



Figure 1 Alumnus Teri Lynn Haffick (EE 2007)



**UNIVERSITY OF
SASKATCHEWAN**

College of Engineering

Annual Local Safety Committee Report 2016-17

Supporting +/-2,500 College of Engineering community members, including +/-347 employees

College Safety

The Local Safety Committee (LSC) is established to review and address health and safety concerns in the College of Engineering.

The committee is one component of the University's Occupational Health and Safety policies and procedures. In accordance with the Saskatchewan Employment Act, Part III (formally the Occupational Health and Safety Act), the University of Saskatchewan has established an Occupational Health Committee (OHC) to provide a forum for consultation between the University of Saskatchewan and representatives of its employees concerning health and safety issues in the University workplace. The primary focus of the OHC is to address health and safety issues that have implications for the University as a whole. In support of the OHC and its activities, a network of Local Safety Committees (LSC) is established to identify, review and address health and safety concerns arising at the college/division level. The College of Engineering also has established active Departmental Safety Committees (DSC) for the departments of; Chemical & Biological, Civil, Geological and Environmental, Electrical and Computer, and Mechanical Engineering. Each DSC has a representative on the College LSC providing effective two way communications on issues pertaining to health and safety.

<u>Current Local Safety Committee Members</u>		
Veronica Bendig	Management Co-Chair	3B48.7
Richard Blondin	Employee Co-Chair & CBE Representative	1D23
Adam Hamerlindl	CGEE Representatives	1C16
Doug Bitner	ME Representative	1B19
Jason Pannell	ECE Representative	2C94
Maureen Bourke	SciFi Representative	1C03
Andrea Book	E-Shops & Building Warden Representative	1B95
Denard Lynch	Faculty Representative	3B11
Shafiq Alam	Faculty Representative	1C123
Nribesh Ayer	Graduate Student Representative	
Ashley Stock	Undergraduate Student Representative	
Quinton Zook	U of S OHC Representative	WCVM 1317
Patrick Hauser	U of S Safety Resources Representative	
Marwan Bardouh	FMD Representative	2B10
TBD	LSC Administrative Support	1B97.3
Brenda Butler/JoAnn Murphy	Library Representatives	
Jim Bugg	Management Representative	3B48.6

The goal of the Engineering LSC mirrors the goal of the Workers' Compensation Board of "Mission Zero" with regards to incidents within the college. The LSC also wants to develop a safety culture which the students incorporate into their careers and employees incorporate into their everyday lives both on and off campus. The Engineering LSC met monthly in 2016-17 and reports that overall the college continues to progress in achieving its safety goals and targets.

Chemical & Biological Engineering Dept. 2016-17 Safety committee Report

Committee Members

Acting Department Head (Y.H. Lin), 1 faculty member (S. Alam), 3 departmental technicians (R. Blondin, R. Prokopishyn, K. Carter), 1 Departmental Assistant (M. Mapiour)

CBE Safety Meetings

Held 11 regularly scheduled monthly meetings (missed one due to change in department head)

RSF Funding

Purchased the following safety items from Indirect Cost of Research funding:

- Calibration gases for regular calibration of permanent toxic gas monitoring systems
- Gas leak detector for detecting small gas leaks in instruments/reactors etc.
- Microwave leak detector to detect leaks from commercial microwaves in use for research
- Four chemical storage cabinets for two labs
- Spill kits for pilot plant
- Three WJF Instrumentation permanent gas monitoring systems for LEL, H2S & CO for labs

Laboratory Safety Inspections

Performed quarterly inspections of 21 labs and all graduate offices were inspected twice. Pilot plant was inspected seven times.

In Progress

All faculty, staff, students and researchers have been notified of new WHMIS 2015, Lab Safety, Biosafety training legislation requirements (best practices) and are moving toward completion. Progress is being monitored.

Civil, Geological & Environmental Engineering Dept. 2016-17 Safety committee Report

Committee Members

Department Head (Leon Wegner), 6 departmental Assistants (Helen Yin, Dale Pavier, Brennan Pokoyoway, ,Zig Szczepanik, Adam Hammerlindl, Donna Beneteau), 1 Administrative Assistant (Cynthia Hanke)

CGEE Safety Meetings

Held 10 regularly scheduled monthly meetings.

RSF Funding

Purchased the following safety items from Indirect Cost of Research funding:

- The environmental lab received funding (~\$2000) for 3 new gas regulators.

Laboratory Safety Inspections

Monthly inspections of all 5 labs continue to occur. Inter-department safety inspections were completed by Richard Blondin, Pat Hauser, and Cindy Thomson in August 2017. Each month 2 technicians are appointed from a lab different than the one being inspected, to conduct a rotating 'external' inspection.

In Progress

The SaskPower walkthrough and inspection items have been brought to the CGEE technician's attention, and will be corrected as part of our routine/ongoing safety program. No major deficiencies noted.

Electrical & Computer Engineering Dept. 2016-17 Safety Committee Report

Committee Members

Department Head (Robert Johanson), 1 faculty member (Denard Lynch), 5 departmental support engineers (Jason Pannell, Rory Gowen, Chandler Janzen, Peyman Pourhaj, Andrew Kostjuk),

ECE Safety Meetings

Held 3 regularly scheduled quarterly meetings.

RSF Funding

Purchased the following safety items from Indirect Cost of Research funding:

- Broken Glass Containers
- Under Counter Polyethylene Acid Cabinet

Laboratory Safety Inspections

Performed monthly inspections of undergraduate labs, annual inspection of research laboratories and all graduate offices were inspected once.

In Progress

All faculty, staff, students and researchers have been notified of new WHMIS 2015, Lab Safety, Biosafety training legislation requirements (best practices) and are moving toward completion. Progress is being monitored.

ME Dept. 2016-17 Safety Committee Report

Committee Members

Department head (D Torvi), 2 faculty members (S Noble and R Retzlaff), 5 departmental assistants (D Bitner, R Peace, S Reinink, M Fauchoux and N Zhao) and 2 graduate students

ME Safety Meetings

Held 12 regularly scheduled monthly meetings

RSF Funding

Purchased the following safety items from the Indirect Cost of Research funding

- Gas Cylinder Tubing in OC14
- HF First Aid Kit
- Remote Sensor for ATI Methane Gas Detector
- Tecvalco Methane Detector for 1B30.5

Laboratory Safety Inspections

12 monthly safety inspections were carried out for the 6 different laboratory areas. Each inspection was completed by two or more of the committee members not from their area. The 6 different laboratory areas were inspected twice during the year.

Major Action Items from Inspections

In response to a dangerous occurrence investigation in OC14 (March, 2015), a LSC subcommittee was established and monthly inspections were carried out. After changes and improvements to the lab, including updated counters/cabinets and compressed gas station/tubing, all deficiencies were rectified and the committee was disbanded. After inspections (including June, 2017) raised no additional concerns and satisfactory safety protocols were being followed, OC14 was incorporated back into the regular department safety inspection schedule.

Incidents

In 2016-17, there were 5 reported incidents in the college, this is down two from the prior year. All of the incidents have been addressed.

Minor preventable occurrences	Personal Injury requiring medical attention	Near Misses and dangerous occurrences
Chemical ignited within glove box	Eye injury	
Uncontrolled release of Gas		
Cut Finger; required bandage		
Mercury Spill		

Safety Training

Providing regular safety training to the building occupants remains to be a priority for the LSC.

In 2016-17, continued training was offered to various members of our college communities including:

1. Two day safety training for 2nd year Undergraduate and Graduate students (366 participants),
2. Safety Orientation for Employees – Engineering (307 participants),
3. Safety Orientation for Supervisors (8 participants)
4. WHMIS 2015 (37 participants)
5. Laboratory Safety Training (108 participants)
6. BioSafety (18 participants)
7. Radiation Safety Training (1 participant)
8. Nano Particle Safety Training (September 29th, total of 19 participants)
9. Handling of Dangerous Goods – gas cylinders (43 participants)

Inspections

This past year has seen numerous inspections of labs from various authorities.

INSPECTOR	INSPECTION TYPE	2014-15 INSPECTION RECOMMENDATION	2015-16 INSPECTION RECOMMENDATION	2016-17 INSPECTIONS
SaskPower	Electrical	Notice of 10 defects	4 remain	Fall 2016
Saskatoon Fire & Protective Services	Fire Code	Notice of 5 defects	Notice of 1 defects	Summer 2016
RMS Insurance		34 Hazards	6 remain	Fall 2017
Stantec (University Sponsored)	Building Condition Assessment			Correction in Progress
College	Laboratory Condition Assessment (OC Wing)		23 Defects Identified, 10 Corrected	Planned continued monthly inspections
LSC (Local Safety Committees)	Regular scheduled audits			Complete Engineering inspection, 2017

Chemical Safety Committee DSC (Dept. Safety Committees)	Chemical Inventory		63 Defects Identified	Summer 2016
	Regular self-inspections			Ongoing

Fig. 8: Local Safety Committee Inspection Summary 2016-17

As a result of these inspections, numerous deficiencies were observed and rectified. Some deficiencies remain as work in progress and continuous reviews and inspections are required to ensure compliance is achieved and maintained long term.

Through funding received for Indirect Costs of Research, the LSC continues to allocate \$25,000 annually to departments in order to address safety concerns and noted defects in research laboratories.

Safety Subcommittees

Chemical Security Subcommittee

U of S Safety Resources is planning to purchase a Hazardous Materials Management Software package to be implemented campus wide. Once implemented, the system will manage the inventory of hazardous materials, the related SDS, and fulfill the operational needs of the Waste Management Facility. The system will meet the requirement of Saskatoon Fire for an accessible inventory of materials and data sheets while implementing best practices in inventory management and waste minimization. The system will provide cradle to grave tracking of hazardous materials, meet the regulations set out in Canadian OHS regulations, Saskatchewan OHS regulations, and the Hazardous Products Regulations. Implementation to begin by end of 2017. Therefore, the Chemical Security Subcommittee has been disbanded to eliminate duplication and align with Safety Resources planning. Unfortunately, based on current estimates of the ICT Tech Assessment Process and available resources for ICT implementation, this project will not be available to move forward until at least the first quarter of 2018.

Safety Days Subcommittee 2016 Report

Background

Saskatchewan's Engineering and Geoscience Professions Act clearly states that all members shall "hold paramount the safety, health and welfare of the public and the protection of the environment and promote health and safety within the workplace" (Regulatory Bylaws, 20(2) (a)). The College of Engineering at the University of Saskatchewan has the dual responsibility to not only ensure that all students, staff and faculty work and study in a safe environment, but to also instill an understanding and appreciation for this responsibility in the future engineers we have the privilege and opportunity to train.

It is in fulfillment of this responsibility, and opportunity, that the college took steps to enhance and improve our students' knowledge in this essential and important area by introducing "Safety Days" events in the college. The inaugural event was held in January, 2014, and included undergraduate and graduate students in all discipline programs. Students in the general program (1st year) were also given an introductory exposure to safety essentials. Subsequent events in September 2014, 2015 and most recently in September 2016 focused on students progressing from the general program to a discipline program, and on all graduate students who had not attended a previous event (typically all new graduate students).

The inaugural event in January 2014 already included significant involvement and support from industry and the profession, which has only grown since then. This partnership not only illustrates to students our common interest and emphasis on safety in the profession and the workplace, but also exposes our students to common industry safety culture and practices. The college is grateful for the support and participation of our many

industry partners and the Association of Professional Engineers and Geoscientists of Saskatchewan, and looks forward to their continued support in the future.

Objectives and Achievements

The main objectives of the Safety Days program are to increase the knowledge and awareness of all students about industry safety practices and to develop a strong, evident safety culture within the College of Engineering. The key strategies used to achieve these objectives are to: develop a syllabus of relevant topics, and continually improve the program through review and feedback from both industry and students.

Event Details

The 2016 Safety Days event was structured so that each undergraduate student in the target audience (2nd year) would attend three presentations over the 2-day event: two on topics of interest to all disciplines, and one industry presentation related to their field of interest. Graduate students were scheduled to attend the two common sessions and industry sessions of their choosing where space was available. In addition, all senior undergraduate and graduate students were invited to attend any sessions where space was available.

The following sessions were offered:

Safety Psychology – Understanding Human Behavior (common) Speaker(s): Michael Heimlick, Evan Poncelet and Prachi; Safety Engagement of Saskatchewan Employees in the Mining Industry (SESEMI) project

Engineering Safety: Laws and Regulations (common)
Speaker(s): Mr. Bob McDonald, P.Eng. LL.B., APEGS Deputy Registrar and Director of Legal Services, Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS)

Industry Culture and Safety Practices (discipline: CBE)
Speaker(s): Megan Torrie and Lennita Knudsen, Consumers Cooperative Refineries Ltd.

Industry Culture and Safety Practices (discipline: ME)
Speaker(s): Mike Kleiter, Mine Operations Superintendent, PCS Cory

Industry Culture and Safety Practices (discipline: CE, GEO, ENV) Speaker(s): Scott Miller, Associated Engineering

Industry Culture and Safety Practices (discipline: EE, CME, EP) Speaker(s): Adam Detillieux, Technical Sales Specialist, Littelfuse Startco

Attendance

Approximately 366 undergraduate students (versus 320 in 2015) and 46 graduate students attended the scheduled sessions for a total of approximately 1217 student-sessions of training (versus 900 in 2015). Attendance was monitored by staff volunteers at the venue by using magnetic cards readers, and asking students to swipe their student ID cards upon entry to each session attended. The expectation communicated to students was that they must attend all assigned sessions. Flexibility was planned into venue loading to accommodate extraordinary student course schedules. The target for attendance was reasonably met. Using estimated 2nd-year program enrollment figures, an attendance rate of approximately 96% was achieved for undergraduate students (versus 80% in 2015) (Note: this is an approximation, as ~17% attended more than 3 sessions while ~15% attended less. In addition, information and recording errors may also contribute to minor inaccuracies.) Considering reasonable but unavoidable absences and unresolvable schedule conflicts, the attendance achieved is considered successful, and an improvement over 2015. Our goal is to continue to implement changes to improve this result more in the future.

Continuing Work

In 2017-18 the LSC continues to focus on continued improvement to the overall safety culture and is committed to the following initiatives:

Project/Activity	Team	Detail	Timeline
Safety Day Planning Committee	D. Lynch, D. Pavier, C. Deutscher	Annual activity resulting in delivery of a two day safety training program for all 2 nd year undergraduate and graduate students	September 2017.
Eye Wash Station Installation	P. Hauser, V. Bendig	List of required Eye Wash stations to ensure safety of all laboratories	April 2018
Apparatus and Equipment Safety Policy	R. Blondin, P. Hauser	ERP policy, HAZOP policy, and SOP policy	April 2018

As always we appreciate the college community is continuously growing and changing and as such continue to welcome all input and suggestions related to improving the overall health and safety for all members of our community. Please contact any of the members of the LSC to provide your feedback or suggestions.