Minutes of NCAC 4 Cornell University

Meeting was held on May 20 - 21, 2012 on the Cornell campus, Ithaca, NY. Marvin Pritts was the local host.

As introductions were made everyone was asked to describe their department structure.

- Cal Poly, San Luis Obispo (SLO) has the Department of Horticulture and Crop Science (Wyatt Brown). aeps.calpoly.edu/
- Clemson has 4.5 departments now as the School of Agricultural Forestry and Environmental Sciences (Pat Layton). www.clemson.edu/cafls/safes/index.html
- Cornell has a history of mergers and now that we are one Department of Horticulture, we are facing a 5-department reduction down to 3. Not sure of the next merged department's name. The groundwork for these mergers are currently being discussed (Marvin Pritts, chair and Susan Brown, associate chair).
- Iowa State University has the Department of Horticulture (Gail Nonnecke). www.hort.iastate.edu/about
- Kansas State University has the Horticulture, Forestry and Recreation Resources Department (Kimberly Williams). www.hfrr.ksu.edu
- Michigan State University has the Department of Horticulture (Vance Baird). www.hrt.msu.edu/
- Morehead State University in Kentucky has a degree in Agricultural Science, with a Horticulture option (Jerry Phillips). www.moreheadstate.edu/Academic-Programs/AGSI/Horticulture/
- Morrisville State College has a Horticulture Department (Aida Khalil). www.morrisville.edu/academics/Ag_NRC/Horticulture/index.htm
- Niagara County Community College offers an AS or AAS and a program in Horticulture in the Science and Technology Division (Carolyn Stanko). www.niagaracc.suny.edu/academics/science-technology/?section=academics
- North Carolina State has the Department of Horticultural Sciences (John Dole, interim chair). http://cals.ncsu.edu/hort_sci/people/faculty/all_faculty.php
- Oregon State University has the Department of Horticulture (Anita Azarenko). http://hort.oregonstate.edu/
- Penn State has the Department of Horticulture (Rich Marini). horticulture.psu.edu/about
- Purdue has the Department of Horticulture and Landscape Architecture (Robert Joly). www2.ag.purdue.edu/hla/Pages/default.aspx
- Southern Illinois University has the Department of Plant, Soil Science and Agricultural Systems (Karen Midden). coas.siu.edu/default2.asp?active page id=165
- Univ. Connecticut has the Department of Plant Science and Landscape Architecture (Rich McAvoy). plantscience.uconn.edu/index.html

- Univ. Florida has the Horticultural Sciences Department (Steven Sargent). hos.ufl.edu/
- Univ. Georgia has the Department of Horticulture (Doug Bailey). www.hort.uga.edu/Dept_Info/overview.htm
- University of Hawaii at Monoa has Tropical Plant and Soil Sciences with 5 emphasis areas (Robert Paull). www.catalog.hawaii.edu/schoolscolleges/ctahr/tpss.htm
- Univ. Minnesota has the Department of Horticultural Sciences (Emily Hoover). www.horticulture.umn.edu/index.htm
- Univ. Rhode Island has the Department of Plant Science and entomology (Brian Maynard). cels.uri.edu/pls/
- Univ. Tennessee has the Department of Plant Sciences (Andy Pulte). plantsciences.utk.edu/
- Univ. Wisconsin-Madison has the Department of Horticulture. They had 5 degrees, but now 1 degree in Horticulture for the Bachelor of Science (Irwin Goldwin). www.horticulture.wisc.edu/
- Univ. Wisconsin-Platteville has the School of Agriculture, with majors in Agribusiness, Ag Ed, Animal Science, Ornamental Horticulture, Reclamation, Environment and Conservation and Soil and Crop Science. Department of Animal Science, Reclamation, Soil and Crop Science (Michael Compton). www.uwplatt.edu/soa/major-desc.html#a4
- Utah State University has the Department of Plants, Soils and Climate (Teryl Roper). psc.usu.edu/

Marvin Pritts: One goal of our meeting is to develop a set of learning outcomes for a 4year horticulture program. First we must develop and agree on these from a national perspective. A next step, perhaps a topic for next year's meeting, is to determine how to assess them. A second goal is to discuss how two and four-year programs can better understand each other and coordinate educational programs. A third goal is to explore how horticulture can contribute to the national discussion on civic engagement.

Administrative report:

Marvin read a report from administrative liaison, Marc Linit, who was unable to attend. A handout was distributed on proposed funding amounts in legislative and executive budgets.

Anita Azarenko reported on SCRI and AFRI- flat funding. Farm Bill has OREI-SCRI going from 55 million to 25 million. Still in farm bill, but cut 50:50.

Cal-Poly volunteered to host next year's meeting sometime in May/June. Wyatt Brown agreed to be the official host, chairman and coordinator of local arrangements. An inquiry will be made as to whether faculty from a non-land-grant institution can serve as NCAC-4 administrative chair for the purpose of filing the report. (It was later learned

that a land-grant faculty member should serve as administrative chairman, so a follow-up survey of the participants had no objections to Marvin serving in this role for another year.)

Issues that participants would like input on or would like discussion about:

Robert Paull: We are competing for international scholars. Currently, agriculture is not listed as a STEM subject and, therefore, ineligible for certain funds.

Motion made that we write a letter from the group and send it to Secretary Wotecki. Anita A. agreed to draft a letter on behalf of the group. Change STEM to STEAM?

Robert Paull: How do you get faculty to embrace the need for assessment and how do you do assessments at your institutions?

WEE: Clemson uses formal assessments and says it is a challenge.

Vance Baird (Michigan State): The extension director has freed up funds, by using funds devoted to extension salaries. For example, for a 40% assignment, the 40% going for salary is now pooled to be used for grants with extension and the core salary will be paid centrally.

Hiring of non-tenured faculty, especially off-campus. Is this common? Does it present problems? Are hires satisfied with their careers?

Many research positions are being developed without tenure.

What is the situation regarding support staff at your institution?

Support staff are very often not retained when a position is ended. Downstream effect is that extension audiences, in particular, will not be served and this will affect political ties and support.

Emily Hoover (MN): If you hire extension specialists you can get a match, so extension hiring is increasing. With many positions 60% is extension. Flexible ninemonth system so faculty do not need to be off during the summer, when the need may be greater. Also industry can pay the rest of the time.

Robert Paull (HI): Are there any studies showing that those on 9-month appointments have more incentive to get grants than those on 12-month appointments?

Pat Layton (Clemson): Their faculty pay themselves in the summer. Some concern expressed that this may impact students who may not be paid as well in the summer as a result of reduced resources.

Anita Azarenko (Oregon): Our rules say that you are expected to bring in 3 months of salary. It is in the job description and you are judged on the job description. On 9 months you can use 1 day to consult, but those on 12 months find it costs them to consult.

Wyatt Brown (Cal Poly, SLO): Enrollments are up. Originally 18 faculty now down to 9 but are now starting to build back. John Peterson, department head, hired Stamats (http://www.stamats.com/), a higher education marketing company. They did national surveys on horticulture: what it means to prospective students and to discover what buzz words can be used to grab students' attention. Sustainability is a big buzzword. Stamats proposed merging 3 majors – Crop Science, Fruit Science and Environmental Horticultural Science - into 1 major, Agricultural and Environmental Plant Sciences, with 7 concentrations: Crop Science, Fruit Science, Greenhouse and Nursery Plant Production, Plant Protection Science, Public Horticulture, Sustainable Landscape Management and Design, Turfgrass and Sports Field Management. They developed all new brochures that can be used at ASHS and trade shows, with tag lines: 'Learn by Doing" (University's tag-line) and "Learn, Do, Lead" (HCS Department's tag line). With the new major and promotional materials, they have increased enrollment from ~260 to ~350 students over the last year. The goal is to increase enrollment to 450students but the Dean has slowed down the increases in enrollment due to budget considerations. A copy of the report by Stamats was provided.

Cal Poly received 41,000 applicants this year but accepted only ~4,000. Their selectivity ranks with Harvard and Stanford. There was a question about GPAs and SAT scores, but the information was not available.

Applicants from cities had higher GPAs than rural applicants, but urban students were found to be less participatory and "work ready" than their rural counterparts.

I. Learning Outcomes for Horticulture

A significant part of the meeting was spent working in smaller groups to develop learning outcomes for a horticulture major and then sharing with the larger group. This exercise was led by Dr. Travis Park, an education professor recently associated with Cornell's Horticulture Department. The outcome of the day's deliberations is attached at the end. These outcomes were endorsed by all of the participants and the intention is to share these at the national horticulture meeting in Miami in July, then possibly publish them. Present interactive poster where conference attendees may write on poster with suggestions?

Learning outcomes Goals Objectives

Process starts us towards specificity

Helps identify gaps Moves us towards developing tools for assessment

=> Have "horticulture" used often in learning objectives so that other areas, such as Biology, cannot appropriate.

New terminologies should be evident throughout document.

A primary consideration: How do learning objectives differentiate *horticulture* from other disciplines?

Entrepreneurship: meeting an unmet need

II. Coordination with and understanding two-year programs

Niagara is a small program, with some non-traditional audiences such as retirees viewing horticulture as a second career, and also traditional students. Finances can influence the decision to enroll as can family situations. Students may not feel ready for a 4-year school and a community college can help to build a student's confidence. Community colleges welcome collaboration with 4-year institutions. There is a problem with syllabi and students not getting credit for courses they have taken, often having to repeat coursework. Four-year classes do often offer greater depth, but there is redundancy. A dialog on courses and how they can be accepted at 4-year institutions would be beneficial.

When asked how the outcome of a community college is judged, retention and the number that complete their degrees were mentioned. AES versus AS; AAS has transfer options with SUNY schools.

Teryl Roper (Utah): 1 year and 2 year programs with the one-year program bringing in \$40K. 1-year certificate. Their state is also eligible for Perkins funds which help.

Pat (Clemson): Some B.S. students are envious of the confidence of students coming from technical schools. They have had more hands-on experiences. Clemson is working on required internships where the students can get this experience, but often students get around this requirement by doing a research project. As budgets get tighter, there will be a diminished chance for "hands-on" learning.

MN: The 12-15 passenger vans have been eliminated so for field trips school buses must be chartered at a cost of \$600/trip. This will lessen field trips.

Carolyn Stanko: Niagara CC found that on-site and campus demonstrations from the industry were possible and were welcomed.

Some departments are getting charged for lab space and greenhouse use associated with their classes.

Karen Midden (S Illinois U): Service learning is part of a segregated fee - up to \$5K a semester - as part of a graded project with students and community partners. This can mean an extra \$30K per school year for the budget. Basic information can be found on the web site.

PACE-Pioneer Academic Center for Engagement (www.uwplatt.edu/pace/about/). We discussed hiring lecturers and some said that course instruction could run 3-4K to teach a course and they found that they could not get quality on an ad-hoc basis. The lecturers would teach, but there were no outside activities -- clubs, community aspect, engagement. The lecturers don't attend meetings or submit grants.

One community college said they pay their instructors \$675 per credit hour taught. Some 4-year schools pay \$5K per course.

Rich Marini (Penn State): They are finding that it is becoming very difficult to hire extension faculty and staff as they are competing with industry to get them. It was mentioned that a similar situation is occurring with plant breeders, due to strong industry demand.

Faculty demographics at many of the departments lean to the right, with many (50%) 50 years or older. HI mentioned one faculty member still working at 85.

MN said they were being given a mixed message about the value of applied work. They have been told to do applied research, but USDA, SCRI grants don't "count" though NSF grants do.

There were questions on the discipline of horticulture moving forward. We shouldn't say a 2-year degree is sufficient. Maybe land grant institutions will not be the place for 4-year degrees in the future. Brian Maynard (RI) says he discourages individuals from looking at a 4-year landscape architecture degree, as those in the field with experience do not need it. However, turf management is a 4-year recommendation.

Industry support and partnerships will be crucial in moving forward. Rich Marini (Penn State) said that if there is no industry, or only a small industry, there may not be programs.

Unfortunately consumers do not equate horticulture with farming and with the fruit and vegetables they enjoy. Some schools are looking at having both a 2- and 4-year undergrad curricula. Peak oil issues, fracking, petroleum extraction, alternate energy and global warming are today's critical issues. Big question remains: "How will future positions be funded?" Research and the ability to fund it are still driving hires. Institutes are promoting international activities.

Gail Nonnecke (Iowa State): Global research systems is a new major.

Pat Layton (Clemson): Wrote 5 articles on fruit/vegetables/water research programs that would appeal to people. VP now helping with financing.

HI: They also have stories, but not money for support. They are getting a new dean, so maybe that will change.

Some stakeholders are starting to be dissatisfied with the university as there is a shift away from applied work.

Anita Azarenko (Oregon): They started an endowment fund to support the replacement of Bernadine Strik -- \$1 million over 5 years.

Clemson must raise 4 million for an endowed chair.

Emily Hoover (MN): We need to explore how we partner and, as importantly, who are our partners?

Discussion item: How do we counter the bad press on how a degree in horticulture is one of the top "useless degrees?" Cal Poly, SLO used a marketing group to study impact and marketing -- the report that was provided.

What can we do?

- Civic engagement: community work with advertisement: all work heavily advertised to get message out: placards, etc. on-site to indicate who is doing the work
- Need to explain to general public why they need horticulture, i.e., why they need our "product."
- Message needs to be nationalized and repeatedly stated (ASHS)
- Approach Newsweek/Time with counter-story to "horticulture is a worthless degree."
- ASHS website is internally directed but needs to be externally directed for people visiting site.

Anina Arazenko asked if money could be requested from multi-state organizations. ASHS was discussed as a vehicle for raising funds for a general account, but that is what SCRI is supposed be doing.

III. Scott Peters, associate professor at Cornell, gave a presentation on Civic Engagement in Higher Education

Community and human development not separate from economic/scientific issues.

Examples of civic engagement currently underway:

HI has an Urban Gardens Society. American Commonwealth Partnership

There is an "American Blooms" community program across the country. Community pride program which is horticulturally-driven. Brings together diverse people; unifies community; talk about positive items rather than negative; industry has a huge role in the program: shows industry in a very positive light; promotes historical and environmental aspects.

Mike Collins (Missouri): We developed a formal rose garden. Volunteer hours help in the maintenance. This has become a very popular venue for wedding pictures.

Morrisville: Can be engaged in the community without a lot of money. Seeing an increase in Community-Supported Agriculture. It is challenging to get enough community ownership, and how does one sustain it?

Need to show professional side of horticulture more.

A number of milestones approaching: 150-yr anniversary of land-grant system (Morrill Act, this July), 100-yr anniversary of the extension system.

Land grants have lost a lot of their power since they have transferred a lot of their technology to the private sector.

Every generation has had to figure out that the land-grant system is worthwhile, that horticulture as a science is worthwhile.

Land-grant was supposed to help the working classes have access to higher education; hasn't mission been accomplished?

Extension was supposed to make information available to the home owner: has mission been accomplished?

Scott explained that we are "Keepers of Knowledge." We need to define ourselves: Are we facilitators or managers of knowledge, knowledge you can trust?

Which knowledge can and should be trusted and how can it be put to use? 1890's saw extension pioneers such as Anna Botsford Comstock and Liberty Hyde Bailey, who said, "The best experiment station is that which encompasses every farm in the state."

Most emphasized today: science and the application of science. However, not compelling; must be stated in a way to captivate lay people – emphasize relationships. Cornell has institutionalized, as a land-grant, relationships with ordinary people.

Anita Aazrenko: We need to be less averse to using popular, more contemporary language: "Whole foods." The new land grant: public health.

Internet as competitor with university for knowledge: how do we position University as desirable over Internet access?

As information availability increases, University's importance actually increases as arbiter and source of trustworthy knowledge.

Extension agents not trying to sell products so knowledge being presented is considered to be more trustworthy.

Dairy farmers, e.g., want to partner with land-grants rather than have land grants tell them what to do.

Farms as a source of testable information: farmers are developers of knowledge, albeit, not with the rigor of a scientific experiment in many cases.

Engagement with stakeholders rather than strict delivery of information.

Scientists as control freaks: don't trust common knowledge or experience.

We need to look at trends in our departments. As molecular science has increased, there is still a "those folks" mentality -- we do not have the right integration. We need to fix that moving forward.

The University of Phoenix offers a wide array of courses on-line (<u>www.phoenix.edu/</u>). Veterans and those in the military are going to college, especially those serving now. The Ivy's are offering free on-line courses (www.coursera.org).

Emily Hoover (MN): A NY Times editorial by David Brooks called "The Campus Tsunami" discussed issues in higher education (attachment to minutes). MN is developing a writing-enriched curriculum.

Marvin Pritts (Cornell) discussed the start of using electronic portfolios to let students document their progress. Student e-folio's: student's fill in blank template showing when they and if they have met learning outcome: Could be introduced in freshman orientation and, again, in senior seminar class.

National certification program in horticulture from ASHS Stair-step of tiers (analogous to CCA from agronomy): will hold up in court of law.

CH: Now have study guide. For practitioners in the field. Requires minimum 2 years of practical experience.

CHP: for students with 4-year degrees. Four-year degrees have to be worth more than simple field experience.

Professional Horticulture Associate: Both CHP and PHA are board certified. Don't have to take exam!

Concept of a "certified" person is very well established in our society. Adds value to career of being a horticulturist.

Program analogous to certification program for engineers.

Important for students to state that they are certified at the national level.

Wyatt Brown (Cal Poly): Study guide. Two years of experience but you do not need a degree in horticulture. Four years-CPH- certified public horticulturists- must meet set curriculum requirements. Certified at the national level. Both national and regional partnerships are valuable.

IV. Following an evening meal, a tour of campus was provided. The following day, a tour of regional attractions occurred.

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Learning Outcomes and Goals for a Horticulture Major

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Horticulture: Using plants to provide healthy whole foods, to build sustainably-designed landscapes and to promote human health and well-being.

Learning Outcome 1: Acquire, integrate and apply knowledge of plant science to managed systems

- Goal 1. Use multiple sources to find, evaluate and curate information related to horticultural systems
- Goal 2. Apply scientific methods to test hypotheses
- Goal 3. Demonstrate competence with both laboratory and field-based technologies used in modern horticulture
- Goal 4. Apply concepts of plant biology, systematics, ecology, propagation, and genetics to manage and improve plants and their products

Learning Outcome 2: Demonstrate interdisciplinary knowledge and competency in managing horticultural systems

- Goal 1. Assess soils, fertility, water and site limitations
- Goal 2. Recommend and use appropriate application methods, materials and diagnostic skills for addressing irrigation, nutrient, stress, and pest management issues
- Goal 3. Assess potential and evaluate realized interactions with the abiotic and biotic environment in which plants are grown
- Goal 4. Recommend appropriate, effective and integrated approaches to produce and maintain high-quality food and ornamental crops
- Goal 5. Apply principles of accounting, business law, labor, and personnel management to a horticultural business and contribute to developing the various components of a business plan

Learning Outcome 3: Synthesize knowledge and use insight and creativity to better understand and improve plant systems

- Goal 1. Anticipate and recognize problems, identify causes of those problems, quantify potential impacts, analyze options, identify viable solutions to the problems and evaluate actions and consequences of treatments and interventions
- Goal 2. Develop, identify, and employ best management practices that lead to sustainable solutions and outcomes

Goal 3. Understand how global issues including climate change, energy use, water availability and food safety impact the sustainability of horticultural systems locally, nationally and globally

Learning Outcome 4. Appreciate and communicate the diverse impacts of horticulture on people

- Goal 1. Describe the various ways that plants impact human well-being (mental, physiological, psychological, medicinal, restorative)
- Goal 2. Describe and assess the influence of plants and their management on environmental sustainability and restoration
- Goal 3. Quantify the economic importance of plants in horticultural systems
- Goal 4. Describe the social, spiritual and cultural importance of plants to historical and contemporary communities of people

Learning Outcome 5. Demonstrate professionalism and proficiency in skills that relate to horticulture

- Goal 1. Communicate effectively with various audiences using oral, written, and visual presentation skills, and contemporary networking technologies
- Goal 2. Demonstrate leadership and the ability to collaborate and work in teams
- Goal 3. Demonstrate a high level of personal and social responsibility
- Goal 4. Develop a plan for life-long learning as it relates to career choice and professionalism
- Goal 5. Develop thoughtful, clear and consistent perspectives on ethical and moral issues related to horticulture
- Goal 6. Demonstrate knowledge of a range of cultures, values and political perspectives that are relevant for living in a global community
- Goal 7. Plan and engage in actions that demonstrate civic responsibility to community and society