Summary:
When Barry Hall was first conceived, a Trading Room (Financial Trading Room) was included. Due to funding, this room was eliminated from the plan, or at least deferred. Since then, employers that met with faculty indicated their interest. Based on this, the Vice President (VP) of Academic Affairs indicated that he would provide a dedicated room for this purpose, if we had industry support for the program. Consequently, we sought support, received it and since then, the new VP has created a dedicated room for this purpose.

NDSU Agribusiness is now developing a Commodity Trading Room and Financial Laboratory (CTR). The major goal of the CTR is to provide a laboratory for teaching about risk related to commodity marketing and financial analysis. NDSU has had a growing focus in commodity marketing, finance, and risk and is planning to expand its expertise.

The CTR will focus on risk, commodity trading in addition to finance, portfolio analysis, and management. All aspects of risk will be taught using facilities/technology in the CTR. The technology of the trading room includes financial/market information from Bloomberg and DTN-Prophet, trade simulation from Trading Technologies, and numerous supplemental programs and services germane to the initiative.

The CTR is being supported by contributions from numerous employers, including ADM, CHS, Gavalon, amongst others, and all the major commodity groups (wheat, corn, and soybeans) in North Dakota. Construction has recently been completed and Information Technology Services is in the process of installing the information technology. It is expected to be integrated into teaching during the 2012/13 school year.

Funds have been raised from varying sources to kick-off development of the room and teaching initiative. Specifically, funds are available to support the room construction, furnishings, and equipment, and for operation of the CTR for a number of years.

An endowment has been approved by the Development Foundation to support the continued annual operations of the CTR. Additional funds will be sought to 1) expand the scope of the initiative; 2) support scholarships; and 3) a partial endowed professorship in commodity risk.

NDSU Expertise in Commodity Risk and Management:
Risk has evolved to be very important in virtually all aspects of agriculture. This initiative focuses on risk, in part because of its importance to the sector, but, also, it would complement activities of 4-5 other faculty wanting to work more in this area. There is sufficient demand in this field to accommodate more effort and allow us to build an area of expertise.
Risk is a dominant issue in all aspects of agribusiness including risks related to price, yield, weather, competitors, technology, food safety, etc. The impact of risk is to result in more volatility in profits throughout the sector.

Agriculture is now 3-4 times more risky than in the 1980s and expected to continue for 8-10 years. It affects all aspects of agriculture and agribusiness, large and small growers, technology development, input suppliers (production risk), agricultural finance (financial risk), farm programs and crop insurance (farm safety-net risk), logistics, exporting/trading, and domestic and off-shore buyers (market, quality, strategic, risk), food safety (food risk, testing risk, etc.), the rapidly growing biofuels sector (including investment analysis, technology development, firm-level risk management, contracting, etc.), and is a major focus of future farm policies. The common core of each of these is the importance of risk in the function, the need to measure and analyze factors contributing to the risk and to evaluate strategies to mitigate the exposure to risk.

There are five faculty in Business and several in the College of Business Administration (CBA) that focus on risk in varying aspects of their teaching, research and outreach. In addition a portfolio management club manages the Bison Fund and competes regionally. Agribusiness now has defined three courses at the undergraduate level, and two at the Master of Science (MS) level focusing on risk, and, has developed a ‘Certificate of Risk Analysis’ that can be earned by MS students across majors.

Faculty in Agribusiness have extensive research, teaching and outreach in these areas. The project is being led by Dr. Wilson who is a University Distinguished Professor. His focus is on risk and strategy. He teaches courses in risk and strategy, at both the Bachelor of Science (BS) and MS levels. He also teaches an annual course (now three times per year) on risk management to world buyers. These courses are routinely at capacity. His research is on risk and strategy for technology investments in agriculture, logistics, and trading. He regularly teaches or makes presentations abroad including regular projects in Australia, Russia, Mexico, amongst others. He consults with major agribusiness firms on topics related to the above and has worked extensively in the following industries: procurement strategy, railroads, barges, ocean shipping, and elevators (shuttle development) malting and beer, durum and pasta, wheat and bread, and biotechnology. He routinely has projects and/or overseas clients and travels internationally extensively. He served as a Board member of the Minneapolis Grain Exchange for 12 years, on the FGIS Advisory Board, and currently serves as a Board member of several regional firms. He was recognized as one of the top 10 Agricultural Economists in 1995.

In addition, Agribusiness has several newer faculty working in these areas. Dr. Saleem Shaik teaches the undergraduate course in risk analysis, a graduate course in risk analysis and measurement as well as analytical methods incorporating risk. His research focus is production risk, financial risk, and policy risk with an emphasis on crop insurance which has emerged to be critically important to North Dakota and the entire agricultural industry. This includes evaluating the demand for new insurance products, asymmetric issues and importance of crop insurance on efficiency and productivity using farm level as well county level analysis. He is one
of the notable experts in these fields. Dr. Ryan Larsen teaches financial investments inclusive of how risk impacts investment decisions and how to accurately measure risk. His research is on risk strategies in agriculture and banking, investments, and geographical diversification for both farmers and specialty crop processors. Specifically he is looking at how to more accurately measure and manage risk in investments, as well as geographical diversification. Dr. Frayne Olson leads the outreach program in areas of risk and risk management.

These faculty regularly train students in these areas. As a result there are numerous former students throughout the industries that have training from NDSU. Finally, he has students who are in senior positions in a number of the large agribusinesses including commodity companies, railroads, and food and beverage companies. NDSU has placed many students in positions working in varying aspects of risk (commodity risk management, hedging, and crop insurance). In many cases they have evolved into Sr. Managerial positions in many commodity companies in the United States and around the world.

Indeed, in its letter supporting their contribution to NDSU, one of our major sponsors indicated

"..... NDSU has a long tradition of preparing students for the complex world of agricultural commodity trading, and we are pleased to help them continue this leadership with our investment in the Commodity Trading Room. We are confident it will help develop the next generation of industry leaders."

Project Overview and Scope:
Overview: Many Business Schools in the United States are now incorporating varying forms of Financial Trading Rooms as an integral part of the curriculum and training. NDSU had always planned a trading room and now it is moving forward.

Goal: The major goal of the Trading Room is to provide a laboratory for teaching about risk related to financial analysis and commodity marketing.

There is substantial employer interest for expanded training in areas related to risk, financial analysis and commodity marketing. Specifically, the major goals of the initiative are

1) Increasing enrollment among students wanting to pursue a career in commodity trading (broadly defined);

2) Enhanced educational opportunities by providing state-of-the-art teaching platform; and

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1 Examples include all of the major business schools including: UND, U of Minn., Tulane, University of Denver, Cornell University, Florida State University, The Johns Hopkins University, Northwestern University, Penn State University, Purdue, Rice, University of Colorado-Denver, University of Chicago, University of Houston, University of Illinois, University of Illinois at Chicago (UIC), University of Iowa, University of Michigan.

NDSU is being modeled after that at Tulane. U of Colorado recently announced a like initiative.
3) Escalating the sophistication of training for current students. Indeed these firms have already made varying forms of commitment to support the operations of the room.

Student Focus:
The focus of the initiative is primarily on student training, though technically the CTR also can serve as a laboratory for researchers in areas related to commodity and financial markets.

The teaching focus will be at both the BS and MS Levels. The primary goals in teach are summarized in the Table below. The items are listed in rank order of importance:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Commodities</th>
<th>Financials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information sources, and the flow of information in commodity marketing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Data sources, extraction and analysis.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Portfolio Analysis</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Incorporate market information and data analysis into making marketing decisions</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Risk Analysis</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Hedging decisions</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Trading and trade execution: electronic mechanisms including the future price ladders, market depth, etc.</td>
<td>2</td>
<td>2</td>
</tr>
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</table>

To fully exploit the advantages of the CTR, the curriculum will need revisions. Initially, the teaching will encompass adapting current courses where and as appropriate. In Agribusiness, this would include about four courses per year. In the CBA, there are 2-3 courses per year where the CTR could be used initially. These would/could include courses in areas related to Speculative markets, Investment analysis, Courses on portfolio analysis and international finance. It is important that in many cases, courses would be taught conventionally, but, assignments would be provided requiring use of the CTR for information and analytics (i.e. the CTR is a lab for finance and trading courses).

For agribusiness, the primary focus of the trading room will on trading mechanisms and strategy, risk and logistics. NDSU will be the first school having such capabilities with a focus on agriculture and the biofuels sector. For the College of Business, the trading room will provide a state of the art facility like exists now at most competing schools. It will be used for teaching courses in finance and portfolio management, derivatives, etc. Finally, the NDSU Portfolio Club will use the CTR to manage the “Bison Fund” and also participate in regional competitions. In the past, this club has not had easy access to this type of tool. Through the CTR, the activities of this club will be greatly enhanced. Indeed, they held their first meeting on October 1 and the room was both full, and, also full of excitement.
Over time, the curriculum would be adapted to more fully utilize the CTR, at least within its capacities. Most important would probably include development of a lower level introductory course in Derivative Markets (futures, forward and option markets), a higher level course in portfolio analysis and management, and several courses in risk measurement and management (the latter two are already under development in Agribusiness).

In total the number of students prospectively using the CTR would include virtually all of the students in Agribusiness and Applied Economics, and a portion of the students in the College of Business Administration focusing on financial markets.

Scope:
The scope of the initiative is broadly defined as the economics of risk analysis and management as applied to commodity marketing, and financial analysis including portfolio modeling and investment decisions.

The primary focus, at least initially, will be in areas related to commodities (inclusive of agriculture, biofuels, and eventually energy, amongst others). In part this is due to the source of funds for current support for the project, and importance to NDSU and the region. As focus and interest grows, the scope would be expanded to portfolio analysis and financial risk.

All aspects of risk will be taught using facilities/technology in the CTR. This includes: commodity market risk management for age, energy and biofuels, production risk management, risk measurement, etc. as well as extensive teachings on options and other derivative markets. The room would also be available for teaching of portfolio management and decisions, investment decisions in stocks/bonds, and fixed income.

The research focus of the initiative will generally include financial analysis of decisions related to risk, commodity marketing, and portfolios. Examples include: commodity market risk management for age, energy and biofuels (including hedging, pricing, logistics, etc.), production risk management; insurance (e.g., crop insurance); risk measurement (NDSU now teaches courses in how to measure risk related to these decisions); analysis of options (financial and ‘real’) and other derivative markets and decision making; and investment decisions in stocks/bonds and fixed income.

Substantial demand exists for outreach in risk analysis using the CTR. The NCI is a current funder, and we currently teach three week courses on risk in commodities, and have been asked to teach like courses for mid-career managers at a number of agribusiness companies. Thus, risk and trading are the primary focus of the activities of the room.

These areas are critical in Midwestern age, energy and other commodity sectors, as well as all aspects of financial risk management.
**Expanded Scope:**
There is potential to expand the horizontal and vertical scope of the initiative. One would be to expand the scope into more commodities and/or more in-depth analysis of existing commodities. Currently, the focus is on agricultural and related commodities (e.g., biofuels). However, notably missing is energy which has escalated in importance to North Dakota’s economy. Second, would be more intensive work in risk. Currently, the focus would be on all aspects of price, insurance, and financial risk. There are many more areas of risk, notably derivative instruments, and other hybrid-types of instruments.

The CTR initiative could also be expanded to include more areas of financial and portfolio risk analysis and modeling. This would be a natural and obvious area of expanded effort and would be comparable to that which exists at many other Business Schools. Indeed, the technology in the CTR would similarly facilitate work in these areas.

**Regional Community/Industrial Interest:**
Since its inception, there has been a great deal of interest in this project. To date there have been very positive press reports in both local media, as well as at the national level (Forbes, and Associated Press).

During the fall of 2012, there has been (is) a number of notable visits to learn of the activities and plans for the CTR. In all cases, the project is described, and we give a tour through the information technology of the room. In all cases, they are impressed. These groups include:

- Sept 12  ND Trade Office tour
- Sept 13  CBA Accounting/finance advisory committee
- Sept 14  SBARE (State Board of Ag Research and Ext)
- Sept 17-21  NCI Grain Procurement course
- Sept 27  ND Stockman’s’ Assoc. meeting
- Oct 6  Homecoming and tour with CoBank Sr. Vice President, Al Schuler
- Oct 8-12  NCI Soybean procurement short course
- Oct 27  Visit by president of CHS (major donor) at Harvest Bowl
- Oct 29  Barry Foundation Board Meeting
- Oct 30  Tri-College Deans of Business hosted by Mr. Barry
- November  Plans for local CFA association meeting
- November  Industrial Commission (a major supporter for risk management biofuels).

**Technical Features:**
The CTR is a high-technology room with live information feeds from financial (including equities, credit, forrex etc.) and commodity markets (including agriculture, energy, and biofuels) and includes the ability to analyze portfolios, trading strategies, and risks. All of these
are important in North Dakota and the region. Most Business Schools have financial and trading rooms. Developing a trading room in Barry Hall will provide similar training and research opportunities for NDSU students and faculty.

The Trading Room was modeled after that at Tulane. Its focus will include: finance, portfolio analysis and management, risk, and commodity trading. The technology of the trading room will include financial/market information from Bloomberg and DTN-Prophet, trade simulation from Trading Technologies, and numerous supplemental programs and services germane to the initiative. Bloomberg is more common in the financial industries, and DTN is more common in the commodities, energy, and biofuels markets.

The project entails a high-technology room with live feeds to markets and financial information. Technically, the room will have: 32 work stations (20 DTN and 12 Bloomberg) for adopting information/trading technology, in addition to Trading Technologies, an electronic trade execution platform.

Below would be an example of a screen shot of these technologies on the PC work stations.

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2 See below for reference
http://www.freeman.tulane.edu/energy/trading1.php
http://www.freeman.tulane.edu/energy/trading2.php
www.freeman.tulane.edu/energy/trading5.php
http://www.freeman.tulane.edu/trading/default.php which includes a video of their competition they host among universities

Simulation software from Trading Technologies (below is a screen shot) will be used which provides capabilities of conducting live and re-play simulations in any of these markets.

Room Design/Structure:
A dedicated room on the first floor has been selected, Barry Hall 124, for the CTR. The room was retro-fitted to make it highly visible and accessible.

Below are early renditions of the room. It contains 32 work stations each with dual monitors.
The drawing below shows the plan with near perfect colors.

Below is a view from the interior wall in which 2 large windows, to match the Barry Hall Board Room, were installed with operable shades. They also match the exterior walls on the north side of the room.
Below are pictures of the Trading Room as completed. One to the east wall, the other to the south wall.
**Funding To Date:**

There has been a high degree of interest among employers and alumni since the inception of the project. As a result, funds have been received from varying firms and organizations. These include: varying NDSU sources; major NDSU employers including ADM, CHS, Gavalon, The Rice Trader (Jeremy Zwinger) and George Schuler (Minn-Dak Breckenridge), in addition to all the major commodity groups in North Dakota (ND Corn, ND Soybeans, ND State Wheat Commission and the NCI). These contributions are important, and reflect the high degree of interest in the project.

It is also important that all of the funds received to date are from agricultural interests. Sufficient funds exist from these sources to support the operation of the room for 6-8 years. These are being used to commence implementation and operation for the initial period. These surplus funds will be included in the endowment once it is established.

**Other Plans for Launching the Commodity Trading Room:**

Below are a number of related items toward further launching of the Commodity Trading Room:

**Name:**
The alternative that seems to best describe the scope of the project is:

*Commodity Trading and Financial Lab*

There is space above the windows in the hall way to place the name.

**Recognition:**
The intention is to use plaques identical to those used in the east entry of Barry Hall. Space is provided in the outside hall-way wall for this. These will list names of current donors, and leave space for future donors.

**Dedication/Grand Opening:**
The intention would be to have a grand opening and dedication sometime during the 2013 spring semester. This would be concurrent with the room being fully operational, allow time to invite special guests, and concurrent with further progress on the funding initiative.