Brad Hill, MS in RME, 2012
Reliability & Maintainability Métier Manager at Schlumberger
Brad Hill started to pursue his MS in RME after several years of being a field engineer at Schlumberger Technology Corp. The flexibility of the MS program allowed him to continue working during normal business hours and take courses online in the evenings. The RME MS degree helped him build a solid foundation in reliability and maintainability through coursework in reliability, maintainability, statistics, and systems engineering. For his final project, he did a recurrence analysis to get a better understanding of the reliability of a few of Schlumberger’s products. Since completing the degree in 2012, he has been working as the Reliability & Maintainability Métier Manager at Schlumberger’s Houston Formation Evaluation Center, where he is responsible for ensuring that reliability and maintainability are incorporated into product design. In the above photo, Brad was next to a chamber where a Highly Accelerated Life Test is performed to understand the operating margins and limits of designs.

Eric Strong, MS in RME, 2013
Pursuing a PhD in Nuclear Engineering at UT
Eric Strong has been investigating the usefulness of fault codes, also called error or alarm codes, obtained from built-in self-tests in predicting the remaining useful life of monitored components. Increased numbers of fault codes before or during operation can be indicative of degradation. The information contained in fault codes can also be integrated with existing degradation parameters for higher accuracy in estimation of remaining useful life.

Victor Foster, BS with RME Certificate, 2008
Senior Reliability Engineer at Cargill
Victor Foster got into reliability through an RMC summer internship at DuPont. His wife and he decided to take jobs as Maintenance and Reliability Engineers with the Dow Chemical Company after getting their BS degrees. After working at two different plastic manufacturing facilities within Dow, he took a position at a RockTenn paper mill as a reliability engineer. As the first reliability engineer the site had ever had, he was able to implement several new programs and revitalize existing reliability initiatives. As the reliability engineer, he participated in a reliability audit with the division’s leadership. He soon had the opportunity to be promoted to the Mechanical Reliability Leader for the division. Now he is the senior reliability engineer for Cargill, where he is in charge of the site’s reliability engineers and contract predictive maintenance services.
About the Program
The Reliability and Maintainability Engineering (RME) program is a multidisciplinary program focusing on the use of management systems, analysis techniques, and advanced condition-based and preventive technologies to identify, manage and eliminate failures leading to losses in system function. Once perceived as a practitioner or manufacturing issue, reliability and maintainability engineering is now considered a business issue of urgent priority. The program was initiated through a close association with the Reliability and Maintainability Center, which was established in 1996. The center is a unique partnership between academia and industry dedicated to improving productivity, efficiency, and safety through the development and application of maintenance and reliability technologies and management principles.

Master of Science Degree in RME
The Master of Science (MS) degree in RME consists of 30 hours. There are thesis and non-thesis options. The program can be completed on campus or through real-time and interactive distance delivery.

Admissions Information
- Applicants for admission must have a bachelor’s degree from an accredited undergraduate program in engineering or science.
- The student should choose a concentration in one of the six traditional engineering areas:
  - Chemical and Biomolecular Engineering
  - Electrical Engineering and Computer Science
  - Industrial and Systems Engineering
  - Materials Science and Engineering
  - Mechanical, Aerospace and Biomedical Engineering
  - Nuclear Engineering
- The student will apply to one of the six departments. RME is not a department and its director does not have admissions privileges.
- Students from other disciplines may be admitted, but may be required to take additional engineering courses.
- All applicants to the RME Master of Science program and Graduate Certificate must apply through the University of Tennessee Graduate School: http://graduateadmissions.utk.edu/

Thesis Option
Minimum of 30 semester hours including:
- 12 hours of RME core courses
- 6 hours of required statistics sequence
- 3 hours of RME elective courses or statistics electives
- 3 hours in engineering, statistics, business management
- Thesis – 6 hours through the department of the major professor.
- A final oral examination covering the thesis and related course work.

Non-Thesis Option
Minimum of 30 semester hours including:
- 12 semester hours of RME core courses
- 6 hours of required statistics sequence
- 6 semester hours of RME elective courses or statistics electives
- 3 hours in engineering, statistics, business management
- Project in lieu of thesis (3 hours). A written final report is required.
- A final oral examination covering the project and related coursework. The final oral examination must be on the UT campus.

Note: At least two-thirds of the minimum required hours must be taken in courses numbered at or above the 500 level.

RME Core Courses
- Introduction to Reliability Engineering
- Introduction to Maintainability Engineering
- Process Systems Reliability & Safety
- Reliability of Lean Systems*

Statistics Sequence
- Introduction to Mathematical Statistics*
- Survival Analysis*

RME Electives
- Linear Algebra in Engineering Systems
- Multivariate Statistics
- Random Process Theory for Engineers
- Statistical Methods in Industrial Engineering*
- Optimization Methods in Industrial Engineering*
- Mechanical Vibrations*
- Equipment and Systems Prognostics*
- Empirical Models for Diagnostics*

Statistics Electives:
- Data Mining & Business Analytics
- Statistics for Research I*
- Statistics for Research II*
- Introduction to Data Management
- Applied Time Series
- Applied Multivariate Methods *

*Currently offered through distance education. All courses are 3 hour courses.

Graduate Certificate in RME
The RME Graduate Certificate program is an interdepartmental initiative designed for students who wish to pursue careers in Reliability and Maintainability Engineering. It is also suitable for professionals and managers currently working in the field looking to improve their knowledge and skills.

RME Undergraduate Minor
Fifteen hours of coursework are required as listed below. The grade in each of the required classes must be at least a C.

Core Courses (6 hours)
- Introduction to Reliability Engineering
- Introduction to Maintainability Engineering*

Statistics or Math Requirement (3 hours, choose 1)
- Che 301, ECE 313, MATH 323, STAT 251

Engineering Electives (6 hours, choose 2)
- CBE 360, ECE 315, ECE 471, IE 300, STAT 340, ME 345, ME 363, NE 401, IE 340

Reliability and Maintainability Center
The Reliability and Maintainability Center (RMC) exists to advance reliability and maintenance education and practices within the academic and industrial communities. The RMC creates opportunities for member companies and organizations, students, faculty, and industry to achieve exceptional value through a comprehensive program of education, research, and information sharing.

The RMC currently has about fifty member companies and organizations, such as ABS Consulting, AEDC, Amazon, Bayer, DuPont, Dow, Eastman Chemical Company, Emerson, Georgia Pacific, GM, Nissan, ORNL, Swagelok, US Army–AMRDEC, etc. Each summer, the RMC places many RME graduate and undergraduate students in internships with member companies.

The RMC also offers the Reliability & Maintainability Engineering Implementation Certificate that is designed for working professionals and provides the most hands-on and practical maintenance and reliability education offered. http://www.rmc.utk.edu/