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A Collaboration through Academia into Industry

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This presentation is about two collaborative projects, Lees Carpets Funded Studio and Ameleon, of which I have had the honour to be a part. My involvement in these projects is a result of being on faculty in the Department of Art and Design at North Carolina State University.

I joined this University for several reasons. An important one among them was research. When I was hired, I understood this to mean the continuation of work on my artistic textile production. While I have in fact continued on this research line as well, in this paper I will discuss two collaborative projects I have also undertaken. I will also note the changes of terminology and definition that I have encountered and continue to encounter as research at the University redefines itself!

North Carolina State University is a Land Grant University. For those unfamiliar with this term, it denotes that this University began its involvement with education primarily as a technical school to train the people of North Carolina for jobs in agriculture, engineering, textiles, the food sciences, etc. Core funding, and hence accountability, are thus linked primarily to the State Legislature.

A land grant university, responsible to the State and its citizens, carries with it a social responsibility with a strong commitment to community. While this commitment might be thought to be satisfied through the educational component itself, in the time since I have joined the faculty, five years ago, a significant shift has occurred.

Last week in the University newsletter, there were four articles prominently displayed on the front page. One was about a new building opening on campus and the second was about a new basketball event, no surprise there! What was of note was that the other two articles were about entrepreneurship and economic development. One covered the success of the Entrepreneurship Education Initiative (EEI). The mandate for this initiative is, "promoting the entrepreneurial atmosphere…" and the belief that, "… If you build entrepreneurially minded students, the investors will come…"[1] The other article covered the fact that NCSU was ranked as 20th out of 200 US universities on its record of technology transfer[2]. What is technology transfer? Chancellor James Oblinger states that it is, "How the knowledge created by university researchers is transferred out for early stage commercialization"…he … "wants the University to know how to take the products of our research and get them into the hands of the people who can best put them to use". He sees the University as an engine for economic development of the state, the nation and the world[3].

Mega grants, entrepreneurial spirit, and technology transfer have traditionally been a part of the expectations of the science faculties. The arts and humanities have been valued for providing a sound academic grounding for students and hence, while not exempted from contributions to the community, there has been less expectation of bringing in big research dollars and participating in technology transfer. With this distinction came another traditional difference,

[1] Staff writer, "Entrepreneurial spirit flourishes at NC State", *NCSU Bulletin*, Sept. 29, 2006, p.1-2
[2] Staff writer, "University earns top 20 ranking for tech transfer", *NCSU Bulletin*, Sept. 29, 2006, p.1&3
[3] Ibid.

faculty in the arts and humanities have had higher teaching loads and contact hours with students.

However, in the past five years, the humanities and arts have also been challenged to seek creative solutions to address entrepreneurial spirit through community, sponsored, and cooperative extension projects, technology transfer as well as to search for grants and other external funding sources. In his annual report 2006 / 2007 the Dean of the College of Design states that an increase in scholarship and involvement in service learning and extension projects is evident in one of his aspirations for the College[4]. It is also very important to note that in 4 of the past 5 years there has been a reduction in operating grant that the University receives from the State.

Since joining the College of Design 5 years ago, I have undertaken two projects related to cross-disciplinary, community involvement: Project Ameleon and Lees Carpets Funded Studio.

Ameleon is an ongoing project that started in spring of 2004. The primary participants are: Catharine Ellis, Lori Eichel, and Nancy Powell. Catharine Ellis teaches at Haywood Community College in Western North Carolina. Over the past 10 years Ellis has worked to develop techniques of woven shibori and has written a book on the subject that has recently been published. Lori Eichel is Founder of BlueBolt Networks and a business consultant. She saw some research I had undertaken to adapt Ellis's woven shibori techniques to the Jacquard loom and was convinced of its marketability. Nancy Powell is an Associate Professor at the College of Textiles with extensive knowledge of the textile design industry.

These four researchers represent, over 60 years of experience in the fibers and industrial textile field. It is the aim of this group to develop a product prototype based on woven shibori. Simultaneously, this project would also explore the feasibility of developing a model for a product that could be produced at a small mill, helping it survive through niche product development.

Our background research indicated that the textile industry in the US is suffering tremendous reductions both in jobs and manufacturing facilities. North Carolina mills cannot compete with commodity-based textiles against the low cost, high volume textiles produced in China and India. However it is interesting to note that some niche companies in the textile and design related arena are not only surviving, they are thriving.

Stuart Rosenfeld in his white paper "The Art of Economic Development: Community Colleges for Creative Economies", identifies and links the role of the hand craft designer and maker as potentially having a key component in rejuvenating failing manufacturing industries by emphasizing unique design and material characteristics in new product lines.[5]

A new report from the Harvard Center for Textile and Apparel Research offers hope for North Carolina's smaller manufacturers. It states that companies can compete in a world without quotas if they keep costs down, shorten their production times and offer more variety. This report

[4] Marvin Malecha, *Annual Report*, (College of Design, North Carolina State University, Raleigh, N.C. 2006), p 7 & 31. He also discusses the need to review teaching expectations in relation to expanded research, sponsored program and extension activities.

[5] Stuart Rosenfeld, "The Art of Economic Development: Community Colleges for Creative Economies". (White paper and conference report delivered at the Regional Technology Strategies Conference, Asheville, N.C. 2004).

points to the advisability of developing specialty products and innovative processes that would preserve and revitalize the North Carolina textile tradition[6].

The focus in Ameleon is on textile production with an emphasis on craft and design expertise and innovation. The most important aspect of this process is its ability to use technology to reproduce a repeat element while introducing, to the end product, the element of the unexpected and the beauty of the irregularity of a regular repeat pattern.

I have been able to apply for and receive University grants to assist with start up funds.

Other enthusiastic partners have come on board at various times to invest their time, energy, and equipment. Tahoe Mills has woven the yardage. Tumbling Colors and Cotton Incorporated have provided their dye facility to help determine industrially appropriate procedures. Students also play an important role by participating individually or in small teams as paid research assistants.

Most of the communication in the team occurs by e-mail with the occasional conference call. Because of the geographic diversity, we get together about twice a year. The combined expertise, the cross over of ideas, the respect for varying perspectives is palpably exciting. The meeting times are always invigorating and productive. One realizes that the team is truly greater than the individual. However one of the main drawbacks in this project is that everyone on the team has another full time job. This means all the participants keep the Ameleon project juggling in midst of a full work load. This also means it has occasionally gotten dropped, and progress can, at times, be slow.

A solution for this problem could be addressed by faculty workload reductions while working on projects. However, this is possible only if outside sources of funding come in and purchase or buy out the faculty classroom time allowing that faculty member a period of more intense research production time.

At times it has been a challenge to keep the momentum going. However, it is important to keep ones eye on the goal. I must add that this is a challenging endeavor that may take some years to see through to fruition, but I believe it has already has, and will assist in bridging the gap between the hand maker, the designer and industry.

The second collaborative project was a funded studio undertaken with Lees Carpets, one of the most successful carpeting companies in the US. One of the ways it has kept its edge is by inviting ‘non-industry’ partners to join its design team on an annual basis. This has kept their carpet and flooring designs fresh and different from their competitor’s.

Lees wanted a carpet that would appeal to a younger generation. Who better to turn to but university students studying design? A cross disciplinary team was formed comprised of six students; two in graphic design, two in industrial design and two in Art and Design with a fibers concentration.

A team of faculty acted as advisors and as junior faculty I fell into the role of Project Coordinator. The project ran from September to June and the deliverable was a new contract carpeting line that would be exhibited at 2004 Neocon World Trade Exhibition in Chicago, a huge interior design trade show.

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[6] Amy Martinez and Karin Rives, “Quotas’ End Vexes N.C. Textile Execs,” *Raleigh News & Observer*, Jan. 1, 2005. In their article they refer to this report from the Harvard Center for Textile and Apparel Research.

The students went to the mill and learned all about carpet design. Lees technical and design staff was remarkably generous with their time and expertise and really engaged with the students and embraced their ideas. However, after the initial visit to the mill, on the way back in the van, the students admitted that they, in fact, did not even like carpeting! As a result, they looked at the technical capacity of the carpet looms and designed a product that Lees could not sell legally under the definition of carpeting, and named flooring.

There is no doubt that the students learned much through this project. It was exciting and challenging to engage with the real world. The students presented sketches and ideas and had the opportunity to see them translated into actual carpeting. They were asked to develop and present their ideas not only on the carpet design, but also for the product name, the development of colour ways, as well as for display and marketing strategies. They literally saw their product go from concept to proto-type tests and into production in nine months. That is amazing feat cannot be beat as a university course outcome or a real life experience!!

The students also learned to work together in teams. They started with a wealth of inspirations and ideas. These were narrowed to six concept presentations, that were eventually narrowed to three. They formed teams and worked on the presentation of these three ideas to the Lees executive team. In each of these stages, carpet samples were developed and woven at the mill.

In the final selection, the "rbn™" concept was clearly the first choice. However, due to its innovative design, Lees executives felt a back-up design was needed. This was in case the actual production innovations resulted in problems that could not be technically resolved in time for Neocon. There were some tense moments as the team was now close to final delivery and was pressured to work on two projects simultaneously.

Lees succeeded in their production schedule and "rbn™" flooring was presented and actually won the Silver Medal in Contract Carpeting at Neocon that year. We were all thrilled.

It was great success for everyone and everyone, not just the students, learned much through the process. This Funded Studio raised many issues and provided considerations that were addressed prior to undertaking another funded studio.

The main issue was copyright and intellectual property. The University never imagined that the students would come up with a revolutionary approach to carpeting. There was no consideration for this in the contract. The university team must be comprised of an individual who is extremely knowledgeable in the realm of industrial copyright.

Students were paid marginally for their time. This was seen as a course and while they received credit, the question of adequate reimbursement was raised. The university has since developed a system of compensating students in studios such as this.

Faculty time must also be bought out. It was thought this first studio would be lead by a team of faculty and in fact one faculty took the lead to provide the continuum the project required. This kind of undertaking is a considerable amount of work and the College now recognizes that Funded Studios can replace one of the courses in a faculty ‘s workload.

There is no doubt that this is an educational model that could bring great benefit to everyone involved. These situations go well beyond the more traditional internship opportunities, that also bring students into "real world" situationa during their educational process. This type of product

or model based scenario could not only be a great pedagogical tool but it can also respond to the University's increasing need to bring in additional sources of funding and address its goal of entrepreneurial advancement.

There are faculty in the University who are resistant to this new entrepreneurial model. They express a real concern that the University is starting to behave more like a corporate entity where less attention is being paid to a comprehensive education and pedagogical issues and much too much energy is being invested in the ways and means of bringing in grants and funding. The fear is that this will be detriment to the primary goal which they feel is education. This is a concern, and a watchful eye should be kept on a balanced approach.

In conclusion, I personally have learned much from each of these projects and would like to continue to work collaboratively. In this presentation, I have discussed two models: The Ameleon Project, a group of faculty and professionals working to develop a new model for a product and applying that to a model for small scale design based industry; and the Lees Carpet Funded Studio that provided an educational opportunity within a new "industrial classroom" setting.

There is no doubt that these types of collaborative projects provide creative educational opportunities, professional interaction and experience, networking, and cross fertilization as well as opportunities for technical and conceptual growth across disciplines. All participants have gained immeasurably from learning in a real world based "classroom" situation. It would be exciting to formulate new models for interactive, collaborative teaching situations. Thoughtful parameters and guidelines should be set up to ensure that students gain, faculty gain, industry gains and the University attains its goal of being an engine for economic development as well as education. If properly formulated, to take the individual student and faculty into account as well as the educational context, these could be win / win situations for all.