Dear QUEST Seniors,

Congratulations on the completion of the Quality Enhancement Systems and Teams (QUEST) capstone course. Excellence in academics is at the core of the University of Maryland’s mission. Rigorous educational programs such as QUEST allow talented students to enrich their classroom knowledge with practical skills that will maximize their future contributions to society. Team work, interdisciplinary research and close consultation with experienced faculty are strengths of the QUEST program. They embody some of the best educational practices at the University of Maryland.

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

Yours sincerely,

C. D. Mote, Jr.
President
QUEST WELCOMES

Alumni
Family & Friends
QUEST Partners
Students
University Colleagues

Consulting Project Clients:
Agilent Technologies
ATK
Bowles Fluidics Corporation
Force 3
GE Healthcare
KPMG, LLP
Lockheed Martin Corporation
PricewaterhouseCoopers
SAIC
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Registration & Storyboard Display
Rever Alumni Hall of Fame
5:30 – 6:00 pm

Welcome
Grand Ballroom, The Samuel IV Riggs
6:00 pm

Student Presentation Breakout Sessions
(Please see the chart below.)
6:25 pm

Reception
Rever Alumni Hall of Fame

 Closing Remarks and Conclusions
Rever Alumni Hall of Fame

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>Ballroom A</th>
<th>Ballroom B</th>
<th>Ballroom C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session 1</strong></td>
<td>SAIC SmartGRID</td>
<td>ATK Supply Chain</td>
</tr>
<tr>
<td><strong>Session 2</strong></td>
<td>SAIC Cyber Security</td>
<td>ATK Oil Tools</td>
</tr>
<tr>
<td><strong>Session 3</strong></td>
<td>KPMG, LLP</td>
<td>Force 3</td>
</tr>
<tr>
<td><strong>Session 4</strong></td>
<td>PricewaterhouseCoopers</td>
<td>Agilent Technologies</td>
</tr>
</tbody>
</table>

The reception will take place in the Rever Alumni Hall of Fame following student presentations at 7:35 p.m.
THE QUEST - AGILENT PROJECT

PROJECT TITLE: IMPROVING THE QUALITY AND TRACKING OF SERVICE REPAIR PARTS

ORGANIZATION PROFILE:
Agilent Technologies is a leading designer and manufacturer of electronic and bio-analytical measurement tools. The company serves markets that include life sciences, communications, healthcare, and electronics. The Logistics Center Americas, located in Delaware, is the sole distribution center in the United States.

Department: Logistics Center Americas
Project Champion: Dennis Cook, Senior Logistics Representative

QUEST STUDENT TEAM: TEAM AGILE

Kourtney Johnson  
B.S. Accounting  
B.S. Finance  
Expected May 2010

Heather Kerrick  
B.S. Mechanical Engineering  
Expected May 2010

Pooja Patel  
B.S. Accounting  
B.S. Operations Management  
Expected May 2010

Alexandra Petrenko  
B.S. Finance  
B.A. Economics  
Expected May 2010

Mike Pollhammer  
B.S. Supply Chain Management  
B.S. Marketing  
Expected May 2010

Felix Stief  
B.S. Mechanical Engineering,  
Expected December 2009

BIOGRAPHY
The team is comprised of six seniors in the QUEST Program with a diverse array of majors ranging from Operations Management, Mechanical Engineering, Economics, Supply Chain Management, and Accounting. Team AGILE's diverse academic and work backgrounds, supplemented with its strong knowledge of Six Sigma practices and Total Quality Tools, provide it with a solid framework for meeting Agilent's needs.

FACULTY ADVISOR
Dr. Martin Dresner  
Professor, Logistics, Business, and Public Policy  
Robert H. Smith School of Business

PROJECT ABSTRACT
Agilent has an opportunity to increase customer satisfaction through timely and efficient repair of instruments. In order to do so, the quality of the repair parts shipped to the Customer Engineer (CE) must be ensured so as to not result in a Defect on Arrival (DEFOA), which would lead to complications and timely delays in the repair process. Team AGILE’s was asked to recommend solutions to both decrease the number of DEFOAs in the current system and to better track the quality of Agilent's service parts.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
The team has successfully devised four primary recommendations to reduce the occurrence of DEFOAs.
- Create a more detailed DEFOA claim form to collect data so trends in root causes can be more easily tracked.
- Implement inspection process for returned repair parts to catch and prevent potential DEFOAs. Store information on these potential DEFOAs in new database for trend analysis purposes.
- Create more defined metrics to measure CE performance in relation to DEFOAs.
- Individually track high-cost and DEFOA-prone parts to capture more data related to part history.
The QUEST - ATK (Oil Tools) Project
Project Title: ATK Oil Tools

Organization Profile:
Alliant Tech Systems, Inc. (ATK) is a premier supplier of aerospace and defense products to the U.S. government, allied nations, and prime contractors. ATK specializes in energetics and the development and manufacturing of solid extruded propellant for more than 25 types of military ammunition and rocket systems.

Department: Mission Systems
Project Champion: Jaime Rojas, Vice President, Energy Sector

Quest Student Team: Blasting Edge

Michael Givens
B.S. Marketing
Expected May 2010

Amanda Gravenhorst
B.S. Bioengineering
Expected May 2010

Christopher Huie-Spence
B.S. Aerospace Engineering
Expected May 2011

Emily Kanner
B.S. Civil Engineering
Expected May 2011

Ari Lowell
B.S. Finance
Expected May 2010

Biography
An integrated and dynamic team composed of engineers and business students combined unique ideas and perspectives in order to develop an industrial marketing process for technologically advanced products. Michael Givens’s concentration in marketing along with Ari Lowell’s proficient business background has helped to create a framework for an effective product marketing process. In addition, the technical backgrounds of Aerospace Engineer Christopher Huie-Spence, Bioengineer Amanda Gravenhorst, and Civil Engineer Emily Kanner, have helped to make this process unique by integrating important knowledge regarding product usage and functionality in order to better understand the customer.

Faculty Advisor
Dr. Joseph Bailey
Executive Director, QUEST Program
Research Associate Professor
Decision, Operations & Information Technologies
Robert H. Smith School of Business

Project Abstract
Currently, ATK culture is focused around project oriented work with well defined structure. As a highly regarded aerospace company, ATK is trying to emerge into new markets with existing high-prized technology products. In order to achieve this goal, our team has defined a framework to be used for an industrial product marketing process, which can be modified for a specific product. In order to make improvements to this framework, an existing product was run through the process. Our team’s final deliverable is an ATK specific marketing process that will allow the company to successfully introduce a product to the industrial market.

Key Contributions and Recommendations
Our defined industrial product marketing process will help ATK assess markets and customer trends. The industrial product marketing process framework created by our team is customized specifically to ATK in that it is quantified and well-defined, allowing the company to easily determine success within a given market. Marketing to an industrial customer is not a specialty within ATK, however, this framework will allow the company to expand from a project based government market to a customer driven industrial market.
**Organization Profile:**
Alliant Techsystems is a defense contractor headquartered in Minneapolis, MN, providing aerospace and defense products to the US government, who accounts for over 70% of total sales. The company currently records $4.75 B in revenue and employs over 19,000 employees. Their main products include fuses, rocket motors, ammunition, and other engine components.

**Department:** Receiving  
**Project Champion:** Arthur Marriott, Vice President of Logistics

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**Quest Student Team: Team Attack**

- Jill Clark  
  B.S. Accounting  
  B.S. Finance  
  Expected May 2010

- Erika Elko  
  B.S. Accounting  
  B.S. Operations Management  
  Expected May 2010

- Steve Hall  
  B.S. Accounting  
  B.S. Finance  
  Expected May 2010

- Kelly Quinn  
  B.S. Supply Chain  
  B.S. Operations Management  
  Expected May 2010

- Wayne Yu  
  B.S. Aerospace Engineering  
  Expected May 2010

**Biography**
Team Attack brings experience from multiple fields, including backgrounds in finance, supply chain, and engineering, to create an innovative solution for ATK. The team used its knowledge from previous consulting projects to create process flow diagrams, cost analysis, and to identify the best practices and areas of improvement for the company. The team met twice a week in addition to weekly meetings with a faculty mentor to clearly define the problem, conduct background research, brainstorm solutions, and to add value to the receiving process.

**Faculty Advisor**
Dr. Tom Corsi  
Professor of Logistics  
Co-Director, Supply Chain Management Center  
Robert H. Smith School of Business

**Project Abstract**
Team Attack will develop a set of innovative measures unique to Alliant Techsystem’s business, beyond typical supply chain organization throughput and supplier delivery metrics. Our team will visit ATK and observe the receiving process for special storage requirement items at Allegany Ballistics Lab, West Virginia. We will identify industry best practices and areas of improvement to develop a total quality process complete with a metric set and future benchmarks to measure performance for both the short-term and long-term horizons.

**Key Contributions and Recommendations**
Team Attack has designed a four-pronged approach to identify solution areas, which focus on technology, human capital, supplier cooperation, and regulation. These recommendations include an alert system on the computer database, a dashboard for condensing information, an updated supplier scorecard to evaluate delivery variables, and working with labor flexibility. We have included a cost analysis in our recommendations to support future cost savings. Team Attack’s solution will create more visibility in the supply chain, foster communication, and save ATK time and resources in their receiving process in the future.
THE QUEST - BOWLES FLUIDICS PROJECT
PROJECT TITLE: BOWLES EXPANSION

ORGANIZATION PROFILE:
Bowles Fluidics Corporation (BFC) is the industry leader of Fluid Dynamics and has for decades been a Tier 1 supplier for large automakers such as Ford and Toyota. They have been extremely successful due to their vast intellectual property and unique nozzle designs that allow BFC customers noticeably efficient and accurate use of their fluidics devices (windshield washer nozzles, massaging showerheads, oral irrigators, and more).

Department: Operations
Project Champion: Ron Tobb, Vice President of Operations

QUEST STUDENT TEAM: TEAM BOWLERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Expected Graduation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marisa Cicale</td>
<td>B.S. Mechanical Engineering</td>
<td>Expected May 2010</td>
</tr>
<tr>
<td>Jon Lau</td>
<td>B.S. Operations Management</td>
<td>Expected May 2010</td>
</tr>
<tr>
<td>David Mayo</td>
<td>B.S. Finance</td>
<td>Expected May 2010</td>
</tr>
<tr>
<td>Alan Yang</td>
<td>B.S. Computer Engineering</td>
<td>Expected May 2010</td>
</tr>
<tr>
<td>Albert Zhou</td>
<td>B.S. Aerospace Engineering</td>
<td>Expected May 2010</td>
</tr>
</tbody>
</table>

BIOGRAPHY
Team Bowlers is a united team of undergraduate engineering, finance, and operations students. The team meets twice a week to collaborate and define solutions that will truly benefit our client.

FACULTY ADVISOR
Dr. Charlie Carr
Technology Consultant
Maryland Technology Enterprise Institute

PROJECT ABSTRACT
Bowles Fluidics Corporation (BFC) is planning to expand their injection molding facilities to compensate for the company’s expansion into a new market. To facilitate this expansion, the team will determine how many presses will be needed in the injection molding process and how the new presses will be fitted into BFC’s layout optimally.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
The team has developed an extensive capacity model that allows Bowles Fluidics to analyze and identify press demand based on product mix and aggregate unit demand inputs. Using these calculations, simulations are performed to identify the most profitable press acquisition plan based on Net Present Value calculations. The combination of capacity modeling and simulations allow for an optimal layout, which will be provided to Bowles Fluidics as a recommendation for their expansion.
ORGANIZATION PROFILE:
Force 3 partners with hardware and software vendors to provide integrated information technology (IT) solutions to clients in the federal government.

Department: Marketing and Research
Project Champion: Krissy Kelley, Director of Marketing

QUEST STUDENT TEAM: ALLIED VENTURE CONSULTING

Charlie Davis
B.S. Finance
Expected May 2010

Whitney Ford
B.S. Computer Science
Expected May 2010

Matthew Marsala
B.S. Information Systems
Expected May 2010

Roksana Slavinsky
B.S. Operations Management
B.S. Marketing
Expected May 2010

BIOGRAPHY
Allied Venture Consulting, comprised of a mix of business and computer science majors, strives to deliver the best possible solution for our client, Force 3, while portraying a professional image on behalf of ourselves, the QUEST program, and the University of Maryland.

FACULTY ADVISOR
Dr. P.K. Kannan
Professor of Marketing
Director of Center for Excellence in Service
Robert H. Smith School of Business

PROJECT ABSTRACT
Allied Venture Consulting is working to expose opportunities for Force 3 with which to make an impact using virtualization technology in the Federal Government. Virtualization technology enables one to run several independent operating systems (such as Windows or Linux) and applications (such as Email) on a single physical hardware system, allowing for lower energy consumption, lower cooling costs, and lower maintenance costs. In helping Force 3 bring this technology to the federal government, we are helping them find ways in which to expand and are also essentially helping the government to more efficiently and effectively serve the American people.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
Our team has collected and analyzed original data in the form of interviews with Information Technology (IT) personnel within the federal government and questionnaire responses. In addition to this original data, we have gathered and reviewed over twenty Gartner research reports regarding virtualization technologies and government technology trends. Based on all of this data and research, we have found common themes and are recommending particular avenues for Force 3 to further explore.
THE QUEST - GE HEALTHCARE PROJECT
PROJECT TITLE: MICROENVIRONMENT CONNECTIVITY INITIATIVE

ORGANIZATION PROFILE:
GE Healthcare is a leader in innovative transformational medical technologies and services. GE's devices help clinicians around the world re-imagine new ways to predict, diagnose, inform and treat disease.

Department: Maternal Infant Care
Project Champion: David Blair, Engineering Process Manager

QUEST STUDENT TEAM: GEraffe

Michele Abbott
B.S. International Business
Expected May 2010

Joshua Davis
B.S. Mechanical Engineering
Expected May 2010

Schiquita Goodwin
B.S. Electrical Engineering
Expected December 2010

Karena Miller
B.S. Operations Management
B.S. Marketing
Expected May 2010

Ami Trivedi
B.S. Operations Management
B.S. Finance
Expected May 2010

BIOGRAPHY
Team GEraffe consists of five graduating seniors from the Robert H. Smith School of Business, and the A. James Clark School of Engineering. Using cross-disciplinary principles, systematic approaches, and leadership strategies developed through the QUEST program, members of the team utilized unique experiences in cost-benefit analysis and criteria ranking systems to consult for GE Healthcare on its complex decisions. Meeting weekly with the client and as a team, each team member has invested heavily in this project.

FACULTY ADVISOR
Dr. Jeffrey Herrmann
Associate Director, QUEST Program
Associate Professor of Mechanical Engineering
Joint Appointment with the Institute for Systems Research
A. James Clark School of Engineering

PROJECT ABSTRACT
GE Healthcare manufactures high quality microenvironments used to treat premature babies. In a continued effort to improve their product, GE wants to introduce connectivity ports to allow for device networking and data capture. Team GEraffe has been asked to provide possible connectivity options, develop a cost-benefit analysis of the different options, and present a final decision recommendation and business case summarizing their results.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
Team GEraffe used quantitative and qualitative data derived from a financial model and Analytical Hierarchy Process to provide GE with a recommendation for future connectivity options for the Giraffe Omnibeds and Incubators. Team GEraffe recommends that the best decision is to implement a new Ethernet connectivity port. This background data generation and analysis will provide GE with the support necessary to move forward with the future implementation of Ethernet on the next generation of Giraffe products.
**Organization Profile:**

KPMG is one of the largest professional services firms, specializing in audit, tax, and advisory services. Their Federal Practice Unit focuses on work for the federal government.

**Department:** Federal Practice  
**Project Champion(s):** Don Farineau, Federal Advisory Partner  
Sean Hoffman, Risk Management Partner

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**QUEST Student Team: Team SWIFT**

**Wilson Ahn**  
B.S. Finance  
B.S. Accounting  
Expected May 2010

**Adam Bernstein**  
B.S. Finance  
B.S. Mathematics  
Expected May 2010

**Jennifer Mauer**  
B.S. Finance  
Expected May 2010

**Jonathan Pang**  
B.S. Finance  
B.S. Accounting  
Expected May 2010

**Jason Young**  
B.S. Computer Science  
Expected May 2010

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**Biography**

This team is comprised of five seniors from the QUEST Program with majors in Finance, Accounting, Mathematics, and Computer Science. Our diversity gives us unique perspectives and insights into KPMG’s revised RFP acceptance process. For our project we each contributed by using our individual skills gathered from both previous experience in QUEST and from our individual areas of study. We very much enjoyed working with KPMG and would like to thank the entire KPMG team for their support throughout the semester.

**Faculty Advisor**

David Ashley  
Adjunct Faculty, QUEST Program  
Lecturer  
Robert H. Smith School of Business

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**Project Abstract**

KPMG is constantly responding to RFPs (Requests for Proposals) in order to win work from the federal government. Due to the complexity of RFPs, there are many risks that must be addressed by the company before proposals can be submitted. We studied KPMG’s current process for creating new work and suggested improvements. The ultimate goal was to improve the ease-of-use for employees. Improving this process will not only assist KPMG in conserving resources, but will also help to increase the quality of the RFPs it submits.

**Key Contributions and Recommendations**

We conducted two focus groups on November 13th, 2009. Using the data we gathered there, we identified several points where we feel there are inefficiencies in the revised process. We researched tools and recommended ones we felt will be helpful to KPMG in improving efficiencies.
ORGANIZATION PROFILE:
Lockheed Martin Corporation is a global company that is engaged in research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The MS2 department provides surface, air and undersea applications on more than 460 programs for the US military and international customers.

Department: MS2, Maritime Systems & Sensors
Project Champion: Nancy Wasson, System Engineer

QUEST STUDENT TEAM: TEAM NYQUEST

Suehyun Cho  
B.S. Physics  
Expected May 2010

Munaf Kachwala  
B.S. Finance  
B.S. Cell Biology and Molecular Genetics  
Expected May 2010

Abhishek Kumar  
B.S. Electrical Engineering  
Expected May 2010

Abby Widom  
B.S. Operations Management  
Expected May 2010

Gary Wu  
B.S. Mechanical Engineering  
Expected May 2010

BIOGRAPHY
Team Nyquest has worked as a cohesive and enthusiastic unit right from the start--eager to devise creative and thorough deliverables for the client. After a lot of long meetings, email threads and pizza, Team Nyquest is confident that the results that have surfaced will be both useful and exciting to present to the client. Team Nyquest would like to thank all of the experts and faculty that guided us and supported us through the project, and would work together again in a heartbeat if given the opportunity!

FACULTY ADVISOR
Dr. Jeffrey Herrmann  
Associate Director, QUEST Program  
Associate Professor of Mechanical Engineering  
Joint Appointment with the Institute for Systems Research  
A. James Clark School of Engineering

PROJECT ABSTRACT
Lockheed Martin contracted Team Nyquest to develop three processes of deploying massive buoys off the coast of Oregon at the most efficient level. Selection criteria and analysis exhibited that by implementing a Barge System of deploying the buoys, approximately twenty-times the current number of buoys could be deployed when compared to the current and original method.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
Three processes were devised and analyzed in-depth in order to make the best recommendation to LMCO: Cable System, Barge System, and Buoy Link System. The development of these systems allowed for Team Nyquest to fully comprehend all of the risks and constraints included when deploying masses of this size into the ocean. The Barge System is the recommended process so that higher numbers of buoys may be deployed at a lower cost in order to create energy-producing buoy fields off the coast of Oregon. The Barge System includes lifting the buoys onto a massive barge, driving them out to the placement site in the water, and then submerging the barge so that the buoys can be dragged and pulled into their final locations.
THE QUEST - LOCKHEED MARTIN (SOLAR) PROJECT
PROJECT TITLE: MAINTAINING SOLAR SUSTAINABILITY

ORGANIZATION PROFILE:
Lockheed Martin, headquartered in Bethesda, MD, is a global company that is engaged in research, design, development, manufacture, integration and sustainment of advanced technology systems, and product and services. The MS2 department provides surface, air and undersea applications on more than 460 programs for the US military and international customers. Lockheed Martin is addressing the nation's energy challenges with next-generation, utility-scale alternative energy generation solutions.

Department: MS2, Maritime Systems & Sensors
Project Champion: Michele Hanna, LM Fellow—Global Sustainment Architect

QUEST STUDENT TEAM: TEAM SOLAR

Jenna Cohen
B.S. Finance
B.S. Operations Management
Expected May 2010

Sean Cunningham
B.S. Mechanical Engineering
Expected May 2010

Jennifer Lei
B.S. Bioengineering
Expected May 2010

Benjamin Suarez
B.S. Mechanical Engineering
Expected May 2010

Tiffany Weston
B.S. Bioengineering
Expected May 2010

BIOGRAPHY
Team Solar is a multidisciplinary collaboration of five seniors in the QUEST program with backgrounds in Finance, Operations and Management, Bioengineering, and Mechanical Engineering. Having knowledge of cost analysis, Six Sigma, and reliability engineering allowed the team to assess the problems presented by Lockheed Martin. The unique backgrounds allowed Team Solar to successfully provide a high quality analysis.

FACULTY ADVISOR
Dr. David Lovell
Associate Professor of Civil Engineering
A. James Clark School of Engineering

PROJECT ABSTRACT
Lockheed Martin is looking to address the nation’s current energy challenges with alternative energy solutions, with specific focus on solar parabolic trough technology. In order to achieve success, they need to understand the operation and maintenance (O&M) costs and practices of this kind of power plant. Through extensive research, including a site visit to a model plant, interviews with experts, and secondary research, we have provided a cost projection of spares and maintenance recommendations for the first five years of power plant operation.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
We have provided Lockheed Martin with a detailed cost of spares analysis for the first five years of plant operation that will better equip them to break in the solar parabolic trough industry. We have also provided maintenance and labor requirements, and recommendations for successful and sustainable operation of their power plant. This information will help Lockheed Martin gain market presence in this new and essential renewable solar power industry.
ORGANIZATION PROFILE:
Pricewaterhouse Coopers is the #1 provider of professional services to companies and governments throughout the world. Its global operations include business advisory, audit and tax services to business in over 150 different countries. They utilize their 146,000 employees to channel knowledge and value through 22 practices and services such as assurance, human resources and crisis management.

Department: Federal Practice
Project Champion: Pat McNamee, PwC Firmwide Relationship Partner

QUEST STUDENT TEAM: PwC GREEN Team

Raina Dwivedi
B.S. Mechanical Engineering
Expected May 2010

Shayan Masoudpour
B.S. Finance
B.A. Economics
Expected May 2010

Mahesh Vellanki
B.S. Finance
Expected May 2010

Derek Lu
B.S. Marketing
Expected May 2010

Alex Yaraghi
B.S. Finance
Expected May 2010

BIOGRAPHY
The team is comprised of four seniors from the Robert H. Smith School of Business and one senior from the A. Clarke School of Engineering. Together, the team hopes to offer an outside perspective to PwC with organized consulting principals and tools.

FACULTY ADVISOR
Professor David Ashley
Adjunct Faculty, QUEST Program
Lecturer
Robert H. Smith School of Business

PROJECT ABSTRACT
The consulting team has been contracted by PwC to assess the current state of the recycling program and initiatives at the Tyson Corner office. The team will analyze the various aspects of the recycling program, including the types of recycling, policy management and awareness, the effectiveness of the system and relationship with the vendor and community. The team will also research the industry best practices in regards to single stream recycling.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
The team has successfully developed a process flow diagram of the current recycling program in place. Currently, there are many opportunities for improvement. The team has successfully devised two primary recommendations to increase the awareness and efficiency of the recycling program in the McLean office:

1. A bin purchasing program that would standardize not only the types of recycling receptacles but also the locations within the office, removing human error in the process flow efficiency.
2. A knowledge campaign that would both clarify and enhance employees’ understanding of single-stream recycling best practices.
THE QUEST - SAIC (CYBERSECURITY) PROJECT
PROJECT TITLE: SAIC CYBERSECURITY

ORGANIZATION PROFILE:
SAIC is a leading government services contractor offering a large variety of services including consulting and technical support related to defense systems, intelligence gathering, homeland security, information technology, logistics, and research projects. Within SAIC, the Cybersecurity division provides government and commercial enterprises with high-level information protection and integration.

Department: Cybersecurity
Project Champion: Jessica D. Gulick, Branch Manager

QUEST STUDENT TEAM: VOID*

Haren Arcot
B.S. Computer Science
Expected May 2010

Andrew Duch
B.S. Information Systems
Expected May 2010

Jeremy Erdman
B.S. Finance
B.S. Accounting
Expected May 2010

Akshay Goyal
B.S. Finance
B.S. Accounting
Expected May 2010

Cameron Rose
B.S. Computer Engineering
Expected May 2010

Nicole Thomas
B.S. Computer Engineering
Expected May 2010

BIOGRAPHY
Team VOID* is comprised of six students with diverse backgrounds. The team leveraged the technical and business knowledge of its members to develop a comprehensive understanding of SAIC’s Cybersecurity business. Applying total quality tools and cross-discipline principles, the team looks to provide SAIC Cybersecurity with an implementable solution that adds value to both SAIC and its clients.

FACULTY ADVISOR
Dr. Michael Hicks
Associate Professor of Computer Science
University of Maryland Institute of Advance Computer Studies
College of Computer, Mathematical and Physical Sciences
Affiliate Associate Professor of Electrical and Computer Engineering
A. James Clark School of Engineering

PROJECT ABSTRACT
SAIC Cybersecurity provides system security solutions for its clients through recommendations based upon vulnerability assessments and penetration testing. Team VOID* has been contracted to evaluate the added value of adopting the Common Vulnerabilities and Exposures (CVE), Common Weakness Enumeration (CWE), Common Vulnerability Scoring System (CVSS), and Common Attack Pattern Enumeration and Classification (CAPEC) standards for SAIC Cybersecurity testing services. SAIC has also asked our team to determine the added value of implementing a database to track test result information and provide trend data.

KEY CONTRIBUTIONS AND RECOMMENDATIONS
After evaluating the all of the MITRE standards, we focused on three areas where these standards could add value: operational effectiveness, value proposition, and revenue growth. CVEs and CWEs can be leveraged in order to increase the efficacy of penetration testing and penetration training. Additionally, by becoming CVE-Compatible, SAIC can better market their penetration testing services. Finally, SAIC Cybersecurity can now offer trend reports by utilizing a database to track vulnerabilities.
THE QUEST - SAIC (SMARTGRID) PROJECT
PROJECT TITLE: SAIC SMARTGRID

ORGANIZATION PROFILE:
SAIC is a Fortune 500 leading provider of scientific, engineering, systems integration and technical services and solutions. It works extensively with numerous federal departments and agencies, including the Department of Defense, and the Department of Homeland Security, among others. SAIC is looking into the Smart Grid market with a focus on cybersecurity issues. Within the company, the Cybersecurity division provides government and commercial enterprises with high-level information protection and integration.

Department: Cybersecurity
Project Champion: Gib Sorebo, Assistant Vice President for Technology, Chief Security Engineer

QUEST STUDENT TEAM: 'N SYNCHROPHASORS

Ellen Abrams
B.S. Mechanical Engineering
Expected May 2010

Elliott Morris
B.S. Economics
Expected May 2010

Elyse Pilitteri
B.S. Finance
Expected May 2010

Edward Tao
B.S. Finance
B.A. Economics
Expected May 2010

Matthew Thomas
B.S. Computer Science
B.S. Mathematics
Expected May 2010

Biography

'N Synchrophasors is a diverse team of QUEST seniors from four different colleges within the University. Concentrated and effective twice-weekly meetings helped 'N Synchrophasors create quality outputs for SAIC.

Faculty Advisor

David Ashley
Adjunct Faculty, QUEST Program
Lecturer
Robert H. Smith School of Business

PROJECT ABSTRACT

SAIC wants to provide cybersecurity solutions to electric transmission substations. The move towards a "Smart Grid" will automate the power grid. Automating substations means increased communication and more opportunities for cybersecurity threats.

KEY CONTRIBUTIONS AND RECOMMENDATIONS

The report generated by the project addresses the cybersecurity aspects of substation automation. It also compiles information on substation design, specifically the connectivity of the relays that monitor a substation. This information will be presented through design schematics of components necessary for Smart Grid implementation in a transmission substation. A high-risk high-value diagram will help SAIC analyze cybersecurity threats that must be addressed in order to build a secure data network in the overall power grid. Finally, cross-functional teams must be utilized when implementing Smart Grid solutions given the engineering complexity of substations.
QUEST Faculty and Leadership

David Ashley
Adjunct Faculty, QUEST Honors Fellows Program
Robert H. Smith School of Business
Faculty for BMGT/ENES 490H

Project(s) Advised: PricewaterhouseCoopers; KPMG; SAIC (SmartGRID)

David Ashley is a Program Analyst for the Department of Homeland Security. His duties involve developing a FEMA-wide force sizing model, performance measurement and survey work, and program management and program reviews for the Federal Management Emergency Agency. He also served as the Executive Officer for FEMA’s Office of Policy managing budget and personnel issues. Before joining FEMA, Mr. Ashley served as a Financial Resource Manager with the Department of Homeland Security, Customs and Border Protection. 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, Mr. Ashley worked for the U.S. Small Business Administration where he led various marketing research efforts including the SBA’s branding campaign. Before joining the government, Mr. Ashley served as the director of the Small Business Development Center at the University of New Mexico. While on the Valencia Campus, he oversaw the Center’s operation including formulating business and marketing plans for area businesses as well as assembling business loan packages.

Mr. Ashley is 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.

Mr. Ashley holds a bachelor’s degree from the University of North Carolina and an MBA from the University of New Mexico. He has also successfully completed the Washington Campus Program held at Georgetown University and the Hansard Scholars Programme for Parliamentary Government at the University of London. Finally, he holds a Professional Research’s Certification—Expert Level from the Marketing Research Association.

Dr. Joseph P. Bailey
Executive Director, QUEST Honors Fellows Program
Research Associate Professor of Decisions, Operations & Information Technologies
Robert H. Smith School of Business

Project Advised: ATK (Oil Tools)

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 the area of Internet competition.

Dr. Bailey has written numerous peer-reviewed journal articles, book chapters, and co-edited the book Internet Economics with Dr. Lee McKnight. His research has impacted company strategy and public policy beyond his scholarly publications. Additionally, he has worked with multiple companies including SAIC, Home Depot, eBags, and Amazon.com. Dr. Bailey’s research has also lead to interactions with government agencies including the Federal Communications Commission, National Science Foundation, and the U.S. Postal Service.

Charles W. Carr, Professional Engineer, Six Sigma Black Belt, joins QUEST as a project advisor from the Maryland Technology Enterprise Institute. His analysis and design expertise includes application of thermodynamics, special manufacturing methods, and high voltage power distribution systems.

Mr. Carr’s consulting experience includes serving as a senior management member of the Engineering Research Center. In this capacity he has provided services to clients regarding strategic planning and gap analysis, project management and scheduling, and lean manufacturing methods. Among Mr. Carr’s professional accomplishments are four United States Patents and a 1996 publication titled Steam Transmission Line System Engineering, International District Heating Association Proceedings.

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 serves on the editorial review board of the Transportation Journal. 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 currently serves as program manager for the University of Maryland QUEST program. She establishes and maintains professional relationships for the program, manages university relationships, and is involved with curriculum development and execution.

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. She is a candidate for a Ph.D. in Education Policy Studies Ph.D. program here at Maryland.

Nicole’s research includes studying policy impacting higher education and foreign language education. In February of 2008, she presented an ethnography of students’ cultural differences and their impact on teamwork at the 29th Ethnography in Education Research Forum at the University of Pennsylvania.
QUEST Faculty and Leadership, Continued

Dr. Martin Dresner
Professor of Logistics
Robert H. Smith School of Business
Project(s) Advised: Agilent Technologies

Dr. Martin Dresner joins QUEST as a faculty advisor from the Logistics, Business and Public Policy department in the Robert H. Smith School of Business. Dresner’s research focuses on two broad areas, air transport policy and logistics management. He has published papers in leading transportation and logistics journals, as well as journals in related fields, and has co-authored a book on supply chain management. Professionally, he is Editor for Research in Transportation Economics, and is active in several organizations, including the Air Transport Research Society and the Transportation Research Forum.

He has testified before the House Aviation Subcommittee, and has worked on consulting projects for a number of organizations, including the Maryland Aviation Administration and the U.S. Department of Energy.

Dr. Jeffrey W. Herrmann
Associate Director of QUEST and Associate Professor of Mechanical Engineering
A. James Clark School of Engineering
Project(s) Advised: GE Healthcare; Lockheed Martin (Ocean Wave)

Jeffrey W. Herrmann is an associate professor at the University of Maryland, where he holds a joint appointment with the Department of Mechanical Engineering and the Institute for Systems Research. He is the director of the Computer Integrated Manufacturing Laboratory. Dr. Herrmann earned his B.S. in applied mathematics from Georgia Institute of Technology. As a National Science Foundation Graduate Research Fellow from 1990 to 1993, he received his Ph.D. in industrial and systems engineering from the University of Florida. His dissertation investigated production scheduling problems motivated by semiconductor manufacturing. He held a post-doctoral research position in the Institute for Systems Research from 1993 to 1995.

His current research interests include emergency preparedness planning and response, health care operations, production scheduling, and decision-making systems.

Dr. Michael Hicks
Associate Professor of Computer Science
University of Maryland Institute for Advanced Computer Studies
College of Computer, Mathematical and Physical Sciences
Project(s) Advised: SAIC (Cybersecurity)

Michael W. Hicks is an associate professor in the Computer Science department and UMIACS at the University of Maryland, College Park. His research focuses on using programming languages and analyses to improve the security, reliability, and availability of software. Noteworthy among his research accomplishments is the development of analysis and compilation tools for enabling software to be safely updated while it runs, to fix bugs and security flaws, and to add new features.

He has also explored the design of new programming languages and analysis tools for automatically discovering or remediating software flaws and security vulnerabilities. He is also interested in human-computer interaction, particularly as they relate to the use of software tools, and distributed systems design and evaluation, particularly when adaptivity and security are system goals.

Dr. P.K. Kannan
Professor of Marketing
Director, Center for Excellence in Service
Robert H. Smith School of Business
Project(s) Advised: Force3

P.K. Kannan is Professor of Marketing at the Robert H. Smith School of Business at the University of Maryland. He is the Director for the Center of Excellence in Service. His current research stream focuses on new product/service development, design and pricing of digital products and product lines, marketing and product development on the Internet, e-service, and customer relationship management (CRM) and customer loyalty. He has received several grants from National Science Foundation (NSF), Mellon Foundation, SAIC, and PricewaterhouseCoopers for his work in this area and research papers have been published in Marketing Science, Management Science, Journal of Marketing Research, and Communications of the ACM.

His research has also won the prestigious John Little Best Paper Award (2008) and the INFORMS Society for Marketing Science Practice Prize Award (2007). His research has also been selected as a finalist for the Paul Green Award (2008). Dr. Kannan was a panelist in the NSF Workshop on Research Priorities in e-Commerce (1998) and a Fellow of the AMA Consortium on e-Commerce (2001).
**QUEST Faculty and Leadership, Continued**

**DR. DAVID J. LOVELL**  
**ASSOCIATE PROFESSOR OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
**A. JAMES CLARK SCHOOL OF ENGINEERING**  
**PROJECT ADVISED: LOCKHEED MARTIN (SOLAR)**

David J. Lovell (Ph.D., University of California, Berkeley) is an Associate Professor in the Department of Civil and Environmental Engineering and the Institute for Systems Research in the A. James Clark School of Engineering. His research interests include improving air traffic control and air traffic management systems for the FAA and NASA, developing novel display technologies based on electrophoresis and retroreflectivity for the National Science Foundation, and developing wireless ad hoc network systems for vehicle-to-vehicle communications. He has been a Visiting Associate Professor at the Massachusetts Institute of Technology.

**MELANIE N. LEE**  
**PROGRAM MANAGER, QUEST HONORS FELLOWS PROGRAM**

Melanie Lee 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 to include the Integrative QUEST Events Initiative. She serves as a student affairs counselor and administrator, events coordinator, and website content manager.

Prior to joining QUEST, Melanie worked as an Assistant Manger 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.

**DR. HANK LUCAS**  
**SMITH PROFESSOR OF INFORMATION SYSTEMS**  
**DEPARTMENT CHAIR, DECISION, OPERATIONS AND INFORMATION TECHNOLOGIES**

Professor Lucas has been a professor of information systems at the Leonard N. Stern School of Business at New York University where he was a research professor of information systems from 1988-1998, and professor and chair of the Department of Computer Applications and Information from 1978-1984. He also served as the Shaw Foundation Professor at Nanyang Technological University in Singapore, and as a visiting professor at INSEAD in Fontainebleau, France. He was a visiting researcher at Bell Communications Research in Morristown, New Jersey, and a consultant to Arthur D. Little, Inc., in Cambridge, Massachusetts. He serves on the board of directors of a software supplier for satellite multicasting and has been a board member of a worldwide manufacturer and supplier of passive electronic components. Professor Lucas is a member of the Association for Computing Machinery, the Association for Information Systems, the Institute of Electrical and Electronic Engineers, and INFORMS.

Professor Lucas has authored a dozen books as well as monographs and more than 70 articles in professional periodicals on the impact of technology, information technology in organization design, the return on investments in technology, implementation of information technology, expert systems, decision-making for technology, and information technology and corporate strategy. His most recent books include *Inside the Future: Surviving the Technology Revolution* (Praeger, 2008), *Strategies for E-Commerce and the Internet* (MIT Press, 2002), *Information Technology and the Productivity Paradox: Assessing the Value of Investing in IT* (Oxford University Press, 1999) and *The T-Form Organization: Using Technology to Design Organizations for the 21st Century* (Jossey-Bass, 1996).

**CALLIE S. RILEY**  
**GRADUATE ASSISTANT, QUEST HONORS FELLOWS PROGRAM**

Callie Riley joins the QUEST team as a Graduate Assistant. She is currently pursuing her M.A. in Education Policy Studies here at Maryland. She compiles the bi-annual resume book, serves as an advisor to the staff of the QUESTPress newsletter issued each month and organizes QUEST’s alumni relations initiatives.

Prior to coming to Maryland, she taught English as a Second Language to junior high school students for two years in Kuji City, Iwate Prefecture, Japan, and spent time teaching Reading classes at Glenridge Middle School in Orlando, Florida. While earning her B.A. in East Asian Studies with a minor in Political Science from Wittenberg University (OH), Callie was very active in many philanthropic, athletic and social organizations. She credits her undergraduate experience in an interdisciplinary degree program for increasing her interests in learning communities and interactions between colleges as demonstrated in QUEST’s mission.

Callie stays involved in the Maryland community as an ESOL conversation partner for current students and as a member of the Education Policy Studies Graduate Student Association.
QUEST FACULTY AND LEADERSHIP, CONTINUED

DR. J. GERALD SUAREZ
ASSOCIATE DEAN, OFFICE OF EXTERNAL STRATEGY
PROFESSOR OF THE PRACTICE OF DECISIONS, OPERATIONS AND INFORMATION TECHNOLOGIES
ROBERT H. SMITH SCHOOL OF BUSINESS
FACULTY FOR BMGT/ENES 390H

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.
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 Physical 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

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 Fellows Program
3335 Van Munching Hall
University of Maryland
College Park, MD 20742
(301) 405-9553
questmail@umd.edu

LEARNING AND COLLABORATING
Special Thanks & Acknowledgements

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.

Matthew Brumberger

QUEST Students

QUEST Alumni

Family, Friends and University Colleagues

Consulting Project Advisors

David Ashley
Dr. Joseph P. Bailey
Dr. Charlie Carr
Dr. Thomas M. Corsi
Dr. Martin Dresner
Dr. Michael Hicks
Dr. Jeffrey Herrmann
Dr. P.K. Kannan
Dr. David Lovell

Consulting Project Clients

Agilent Technologies
ATK
Bowles Fluidics
Force3
General Electric Healthcare
KPMG, LLP
Lockheed Martin Corporation
PricewaterhouseCoopers
SAIC

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Dr. Jeffrey W. Herrmann
Joel Liebman
Dr. J. Gerald Suarez

QUEST Partner Colleges

College of Computer, Mathematical and Physical Sciences
A. James Clark School of Engineering
Robert H. Smith School of Business

Photography

Lisa Helfert

Catering

Festive Foods