

# Materials Research Institute

## Third Annual Safety Report

**Report Covering Dates:** Spring 2015-Spring 2016

**Date of Last Report:** Spring 2015

### Executive Summary

This is the Third Annual MRI Safety Report highlighting significant and on-going safety improvements in and around the 51 labs housed in the north wing of the Millennium Science Complex (MSC). The report reflects the efforts of faculty, students, and the MRI Safety Committee (MRI-SC) to make the lab a safe environment for users and north wing occupants. The report encompasses, but is not limited to, these categories: Current Initiatives, Safety Successes, Safety Opportunities, and Future Initiatives.

#### 1. New Faculty Lead

January 2016 saw a change in leadership from Professor Josh Robinson to Professor Roman Engel-Herbert. The impetus behind the change is based on new responsibilities for Professor Robinson and his role as Director for User Program for the incoming NSF sponsored 2DCC MIP facility. MRI benefited greatly from his leadership when he set safety as a priority within MRI. About working with the committee, he said, "It is rare to think of safety as 'fun,' but the staff and students at MRI have made it that way for me over the last few years, and I look forward to working with them as we move forward!"

Professor Engel-Herbert, an expert in thin-film molecular beam epitaxy technology is eager to assume his new role and continue the programs that have started and even implement a few new ideas of his own. He informed the Committee, "I am excited to contribute to the safety environment at MRI and will continue to nurture the spirit and guiding principle of our modern safety culture: safety is happiness if implemented in a smart way."



Furthermore, the Office for the Vice President for Research hired Alissa Hanshew whose position is to act as a liaison between Environmental Health and Safety (EHS), and the four Penn State Institutes: Materials Research Institute (MRI), Penn State Institutes of Energy and the Environment (PSIEE), Huck Life Sciences Institute, and Social Science Research Institute (SSRI). Alissa acts as an extra resource to anyone in the Institutes. For example, attending a MRI Lab Manager meeting to train and give demos on the proper use of multiple kinds of fire extinguishers. Alissa serves on the MRI Safety Committee which offers direct safety representation to the Committee. Her work is proving to be a valuable asset in the subject of safety to the Committee, MSC Facilities and to MSC building occupants.

#### 2. Current Initiatives

Industry/University Safety Consortium (I/USC) is a multi-purpose program to develop industry/PSU partnerships centered on safety. The vision is to enlist member industry partner companies such as Corning, Airgas, Dow, VWR, and others whose support will close the "safety gap" between industry and academia and help further raise the safety levels implemented in MRI above the required standards, as well as educate and prepare students for professional industry work. Faculty lead Joshua Robinson has met with the four mentioned companies, who are all willing to contribute in-kind support. For example, Airgas and VWR are both providing safety videos from their company library to MRI that will be used internally for educational purposes. Industry contributions to MRI Safety support the university in educating and preparing students for safely working in "real world" jobs.

### 3. Safety Successes

Committee members and MRI facilities management worked closely with EHS to finalize the Integrated Safety Plan Phase 2. For example, lab manager meetings fulfill one Phase 2 compliance requirement by directly involving lab users and staff in planning for safety efforts. Completion of Phase 2 means MRI continues to be eligible for insurance indemnity and for cost sharing. MRI will continue working closely with EHS and provide timely self-inspections to maintain eligibility.



New this year, the Safety Olympics were held as the second featured event during Safety Week. It was a great success, involving PIs and their four-member teams competing against other teams on the basis of knowledge while emphasizing the fun aspects of safety. The event involved 21 four-member teams, approximately 19 PI faculty members, and multiple students and staff on the planning & development committee. The event also brought out 40-50 fans in support. The Safety Olympics demonstrated the importance of lab safety for this large and enthusiastic group of supporters and participants and we hope to make it an annual event.



Winning Team with Corning Sponsor



One Team T-shirt

### 4. Continuing Safety Progress and Finding New Opportunities

MRI is dedicated to maintaining eligibility for Phase 2 of the Integrated Safety Plan (ISP). MRI will seek to continually maintain the three core values of ISP: leadership commitment, employee and student involvement, and timely self-reviews. The underpinning for ISP eligibility lies in maintaining the strong working relationship between EHS and MRI.

Lab manager meetings continue to be a primary form of communicating, educating, planning, and practicing safety in the materials wing of the MSC Building. Meetings are run by a lead lab manager supported by student representatives from the committee, as well as the safety officer. Agendas are developed by multiple parties: students, committee members, and technical staff. Meetings are held alternate months and remain a key avenue in nurturing our safety culture, continuing to raise awareness for safety and highlighting the importance of safety.

Several industry partners are collaborating on different levels with MRI Safety: Corning Inc., Airgas, Dow, and VWR Scientific Products. Two companies in particular have provided or will provide in-kind support to MRI's Safety program: Corning, Inc. donated ~ 100 Safety Minute PPT slides, which will be used at the weekly M-café research speaker's event. Corning also donated the cost of a training conference that their own employees are required to attend. Last December MRI technical staff, Nichole Wonderling, attended the Value Base Safety (VBS) Training put on by Value Safety 365 (<http://www.valuesafety365.com/company/>) in Corning, NY. VBS training focuses on safety as a value and not a priority and our safety culture at MRI is aligned with this guiding principle: while priorities change, values do not change and are not compromised. The end goal of the program is to reduce the number of injuries, increase the number of opportunities for safety involvement, provide more positive recognition for safety, promote a safer attitude off the job, and perhaps most important, create a more enjoyable and caring work environment.

Finally, Corning made and donated the first Safety Olympics Trophy to MRI's Safety Olympics.



#### Safety Olympics Trophy Donated by Corning, Inc.

Airgas is donating videos from their safety library that focus on a myriad of topics, such as chemical safety and gas safety, as well as many more videos on a variety of relevant safety topics. The company provided the featured speaker at the yearly Safety Week in September, a highly appreciated form of industry support to close the safety gap.

MRI continues to open each M-café presentation with a Safety Minute slide, presented by a student, staff, or faculty. Each Safety Minute emphasizes safety as a priority to all M-café attendees and it supports building a safety culture within MRI by keeping safety in the forefront for everyone: lab users, students, staff, faculty, and industry visitors.

#### 5. **Future Initiatives**

Nichole Wonderling will present to lab managers at their bi-monthly meeting the VBS concept that safety is a value versus a priority. People and safety are more important than regulations alone. Safety is broader than rules. A plan is to repeat the presentation each year since students move on and graduate.

The committee seeks to increase membership by one faculty member. An additional faculty member would broaden commitment to safety by involving more students in the lab safety program. We will further create a user-friendly web-based tool, 'TurboSOP,' that helps in crafting html-based standard operating procedures (SOP) by providing a step-by-step tutorial, preformatted building blocks, as well as standardized formulations.