

College of Textiles

ANNUAL REPORT 2001-2002

Changes in Service Environment

This has been a challenging year financially. The continued shortfall in the state budget and resulting cuts to the colleges has put pressure on the college to combine activities, eliminate positions, and delay plans. The continued uncertainties in the textile industry have resulted in cuts in training budgets putting pressure on our extension activities resulting in further combining activities, eliminating positions, and delaying programs. The irony is that in the past year we have had more new research opportunities, industry interest in our new activities, and new areas of exploration than ever before. There are strong positive signs of change in the industry. Several companies had record sales and profits the first quarter of this year. Several even set records last year. The consolidations and mergers have created larger companies with new interest in research and new product development.

The industry continues to expand in new, non-traditional areas. One of our challenges is to move quickly enough to be the leader in these areas thereby attracting the necessary funding, building the facilities, and positioning our faculty for these new opportunities. In the past year we have made considerable progress in expanding our research facilities in nonwovens research, launching a new medical textiles concentration, and adding other lab facilities and faculty to support the "new world of textiles." We made great progress working with the North Carolina Textile Foundation this year. In addition to our regular Board of Directors meeting in the fall, we held a full-day retreat in January, a "Vision and Design" meeting with selected board members in April, and numerous smaller meetings to improve the foundation's structure and add new committees on development, membership, finance, and structure.

Compact Plan: Major Initiatives from our Compact

We completed several major initiatives in our compact during the past year and made significant strides in others. The new Nonwovens Partners Lab was opened on May 28th. This twelve million dollar facility gives us unmatched research facilities for this rapidly growing area of the textile industry. Already North Carolina has 29 companies in nonwovens with over \$3 billion in total annual related revenues. We continued to grow our Anni Albers Scholars dual-degree program with the College of Design. Ms. Nancy Powell, formerly Director of Design for Milliken and Company, joined our faculty in February. Professor Powell brings new talents in industrial and product design to the program.

We continued our High School Teachers Summer Research Workshop for chemistry and physics teachers and also had four sessions of Summer Research Workshops for high school students. Feedback from participants continues to be outstanding. Many of our incoming freshmen have attended one of the student workshops in the past. We continued to expand our college honors program taught by two outstanding young faculty members. We have also expanded our freshman mentoring/research program. This year we have gotten over 100 alumni to volunteer to mentor all incoming freshmen in addition to our normal advising and mentoring programs.

The Centennial Scholars Program has become the foundation for our scholarship programs. This year we interviewed 43 students on campus with teams of industry senior executives, faculty and staff. Eleven Centennial Scholars were selected (six are also Park Scholars) with an average SAT of 1401. Most of the other 32 interviewees also were offered scholarships. We have continued to expand the international opportunities for our students and are now official members of the European Association of Universities of Textile Engineering (AUTEX). This association of nineteen universities offers a four-semester textile engineering masters degree with study in four countries.

One of our internal initiatives was to increase visibility of the college through sponsored conferences and improved communications. This past year we co-sponsored with AATCC a special color science workshop, sponsored our second Symposium on Protective Clothing, and co-sponsored with Columbia University and the U.S. Department of Commerce a special conference on "Reindustrialization: Prospects for the Fashion Industry." We dramatically improved our communications by hiring a Director of College Relations, Ms. Emily Parker. In the past year, we have created a new college newsletter for both internal and external customers, had five television spots, thirteen media articles, hosted a retired faculty and staff luncheon, hosted a medical textiles focus group, and built an alumni mentoring program for our freshmen. We also published *A Century of Progress*, a delightful history of the college by Dr. Gary Mock.

Diversity: Initiatives and Progress

The College of Textiles has continued to be a leader on campus in diversity. Of the last seven faculty hired five have been female, one African American, and one international. In the past twelve months, two female faculty members have received tenure. We have appointed an American Indian as Acting Coordinator for Diversity programs and created a college committee led by the dean. We have just begun an initiative to improve graduation rates for African American students.

Instructional Program Advances

During the past year we have developed a new concentration in medical textiles. This program has three tracks: biotextiles (inside the body), medical textiles (outside), and textile healthcare management. The concentration will be open to majors in textile technology, textile chemistry, textile engineering and textile and apparel management. The first course, a modified version of our introductory textile T105 course, will be offered this fall taught by Professor Martin King.

The Textile Engineering, Chemistry and Science Department undertook a thorough review of its textile chemistry degree program. The department held a full-day retreat to discuss the recommendations and is now implementing this major restructuring of the program. The new focus will be on color chemistry, polymer science, and sustainable manufacturing. The Textile Engineering faculty have developed state-of-the-art laboratories for teaching circuit design and information systems. The MS/TE Option B degree was approved. The Textile and Apparel, Technology & Management Department has also made major changes to their programs. The MS Textiles program revisions have been approved and new tracks added in product design, advanced fibrous structures, and medical textiles. TATM has also spent considerable time preparing for the 2003 ten-year review for SACS accreditation. The college has also designed a new, writing intensive course, "New Product Evolution," as a substitute for the discontinued English 112 that we hope will be attractive to a large number of students outside of textiles. The TTM Ph.D. program has also undergone significant revision.

Research

Overall our research indicators have been disappointingly flat. Some indicators decreased relative to the last two years, although it looks as if expenditures will be up slightly relative to last year. The severe economic downturn in the industry, with concomitant rapid industry rearrangements and repositioning, undoubtedly plays a large part in our research contract and applied research / service agreement levels of activity. There are signs that this has begun to change in 2002.

The *National Textile Center* continues to be successful, with this past year marking the 11th year of support from the Department of Commerce. The College of Textiles funding from NTC is about \$2.3 million per year in research funding. This year two new universities, University of California – Davis, and

Cornell, have joined NTC. With the two new universities, we have proposed an increase from \$10 million to \$12 million for next year in basic research funding, and \$5 million in new funding for applied research and technology transfer.

The *Nonwovens Cooperative Research Center* (TATM) is operating successfully on state and industrial funding, with 35 associate, affiliate, and full members. On May 28th, NCRC unveiled a \$12 million state-of-the-art melt-blown / spun-bonded, hydroentangling pilot line in Partners I building. This will provide the college an international showplace research facility for producing a wide variety of high-performance nonwoven fabrics.

A research initiative in Electrotexiles (TATM), joint with the Electrical and Computer Engineering Department received substantial seed money last year from the Defense Advanced Research Projects Agency for investigations into use of electrically conductive fabric structures in a variety of applications. This funding has been continued.

The *Thermal Protection and Comfort Center* (TECS) continues to serve industry with what is arguably the finest facility in the world for assessing protection and comfort issues. Although their funding is somewhat more sensitive to industry economic conditions, and is down somewhat this year, industry contracted for almost \$240,000 of testing and analysis services last year. TPACC announced a new initiative – The Fire and Emergency Response Garment Initiative – with major support from the National Institute of Occupational Safety and Health.

Extension

Textile Extension and Applied Research programs suffered from the economic downturn in the textile economy last year. The Applied Research program, although still quite strong, suffered a 35% decrease in contract value, although only an 8% loss in numbers of contracts. The Short Course program suffered a 48% decrease in number of courses, and a 60% loss in student numbers in

programs offered only by the college. However the success of joint programs in Six Sigma (with the College of Engineering Industrial Extension Service) and Supply Chain Management (with the College of Management) is gratifying. Our In-Plant program suffered the most – 62% decrease in programs, and 34% decrease in numbers of students. Due to the shortfall in revenues, we reduced staff in these areas by two EPA and two SPA employees in early 2002.

The success of our joint programs in Six Sigma and Supply Chain Management programs points to new directions of emphasis for our extension educational programs. Our gross revenues for Six Sigma and Supply Chain Management were \$285,000 and \$185,000 and net revenues \$95,000 and \$40,000 respectively. These gross revenues are \$180,000 and net revenues are \$80,000 higher than all our other short courses and in-plant courses combined. We hope to use these programs and approach as a foundation to rebuild our offerings. We have also finished a Textile Fundamentals online and/or CD-ROM course with 25 hours of instruction. We have just started marketing this program.

The rejuvenation of the Supercritical CO₂ Consortium with the new members Parkdale and Cotton Inc. is positive, as is the discovery of a dyeing process that promises to be applicable to all dyes and substrates. We have also drafted plans for the new textile partners building on Centennial Campus tentatively named the Textile Innovation Center. We are currently negotiating with the anchor tenant.

Faculty and Staff

Dr. David Hinks was named Outstanding Teacher in the College of Textiles for 2001-2002 and was one of four faculty to receive cash awards from the university for his teaching accomplishments. Dr. Gary Mock was selected as the College of Textiles nominee for the Board of Governors Award for Excellence in Teaching. A paper co-authored by Ms. Michele Wallace, Dr. Keith Beck and Dr. Brent Smith was selected as the Paper of the Year in *Textile Chemist and Colorist/American Dyestuff Reporter*. Dr. Mansour Mohamed, Burlington Professor Emeritus, was

selected as the 2002 Swartz Lecturer. Dr. Moon Suh was elected a member of the American Statistical Association. Dr. Subhash Batra received a Sloan Foundation grant to support a scholarly leave with the Harvard University Center for Apparel and Textile Research.

Students

During the December 2001 and May 2002 graduation ceremonies, we presented 201 degrees: 163 undergraduate and 38 graduate. We had 56 students enrolled on our Textile Off-Campus Televised Education (TOTE) program. Four of these students received Master of Textiles degrees. We recorded seven additional courses, and twenty-eight courses were delivered using pre-recorded tapes.

Placement was surprisingly strong with 89% of students placed by June 1, 2002. Thirty-two percent of this year's graduates are entering graduate schools. Many of these graduate-school placements were outstanding. For example, Jacob Hooker (TC) was recipient of a national Phi Delta Theta Scholarship for his senior year and earned a NSF Graduate Research Fellowship valued at \$21,500/year for three years to work on his Ph. D. in chemistry at Berkeley. Our students continued to increase their national and international activities. Four presented papers at the Textile Institute annual conference in Cairo. Mr. Guowen Song's presentation won First Place at the National Textile Center Forum. Min Wei, won third place at the Gilbert Symposium. Sara Draper won second place in the AATCC Herman and Myrtle Goldstein Student Paper Competition, and Dung-wook Jung won second place at the Richard D. Gilbert Graduate Student Symposium.

Fund Raising

This past year we have made excellent progress in organizing for the university's development campaign. Dr. Lennie Barton is now full-time Executive Director and Director of Development. He will be adding a full-time administrative assistant in the near future. Mr. David Holt has become chairman of the

college's development campaign and Messrs. Alan Dickson and Duke Kimbrell honorary co-chairs. We have created a large, active development committee from senior leaders of the North Carolina Textile Foundation and faculty to support their efforts. The foundation provided over \$1.5 million in direct support to the college last year. We have gotten off to a good start in the new campaign, especially in gifts-in-kind due to the new Nonwovens Partners Lab. Our total is now over \$7.7 million.

Administration

We continued to make organizational changes to improve efficiency. These included combining all computer and information technology positions into a single organization and reorganizing the Textile Extension and Applied Research Department. We significantly improved our Internet and intranet presence. Four faculty have retired and three EPA professionals and ten SPA staff have left. Eight positions were eliminated as part of the college's reductions in force. Attracting qualified SPA candidates for open positions continues to be a concern due to lack of flexibility in hiring.

Recommendations and Concerns for the Future

Our main concern continues to be the uncertainty in state funding. The rise in in-state and out-of-state tuitions will continue to make recruiting top students difficult. We feel the college is adjusting quickly to the changes in the textile industry and building a strong base for the "new world of textiles." We must continue to find funding for the new laboratory facilities and to attract leading researchers in key areas. We have the opportunity to be the leading college of our kind in the world with both depth and breadth in the key areas of the industry. Full participation in the Academic Common Market would enable us to attract outstanding students from throughout the region. Our most important challenges are enrollment, program changes, filling key faculty positions, and expanding our sources of research funding.