

**Expanding the scope and vision for the Safety Studies Program--
*A Strategic Planning Initiative for the College Planning Council***

Executive Summary

This proposal aims to expand the scope and vision for the Safety Studies Program at Keene State College by creating the Safety and Health Program Leadership Center. The Center would encompass a new department offering a Bachelors of Science in Safety and Health Program Management, a professional certificate program in Safety and Emergency Management, a graduate certificate in Safety and Health Management, and a graduate program offering a Masters of Science degree in Safety and Health Applied Sciences. If approved, this proposal will create significant organizational change within the Technology Design and Safety Department with the separation of Safety Studies from our colleagues in Architecture and Product Design. The intent behind this proposal is to provide improved visibility for the diverse curriculum and applied research opportunities for potential students and extramural funding agencies and to create opportunity for future growth and innovation for Safety Studies at Keene State College. The faculty in the Safety Studies Program request that the college consider the impact of such an action on our current departmental colleagues and, should our proposal be supported, provide ample opportunity for the Architecture and Product Design programs to leverage their expertise fully within the college.

Expanding the scope and vision for the Safety Studies Program-- A Strategic Planning Initiative for the College Planning Council

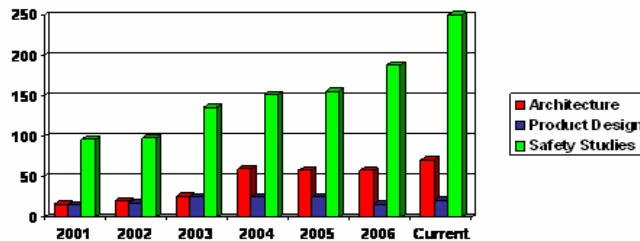
1. Title of Initiative: **Expanding the scope and vision for the Safety Studies Program**

2. Provide a statement of the problem, need or opportunity:

Problem/need:

A. Current departmental structure (TDS) does not provide adequate visibility to our consumers or potential funding sources. In addition, the Safety Studies Program enrollment supports departmental separation.

TDS Enrollment Trends
2001-06 From KSC Factbook Current from Datatel 02/19/07



B. Current program name (Safety Studies) does not fully reflect the mission and opportunities in the program.

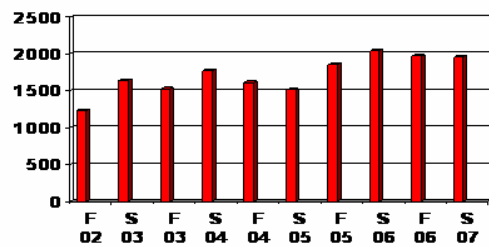
C. Current staffing levels will limit future growth and opportunity for revenue generation within the program

As shown in the figures below, consistent growth in enrollment and credit hours produced per semester in the undergraduate Safety Studies Program will limit opportunity for the program (currently staffed with 4 tenure track faculty) to innovate, seek extramural funding streams, and to develop new curricula.

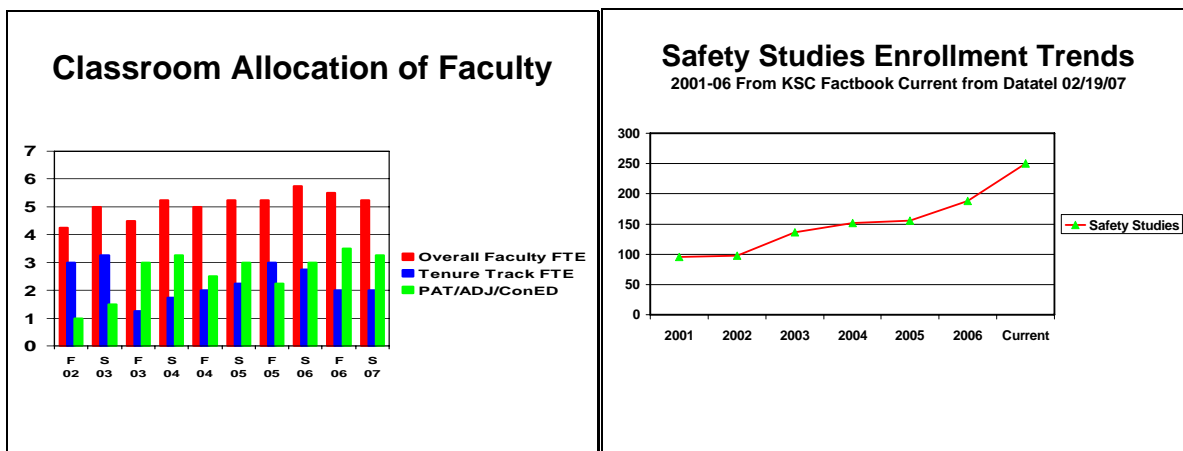
TOP FOUR KSC MAJORS

Does not include Graduate data

Safety Studies
Credit Hours Produced per Semester



- D. Growing demand within practicing professionals and alumni for our program to expand curricular offerings to include post-graduate instruction.¹ The launch of a graduate program within the *Safety and Health Program Leadership Center* will provide new revenue streams for the college.
- E. Demonstrated success in securing extramural funding to expand curriculum and to create technology transfer opportunities for the college has attracted students and created a staffing challenge. The *Safety Studies Program* has secured over 2.9 million dollars in federal grant monies to support applied research activities and curricular development over the past five years. Grant monies have been used to purchase equipment, to offer applied research internship and independent study opportunities for advanced students and to directly benefit the undergraduate education for all majors through classroom enhancements. During the same five year period, the number of dedicated tenure track faculty has remained at four, the number of safety majors has continued to grow, and the classroom allocation of tenure-track and non-tenure track faculty supporting undergraduate education has remained stable. During this growth period, grant funds have been used to provide release time for faculty engaged in applied research with KSC students and the Department Chair has been allocated release time to manage departmental affairs and to direct the Safety Studies undergraduate internship program. Extramural funds have also been used to compensate non-tenure track faculty and staff engaged in classroom instruction in the program. In the current KSC model it is typical for a faculty member in the Safety Studies Program to instruct 70 – 80 students in class each semester, despite a two course release funded by grant awards or allocated through the college for other administrative responsibilities. In addition, faculty in the program are currently responsible to offer advising support for between 30 and 113 students.



¹ The Safety Studies Program developed and conducted a survey of alumni and professionals educated through the OSHA Training Institute. With over 200 responses received—81% indicate interest in pursuing graduate studies at Keene State College

- F. This proposal would create a center director who would be responsible to identify and secure funding to support innovative opportunities, while limiting the grant administration responsibilities for faculty participating in applied research and delivering undergraduate and graduate instruction. An example of the type of innovative opportunity for future applied research is shown in Appendix 1. For the past several months faculty from the Safety Studies Program have been collaborating with community partners, private sector company collaborators, and the college administration in an effort to launch a novel project to create a biodiesel refinery and research center in Keene, NH. It is anticipated that this type of opportunity for technology transfer, community engagement, and student involvement will be enhanced under the proposed reorganization of the Safety Studies Program.

Opportunity:

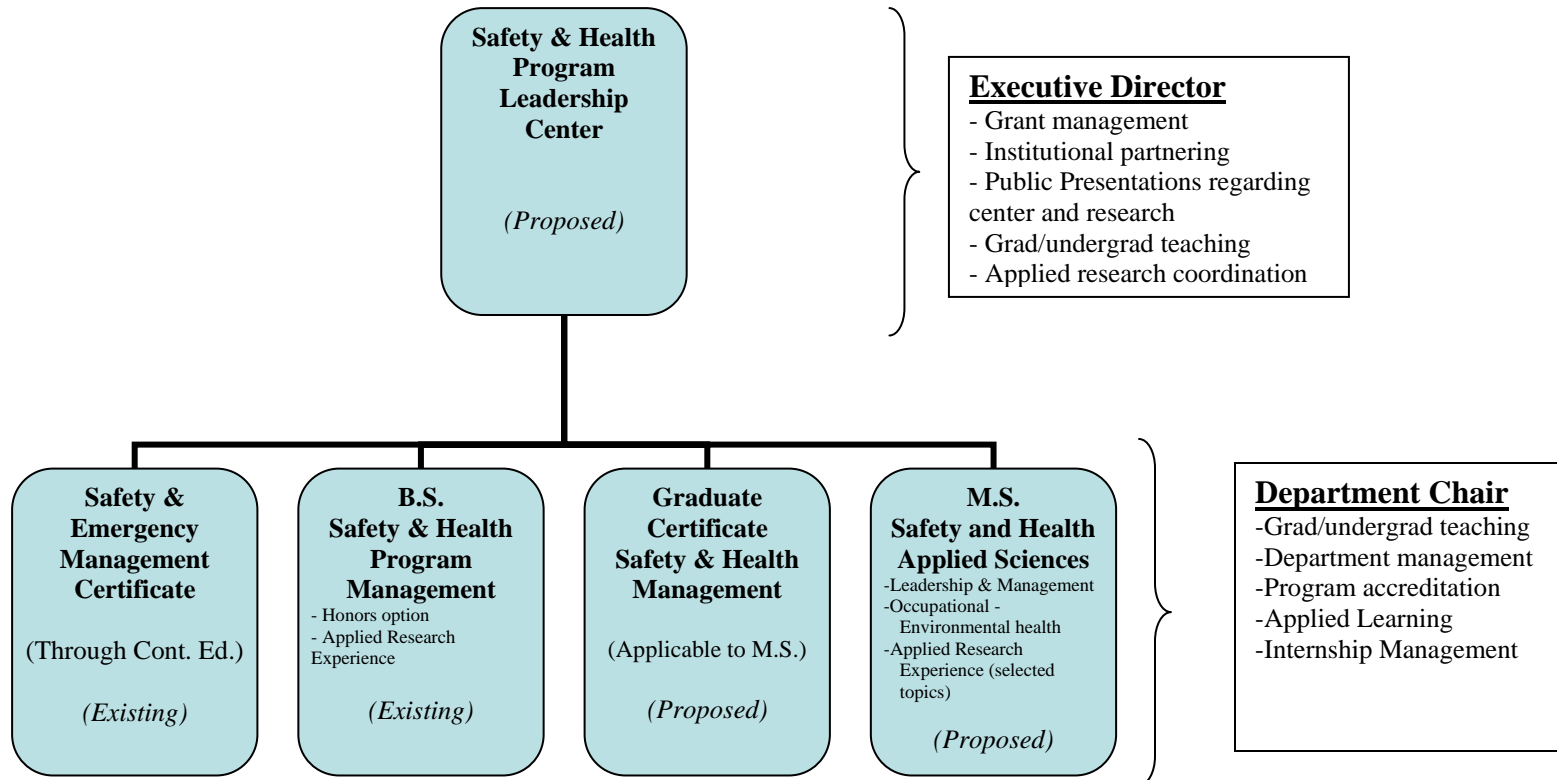
With a history of success funding innovative initiatives that support academic and research excellence, the Safety Studies Program (under the umbrella of the Safety and Health Program Leadership Center at KSC) is facing an opportunity to move from good to great. With this proposal; we aim to continue, and to expand the opportunities for our students to engage in applied learning and service through internships, research, and graduate studies. As in the past, we hope that the college will continue to join us as we engage in this new initiative.

3. Describe the Proposed Initiative:

The overall objective is the creation of a new department and a graduate program. Our proposal is to create the Safety and Health Program Leadership Center. This center would encompass a new department offering a Bachelors of Science and Professional Certificates in Safety and Health Program Management and a graduate program offering a Masters of Science degree in Safety and Health Applied Sciences. This move will allow us to achieve two specific goals: 1) meet the demand for qualified professionals² in the field of occupational health and safety in our increasingly complex world and 2) furthering the research grant opportunities that lead to technology transfer to our communities. We see the future of the program to provide opportunities for:

- Expanding the educational opportunities for students, applied research, and community partnerships to keep students and Keene State College on the leading edge
- Continuing expansion of Keene State's reputation for academic excellence, community service, and scholarship
- Obtaining sustained funding to support student leadership and learning, faculty scholarship, and to develop more prepared professionals to meet the future needs of society
- Enhancing the Safety Studies curriculum that focuses on student needs and integrative/interdisciplinary study as the college moves to a four credit curriculum
- Launching an accredited academic honors track in the Safety Studies Program, qualifying for external recognition by a national certifying board
- Creating a graduate program to expand the educational development in the leadership of safety, health, and environmental sciences at KSC

² Our society is demanding professionals with educational preparation that is grounded in the liberal arts, but with demonstrated technical competencies, critical thinking skills, ethical awareness, and a strong commitment to service and professional community.



4. Indicate the ways the proposed initiative reinforces missions and values, and supports strategic goals and/or evaluative criteria:

Proposals should be congruent with the college's strategic goals, those goals:

1. To significantly enhance and become recognized for the quality of our academic programs and the academic achievements of our faculty and students.

- The center will seek national accreditation of the Honors Track and Graduate Program
- The center will expand efforts to secure extramural funds
- The center will work to support business and tech transfer and to assure program relevance
- The expansion in curricular offerings will increase opportunities for student and faculty engagement, community engagement, and will increase the visibility of the academic programs at Keene State College

2. To clearly and continuously communicate our mission and values in all that we undertake and to foster a strong sense of community on campus in pursuit of academic excellence

The changes being proposed will:

- Provide expanded opportunities for faculty and students to engage more actively in regional and national organizations to share the successes of our work
- To expand interdisciplinary offerings and to introduce new applied research challenges
- To continue to support the state legislature by sharing policy-relevant results of our work
- To work more aggressively to collaborate with local municipalities and state agencies to support initiatives
- To expand our successful OSHA Outreach and Education Training Institute to become a regional and national resource for occupational safety and health education and research

3. To invest in faculty and staff so they can provide leadership for the College's transformation.

- The proposed organizational change will provide an opportunity for an academic program at Keene State College to diversify its curricular offerings, to create new revenue streams to support the college, and expanded opportunities to attract extramural research funds to the college
- Faculty and students will also be encouraged to engage with community and business world through research and service to expand our program's reputation and the regional and national recognition for Keene State College

4. To actively engage our students in a learning process that is grounded in service, citizenship, and ethical awareness.

- We will expand internship, service-based learning opportunities, and undergraduate and graduate research opportunities with this proposal
- Applied research opportunities will continue to engage our community partners and to engage both undergraduate and graduate students
- This proposal will also create integrative opportunities for faculty and students to work together to create innovative solutions for the challenges facing occupational safety, health and environmental professionals in today's world
- To provide high-quality academic programs that are affordable and accessible to a wide range of learners; Safety Studies has been an innovative program throughout its history---offering on-line courses, working with businesses to develop educational opportunities for employees, developing certificate programs for continuing professionals, and contributing to the education of over 20,000 professionals each year through the OSHA Outreach and Education Center. The new graduate program will include innovative curricular offerings for traditional and non-traditional students

5. Describe the action steps----who will do what and when (this can be multi-year steps):

Fall 2006: Proposal of a new four-credit curriculum, an honors track, and graduate level courses for Safety Studies

The Safety Studies Department, during the recent revision to develop a four credit curriculum, identified core competencies for our graduating students. Our four-credit programmatic revision is targeted to ensure our students achieve success in four primary areas of competency: 1) core technical skills, 2) capacity to innovate in the rapidly changing profession, 3) leadership skills to encourage organizational change when necessary for success in this field, and 4) interpersonal skills and attributes essential for success. This organization of core competency areas supported the development of a curricular structure which would established a solid foundation and progressive learning in each of these four areas of competency.

The changes to the Safety Studies curriculum serve to enhance the current curriculum and reflect an intentional design, with assessable outcomes, in each of the core competency areas identified by our programmatic review. The proposed curriculum is structured to provide the knowledge and skills essential for individuals engaged in the practice of occupational safety, health, and environmental program management and the aptitude for these individuals to be lifelong learners and leaders in their profession.

Fall 2006 and Spring 2007: Development of a graduate certificate program and planning for a Masters-level graduate program

A graduate certificate program will be launched. The program is currently being coordinated by a 40% PAT position. Courses will begin during Summer 2007. This program is in direct collaboration with the Office of Continuing Education and Extended Studies and is funded by extramural funding through our Department of Justice Community Oriented Policing Services (DOJ-COPS award). This certificate program is the second program developed under the DOJ-COPS award. These professional certificate programs are developed in close collaboration with both the Office of Continuing Education and Extended Studies and the Occupational Safety and Health Administration's Regional OSHA Education and Outreach Institute in Manchester, NH and employ mixed educational methods, including on-line instruction.

Please see Table #1 for a summary of action steps and a proposed timeline.

Table 1: Summary of Action Steps and Proposed Timeline

	Objective	Sprg 07	Smr 07	Fall 07	Sprg 08	Smr 08	Fall 08	Sprg 09	Smr 09	Fall 09	Sprg 10	Smr 10	Fall 10
1	Survey existing students for departmental program name	X											
2	Electronic survey safety of alumnae & OSHA Ed. students to determine interest in graduate program (very positive response received)	X											
3	Brief TDS Department on proposal	X											
4	Submit Proposal to Planning Council	X											
5	Develop Grad Certificate Safety & Health Management w/ Cont. Ed	X											
6	Launch new 4 credit model		X										
7	Implement Grad Certificate Safety & Health Management w/ Cont. Ed		X	X									
8	Develop Graduate MS Safety & Health Applied Sciences Program	X	X	X									
9	Propose Graduate MS Safety & Health Applied Sciences Program to Department, Dean, Provost			X									
10	Propose Graduate MS Safety & Health Applied Sciences Program through KSC/USNH approval process			X	X	X	X						
11	Determine and fill staffing needs for center						X	X	X				
12	List Graduate MS Safety & Health Applied Sciences Program in Catalog									X			
13	Apply for continuing extramural funds as opportunities when available and match needs	X		X	X		X	X		X	X		X
14	Work with College Advancement Office to secure funding to support initiatives-on going	X	X	X	X	X	X	X	X	X	X	X	X
15	Evaluate and adjust program		X		X			X		X		X	
16	Apply for national accreditation of BS Honors Tract						X						
17	Apply for national accreditation of MS Safety & Health Applied Sciences tract									X			

6. Estimate impact on revenue and/or expenditure of the proposed programmatic changes. Describe funding sources and whether additional funding is required. If applicable, use the attached Initiative Financial Worksheet.

The Safety Studies Program has a history of creating innovative programs and of working with community partners to develop engaging learning experiences and to provide qualified professionals who will strive to improve the health and safety in workplaces and the environment alike. What we are proposing here is smart growth/fiscally responsible growth for the program. There is an opportunity to create new and innovative educational opportunities at Keene State College, an opportunity to connect our programmatic achievements and interests with business partners, community organizations, and other academic institutions through enhanced undergraduate and novel graduate programs. We have been successful in attracting competitive grant funds to Keene State College and have used these funds to enhance educational opportunities and experiences for our undergraduate students. In the past five years, the Safety Studies Program faculty have received \$2,984,000 in extramural funds. These funds have been used to complete targeted research activities, to purchase new equipment for the college and the department, and to expand educational opportunities and to offer curricular enhancements. In addition, these monies have supported the release time for one faculty member and have supported four full-time equivalent staff in the department. These individuals have contributed to the research activities and have instructed courses in our undergraduate program.

This success has brought recognition to the campus and has been concurrent with increases in the number of undergraduate majors. Current staffing levels limit the capacity of faculty engagement in seeking and directing extramural research projects. Those faculty interested in securing and directing applied research projects are limited in their capacity to do so given the teaching expectations. This proposal, by creating a director for the center, will ensure a dedicated faculty presence to secure funding to support activities that directly benefit the undergraduate program, certificate programs, and graduate program offerings. The director would work closely with faculty to ensure that all interested parties can engage in applied research and directly connect their research to classroom instruction. The director would be responsible to work with the Office of Sponsored Projects and the Business Office to administer all grants received. It is anticipated that this focused faculty direction will provide for more opportunities, with limited time expectations, associated with the grant funded research for faculty in the program.

In addition to expanding the opportunity for revenue from extramural grant applications, this proposal will provide new revenue through an expansion of certificate program offerings and through the launch of a Masters degree in Safety and Health Applied Sciences. With 81% of alumni and those participating in KSC OSHA Training Institute courses we surveyed expressing interest in graduate program in Safety and Health Applied Sciences at Keene State College, we anticipate revenue from this program could be significant.

This proposal seeks: 1) the appointment of a Director for the *Safety and Health Program Leadership Center* and 2) funding for 1.5 FTE staff positions to continue to support our undergraduate instruction and the launch of graduate certificate offerings as we develop long-term funding strategies for the Center and the associated programs. The Director would be expected to secure extramural funds or other support for the undergraduate and graduate instruction offered through the Center. This Director would also be expected to teach one course per semester at the undergraduate or graduate level in the program. This would obligate a two-course release per semester for this faculty member. It is anticipated that the position would be supported by extramural funding or revenue from programmatic enhancements within five years. It is anticipated that the staff positions would be supported by extramural funding, by the Office of Continue Education and Extended Studies, or by revenue from programmatic enhancements within three years.

7. Identify outcomes of the initiative and how it will be measured or documented.

Named outcomes: Separate and rename the department, seek more national recognition, increase extramural revenue and applied research opportunities, and launch a graduate program.

- The undergraduate degree will be renamed by Fall 2008
- Accreditation of honors undergraduate program will be achieved within three years
- Graduate program proposed, with articulation agreements with partner institutions such as: UNH, Antioch New England, or UMASS-Lowell Ph.D. programs and curricular coordination with Plymouth State University's Environmental Health M.S. program, within five years
- Increase the number of students participating in applied research and honors study at the undergraduate level from ~10 per year to 15 per year within three years
- Enroll 10-12 students per year in a Masters Program within five years
- Increase the number of service learning/internship experiences for our students, striving to target that 75% of our undergraduate majors participate in this type of learning experience within five years
- The Center funding will contribute to certificate and graduate level staff compensation within five years
 - Anticipate offering 2 graduate program courses per semester and 2-4 additional courses each summer
- Secure NIOSH/NSF curricular undergraduate and graduate fellowship training and education program funding within four years
- Opportunity for future growth of individual TDS programs within the college over the coming years

Appendix 1

KSC COOPERATIVE BIODIESEL PROJECT

Premise: To create and develop operations for a “Not for Profit” New Hampshire-based organization that will refine biodiesel fuels. Fuel will be made using waste vegetable oil from Keene State College and the surrounding area. The intention is for this collaborative venture to provide a self-sustaining fuel source. Waste will be collected from the college and the city restaurants and fuel will be returned to the college and city for use in fleet operations and heating. Sources of additional regional waste oil may be needed if demand for biodiesel climbs too high.

The business development and fuel production processes could provide robust instructional opportunities for the School of Professional and Graduate Studies (Management and Safety Studies) and the School of Sciences (Chemistry and Environmental Studies). This venture will also support expansion of the current collaboration between KSC and the City of Keene evaluating the policy and public health benefits of burning biodiesel. Funds will be pursued to support first in the nation emissions and exposure assessment research evaluating various biodiesel blends.

Funding for the start up costs will be through philanthropic donations and external grant awards. Once established, the operation will be self supporting as the fuel is sold. Fuel cost per gallon will be substantially reduced (~50% lower than current cost) for the municipal fleet and the KSC equipment fleet. In addition, this fuel could be burned for residential and industrial heating applications, significantly reducing the energy costs for the college and city.

Benefits:

College

- Reduced waste disposal costs
- Low cost fuel for heating and fleet power
- Research and education center
- National prominence and publication opportunities
- Technology and public health policy relationship with local businesses, the community, and industrial partners

City

- Low cost, readily available fuel
- Reduced emissions and public health benefit
- Expanded relationship with local businesses, the community, KSC, and industrial partners
- Recognition as environmentally conscious
- National prominence—1st in the nation

Batchelder Bio-Diesel

- National prominence
- Local, public, private collaboration
- Financial return on investment for venture start up
- Opportunity to prove feasibility and expand nationwide

Restaurants

- Elimination of waste oil disposal costs
- National prominence
- Tax savings for donations to the City of Keene
- Certifications and financial incentives for participating restaurants

Partners:

What does Batchelder Bio-Diesel bring to the Operation?

- Proven Process for transferring waste to fuel.
- Equipment and facility knowledge.
- 50 years engineering experience.
- Payment of services over successful completion of project from savings.

What does Keene State College Bring to Operation?

- Connections to the City of Keene (obtain a “Letter of Intent”)
- Connection to philanthropic contributors
- Knowledgeable faculty and staff
- Past research with biodiesel
- Grant application development expertise
- Sources of waste
- End user of the fuel product
- Research collaboration and national advocacy

What does City of Keene Bring to Operation?

- Letter of Intent to use fuels for extended period
- Experience as a nation leading Green City
- List and contact to all generators of waste in local area.
- List of all city and county users of fuel.
- Local, regional, and national advocacy for the project

Slide 1

**Closing the Sustainability Loop:
A vision for Biodiesel Production and
Research in Keene, NH**



Ms. Nora Traviss Velazquez
Dr. Melinda Treadwell
Mr. Chris Langille

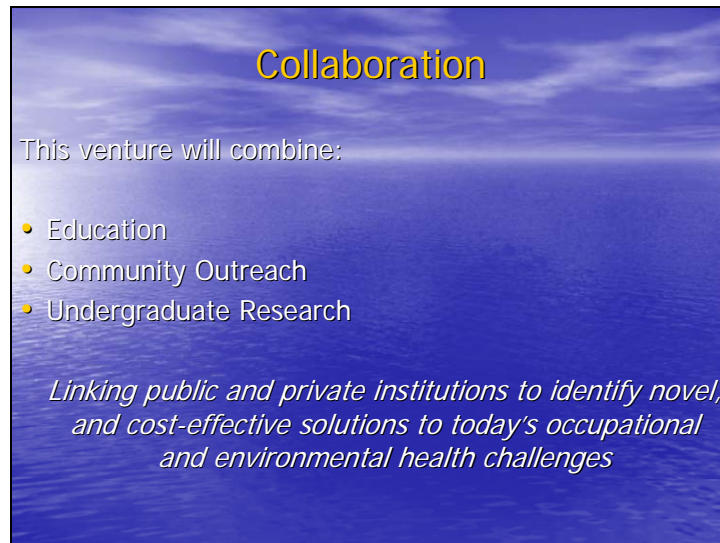
Slide 2

What is the Proposal?

Batchelder Biodiesel Refineries (BBR), the City of Keene, and Keene State College will collaborate to:

- **Produce** biodiesel from waste oil collected throughout the City of Keene
- **Supply** biodiesel (at reduced cost) to City of Keene and Keene State College
- **Create** a research and testing laboratory
- **Expand** undergraduate research to investigate the health and environmental impacts of biodiesel combustion

Slide 3



Collaboration

This venture will combine:

- Education
- Community Outreach
- Undergraduate Research

Linking public and private institutions to identify novel, and cost-effective solutions to today's occupational and environmental health challenges

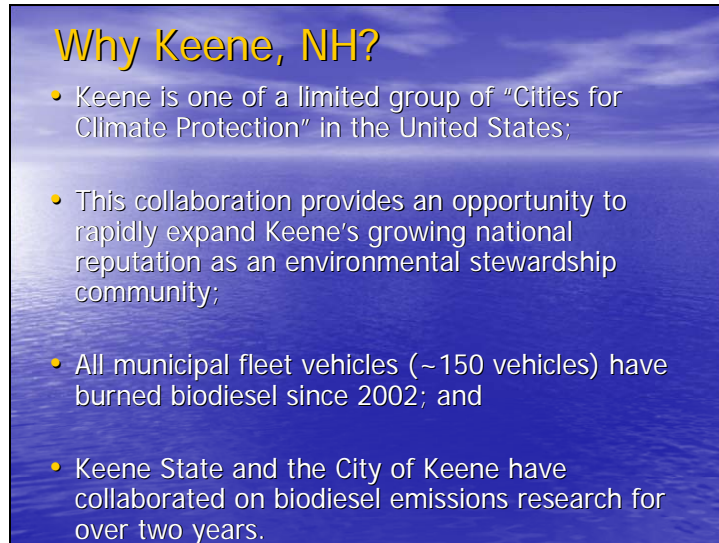
Slide 4



Why BBR?

- New Hampshire based company that has been refining biodiesel for over one year;
- A company with successful collaborative ventures with KSC Safety Studies and Product Design Department faculty and students;
- A Company with over 60 years of automation and engineering experience; and
- A group that specializes in breakthrough technologies, manufacturing, and quality control processes.

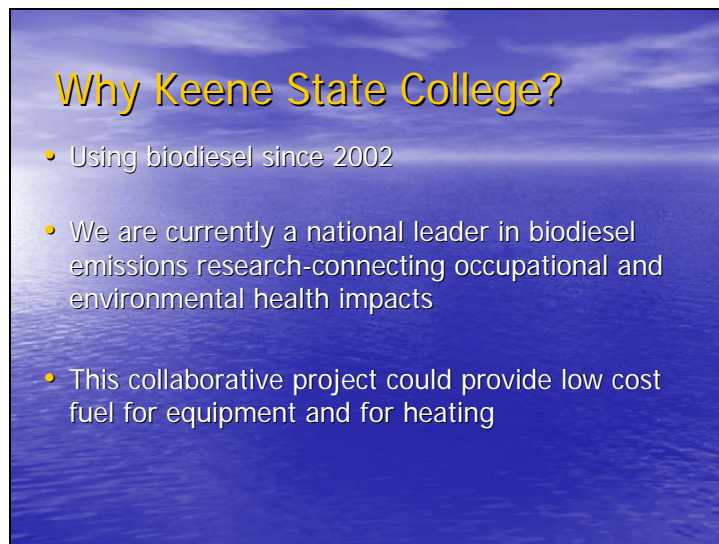
Slide 5



Why Keene, NH?

- Keene is one of a limited group of "Cities for Climate Protection" in the United States;
- This collaboration provides an opportunity to rapidly expand Keene's growing national reputation as an environmental stewardship community;
- All municipal fleet vehicles (~150 vehicles) have burned biodiesel since 2002; and
- Keene State and the City of Keene have collaborated on biodiesel emissions research for over two years.

Slide 6



Why Keene State College?

- Using biodiesel since 2002
- We are currently a national leader in biodiesel emissions research-connecting occupational and environmental health impacts
- This collaborative project could provide low cost fuel for equipment and for heating

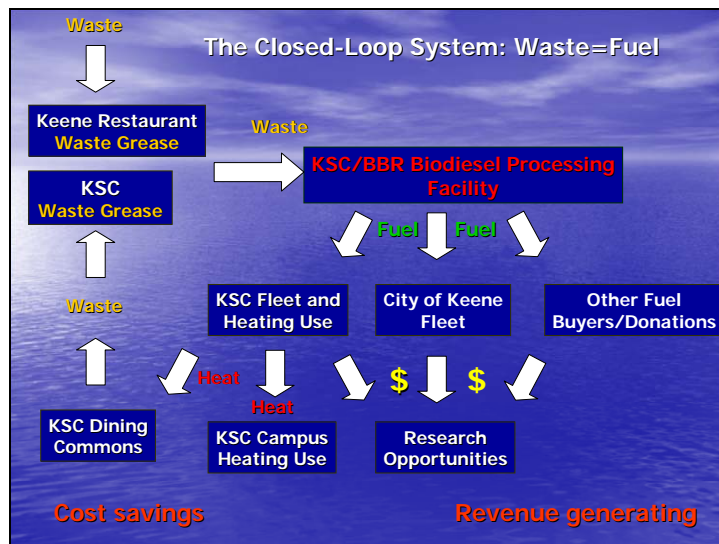
Slide 7

However...

- While both KSC and the City of Keene are using biodiesel (B20 and/or B100)...they are importing it from out of state (the Midwest)

Opportunity exists to close the loop by both using biodiesel AND making it locally

Slide 8



Slide 9

Educational Opportunities

- Sustainability – pioneering “closed loop system”, 1st in nation to make AND use on-site/intra-community
- Safety Studies courses: *Hazard Assessment, Industrial Hygiene, Environmental Regulations, Fire Safety, Safety & Health Standards*
- Technology courses: *Manufacturing Processes, Product Design*
- Environmental Studies
- Chemistry
- Elementary/Secondary Education: developing curriculum for local K-12 schools
- Community outreach and education

Slide 10

Undergraduate/Community Research Opportunities

- Safety Studies/Exposure assessment –
 - Control of % biodiesel blends – from 5 to 100%
 - Expand current national leadership in research
- Environmental studies
- Future partnership with UNH/UVM? – evaluate feasibility of growing oil feedstocks, testing exposure

Slide 11

What's Unique?

- High end manufacturing process-not a "kit"
- Quality assured product (ASTM certified)
- Sustainable/closed loop system (community service)
- Not a demonstration project
- First in the nation status
 - Community supported partnership



Slide 12

Challenges

- Funding
- Administration/organization of public/private partnership
- Location
- Staffing
- Establishing confidence in biodiesel quality