



# Wilson College of Textiles Annual Report

July 1, 2019 to June 30, 2020

The 2019-2020 academic year was unlike any other in the history of the Wilson College of Textiles, owing to the effects of the COVID-19 pandemic. As we completed only our second year as the second-named college at NC State, we look back with deep gratitude to Fred Wilson and the Wilson family for their vision in enabling NC State to maintain a world-leading position in education, research and service in the field of textiles. By naming the college – ensuring our existence in perpetuity – and providing the crucial resources to support the mission of the Wilson College, Fred and his family have helped ensure that the global reputation of our college will only increase.

This was a year when citizens throughout the world recognized the critical value of textiles in all our lives; when everyone could not fail to appreciate that textiles save lives. The fact that NC State University is the only institution in the Americas with a college dedicated to the interdisciplinary – and transdisciplinary – field of textiles is a testament to the vision and foresight of leadership at the university, the UNC system and the highest levels of the government of the great state of North Carolina. Our 400-plus industry partners constantly tell us the value of Wilson College to their success, in terms of talent supply, research advancement, product development and bottom-line success. The Wilson College of Textiles continues to “punch above its weight” and build economic vitality within North Carolina and the United States.

While challenging, the 2019-2020 academic year was one we look back on with great Pack pride in our accomplishments:

- Pride in collaborating and adapting to ensure that we successfully completed an academic year with strong graduating students at all levels, while keeping all our students and Wilson Community colleagues and partners safe with no known transfer of virus within the Wilson College to date.
- Pride in designing and producing tens of thousands of protective masks – through the Nonwovens Institute and the Zeis Textiles Extension department, and in collaboration with our industry partners. These masks were and are being produced for the NC State campus, North Carolina and beyond
- Pride in advancing the critically-needed research and testing of personal protective equipment performance, through the Textile Protection and Comfort Center and their partners
- Pride in launching the Textile Pioneers Scholarship Program, our college’s first need-based scholarship focused on students from rural North Carolina and/or first generation college attendees
- Pride in enabling one of the strongest career placements for the 2019 graduating class
- Pride in one of the highest levels of scholarship impact in our history – in extramural funding and scholarship knowledge transfer
- Pride in advancing our diversity and inclusivity in our leadership, our student body, our employees and within the North Carolina Textile Foundation Board of Directors
- Pride in establishing our college’s first Culture Charter to help establish the most welcoming environment possible

- Pride in establishing a renewed Strategic Plan, with a new vision, mission, core values and themes. Established in 2019, our vision cannot be more relevant to today's pandemic environment: ***A compassionate world in which textiles enhances sustainability and quality of life for all***
- Pride in our second-highest fundraising year in our history, second only to Fiscal Year 2019 when the Wilson College of Textiles was named
- Pride in our college being awarded the Chancellor's Creating Community Award
- Pride in the awards and recognition of our staff and faculty, including Professor Warren Jasper selected as a Jefferson Scholar by the U.S. Department of State and Ms. Delisha Hinton named as the 2020 NC State University Equity for Women's Award recipient for her stellar work in advancing equity, diversity and inclusion within the Wilson College.

## **Enhancing the Success of our Students through Educational Innovation**

The success of our students remains our top priority, through learning, mentoring and world-class support in preparing each of our students for a successful and impactful career, and a life of service, learning and giving back. Our more than 10,000 alumni are testament to our success, with an impressive number becoming CEOs, entrepreneurs and leaders in their chosen fields of emphasis.

In this academic year, we graduated 159 undergraduates, 16 master's students and 29 doctoral students, one of the highest graduating classes in our history. Graduate success, including employability, is one of the consistent points of pride for the Wilson College. The class of 2019 saw far higher than national averages for career-related outcomes with 96% entering into industry, government, graduate programs or professional degrees such as medicine, pharmacy, optometry, dentistry and law within six months of graduation, compared to a national average of 81%. This **15 point** positive difference is an exciting number. More exciting still is its immeasurable impact on the quality of our graduates' lives. This performance is a testament to the outstanding educational and global cultural competence experiences of our students – gained inside and outside the classroom, laboratory or studio – as well as our decades-long partnerships with industry and government, and our stellar career services within the Academic, Career and Student Services (ACSS) unit.

In place of commencement this year, we initiated department-level celebration of success events for graduating undergraduate and graduate students. All were well received. Our staff and faculty invested time to show that we support, celebrate and honor the graduates, with the hope that many will return for an on-campus commencement experience when safe to do so.

In other examples of student success, the Wilson College:

- Achieved undergraduate recruitment for fall 2020 at a level substantially higher than in previous years and reached enrollment targets for graduate programs on the whole – a sign of the continuing strength of our reputation despite the challenging higher education climate.
- Launched the first cohort recruitment of need-based scholars by offering the Textile Pioneers Scholarship. This is only for students from rural North Carolina and/or first generation college attendees. The inaugural five Textile Pioneer Scholars (four of which are first-generation college students) will join us this fall following fundraising for this initiative of over \$4 million in less than two years (see fundraising below).
- Established our first dual degree master's program in partnership with Zhejiang Sci-Tech University, China, to start in fall 2021. This agreement provides opportunity to obtain a Master of Textiles from NC State University and a Master of Engineering from Zhejiang Sci-Tech University, China.

- Established a new 3+X program with Shanghai University of Science and Technology. Wilson College has a very robust 3+X program with nine universities in which students begin taking master's level classes at Wilson College while simultaneously completing their undergraduate degree from their home university (in either Asia, Europe or South America). This program is a substantial feeder program to our two doctoral programs.
- Conducted the eight year reviews of both academic programs which were very productive and provided insight in improvements needed. The curricula for undergraduate and graduate degrees are under review and an action plan to address the recommendations is being developed.
- Continued maximizing capabilities of Zeis Textiles Extension (ZTE) which provided more than \$400,000 worth of free laboratory training and education to full-time students in the Wilson College. ZTE also established a paid Student Operator Apprentice Rotation (SOAR) program to enable students to gain interdisciplinary practical experience as well as earn support for their education and living expenses.

### **Enhance Scholarship and Research by Investing in Faculty and Infrastructure**

Wilson College has a long history of impactful and interdisciplinary applied research and development with a highly diversified portfolio of extramural funding from industry and government (six major funding agencies). We support a high number of doctoral and master's students as well as mentor and hire undergraduates in our research laboratories and studios. We do not separate education from research. In research, Wilson College staff, faculty, students and our partners learn together, and together advance the textiles enterprise. Some of our notable highlights for this year include:

- New knowledge generation and transfer: over 200 peer-reviewed publications, juried exhibits, patents and books/book chapters were produced, most co-authored by students, demonstrating that the Wilson College remains the leading institution for research and scholarship in textiles globally.
- Extramural research: the college had a robust year in winning extramural research funding. The staff and faculty were extraordinary in the way they continued research operations throughout the year. The success was also due, in part, to the College Research Office providing proposal development support, multiple workshops to enhance research funding success and faculty research mentoring support. The increasingly diverse and large number of junior faculty in particular are showing strong signs of success in funding research and the research and scholarship outlook is strong for the coming years in all disciplines.
  - 102 proposal applications: \$29,927,675 (up by 99% from 2018-2019)
  - 51 federal funding applications: \$23,885,705 (up by 114% from 2018-2019)
  - 26 industry funding applications: \$3,262,922 (up by 28% from 2018-2019)
  - 25 other applications: \$2,779,048 (up by 140% from 2018-2019)
  - 65 research awards: \$7,299,732 (up by 26.16% from 2018-2019)
  - 31 federal awards: \$4,033,797 (up by 11% from 2018-2019)
  - 16 industry awards: \$2,005,333 (up by 30% from 2018-2019)
  - 18 other awards: \$1,260,602 (up by 115% from 2018-2019)
  - 96 Technical Service and Fabrication Service Agreements: \$2,596,523 (up by 42% from 2018-2019)
  - Contracts and grants expenditures: \$4,958,74 (down by 9% from 2018-2019, mostly because of the effects of COVID-19).
- Faculty awards: there were many awards this year with some notable ones including:
  - Dr. Warren Jasper, 2020 Jefferson Science Fellowship Award, National Academies of Science, Engineering and Medicine
  - Dr. Yingjiao Xu, 2020 NC State University Global Engagement Award

- Dr. Kristin Barletta, Richard H. Barchi Prize for best paper given at the Military Operations Research Society (MORS) Symposium for paper titled “Assessing Uncertainty and Risk in an Expeditionary Military Logistics Network” (with B.M. McConnell, T.J. Hodgson, M.G. Kay, R.E. King, Y. Liu, G. H. Parlier, and J.R. Wilson), 5/10/2019
- Dr. Ericka Ford, 2019 NC State Outstanding Extension Award
- Bryan Ormond, AATCC Future Leaders Award

## **Enhance Interdisciplinary Scholarship to Address the Grand Challenges of Society and Enhance Local and Global Engagement Through Focused Strategic Partnerships**

Wilson College is, by design, inherently interdisciplinary with over 400 industry partners who engage with us in internships and hiring, research, development, entrepreneurship and intrapreneurship, product development and lifelong professional education and training. We continue to partner with North Carolina’s outstanding community college system, especially the world class textiles centers within Catawba Valley Community College and Gaston College, at the geographic heart of U.S. textile manufacturing.

Increasingly, we are becoming a transdisciplinary college in which our staff, faculty and students embed their work in collaboration with many other disciplines. Our curricula span engineering, design, technology, management and chemistry. As we build new curricula, these silos will begin to increasingly fall away to a transdisciplinary, problem-solving and opportunity-creating approach to improving our world. While almost all of our activities are interdisciplinary in nature, the most striking example this year has been the demonstration of how textiles save lives. Our interdisciplinary centers and institutes have led the way.

Immediately when the impact of COVID-19 became apparent, the Wilson College and its centers and institutes pivoted to testing and producing fabric and masks in-house – and with our North Carolina industry partners – to Protect the Pack (NC State employees and students) and, the health centers of North Carolina as well as citizens of our great state and beyond. Some highlights include:

- The Nonwovens Institute (NWI) is producing massive quantities of patent-protected air filtration fabric for use by major partners such as Hanesbrands, and is commencing manufacturing masks in partnership with Freudenberg in Durham, NC. This is a tremendous example of the positive impact of textiles on society generally, and health and safety specifically. Also, it’s a testament to the performance, adaptability and economic impact of nonwovens, a rapidly growing sector of the textile industry.
- The Zeis Textiles Extension department and the Textile and Apparel, Technology and Management department have made and continue to make thousands of facemasks for NC State employees and students, all using nonwovens fabric produced by the NWI. Some of the masks feature nonwovens filters that are inserted into knitted masks using a fully automated process in which there is practically no human contact during manufacture.
- The Textile Protection and Comfort Center is developing new comprehensive tests for facemasks and other personal protective equipment (PPE) to improve PPE performance and help prevent the spread of the coronavirus that causes COVID-19 as well as other viruses.

## **Enhance Organizational Excellence by Creating a Culture of Constant Improvement**

The culture of any organization in large part defines its ability to advance a bold strategic plan. The importance of working to improve our culture cannot be overemphasized. For this reason, the leadership of the Wilson College has made addressing our cultural challenges a major priority for the last year, with conviction, vulnerability and with new core values. We are starting to see progress. While the college had the lowest response rate of any college in the UNC Employee Engagement Survey in 2018, in 2020, we had the highest

(80% responded). We are steadfastly committed to building and maintaining the most welcoming environment for all students, employees and partners.

This year, we established a more focused strategic plan and our inaugural Culture Charter, which establishes the framework within which we will operate, collaborate and behave. Our new vision is so relevant to today's pandemic world:

***A compassionate world in which textiles enhance sustainability and quality of life for all.***

As is our mission:

***We exist to advance the success of our students and the textile industry in North Carolina, the U.S. and around the world, through teaching innovation, research excellence, strong partnerships and service***

Within the strategic plan, our newly established core values for the college are: **compassion, equity, collaboration, innovation and sustainability**. These values are all especially key to the changing times that we are currently facing.

After establishment in 2018, we have engaged in socialization and implementation of our Wilson College's first Culture Charter following a deep dive engagement with Tidal Equity, whose consultants brought significant expertise in equity and strategy. The charter provides guidelines on our culture for the Wilson College leadership and all employees. It is proving its worth in many ways, but especially with the transformative change we have experienced as a result of COVID-19 and Black Lives Matter in recent months. Wilson College leadership and all its employees are responding to both, in alignment with our charter. The charter specifically speaks to equity, inclusion and diversity.

## **Diversity, Equity and Inclusion**

We continue to focus on establishing a diverse, equitable and inclusive environment. We are actively working to deconstruct inequities where we find them, and we are emerging as a leader for the U.S. textiles industry in this key realm. While we have much work to do, some accomplishments for which we are proud include:

- Gender: For the first time in our 121-year history of textiles education, Wilson College is now 50% female faculty and majority female in all majors (undergraduate and graduate).
- Underrepresented minority (URM) population: Our population of URM students has increased, owing to dedicated efforts to increase diversity. The number of Black or African American graduate students has increased appreciably. However, much more work is needed in these areas, especially with Black undergraduate students.
- College leadership: Dr. Pamela McCauley was hired as the Associate Dean for Academic Programs. She brings a wealth of experience as an NSF program director of the I-Corps program and a professor of industrial engineering for almost 30 years. The first Black woman Associate Dean of the Wilson College, Dr. McCauley also brings tremendous experience, both personal and professional, in the arena of supporting a diverse student body, building diversity among employees and establishing a welcoming and inclusive environment.
- Strengthened charge for the Diversity and Inclusion (D&I) Committee: Even prior to the murder of George Floyd and the resulting pain and unrest in our country, the D&I Committee had a strengthened charge to assist the dean in identifying and deconstructing inequities within the college and provide a means for continually enhancing a welcoming and inclusive environment. A recent town hall organized by the D&I Committee has engaged Wilson College faculty and staff at a profound level.

- Professional development: All Wilson College colleagues are required to develop Professional Development Roadmaps that now include required diversity and inclusion training above and beyond that which will be required at the university level.
- Transparency: A key part of our Culture Charter is enhancing transparency in multiple ways. We hired a new, highly experienced director for marketing and communications and part of his first year is developing a robust internal communications plan to enhance transparency in areas of value to all employees.
- Graduate student mental health: Doctoral students within the college played major roles in the establishment of Graduate Student Mental Health Ambassadors, in producing surveys to graduate students and in developing the first Graduate Student Mental Health Symposium in the country (postponed due to COVID-19).

Finally, our renewed Strategic Plan (a living document that will align with the University Strategic Plan, once adopted) has established three new themes that are being incorporated into all that we do:

- Hyper-collaboration in a culture of equity and inclusion. Example: remarkable and unprecedented collaboration occurred to move all classes online in the latter part of spring 2020.
- Sustainability in all that we do. Example: we have increasing numbers of faculty engaged in textiles sustainability research, organizing symposia and revising curricula.
- Quality of life through textiles innovation. Example: the importance of textiles for the entire planet could not be more obvious given the worldwide requirement for facemasks to prevent the spread of COVID-19. The Wilson College is playing – and will continue to play – a lead role in protecting the university’s students and employees and the citizens of North Carolina and beyond.

## **Fundraising and the North Carolina Textile Foundation**

The college and the North Carolina Textile Foundation had yet another record year in gifts and pledges (not including the Wilson family gift) of \$4.7 million. Of particular note, to date we have raised more than \$4 million in funds to establish our first need-based scholarship, the Textile Pioneers Scholarship program. This will directly support students who are first generation college attendees and/or from rural North Carolina.

The chancellor’s bold vision for establishing a robust infrastructure and strategy to raise the university endowment to beyond \$1.6 billion through the Think and Do the Extraordinary Campaign directly enabled our college to become Wilson College of Textiles, the second named college at NC State.

Wilson College can attribute year-on-year record achievements in fundraising to its investment in fundraising leadership and personnel, infrastructure and strategy within the college and the North Carolina Textile Foundation, and its unprecedentedly strong collaboration with University Advancement. As the Wilson family gift becomes vested over five years, Wilson College is on track to more than double its total endowment since FY15 (then \$42 million). We believe a goal of \$100 million endowment (gifts/pledges) is within sight, pending market performance. These funds will enable us to maximize the impact of the Wilson College and inspire all who engage with us.

This report demonstrates the remarkable resilience, outcomes-focused and adaptability of the Wilson College community of employees, students and partners. It highlights our proud commitment to the success of each and every one of our students, our dedication to our land-grant mission, our laser focus on interdisciplinary partnerships to support and advance the economic vitality of our great state while also advancing the North Carolina, U.S. and global textiles industry. Textiles improves and saves lives and its relevance has never been more clear.