



Topic of the Speech:

Rethinking Critical Processes for Combating a Pandemic

Professor A. Blanton Godfrey

Joseph D. Moore Distinguished University Professor & Former
Dean

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Professor A. Blanton Godfrey is the Joseph D. Moore Distinguished University Professor of Textile and Apparel, Technology and Management in the Wilson College of Textiles. He is a Fellow of the American Statistical Association, the American Society of Quality, the World Academy of Productivity Sciences, the Royal Society of Arts, Manufactures and Commerce and an elected member of the New York Academy of Science. Professor Godfrey is the recipient of the C. Jackson Grayson Distinguished Quality Pioneer Medal, the Feigenbaum Lifetime Achievement Medal, and is an Honorary Member of the American Society for Quality. He has a B.S. in Physics from Virginia Tech and an M.S. and Ph.D. in Mathematical Statistics from Florida State University.

He is the co-author of eight books and over 30 book chapters and has published over 200 papers. Prior to joining NC State University as Dean of the College of Textiles, Dr. Godfrey was Chairman and CEO of Juran Institute, a quality management consulting company working in over 60 countries. He joined Juran Institute after fourteen years at Bell Telephone Laboratories where he was Head of the Quality Theory and Technology Department. He taught graduate courses at Columbia University for nineteen years as an adjunct professor in Industrial Engineering and Operations Research and was a visiting lecturer in clinical quality at Harvard University for four summer courses. In 1987 he co-founded the National Demonstration Project for Quality Improvement in Healthcare that later became the Institute for Healthcare Improvement, an organization that he has been associated with for over 30 years serving as a member and as chair of the board.



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Rethinking Critical Processes for Combating a Pandemic

Dr. Shaghaeygh Rezaei Arangdad

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Dr. Shaghaeygh Rezaei Arangdad received her Ph.D. in Textile Technology Management from the Wilson College of Textiles at North Carolina State University. As a post-doc she focused much of her research in dynamic interactive data visualization and utilization in support of research grants with the U.S. Department of Health and Human Services with the University of North Carolina-Chapel Hill Gillings School of Global Public Health and a private foundation grant with the UNC-CH WHO Coordinating Center focused on maternal and child health.

This work is in direct support of the United Nations Sustainable Development Goal 3 and UNICEF. Dr. Arangdad has acquired knowledge and extensive experience during years of education and research in the field of textiles, sustainability, data science, and quality improvement in healthcare. She leads the joint development of the Dynamic Interactive Data Visualization & Utilization Lab for UNC-CH and North Carolina State University. She also has an M.Sc. in Textile Management from the Science & Research University in Tehran, Iran and a B.Sc. in Industrial Management from the College of Management in Tehran University. She has published papers in medical textiles, statistics and data science, and apparel and textile sustainability and consumer behavior.

Dr. Arangdad has also supported over 300 graduate students in Lean Six Sigma courses and projects and over 300 undergraduate students in textile and apparel entrepreneurship and new product development.

ABSTRACT SUBMISSION

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Rethinking Critical Processes for Combating a Pandemic

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ABSTRACT (NO MORE THAN 500 WORDS:)

Over the past twelve months, we have been intensely engaged in research driven by the COVID-19 pandemic in the United States. With the support of over thirty graduate students and faculty colleagues in textiles, industrial and systems engineering, management and other fields we have focused first on the major shortcomings in the supply chain management system for Personal Protective Equipment (PPE) and other critical supplies. Our research has provided fundamental insights included in recently published papers recommending major changes in the U.S. Strategic National Stockpile and proposing improvements in data governance. Two other papers describing the response by US textile and apparel companies in pivoting quickly to PPE production and in comparing the US response to other countries have recently been completed and submitted for publication. These rapid increases in production have been supported by university research leading to breakthroughs in technology for N95 respirators and other critical equipment.

Our current research is focused on two related areas: the vaccination rollout process in the United States and the management of COVID-19 in major universities throughout the world. The US Federal Government chose to delegate how vaccinations would be administered to each of the 50 states. Some states, including North Carolina, further delegated the vaccination process to the counties. Public Health resources in most states are understaffed and have limited experience in major health initiatives. The resources and public health skills in individual counties are even more limited. This situation has created hundreds of different processes for the vaccination rollouts with extreme variations in process performance. Our research is using modern benchmarking processes across the fifty states and thousands of counties to discover best practices and to recommend high-performing process designs that can be widely replicated in the US and other countries.

The variation in management of COVID-19 on college and university campuses has produced results that are extreme. Some campuses have had zero infections while others have had thousands. Comparisons of the results on different campuses and by different universities are not turning up any surprising ideas or brilliant strategies. Rather our research is showing how different management processes and strong leadership are producing significantly different results.

Shortages in PPE, testing capabilities, and basic supplies for the vaccination process still hinder the efforts to reduce COVID-19 infections in the United States. We believe our research will provide a strong foundation for a more systems-orientated approach to reducing some of these problems.