

## The Early Years

According to Jeff Kimpel  
June 4, 2008

In the late 1970s the oil patch was awash in money thanks to the emergence of the oil cartel and the cartel's ability to fix oil prices near \$40 a barrel. Domestic drilling and production in the oil and natural gas rich states increased dramatically. In the years 1978, 79 and 80 the University of Oklahoma's budget from the State increased by at least 25% each year. These were heady times buoyed by the desire of loyal alumni who made quick fortunes in the petroleum industry to pay back the educational institution that trained them in petroleum geology and petroleum engineering.

By 1980 \$70 million had been pledged to create an "Energy Center" at the University of Oklahoma and the School of Meteorology was moved from the College of Engineering to the new college of Geosciences along with the Departments of Geography, Geology and Geophysics. Everyone was thinking big and how we could use our newfound wealth to improve the academic status of the entire University.

In 1980, four meteorological entities existed in Norman, Oklahoma each with its own Director. These were the School of Meteorology (SOM), The Oklahoma Climatological Survey (OCS), The NOAA-OU Joint Institute the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS), and NOAA's National Severe Storms Laboratory (NSSL). To say that there was friction, distrust, and barriers to collaboration among these four organizations, and especially their leaders, was an understatement. In 1981, Jeff Kimpel was appointed as the Chair of the SOM in the new College of Geosciences. He invited Amos Eddy (OCS), Yoshi Sasaki (CIMMS) and Ed Kessler (NSSL) to lunch in June of that year. None of the invited guests were aware of the other's invitations. This was the first of the "lunch meetings" that have been held continuously on the first Tuesday of every month until the present day.

That first meeting was devoted to asking the other three Directors for ideas on how we could tap into this unprecedented wealth to improve the meteorology program in Norman. Amos Eddy suggested that we establish a "teaching hospital" like medical schools have to further our research and better prepare or students for the profession of meteorology. When pressed on how we could do that, Amos suggested that we move the Oklahoma City Weather Service Forecast Office from the Oklahoma City airport to campus. While this seemed a bit strange at the time, subsequent lunch meetings led to a vision of doing just that as a part of taking advantage of the National Weather Service Modernization, the development of Doppler weather radar at NSSL and focusing on weather (at the expense of climate and atmospheric chemistry) as a way to build a stronger meteorological program in Norman.

In August 1981 the oil boom turned instantly into an oil bust with the collapse of Continental Bank in Chicago and the Penn Square Bank in Oklahoma City. Of the \$70 million pledged for the Energy Center, the University eventually collected only \$19 million after committing to a \$50 million Energy Center building. However the vision of an Oklahoma Weather Center, a term coined by OU's then Provost J. R. Morris, continued on and was bolstered by the hiring of Doug Lilly and Tzvi Gal-Chen as faculty in the SOM and Frank Stehli as the first Dean of the College of Geosciences. Frank was a geologist and Vice President for Research at the University of Florida before coming to OU.

By 1982 things were looking bleak. The University's budget was cut and the focus was on how to make up the deficit in funding for the Energy Center building. However, planning went forward for the Oklahoma Weather Center. Ed Kessler helped us all understand what was possible in Norman with a consolidation of all of NOAA/NWS' severe weather activities in Norman including all severe storm research, the operational arm of the National Severe Storm Forecast Center, severe weather forecaster training, and experimental forecast programs. Frank Stehli knew that it would take money to develop these ideas and that the money would not come from the State of Oklahoma.

Frank had a good understanding of the role the private sector played in petroleum exploration and production R&D. Frank was convinced that we could attract funding from private foundations to help our cause. Upon further study he learned that many foundations were prohibited from giving money to tax supported organizations like the University of Oklahoma. He figured that the only way to proceed was to incorporate ourselves as a not-for-profit company. This would have the added advantage of bring together academic, government and private entities to serve on the Board of Directors. Thus Applied Systems Institute (ASI) was incorporated in about 1983 by Stehli and Kimpel at a cost of \$50. The University of Oklahoma Board of Regents formally sanctioned the Oklahoma Weather Center and ASI. Frank was insistent that private companies occupy important positions in ASI from the very beginning. The following entities held seats on the ASI Board of Directors.

College of Geosciences (President)  
School of Meteorology (Vice President)  
Cooperative Institute for Mesoscale Meteorological Studies  
Oklahoma Climatological Survey  
National Severe Storms Laboratory  
NEXRAD Operational Support Facility  
Oklahoma City Weather Service Forecast office  
Cray Research Inc.  
Control Data Corporation  
Digital Equipment Corp.  
WeathetScan International Inc.  
IBM (later)

The Board met for lunch the first Tuesday of every month for two hours. The only rule was no agenda. The meetings were used to explore emerging opportunities for growing the Oklahoma weather enterprise. ASI's first funded project was to develop an operational flash flood warning system for the City of Tulsa based on the experimental WSR-57 digitized radar in Oklahoma City. Tulsa had experienced fatalities during the flooding of Mingo Creek on Memorial Day in 1982. Additional funding came via an economic development grant from the Sarkeys foundation. Early projects focused on co-locating the Oklahoma City Forecast Office with NSSL, acquiring a supercomputer, and developing a research mesoscale, numerical weather prediction model. Following his retirement as the Director of the NWS Southern Region, Ray Jensen was hired as ASI's Executive Director.

The move of the Oklahoma City Forecast Office to Norman was complicated by the fact that two congressional districts were involved. After gaining the support of Dick Hallgren, the Director of the National Weather Service, and his Deputy, Joe Friday, a triple OU Alumnus, Oklahoma Congressman Dave McCurdy was approached to help negotiate the move. This connection later became important in gaining Congressional support for the National Weather Service Modernization, especially the Doppler radar network known as NEXRAD (WSR-88D). Congressman McCurdy held an important seat on the House Science Committee and held several hearings on the value of Doppler radar to improve severe weather and flash flood warnings. Congressman McCurdy, a Democrat, influenced Oklahoma Senator Don Nickles, a Republican to support the Modernization from his leadership position in the Senate.

Doug Lilly replaced Yoshi Sasaki as Director of CIMMS and he and graduate student Dawn Wolfsberg proved mathematically that the two-dimensional wind field could be retrieved from a time series of the radial wind component as measured by Doppler radar. Additional work on retrieving the thermodynamic variables meant that, theoretically, Doppler radar data could some day be assimilated into numerical forecast models. This was the scientific basis that led to OU being awarded a National Science Foundation (NSF) Science and Technology Center in the first round. ASI's connection to the private sector, especially Cray Research, helped meet NSF criteria. Of over 300 preliminary proposals, only 11 awards were made. The Center for Analysis and Prediction of Storms (CAPS) received \$11 M from NSF over the next decade. The CAPS effort was lead by Doug Lilly and Kelvin Droegemeier.

Meanwhile, Ray Jensen, Chuck Doswell (NSSL scientist) and Ken Crawford (local Meteorologist-in-Charge) conceived of and wrote a proposal for what eventually became the Oklahoma Mesonet. The initial \$2.7 million to build the network came from "oil overcharge funds", the University of Oklahoma, and Oklahoma State University. To implement the Oklahoma Mesonet, Ken Crawford left government service to become the Director of the Oklahoma Climatological Survey (OCS) following Amos Eddy's retirement.

As the NWS Modernization proceeded, a decision was made to co-locate the NEXRAD Operational Support Facility (now the Radar Operations Facility) with the Norman Forecast Office and NSSL. A few years later, the Storm Prediction Center was relocated to Norman. Later the NWS Warning Decision Training Branch was split off of the Radar Operations Center. Thus there are now five NOAA organizations in Norman.

The remarkable growth of what was now known as the Oklahoma Weather Center occurred in a scattering of physical facilities about Norman. In around 1990 the NOAA organizations requested that a new facility be build on OU's North Campus to consolidate all five organizations in one location. The OU components (SOM, CIMMS, OCS, and CAPS) were about to move to the soon to be completed Energy Center Tower, approximately four miles to the south. In 1992 Deb Stirling, then Director of Government Relations at the University Corporation for Atmospheric Research (UCAR), assisted the Norman community in getting a new building for NOAA authorized as part of the fiscal year 1993 appropriation process. Legend has it that NOAA, at the urging of Ron McPherson, added the phrase "within easy walking distance to the School of Meteorology" to that authorization. This simple phrase caused considerable downstream chaos as planning for the new facility evolved, but resulted in OU and NOAA, and research and operations, sharing the same building (National Weather Center) on a campus with a number of private weather related companies.

These early years resulted in many "lessons learned" by the weather community in Norman, Oklahoma. Some of these are:

1. No sector, be it academia, government, political, or private sector has a monopoly on good ideas;
2. Technology transfer is enhanced in a shared environment in which researchers and practitioners work together;
3. Three researchers might each win a grant for \$100,000. Working together they could win a single grant for \$1 million. The whole is greater than the sum of the parts;
4. Projects that play to important societal needs and political imperatives have a better chance of being successful;
5. Engage the media. They are important in shaping public perception. Oklahoma became a national program following the NOVA series airing of TORNADO!. The SOM became the nation's largest meteorology program following the release of the movie "Twister";
6. Always hire someone better than yourself;
7. There are two kinds of people. Those who are important and those who believe in something bigger than themselves. Hire the later; and finally
8. The scenery changes only for the lead dog.