Senior Conference

2011 Conference Program & Projects Portfolio

Conference Sponsors:
ATK, Capital One, PwC, and SAIC
December 8, 2011

Dear QUEST Seniors:

Congratulations on the completion of your QUEST capstone course!

The QUEST Honors Program is well known for its rigorous academic standards, so your success is one to be celebrated. Through your coursework with QUEST, you will be entering the professional world with extensive knowledge of teamwork, innovation, and real-world problem solving. These are essential skills for cultivating a bright future.

I am pleased to see that QUEST continues to build its vibrant alumni network and to prepare its students for international partnerships. QUEST’s active participation in study abroad trips to such places as Tunisia, China, and your upcoming trip to Brazil shows that QUEST students understand the criticality of establishing diverse, professional relationships across borders.

I also understand that in the Spring of 2012, you will be welcoming the 20th cohort of QUEST students to your community. Twenty years as an honors program here at the University of Maryland is certainly an accomplishment to be widely recognized, and as graduates of this program you should feel proud to contribute to its legacy.

The University is proud of your achievements and wishes you the best in your conference presentations. I am confident that your experiences in the QUEST program will serve you well beyond the University of Maryland.

Sincerely,

Wallace D. Loh
President
December 8, 2011

Dear QUEST Seniors,

Congratulations on the completion of your capstone project in the QUEST Honors Program!

Your hard work within QUEST exemplifies the best qualities of our talented students at the University of Maryland. As you progressed in your majors within our three colleges on campus—The A. James Clark School of Engineering, the College of Computer, Mathematical, and Natural Sciences, and the Robert H. Smith School of Business—you were able to further challenge yourself by being part of QUEST Cohort 17 and learn in multidisciplinary teams in an action learning context.

Tonight, we congratulate you as your present the results of your hard work within your capstone class to our corporate partners, honored guests, and the entire QUEST community. We are proud of your accomplishments and wish you all the best in your future endeavors!

Sincerely,

Dean Darryll J. Pines
The A. James Clark
School of Engineering

Dean Jayanth R.
Banavar
College of Computer,
Mathematical, and
Natural Sciences

Dean Anand
Anandalingam
The Robert H. Smith
School of Business
QUEST WELCMES

Alumni
Family & Friends
Corporate Partners
Students
University Colleagues
Consulting Project Clients
   ATK Missile Products Group
   ATR
   Booz Allen Hamilton
   Bowles Fluidics
   ezStorage
   Lockheed Martin
   SAIC
   Time Warner Cable
   Unilever
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Conference Program

Registration & Storyboard Display*
Rever Alumni Hall of Fame and Grand Ballroom
5:30 – 6:00 pm

Welcome
Grand Ballroom
6:00 pm

Student Presentation Breakout Sessions
(Please see the chart below.)
6:20 pm

Project of the Year and Closing Remarks
Grand Ballroom
7:40 pm

Reception
Rever Alumni Hall of Fame
8:00 pm

* Please use the chart below to find the corresponding storyboards in the Grand Ballroom.

Student Presentation Breakout Sessions

Guests will progress to the student presentations from the welcome in the ballroom. Guests may attend presentations in any room. Time has been built into each session for guests to move to other rooms in-between presentations. Each session will be 15 minutes with a 2 minute transition interval.

Student ushers are available for guests who are looking for specific rooms and presentations.

<table>
<thead>
<tr>
<th>Session</th>
<th>Ballroom A</th>
<th>Ballroom B</th>
<th>Ballroom C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>ATK (Cost Saving Strategies)</td>
<td>SAIC (Cybersecurity)</td>
<td>Unilever (Foreign Material)</td>
</tr>
<tr>
<td>Session 2</td>
<td>ATK (Market Analysis)</td>
<td>SAIC (Machine Reading)</td>
<td>Unilever (Sustainability)</td>
</tr>
<tr>
<td>Session 3</td>
<td>Booz Allen Hamilton</td>
<td>Time Warner Cable</td>
<td>ATR</td>
</tr>
<tr>
<td>Session 4</td>
<td>Lockheed Martin</td>
<td>Bowles Fluidics</td>
<td>ezStorage</td>
</tr>
</tbody>
</table>

Refreshments will be available in the Rever Alumni Hall of Fame between the Student Presentation Breakout Sessions.
The QUEST - ATK (Cost Saving Strategies) Project
Product Cost Reduction and Optimization

Organization Profile:
Alliant Techsystems Inc. (ATK) is a $4 billion aerospace and defense company with more than 18,000 employees in 22 states, Puerto Rico, and internationally and is headquartered in Arlington, VA. ATK has four main departments: Aerospace Systems, Armament Systems, Missile Products, and Security & Sporting. ATK has grown to become a leading supplier of aerospace and defense products to the U.S. government and its allies, as well as prime contractors. ATK is also a major supplier of ammunition and related accessories to law enforcement agencies and commercial customers.

Project Champion: Kevin Schoonover, Business Development Director of Missile Defense and Targets, ATK
Faculty Advisor: Dr. David Akin, Associate Professor and Space Systems Laboratory Director
A. James Clark School of Engineering

Alison Cowley
B.S. Mechanical Engineering
Expected May 2012

Talyne Derderian
B.S. Mechanical Engineering
Expected May 2012

Anna Mayr
B.S. Finance
Expected May 2012

John Walsh
B.S. International Business
Expected May 2012

Travis Wilson
B.S. Bioengineering
Expected May 2012

Project Abstract
ATK has responded to a Request for Proposal from a potential client, offering a product that has been previously designed, built, and tested. However, the current cost per unit is outside the customer’s price range. Therefore, ATK would like to reduce the cost per unit by 20-25% to meet the potential client’s target price range. This contract award has strategic implications for the future growth of ATK and its potential customer. The main opportunity of this project lies in reducing the total cost of production while meeting the specifications and expectations of the potential customer.

Key Contributions and Recommendations
Interception has devised four main recommendations for ATK on how to reduce the total cost of this product. (1) ATK can capitalize modular tooling that can be used across multiple products and contracts, thus transferring the cost of tooling design and fabrication outside of the contract. (2) ATK should reduce the amount of hours that have been allocated to design and drafting. Because this product has been designed, built, and tested before, it was determined that a complete redesign and redrafting was unnecessary. (3) ATK could reallocate the cost of the quality unit that will be delivered to the customer for their own test purposes. Therefore, the customer will purchase this unit instead of amortizing the cost over the total life of the contract. (4) ATK can switch suppliers for one of the key components of the product, thereby significantly reducing the cost of materials.

Product Cost Reduction and Optimization

ATK has responded to a Request for Proposal from a potential client, offering a product that has been previously designed, built, and tested. However, the current cost per unit is outside the customer’s price range.

ATK would like to reduce the cost per unit by 20-25% to meet the potential client’s target price range.

Final Recommendations

- **Tooling**
  - Propose ATK should capitalize modular tooling that can be used across products and contracts.
  - Identified that approximately 75% of the tooling can be modular.

- **Quality Unit Allocation**
  - Recommend that the customer purchase the quality unit for testing purposes.

- **Material Inventory**
  - Reallocation quality unit to recurring costs would decrease non-recurring cost that would be amortized over the contract.

- **Supplier Optimization**
  - Quantified ATK’s potential advantage in a price negotiation.

Acknowledgements
Team Interception
Alison Cowley B.S. Mechanical Engineering
Talyne Derderian B.S. Mechanical Engineering
Anna Mayr B.S. Finance
John Walsh B.S. Finance, B.S. Operations Management
Travis Wilson B.S. Bioengineering

Project Champion: Kevin Schoonover
Faculty Advisor: Dr. David Akin

Company Background
Alliant Techsystems Inc. (ATK) is a Fortune 500 aerospace and defense company that has become a leading supplier to the U.S. government and its allies, as well as prime contractors. ATK has four departments: Aerospace Systems, Armament Systems, Missile Products, and Security & Sporting.
**Organization Profile:**
ATK, a large aerospace and defense contractor, was founded in 1990 as a spinoff of Honeywell. The company is comprised of four groups: Aerospace Systems, Armament Systems, Security and Sporting, and Missile Products. In 2001, ATK acquired Thiokol, a specialty chemical producer concentrating in rubber and related chemicals as well as rocket and missile propulsion systems.

Department: Business Development  
Project Champion: Kurt McIntyre, Strategic Market Analyst  
Faculty Advisor: David Ashley, Executive in Residence, QUEST Honors Program, Robert H. Smith School of Business

**QUEST Student Team: Space Ventures**

**Project Abstract**
Space Ventures advised ATK in the creation of a competitive advantage through a potential acquisition, increasing product offerings to customers. We conducted scenario analysis given certain possible outcomes as a result of the acquisition in both the short and long term, and ultimately determined what opportunities will maximize profit generation and customer satisfaction. Throughout the process, Space Ventures provided fresh insights and ideas as well as a thorough understanding of the marketplace and its respective component interactions.

**Key Contributions and Recommendations**
The team has successfully devised multi-staged filter processes to effectively analyze the current commercial chemical industry. Through this detailed analysis, Space Ventures has come up with five companies for ATK to align itself with and create strong synergistic value. The team has performed due diligence in order to analyze and further rank these five companies on their economic value to ATK.

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**Alliant Tech Systems**  
**Expansion Into Commercial Markets**

**Opportunity**
- Advise ATK on a potential acquisition of a chemical manufacturing company.

**Target Company Considerations**
- Commercial industries: Petrochemical, rubber, aerospace, defense.
- Profitability: Financial performance, market share.
- Synergies: Complementary technological capabilities, customer base.

**Company Background**
ATK, a large aerospace and defense contractor, was founded in 1990 as a spinoff of Honeywell. The company is comprised of four groups: Aerospace Systems, Armament Systems, Security and Sporting, and Missile Products. In 2001, ATK acquired Thiokol, a specialty chemical producer concentrating in rubber and related chemicals as well as rocket and missile propulsion systems.

**Company Research**
- Hoover’s Database – compiled a list of chemical manufacturers.
- IBISWorld – researched industry outlook.
- Yahoo Finance – obtained detailed financial records for various companies.
- Bloomberg – found earnings consensus and equity value.

**Table of Companies**

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenue Growth</th>
<th>Net Income Growth</th>
<th>Market Cap</th>
<th>Debt-to-Equity</th>
<th>Current Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Inc.</td>
<td>10%</td>
<td>5%</td>
<td>$500M</td>
<td>2:1</td>
<td>2</td>
</tr>
<tr>
<td>XYZ Corp.</td>
<td>12%</td>
<td>8%</td>
<td>$700M</td>
<td>1:1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Recommendations**

**Team Members**
- Marcy DiCarlo  
  B.S. Finance  
  Expected May 2012
- Dan Flesher  
  B.S. Aerospace Engineering  
  Expected May 2013
- Josh Goldstein  
  B.S. Finance  
  B.S. Accounting  
  Expected May 2012
- James Rigos  
  B.S. Finance  
  Expected May 2012

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**QUEST Project:</mark>  
**Market Analysis**  
**Expansion into Commercial Markets**
The QUEST - ATR Project
Penetrating the Residential Market with Efficient Solar Energy Solutions

Organization Profile:
Advanced Technology and Research Corporation (ATR) is a diversified engineering firm that is dedicated to providing high quality products and engineering and technical support services to the public and private sectors. ATR is known for their innovation and the quality of their products, as well as their loyal customer base. They have recently added the Sun Tracking Solar Power division to the company with the innovation of the solar panel tracker.

Project Champion: Eric Rees, COO and CFO
Faculty Advisor: Nicole Coomber, Assistant Director, QUEST Honors Program, Robert H. Smith School of Business

QUEST Student Team: Solar Solutions

Project Abstract
ATR has developed solar panel trackers for the commercial and residential markets. The dual panel tracker (DPT) rotates that panel every ten minutes, increasing daily power by 30%. The DPT system is a ground mount that is specifically designed for the home owner looking for renewable energy sources. Our goal was to identify tactics for rapid penetration of the residential market with the DPT through distribution and marketing strategies. This market opportunity is beneficial for ATR, the consumers, and the environment.

Key Contributions and Recommendations
Solar Solutions has derived three recommendations for ATR that will allow them to sell the DPT to the consumer. Solar Solutions recommends implementing more than one recommendation. The first recommendation is to partner with solar panel system installers. These installers provide leasing and support for the consumers. Second, Solar Solutions recommends partnering with homebuilders, who can install the panel trackers on new homes. Third, we recommend implementing a social media campaign consisting of Facebook, Twitter, and YouTube to spread the word about their new technology and the benefits the solar tracker provides.
THE QUEST - BOOZ ALLEN HAMILTON PROJECT
STREAMLINING THE ACQUISITION REPORTING PROCESS

ORGANIZATION PROFILE:
Booz Allen Hamilton, a Fortune 500 company, is a technology and strategy consulting firm. The firm’s major clients include civilian agencies, commercial organizations, as well as defense and intelligence organizations. Booz Allen Hamilton utilizes its analytics, engineering and operations, strategy and organizations, and technology capabilities to help its clients succeed.

Department: Advanced Analytics Team — Navy and Air Force markets
Project Champion: Andreia Rauta, Senior Consultant
Faculty Advisor: David Ashley, Executive in Residence, QUEST Honors Program, Robert H. Smith School of Business

Lauren Bailey
B.S. Accounting
B.S. Finance
Expected May 2012

Steven Eyring
B.S. Statistics
Expected May 2012

Valentine Kravets
B.S. Computer Science
Expected May 2012

Jennifer Lee
B.S. Operations Management
B.S. Finance
Expected December 2011

Tshikuna Muanankese
B.S. Electrical Engineering
B.S. Mathematics
Expected May 2012

QUEST STUDENT TEAM: TERRAFICIENCY

PROJECT ABSTRACT
Defense Acquisition Executive Summary (DAES) and Probability of Program Success (PoPS) are two reports used within the Department of Defense (DoD) to assess program health; these two reports contain similar information but are in different formats. Currently, military personnel spend more time preparing for PoPS and DAES than in program execution; unnecessary labor hours spent on report generation increases cost growth and schedule delay. Booz Allen Hamilton sees the opportunity to enhance the current reporting tool, Acquisition Management Metrics System (AMMS), to help military personnel prepare both reports through one-time data entry for a more efficient acquisition decision-making process.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
Through research, report guidebooks, and interviews, Team Terraficiency provided information on the layout and components of the DAES report. The team further analyzed the content of PoPS and DAES to find the commonalities and differences between the two reports. An Excel spreadsheet on the commonality report was prepared to demonstrate the team’s findings and to serve as a future reference for Booz Allen Hamilton. In the final deliverable, Team Terraficiency presented a recommendation to Booz Allen Hamilton on functionalities and features that can be enhanced in AMMS through a mock-up presentation.
**The QUEST - Bowles Fluidics Project**

**Optimizing Packaging for Internal Shipping Process**

**Organization Profile:**
Founded in 1958, Bowles Fluidics develops and manufactures fluid flow devices, laying claim to over 250 patents. By creating customized fluid flows without moving parts, the company provides unique and elegant solutions. Bowles Fluidics carries 85% of the market for windshield washer spray nozzles in North America.

**Department:** Quality Systems, Operations  
**Project Champion:** Chi Srinath, Vice President of Quality Systems  
**Faculty Advisor:** Dr. Hugh Turner, Tyser Teaching Fellow, Logistics, Business and Public Policy; Robert H. Smith School of Business

**QUEST Student Team: H₂Optimized**

**Project Abstract**
Bowles Fluidics is a fluid distribution products manufacturer that operates out of two main facilities to meet their customers’ demands: one for manufacturing the individual components of the products, and the other to assemble these components into finished products. This requires internally shipping over 200 tons of product per year, which forces even small inefficiencies to quickly add up both from a financial and environmental perspective. By moving from the current disposable boxes for internal shipping to reusable containers, Bowles can potentially save a substantial amount of money and reduce their waste production. We sought to determine the most optimal shipping container for Bowles’s current internal shipping.

**Key Contributions and Recommendations**
Team H₂Optimized has researched three packaging alternatives for Bowles’s internal supply chain: corrugated plastic, double-walled cardboard, and nesting plastic. H₂Optimized has determined that the optimal alternative is corrugated plastic. In today’s economy, reducing cost is an increasingly difficult necessity. From an economic perspective, the corrugated plastic option will save Bowles 44.7% on the internal shipping packaging cost. This option will cost $0.63 per trip, compared to the current single use cardboard cost of $1.14 per trip, saving Bowles $0.51 per box per trip. From an environmental perspective, the corrugated plastic option will reduce their shipping waste by 96% over a ten-year period, from 156 tons down to 6 tons.

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**Optimizing Packaging for Internal Shipping Process**

**Team: H₂Optimized**  
**Client: Bowles Fluidics**

**Phil Anderson**  
B.S. Computer Science  
B.S. Mathematics  
Expected May 2012

**Kate Hartinger**  
B.S. Operations Management  
B.S. Supply Chain Management  
Expected May 2012

**Aaron Pearl**  
B.S. Mechanical Engineering  
Expected December 2011

**Aparna Rao**  
B.S. Operations Management  
Expected May 2012

**Saul Shamash**  
B.S. Civil Engineering  
Expected December 2012

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**Current Process & Opportunity**

- **Best opportunity:**
  - Weekly shipments: Parts transported for assembly from Columbia, MD to Franklin, MEX
  - One-way systems: Use cardboard boxes unconsolidated by weekly.

**Opportunities:**
- Choose an alternative that, for internal shipping, will optimize
  - Cost Reduction
  - Waste Reduction
  - Increased Reliability

**Process Map**

**TL vs. LTL & Cost Equation**

**Option Comparison**

<table>
<thead>
<tr>
<th>Option</th>
<th>Current Process</th>
<th>Double-Walled Cardboard</th>
<th>Corrugated Plastic</th>
<th>Nesting Plastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of trips</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Weight (lbs)</td>
<td>4,600</td>
<td>4,600</td>
<td>4,600</td>
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<tr>
<td>Height (in)</td>
<td>24</td>
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<tr>
<td>Width (in)</td>
<td>24</td>
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</tr>
<tr>
<td>Length (in)</td>
<td>168</td>
<td>168</td>
<td>168</td>
<td>168</td>
</tr>
</tbody>
</table>

**Conclusions**

**Recommendations:**
- Corrugated Plastic
- Packaged 44.7% less in current state
- TL shipping costs lower than LTL
- Waste reduction: 96% reduction in shipping waste over 10 years
**THE QUEST - ezSTORAGE PROJECT**

**REVENUE MANAGEMENT SYSTEM MODEL**

**ORGANIZATION PROFILE:**
ezStorage is the largest self storage company in the DC metropolitan area. With 48 locations, ezStorage provides 41,000 storage units for its customers. ezStorage’s primary competitors are Public Storage and Extra Space. ezStorage prides itself on providing the highest quality products and services.

**Department:** Finance  
**Project Champions:** George Abdow, CFO; Chuck Ferrarro, Management Consultant  
**Faculty Advisor:** Dr. Tom Corsi, Michelle E. Smith Professor of Logistics, Robert H. Smith School of Business  
Co-Director, Supply Chain Management Center  
Dr. Robert Windle, Professor, Department of Logistics, Business, and Public Policy  
Robert H. Smith School of Business

**QUEST STUDENT TEAM: eZENTIAL CAPITAL**

**PROJECT ABSTRACT**
This project will develop the inputs required to create a revenue management system aimed at maximizing revenue in ezStorage’s facilities. The system will be created based on analysis of company wide data and research pertaining to the self storage industry.

**KEY CONTRIBUTIONS AND RECOMMENDATIONS**
eZential Capital recommends that ezStorage follow the example set developed by the data analysis conducted on stores in two different locations. This data analysis determines the price elasticity for new and existing customers in each of their locations. ezStorage also needs to peg an optimal utilization rate for each location. eZential Capital further recommends that an optimal rate be found for each unit type within the facilities. Finally, to ensure that the price elasticity is as accurate as possible, eZential Capital recommends that ezStorage immediately implement entry and exit surveys to determine customers’ intended lengths of stay and reasons for vacat-
THE QUEST - LOCKHEED MARTIN PROJECT
LOCKHEED MARTIN SUPPLY CHAIN METRIC TOOL

ORGANIZATION PROFILE:
Lockheed Martin, a leading global security company, provides IT services, system integration, and training to the United States Government. Within Lockheed Martin, the Mission Systems and Sensors (MS2) division executes nearly 500 programs for US military, providing radar, surveillance systems and other advanced technology products.

Department: Mission Systems and Sensors (MS2)- Supply Chain Management
Project Champions: Lawrence Bigaj, Supply Chain Technical Director
Faculty Advisor: Dr. J. Gerald Suarez, Lockheed Martin Visiting Technical Fellow, Professor of Practice in Systems Thinking and Design, Robert H. Smith School of Business

QUEST STUDENT TEAM: LM UNITED

Brittany Barnaba
B.S. Mathematics
Expected May 2012

Dan Gerzhoy
B.S. Electrical Engineering
Expected December 2012

Brett Jacobs
B.S. Civil Engineering
Expected December 2012

Linda Rassenti
B.S. Bioengineering
Expected May 2012

Vivek Sankineni
B.S. Finance
B.S. Information Systems
Expected May 2012

PROJECT ABSTRACT
Lockheed Martin’s MS2 repair depots use different technical terminology to communicate and varying metrics to measure performance across the company. This may lead to miscommunication and confusion between depots and the Department of Defense (DoD), which can potentially cause mission-critical inefficiencies. Team LM United was provided with the opportunity to analyze this current state, develop prospective solutions, and provide recommendations to Lockheed Martin for communication and organizational performance improvement.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
It is recommended that Lockheed Martin MS2 adopt, implement, and adapt the metric tool created by the team. As such, the tool is meant to be Version 1.0 with the intention of being continually updated as the tool is used, feedback is collected, and the industry environment changes. Once MS2 is comfortable with the tool, it is recommended that it be spread Lockheed Martin wide. If implemented, this metric tool and corresponding calculation dashboards will have significant impact across the company. This iterative method allows for the employees to be actively involved in the evolution of the tool and the dashboards, ensuring an optimal user-friendly interface throughout the life of the metric tool and calculation dashboards.

Lockheed Martin Supply Chain Metric Tool
LM United

Opportunity

Lockheed Martin’s MS2 repair depots use different technical terminology to communicate & varying metrics to measure performance across the company. This could potentially lead to:

- Miscommunication
- Confusion
- Inefficiency

Methodology

1. Analyze existing metrics
2. Develop a holistic metric tool

Calculation Dashboard

1. Living Document – Version 1.0
2. Continually edit and update
3. Deploy LM-wide
The QUEST - SAIC (Cybersecurity) Project

Cyber Maryland Web Portal

Organization Profile:
SAIC is a FORTUNE 500 scientific, engineering, and technology applications company headquartered in McLean, Virginia with over 45,000 employees. SAIC has a strong commitment to supporting programs of national importance in areas of national security, energy and environment, health, and Cybersecurity. Their mission is to help to solve or undertake our country’s most significant problems by offering a broad range of services and products to address the nation’s most critical technology-related needs.

Department: Cybersecurity Services and Solutions
Project Champion: Hart Rossman, Vice President and Chief Technology Officer for Cyber Programs
Faculty Advisor: Dr. Joseph Bailey, Executive Director, QUEST Honors Program, Robert H. Smith School of Business

QUEST Student Team: Secure Solutions

Project Abstract
Team Secure Solutions recommends the development of an innovative web portal dedicated to the Maryland cyber workforce. As Maryland becomes the center of a growing Cybersecurity industry in the upcoming years, it is critical to ensure that Maryland has the infrastructure to attract, educate, and retain a talented Cybersecurity workforce. Our web portal, named “CyberMD,” will allow this growing Cybersecurity workforce to develop a better community throughout the state by informing the Cybersecurity workforce about upcoming events, educational venues, certification resources, and other relevant opportunities. This web portal will aid in addressing the growing Cybersecurity workforce in the state of Maryland today and allow Maryland to be a global leader in Cybersecurity for years to come.

Key Contributions and Recommendations
The main feature of our innovative web portal is a map and calendar mash-up, which allows users to filter information by time and location. The map will show certification sites, colleges, universities, career centers, and relevant Cybersecurity events. The web portal will also have a traditional calendar of Cybersecurity events. The calendar is included so the event data that is displayed on the map can be seen in a traditional format to help a wide variety of users digest the information. The events will be populated internally, as well as externally by individuals who fill out an event form. Another feature is the Career Navigator that displays pathways and connections for Cybersecurity jobs, demonstrated by a web with nodes that represent different positions or specializations. The navigator would show how to get from one point to another within a Cybersecurity career.
THE QUEST - SAIC (MACHINE READING) PROJECT
A.I. PREDICTION OF FINANCIAL CRISSES

ORGANIZATION PROFILE:
SAIC is a FORTUNE 500 scientific, engineering, and technology applications company headquartered in McLean, Virginia. SAIC has over 45,000 employees and offers services in national security, energy and the environment, critical infrastructure, and health. As a leading provider of IT solutions services for all layers of the modern enterprise, from enterprise strategy consulting to managed infrastructure services, SAIC's IT experts are helping global enterprises every day cope successfully with today's competitive realities and challenges.

Department: DARPA Machine Reading Program
Project Champion: Dr. Leora Morgenstern, Senior Research Scientist and Principal Investigator, SAIC
Faculty Advisor: Dr. Bruce Golden, Professor and France-Merrick Chair in Management Science
Robert H. Smith School of Business

QUEST STUDENT TEAM: A.I.DEAS

Project Abstract
Team A.I.deas is working synergistically with the DARPA Machine Reading Program at SAIC to investigate whether an analysis of ideas within financial news articles can allow for a better categorization than an analysis of words. In particular, we are exploring whether a machine can grasp the underlying ideas presented in an article and use them to predict an impending financial crisis. If such a system could be developed, international finance analysts could use it to gauge the current and future safety of a nation’s economy.

Key Contributions and Recommendations
To achieve the ideal article categorization process, we have created a novel method for encoding ideas in the articles in such a way that a machine can learn and draw conclusions from it. In addition, we have developed an experimental procedure allowing us to compare the efficacy of our idea-based analysis against a word-based analysis. This procedure takes advantage of our "gold standard", the results of human categorization of the articles. Based on a comparison between the two methods' results and "gold standard", the effectiveness of the algorithms can be quantified.

Shiran Beroukhim
B.S. Computer Science
Expected May 2012

Jason Felder
B.S. Mechanical Engineering
Expected May 2012
M.S. Mechanical Engineering
Expected May 2013

Jeff Jacobs
B.S. Computer Science
B.S. Mathematics, B.A. Economics
Expected May 2013

Ryan Murphy
B.S. Operations Management
B.A. Arabic Studies
Expected May 2013

Avi Prince
B.S. Computer Engineering
Expected May 2012
The QUEST - Time Warner Cable Project
Innovating Content Management System Processes

Organization Profile:
Time Warner Cable (TWC) is a cable television company that operates in 28 states and has 31 operating divisions, with its corporate headquarters in New York City. It is a leader in the industry and focuses on "connecting people and businesses with information, entertainment and each other," through their portal site RR.com (RoadRunner) and other services.

Department: Web Services
Project Champion: Ram Nair, Director of Business Operations, HSO Strategy and Web Services
Faculty Advisor: Dr. Hassan Ibrahim, Distinguished Tyser Teaching Fellow, Department of Decision, Operations and Information Technologies, Robert H. Smith School of Business

Quest Student Team: OptimalQ

Project Abstract
Time Warner Cable (TWC) owns a portal website called RoadRunner.com, which increases the value of Time Warner Cable’s services by providing email and breaking news via a portal website. OptimalQ had the opportunity to adapt TWC’s current internal processes to a new content management system, and to provide a five-year vision to increase the value RoadRunner.com adds to its consumers.

Key Contributions and Recommendations
OptimalQ saved Time Warner Cable (TWC) 46% of the time spent loading new content to RoadRunner.com. OptimalQ halved time spent on hero and photo gallery processes and reduced time for their video process by 40%. This translates into fifty-six person-hours saved per month. Over the next six months, OptimalQ recommends that TWC target the website’s advertisements, use an internal wiki to improve internal communication, and reallocate work schedules based on peak times the website is visited. OptimalQ recommends that over the next five years, TWC standardize RoadRunner.com across platforms, diversify website content, integrate social networking, and display TV listings to unify TWC’s TV and web services. With these recommendations, TWC can simplify internal processes and focus on providing value to customers.

Brett Boyle
B.S. Computer Engineering
Expected May 2012

Prateek Kukreja
B.S. Electrical Engineering
Expected May 2012

Eric Oliver
B.S. Computer Science
Expected May 2012

Zach Olson
B.S. Information Systems
Expected May 2012

Emily Pearson
B.S. Finance
B.S. Information Systems
Expected May 2012

Innovating Content Management System Processes
Optimizing Editorial Processes for RR.com

Process Improvements
Old Processes
New Processes

RR.com
RoadRunner Home Page

Recommendations
Over The Next Six Months
Target Ads
Internal Wiki
Reallocate Work Schedules

Over The Next 5 Years
Consistency Across All Platforms
Important Features
New Features

Team OptimalQ
Brett Boyle
Prateek Kukreja
Eric Oliver
Zachary Olson
Emily Pearson

Acknowledgments
Project Champion
Ram Nair
Faculty Advisor
Dr. Hassan Ibrahim
Course Faculty
Dr. Joseph Bailey
David Ashley
Brian Daisey
**ORGANIZATION PROFILE:**
Unilever is a British-Dutch multinational corporation behind many of the world’s best known consumer product brands. Within their food brands Unilever produces a wide variety of popular spreads such as Country Crock. The company produces margarine in four different plants throughout the United States, including a plant in Baltimore.

**Department:** Quality Control  
**Project Champions:** Ben Sandler, Quality Manager  
**Faculty Advisor:** Dr. Debabrata Biswas, Associate Professor of Department of Animal & Avian Sciences, Foodborne Bacterial Infections and Safety Research, College of Agriculture and Natural Resources

**QUEST STUDENT TEAM: PERFECT SPREAD**

**PROJECT ABSTRACT**
Unilever presented Perfect Spread with an opportunity to improve customer satisfaction by reducing the number of complaints related to foreign material, specifically within their soft spreads. Foreign material in this instance is any deviant matter that enters tubs of margarine. As a company committed to maintaining the highest level of brand integrity, Unilever wanted to reduce the exceedingly small percentage of complaints in hopes of enhancing brand loyalty and gratifying customers. By focusing specifically on manufacturing and production, we will aid Unilever in preventing the presence of foreign material in soft spreads produced at the Baltimore plant.

**KEY CONTRIBUTIONS AND RECOMMENDATIONS**
Perfect Spread has taken a multifaceted approach to addressing foreign material reduction. Based on the traceability difficulties of foreign material, we recommend several methods of decreasing foreign material presence. Our recommendations are to conduct stricter supplier audits, create enclosed line coverings, install detection devices, and implement new hygiene protocol. With stricter supplier audits, Unilever will be able to hold suppliers accountable for issues discovered during the audit and encourage them to make necessary changes by the next audit. Enclosed line coverings that circle the tubs from the point they are filled to the point they are sealed will shield the product from exposure to any particles that may be in the air. Detection devices will be able to prevent tubs with specific types of foreign material from leaving the plant. Additional procedures for Hygiene Protocol can decrease the amount of foreign material coming from employees by creating standardized procedures and plant alterations to ensure foreign material does not enter by way of employees.

**FOREIGN MATERIAL REDUCTION PLAN**
Increasing the Quality of Margarine Soft Spreads

**A. METHODOLOGY**

**B. RECOMMENDATION SUMMARY**

1. **SUPPLIER AUDITS**
   Auditing Unilever’s suppliers will help prevent foreign materials from entering the plant by improving the quality of packaging materials such as the tubs used for margarine spreads.
   **ESTIMATED COST:** $5,000 per year

2. **HYGIENE PROTOCOL**
   Three standardized procedures from wearing hairnets to using clean chutes before entering the production floor will reduce the amount of foreign material coming into the plant from outside sources.
   **ESTIMATED COST:** $4,370 per year

3. **LINE COVERS**
   Completely enclosed production lines will help prevent foreign materials from entering margarine tubs during the filling process.
   **ESTIMATED COST:** $5,000 per line

4. **DETECTION DEVICES**
   Detection devices will help reduce the amount of foreign material in Unilever’s margarine spreads by using key technology to detect materials like metal and glass that should not be in the final product after it is sealed.
   **ESTIMATED COST:** $55,000 per line
The QUEST - Unilever (Sustainability) Project: Strategic Planning for a Sustainable Future

**Organization Profile:**
Unilever is a global company established in the 1890s with over 400 brands focused on health and wellbeing. Their portfolio of products ranges from margarine and ice creams to soaps and household care products.

**Project Champions:** Pat Toner, Plant Engineering Manager; Tom Kwasnik, GA Plant Financial Manager

**Faculty Advisor:** Dr. Mike Ohadi, Professor, Mechanical Engineering, A. James Clark School of Engineering

**Co-Founder of the Center for Environmental Energy Engineering**

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### QUEST Student Team: ECONOMIC

- Natan Aronhime  
  B.S. Materials Science and Engineering  
  Expected May 2012

- Kathleen Hendrick  
  B.S. Mechanical Engineering  
  Expected May 2012

- Hannah Henningsgaard  
  B.S. Mechanical Engineering  
  Expected May 2012

- Joel Shumsky  
  B.S. Electrical Engineering  
  Expected May 2012

- Kachan Singh  
  B.S. Information Systems  
  B.S. Finance  
  Expected May 2012

**Project Abstract**
In 2010, Unilever launched the Unilever Sustainable Living Plan, a strategy to grow their business while reducing their environmental impact. Team ECONOMIC’s project focuses on recommending ways to satisfy this goal at the Baltimore Spreads Plant, home to several different brands of margarine. The team performed an energy mapping of the plant to further Unilever’s understanding of the major sources of energy consumption of the plant and to identify the largest areas of opportunity for improvement. The team used this analysis to identify and recommend energy conservation measures that will provide long-term energy and cost savings.

**Key Contributions and Recommendations**
Team ECONOMIC used knowledge of the plant’s layout in combination with energy consumption records to map where and how much energy is consumed around the plant. They used this information to identify the largest areas of opportunity, namely the boilers and compressors, and provide recommendations for improvements that would result in both cost and energy savings. Installing energy meters at each of these major pieces of equipment is essential for a more accurate mapping that will facilitate future improvements and decisions regarding equipment replacement. Additionally, Team ECONOMIC proposed a photovoltaic solar system to provide electricity to the lights within the office space of the plant. The combination of these recommendations satisfy Unilever’s goal to reduce the Spread Plant’s environmental impact and to raise awareness of environmentally friendly practices around their organization.

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### Strategic Planning for a Sustainable Future

**University of Maryland, College Park**

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**Opportunity**

**Unilever Sustainable Living Plan**
By 2020, we will halve the environmental footprint of our products, help more than 1 billion people take action to improve their health and well-being, and source 100% of our agricultural raw materials sustainably.

**Project Focus**
Baltimore Spreads Plant
Average Monthly Energy Consumption (kWh)

**Methodology & Analysis**

**Energy Mapping & Benchmarking**

**Energy Consumption Distribution by Equipment:**

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Consumption (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>4564</td>
</tr>
<tr>
<td>Electrical</td>
<td>2068</td>
</tr>
<tr>
<td>Mechanical</td>
<td>1622</td>
</tr>
<tr>
<td>Process</td>
<td>874</td>
</tr>
<tr>
<td>Other</td>
<td>92</td>
</tr>
</tbody>
</table>

**Energy Consumption:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Current Month (kWh)</th>
<th>Previous Month (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
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<td>925</td>
</tr>
<tr>
<td>Electrical</td>
<td>2068</td>
<td>2100</td>
</tr>
<tr>
<td>Mechanical</td>
<td>1622</td>
<td>1650</td>
</tr>
<tr>
<td>Other</td>
<td>92</td>
<td>100</td>
</tr>
</tbody>
</table>

**Energy Conservation Measures**

**Focus**

- **Blown Air System:** Reduce energy consumption by 50%
- **Vacuum System:** Reduce energy consumption by 30%
- **Lighting System:** Reduce energy consumption by 20%

**Recommenations**

- Install energy meters to track energy consumption.
- Implement a photovoltaic solar system to provide electricity to the office space.

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**Team ECONOMIC – QUEST Honors Program**

**Faculty Advisor:** Dr. Michael Ohadi

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**Project Champions:** Pat Toner

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QUEST Faculty and Leadership

Dr. David Akin
Associate Professor, Department of Aerospace Engineering
A. James Clark School of Engineering

Project Advised: ATK (Cost Saving Strategies)
Dr. David Akin is an Associate Professor in the Department of Aerospace Engineering, A. James Clark School of Engineering. He is also the Space Systems Laboratory Director. Dr. Akin’s research includes space systems, space robotics, space human factors, extravehicular activity, and space suit design. He has many peer-reviewed publications in these areas. Additionally, Dr. Akin works extensively with the American Institute of Aeronautics and Astronautics (AIAA) and collaborates often with NASA’s Goddard Space Flight Center. Dr. Akin earned his B.S., M.S., and Ph.D. degrees from the Massachusetts Institute of Technology.

David Ashley
Executive in Residence, QUEST Honors Program
Robert H. Smith School of Business

Projects Advised: ATK (Market Analysis), Booz Allen Hamilton
David Ashley is an adjunct professor and an Executive in Residence at the University of Maryland Smith School of Business. He is also a program analyst for the Federal Emergency Management Agency (FEMA) within the Department of Homeland Security where his duties involve developing business models, performance measurement and survey work, and program management and program reviews. Before joining FEMA, Professor Ashley served as a Financial Resource Manager with the Department of Homeland Security, Customs and Border Protection (CBP). His duties involved managing a $200M budget including its formulation and execution. Additionally, he oversaw performance measurement and analysis, survey research, and strategic planning for CBP. Previous to his DHS assignment, he worked for the U.S. Small Business Administration (SBA) where he led various marketing research efforts including the SBA’s branding campaign. Professor Ashley also served as the director of the Small Business Development Center at the University of New Mexico overseeing the Center’s operation including formulating business and marketing plans for area businesses as well as assembling business loan packages. He served as president of the University of Georgia’s Marketing Research Institute International and he served two terms as president of the Mid-Atlantic Chapter of the Marketing Research Association. He has published in Quirks Marketing Research Review and has published instructor ancillary materials for various marketing, marketing research, and economics textbooks for Wiley Publishing. Finally, Professor Ashley has just authored a marketing research college textbook though Kendall Hunt Publishing. He holds an undergraduate degree from the University of North Carolina and a graduate degree from the University of New Mexico.

Melanie N. Ashton
Program Manager, QUEST Honors Program

Melanie Ashton joined the QUEST community in Spring of 2009. Since coming to QUEST, she remains highly involved with the strategic implementation of extracurricular programming for the students. She serves as a student affairs counselor, administrator, and events coordinator.

Prior to joining QUEST, Melanie worked as an Assistant Manager in Smith’s Domestic and International EMBA Programs where she organized student trips for our international EMBA students to come to our College Park campus. In this role, she served as a student advisor and faculty liaison, and coordinated EMBA activities with our partners in China, Switzerland, and Tunisia. Prior to that, Melanie was Program Coordinator in the office of Executive Education. Additionally, she brings experience as Special Education Coordinator in the Extended School Year Program for Montgomery County Public Schools. She holds a Bachelor’s Degree in Psychology from the University of Maryland College Park.
**QUEST Faculty and Leadership, Continued**

**Dr. Joseph P. Bailey**  
**Executive Director, QUEST Honors Program**  
**Research Associate Professor of Decisions, Operations & Information Technologies**  
**Robert H. Smith School of Business**  
**Project Advised: SAIC (Maryland Cybersecurity Webportal)**

Dr. Joseph P. Bailey is the QUEST Executive Director and a Research Associate Professor at the Robert H. Smith School of Business. He has been a faculty member at the University of Maryland since 1998. In addition to teaching the capstone course in the QUEST program, Dr. Bailey also teaches the QUEST sophomore course on innovation and design and an MBA course on managing digital markets. His research focuses on Internet commerce and digital platform competition. Dr. Bailey has written numerous peer-reviewed journal articles, book chapters, and co-edited the book *Internet Economics* from MIT Press. His research has impacted company strategy and public policy beyond his scholarly publications. Additionally, he has worked with multiple companies including Amazon.com, AutoTrader.com, eBags, eHarmony, Home Depot, Match.com, SAIC, and Staples. Dr. Bailey’s research has also led to interactions with international organizations and government agencies including the Federal Communications Commission, National Science Foundation, OECD, U.S. Patent and Trademark Office, and the U.S. Postal Service. Dr. Bailey completed his Ph.D. in June 1998 in the Technology, Management and Policy Program at MIT—an interdisciplinary program combining technical, economic, and business analyses for integrated research. His interdisciplinary work originates from a technical/economic background. He received his B.S. in Electrical Engineering and Engineering and Public Policy from Carnegie Mellon University in 1992 and his M.S. in Engineering-Economic Systems from Stanford University in 1993.

**Dr. Debabrata Biswas**  
**Assistant Professor, Department of Animal and Avian Sciences and Center for Food Safety and Security Systems**  
**College of Agriculture and Natural Resources**  
**Project Advised: Unilever (Foreign Material)**

Dr. Debabrata Biswas is an Assistant Professor in the Center for Food Safety and Security Systems (CFS3) & the Department of Animal and Avian Sciences at the University of Maryland, College Park, MD. Dr. Biswas has received his Ph.D. in Bacteriology and Zoonotic Infection from the Department of Animal Resource Sciences at the University of Tokyo, Japan where his research focused the host-foodborne bacteria (*Campylobacter jejuni*) interactions. Following the completion of Ph.D., he worked as a post-doctoral fellow for two years at Washington State University School of Molecular Biosciences, Pullman, WA. During this post-doctoral training, Dr. Biswas worked on the purification and characterization of bacterial (*C. jejuni*) secreted proteins and defined the function of the proteins in adherence, invasion and survival in intestinal cells. Then Dr. Biswas joined as a Research Associate at the Vaccine and Infectious Diseases Organization (VIDO), University of Saskatchewan, Canada. At VIDO, his works focused on the factors involved in the colonization of food-borne bacterial pathogens including *C. jejuni*, enterohemorrhagic *Escherichia coli* (0157:H7) in the intestinal epithelial cells and the development of antigenic components to prevent the colonization of these bacterial pathogens in agricultural animals. Prior to his move to the University of Maryland-College Park, Dr. Biswas worked as a Research Associate at the Center for Food Safety, University of Arkansas, Fayetteville, AR. His research in AR focused on the construction of a novel *Salmonella enterica* serovar Typhimurium and *C. jejuni* vaccine against chicken colonization to make safer poultry products and the role of orange citrus oil, blueberry juice and some other natural products in control of foodborne bacterial colonization in animals.
**QUEST Faculty and Leadership, Continued**

**Dr. Thomas M. Corsi**  
**Michelle E. Smith Professor of Logistics**  
**Co-Director, Supply Chain Management Center**  
**Robert H. Smith School of Business**  
**Project Advised: ezStorage**

Dr. Thomas M. Corsi joined the Smith School in 1976 as a Professor of Logistics and Transportation. He is an associate editor of the Logistics and Transportation Review and the Journal of Business Logistics. He serves on the editorial review board of the Transportation Journal and the International Journal of Physical Distribution and Logistics Management. He has authored more than 100 articles on logistics and transportation. He has consulted for such organizations as the Interstate Commerce Commission, the Maryland State Department of Transportation, the National Science Foundation, the Federal Motor Carrier Safety Administration of the United States Department of Transportation, the National Truck Stop Operators, United Parcel Service, the United States Department of Energy, and the U.S. Army Logistics Agency.


**Nicole Coomber**  
**Assistant Director, QUEST Honors Program**  
**Project Advised: ATR**

Nicole Coomber currently serves as assistant director for the University of Maryland QUEST program. She establishes and maintains professional relationships for the program, manages donations, and chairs the QUEST Curriculum Review Committee. Previously, Nicole worked as policy analyst intern at the Joint National Committee on Languages and as a French teacher and administrator at independent schools in New York and Washington, DC. After graduating Phi Beta Kappa from the University of the South in 2001 with a B.A. in English and French, she earned an M.A. in French Studies from Middlebury College while living in Paris. Currently, she is a doctoral candidate in the University of Maryland’s Education Policy and Leadership department. Nicole’s research includes studying policy impacting higher education and foreign language education. She is currently working on her dissertation, an oral history project that explains the relationship between federal foreign and second language education policies and the establishment of foreign language programs at the higher education level. Nicole teaches courses on teamwork, leadership, and non-profit consulting.

**Dr. Bruce L. Golden**  
**Professor and France-Merrick Chair in Management Science**  
**Robert H. Smith School of Business**  
**Project Advised: SAIC (Machine Reading)**

Bruce Golden received his undergraduate degree in mathematics from the University of Pennsylvania and his master’s and doctoral degrees from the Massachusetts Institute of Technology. He joined the faculty of the University of Maryland Business School in 1976 and served as a Department Chair from 1980-1996. Bruce has received numerous awards, including the Thomas L. Saaty Prize (1994 and 2005), the University of Maryland Distinguished Scholar-Teacher Award (2000), the INFORMS Award for the Teaching of OR/MS Practice (2003), the INFORMS Computing Society Prize (2005), and the Harvey J. Greenberg Award for lifetime contributions to the INFORMS Computing Society. He was named an INFORMS Fellow in 2004. Since 1999, Bruce has served as Editor-in-Chief of NETWORKS. Before that, he was Editor-in-Chief of the INFORMS Journal on Computing. In 1980, Bruce and several colleagues founded two companies specializing in the design and sales of vehicle routing software. He and his partners successfully grew these companies and sold them in late 1998. The surviving company is RouteSmart Technologies, Inc. His current research interests include transportation science, vehicle routing, and healthcare operations management.
**QUEST Faculty and Leadership, Continued**

**Kylie Goodell**  
**Graduate Assistant, QUEST Honors Program**  
Kylie Goodell serves as a Graduate Assistant with QUEST while pursuing a M.A. in Higher Education Administration here at Maryland. In her second year with the program, Kylie coordinates QUEST’s alumni engagement efforts and has helped form and guide the efforts of the QUEST Alumni Board. Kylie is involved with process standardization and strategic program improvement and will present on QUEST’s model of student ownership at a conference this coming March. This spring, Kylie will help lead QUEST’s admissions cycle for cohort 20.

Prior to coming to Maryland, Kylie worked as an industrial engineer for Tyco Electronics in Greensboro, NC. While earning her B.S. in Industrial and Systems Engineering with a minor in French from North Carolina State University, Kylie was active in many academic, philanthropic, and social organizations.

**Dr. Hassan Ibrahim**  
**Distinguished Tyser Teaching Fellow**  
**Department of Decisions, Operations and Information Technologies**  
**Robert H. Smith School of Business**  
**Project Advised: Time Warner Cable**

Dr. Hassan Ibrahim is a Distinguished Tyser Teaching Fellow at the Robert H Smith School of Business. Dr. Ibrahim received D.Sc. and Master degrees in Engineering Management from The George Washington University. He also has Bachelor degree in Electrical Engineering. Dr. Ibrahim areas of specializations are Project Management, Information Systems development, and Operations Management.

Dr. Ibrahim’s research was published by Harvard Business School and the Production and Inventory Control Journal. Ibrahim served on the Editorial Review Board of the Journal of Operations Management. His primary teaching areas are: systems analysis and design, data communications, and operations management. He was nominated for the Outstanding Scholar of the Year Award in the Commonwealth of Virginia in 1996. He has worked for and consulted with a number of industry leaders including the World Bank, McDonnell Douglas, Phillips Electronics, and Siemens Medical Systems.

**Dr. Michael M. Ohadi**  
**Professor, Mechanical Engineering**  
**Co-Founder of the Center for Environmental Energy Engineering**  
**A. James Clark School of Engineering**  
**Project Advised: Unilever (Sustainability)**

Dr. Michael M. Ohadi is a professor of mechanical engineering and co-founder of the Center for Environmental Energy Engineering at the University of Maryland. He leads an industrial consortia in Advanced Heat Exchangers and Cooling Systems, with member companies from the U.S., Europe and Asia. He is internationally recognized for his research in enhanced heat and mass transfer, heat exchanger design and enhancement, advanced energy systems, and micro and nano applications of heat and mass transfer. He is the inventor/co-inventor of nine issued U.S. patents and has published more than 150 refereed technical publications. Dr. Ohadi has actively participated in promoting the higher education and support for fostering technological innovation and entrepreneurship. In 2002 he was featured in Washington Post for his efforts involving innovation and technology transfer. From 2003 to 2010 he was on leave assignment to the Petroleum Institute (Abu Dhabi) where served as Director of Mechanical Engineering program (2003-2006) and Provost and Acting President (2006 to 2010). He is a fellow member of both ASME and ASHRAE and has won numerous awards from both societies. He is actively sought for his expertise by industrial sponsors.
J. Gerald Suarez was named Associate Dean of External Strategy for the Smith School in 2008. In this role, Suarez oversees Smith’s Offices of Career Management, Recruiting and Marketing Communications. In 2005, he joined the Smith School as an Executive Education Senior Fellow, Ralph J. Tyser Teaching Fellow for the Decision, Operations and Information Technology Department, and Executive Director of the Quality Enhancement Systems and Teams (QUEST) Honors Fellows program. In 2008 he received the prestigious Allen J. Krowe teaching excellence award.

He has taught at the corporate, executive MBA, full-time MBA, international, and undergraduate levels and has served as academic director for executive on-site programs at Lockheed Martin Corporation and Scientific Applications International Corporation (SAIC). In 2009, Dr. Suarez became a Visiting Fellow for Lockheed Martin Corporation. Prior to joining the Smith School, Suarez served under two administrations in the White House as the Director of Presidential Quality -- the first such post in the institution’s history.

Dr. Hugh Turner
Tyser Teaching Fellow
Logistics, Business and Public Policy
Robert H. Smith School of Business

Dr. Turner has served as Academic Director for the Smith School’s Freshman Fellows Program since 2007. He teaches multiple sections of the Smith School’s prestigious Freshman Fellows as well as core and elective courses in supply chain management and technology to Smith School students. He has served as Academic Coordinator for the Smith School’s Freshman Fellows Program since 2007. In addition, in 2008 he developed and launched the successful Music Management Fellows Program at the Smith School. He has been recognized as being among the Smith School’s top 15% in teaching, was a finalist in the Smith School’s Krowe Award for teaching with technology and in 2009 won the Legg-Mason award for Teaching Innovation. Dr. Turner serves as Faculty Advisor to the Music Management Business Society and has developed, organized, and led the undergraduate Logistics, Transportation and Supply Chain Management Fellows field trip to the Port of Los Angeles since 2007.

Dr. Turner’s industry experience includes working as a private truck fleet manager for a major retailer, a consultant to the railroad industry, and deck officer in the merchant marine where he held a Chief Mate’s license.

Dr. Turner’s research interests include seaport policy and economics with emphasis on cost structures, port productivity, and infrastructure investment. His work has been published in Maritime Policy & Management and Transportation Research E. In 2003 his dissertation was awarded first place in the annual dissertation competition sponsored by the Transportation and Public Utilities Group of the American Economic Association.

Kathryn Weiland joined the QUEST team in July of 2011. She is currently finishing her M.A. in Higher Education Administration here at Maryland. Kathryn heads QUEST’s communication efforts, which includes distributing “This Week in QUEST (TWIQ)”, advising QUESTPress, the student newsletter, and serving as the website content manager. She also compiles the bi-annual resume book and assists with marketing initiatives. Kathryn is also on the planning committee for the QUEST 20th Anniversary Celebration in April 2012.

Prior to joining the QUEST staff, Kathryn was a middle school English teacher in Baltimore County and Montgomery County Public Schools. She earned her bachelor’s degree in Education and English from Niagara University. Upon graduation from Maryland in May of 2012, Kathryn hopes to work in the field of higher education policy in Washington, D.C.
LEARNING AND COLLABORATING

ABOUT QUEST
Quality Enhancement Systems and Teams (QUEST) is a multidisciplinary engineering, technology and management program at the University of Maryland. Students participate in a challenging course of study that focuses on quality management, process improvement, and system design. Funded in 1993 by a grant from IBM to establish total quality on university campuses, the University of Maryland has continued the program which has produced excellent graduates prepared to face the changing landscape of business, engineering, and technology.

COLLABORATION & TEAM WORK
In each QUEST course, students work in cross-functional teams on action learning projects. The team based and multidisciplinary format of the curriculum provides students with experience in team dynamics, allows collaboration between individuals of diverse skill sets and talents, and inspires an environment for collaborating on ideas and tactical strategies.

COMMUNITY OF LEARNING
QUEST is a community of learning – all members contribute to and benefit from the interactions and lessons learned. The community includes students, faculty and staff, alumni, professional partners and University colleagues. This dynamic combination provides a broad field of shared learning experiences, networks, sponsorship and project opportunities, and a unique program structure.

MULTIDISCIPLINARY FOCUS
QUEST students represent majors within three colleges of the University:
- A. James Clark School of Engineering
- College of Computer, Mathematical and Natural Sciences
- Robert H. Smith School of Business
QUEST students share and develop their organizational and technology acumen while increasing their understanding of how these industries are interdependent in the professional field.

ACTION LEARNING
QUEST courses go beyond the walls of the university by inviting in corporate guest speakers and allowing students to apply course lessons to real-world challenges. Students learn to apply principles of quality management, process improvement and system design to meet the needs of customers and users. As seniors, student teams work on problems defined by corporate, government, and non-profit organizations, learn about the consulting process, and provide recommendations.

JOIN THE LEARNING COMMUNITY
QUEST partners are individuals and organizations who engage in and contribute to learning programs, projects and initiatives. Partners interact with the students, staff and faculty in a variety of forums resulting in value-added exchanges of knowledge and ideas. Partners are engaged in:
- Receiving consulting services
- Sponsoring Integrating QUEST (IQ) events, initiatives and visits to their organizations
- Sponsoring the QUEST Senior Conference

QUEST partners gain exposure for recruiting students to internship, co-op and full-time positions and benefit from a heightened presence at the university level.

To join us, please share your business card with a staff member or contact us at:

QUEST Honors Program
3335 Van Munching Hall
University of Maryland
College Park, MD 20742
(301) 405-9553
questmail@umd.edu
FORMER QUEST PROJECTS OF THE YEAR

2010: THE QUEST – TULKOFF FOOD PRODUCTS PROJECT

PROJECT: WASTE REDUCTION & WATER TREATMENT OPTIMIZATION

Jeffrey Lue
Yasmeen Thomé
Augusto Tono
Melanie Wong
Jesse Wu

2009: THE QUEST - LOCKHEED MARTIN (OCEAN WAVE) PROJECT

Project: Deployment of Ocean Wave Power-Generating Buoy Farms

Suehyun Cho
Munaf Kachwala
Abhishek Kumar
Abby Widom
Gary Wu

2008 (TIE): THE QUEST – WINCHESTER HOMES PROJECT

PROJECT: SUSTAINABLE SOLUTIONS FOR CONSTRUCTION WASTE MANAGEMENT

Brad Eisenberg
Tracey Epstein
Sean Kirk
Mary Larson

2008 (TIE): THE QUEST – UKRAINIAN YOUTH PROJECT

PROJECT: SHUTTERS4SCHOLARS

Ianina Jmourko
Alexandra Petrenko
Shaun Robinson
Allison Sedrish
Ellen Shvets
Vlad Tchompalov

2007: THE QUEST – ANACOSTIA WATERSHED SOCIETY PROJECT

PROJECT: PRESERVING THE ANACOSTIA WATERSHED

Greg Brown
Christopher Barrow
Jessica Slick
Ashley Ng
**QUEST Sponsors**

The QUEST Honors Program at the University of Maryland thanks all of its sponsors. Sponsorship of many different kinds makes our action learning curriculum possible. Thanks to the support of the companies listed below, we are able to deliver outstanding learning opportunities to our talented students.

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**Project Sponsors**

The companies below have made a significant contribution our QUEST Seniors as they complete their capstone learning project. In addition to a financial contribution, these sponsors have given an enormous amount of time and thought leadership to a team of students.

- ATK*
- ATR
- Booz Allen Hamilton
- Bowles Fluidics
- ezStorage
- Lockheed Martin
- SAIC*
- Time Warner
- Unilever*

* Two Projects

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**Conference Sponsors**

The companies below have made a significant contribution to our QUEST Senior Conference. Thanks to their financial support, our QUEST Seniors have been given the opportunity to professionally present their projects and our QUEST community has been given the chance to celebrate their accomplishments.

- ATK
- Capital One
- PwC
- SAIC

---

**Other Support**

In addition to our signature sponsors, the companies below have contributed to the learning of our QUEST Seniors in a variety of ways including our classroom visits and co-curricular activities.

- Accenture
- BD
- Deloitte
- GE
- Goldman Sachs
- IBM
- KPMG
- W. L. Gore & Associates

---

**Thank You!**
QUEST would like to thank and acknowledge all of the individuals, committees, and organizations who have contributed to helping honor and celebrate student achievement at this event.

**QUEST Students**

**QUEST Alumni**

**Family, Friends, and University Colleagues**

**Student Volunteer Committee**
- Alexander Bansleben
- Elizabeth Blankenhorn
- Hayley Brown
- Elinor Chang
- Manas Kulkarni
- Alexander March
- Audrey Morris
- Jessica O’Keefe
- Bryan Prince
- Rochelle Samuel
- Aditya Sridhar
- Mercedes Velaro
- Jacob Wilkowsky

**QUEST Partner Colleges**
- College of Computer, Mathematical and Natural Sciences
- A. James Clark School of Engineering
- Robert H. Smith School of Business

**QUEST Student Organization (QSO) 2010-2011**
- Marc Kramer (President)
- Steve Eyring
- Jeff Jacobs
- Prateek Kukreja
- Manas Kulkarni
- Audrey Morris
- Kyle Zhang

**Capstone Course Teaching Assistant**
- Brian Daisey

**Robert H. Smith Events Team**

**QUEST Alumni Board**
- Andreia Rauta (Q14) *Chair
- Manan Bahri (Q11)
- Brian Bender (Q5)
- Kyle Bodt (Q14)
- Joshua Davis (Q15)
- Erika Elko (Q15)
- Debbie Feinberg (Q1)
- Megan Harvey (Q14)
- Yana Jmourko (Q14)
- Joel Liebman (Q14)
- Bernard Ng (Q10)
- Kevin Schoonover (Q11)
- Anna Volper (Q14)

**QUEST Curriculum Review Committee**
- Nicole Coomber *Chair
- Melanie Ashton
- David Ashley
- Dr. Joseph Bailey
- Debbie Feinberg
- Kylie Goodell
- Dr. Jeffrey Herman
- Prateek Kukreja
- Manas Kulkarni
- Dr. James Purtilo
- Meenu Singh

**QUEST Recruiting Committee**
- Alison Cowley
- Michele Fried
- Varisha Parikh
- Joshua Kohn
- Shirley Han
- Danny Laurence

**Photography**
- Lisa Helfert

**Catering**
- Matters of Taste

**Riggs Alumni Center**
- Heather Gleason