1. Introduction
Recent years have been witness to a significant growth of meteorology in the private sector. Although this growth has offered many new opportunities for meteorologists, the typical meteorological curriculum does not explicitly prepare students for these new opportunities. At the University of Wisconsin-Madison, in the Spring 2000 semester, a seminar course entitled “The Business of Weather” was offered to undergraduate and graduate students in the Atmospheric and Oceanic Sciences Department. This seminar course, created by graduate students, was designed to familiarize students with the growing opportunities within the private sector, with an emphasis on the rapidly growing weather derivatives market. The course contained a combination of student presentations and guest speakers. The guest speakers included participants from energy companies, financial institutions, airlines, agricultural technology, and private forecasting companies. Student run discussions included topics such as the role of the National Weather Service vs. the private sector, economics of climate change, and the weather sensitivity of industries such as insurance, transportation, and agriculture.

2. Motivation and Preparation
Graduate students within the Atmospheric and Oceanic Sciences (AOS) Department conceived the idea for the course. The weather derivatives market was first introduced to the AOS graduate student community when, in April 1999, a colleague left the AOS department for a new career in weather derivatives. Intrigued by the application of atmospheric science to the business world, the graduate students approached the faculty about a seminar focusing on this topic. After receiving departmental approval for the "Business of Weather" seminar course, graduate students began researching the field and contacting potential speakers. The seminar course was scheduled for the spring semester of 2000. One of the graduate student coordinators attended the AMS short course on "Becoming a Weather Entrepreneur" in January 2000.

3. Organization and Expectations
Nineteen students, consisting of 1 sophomore, 9 juniors, 4 seniors, and 5 graduate students, enrolled in the seminar course. The course was taken for one credit, and met once a week for one hour. Students taking the course were expected to attend all the seminars, contribute to class discussions, and participate in a group presentation. The group presentations consisted of three or four students, who were expected to use visual aids in their discussion of a topic they thoroughly researched. A course web page (http://mocha.meteor.wisc.edu/Wx_bus/main.html) was developed that included student expectations, a calendar of presentations, and links to relevant sites. A faculty member served as an advisor for the course, which was run by graduate student coordinators.

4. Course Content
The first day of the course focused on a class discussion about what industries are highly weather sensitive. The discussion was followed by a video from the AMS on "Becoming a Weather Entrepreneur". Guest speakers were an essential component of the course, accounting for two-thirds of the seminar series. The first guest speaker, Prof. Donald Hester of the Economics Department at UW-Madison, introduced the students to basic financial instruments used to hedge weather risk. Mark Russo, a meteorologist with Salomon Smith Barney, discussed how he uses meteorological insight to support financial interests. Brad Hoggatt (Aquila Inc.) and Kevin Green (formerly of Castlebridge Partners) both gave talks on their experiences as scientists within the weather derivatives industry.

Various components of the meteorological private sector were represented by speakers. Charlie Shortino (Weathernet, Inc.) shared his experience in starting up a private forecast company supporting construction and power companies, snow removal outfits, and ski resorts.
Mr. Shortino also spoke of his experience as a forensic meteorologist. Terry Kelly, founder of Weather Central, gave a history of the company and discussed its increasing role in weather communications. The role of operational meteorologists in aviation was covered by Tom Fahey, Manager of Meteorology at Northwest Airlines. Bill Bodine (mPower3) gave a presentation entitled, “New Weather Technology Products for Agricultural Decision Making Support”.

The student presentations were assigned in areas that would enhance their understanding of the financial role of weather on society. The topics covered by students were: weather derivatives, weather and transportation, weather and agriculture, weather and insurance, and the economics of climate change. Students also participated in a debate centered on the role of the National Weather Service vs. Private Industry. The students were provided with reading materials on this topic and divided into two groups representing the interests of the private sector and the NWS. The debate moderators posed questions to the students such as: "Does the NWS compete with private industry?", "Should weather information be free to the public?", and "Is the elimination of NWS forecasters a realistic and appropriate goal?".

5. Student Feedback

At the end of the semester, the students were asked to fill out a course evaluation. Students evaluated course components on a scale of 1-5, with 5 being the best. Overall the seminar course received a mean score of 4.1. Students were also asked to write comments. Here are a few representative comments:

"The weather derivatives speakers, by-and-large, were very interesting."

"I have a fuller understanding of how weather affects the economy."

"I came in with no previous knowledge and learned something about the impact of the private sector."

"I would recommend it (the seminar course) to people who were interested in economics, even business majors."

"Some of the speakers talked over our heads but it was interesting."

"Would have liked to have seen how weather affects the entertainment industry."

"It gave me some exposure and insight into areas in which I could use an education in atmospheric science that I didn't know much about."

6. Acknowledgements

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