Academic Affiliates

October 4, 2011

Academic Affiliates present: David Smith (Chair) (United States Naval Academy), Nolan Atkins (Lyndon State College), Alison Bridger (San Jose State University), Richard Clark (Millersville University), Andrew Detwiler (South Dakota School of Mines and Technology), James Edison (University of Connecticut), Adam French (University of Louisiana at Monroe), Anthony Hansen (St. Cloud State University), Gina Henderson (United States Naval Academy), Redina Herman (Western Illinois University), Eric Hoffman (Plymouth State University), Larry Hopper (University of Louisiana at Monroe), Varavut Limpasuvan (Coastal Carolina University), Duanjun Lu (Jackson State University), Jose Maliekal (The College at Brockport), Tom McElroy (York University), Richard (Neil) Mower (Central Michigan University), Andrew Oliphant (San Francisco State University), Micheal Poellot (University of North Dakota), Alfred Stamm (SUNY at Oswego), Cristiana Stan (George Mason University), Richard Wagner (Metro State College), Arne Winguth (University of Texas at Arlington), Sepideh Yalda (Millersville University), Joseph Zehnder (Creighton University), Lei Zhou (Columbia University, LDEO)

Guests: Richard Dixon (Texas State University), Jim Edson (University of Connecticut)

UCAR Staff: Rick Anthes, Jack Fellows, Susan Friberg, Bob Henson, and Susan Montgomery-Hodge

1. **Welcome**: Rick Anthes, in his last October annual meeting as UCAR President, stated that creating the Academic Affiliates (AA) was one of his major accomplishments. Not only are the AA critical in preparing students for the pipeline but they are also very important in helping educate a broad cadre of students by giving them a background in meteorology and climate. Russ DeSouza and Rick presented a proposal to the Members Representatives (MR) in 1991 and start with just five Academic Affiliates members. The MRs quickly realized that the AA contributed in many meaningful ways. Now with 25 members, it is a highly successful program and has created a beneficial network to both the AA and MR. Rich Clark pointed out that this year celebrates the 20th anniversary of AA. This is also the largest number of AA members in attendance.

Jack Fellows reiterated how important the AAs are and thanked them for their involvement and interactions.

2. **Coping with austere budgets**: This is an issue that not only the AAs face, but also many of the larger schools as well.

Although there are multiple methods institutions are choosing to deal with this issue, there are some common themes:

- Eliminate smaller programs which don’t have an adequate number of students to justify them.
• Restructure/combine programs/departments. Some departments combined with environmental sciences, geography, engineering, etc.
• Recruit and retain more students (includes actively marketing to non-traditional and/or working students for evening and online courses).
• Restructure how courses are taught. Not eliminating all in-class courses but when possible, creating a hybrid approach of some on-line instruction and some in-class face-to-face. Also incorporating and making use of UCAR’s COMET modules as a springboard for further discussion and understanding. Recognize however, that there have to be applied problem solving and active interaction with an instructor. Several noted that, in general, strictly on-line instruction tends to produce a lower quality student.
• Whenever possible, leverage and promote the uniqueness of the program. For example, St. Cloud University had the only meteorology program in the state and the only hydrology program in five states. This worked in their favor when discussion of eliminating programs was undertaken.
• Retirement incentives for faculty. However, this has the danger of losing key faculty you don’t want to leave. Then they are either replaced (if administration and budgets allow) or there is a hole in your program from the loss of their expertise.

A shift in attitude is helpful in dealing with austere budgets. This is a situation which is not likely to improve in the near future. Look for, emphasize, and build on opportunities.

• Combining colleges/programs/departments also combines resources. Unexpected synergies develop. For example, at St. Cloud University, atmospheric sciences was combined with the engineering school. Hydrology is seen as civil engineering. Engineering students are taught to have the attitude, “you’re an engineer, you’re a problem solver.” Teach this attitude to the atmospheric science student; this is very dynamic and something that employers will appreciate if they know that the students have this.
• Look for other areas of growth. For example, at Millersville - risk and emergency management. This is an area which is 80% climate and weather related. Other disciplines such as societal impacts and sociological impacts of hazards are also brought in. Environmental sciences, which has many different sub-specialties, is another huge area of growth.
• Train students to become more applied and give a more solid science foundation to students from other fields.
• Remember that climate change is a driver of all that we do.

3. **Maintaining critical numbers in our programs.** Students have experiences and expectations that are so different from what the previous generation had when entering higher education. What kind of jobs might they get when they do get their degree? What’s the balance between how many students you’re graduating and how many can you get jobs for?

• Teach students (and employers where possible) that they are problem solvers. They have critical thinking skills, knowledge and technical skills that other students don’t have. Promote
what an atmospheric science or related-field student can do, especially with the math background necessary.

- Be aggressive in recruiting. At Texas State University, the majority of majors are picked up at the freshman orientation. Faculty discuss opportunities with a BS degree in geography and submajors. Additionally, one of the MOST effective tools is the business card approach. Program graduates are requested to send their business cards which are highlighted on a website as examples of what can be done with this degree. This same approach is also used to educate the administrators and show the value that is brought to the university with this program/field.

- Remember that some of your best recruiters to get more students into the program are current students and/or alumni – reach out to these people. Also do more public outreach.

- Engage the juniors and senior level students to tutor the freshman and sophomores in challenging courses, such as some of the higher math, to not only help them successfully complete the course but also gain from the peer-to-peer relationships. Emphasize to the older students their importance as role models for lower level students and develop pride in them to help develop younger leaders.

- Create additional and unique internships and other hands-on opportunities. For example, at the Naval Academy, the opportunity to fly with hurricane hunters pays huge dividends. Not only do research projects result but recruitment and retention is greatly impacted. Local TV stations – even if they aren’t interested in broadcasting, the student is behind the scenes helping with forecasting and getting experience with the computer graphics. Some weather stations will take volunteers (shadows). Use own faculty – have them analyze data and get a credit for it. USGS sometimes offer internship. Renewable energy providers may offer internships. SKEP programs and air force weather. Contact alumni – these can lead to incredible contacts for job placement. Museums and science centers – a lot of org have science educations branches – may become a career. Great resume building, get diff experiences than classroom. Connect undergraduates with grad students – ask the undergrads where they live and what are they interested in. Use resources such as Facebook for mentoring. Will need to differentiate between paid and non-paid internships.

- Broaden the curriculum by adding more applied issues, but be sure to embed practical experiences. Involve them in research as undergraduates. The quicker they can engage in some type of hands-on activity, the more likely they are to persist through difficult courses to be able to gain their degree and work in that area.

- Offer hybrid courses (in-class and on-line) but be sure to include problem solving and applying the information.

- Broaden the perspective of what you are offering. Don’t necessarily link a specific job to a course of study; this limits the student. Emphasize skills such as critical thinking and problem solving skills that are necessary to be successful in life.

- Open door policy: every major has positives and negatives. Ask the students to give you the first opportunity to correct major issues. You may not be able to completely solve the problem but many times just knowing that they have been heard solves a host of issues; it is time well spent and from a retention standpoint, makes a huge difference.
• Develop an aggressive advising program. Recognize the higher level students and direct them into specific areas in which they are showing particular promise. Mentor struggling students intensely, and if possible, get them tutoring and encouragement. If they are math phobic and not making progress consider steering them into another related area such as emergency management which doesn’t need as high of level of math and might be a more appropriate fit.
• Develop and maintain discipline-wide statistics as far as number of students coming into the program, percentage of those who complete it, and time to completion. Compare against other universities and national average.

4. Dealing w new AMS Policy Statement on the BS degree. Now had a year of implementation. What are AAs changing in order to stay within the new standard? Some AAs were already making changes when the policy came out. Others have created new capabilities, such as a mesoscale lab which incorporates both satellite and radar training. However, a second semester chemistry course had to be dropped to incorporate this. A separate instrumentation course is also required.

Other AAs are interpreting the AMS policy on radar/satellite meteorology and instrumentation training with an emphasis on the former and little to no emphasis on the latter. Other AAs require an instrument course and include some units on satellite and radars in that course. However, these requirements allow the addition of few elective courses if a degree is limited to 120 hours.

The change is in competency not necessarily course work. There are different ways to meet the requirements. However, it is going to be less obvious to an outsider that you are meeting them. There is reliance on various programs to be good citizen.

For the most part, there is not strong disagreement with the AMS policy. It is competency based and allows the opportunity focus on faculty strengths and on what students need and want. Accreditation is not something desired. But it will be interesting to explore ways to talk about the competencies and learning outcomes in the various areas in an informal way so that we can see what works and can learn from one another.

The next round of AMS policy changes will be completed in 2015 and will be on student learning outcomes. It is critical to start talking about this now and to have AA representation on this AMS committee.

Richard Wagoner, Jose Maliekal, Rich, Tony Hansen, and Eric Hoffman volunteered to work on this, build consensus, and come back to the AA meeting next year with a document to share. In the process, the annual assessment learning documents should be shared within the AAs.