC to a four year term to represent them as a New York State delegate to the American Association for Respiratory Care. In 2015 he received the Jonathan Schwarz "Respiratory Therapist of the Year" Award from the New York Downstate Association for Respiratory Therapy. In 2012 he was recognized for outstanding service and dedication to the Respiratory Therapy Licensure Board and in 2014 he received the Stony Brook University, School of Health Technology and Management Faculty Honor Award.

He has spoken at many conferences, reviewed textbooks, is involved in research, has received research grants and has been published in medical journals. His areas of interest and responsibilities include topics on hemodynamic monitoring, EKG interpretations, cardiac catheterization, treatment of cardiac arrhythmias, cardiac pathologies, cardiac pharmacology, medical ethics and advanced respiratory care techniques. As a dedicated educator, his primary objective is to educate students about the field of cardiopulmonary medicine.



Anna Lubitz

Anna Lubitz is an alumna of Stony Brook University. She obtained her Bachelors of Science in Biology (major) and Music (minor) (Class of 2014), and then continued on to achieve her Masters in Business Administration with a concentration in Healthcare Management, and her Masters in Public Health with a concentration in Community Health (2016). Within her dual masters program, Anna also obtained two advanced certificates in Health Communications and Health Care Management. She is now pursuing to further her education, gaining more experience in research and the dental health care field, with a Masters in Biomedical Science in Oral Biology and Pathology at the Stony Brook School of Dental Medicine. Anna has extensive leadership experience from her undergraduate and graduate academic careers at Stony Brook University. She is the former Undergraduate Student Government President (2012-2013) and former SUNY Student Assembly Executive Committee Representative (2013-2015). In August 2016, Anna was a panelist for the Youth Assembly at the United Nations; she discussed Professional Partnerships, Good Health and Well Being, and Gender Equality (women in leadership).

Anna has been involved with multiple research studies within the Stony Brook University community, including Stony Brook's Heart Center (Catheterization Labs), the School of Marine and Atmospheric Sciences (SoMAS), Stony Brook Medicine's Department of Pediatrics, and Stony Brook's School of Dental Medicine. In 2016, Anna helped contribute to the development of inter-professional workshop entitled, "The First Available Dental Appointment is Next Year..." The project, which was sponsored by the Presidential Mini-Grant for Departmental Diversity Initiatives, brought together students from the School of Nursing, the School of Dental Medicine, and the Department of Pediatric Medicine to learn about the barriers that socioeconomically challenged families face when seeking dental care for their children. Anna was instrumental in developing the workshop's active learning intervention, in organizing registration and programming, and was one of two key speakers. In 2017, Anna conducted a clinical research study under the supervision of Dr. Charles Larsen in the School of Dental Medicine at Stony Brook University (Pediatric Dentistry Department). Her research is focused on assessing attitudes regarding obesity screenings in the pediatric dental setting. Anna will be assessing the attitudes of caregivers of pediatric patients through a survey administered in the Dental Care Center in the School of Dental Medicine and will work on developing specific protocols for obesity screenings and referral for dietary intervention in the pediatric dental setting. Anna joined the Drowsy Driving Prevention Program team as the Project Staff Assistant in November 2017, and is excited to be working on developing and implementing the Drowsy Driving Curriculum, and raising awareness of Drowsy Driving among college age students.



The Center for Community Engagement and Leadership Development

The Center for Community Engagement and Leadership Development (CCE) has as its mission to foster capacity building, health promotion, and social justice through partnerships and projects between Stony Brook University faculty and community members. Its goals include the promotion of community-driven social change initiatives through community-based academic scholarship, incorporating the knowledge, wisdom, and expertise of community members and research faculty to address community-based challenges, and ensuring that Stony Brook University faculty and community members are skilled to develop partnerships, build capacity, and implement leadership strategies to work towards meaningful positive change. For more information visit <https://cce.stonybrook.edu/about>.



PARTNERSHIPS AND ORGANIZATIONS

[NYS Governor's Traffic Safety Committee](#)

[Governors Highway Safety Association \(GHSA\)](#)

[The National Road Safety Foundation](#)

[Stony Brook School of Health Technology and Management](#)

