

## Turning Ideas Into Solutions

NC STATEPoole College of ManagementSupply Chain Resource Cooperative



The Poole College of Management at NC State University actively engages with industry and academia to create an innovative and collaborative intellectual environment that fosters learning, scholarship and service. We focus on developing and supporting leaders with an entrepreneurial mindset and analytical problem solving capabilities to positively impact our data-rich, dynamic, global economy.

poole.ncsu.edu

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## **NC STATE** Poole College of Management

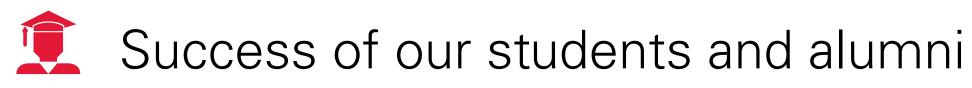


Excellence in all endeavors



Impact of our scholarship

Positive contribution to our global society





A culture of diversity and inclusion

Ethical awareness, decisions and behaviors

# The Supply Chain Resource Cooperative (SCRC) is a unique, industry-university partnership

dedicated to advancing the supply chain industry, delivering bottom-line value to our partners and academic excellence to our students.

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## Leveraging access to the full resources of the university,

the SCRC is able to bring extensive sought-after faculty expertise, research resources and disciplines to the table for our partner companies and students — covering financial, marketing, technology, business risk, human resources, engineering and other crucial AC STATE components of supply chain issues.

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Since 2000, the SCRC has provided support, services, and programs to benefit three overlapping constituent groups:

> Supply Chain Management **Students**

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#### Poole College of Management Faculty

#### SCRC

#### **Corporate Partners** from Diverse Industries

We address real industry challenges through **structured team projects**. We drive performance through **traditional and nontraditional methods**. We deliver results by identifying opportunities and **transforming ideas into action**. **We add value** for students, faculty members, and business partners.





## **SCRC Leadership** A Powerful Combination of Knowledge and Know-How





Building and sustaining relationships, market intelligence, process thinking, project management, leading teams, and thinking globally— these are the skills our partners seek in our students.

The curriculum has been designed with these developmental capabilities in mind, and our students are testimonials to its success. 77

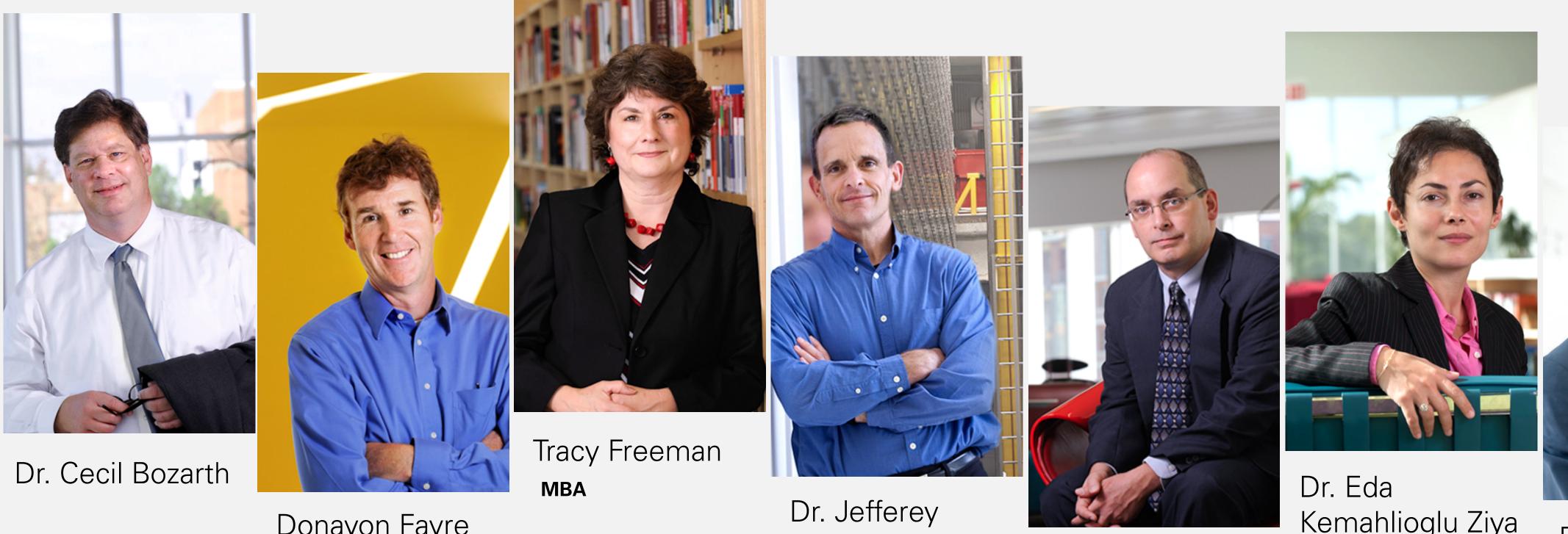
#### **Rob Handfield**

Bank Of America University Distinguished Professor of Supply Chain Management and Executive Director, SCRC, Poole College Of Management





#### SCRC Faculty



Donavon Favre MA

SCRC's faculty leaders cultivate Jenkins MBA program graduate students through experiential learning, increase and diversify its base of supporting companies, engage in industry, and provide an on-going source of supply-chain information.

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Stonebraker

Dr. Don Warsing

Kemahlioglu Ziya

Dr. Sebastian Hesse





#### Executive **Advisors**

Tom Donahue, BS

#### Clyde Crider, MBA, CLSSBB

John Zapko, MBA

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#### Walt DeGrange, **MSOR**

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Craig Demarest, MBA, CPSM

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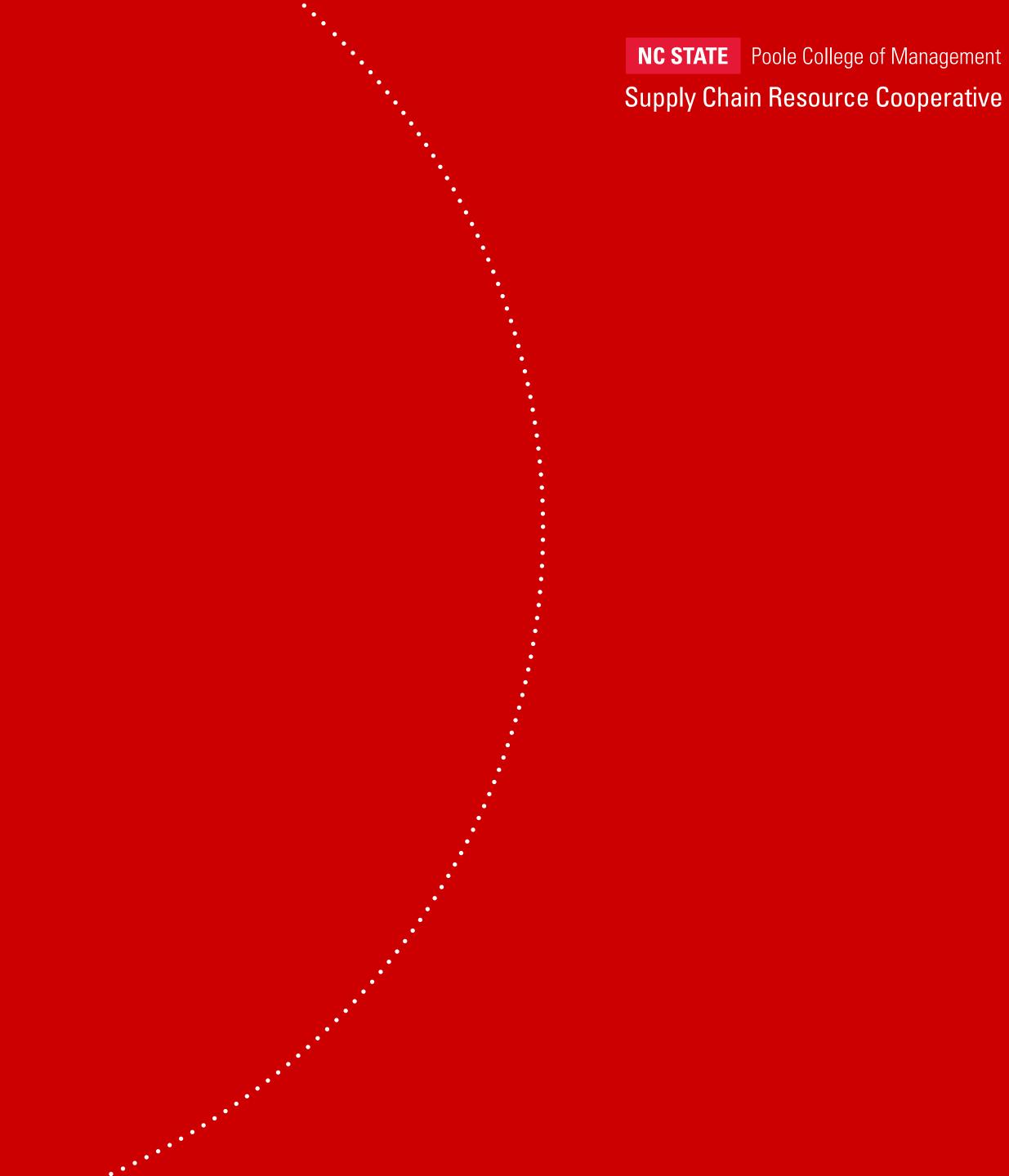
John Glass, **BSIE, MSOM** 

Betty Minton, MBA, CSCP





**SCRC Student Experience** A Leading Edge for Our Students



#### SCRC Student Experience

## Students work with professionals at all levels on real industry challenges

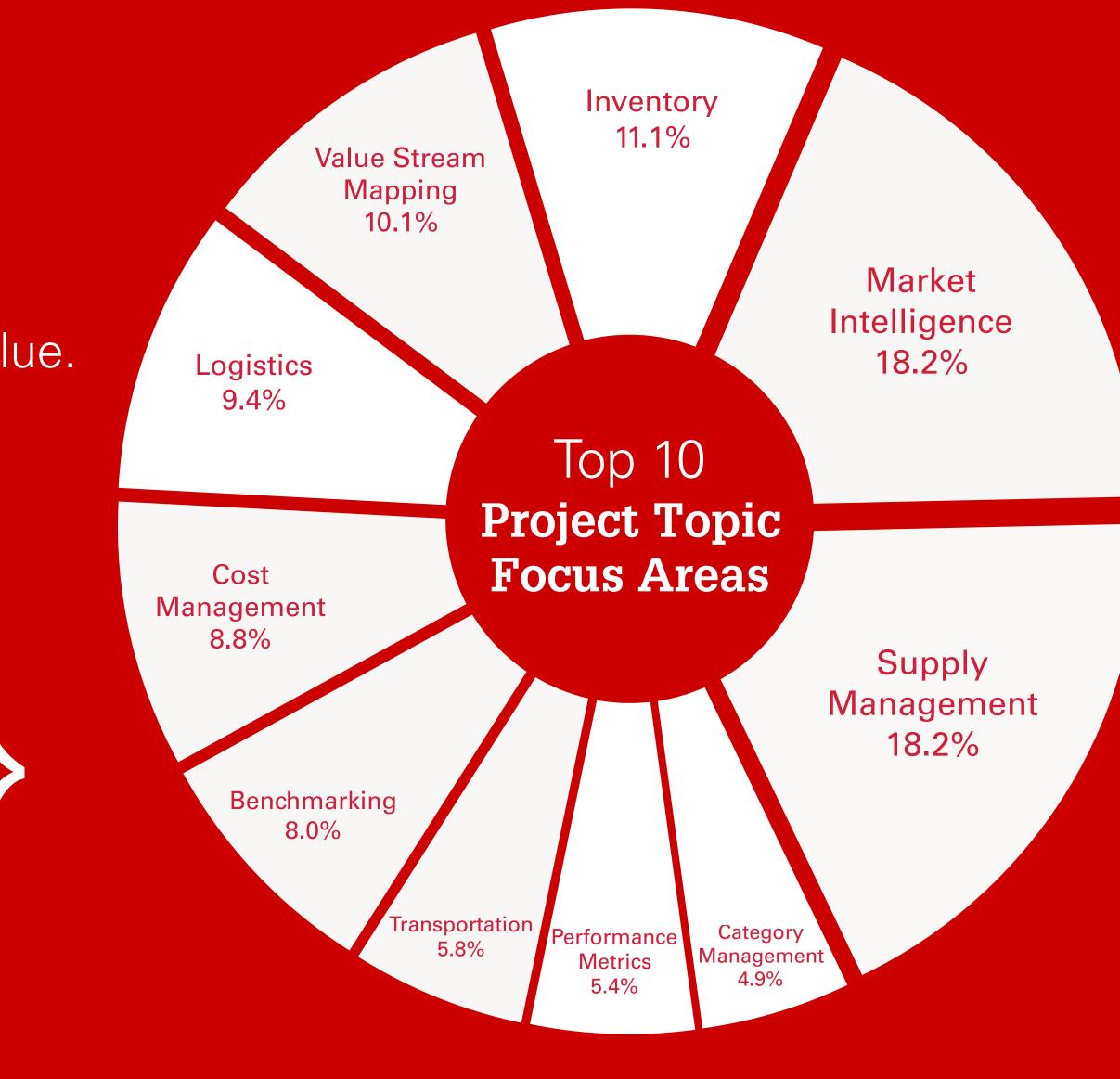
— from engineering, sciences, textiles and even humanities, students put lessons in process mapping, project planning & implementation, and total cost analysis into practice by solving problems for companies in their coursework.

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## Since it's conception, SCRC's 2,200+ students have completed 630+ field-based projects with our **60+ corporate partners** — all with actionable return on investment value.

Project Type	# of Projects
Benchmarking	42
Category Management	26
Cost Management	46
Data Management	11
Inventory	58
Logistics	49
Market Intelligence	95
Performance Metrics	28
Risk Management	10
SC Demand Forecasting	7
SC Maturity	9
SCTechnology	15
Scorecards	10
Supplier Diversity	14
Supply Management	95
Sustainability	5
Talent Management	11
Transportation	30
Value Stream Mapping	53

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SCRC Student Experience

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Industry Partners worked with SCRC students on projects

25-30 **Field Projects** per academic semester

**168 hrs Dedicated to each** supply chain project on average

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## 83 Grad &

Undergrad **Students** 

representing **5** colleges

across NC State enrolled in supply chain practicum projects Fall 2017

## Bloomberg

SCRC Students accessed information and data on 630,000+

global companies with our Bloomberg Terminal



#### SCRC Student Experience

### Ranked **19th** Among Supply Chain Graduate Programs in the U.S.

- GARTNER

## Ranked **25th** in Supply Chain MBA Programs Worldwide

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- SCM WORLD

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## 98% **Placement Rate** in Supply Chain **Related Positions**

## \$80,000

**Average starting salary MBA Class of 2017** for supply chain concentration

## \$54,650

**Average starting salary Undergraduate 2017 grads** for supply chain concentration

## The SCRC **Graduate Research Assistant** (GRA) Program

Creating a highly valued pool of top performers, and a talent pipeline of future supply chain leaders, who work closely with partner companies and faculty on applied research projects for SCRC corporate business partners.





GRAs dedicate a significant amount of time and effort to resolving complex, ill-defined and highly challenging supply chain problems through individual research, on-site interviews with corporate partners, and interaction with NCSU and SCRC faculty.

The GRA student works directly with an assigned corporate partner to identify key supply chain areas in need of improvement and may be required to develop position papers and recommendations based on primary and secondary research.

During the course of a semester, they complete the equivalent of one and a half MBA capstone-level project on an individual basis.

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#### SCRC Student Experience

I recently attended an ISM workshop in Chicago titled "Business Analytics" for Procurement." I found that I had just finished learning so much of what they covered in the workshop in my supply chain courses at NCSU.

l also gained a lot of (much needed) professional experience from the fellowship experience and the practicum projects I took part in through the SCRC. I feel like those experiences definitely helped me to get the job here and also helped me to prepare for what I would be doing in my current role.

I end my day knowing that what I do matters. My hope is that I am helping others make better business decisions using data so that we can ensure that we are good stewards of the money people give us and the blood they donate.

#### I had no idea how much I was learning while I was in school— or how valuable my education was—until I heard ISM presenters teaching these topics to experienced professionals.

#### Kaitlyn Sutton Pennington, MBA 2017

Business Analyst for Supply Management, Red Cross



We empower our students to identify opportunities for businesses and move their ideas forward into action.

BAYER

Background

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**NC STATE** Poole College of Management Supply Chain Resource Cooperative **SCRC Corporate Partnerships** An Extension of Our Partners' Supply Chain Resources

## **Bottom-Line Value** for Our Business Partners

Industry Projects Semi-Annual Partner Meetings Impactful Workshops

SCM Articles & White Papers **Research Libraries** Case Studies

Tax-Deductible Contribution Status Talented Supply Chain Candidates

Industry Polls Tutorials Learning Modules

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Website Partner Portal Blog SCM eNewsletter















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## Merck has derived great value from our partnership with the NCSU SCRC in three areas:

- solutions to our real-world business problems brought forth by the SCRC's smart and enthusiastic students.
- enabled by our membership to the SCRC. 77

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1. Through the supply chain practicum course, we have benefited from innovative yet practical

2. Recruiting top supply chain talent from the SCRC has enabled us to strengthen our organization. 3. Networking opportunities with faculty members and fellow partner companies have been



#### **Timothy Elliot**

Director, Supply Chain Management Leader, Merck

<sup>44</sup> The students are able to apply their knowledge from their supply chain course and their background research for the projects and develop solutions.
We have been able to implement recommendations from many of the projects and immediately see the results of the student's efforts.
The student projects been outside perspectives to finding solutions to the issues with an academic focus. Duke Energy also has an opportunity to look at student performance in action, when we are selecting candidates for internships or future employment. <sup>99</sup>

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C. Curtis Price P.E.,

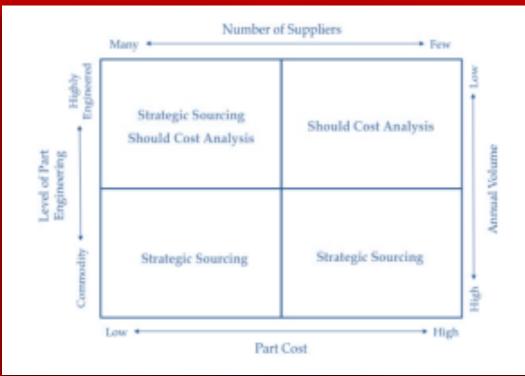
Director, Duke Energy Carolinas, Warehouse Operations

#### ato Partnerships

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Process	<b>Consumables Factor</b>
CNC Lathe	0.05
CNC Machine Center (Milling)	0.05
Coating (Powder)	0.40
Die Casting Cold	0.05
Injection Molding	0.20
Sawing	0.05
Grinding	0.35
Plating	0.40
Waterjet machining	0.05
Washer	0.10
Gear Grinding	0.05
Gear Hobbing	0.05
Welding	0.25
Stamping	0.05



Country	Effective labor sate (USD)	Diffective Labor Rates (USD)
China	5.0	Vietnam -
Indonesia	5.1	Theiland
India	5.0	Philippines
Jepan	22.0	inda -
Mexico	7.5	China
Malaysia	6.7	Indonesia and
Philippines	5.0	Malagola
Singapore	25.4	Mexico
Thelland	4.8	Puland
United Kingdom	20.6	Hungan
United States	28.1	Tatean
Talwan	30.6	Structure
Finland	29.9	Each Republic Bould
Germany	30.3	Singapore
Camada	23.6	Row
Bonea	20.6	Linited lington
Basel	34.8	Jacon I
Vietnam	4.0	United Tabel
Carech Republic	34.1	Canada
Hungary	10.2	finierd
Slowakta	12.8	Germany
Poland	5.6	6.0 30.0 30.0 50.0
Romania	4.1	

# TESLA

#### **Automotive Prototype Components and Extrapolation Factoring Economies of Scale**

Type:

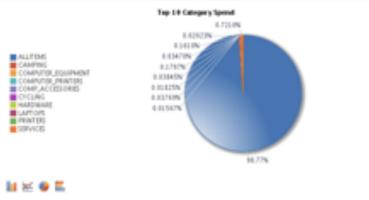
#### **Cost Modeling, Cost Management**

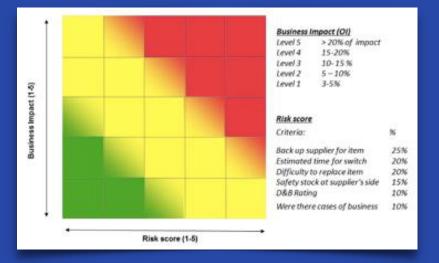
**Project Summary:** 

The NC State team developed a should-cost model taking into account end product dimensions, feedstock dimensions, manufacturing process steps, and cycle times, and incorporating various factors such as the country of manufacturing, the depreciation of capital equipment, taxation, labor rates, labor complexity and power rates to further refine the estimated cost. The model also utilizes the Wright's Learning curve principles for different segments in the cost structure to estimate the drop in the cost of manufacture by volume.



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#### **Commodity Materials Procurement & Risk Mapping**

Type:

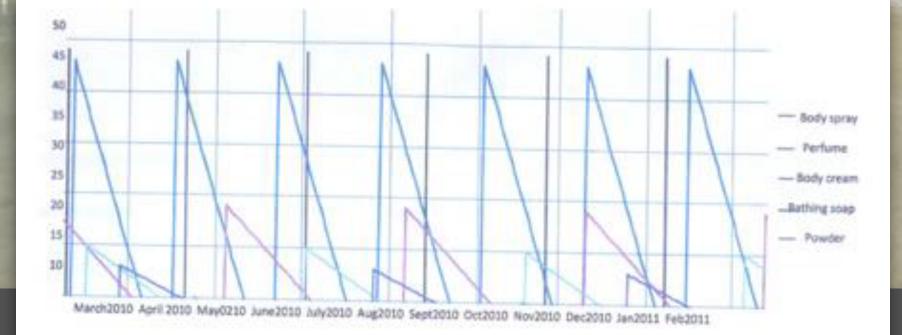
#### **Category & Risk Management**

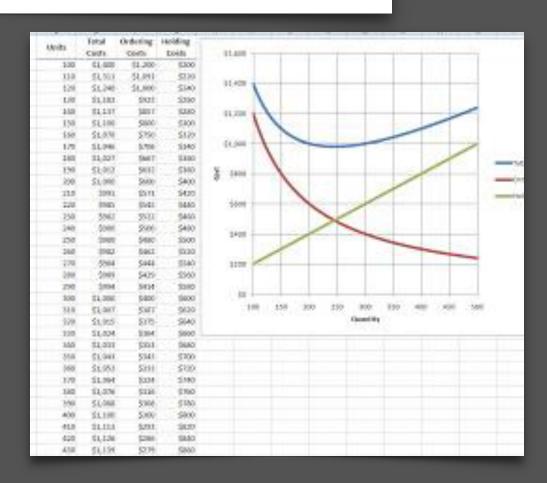
**Project Summary:** 

The NC State team provided Biogen procurement with a should-cost analysis and enhancements to their risk management practices based on research and analysis, such as risk-mapping and new key performance indicators leading to substantial price reductions of commodity materials. Further implementation by new product launch teams have enabled Biogen to strengthen risk mitigation planning.









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## REVLON®

#### **EOQ Model Analysis for Lower Level Inventory**

Type: **Demand Forecasting** 

**Project Summary:** 

The NC State undergraduate Supply Chain Management team reviewed current ordering practices for lower level inventory and analyzed against forecasting/ inventory management best practices. The team recommended an EOQ framework to optimize inventory investment, internal and external handling, and transportation expense. Implementation demanded minimum cost and provided great benefit.





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#### **Procurement KPI Dashboard** & Visualization

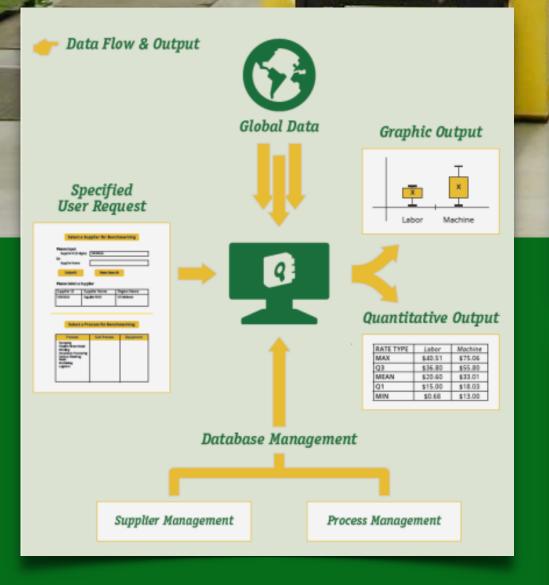
#### Type: **Performance Metrics**

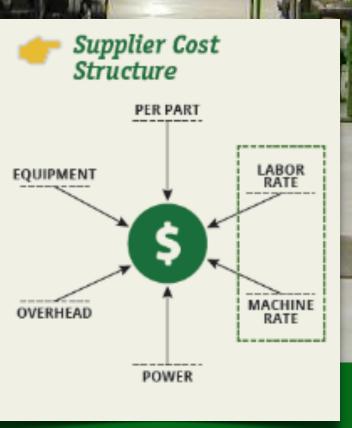
**Project Summary:** 

The NC State MBA Supply Chain team conducted extensive research for industry-leading practices in procurement to recommend impactful internal procurement KPIs and build a tool to calculate these metrics based on Bayer CropScience's data infrastructure. The team then built a visually-engaging platform for the Bayer CropScience procurement organization which was implemented following completion of the project.









#### Initial Supplier Input Template

ID	1000002
SUPPLIER NAME	New Supplier
REGION	Supplier Region
COUNTRY	Supplier Country
PROCESS	Supplier Process
SUB PROCESS	Supplier Sub Process
EQUIPMENT	Supplier Equipment
LABOR RATE	\$0.00
MACHINE RATE	\$0.00

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#### **OEM Global Cost Analysis Tool**

Type:

#### **Data Management & Cost Benchmarking**

#### **Project Summary:**

The team of NC State students developed a flexible, userfriendly database management tool that can provide a competitive assessment of manufacturing rate information. With flexible sorting capability users may customize data outputs, while the tool also allows any OEM to see how competitive a supplier is on a global, regional, commodity and/or equipment level, as well as compare to dynamic industry benchmarks.

Partnerships Investing in Supply Chain Excellence: SCRC Philanthropic Gifts

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## We believe that engaged executive sponsors are a key to successful project outcomes.

With the partnership model, partner companies make annual philanthropic investments in the SCRC. We're always looking for forward-thinking industry partners, supply chain professionals, and students who are eager to join together to make a lasting difference in their business, profession, and career.

If this sounds like you or your organization, let's get in touch.

Tell us how we can support your engagement with us.

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CRC-BETTE

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